City of Palo Alto (ID # 8716)

City Council Staff Report

Report Type: Consent Calendar **Meeting Date: 3/5/2018**

Summary Title: Community Engagement Block Program

Title: Approval of a Contract With the Empowerment Institute for $100,000 for Community Engagement Block Program

From: City Manager

Lead Department: City Manager

Recommendation

Approval of a contract with Global Action for the Earth (the Empowerment Institute) for $100,000 for the Community Engagement Block Program (Cool Block).

Summary

The Cool Block Program engages citizens who live together on the same block to learn, share and connect with neighbors on common interests of sustainability, healthy cities and emergency preparedness. The City, in partnership with the Empowerment Institute, has piloted the program twice (spring 2016 and summer 2017 in pilot phases called the Alpha pilot and the Beta pilot). With the successful completion of the Alpha and Beta pilots, the City now seeks to resource the Cool Block program to focus on community engagement and the development of social capital at the block level.

The City issued a Request for Proposals (RFP) in fall 2017 for an organization to help the City develop a community engagement block program that builds social capital on a city block level. Staff received two (2) proposals in response to the RFP. The most responsive proposal was from the Empowerment Institute, who piloted the initial Cool Block Programs.

The Empowerment Institute's Cool Block Program focuses on helping neighbors become more resilient and community-rich by shifting lifestyle practices that will result in a cleaner planet, shared resources and a healthier and safer connected community. The Empowerment Institute has a 35-year legacy of community engagement and has worked with many cities and organizations nationwide.

The contract with the Empowerment Institute (Attachment) is for Phase I of the

program. Phase I will be completed within one (1) year, for a total cost not to exceed $100,000. The Empowerment Institute will match the City funds with in-kind services totaling an additional $100,000 that will be used for personnel and program resources.

Phase II of the Cool Block Program envisions 350 blocks participating over a three (3) year period. The financial and administrative feasibility for the City of Palo Alto to implement Phase II is to be determined after the completion Phase I, and after a thorough assessment of the program goals, outcomes and value to the community.

Background

Developing a community engagement program that meets citizens at the block level has been an interest of the City Manager for many years. It stems from concerns that over time, for many reasons, people have become increasingly disconnected from one another and their local government, resulting in the loss of community and social capital. Instead of residents knowing and relying upon one another, and actively participating in civic affairs in partnership with elected leaders and City staff to build community, people are distanced from each other and their government.

This is not unique to Palo Alto; it is largely a national trend, with Palo Alto being far more engaged than many other communities. However, without developing and cultivating a structure that promotes citizenship, even Palo Alto runs the risk of losing the greatest strength and value a community has to offer, and that is community social capital.

In 2012 City staff and the Empowerment Institute first came to Council with an idea to engage citizens block by block to build social capital through encouraging a low carbon lifestyle, green living, livable neighborhoods and disaster resilience. At that time the program was called the Cool Cities Challenge. A Letter of Intent was signed by the City and the Empowerment Institute to develop the program. In 2016 the Empowerment Institute secured seed funding to pilot the program. The program name was changed to the Cool Block Program.

In 2016 the Council agreed to participate in the program called the Cool Block, in partnership with the Empowerment Institute (Attachment A). The program as initially envisioned is a block-based community engagement initiative that aligned with other City programs, including the Know your Neighbors Grant program, Palo Alto community events, Healthy City, Healthy Community and Emergency Service Volunteer Programs.

In the first pilot 15 community members volunteered as Block Leaders in their respective neighborhoods to create solutions. They structured behavior change with actions that contribute towards Palo Alto working to achieve its Sustainability and Climate Action Plan (S/CAP) goal of 80 percent carbon reduction by 2030. Neighbors getting to know one another was one of the most valuable benefits of the pilot. In the

program, participants selected from a menu of 112 action recipes that include carbon reduction, water conservation, resiliency and livability. They were able to track their progress through a web platform that has the resources necessary to help achieve the actions they choose to complete. Some actions were done as individual actions and others were Cool Block team actions.

A second Cool Block pilot was conducted in spring 2017. The second pilot program took place over four and a half months with 24 blocks participating, representing approximately 175 households. The goal of the Cool Block program was again to engage residents at the block level to learn, share and take action to live a low carbon and environmentally sustainable lifestyle, increase disaster resilience, and enhance the livability of the block. The program consisted of nine meetings that were led by a block captain and largely self-directed by a team of five to eight households on a block.

Staff learned a lot in the pilot programs, not the least of which was, a group of citizens at the block level is a unique and powerful group that is the right size, structure and composition to allow for dynamic learning, sharing and action on common City and citizen interests. Moreover, by collaborating with other households it strengthened the motivation to follow through with commitments, enabled the sharing and exchange of valuable ideas and resources for taking the actions, and provided implementation support for more complex actions. Some of the specific outcomes from the pilot program are below, and in Attachment B you can see and read more quantitative and qualitative program results:

- Percentage of households on a block participating on a Cool Block Team: 41%
- Average recruitment rate per block (people invited who ended up participating): 55%
- Average CO_2 reduction per household: 32%
- Average number of disaster resiliency actions taken per household: 9
- Average number of program actions taken per household: 26

Discussion

Having experienced success with the Cool Block Alpha and Beta pilot programs, staff now seeks to continue the program and potentially scale it to have 25 percent or more Palo Alto blocks participating. Continuing the program will also maintain the momentum from the pilot programs. Up until now the City has been fortunate to have had the support of the Empowerment Institute to fund the pilot programs, with the support and dedication of a citizen volunteer (Sandra Slater). In order to build on the pilot programs' success and to sustain the Cool Block Program, the City will need to provide some resources.

The expectation for the next version of the Cool Block Program is to continue to incorporate sustainability, disaster resilience, and livability but also to further build in

the Healthy City, Healthy Community and Smart City learning, sharing, and actions. The most important opportunity the Cool Block Program presents, and why staff is so excited about developing the Cool Block Program, is that it engages citizens in a new and creative way, it is citizen-centric, collaborative, and builds community.

The National Citizen Survey, annually conducted by the City of Palo Alto, has shown that the overall sense of community in Palo Alto has decreased over time. In 2003, the survey results showed that 70 percent of survey respondents found that the sense of community in Palo Alto was good or excellent. In 2017, only 56 percent of respondents found the sense of community to be good or excellent. In the period in between 2003 and 2017, the average satisfaction rate (rating it as good or excellent) was 66 percent. These survey results reflect the growing need of neighbors' desire to feel connected to one another.

In fall 2017 the City released a Request for Proposals (RFP) to further develop the Cool Block Program. The RFP was released in October, proposals were evaluated in December and the most responsive vendor was the Empowerment Institute. The RFP scope of services can be seen in Attachment C. The primary program goals include:

1. Developing community / local government relationships that strengthen and enable authentic partnerships in community building.

2. Building a connected citizenry to promote resiliency and emergency preparedness, building upon and in partnership with the Emergency Services Volunteer (ESV) program (www.cityofpaloalto.org/emergencyvolunteers).

3. Empowering residents to reduce Palo Alto's carbon footprint by understanding their household energy use and by learning to advance sustainable practices in a way that takes full advantage of Palo Alto's Carbon Neutral electricity and interest in building efficiency and electrification.

4. Building socially connected and community rich neighborhoods to support a healthy city and healthy community.

The contract with the Empowerment Institute includes coordinating 30 Cool Block Teams who will meet nine times in approximately four months and in that time citizens of the participating blocks will learn how to make their homes more energy resilient, be more prepared for a natural disaster, reduce their carbon footprint, increase transportation efficiency, be good stewards of water, become involved in the Healthy City initiative, share more resources with their neighbors, create a greater sense of community, and become more involved with the City.

In addition to a few other metrics, staff will measure the effectiveness of the program in the following ways:

- Number of Cool Blocks participating
- Number of participating households
- Number of household members participating
- Percentage of households on a block participating
- Average carbon footprint reduction per house hold
- Average CO_2 reduction per household
- Average number of disaster resiliency actions taken per household
- Average number of program actions taken per household

Phase II of Cool Block envisions taking the program to scale with 350 or more blocks participating. Phase II would require considerably more resources to implement. The Empowerment Institute has proposed some funding for Phase II, however, staff is not recommending Phase II or this funding commitment at this time. After the completion of Phase I staff and Council will need to evaluate the program further to consider the potential and value of further investment.

Approval of this contract with the Empowerment Institute will allow the City to continue the momentum and its efforts of improving community engagement and providing additional opportunity for residents to connect with one another.

Timeline
Phase I of the program will be completed in calendar year 2018.

Resource Impact
Phase I program costs are $200,000, with the City contributing $100,000 and staff time, and the Empowerment Institutes matching City funds with in-kind services up to $100,000. Staff recommends using the City managers Contingency fund, which has a current balance of $244,000, to fund Phase I.

Policy Implications
The Cool Block program relates to three Major Themes of the Comprehensive Plan: Building Community and Neighborhoods; Keeping Palo Alto Prepared; and Providing Responsive Governance and Regional Leadership. Cool Block touches each of these themes through connecting citizens on a block level and strengthening their connection to city government.

Comprehensive Plan Goal 5-C, Policy C-5-7 references the Healthy City, Healthy Community Resolution. The Cool Block program contributes to this goal. One subgoal of Health City, Healthy Community is to promote a healthy culture where the City "promotes and provides opportunities for social interaction." Another subgoal is to promote a healthy environment where the City "supports, protects and connects Palo Alto to the natural environment and cultural resources." Cool Block contributes to these goals by creating the opportunity for Palo Altans to have neighbor-to-neighbor interactions in order to advance other safety, cultural, and environmental goals.

Environmental Review

This contract is exempt from the California Environmental Quality Act (CEQA) under section 15061(b)(3) of the CEQA Guidelines. (See Cal Code Reg, Title 14, Chpt 3, § 15061(b)(3).).

Attachments:

- Attachment A: Letter of Intent 10-22-2012
- Attachment B: Feb 2016 MOU Cool Cities Challenge
- Attachment C: Study Session July 2016 ID# 3019 Cool Cities
- Attachment D: Pilot Program Results-2012 and 2016

City of Palo Alto
City Council Staff Report

(ID # 3170)

Report Type: Action ItemsMeeting Date: 10/22/2012

Council Priority: Environmental Sustainability

Summary Title: Cool Cities Challenge

Title: Approval of Letter of Intent to Participate in Cool Cities Challenge

From: City Manager

Lead Department: Public Works

Recommendation

Staff recommends that Council authorize the City Manager or his designee to sign the Letter of Intent to participate in the Cool Cities Challenge (Attachment A) being organized and implemented by David Gershon, the Empowerment Institute and its partner organizations.

Background

David Gershon, author of the Low Carbon Diet, co-founder of the Empowerment Institute (EI), and a leading social change practitioner, has visited Palo Alto on several occasions in preceding months to invite our participation in the ambitious Cool City Challenge (CCC) community engagement program. This has led to the current invitation to Palo Alto to formalize this potential working partnership through a Letter of Intent (LOI).

The purpose of the CCC is to scale up a proven community-based social innovation to achieve dramatic greenhouse gas emission reductions in three early adopter American cities and three neighborhoods in San Paolo, Brazil of comparable size to the American cities, and then disseminate this model worldwide. The ultimate goal of the CCC is to develop a scalable social innovation capable of making a dramatic change to retard climate change.

With international climate change legislation failing to get traction in adoption or implementation, and the long timeframe required to scale up technological solutions, there is a need now for viable and scalable strategies for addressing global warming. Cities represent 70% of the planet's CO_2 emissions and in developed countries citizens' daily lifestyle choices represent at least 50% of these emissions with huge opportunities for efficiency. This provides the potential for a high leverage opportunity to address global warming if cities can achieve substantial behavior change among its citizens by taking individual behavior change to a communitywide scale. Further, this could serve as a demand-side driver for local green economic development.

The Empowerment Institute—a leader in environmental behavior change and community engagement—over the past two decades has developed a methodology to help cities empower citizens to reduce their carbon footprint by 25% through the Low Carbon Diet EcoTeam program and a strategy to achieve between 25% and 75% household participation. This methodology has been tested on a smaller scale in over 300 US cities and 6 countries including China. The CCC is designed to bring this potentially transformative social innovation to scale (community-wide) first in the three California demonstration cities and Sao Paulo and then to the wider world based on the experience and lessons learned in the demonstration cities.

The Empowerment Institute (EI) will provide each of the cities deep technical assistance in its implementation. This Institute has a successful track record in designing and implementing successful behavior change programs and community engagement strategies for cities both in the United States and Europe. The content of these behavior change programs include Low Carbon Lifestyles, Green Living, Livable Neighborhoods, and Disaster-resilient Communities. In particular, their Low Carbon Diet Program has been disseminated to over 300 US cities with 46 of those cities in California.

To enable this project to be most effectively disseminated after this prototype phase, EI has enlisted the commitment of major research institutions to study,

evaluate, and assist in the analytics. EI reports that these partners are Lawrence Berkeley National Laboratory, UC Berkeley, UC Davis and Stanford.

EI assumes that cities do not have resources to implement this type of social innovation, and has committed to raising the funds for the cities. One of the purposes of the Letters of Intent with potential demonstration cities is to indicate potential participation by cities that will aid in the Empowerment Institute's fund raising goals. If EI is successful in raising the funds to provide the support and staffing in the demonstration cities over the three year program period, then EI will issue Requests for Proposals from cities for evaluation and final selection of the demonstration cities to participate in the program. That proposal process is expected to occur sometime later in 2013.

Discussion

The Cool Cities Challenge gives Palo Alto a chance to contribute to developing a potentially game changing local solution to climate change. Palo Alto is already a leader in climate protection in many ways, so this is an opportunity to achieve the next level and advance our climate action and energy efficiency goals.

CCC potentially provides the City with a platform that allows for integration of its many sustainability programs and which can be applied literally block by block across our community. Neighborhood groups would allow Palo Alto to get better take up in these programs; it also allows for efficiency in the financial investments that will create and distribute these programs.

The CCC provides Palo Alto an opportunity to more tightly knit together the social fabric of the community. It also allows for the integration of sustainable community outreach efforts.

Resource Impact

No significant direct costs to the City are associated with the staff recommendation to sign the LOI. Staff will continue to work with EI, and other partners (Cool Davis, California Air Resources Board, Lawrence Berkeley National Labs), to advance the City's community engagement goals and our efforts to reduce GHG emissions.

As indicated in the attached LOI, fiscal impacts associated with long-term participation in this ambitious program will be offset by funding secured by EI; as mentioned earlier in this report, the Cool Cities Challenge program will only occur if EI is able to secure adequate funding. Indirect fiscal impacts associated with the implementation of a household based demand-side carbon reduction program are undetermined. While this initiative is based on EI providing new funding to support this effort, a program as ambitious and as far reaching as this in its intent and design will certainly draw on existing city staff, Council, and community capacity. On the other hand, staff anticipates that local businesses and entrepreneurs could respond as local demand for carbon reduction products and services emerge as one outcome of this program.

While submission of a LOI by the City signals our serious interest in this initiative, it commits to no binding obligation. The City will again need to carefully review the results this initiative may produce and the investment that this initiative will require, if and when EI issues the formal Request for Proposals later in 2013. By that point, the City should be able to have a clearer understanding of the costs of participation that may occur beyond the funding EI provides and a better sense of our citizens' interest in participating.

If the Council approves the LOI, and as staff learns of EI's success in fundraising, staff will return to Council with a process to test community interest through targeted outreach to key stakeholders and some method of surveying household interest.

A good understanding of the receptivity of our citizens to participating in a multi-year high touch outreach and behavior change program such as this would be important as a prelude to our submission of any formal proposal to EI when they issue their Request for Proposals in 2013.

Policy Implications

Participation in the Cool Cities Challenge would assist Palo Alto in implementing its Climate Protection Plan and is fully consistent with the Greenhouse Gas reduction goals of that plan.

Environmental Review

Submitting a LOI to participate in the Cool Cities Challenge does not constitute a project under the California Environmental Quality Act (CEQA).

Attachments:

- Cool City Challenge Letter of Intent (DOCX)

Prepared By: Philip L. Bobel, Interim Asst. Director, Engineering Services

Department Head: J. Michael Sartor, Director

City Manager Approval: _____

James Keene, City Manager

Attachment A

DRAFT COOL CITY CHALLENGE LETTER OF INTENT

Dear Mr Gershon,

Thank you for the invitation to be considered as a candidate for the Cool City Challenge. We understand that Empowerment Institute and Lawrence Berkeley National Laboratory are in the process of raising the finances and wish to have non-binding letters of intent from candidate cities to share with potential funding sources.

We would like to be considered as one of the Cool City Challenge communities. We have briefly responded below to the five criteria in the city selection process document and have read the strategic plan. We feel that we meet these criteria.

We understand there is a two-step process. First we submit this letter of intent and then, when financing is secured, we will be invited to submit a more substantive competitive application.

We believe we are good candidates for the Cool City Challenge because:

1. Palo Alto has a commitment to bold carbon reduction with a proven track record, deep commitment, and measurable goals set by the Palo Alto City Council to achieve ambitious carbon reduction in the short and mid-term.

2. Palo Alto has a commitment to community engagement with recognition by the Palo Alto City Council of the need to engage community members in reducing their carbon footprint and a demonstrated track record in doing so.

3. Palo Alto has a commitment to the Cool City Challenge goals with the strong buy-in of the Palo Alto City Council and other civic leaders to local GHG reduction goals and a demonstrated willingness to invest political capital in realizing them.

4. Palo Alto has a track record as an early adopter city including a desire to take on big challenges, lead the way for other cities, civic pride in past accomplishments, high tolerance for experimentation, and a can-do community culture.

5. Palo Alto has a commitment to be a learning and teaching city: Since this is a bold social learning endeavor each city needs to be a committed partner with Empowerment Institute and Lawrence Berkeley National Laboratory in the research and learning. And when feedback dictates, to be willing to evolve the program. Further, since the goal of this endeavor is to develop a scalable model, to also be willing to serve as a teaching city for other cities to learn from.

Thank you for considering this letter of intent and for your important work.

Sincerely,

James Keene
Palo Alto City Manager

City of Palo Alto (ID # 6618)

City Council Staff Report

Report Type: Action Items **Meeting Date: 2/29/2016**

Summary Title: Cool Block Small Pilot Program

Title: Agreement with Empowerment Institute on Cool Block Small Pilot Program (Continued From February1, 2016)

From: City Manager

Lead Department: City Manager

Recommendation
Authorize the City Manager to sign the attached Cool Block Pilot Memorandum of Understanding between the City of Palo Alto and Empowerment Institute.

Background
In 2012 the Council authorized the City Manager to sign a Letter of Intent (LOI) to participate in the Cool Cities Challenge being organized in implemented by David Gershon, the Empowerment Institute, and its partner organizations (Attachment A).

That "Challenge" has been modified slightly to the Cool Block Pilot Program, which is the subject of the attached MOU (Attachment B). While one interpretation would be that the City Manager could sign this new MOU on his own authority, based upon that prior direction, Council re-authorization is being sought because:

- The Cool Block Pilot is in a slightly different form that the earlier proposal, although the concept is similar.
- The Pilot involves a process of neighborhood engagement of between 10-30 city blocks and this Consent Item informs the Council and community of that intention.
- The earlier LOI included the following language: *If the Council approves the LOI, and as staff learns of EI's success in fundraising, staff will return to Council with a process to test community interest through targeted outreach to key stakeholders and some method of surveying household interest.*

The Cool Block Pilot is a program that will require relatively little staff time over the next 12-14 months but will secure enough assistance from the Empowerment Institute to test the effectiveness of this block-based engagement effort to accelerate household and neighborhood action on climate change, resiliency, social connectedness and growing the green economy. As

the details below lay out, the results of the pilot will shape the formal competitive RFP to later be issued by The Empowerment Institute, which will provide significant funding and support for a broader city-wide Cool Cities Challenge (still using the block as an organizing basis). We may again decide to participate in that competition, as The Empowerment Institute has now secured funding to advance that program. Again, participation in this pilot program in no way obligates the City to further participation nor does it guarantee our automatic selection.

In any case, the City may independently learn some important lessons from this pilot. The core component of our role will lie in the identification of the pilot blocks and helping to identify and recruit block leaders, in up to 30 blocks.

Further Detail form the Attached MOU

The Cool Block grows out of a vision to reinvent our cities from the bottom up in the age of climate change to help people adopt low carbon and environmentally sustainable lifestyles, disaster resilient and livable neighborhoods and collaborate together as neighbors and citizens. It builds upon David Gershon and his Empowerment Institute's decades of experience furthering pro-social behavior change and community engagement throughout America and the world. It does this through a nine-meeting, 4 1/2-month program co-led by a group of neighbors living on a block or in a building. Participants in the program select from a menu of 112 action recipes. Some actions are done as individuals and others are

Attachments:

- Attachment A: Staff Report October 2012 (DOC)
- Attachment B: TCB MOU Between CoPA and EI (DOC)

City of Palo Alto (ID # 3170)

City Council Staff Report

Report Type: Action Items **Meeting Date: 10/22/2012**

Council Priority: Environmental Sustainability

Summary Title: Cool Cities Challenge

Title: Approval of Letter of Intent to Participate in Cool Cities Challenge

From: City Manager

Lead Department: Public Works

Recommendation

Staff recommends that Council authorize the City Manager or his designee to sign the Letter of Intent to participate in the Cool Cities Challenge (Attachment A) being organized and implemented by David Gershon, the Empowerment Institute and its partner organizations.

Background

David Gershon, author of the Low Carbon Diet, co-founder of the Empowerment Institute (EI), and a leading social change practitioner, has visited Palo Alto on several occasions in preceding months to invite our participation in the ambitious Cool City Challenge (CCC) community engagement program. This has led to the current invitation to Palo Alto to formalize this potential working partnership through a Letter of Intent (LOI).

The purpose of the CCC is to scale up a proven community-based social innovation to achieve dramatic greenhouse gas emission reductions in three early adopter American cities and three neighborhoods in San Paolo, Brazil of comparable size to the American cities, and then disseminate this model worldwide. The ultimate goal of the CCC is to develop a scalable social innovation capable of making a dramatic change to retard climate change.

With international climate change legislation failing to get traction in adoption or

implementation, and the long timeframe required to scale up technological solutions, there is a need now for viable and scalable strategies for addressing global warming. Cities represent 70% of the planet's CO_2 emissions and in developed countries citizens' daily lifestyle choices represent at least 50% of these emissions with huge opportunities for efficiency. This provides the potential for a high leverage opportunity to address global warming if cities can achieve substantial behavior change among its citizens by taking individual behavior change to a communitywide scale. Further, this could serve as a demand-side driver for local green economic development.

The Empowerment Institute—a leader in environmental behavior change and community engagement—over the past two decades has developed a methodology to help cities empower citizens to reduce their carbon footprint by 25% through the Low Carbon Diet EcoTeam program and a strategy to achieve between 25% and 75% household participation. This methodology has been tested on a smaller scale in over 300 US cities and 6 countries including China. The CCC is designed to bring this potentially transformative social innovation to scale (community-wide) first in the three California demonstration cities and Sao Paulo and then to the wider world based on the experience and lessons learned in the demonstration cities.

The Empowerment Institute (EI) will provide each of the cities deep technical assistance in its implementation. This Institute has a successful track record in designing and implementing successful behavior change programs and community engagement strategies for cities both in the United States and Europe. The content of these behavior change programs include Low Carbon Lifestyles, Green Living, Livable Neighborhoods, and Disaster-resilient Communities. In particular, their Low Carbon Diet Program has been disseminated to over 300 US cities with 46 of those cities in California.

To enable this project to be most effectively disseminated after this prototype phase, EI has enlisted the commitment of major research institutions to study, evaluate, and assist in the analytics. EI reports that these partners are Lawrence Berkeley National Laboratory, UC Berkeley, UC Davis and Stanford.

EI assumes that cities do not have resources to implement this type of social innovation, and has committed to raising the funds for the cities. One of the

purposes of the Letters of Intent with potential demonstration cities is to indicate potential participation by cities that will aid in the Empowerment Institute's fund raising goals. If EI is successful in raising the funds to provide the support and staffing in the demonstration cities over the three year program period, then EI will issue Requests for Proposals from cities for evaluation and final selection of the demonstration cities to participate in the program. That proposal process is expected to occur sometime later in 2013.

Discussion

The Cool Cities Challenge gives Palo Alto a chance to contribute to developing a potentially game changing local solution to climate change. Palo Alto is already a leader in climate protection in many ways, so this is an opportunity to achieve the next level and advance our climate action and energy efficiency goals.

CCC potentially provides the City with a platform that allows for integration of its many sustainability programs and which can be applied literally block by block across our community. Neighborhood groups would allow Palo Alto to get better take up in these programs; it also allows for efficiency in the financial investments that will create and distribute these programs.

The CCC provides Palo Alto an opportunity to more tightly knit together the social fabric of the community. It also allows for the integration of sustainable community outreach efforts.

Resource Impact

No significant direct costs to the City are associated with the staff recommendation to sign the LOI. Staff will continue to work with EI, and other partners (Cool Davis, California Air Resources Board, Lawrence Berkeley National Labs), to advance the City's community engagement goals and our efforts to reduce GHG emissions.

As indicated in the attached LOI, fiscal impacts associated with long-term participation in this ambitious program will be offset by funding secured by EI; as mentioned earlier in this report, the Cool Cities Challenge program will only occur if EI is able to secure adequate funding. Indirect fiscal impacts associated with the implementation of a household based demand-side carbon reduction program are undetermined. While this initiative is based on EI providing new funding to

support this effort, a program as ambitious and as far reaching as this in its intent and design will certainly draw on existing city staff, Council, and community capacity. On the other hand, staff anticipates that local businesses and entrepreneurs could respond as local demand for carbon reduction products and services emerge as one outcome of this program.

While submission of a LOI by the City signals our serious interest in this initiative, it commits to no binding obligation. The City will again need to carefully review the results this initiative may produce and the investment that this initiative will require, if and when EI issues the formal Request for Proposals later in 2013. By that point, the City should be able to have a clearer understanding of the costs of participation that may occur beyond the funding EI provides and a better sense of our citizens' interest in participating.
If the Council approves the LOI, and as staff learns of EI's success in fundraising, staff will return to Council with a process to test community interest through targeted outreach to key stakeholders and some method of surveying household interest.

A good understanding of the receptivity of our citizens to participating in a multi-year high touch outreach and behavior change program such as this would be important as a prelude to our submission of any formal proposal to EI when they issue their Request for Proposals in 2013.

Policy Implications

Participation in the Cool Cities Challenge would assist Palo Alto in implementing its Climate Protection Plan and is fully consistent with the Greenhouse Gas reduction goals of that plan.

Environmental Review

Submitting a LOI to participate in the Cool Cities Challenge does not constitute a project under the California Environmental Quality Act (CEQA).

Attachments:

- Cool City Challenge Letter of Intent (DOCX)

THE COOL BLOCK PILOT MEMORANDUM OF UNDERSTANDING BETWEEN THE CITY OF PALO ALTO AND EMPOWERMENT INSTITUTE

OVERVIEW

The Cool Block grows out of a vision to reinvent our cities from the bottom up in the age of climate change to help people adopt low carbon and environmentally sustainable lifestyles, disaster resilient and livable neighborhoods and collaborate together as neighbors and citizens. It builds upon David Gershon and his Empowerment Institute's decades of experience furthering pro-social behavior change and community engagement throughout America and the world. It does this through a nine-meeting, 4 1/2-month program co-led by a group of neighbors living on a block or in a building. Participants in the program select from a menu of 112 action recipes. Some actions are done as individuals and others are collective and carried out by The Cool Block team.

The pilot phase of *The Cool Block* program will take place in three cities: Palo Alto, San Francisco and Los Angeles. *The Cool Block* program will then be integrated into the Cool City Challenge – a three-year campaign to achieve a minimum of 25% carbon reduction among a minimum of 25% of the households in a community along with creating disaster resilient neighborhoods and green economic development. *The Cool Block* pilot program provides an advantage to participating cities to being favorably considered for the statewide competitive RFP process to receive a 3-year grant of $2.5 million to participate in the Cool City Challenge. This is because of the social infrastructure, program knowledge and integration into city services that will have been created. That said, participation in Cool City Challenge is not guaranteed.

This MOU below describes *The Cool Block* two-phase pilot in the City of Palo Alto from January 2016 to March 2017. What follows are roles, responsibilities, deliverables and a timeline for Empowerment Institute and the City of Palo Alto.

EMPOWERMENT INSTITUTE DELIVERABLES

1. Recruit, train and coach 30 Cool Block leaders and deliver the program on 30 blocks in two phases.

    - Phase 1: Pilot *The Cool Block* program independently, or if ready, with the alpha tech platform on 10 blocks.

    - Phase 2: Pilot the beta version on *The Cool Block* program and tech platform on an additional 20 blocks with support of community groups.

2. Build The Cool Block technology platform, a web and smartphone platform to track results, share best practices, and integrate city agency, non-profit and local business services into the program's actions.

3. Work with the City of Palo Alto to integrate city programs and services into *The Cool Block* tech platform around the relevant actions.

4. Research and integrate into *The Cool Block* tech platform local business, community organization and state services and programs around the relevant actions.

5. Produce a report on pilot outcomes that includes carbon reduction per household, household and block level actions taken, participation rate per block and feedback on various aspects of the program.

CITY OF PALO ALTO DELIVERABLES

1. Participation of City Manager to frame, communicate, and execute The Cool Block program internally with city staff and externally in the community.

2. Participate with the Office of Sustainability and other city staff to integrate The Cool Block program into the S/CAP strategy and encourage the participation of the S/CAP Advisory Board.

3. Assist in creating The Cool Block strategy including identification of blocks and potential block leaders.

4. Assist in the recruitment of community organization leaders around the four core pillars of The Cool Block program and respective actions: carbon reduction, disaster resiliency, water conservation/quality and livability/social cohesion.

5. Participate on the design team of the Cool City Challenge to accelerate bold climate action toward carbon neutrality in up to 20 California cities through the use of this platform and funding.

6. Participate in communication and events at the local and state level.

PILOT TIMELINE: JANUARY 2016 TO JUNE 2017

- Recruit and train of Cool Block leaders: January to March 2016

- The Cool Block pilot phase 1 (10 blocks): April to August 2016

- The Cool Block pilot phase 2 (20 blocks): October 2016 to February 2017

COOL CITY CHALLENGE TIMELINE: MAY 2017 TO DECEMBER 2020

- Cool City Challenge RFP announcement: May 2017

- Cool City Challenge RFP due: July 2017

- Cool City Challenge awards to cities: September 2017
- Cool City Challenge Deployment: January 1, 2018 to December 31, 2020

_____
David Gershon,
CEO, Empowerment Institute

_____
Date

_____
Jim Keene, City Manager, City of Palo Alto

_____
Date

City of Palo Alto (ID # 3019)

City Council Staff Report

Report Type: Study SessionMeeting Date: 7/16/2012

Summary Title: Cool City Challenge

Title: Cool City Challenge Study Session

From: City Manager

Lead Department: City Manager

This is a study session where David Gershon of the Empowerment Institute will explain the Cool City Challenge Initiative and take questions from the Council. As a study session, there will be no action. If the City would be interested in participating in the Cool City Challenge, the first step would be to commit to participating via a letter of intent. We would expect that matter to come to the Council after you return from break, if there is interest.

The Challenge will only occur if the Empowerment Institute is able to raise the funds to support the initiative. At the point that the initiative proves it will be viable, cities that have signaled their intent to participate will be asked to submit formal applications to be one of the three participating California cities. There thus may be a competition to be a participating city, so a letter of intent may not ensure a city's automatic participation.

The Cool City Challenge is a bold initiative and in staff's view will require a significant commitment over the approximate three year period that the Challenge requires. In staff's opinion, Council should understand that this is as much a civic engagement, community building exercise as it is an experiment to advance the reduction of CO2, increased energy efficiency, and other aspects of our climate action goals and environmental initiatives as a community.

The City has established ambitious goals through our Climate Action Plan and is a leader, comparatively, in making significant progress in meeting our CO2 reduction targets. In our case, we will want to consider the Cool City Challenge in the context of surpassing our established 15% community wide CO2 reduction goals. How far do we want to go and how much of an effort to we want to commit to? And is the grassroots, household-by-household approach that the Cool City Challenge proposes a vehicle we want to use? These and other questions will help to inform any next steps the City would take in the Cool City Challenge.

We have included a number of summary bullet points below that provide some basic facts and background about the Cool City Challenge. There are also a series of attachments provided by David Gershon that provide more depth and background about the initiative. Staff will also reach out to different community partners from our Green Teams to Acterra and others who have expressed interest in the Cool City Challenge to be sure they are informed about this study session.

Summary Facts and Background

- It is a global climate change initiative that involves 3 CA cities and 3 neighborhoods of comparable size in San Paulo, Brazil.

- It is based on the fact that cities are where a large percentage of the planet's carbon is generated (70%), and citizens represent a significant part of a city's footprint (50 to 90%).

- If a community model can be built in these 4 demonstration cities and then brought to scale worldwide, it would represent a major global climate change mitigation intervention.

- Empowerment Institute, the initiator of the Cool City Challenge and who will provide each of the cities technical assistance in its implementation, has a successful track record in designing and implementing successful behavior change programs and community engagement strategies for cities both in the United States and Europe. The content of these behavior change programs include low carbon and sustainable lifestyles, livable neighborhoods and disaster-resilient communities.

- Their Low Carbon Diet Program, core to the Cool City Challenge, has demonstrated that it can help households reduce their carbon footprint by 25% or more. As a result the program is being used in over 300 US cities with 46 of those cities in CA, and 6 countries including China. They have also demonstrated that through their community engagement tools they are able to get a minimum of 25% of the residents on a block to participate in their programs.

- One of our Palo Alto citizens, Sandra Slater, heard about the Cool City Challenge, thought Palo Alto would be a great fit, and introduced it to us.

- The 3 US cities being selected by EI are based on the following criteria.

    1. The cities needed to be in CA because of its strong commitment to GHG reduction as demonstrated by AB 32.
    2. Be in reasonably proximity to one another so they can form a learning community and enable easy access for those who will travel here to learn from them.

3. Be early adopter cities known for taking leadership on the issues of climate change and sustainability.
4. Have either a citizen or local community group and the local government championing the participation of their city in the program.

- To enable this project to be most effectively disseminated after this demonstration phase, Empowerment Institute has partnered with Lawrence Berkeley National Laboratory to do a research study and provide the analytics for this initiative. Stanford, UC Berkeley and UC Davis will assist them in this research.

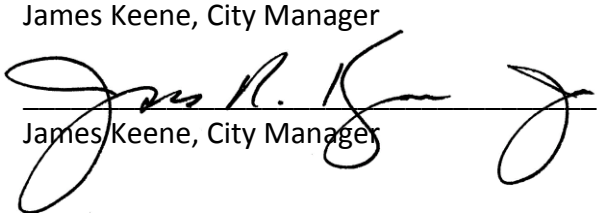
- Empowerment Institute realized that cities do not have resources to implement this type of transformative social innovation, as much as we might wish, and has committed to raise the funds in partnership with LBNL for the program's implementation in the cities selected.

Attachments:

- Attachment A: Cool City Challenge_City Selection Process (PDF)
- Attachment B: Cool City Challenge v1 6 (PDF)
- Attachment C: LBNL Cool City Challenge Research Framework v2 1 (PDF)
- Attachment D: Local Carbon Reduction Initiatives (PDF)
- Attachment E: Changing the World One Household at a Time (PDF)

Prepared By: Lorie Camino, Executive Assistant to the City Manager

Department Head: James Keene, City Manager

City Manager Approval: 

James Keene, City Manager

ATTACHMENT A

COOL CITY CHALLENGE SELECTION PROCESS

This document provides a summary of the Cool City Challenge, provides criteria for being invited to participate as a candidate city, and describes the selection process.

SUMMARY

PURPOSE: To scale up a proven community-based social innovation to achieve dramatic carbon reduction while building a low carbon economy and resilient neighborhoods in three early adopter California cities and three neighborhoods in Sao Paulo, Brazil; and then disseminate this strategy worldwide. The ultimate goal of the Cool City Challenge is to change the game around greenhouse gas reduction in cities and provide a viable path forward to address climate change.

NEED AND OPPORTUNITY: With international climate change legislation failing to get traction and the long timeframe required to scale up technological solutions, the world is searching for a feasible and scalable strategy for addressing global warming. Since cities represent 70% of the planet's CO2 emissions and citizens' daily lifestyle choices represent between 50 and 90% of these emissions, cities and their citizens provide the world with an unparalleled opportunity to address global warming. Further, this can serve as a demand-side driver for building robust local green economies.

STRATEGY: Empowerment Institute—the world's pre-eminent expert in environmental behavior change and community engagement—over the past two decades has developed a proven methodology to help cities empower citizens to reduce their carbon footprint by 25% through the Low Carbon Diet EcoTeam program and a strategy to achieve between 25 and 75% household participation. This methodology has now spread to over 300 US cities and 6 countries including China. The Cool City Challenge is designed to bring this transformative social innovation to scale.

GOALS:

- Minimum of 25% carbon reduction per household
- Minimum of 25% participation of citizens in the community
- Minimum of 40% participation in some form of household retrofit
- Stimulate green economic development
- Enable participating households and blocks to become more disaster resilient
- Build social capital on blocks that can be redeployed to address multiple community issues.
- Transfer Empowerment Institute's intellectual capital in behavior change, community engagement and large system transformation to city government agencies and multiple community groups.

- Help grow participation in existing community programs such as audits, rebates, zero waste, water conservation, as well as leverage the campaign to help create new programs and local business opportunities such as a local carbon offset program.
- Develop a plan for city to become carbon neutral
- Do rigorous research on all of the above through Empowerment Institute's partnership with Lawrence Berkeley National Laboratory to be in a position to take this model to scale in cities across the state of CA, nationally and ultimately globally.

DESIGN PRINCIPLES: To enable a scalable behavior change and community engagement initiative to succeed, Empowerment Institute's research has shown the following elements need to be in place.

1. A structured program with a menu of carefully crafted pro-social behaviors customized to support the outreach efforts of city agencies, community-based organizations, neighborhood and blocks. The Cool City Challenge combines four of Empowerment Institute's behavior change programs—carbon reduction, green living, disaster resiliency and neighborhood livability—to increase household, block and city benefits. Game mechanics will be applied to enhance participation, social innovation and stickiness among households, blocks, community sectors, community groups and cities.
2. An in-person peer support system to provide the motivation and accountability to take and sustain pro-social behaviors.
3. Neighbor-to-neighbor connectivity based on a block or in a multi-family dwelling that is built around a set of co-benefits that include community building, environment, health, safety and livability improvements.
4. A vision and set of goals that can speak to a broad cross-section of the community and as a consequence engage a wide diversity of stakeholders in the campaign.
5. A web-based feedback system complimented by social media that shows the drops filling the bucket both around the program and participation goals to sustain motivation over time.
6. A formal partnership with the local government to enable program credibility and longevity.
7. Participation of multiple local organizations to recruit members, constituents and customers. These include faith-based organizations, environmental groups, emergency preparedness and safety groups, businesses, schools and various community-based organizations. It is not be up to any one individual or group to recruit all the teams.
8. Staffing from individuals who live in the community, are talented in community organizing, competent in program management, accomplished leaders, well connected to various community organizations, and astute students of social learning and human motivation.

9. Empowerment Institute consulting support of the organizing team around the local customization of this social architecture, capacity building training and coaching of local community groups, and on-going coaching of the organizing team as they deploy and evolve this methodology.

Empowerment Institute has designed the Cool City Challenge based on the above research. Further it realizes that cities do not have the resources to implement this type of transformative social innovation, as much as they might wish, and has committed to raise the funds in partnership with Lawrence Berkeley National Laboratory for the program's implementation in the cities selected.

IMPLEMENTATION PLAN:

Phase 1: Start-up – one year: Build program and technology infrastructure.

Phase 2: Campaign – three years: Support cities to achieve the carbon reduction, neighborhood resiliency and green economic development goals.

CITY SELECTION

BACKGROUND: Over 2011 Empowerment Institute identified several dozen cities across America for consideration as candidates for the Cool City Challenge. It narrowed this selection down to Northern California cities because of the region's high level of environmental consciousness and leadership, progressive state climate change legislation demonstrated through AB 32, and the ability to serve as a regional hub for national and global dissemination of this transformative social innovation. It then honed in on mid-sized early adopter cities or sub-sections of larger cities in the 50,000 to 75,000-population range that it felt best embodied this environmental leadership. Five criteria were then established to evaluate potential city candidates.

1. *Commitment to bold carbon reduction:* A proven track record, deep commitment, and measurable goals by the local government to achieve ambitious carbon reduction in the short and mid-term.

2. *Commitment to community engagement:* Recognition by local government leadership of the need to engage community members in reducing their carbon footprint and a demonstrated track record in doing so.

3. *Commitment to the Cool City Challenge goals:* Strong buy-in of local government and civic leaders to the Cool City Challenge goals and a willingness to invest political capital in realizing them.

4. *Track record as an early adopter city:* The characteristics of an early adopter community including a desire to take on big challenges, lead the way for other

cities, civic pride in past accomplishments, high tolerance for experimentation, and a can-do community culture.

5. *Commitment to be a learning and teaching city:* Since this is a bold social learning endeavor each city needs to be a committed partner with Empowerment Institute and Lawrence Berkeley National Laboratory in the research and learning. And when feedback dictates, to be willing to evolve the program. Further, since the goal of this endeavor is to develop a scalable model, to also be willing to serve as a teaching city for other cities to learn from.

SELECTION PROCESS: Participation in the Cool City Challenge is invitational based on Empowerment Institute's evaluation of the city's ability to meet the above five criteria. Once invited, the candidate city goes through a two-step process.

First it submits a letter of intent stating that is has read this document and the Cool City Challenge strategic plan and feels it can meet the five criteria necessary to be successful and agrees to implement the strategy.

When Empowerment Institute and Lawrence Berkeley National Laboratory have secured the start-up and first year of campaign funding, the second step in the selection process is initiated. The candidate city is invited to participate in a competitive application process demonstrating it has the on the ground community leadership commitments to make this initiative successful. Empowerment Institute and Lawrence Berkeley National Laboratory will then select the 3 cities with the best application. The cities not selected will be encouraged to participate in the next phase that rolls out the model.

CONTACT INFORMATION: David Gershon, Empowerment Institute, dgershon@empowermentinstitute.net

ATTACHMENT B

COOL CITY CHALLENGE

REINVENTING OUR CITIES FROM THE BOTTOM UP
TO ACHIEVE DRAMATIC CARBON REDUCTION, DEEP RESILIENCY AND GREEN PROSPERITY

AN INITIATIVE OF EMPOWERMENT INSTITUTE IN PARTNERSHIP
WITH LAWRENCE BERKELEY NATIONAL LABORATORY

DRAMATIC CARBON REDUCTION: reduce community's carbon emissions through the mobilization of a large percentage of citizens to reduce their CO_2 footprint by participation in Low Carbon Diet neighborhood-based teams and develop a plan for a carbon neutral community.

DEEP RESILIENCY: redeploy the social capital generated by neighborhood teams to increase the individual and collective resiliency of residents in neighborhoods to address climate-related risks and enhance overall sustainability and livability.

GREEN PROSPERITY: create demand for green goods and services enabling the development of a robust local green economy through bringing neighborhood teams to scale.

THE NEED

"What we do in the next few years to address climate change will determine our future. This is the defining moment."
—Dr. Rajendra Pachauri, Chair, UN Intergovernmental Panel on Climate Change

"The world's cities are responsible for up to 70% of harmful greenhouse gases while occupying just 2 per cent of its land. They have become the real battleground in the fight against climate change. What goes on in cities, and how they manage their impact on the environment, lies at the core of the problem."
'"Hot Cities: Battle Ground for Climate Change" from UN-HABITAT's 2011 Global Report

"Cities and citizens can make a global difference. Cities are responsible for the majority of our harmful greenhouse gases, but they are also places where the greatest efficiencies can be made. With better urban planning and greater citizen participation we can make our hot cities cool again."
—Dr. Joan Clos, Executive Director, UN-HABITAT

PURPOSE

To scale up a proven community-based social innovation to achieve dramatic carbon reduction, deep resiliency, and green prosperity in three early adopter California cities and three neighborhoods in Sao Paulo, Brazil and then disseminate worldwide.

AN OPENING FOR CHANGE

With international climate change legislation failing to get traction, as concerned citizens of our planet we are left to our own devices. But even if legislation had passed, the speed and magnitude of change our scientists tell us is needed goes well beyond anything political leaders were contemplating. The social change tools at their disposal—command and control and financial incentives—at their best are designed for slow, incremental change. If the current social change tools of carrots and sticks alone are unable to meet our needs, what else do we have? Are there assumptions we might rethink about what motivates people to change? And with our national governments unable to lead the way, how might our communities effectively step into this leadership vacuum?

A VISION OF POSSIBILITY

Imagine for a moment that cities and citizens from the largest per capita carbon-emitting country—America—and one the world's fastest growing economies and a global leader on climate change abatement—Brazil—came together to develop a game changing social innovation around global warming. Its goal: *rapid and substantial carbon reduction in the short-term and carbon neutrality in the long-term, with deep resiliency and vibrant livability for its citizens and green prosperity for its businesses.*

With a real ticking clock, substantive and timely carbon reduction is critically needed. The fossil fuels used to power our homes and cars generate between 50 and 90% of a community's footprint. In America this represents *half* of the country's CO_2 emissions. It is also the low-hanging fruit because we can make these changes immediately while buying needed time for the longer-term technology and renewable energy solutions to scale-up.

Further, empowering the citizens of a community to lower their carbon footprint builds demand for the green products and services needed to create local low carbon economies and the political advocacy needed to become carbon neutral cities – the carbon mitigation end game for cities. Moreover, this sends a profound message to the world that citizens in a developed world country are able to reduce their high carbon-emitting lifestyles and citizens in a developing world country are able to leapfrog over the inefficient use of natural resources and develop environmentally sustainable lifestyles. And all while these cities grow their economies and create greater quality of life for their citizens.

Cities and citizens from the north and south coming together as partners to reduce their greenhouse gas emissions and scaling this approach up city by city worldwide puts a new option on the table for addressing global warming.

MEETING THE CHALLENGE

While getting people to reduce their carbon footprint – energy efficiency – is the low-hanging fruit to CO_2 mitigation in the short term, will we be able to pick it? Can we empower citizens to get out of their comfort zones and adopt low carbon lifestyles? Will cities be willing to expand their social change tool kit beyond legislation and financial incentives to directly reach out and engage their citizens? And if cities and citizens are both willing to make these changes can such an initiative be brought to scale?

In 2006 Empowerment Institute—the world's foremost expert in environmental behavior change and community engagement—began attempting to answer these questions by creating a community-based environmental behavior-change program called Low Carbon Diet. The program consists of twenty-four actions to reduce one's carbon footprint by at least 5,000 pounds in thirty days and to help others do the same. It is based on two decades of experience working with several million people in hundreds of cities around the world who are organized into neighborhood-based peer support groups of 5 to 8 households called EcoTeams.

The Low Carbon Diet program helped empower the movement that had been building in America around personal action and community-based solutions, and immediately took off. It was driven by the many local governments committed to the issue of climate change who were wishing to engage their citizens; faith-based groups like Interfaith Power and Light representing some 5,000 congregations, wishing to engage congregants; and environmental groups, like Al Gore's Climate Project, which gave the book to the 1,000 people he trained to lead his "An Inconvenient Truth" slide show. This interest resulted in the development of a community engagement strategy called a Cool Community.

There are now over 300 Cool Communities in thirty-six states across America with participants achieving a 25 percent carbon footprint reduction and reaching out to fellow citizens to accomplish the same. Low Carbon Diet and the Cool Community model has also been translated and culturally adapted for China, Korea, Japan, Australia, Canada and the United Kingdom.

Cool Communities are developing robust long-term carbon reduction capability by building the community leadership, carbon-literate citizenry, and political will necessary to move the community toward carbon neutrality. However, a Cool Community does more than just address a city's carbon footprint; it also enables it to enjoy the immediate practical benefits of green economic development, more livable and resilient neighborhoods and greater environmental sustainability.

And at the most fundamental level by enabling individuals to become personally part of the solution, Cool Communities are creating a new dynamic in how we tackle large societal challenges. They are allowing us to move beyond the traditional social change formula of business as the problem and government as the solution – the familiar paradigm in which nonprofits lobby government for better regulations against business while disenfranchised citizens sit on the sidelines complaining about the coziness between politicians and business.

When citizens are empowered to adopt socially beneficial behaviors, such as a low-carbon lifestyle, an opening can occur for traditionally adversarial relationships to establish new arrangements of cooperation and collaboration. When the whole system begins working together and there is no "other" to combat or protect against, more innovative and generative solutions start to emerge. Everyone is now a participant in shaping the future.

THE COOL CITY CHALLENGE GOALS

1. Scale up the Cool Community model in three early adopter California cities and three neighborhoods in Sao Paulo, Brazil.

2. Build each city or neighborhood's capacity to engage between 25% and 75% of their residents over a three-year period to reduce their carbon footprints 25%.

3. Build each city or neighborhood's capacity to enable a minimum of 40% of program participants to do energy efficiency building upgrades on their homes.

4. Support each city or neighborhood, with assistance from Lawrence Berkeley National Laboratory, to develop a plan to become carbon neutral by 2025.

5. Support each city or neighborhood in developing a green economic development strategy based on the increased demand generated by the campaign for low carbon goods and services and renewable energy.

6. Support cities in redeploying the social capital generated through the block-based teams to enhance the resiliency, livability and sustainability of the city's neighborhoods at a block level.

7. Create the Cool City challenge as a whole system solution through engaging and building the transformative leadership and community organizing capacity of the local government, community-based groups, university and high school students (Cool Community Corps) and businesses (Cool Corporate Citizen). This approach will not only enable the campaign to accomplish its neighborhood team recruitment goals, but leave a legacy of enhanced community leadership, strengthened community partnerships, and a deepened environmental stewardship ethic.

8. Create a formal research study and evaluation of the environmental, economic and social results of the campaign and its various processes to assist in its future dissemination. (The lead research partner is Lawrence Berkeley National Laboratory.)

9. Based on the success of this four-city demonstration, disseminate this model worldwide.

SUMMARY AND TIMELINE

- Phase 1 – Start-Up (1 Year): Create the information technology management system, communication tools, adaptation of the behavior change programs, and local campaign management teams. (Begins upon securing financing for this phase and at least the first year of the campaign.)

- Phase 2 – Campaign (3 Years): Implement the Cool City Challenge in the four cities.

PHASE 1 – START-UP: EMPOWERMENT INSTITUTE KEY TASKS

1. Select the three early adopter California cities. Candidates are Davis, Palo Alto, San Francisco, San Rafael and Sonoma. This will be done competitively in partnership with Lawrence Berkeley National Laboratory based on a formal application process.

2. Select the three Sao Paulo, Brazil Neighborhoods. This will be done competitively in partnership with the city of Sao Paulo based on a competitive application process.

3. Design and build the information management system for carbon aggregation, participation tracking and results simulation (CAPTIN).

4. Adapt Empowerment Institute's Low Carbon Diet, Green Living, Disaster Resilient Communities and Livable Neighborhood programs to electronic format, integrate into a single program, and customize for each of the cities with localized resources.

5. Integrate into the four-part program and community organizing strategy game mechanics to enhance participation, social innovation and stickiness among households, blocks, community sectors, community groups and cities.

6. Design the Cool Community Corps (student engagement) and Cool Corporate Citizen (employee volunteers) programs and customize for each of the communities.

7. Create a local green economic development strategy in partnership with each city's economic development agency.

8. Design and implement the overall communication strategy including branding, written materials, website, promotional film, and social and traditional media and customize for each city.

9. Meet with local government leaders, civic and faith-based groups, and green businesses in the four cities to understand the unique opportunities offered to each by the campaign and the points of synergy available through increased collaboration with one another. Integrate this information into a visioning and strategic planning retreat for each city.

10. Recruit the local campaign leadership teams for each city.

11. Facilitate a visioning and strategic planning retreat with each community's campaign leadership team, key strategic partners and advisors. The outcomes will be a clearly delineated vision customized to the unique needs and opportunities of each city, three-year strategic plan, and alignment of the team around this vision and plan of action.

12. Provide a capacity building training for each community's campaign's leadership team to enable execution of their strategic plan through developing competencies in the Cool Community organizing methodology, Social Change 2.0 strategies, and transformative leadership skill-set.

13. Help each city's campaign leadership team develop a compelling graphic presentation of the local campaign including the track record of the Cool Community behavior change and community engagement methodology being deployed, benefits to the community at different levels of scale, and the action plan to achieve it.

PHASE 2 – CAMPAIGN: EMPOWERMENT INSTITUTE KEY TASKS PER CITY

Year One

1. Assist local campaign leadership teams in collaboration with city officials in making the Cool City Challenge presentation in an event to on-board community leadership from civic and faith-based groups, businesses, government agencies high schools and universities. Each partner organization will be asked to contribute to the formation of Neighborhood Teams and participate in a capacity building training and learning community of peer support and coaching. This is the formal launch point of the campaign.

2. Provide capacity building training and coaching for community partners in neighborhood team recruitment strategies, empowerment coaching, and utilization of the carbon aggregation and participation tracking information network (CAPTIN).

3. Facilitate monthly master classes for partner organizations to assist them in mastery of the empowerment tools and achievement of their goals.

4. Provide on-going consultation and coaching to each community's campaign leadership team on strategy, tactics, mastery of the tools, and attainment of their team recruitment goals and other campaign metrics.

5. Provide consulting and support to each community in implementing the Cool Community Corps and Cool Corporate Citizen programs, green economic development strategy and communication plan.

6. Create baseline data and establish local partnerships to support the research study.

7. Establish and facilitate a community of practice between the cities through regular teleconferences and the web.

Year Two

8. Provide on-going consultation and coaching to each campaign leadership team on strategy, tactics, mastery of the tools, attainment of their goals and build out of new social innovations.

9. Provide on-going consulting and support to each community in implementing the Cool Community Corps and Cool Corporate Citizen programs, green economic development strategy and communication plan.

10. Provide on-going facilitation of a community of practice between the cities through regular teleconferences and the web.

11. Conduct an on-site retreat with each campaign's leadership team to review progress against their goals and adjust strategies and tactics based as needed.

12. Lead a multi-city off-site retreat to take a deep dive into the best practices and next practices that are emerging in all aspects of the campaign.

13. Manage and provide continuous upgrades in the CAPTIN information management system.

14. Continue implementation of the research study.

Year Three

15. Provide on-going consultation and coaching to each campaign leadership team on strategy, tactics, mastery of the tools, attainment of their goals and build out of new social innovations.

16. Provide on-going consulting and support to each community in implementing the Cool Community Corps and Cool Corporate Citizen programs, green economic development strategy and communication plan.

17. Facilitate the community of practice between the cities through regular teleconferences and the web.

18. Conduct an on-site retreat with each campaign's leadership team to review progress against their goals and develop strategies for necessary adjustments.

19. Lead a multi-city off-site retreat to take a deep dive into the best practices and next practices that are emerging in all aspects of the campaign.

20. Manage and provide continuous upgrades in the CAPTIN information management system.

21. Design and implement Cool City Challenge dissemination strategy.

22. Support cities, in collaboration with local universities, to serve as teaching cities.

23. Present and disseminate the research findings of the Lawrence Berkeley National Laboratory and other participating universities.

PHASE 1 – START-UP: LAWRENCE BERKLEY NATIONAL LABORATORY KEY TASKS

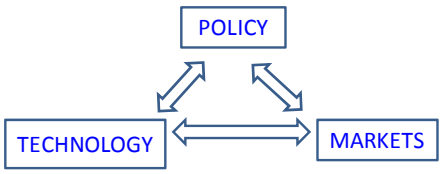
1. Develop methodology for robust data collection and measurement of savings.

2. Collect baseline data and establish local partnerships to support the research study.

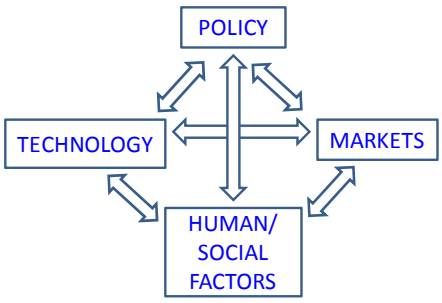
3. Develop partnerships and plans for technology demonstrations and pilot projects with industry.

4. Coordinate partner input for CAPTIN information management system.

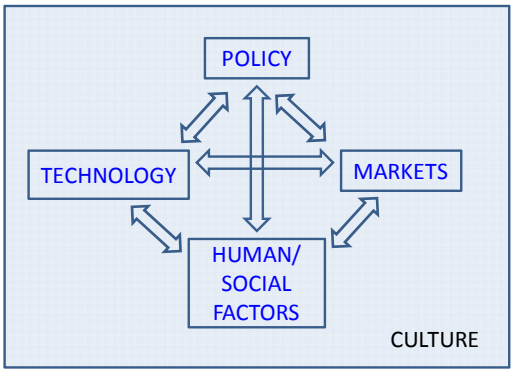
5. Develop a whole system model of analysis for the Cool City Challenge as a climate change mitigation strategy. The focus of this analysis and research will be on how human and social factors can serve as the catalyst and critical driver needed for technology adoption, policy adoption and market creation (Figure 1).



(a)



(b)



(c)

Figure 1. Focusing solely on technology, markets, and policy (a) in climate mitigation is incomplete without including human and social factors (b) which can be a major driver for technology adoption, policy adoption and market creation. All of these items reside and must be understood in a larger cultural context (c).

PHASE 2 – CAMPAIGN: LAWRENCE BERKLEY NATIONAL LABORATORY KEY TASKS

1. Measurement and evaluation of community participation, behavior change actions, energy efficiency retrofits, participation in voluntary technology demonstrations and pilot programs conducted by cities.

2. Quantification of energy and carbon savings by action as part of a structured data collection plan.

3. Semi-annual feedback of results to city and partners for program adjustment and improvement.

4. Annual progress report with quantified results for stakeholders, participants and funding sources.

5. Complete formal research study of the environmental, economic and social results of the campaign and its various processes to assist in its future dissemination, in collaboration with partner universities. This includes:

    - Quantification of behavior change and community participation levels and energy and carbon savings,

    - Analysis and recommendations for community engagement "best practices" and relationships to quantified results,

    - Community scaling scenarios and non-energy related impact assessment analysis e.g. health and air quality impacts,

    - Analysis of economic and social impact of Cool City Challenge,

    - Analysis of this whole system approach in creating technology adoption, policy adoption and market creation,

    - Cost/benefit analyses of behavior change interventions in comparison to other forms of GHG reduction strategies,

    - Potential GHG and economic development impact of scaling the Cool City Challenge across the state of California and the United States

    - Development of carbon neutral scenarios for 2025.

PHASE 2 – CAMPAIGN: COMMUNITY CAMPAIGN MANAGEMENT TEAM KEY TASKS

The staffing required to manage the campaign is estimated to be four full-time people or the equivalent: a campaign director and three program managers. Volunteers and the various community stakeholders can enhance these positions.

1. Identify the residential sector carbon footprint, if it does not already exist.

2. Recruit partner organizations and block leaders to form Neighborhood Teams. (See Cool Community organizing model below.)

3. Integrate the campaign into other community-based carbon reduction, neighborhood improvement, disaster resiliency and community development initiatives to maximize synergy.

4. Support partner organizations in staying on track with their Neighborhood Team formation goals and keep track of their input into the CAPTIN information management system.

5. Manage implementation of the green economic development strategy.

6. Manage participation in the Cool Community Corps that engages high school and university students.

7. Manage participation in the Cool Corporate Citizen program that engages employee volunteers.

8. Manage the local communication strategy.

9. Support research on the carbon neutral city plan.

ABOUT EMPOWERMENT INSTITUTE

Empowerment Institute—the world's foremost expert in environmental behavior change and community engagement—has helped millions of people in hundreds of cities worldwide reduce their environmental footprint. Since 2006 it has applied this methodology, through its Low Carbon Diet program, to help tens of thousands of households in the US reduce their carbon

footprint and trained over 300 communities in its Cool Community methodology. Over the past thirty years Empowerment Insitute's programs have won many awards, and an academic research study described them as "unsurpassed in changing behavior."

Empowerment Institute is the principle architect of the Cool City Challenge and responsible for its overall implementation. This includes the selection of the four cities, building their capacity in deploying Empowerment Institute's behavior change and community engagement methodology, securing and managing the team of content experts who will support various aspects of the intiative. It is also accountable for raising the financing and disseminating of the Cool City Challenge after this three-year demonstration phase.

About Lawrence Berkely National Labratory

Lawrence Berkeley National Laboratory (LBNL) addresses the world's most urgent scientific challenges including the advancement of more sustainable energy technologies. Founded in 1931, LBNL's scientific expertise has been recognized with 13 Nobel Prizes. One of their major initiatives is "Carbon Cycle 2.0" – a multidisciplinary approach to accelerate discovery and innovation in creating global climate change solutions.

The Cool City Challenge fits under this broad initiative and LBNL will lead the research and development effort for the duration of the project. LBNL will coordinate research efforts at participating universities and with corporate sponsors as well as support technology demonstrations and pilots with industry and other stakeholders. Key issues to be studied include how the behavior change and community engagement tools promulgated by this initiative can help catalyze the full spectrum of GHG reduction interventions spanning technology adoption, policy adoption, and market development; the efficacy of the behavioral change and community engagement mechanisms for GHG reduction and green economic development; the potential GHG and economic development impact of scaling the Cool City Challenge across the state of California and the United States; cost/benefit analyses of behavior change interventions in comparison to other forms of GHG reduction strategies; and scenario development for what it would take for the participating cities to become carbon neutral by 2025. LBNL will also assist with securing the financing for the Cool City Challenge.

Strategic Partners

World Wildlife Fund and its Earth Hour City Challenge

World Wildlife Fund is the world's leading conservation organization, works in 100 countries, and is supported by 1.2 million members in the United States and close to 5 million globally. In 2007 it started Earth Hour as a symbolic event and a demonstration of solidarity, with cities turning off their lights for one hour to show support for climate action. By 2011 this symbolic event had become the world's largest environmental campaign for the planet with 1.8 billion people in more than 5,200 cities and towns taking part. Starting in 2012, WWF challenged cities

to do more than turn out their lights and created the Earth Hour City Challenge. Its purpose is to encourage cities and their citizens to reduce their carbon footprints while at the same time becoming more resilient to climate-related disasters. Participating US cities will receive resources and gain recognition for their efforts to address climate change.

Given the shared goals and audience of the Cool City Challenge, World Wildlife Fund reached out to Empowerment Institute to form a strategic partnership and deploy its behavior change and community engagement methodology in the selected cities. This partnership will be phased in as the Cool City Challenge begins scaling this methodology after completion of the demonstration phase described in this proposal.

In order for the Cool City Challenge to serve as the backend of World Wildlife Fund's Earth Hour City Challenge, it will participate in fundraising efforts to support the implementation of this demonstration phase.

City of Sao Paulo Environment and Health Departments

The City of Sao Paulo, though its community health and environmental education and outreach program, will provide the staffing and logistics to enable implementation of the Cool City Challenge. This in-kind contribution is valued at $1 million dollars. The plan is to embed the Cool City Challenge in the city's wider program of behavior change around health, safety and environment using Empowerment Institute's Low Carbon Diet, Green Living and Livable Neighborhood Programs and the PAVS environment and health agent distribution platform. The Cool City Challenge will build this model in three middle-income Administrative Districts (approximately 300,000 people) where its residents can serve as role models for low carbon, environmentally sustainable lifestyles and more livable neighborhoods that could be emulated by other parts of the city. It is estimated that approximately 20% of Sao Paulo's citizens, or around 2 million people, fall in this category. Since 300,000 people represents 15% of our target group and it is also the point at which a well designed innovation can achieve a tipping point and begin diffusing on its own momentum.

Academic Research Partners

University of California, Davis – Energy Efficiency and Sustainable Transportation Centers will support research around technology adoption, energy efficiency and transportation behavior change and modeling for carbon neutral city development.

University of California, Berkeley – Renewable and Appropriate Energy Laboratory and Energy and Resources Group will support development of the carbon calculation aspects of the information management system and the personal transportation data collection.

Stanford University – Precourt Energy Efficiency Center will assist in energy and transportation efficiency research through the application of gamification and feedback systems to increase the efficacy of program participant behavior change.

TEAM MEMBERS

David Gershon, co-founder and CEO of Empowerment Institute, is one of the world's foremost authorities on behavior-change and community engagment and applies this expertise to issues requiring community, organizational, and societal change. His clients include cities, government agencies, large corporations, and social entrepreneurs. He has addressed a wide diversity of issues ranging from low carbon lifestyles, livable neighborhoods, and sustainable communities to organizational talent development, corporate social engagement and cultural transformation.

David used this empowerment proficiency to organize at the height of the cold war, in partnership with the United Nations Children's Fund and ABC Television, one of the planet's first major global consciousness-raising initiatives—the First Earth Run. Building on his background as the Director of the Lake Placid Olympic Torch Relay, he used the mythic power of relaying a torch of peace around the world to engage the participation of twenty-five million people in sixty-two countries, the world's political leadership and, through the media, an estimated 20 percent of the planet's population in an act of global unity. Millions of dollars were also raised as part of this event to help UNICEF provide care for the neediest children of the world.

Gershon is the author of eleven books, including the best selling *Low Carbon Diet: A 30 Day Program to Lose 5,000 Pounds* and the award-winning *Social Change 2.0: A Blueprint for Reinventing Our World*. He co-directs Empowerment Institute's School for Transformative Social Change which empowers change agents from around the world to design and implement cutting edge transformative social innovations. He has lectured at Harvard, MIT, and Johns Hopkins Univeristy and served as an advisor to the Clinton White House and the United Nations on behavior change and community engagement strategies. David has overall responsibility for leading this initiative including desgin, management and project financing.

Douglas Davenport leads strategic partnership initiatives for the Lawrence Berkeley National Laboratory's Environmental Energy Technology Division, an integrated applied sciences research program in energy efficiency and environmental quality, energy resources and storage, and energy policy. Doug's focus is on the value of LBNL's R&D programs to their partners in addressing some of the world's most pressing technical challenges. He's spent the past 23 years as an engineer, leader of a climate consulting practice, renewable energy developer, and business manager. He is currently starting up new innovation programs and partnerships on behalf of LBNL for urban sustainability, battery technology, smart grid, and materials science. Doug will be responsible for management of LBNL's core team and will assist

with Cool City Challenge financing. He will also serve as lead R&D liaison between industry partners and local government programs and coordinate technology demonstrations and pilots.

Tom McKone Ph.D. is the leader of the Sustainable Energy Systems group and Deputy for Research Programs in the Energy Analysis and Environmental Impacts Department in the Environmental Energy Technologies Division at LBNL and has several decades of experience in scientific analysis and technical management. Tom is an authority on the life cycle analysis/health impacts of energy production and was a co-author of the recent National Academy report, *Hidden Costs of Energy: Unpriced Consequences of Energy Production and Use*. He is also an Adjunct Professor in the Environmental Health Sciences group in the Department of Public Health at the University of California, Berkeley. Tom will lead LBNL's overall R&D activities and coordinate the impact assessment analysis team.

Jeffery Greenblatt, Ph.D. is a staff scientist at Lawrence Berkeley National Laboratory's Environmental Technologies Division where he leads work on California's energy future analysis for the California Energy Commission, and leads the Environmental Energy Analysis Team for LNBL's Carbon Cycle 2.0 initiative. He was a major author of California's Energy Future report. Prior to his work at LBNL, he was a Climate and Energy Technology Manager at Google.org, where he screened renewable energy grants and investments. Before coming to Google, Jeff was a High Meadows fellow at Environmental Defense Fund where he evaluated the technical, economic and environmental aspects of a wide range of energy technologies. He helped developed the original "wedge" climate stabilization research and has developed scenarios for California, the Midwest, and the US. Jeff will be responsible for community scaling scenarios, health and resource impact assessment analysis and development of carbon neutral city scenarios.

Max Wei Ph.D. is a Program Manager in the Environmental Energy Technologies Division at LBNL. His work is focused on modeling medium- and long-term greenhouse gas reduction scenarios for California, including the potential of long-term habitual behavior change as a resource for carbon reduction. He was a key contributor to two recent reports: California's Energy Future – The View to 2050, for the California Council on Science and Technology, and California's Carbon Challenge: Scenarios for Achieving 80% Emissions Reduction in 2050, for the California Energy Commission. In 2011 he completed a report on the job creation potential from sustained investment in energy efficiency and low carbon energy sources, co-led successful passage of SB77, a clean energy financing bill in California, and co-authored a study on the economic impacts of a state feed-in-tariff. Max will be responsible for the Cool City Challenge behavior change and community participation measurement and assessment, quantification of carbon savings, and lead analysis of economic and social impact assessment.

Cara Pike is the founder and director of the Social Capital Project and a climate change communications specialist. She has written two climate change communication guides *Climate Crossroads: A Research-Based Framing Guide and Climate Communications* and *Behavior Change: A Guide for Practitioners.* She is also the founder of Climate Access, a network for practitioners to acquire the latest research and emerging ideas on climate change

communications and behavior change. Cara was formerly the Vice President of Communications for the leading nonprofit environmental law firm Earthjustice, where she created and ran a full-service internal communications agency for the organization's eight offices and international program. Cara has a deep understanding of environmental issues and how they intersect with cultural trends and concerns. Cara will manage the development and implementation the Cool City Challenge communication strategy.

Keya Chatterjee is Director of the World Wildlife Fund Climate Change Program in the US. Among her responsibilities she runs the Earth Hour City Challenge initiative for WWF in the US focused on getting cities to reduce their carbon footprint and prepare for adaption. Other responsibilities include advocacy for international and national climate change legislation. Prior to joining WWF, Chatterjee served as a Climate Change Specialist at USAID, where she managed the land-based carbon portfolio. Chatterjee also worked for three years at NASA Headquarters in their Earth Science Enterprise. Chatterjee started her career as a Presidential Management Fellow in the US government, and was a Peace Corps Volunteer in a national park in Morocco from 1998 to 2000. Keya will manage the partnership between the Earth Hour City Challenge and the Cool City Challenge.

John Cleveland is former director of the State of Michigan's industrial extension service where he worked with over 200 SMEs per year. In 2006 he founded Innovation Network for Communities to develop and spread scalable innovations that transform the performance of community systems. He's been working for over 30 years on large-scale system change projects with a focus on the intersection between private markets and public good. His most current work has been leading The Green Ribbon Commission—a high level group of business, civic and institutional CEOs whose mission is to support the implementation of the City of Boston Climate Action Plan and supporting the Urban Sustainability Directors Network. John will provide strategic planning consultation and help partner cities create localized green economic development strategies around the Cool City Challenge.

Carrie Armel Ph.D. is a research associate at Stanford's Precourt Energy Efficiency Center specializing in behavior and energy research. Her current research includes developing climate-positive behavior change interventions; developing tools for measuring climate change relevant behaviors, for use in evaluating the efficacy of behavior change interventions, and in providing feedback to individuals; preparing an integrative review that identifies the most effective behavior change techniques from multiple disciplines so that they may be translated and applied to addressing climate change; and developing a "Behavior and Energy" website and literature database, which serves as a central repository for research on climate relevant behavior. She will be serving as an advisor and assisting us in the use of game mechanics for the Low Carbon Diet.

Chris Jones is research associate at the UC Berkeley Renewable and Appropriate Energy Laboratory. His research interests intersect the fields of environmental psychology, ecological economics and climate change policy. He is lead developer of the CoolClimate Calculator, an online tool that allows households to calculate their carbon footprint and develop personalized

climate action plans. His research is funded by the California Air Resources Board and the California Institute for Energy and Environment. He is also program manager for the Behavior, Energy and Climate Change Conference, the premier conference dedicated to understanding and extending the application of behavioral sciences to solve energy and climate problems. Chris will assist in the development of the CAPTIN information management system.

Karen Ehrhardt-Martinez, Ph.D. is the Director of Garrison Institute's Climate, Mind and Behavior Program. She has two decades of experience in applied academic research on the social and behavioral dimensions of energy and climate change. She was a Senior Research Associate with the Renewable and Sustainable Energy Institute at the University of Colorado and led the behavior change research program for the American Council for an Energy-Efficient Economy. Karen is a cofounder of the Behavior, Energy and Climate Change (BECC) Conference and served as the BECC Conference Chair in 2009. Karen will assist in applying the latest behavior change research to optimizing the Low Carbon Diet program.

Peter Byck is the producer and editor of the highly acclaimed documentary film on climate change, *Carbon Nation.* Peter has presented Carbon Nation for the White House and many Fortune 500 companies and universities, and high schools across the country and internationally. He has over 20 years experience as a director and editor. His first documentary "Garbage" won the South by Southwest Film Festival. In addition, he has edited documentaries for Peter Jackson's last two films, "Lord of the Rings" and "King Kong." Peter has also worked as an editor or director for documentaries and promotional shorts for Warner Bros., Universal Pictures, 20th Century Fox, Disney and MGM, and for shows and movies including "The West Wing," "The Matrix," "Scrubs," and many more. He will be developing a short promotional film and longer documentary on the Cool City Challenge.

Mario Herger is a Senior Innovation Strategist at SAP Labs in Palo Alto, California and global head of the Gamification Initiative at SAP. In his work as head of the Gamification Initiative he has supported gamification efforts in the enterprise from multiple levels and departments, like Sustainability, On Demand, Mobile, HR, Training & Education, Simulation etc. He has driven the awareness around gamification inside and outside SAP by organizing and leading innovation events around this topic, working with gamification platform and service-providers, and by incorporating gamification into SAP's strategy. Mario will be helping build the gamfication platform for the Cool City Challenge.

Greg Searle is the North American Executive Director for Bioregional's One Planet Communities program. In this position he serves as a strategy consultant on behavior change and low carbon neighborhoods for municipalities and green real estate developers. Greg applied this expertise as a consultant to Discovery's Planet Green reality show to help American families achieve a 30% reduction in their carbon footprints in two months. Greg serves as a technical advisor to the US Green Building Council Regenerative Design Program, Clinton Climate Initiative, and the Urban Land Institute. Greg is also the co-founder and former Chief Technology Officer of Tomoye Corporation, an award-winning knowledge management software firm. Greg will help

in the design of the Cool City Challenge's carbon neutral block program and knowledge management system.

Eve Baer has served as Empowerment Institute's Program Director for the past 20 years and is a master coach. She has supported hundreds of individuals to form EcoTeams and coached dozens of program managers in cities across the United States to implement Empowerment Institute's behavior change programs. Eve will assist the community campaign management teams and partner organizations in EcoTeam formation.

John Winter is the founder and president of Social Responsibility Solutions, a consulting firm specializing in creating climate change reduction programs for businesses. Before John began his consulting practice he was the Director of Social Responsibility at Green Mountain Coffee Roasters. In that role, John managed GMCR's activities in climate change and environmental quality. Key tasks included measuring the company's GHG emissions, designing reduction and alternative energy strategies, and creating emissions offsets. Under his leadership the company was ranked 2nd in Business Ethics magazine 2005 "100 Best Corporate Citizens." John will manage operations for the Cool City Challenge and implementation of the Cool Corporate Citizen and Cool Community Corps programs.

Sandra Slater has pioneered environmental sustainability and green design in the San Francisco Bay area for the past two decades. She is the founder of Sandra Slater Environments a design and consulting firm that works with businesses and private homes. Her home was one of the first green demonstration homes in the country. Over 3,000 architects, designers, city planners, and others have toured the home to learn about green building, and it's also been featured in many TV programs, articles and books. Sandra will assist with overall project management with a focus on the participating California cities.

Helio Neves Ph.D. is the City of Sao Paulo's deputy secretary of Environment and director of the city's community environmental and health education and outreach program called PAVS (Green and Healthy Environments Project). He will be responsible for organizing the City of Sao Paulo's participation in the Cool City Challenge including the selection of the three neighborhoods and city staffing.

Rodrigo Lagreca is the managing director of Evolva Projects, leading experts in developing behavior change programs in Brazil. One such program his organization developed is on low carbon lifestyles—the first of its kind in South America. Prior to this work Rodrigo served as a senior executive in a consumer goods company. His background also includes serving as a professor in Pontifícia Universidade Católica. His research has focused on the impact of gray markets on consumers, industries and companies, and ways of changing habits related to such offers. Rodrigo will serve as the program manager for the Cool City Challenge in Brazil, assist in the adaption of the Low Carbon Diet and other programs and in raising the financing.

Sector 2 ½ is a Brazilian marketing and communication company that works at the intersection of the corporate and NGO sectors to design mutually supportive communication strategies and

programs. It strengthens corporate strategies based on intrinsic and genuine social environmental beliefs and practices; and civil society organizations and their causes through planned marketing communication support. Sector 2 1/2 brings these two sectors of society together to enable mutually beneficial strategic partnerships. Their clients include Pepsi, Unilever, World Wildlife Fund and UNDP among many others and their team has spent over forty years in the field of marketing and communications. Sector 2 1/ 2 will implement the communication strategy for the Cool City Challenge in Brazil and in assist in raising the financing.

BUDGET

Phase 1 – Start-Up (1 Year)

- Foundation Building of the Campaigns -- $250,000
  (Includes visits to each of the cities to meet with key stakeholders and assess needs and opportunities, recruitment of campaign management teams, visioning and strategic planning retreats for campaign teams, development of strategic plans for each city, and capacity building training for campaign management teams.)

- CAPTIN Information Management System -- $250,000
  (Design of the carbon aggregation and participation tracker, cool city simulator, community-of-practice, program management, and mobile app software. This is the information management backbone for the Cool City Challenge during the demonstration phase and for its long-term dissemination.)

- Program Development -- $250,000
  (Includes adaptation of EI's four behavior change programs into electronic format and customization for each of the cities, development of the Cool Community Corps and Cool Corporate Citizen programs, and development of the green economic development and research strategies.)

- Communications -- $200,000
  (Creation of the communication strategy including branding, website, promotional film and outreach materials customized to each city.)

- Travel and Lodging -- $50,000
  (Visits to four cities to implement the start-up tasks.)

  Sub Total -- $1,000,000

Phase 2: Campaign (3 Years)

- Core Program -- $7,000,000
  ($1 million per city for four staff over 3 years to manage the campaign and other administration costs. $750,000 per city over three years for Empowerment Institute and its cadre of content experts to provide capacity building, consultation and coaching.)

- Research and Evaluation -- $3,000,000
  (Conducting of the Cool City Challenge research and evaluation by LBNL.)

- Communication -- $1,200,000
  (Promotion of the campaigns in the four cities through social and traditional media, local events to celebrate successes, and development of a film.)

- CAPTIN Information Management -- $300,000
  (Management and program upgrades of the information management system.)

- Travel and Lodging -- $300,000
  (Visiting cities for training and consulting and off-site retreats for leadership teams.)

- Disseminate Cool City Challenge -- $200,000
  (Design and implementation of the Cool City Challenge diffusion strategy including development of the teaching cities platform, identification of the next wave of cities, and dissemination of the research findings of LBNL.)

  Sub Total -- $12,000,000

Project Total: $13,000,000

Note: When the $13 million of core financing is secured, we will seek to raise an additional $12 million for incentive prizes to recognize extraordinary accomplishment of the cities. The Cool City Challenge will offer cities who meet or exceed their goals: $250,000 for 25% citizen participation, $500,000 for 50% citizen participation, $750,000 for 75% or more citizen participation. This will also serve as seed capital to support their efforts to become carbon neutral. When this $2 million dollars of financing is secured we will seek an additional $10,000,000 to serve as an "X Prize" to recognize the first city to achieve the goal of carbon neutrality.

ADDENDUM

Further Information about the Social Change 2.0 Framework and the Low Carbon Diet and Cool Community Methodologies

Review of Social Change 2.0 in Fast Company http://www.fastcompany.com/1576670/social-change-20-a-blueprint-for-reinventing-our-world

Introduction to Social Change 2.0 – "Reinventing Social Change"
http://www.socialchange2.com/index.php/book/excerpts

Low Carbon Diet – Portland Pilot Case Study: "Changing the World One Household at a Time"
http://www.empowermentinstitute.net/files/LowCarbDiet_article.pdf

Huffington Post Series – "Empowering a Climate Change Movement: Low Carbon Diet and the Cool Community" http://www.socialchange2.com/index.php/author/empowering-a-climate-change-movement

FOR FURTHER INFORMATION

David Gershon
(845) 331-1312
dgershon@empowermentinstitute.net
www.empowermentinstitute.net
www.socialchange2.com

ATTACHMENT C

TOWARD BUILDING SCALABLE LOW CARBON CITIES THROUGH IMPLEMENTATION OF A WHOLE SYSTEMS APPROACH IN SEVERAL LEARNING CITIES IN CALIFORNIA AND SAO PAULO, BRAZIL

AN APPLIED RESEARCH FRAMEWORK BY LAWRENCE BERKELEY NATIONAL LABORATORY IN COLLABORATION WITH EMPOWERMENT INSTITUTE FOR THE COOL CITY CHALLENGE

INTRODUCTION

Climate change solutions tend to focus on technologically based solutions and advances in technology. For example 13 or more of the original 15 Socolow climate wedges are technology-based[1]. This is not surprising, given that by definition climate change science is largely studied, quantified, and parameterized by scientists and engineers and since technologies can be analyzed and their impact quantified in a relatively straightforward manner. But what about people: the interaction between people and technology and the larger cultural context of issues driving energy demand and climate emissions including consumption, growth and modernity? After all, people are the ultimate consumers of energy and their consumption accounts for 50-70% of greenhouse gas emissions. For example, the degree to which and rate at which people and by extension, society as a whole adopts new technologies can be as important as the development of the technology itself. Concurrently the world is becoming more urbanized and cities are becoming critical entities in which to address climate change both because of their dominant contribution to global climate emissions and because of their potential for mobilization compared to larger and more unwieldy federal or national levels of authority.

Focusing solely on technology, markets, and policy in climate mitigation strategies is incomplete without including human and social factors, which can be a major driver for technology adoption, policy adoption and market creation (Figure 1). Moreover, all of these items reside in and must be understood in a larger cultural context and ultimately biologically based evolutionary setting. This work describes an innovative new framework for addressing the climate change challenge: a whole systems approach which seeks to comprehend human/behavioral factors, technological approaches, and market factors centered in several learning cities with the objective of building a scalable approach to implementing low carbon cities.

---

[1] Stephen Pacala, Robert Socolow "Stabilization Wedges: Solving the Climate Problem for the Next 50 Years with Current Technologies". Science 13 August 2004: Vol. 305 no. 5686 pp. 968-972.

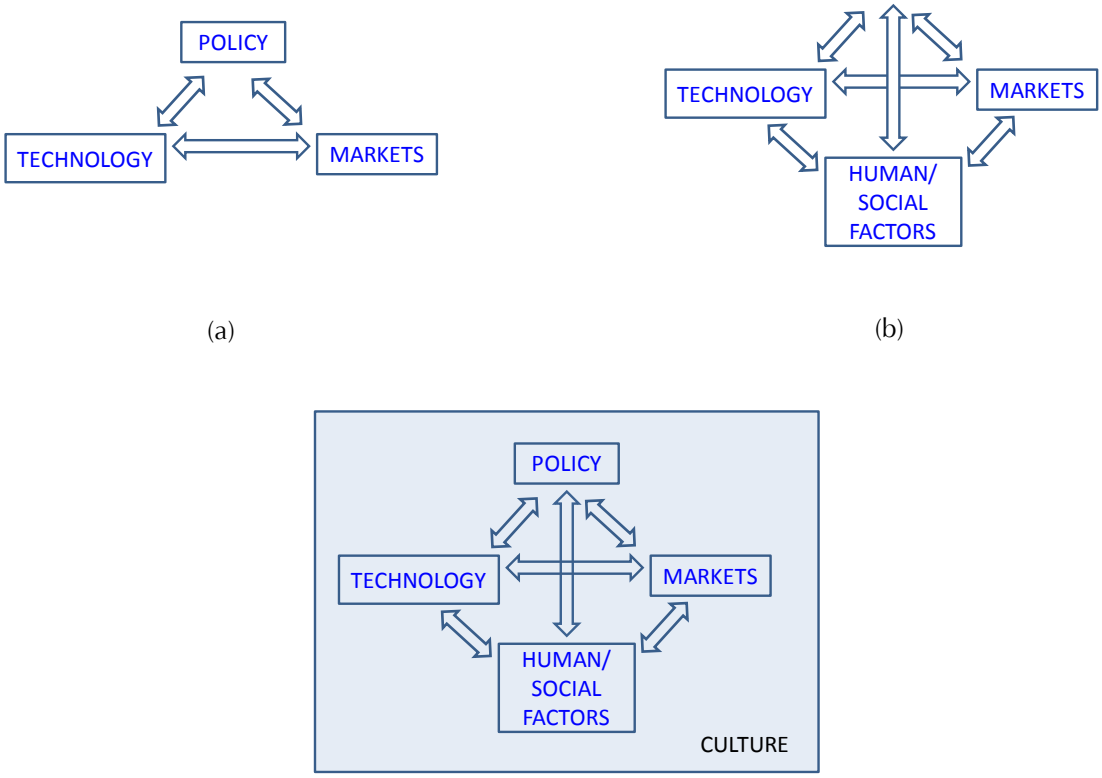


Figure 1. Focusing solely on technology, markets, and policy (a) in climate mitigation is incomplete without including human and social factors (b) which can be a major driver for technology adoption, policy adoption and market creation. All of these items reside and must be understood in a larger cultural context (c).

	Technology	**Markets**	**Policy**
Human/Social Factors	To what degree do human/social factors help/hurt technology adoption? How do we overcome human/technology barriers?	To what degree is conservation/habitual behavior limited by market adoption factors (ease of adoption, ease of trial, visibility of benefits, etc.)? What is the potential for the "collaborative consumption" market?	What is the sensitivity of "strong policy" knobs and habitual behavior change? What policies support current consumption habits? Education, information
	To what extent can community engagement drive technology/market/policy adoption?		
Technology	-	Test, pilot, deploy, data, marketing, etc.	Education, information, incentives, financing, risk mitigation, etc.
Markets	-	-	Carbon price, incentives and regulations

Table 1. Some interactions and research questions in the interaction of human and social factors with technology, markets and policy. Less explored interactions are shaded.

	Technology	Markets	Policy
Human/Social Factors	Lack of familiarity with technologies; complexity of technology.	Feedback mechanisms for consumption and costs; trust factors and transaction costs; ease of adoption; visibility of benefits	Education and awareness Incentives and regulations
Technology	-	First cost issues; planned vs. unplanned (replacement vs. retrofit)	Building codes and standards. Incentives and regulations
Markets	-	-	Building codes and standards; innovative financing mechanisms, incentives and regulations

(a)

	Technology	Markets	Policy
Human/Social Factors	Range concerns; battery safety concerns; lack of engine revving sound; etc.	Collaborative consumption car sharing? Charging vehicle-to-grid interactions with driver preferences	Higher gasoline tax Education Information
Technology	-	Cost adder; infrastructure – charging, distribution upgrades, etc.	Feebates based on carbon emissions
Markets	-	-	Carbon price, higher gas tax, incentive and regulations

(b)

Table 2. The interaction of human and social factors with technology, markets, and policy in (a) Home energy efficiency retrofits; and (b) Electric vehicle adoption—plug in hybrid (PHEV) and battery electric vehicles (BEV).

Global warming is a short fuse issue with the time window for effectual strong action receding with each passing year[2]. There is a lack of coordinated national action or international action. This being the case, much of the leadership in climate change mitigation legislation and policies has devolved to the state and city level. Many cities have climate action plans but lack clear implementation strategies and coordination between disparate agencies (water, utilities, recycling, etc.). Moreover, cities are strapped for resources and budgets are being cut, contributing to persistently high unemployment and a chronic recession since the financial crisis. The net result of all of this is that carbon emissions are not being cut with either the requisite velocity or magnitude needed to meaningfully impact climate change.[3]

2 J. Hansen, Target atmospheric CO2: Where should humanity aim? Open Atmos. Sci. J. (2008), vol. 2, pp. 217-231.

3 "A Daunting Emissions Quest for U.S. Cities," Dylan Walsh, New York Times, April 26, 2012.

Climate change solutions in leading states such as California tend to be technologically focused e.g. cleaner power or lower carbon fuels and based on carbon intensity standards rather than absolute energy or carbon reductions. Wider scale programs such as the Better Buildings Program tend to be piecemeal or narrowly focused in scope (e.g. residential efficiency retrofits) or narrowly focused in audience (e.g. single family homeowners). Because of the piecemeal, narrow focus of these programs, they are not widely adopted and thus far not viewed as successful.

At the same time, cities and residents in cities are a nexus for energy, resource and carbon consumption with increasing urbanization trends especially in the developing world. Localized climate action plans exist in places such as Berkeley and Davis, California, but often lack implementation strategies with detailed measurements and verification. Instead they tend to focus on high level targets with no methodology for structured implementation, measurement or verification, much less financing. State and local approaches also generally lack strategies that include human and social factors, they focus rather on technology adoption.

Further, a persistent and difficult issue to overcome on the path to deep carbon reduction in cities is the lack of demand for energy efficiency services and products, with uptake of home energy retrofit programs chronically low. The direction of programs in general tend to be top down rather than bottom up, based upon extrinsic appeals (such as saving money or saving energy) rather than intrinsic appeals (such as benefiting the community or deeper motivations such as making a difference), and they tend to be scatter shot rather than focused.

Toward Achieving Low Carbon Cities: A New Paradigm

The proposed approach is in many ways an inversion of existing paradigms that have met with limited success, with focus on motivations, desires, and psychology rather than conventional policy making based on technocratic and purely economic considerations. This whole system approach rather than piecemeal foci integrates social and human factors such as context, vision and motivations and not just energy efficiency but lifestyle and community factors such as consumption, diet, health, resiliency and safety.

A potentially game changing, bottom-up climate change solution using this whole system approach has been developed by Empowerment Institute – experts in the development and implementation of behavior change, community engagement and large system transformation strategies. Participants in their Low Carbon Diet program achieve a 25% carbon footprint reduction and through their neighbor-to-neighbor outreach process are able to recruit 25% of a block to participate. LBNL will partner with Empowerment Institute in an attempt to scale up their carbon reduction and community engagement methodology in three early adopter cities in California and three neighborhoods in Sao Paulo, Brazil.

Called the Cool City Challenge (see addendum), its goal over a three-year timeframe is to engage a minimum of 25% of the residents of these communities to reduce their carbon footprint by 25% while providing a platform for the testing and adoption of technologies to enhance the

behavior change and community engagement. A rigorous applied R&D learning process led by LBNL will maximize this opportunity for knowledge creation and ultimately success.

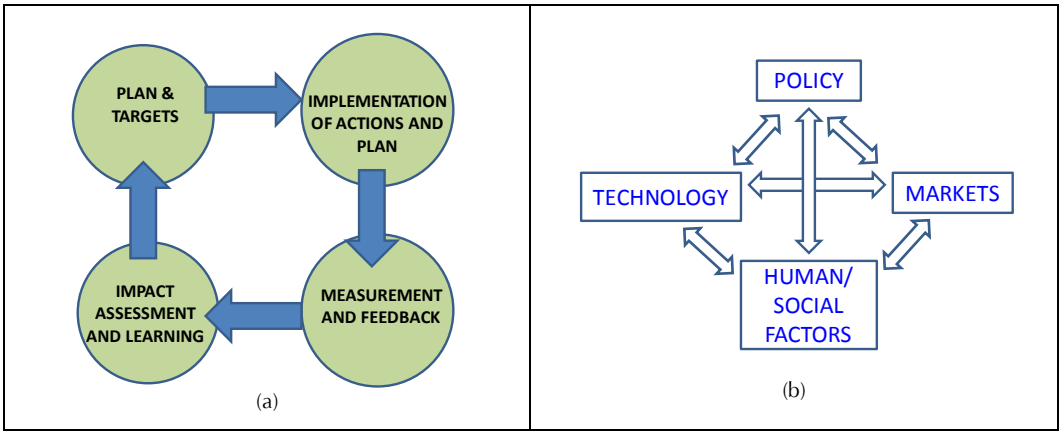


Figure 2. Schematic of climate action plans illustrating the iterative nature of an action plan, an implementation plan, measurement and feedback, and impact assessment and learning (a). Each of the four key elements can be viewed through the lens of coupled technology, policy, markets, and human and social factors interactions (b).

	Human/Social Factors	Technology	Markets	Policy
Plan and Targets	Role of conservation/ habitual behavior change? Education/ Awareness e.g. Eco-driving	Role of key technologies (e.g. controls, networks, end use technologies, energy supply technologies)	Human/social factor intervention and technology cost effectiveness? What are market adoption barriers and relative importance?	What policies can encourage social factor participation and technology adoptions? What is optimal policy trajectory?
	Key Barriers Identified?			
Implementation Plan	How best to do outreach? How to identify early adoption blocks and neighborhoods?	Test/Pilot/ deployment plans. Education	Financing issues	Policies for human/social factors and technology and markets?
	Plan to overcome Key Barriers?			
Measurement and Feedback	How to monitor/verify changes? How to capitalize on feedback?	Sensor, feedback, networks	Demand reduction/ demand shift; more comprehensive product labeling	Policies for more feedback
Impact Assessment and Learning	Impact of implementation and changes?	Total cost of ownership with lifecycle analysis impacts	Impact of implementation on markets e.g. contractor employment	Policy responses
	Market Analytics: outreach, response, adoption, penetration metrics and quantification			
	What are integrated impacts to local economy, to local health, environment? How might these be integrated into an "urban quality index?"			

Table 3. Some interactions and research questions for the dynamics of climate action plans and human/social factors, technology, markets and policy. Human and social factors are usually not included in the implementation plan beyond generalized "outreach plans", and measurement, feedback, impact assessment and learning are not generally addressed.

The Cool City Challenge implementation plan is unique in that it will provide a closed loop learning system. Learning by design, rather than a top down approach of "build it and they will come," e.g. building technology demonstrations and deployments without concomitant seeding of demand at the community level for these new technologies through creating interest in low carbon choices and lifestyle impacts.

LBNL and Empowerment Institute's partnership around the Cool City Challenge brings together for the first time the world-class technology R&D of LBNL in buildings, energy efficiency and energy analysis, IT and technology corporations, and the behavior change, community engagement, large system transformation and scaling strategies championed by the Empowerment Institute. Moreover, the initiative focuses on implementation of carbon reduction plans through specific and quantifiable behavior changes, technologies, and infrastructure in contrast to plans that focus on end states. Similarly, the initiative provides timeframes, locations, and detailed strategies for how to achieve aggressive carbon reduction targets.

Further, the Cool City Challenge initiative provides a platform and test bed for deployment of new technologies, behavior change, community engagement and scaling strategies in cities. In particular it provides a learning lab for technology/human interactions and a tie-in to behavioral change experiments. It also extends the more usual "top down" framework to a "whole system" framework that integrates citizen participation, new technologies, and green economic development with the traditional policy tools of legislation and financial incentives. And the initiative offers the opportunity to design a replicable framework for scaling up low carbon implementation plans to other cities.

The LBNL/Empowerment Institute Cool City Challenge initiative has six key research areas:

1. *Whole System Approach:* How to best integrate citizen carbon reduction actions, community engagement tools, green economic development strategies, a scaling mechanism, technology adoption, market development, and public policy tools.

2. *Adoption Analytics:* How to quantify adoption and penetration for low carbon actions, energy efficiency and technology.

3. *Technology/Human Interface:* How to maximize the human/technology interface to enable the development of new markets for low carbon technologies.

4. *Behavior Change:* How to maximize the quality, quantity and magnitude of citizen carbon reduction actions.

5. *Co-Benefits:* How to measure and quantify the economic, environmental, social and health co-benefits.

6. *Carbon Neutral City:* How to create a structured pathway to a carbon neutral city.

The research focus will include the following case study areas: transportation – vehicle miles traveled (VMT) reduction, residential energy efficiency – household retrofit adoption, and dietary change – eating lower on the food chain and local food. These three areas are chosen because they have either been very difficult to crack as market areas (residential uptake for energy efficiency is smaller than commercial uptake); they represent a large energy and carbon savings opportunity (residential retrofits, VMT reduction, dietary change); and they have not been highly studied or well quantified through citizen participation efforts in the past (VMT reduction and dietary change).

KEY LBNL RESEARCH TASKS

Start-up Phase

The methodology for robust data collection and measurement of savings will be developed in this phase. This will include the definition of an appropriate control group for each city and provisions for collecting both spatial (block level) and temporal quantification (persistence) of behavior actions and community participation. Key household action items to be quantified on a pre- and post- program basis will include VMT, energy efficiency retrofits, carbon reduction actions, purchases, dietary habits, water usage and solid waste generation.

Baseline data will be collected and local partnerships established to support the research study. Existing baseline data or statistics from the participating cities will be utilized wherever possible. Partnership with local utilities and/or technology provider companies will be made to collect pre-and post program utility customer data for base lining and ongoing data collection. VMT data collection will rely either on manual data entry or wireless data collection via cell phone/vehicle linkage. Data collection methodology and measurement of savings will be integrated into the Cool City Challenge information management system ("CAPTIN") and LBNL will coordinate partner input for CAPTIN.

One framework that will be employed in the program design is the investigation and possible mitigation of key barriers for actions in transport and energy efficiency (Table 4). For example, neighborhood-based carpooling barriers may include coordination gaps and trust issues and this could be addressed in the EcoTeam framework of increased community trust and a technology partner providing carpooling software integrated into IT and cell phone networks.

During this phase, LBNL will also develop relationships and partnerships for technology demonstrations and pilot projects with industry or other technology stakeholders. This might include technology demonstrations for home energy management systems, advanced lighting products or controls, advanced window coatings, or pilot deployment of heat pump based space heating and water heating or integrated systems with thermal storage. Such technology demonstrations would explore issues and/or barriers with technology adoption and leverage the early adopter population segment to provide a seeding area for promising new applications.

Barrier	Transport: Barrier Mitigation	Residential Home Energy Efficiency Retrofit: Barrier Mitigation
Motivation	EcoTeam framework vs. Control (non-EcoTeam framework)	
Implementation barriers: coordination/ infrastructure	Neighborhood carpooling software	Demand reduction like programmable or graphical thermostat
Culture	Free public transit days	City government marketing to create a new social norm
Transactional/time	Public transport lanes and privileges	Utility mandatory audit
Financial	Incentives/rebates for public transportation	Free audits for home energy efficiency
Trust	Local, dynamic carpooling with EcoTeam or neighborhood	Trusted certified contractors recommended from EcoTeam neighbors

Table 4. Investigation and possible mitigation of key barriers to citizen carbon reduction actions and technology adoption is enabled with the Cool City Challenge framework and could include some of the above elements in a matrix exploring barriers.

Campaign Phase

Key issues to be studied include measurement and evaluation of behavior changes, community participation, energy efficiency retrofits, and voluntary technology demonstrations. Central to this is the quantification of overall energy and carbon savings by action as part of the structured data collection plan. Effort will also be made to quantify the spatial distribution of EcoTeams, of savings within and across neighborhoods, as well as across time (persistence effects). Semi-annual feedback of results to city and program partners will be provided for program adjustment and improvement and an annual progress report with quantified progress to data will be written for stakeholders, participants and funding sources.

Other issues to be studied include how the behavior change and community engagement tools promulgated by this initiative can help catalyze the full spectrum of GHG reduction interventions spanning technology adoption, policy adoption, and market development; scenario development for what it would take for the participating cities to become carbon neutral by 2025; and the potential GHG and economic development impact of scaling the Cool City Challenge across the state of California and the United States.

Through survey frameworks as well as through EcoTeam member participation data, the research team will seek correlations between population segments, demographics or other characteristics with carbon reduction actions and levels of participation. Comparative cost/benefit analyses of behavior change interventions in comparison to other energy efficiency and carbon reduction programs will be done in terms of baseline adoption rates, energy savings and carbon savings versus program costs. A key question to be addressed is the deployment rate and scope of

energy efficiency retrofitting for Cool City Challenge participants vs. other programs such as the Better Buildings or Energy Upgrade California.

Other key research activities include community-scaling scenarios and non-energy related impact assessments around health, environment, social capital, market development, and local economic development. For example, if higher rates of local energy efficiency retrofits are achieved how would this impact the local rate of employment among contractors and local sales of energy efficient products?

Scenarios will also be built to explore the case where Cool City Challenge results are scaled to larger communities and regions for energy, carbon, and economic impacts. Analysis and recommendations for community engagement "best practices" will be summarized based on quantified dissemination results. Finally carbon neutral scenarios or city-specific requirements will be developed for 2025.

ABOUT LAWRENCE BERKELEY NATIONAL LABRATORY

Lawrence Berkeley National Laboratory addresses the world's most urgent scientific challenges including the advancement of more sustainable energy technologies and climate change research. Founded in 1931, LBNL's scientific expertise has been recognized with 13 Nobel Prizes and dozens of Nobel Laureates have either trained at the Lab or had significant collaborations with staff there. Thirteen Lab scientists have won the National Medal of Science, our nation's highest award for lifetime achievement in scientific research.

One of LBNL's major initiatives is "Carbon Cycle 2.0" – a multidisciplinary approach to accelerate discovery and innovation in creating global climate change solutions. The Cool City Challenge fits under this broad initiative and LBNL will lead the research and development effort. LBNL will coordinate research efforts at participating universities and with corporate sponsors as well as support technology demonstrations and pilots with industry and other stakeholders. LBNL will also assist in securing the financing for the Cool City Challenge.

CORE RESEARCH TEAM

Douglas Davenport leads strategic partnership initiatives for the Lawrence Berkeley National Laboratory's Environmental Energy Technology Division, an integrated applied sciences research program in energy efficiency and environmental quality, energy resources and storage, and energy policy. Doug's focus is on the value of LBNL's R&D programs to their partners in addressing some of the world's most pressing technical challenges. He's spent the past 23 years as an engineer, leader of a climate consulting practice, renewable energy developer, and business manager. He is currently leading new innovation programs and partnerships on behalf of LBNL for urban sustainability, smart grid, battery technology, and materials science. Doug will be responsible for management of LBNL's core team and will assist with Cool City Challenge financing. He will also

serve as lead R&D liaison between industry partners and local government programs and coordinate technology demonstrations and pilots.

Tom McKone Ph.D. is the leader of the Sustainable Energy Systems Group and Deputy for Research Programs in the Energy Analysis and Environmental Impacts Department in the Environmental Energy Technologies Division at LBNL. Tom has several decades of experience in scientific analysis and technical management and is an authority on the life cycle analysis/health impacts of energy production. He was a co-author of the recent National Academy report, *Hidden Costs of Energy: Unpriced Consequences of Energy Production and Use*. He is also an Adjunct Professor in the Environmental Health Sciences group in the Department of Public Health at the University of California, Berkeley. Tom will lead LBNL's overall R&D activities and coordinate the impact assessment analysis team.

Jeffery Greenblatt Ph.D. is a staff scientist at Lawrence Berkeley National Laboratory's Environmental Technologies Division where he leads work on California's energy future analysis for the California Energy Commission, and leads the Environmental Energy Analysis Team for LNBL's Carbon Cycle 2.0 initiative. He was a major author of California's Energy Future report. Prior to his work at LBNL, he was a Climate and Energy Technology Manager at Google.org, where he screened renewable energy grants and investments. Before coming to Google, Jeff was a High Meadows fellow at Environmental Defense Fund where he evaluated the technical, economic and environmental aspects of a wide range of energy technologies. He helped develop the original "wedge" climate stabilization research and has developed scenarios for California, the Midwest, and the US. Jeff will be responsible for community and national scaling scenarios, health and resource impact assessment analysis, and the development of carbon neutral city scenarios.

Max Wei Ph.D. is a Program Manager in the Environmental Energy Technologies Division at LBNL. His work is focused on modeling medium- and long-term greenhouse gas reduction scenarios for California, including the potential of long-term habitual behavior change as a resource for carbon reduction. He was a key contributor to two recent reports: *California's Energy Future – The View to 2050*, for the California Council on Science and Technology, and *California's Carbon Challenge: Scenarios for Achieving 80% Emissions Reduction in 2050*, for the California Energy Commission. In 2011 he completed a report on the job creation potential from sustained investment in energy efficiency and low carbon energy sources, co-led successful passage of SB77, a clean energy financing bill in California, and co-authored a study on the economic impacts of a state feed-in-tariff. Max will be responsible for the Cool City Challenge behavior change and community participation measurement and assessment, quantification of carbon savings, and lead analysis of economic and social impact assessment.

For Further Information:

Max Wei
mwei@lbl.gov
www.lbl.gov

ADDENDUM

COOL CITY CHALLENGE

REINVENTING OUR CITIES FROM THE BOTTOM UP
TO ACHIEVE DRAMATIC CARBON REDUCTION, DEEP RESILIENCY, AND GREEN PROSPERITY

An Initiative of Empowerment Institute in Partnership With
Lawrence Berkeley National Laboratory

"The world's cities are responsible for up to 70% of harmful greenhouse gases and have become the real battleground in the fight against climate change. What goes on in cities, and how they manage their impact on the environment, lies at the core of the problem."
UN-HABITAT 2011 Global Report

PURPOSE To scale up a proven community-based social innovation to achieve dramatic carbon reduction while building a low carbon economy and resilient neighborhoods in three early adopter California cities and three neighborhoods in Sao Paulo, Brazil; and then disseminate this strategy worldwide. The ultimate goal of the Cool City Challenge is to change the game around greenhouse gas reduction in cities and provide a viable path forward to address climate change.

NEED AND OPPORTUNITY With international climate change legislation failing to get traction and the long timeframe required to scale up technological solutions, the world is searching for a feasible and scalable strategy for addressing global warming. Since cities represent 70% of the planet's CO2 emissions and citizens' daily lifestyle choices represent between 50 and 90% of these emissions, cities and their citizens provide the world with an unparalleled opportunity to address global warming. Further, this can serve as a demand-side driver for building robust local green economies.

STRATEGY Empowerment Institute—the world's pre-eminent expert in environmental behavior change and community engagement—over the past two decades has developed a proven methodology to help cities empower citizens to reduce their carbon footprint by 25% through the Low Carbon Diet EcoTeam program and a strategy to achieve between 25 and 75% household participation. This methodology has now spread to over 300 US cities and 6 countries including China. The Cool City Challenge is designed to bring this transformative social innovation to scale.

PROJECT SUMMARY

Phase 1 Start-up – one year: Build program and technology infrastructure.
Phase 2 Campaign – 3 years: Support cities to achieve carbon reduction, neighborhood resiliency and green economic development goals and design global scaling strategy.
(A full proposal is available upon request.)

FOR MORE INFORMATION

David Gershon
dgershon@empowermentinstitute.net
www.empowermentinstitute.net www.socialchange2.com

ATTACHMENT D

Critical Role of California's Cap and Trade Program in Support of

LOCAL CARBON REDUCTION INITIATIVES

By David Gershon
Author of Social Change 2.0 and Low Carbon Diet

EXECUTIVE SUMMARY

California's Global Warming Solutions Act of 2006 (AB 32) directs the California Air Resources Board (ARB) to reduce carbon emissions 20 percent from 1990 levels by 2020 and 80 percent by 2050. A series of market mechanisms have been adopted by ARB to aid implementation of AB 32. Central to these market mechanisms is the nation's largest cap-and-trade system.[1] Implementation of cap-and-trade in California will result in revenues managed by both the California Public Utilities Commission (PUC) and ARB. PUC will manage funds generated from utility ratepayers. ARB will manage funds from industrial sources.

The expenditure of cap-and-trade revenue must demonstrate a strong nexus to effective carbon reduction. In early 2012 the PUC and State Legislature will determine the criteria for cap-and-trade revenue expenditures, which could approach a billion dollars per year.

The effective use of cap-and-trade revenue for local carbon reduction initiatives will be crucial to AB 32's success. This is because 60%[2] of state GHG emissions are generated from the residential sector, which represents between 50 and 90%[3] of a city's carbon footprint. It is also the low-hanging fruit because households can make immediate reductions in their carbon footprint without any quality of life diminishment and it saves them money. In addition, local initiatives can provide the critical co-benefits of demand driven local green economic development while buying us needed time for the longer-term technology and renewable energy solutions to scale-up

The problem however is that local carbon reduction initiatives aimed at getting people to adopt low carbon lifestyles are hard to do and that is why most GHG reduction solutions target the supply side. But if there is no demand, there is no market, and the best supply-side solutions will fall upon barren soil. Of course this is not an either/or proposition. We must bring about change on the supply *and* demand side, as they are synergistic. But for policy makers to fully avail themselves of this synergy they need to better understand how to activate the demand-side of the equation. Providing that understanding is a key goal of this white paper.

---

[1] See www.arb.ca.gov/cc/capandtrade/capandtrade

[2] From Max Wei of Lawrence Berkeley National Laboratory: "About 44% of California's direct GHG emissions are from the residential sector (passenger vehicles, residential power, residential heat). Residential demand and purchases/food are closely intertwined with industry and agriculture/forest production but the Air Resources Board does not break out direct and indirect emissions by residential, commercial, government, and other sectors. Adding indirect emissions due to purchases and food would push residential to well over 50% maybe to 60 or 70%."

[3] Based on Empowerment Institute's research working with many cities across America.

Residential Retrofits: A Key Lever to Achieve GHG Reduction

The most high leverage opportunity to influence the demand side are local initiatives targeting residential retrofits, since both greenhouse gas reduction and the development of a clean energy economy must pass through this gateway. Buildings represent the lion's share of carbon emissions, expensive renewable energy installations only make economic sense when a building is insulated, and retrofits enable the creation of green jobs and green economic development. As a consequence building retrofits were targeted for ARRA stimulus funding, with single-family homes the priority since they can be as much as 70% of the residential sector carbon emissions.[4] The Obama administration recognized the importance of this intervention and called it "recovery through retrofit."

To take advantage of ARRA funding and assist in the implementation of AB 32 and California Public Utility Commission's "Energy Efficiency Strategic Plan," Energy Upgrade California was created with an investment of $229 million dollars. Its goal was to retrofit 130,000 homes by the end of 2012.

Although data is hard to come by at this point in time about the actual results being achieved, in speaking with several people in leadership roles with Energy Upgrade California and the US Department of Energy, the consensus is that this program is struggling mightily. In one part of the state the goal was 13,000 retrofits and they are hoping to get to 15% of this number. The typical conversion rate, when this data can be found, from people directly approached in their homes to actual energy upgrades is 1 to 2%. And in one report shared with me in confidence by a large state energy agency responsible for home retrofits, they determined that their marketing and administrative costs *before* an energy upgrade took place were $3,500!

If we are to unlock the great promise of energy efficiency retrofits to enable GHG reductions and catalyst a clean energy economy, we need to better understand what the barriers are and how we might transform them. Research done by Empowerment Institute, which I head up, has demonstrated promising results for overcoming many of these barriers to participation.

In a pilot in San Antonio 41% of the 205 households participating in a peer-support group called an EcoTeam and using a structured behavior change program did some form of energy efficiency retrofit. Combining these results with Empowerment Institute's neighbor-to-neighbor block-based recruitment rate of 25%[5] indicates that this approach is capable of achieving 5 to 10 times the conversion rate that is currently being attained. Further, because the household recruitment and support is done on a voluntary neighbor-to-neighbor basis, this approach in comparison to major marketing campaigns is quite cost-effective. And it is scalable.

This whole system approach, which I describe in more detail later in this paper, is embedded in an initiative, called the "Cool City Challenge," to scale up Empowerment Institute's proven behavior change and community engagement methodology in Davis, Palo Alto and Sonoma and then disseminate it statewide. The goal of this initiative

---

[4] From Max Wei, Lawrence Berkeley National Laboratory

[5] Based on working with 20,000 people in 9 cities. Results also included substantial natural resource and financial savings per household. See chapter 2 in *Social Change 2.0* for a case study.

however is not just an uptake of retrofits, but substantial household carbon reduction.[6] This behavior change methodology is based on two decades of rigorous research that has demonstrated how peer-to-peer commitment and clear, simple action set in the context of a compelling and achievable community vision, move citizens to act. Key co-benefits of the initiative include local economic development/green jobs, neighborhood-level disaster preparedness, strengthening of the social connectedness of neighbors, and a new model for interaction between citizens and their local governments.

Desired Outcome for California

This white paper makes the case for the importance of investing significant resources from cap-and-trade revenue into scalable local initiatives capable of engaging citizens in achieving substantive GHG reductions. These types of initiatives can meet the major demand-side need currently unmet by building and vehicle efficiency programs. Effective local carbon reduction initiatives that could be adopted by the Legislature and implemented by ARB include:

Cool City Challenge: This initiative, as outlined above, will start in 2013 with the goal over three years of mobilizing between 25% and 75% of each community's residents to reduce their carbon footprint by 25% with at least 40% of these program participants doing home energy retrofits. Each city will also develop a low carbon economic development strategy around the increased residential demand generated by the campaign for low carbon goods and services, energy efficiency retrofits, and renewable energy. Further, in collaboration with Lawrence Berkeley National Laboratory and local universities each community will create a plan to become carbon neutral by 2025. At the completion of this demonstration phase the Cool City Challenge model will be rolled out to communities across the state. To accelerate this scaling process interested communities will be supported through a one-year web-based preparatory program. ARB's Cool California website and community outreach program could assist in this process.

Carbon Reduction Information Management System: Building on ARB's Cool California carbon calculator, develop a robust on-line platform for all cites in California to track the carbon reduction and participation activities of all sectors of their community. This would also allow a city to compare their climate action plan implementation efforts to comply with AB 32 with other cities and exchange learning to accelerate the dissemination of best practices. Moreover, this on-line tool would provide a simulator to help a city visualize the environmental, economic and social benefits at different levels of GHG reductions and participation to help motivate the community to take vigorous action.

Along with helping to provide the programmatic and policy justification for local carbon reduction initiatives, this paper also outlines how those described above could be implemented. I was requested by California State Senator Lois Wolk to prepare this white paper because of my expertise in this field. I wish to thank Max Wei of Lawrence Berkeley National Laboratory, Joe Krovoza, Mayor of the City of Davis, and Mitch Sears, Sustainability Manager for the City of Davis for their contributions.

---

[6] Empowerment Institute's *Low Carbon Diet* program enabled a 25% carbon footprint reduction per household based on data from 1,500 households in Portland, Oregon and communities across the states of Vermont and Massachusetts.

THE POTENTIAL GHG REDUCTION IMPACT OF LOCAL INITIATIVES

"The world's cities are responsible for up to 70% of harmful greenhouse gases while occupying just 2 per cent of its land. They have become the real battleground in the fight against climate change. What goes on in cities, and how they manage their impact on the environment, lies at the core of the problem."

"Hot Cities: Battle Ground for Climate Change" – UN-HABITAT's 2011 Global Report

An Opening for Change

With international and national climate change legislation failing to get traction, the responsibility for addressing global warming in the United States has devolved to states and communities. California, with its tradition as the trend-setting state for progressive environmental legislation in America, has stepped into this vacuum with the passage of its groundbreaking legislation, AB 32, and a cap-and-trade system to support its implementation. But now the work begins—actually getting substantive GHG reduction in a timely manner.

To just get California to its first benchmark of 20% GHG reduction by 2020 against 1990 levels will require a speed and magnitude of change well beyond the traditional experience of government. Its primary policy tools of command and control and financial incentives, at their best, enable slow, incremental change. Moreover the goals of 2020 are only the starting point for a much longer-term process of reducing GHG emissions 80% against 1990 levels by 2050.

If the social change tools of carrots and sticks alone are unlikely to meet AB 32's needs, what else is available? Are there assumptions we might rethink about what motivates people to change? Taking a page from Thomas Jefferson's playbook, might we be able to motivate people to change because of a dream that inspires their imagination, enlivens their sense of possibility, and lifts their spirit as human beings? Or to ask this question in a more tangible way, how might we empower individuals, communities and organizations to voluntarily adopt new behaviors that help them operate at a higher level of social value, which in this context is the reduction of GHG emissions?

I have been attempting to answer this question over the past three decades, at the individual, local, national, and international levels; working with government agencies, nonprofit organizations, corporations, and ad-hoc community groups; in developed and developing countries alike, and around a multiplicity of issues.

My research has taught me that *people are willing to change if they have a compelling vision and are provided tools to help them bring it into being.* The vision must touch their core to engender the necessary passion and commitment needed to overcome the inevitable obstacles on the path of realization. They need others of like mind going on the journey with them to stay motivated. And with a well-designed transformative change platform that is replicable, these behavior changes can be widely disseminated throughout a community, organization, state, country, and across the planet.

I have also seen that when individuals become personally part of the solution it creates a new dynamic in the way we tackle large societal challenges. We are able to see beyond

the traditional social change formula of business as the problem and government as the solution, with nonprofits lobbying government for better regulations against business and citizens sitting on the sidelines complaining about the coziness between politicians and business.

When citizens are empowered to adopt socially beneficial behaviors, such as a low carbon lifestyle, an opening can occur for traditionally adversarial relationships to establish new arrangements of cooperation and collaboration in service to this new voting constituency and purchasing community. When all the parts of a system begin working together and there is no "other" to combat or protect against, more innovative and generative solutions start to emerge.

The model of social change that I have been describing represents what systems theory calls *second-order change* – change that transforms and reorganizes a system to a higher level of performance and social value. When the easier-to-implement change solutions are exhausted and prove inadequate for the magnitude of change required, the system goes into stress and must either evolve or breakdown. This white paper represents an attempt to expand the parameters for social change solutions so that we can evolve our social systems. I call it "Social Change 2.0." It stands on the shoulders of "Social Change 1.0" – command and control, financial incentives, and protest – because it could not function optimally without these. But it is designed to go beyond the constraints of these more incremental approaches to change.

The Social Change 2.0 framework aspires to tread in the territory where some have thrown up their hands and wondered if change was really possible. It addresses issues that are complex and require many people to change in fundamental ways; issues for which there are no easy solutions and those that exist are exceedingly difficult to implement and require the cooperation of the whole system; issues which if not adequately addressed will cause an ecological or social system to break down. These issues include global warming, depletion of our nonrenewable natural resources, chronic poverty, disease epidemics, terrorism, ethnic and racial animosity, the disenfranchisement of women and minorities, and overpopulation.

Global warming, the focus of this paper, is a prime example of the need for a second-order change solution. Jim Hansen, NASA's chief climate scientist, says we have at most ten years to start turning global warming around or "suffer a planet that is not conducive to human life." The *New York Times* says the "climate crisis is at its very bottom a crisis of lifestyle. The Big Problem is nothing more or less than the sum total of countless little choices. Most of them made by us (consumer spending makes up 70 percent of our economy) and most of the rest of them made in the name of our needs and desires and preferences."

In a democratic society we can't legislate the kind of lifestyle change that would be necessary to have a major impact on global warming. Passing a law that commands people to lower their carbon footprint and then penalizing them if they don't is not acceptable or practical. Offering people financial incentives to reduce their GHG emissions is sending the right signal, but people are still free not to avail themselves of these incentives. If people are not already predisposed to changing, financial incentives have a limited effect.

Social protest is a gift of our democracy that has allowed Americans to speak out against injustice and government policies with which we disagree. It contributed to ending an unpopular war in Vietnam and furthering the civil rights of disenfranchised members of our society. But as important as social protest has been and always will be in a democratic society, it is reactionary and defined by the problem. It is a great tool for objecting to what is wrong in society, but not for creating what is right. Saying no to global warming and lamenting the lack of bold and effective national political leadership are very different from providing a viable alternative.

I have no pretensions to believe that the Social Change 2.0 design principles and practices described in this white paper are the solution to the enormous challenge of GHG reduction that the State of California has boldly committed to addressing with its landmark AB 32 legislation. The nature of this problem defies any single approach to change. And this framework is still very much a work in progress. But I have seen enough evidence applying these tools over the past thirty years to believe that they can make a contribution, either in whole or in part, to tackling any issue that requires fundamental transformative change. And global warming is certainly such an issue.

So where do we begin? Where are the high leverage intervention points for addressing GHG reduction? Certainly it makes good sense to work with power suppliers, and much has already been done in the AB 32 legislation and its cap-and trade program to accomplish this. But an undeveloped strategy is the power-users who actually create demand for these supplies of energy. This is a relatively untapped part of the change equation with huge potential. Further, if we can influence change from the demand side we will have developed a long-term solution. For example, when utilities pass on the costs of buying additional renewable energy to the consumer in the form of a higher price for the green energy option, it is still the end user who decides if they wish to pay more for it. And currently the vast majority of people are not choosing this option.

Of course this is not an either/or proposition. We must bring about change on the supply *and* demand side, as they are synergistic. But for policy makers to fully avail themselves of this synergy they need to better understand how to activate the demand-side of the equation. Providing that understanding is a key goal of this white paper.

What kind of potential are we talking about? As noted earlier, cities generate 70% of the planet's carbon emissions with citizens living in these communities responsible for between 50 and 90% of its carbon footprint. And in California, the residential sector generates 60% of the state's GHG emissions. It is also the low-hanging fruit because households can make immediate reductions in their carbon footprint without any quality of life diminishment and it saves them money. And from a societal change point of view, this buys us needed time for the longer-term technology and renewable energy solutions to scale-up.

What would it look like if we were able to scale up a robust demand-side intervention in California's communities? Here is a future scenario for a project I am spearheading, the Cool City Challenge, in three California communities that aims to look just like this. Hopefully it will.

A Vision of Possibility

Three of the most progressive California cities and their citizens embarked upon a bold adventure to develop a game changing social innovation around greenhouse gas reduction. Its goal: rapid and substantial carbon reduction in the short-term and carbon neutrality in the long-term, with vibrant livability and resiliency for its citizens, and green prosperity for its businesses. And they are succeeding! Here's how they did it...

Over a three-year period citizens substantially lowered their carbon footprints and in so doing built demand for green products and services; and as a result local low carbon economies emerged. With this carbon literacy and sense of self-efficacy, these empowered citizens continued pushing the envelope and advocated to their local politicians to become carbon neutral cities by 2025, which they heartedly accepted. Carbon neutral cities became the new "cool" in California. And the race began to achieve the coveted title of the first city in California to become carbon neutral. It also did not hurt that an "X prize" was established that awarded ten million dollars to the first city to accomplish this audacious goal.

These communities sent a profound message to the world that citizens in the highest per capita greenhouse gas emitting country were willing to lead the way in reducing their high carbon-emitting lifestyles for the sake of the greater good. But paradoxically, rather than this being a sacrifice, they discovered it opened up a whole new set of amazing and unexpected benefits. People now knew their neighbors, their neighborhoods had become more resilient and livable, and civic participation had become the new coin of the realm for people young and old.

And at the community level, to the delight of the community economic development agencies and chambers of commerce, many green businesses had sprouted up and were flourishing. And with them, numerous high paying green jobs were being created. This was because 75% of the citizens of these communities were now engaged in reducing their carbon footprint by an average of 25% on the path to carbon neutrality, entire blocks were becoming carbon neutral, and each of these cities was reinventing its technological infrastructure to become carbon neutral. These cities were realizing the potential that many communities had talked about, but few had come close to achieving – a thriving local low carbon economy.

Knowledge about the amazing success of these three cities began to spread and soon other California cities came to learn from them. This was not only because they wanted to replicate this success in their communities, but also because the state of California had wisely decided to invest a portion of their cap-and-trade revenues in helping its communities make these types of changes. The universities in these cities became repositories for these learnings and best practices and played a key role in their dissemination to the visiting cities. These universities also attracted many students who wished to be part of a real-world social innovation laboratory around an issue so vital to their future. The students were fully integrated into the community-organizing aspects of the program and a number of them built green businesses that grew out of the first-hand knowledge they gained about services needed to meet the burgeoning demand for carbon reduction.

All this success spawned a strong sense of confidence, civic pride and a can-do spirit in these communities. Combining this with the new competencies they had learned in how to engage the whole community and design transformative social innovations, engendered an outpouring of social inventiveness. These cities were now not just devising new ways to reduce their GHG emissions, but generating solutions to a wide variety of social, environmental, and economic issues as well. They were living the maxim, "many hands make light work."

After several years, knowledge of the bold social experiments taking place in these three pioneering communities—who were now actively exchanging best practices and collaborating with one another—had spread far and wide across the state, country and world. Many communities had come to learn and were now beginning to replicate this success in their cities. And California – it had once again served its role well as the planet's premier social laboratory for courageous and visionary public policy initiatives. But this time it had gone after the biggest challenge and opportunity facing humankind and delivered!

Meeting the Challenge and Seizing the Opportunity

While getting people to reduce their carbon footprint is the low-hanging fruit to CO_2 mitigation, will we be able to pick it? Can we empower citizens to get out of their comfort zones and adopt low carbon lifestyles? Will cities be willing to get out of their comfort zones and learn the skills necessary for engaging their citizens in behavior change? And if both cities and citizens are willing to make these changes, can such an initiative be brought to scale?

In 2006 Empowerment Institute—a pioneer in environmental behavior change and community engagement strategies—began attempting to answer these questions by creating a community-based behavior-change program called Low Carbon Diet. The program consists of twenty-four actions to reduce one's carbon footprint by at least 5,000 pounds in thirty days and to help others do the same. It is based on two decades of experience working with several million people in hundreds of cities around the world who are organized into neighborhood-based peer support groups of 5 to 8 households called EcoTeams.

The Low Carbon Diet program helped empower the movement that had been building in America around personal action and community-based solutions, and immediately took off. It was driven by the many local governments committed to the issue of climate change who were wishing to engage their citizens; faith-based groups like Interfaith Power and Light representing some 5,000 congregations, wishing to engage congregants; and environmental groups, like Al Gore's Climate Project, which gave the book to the 1,000 people he trained to lead his "An Inconvenient Truth" slide show. This interest resulted in the development of a community engagement strategy called a Cool Community.

There are now over 300 communities in thirty-six states across America, including 46 in California, who received training in how to deliver the Low Carbon Diet program and Cool Community strategy. Participants using Low Carbon Diet are achieving a 25 percent carbon footprint reduction and reaching out to fellow citizens to accomplish the same. Low Carbon Diet and the Cool Community model has also been translated and culturally adapted for China, Japan, South Korea, Australia, Canada and the United Kingdom.

But wide proliferation of these tools is not the same as effectively applying them. After five years of watching many cities dive into this behavior change and community engagement process with gusto, but fizzle out after they bumped up against the hard work and deep knowledge required to be effective, it became apparent to me that we had gone a mile-wide and an inch deep. Having an effective carbon reduction tool and community engagement strategy was just the first step; we now needed to help communities skillfully deploy them if we wished to realize the potential of a demand-side GHG reduction strategy.

It also became clear that this next phase was going to take a very special city – one with a very strong commitment to carbon reduction and determined political and civic leaders. This endeavor was not for the faint of heart. My search for the right cities eventually led me to California because of the political commitment of the state to GHG reduction as demonstrated by AB 32. To a specific part of the state, Northern California, because of the widespread sustainability ethic that permeated cities and citizenry in this region. And eventually to three cities that had demonstrated early adopter credentials around GHG reduction and were a manageable size for such an innovative endeavor.

One of those early adopter cities, Davis, first showed up on my radar screen in 2008. They had sought out Empowerment Institute's Low Carbon Diet and Cool Community methodology after they determined that 75% of the community's carbon footprint was being generated by the residential sector. They concluded that their "climate goals could not be met without the community becoming the primary driver of local GHG emission reduction."

From October 12, 2008, through November 10, 2008, the city organized 150 households to participate in Low Carbon Diet EcoTeams. Participation included the city council and staff; University of California, Davis, administrators, faculty, staff, and students; local businesses; and community members at large. Results were received from 65 percent of the households who reported reducing their carbon footprint an average of 5,516 pounds.

Inspired by these results, they reworked their Climate Action and Adaptation Plan in 2010 to have the city become carbon neutral (the first city in America to make this an official city policy) and committed to engaging 75% of Davis households by 2015 to participate in household GHG reduction.

However, when they tried to scale up the pilot program, their lack of expertise in this behavior change and community engagement methodology combined with limited financial resources led to several unsuccessful efforts. But undaunted and now more cognizant about just what it takes to be successful, they sought out the Empowerment Institute for help. In many ways it is Davis' aspiration to push the envelope around bold carbon reduction and citizen engagement, and their can-do spirit that led to the development of the Cool City Challenge, which will bring them the expertise and resources to meet their fire.

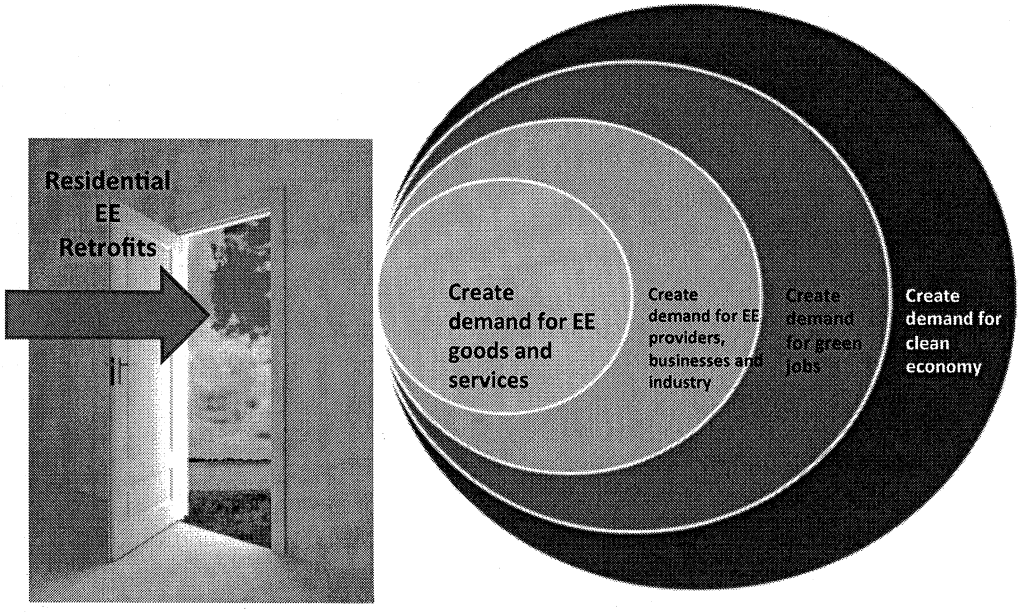
But before we get to the Cool City Challenge, it is important to gain insight into a central component of a demand-side GHG reduction strategy—residential energy retrofits—and the current state of play in California and nationally.

DRIVING DEMAND FOR RESIDENTIAL RETROFITS

Both greenhouse gas reduction and the development of a clean energy economy must pass through the gateway of energy efficiency retrofits. Buildings represent the lion's share of carbon emissions, expensive renewable energy installations only make economic sense when a building is insulated, and retrofits enable the creation of green jobs and green economic development. As a consequence building retrofits were targeted for ARRA stimulus funding, with single-family homes the priority since they can be as much as 70% of the residential sector carbon emissions.[7] The logic of this strategy, which the Obama administration called "recovery through retrofit," is illustrated in the schematic figure below from Lawrence Berkeley National Laboratory.

Residential energy efficiency retrofits are a key lever to unlock and enable a clean, prosperous 21st century economy

(Courtesy of Lawrence Berkeley National Laboratory)



To take advantage of ARRA funding and assist in the implementation of AB 32 and California Public Utility Commission's "Energy Efficiency Strategic Plan," Energy Upgrade California was created with an investment of $229 million dollars. Its goal was to retrofit 130,000 homes by the end of 2012.

In Santa Clara County during the 19-month program, only 1,501 home retrofits were completed in the entire nine-county Bay Area, at a cost of $10.5 million, or about $7,000 in marketing, incentives and administration for every participating home. And this outcome is pretty typical across the entire state. But this struggle to get people to participate in residential retrofits is not limited to California, its endemic across the country and the United Kingdom, even with large financial incentives. The typical conversion rate, when

[7] From Max Wei, Lawrence Berkeley National Laboratory

this data can be found, from people directly approached in their homes to actual energy upgrades is 1 to 2%.

If we are to unlock the great promise of energy efficiency retrofits to enable GHG reductions and catalyst a clean energy economy, we need to better understand what the barriers are and how we might transform them. Research done by Max Wei at Lawrence Berkeley National Laboratory describes four major barriers that exist and suggests how the type of whole system approach developed by Empowerment Institute can help in overcoming them.

Whole system approach to mitigate home retrofit barriers

(courtesy of Lawrence Berkeley National Laboratory)

Home Retrofitting Barriers	Whole System Approach
(-) Energy efficiency is not a priority for people and as a result it is difficult to interest them.	(+) Provide a program that delivers broader and more appealing benefits (conserving resources for the sake of our children, getting to know neighbors, and creating safer and healthier block).
(-) Traditional approaches of engaging people through advertising and websites are scattershot, costly, and have proven to be ineffective.	(+) Engage people through the trusted messenger of a neighbor who presents the appealing co-benefits described above.
(-) Transaction costs are too steep: time consuming and complicated paper work for rebates, difficulty finding a qualified contractor, disruptions in house and life, making a major cash outlay with a long and perhaps uncertain payback period.	(+) Use EcoTeam to create a new social norm around lowering carbon and environmental footprint to motivate deep retrofit actions. Use EcoTeam to assist in implementation through shared leadership responsibility to reduce the time burden on any one person and bundling audits/ retrofits for contractors to reduce costs.
(-) Retrofits as a stand-alone benefit are a narrow basis for expansion and scaling community-wide.	(+) Program's co-benefits appeal to a wide segment of the population. Broad community benefits can attract civic, public and private sectors, making going to scale feasible.

Preliminary research done by Empowerment Institute applying the whole system approach described above to residential retrofits has demonstrated promising results. In San Antonio 41% of the 205 households participating on an EcoTeam, without any prompts, did some form of retrofit. Combining these results with Empowerment Institute's neighbor-to-neighbor block-based recruitment rate of 25% indicates that this approach is capable of achieving 5 to 10 times the conversion rate that is currently being attained. It is also expected that both the participation level and retrofit quality can be increased with a more intentional focus and seamless integration with financial incentive programs. Further, because the household recruitment and support is done on a voluntary neighbor-to-neighbor basis, this approach in comparison to major marketing campaigns is quite cost-effective. And it is scalable.

It is important to stress that while these results are promising, they are quite preliminary and have not fully been put to the test. Also there are a number of other factors involved in making all this work including the quality of the contractors, access to financial incentives, and ease of use of the whole rebate system. The good news is that these factors have benefitted from the ARRA investment and many best practices have emerged. We will be working to fully assess this whole system approach and part of that evaluation will be

through the Cool City Challenge in three California cities. So let's now turn to the Cool City Challenge.

COOL CITY CHALLENGE

The goal of the Cool City Challenge is to not only increase the uptake of energy efficiency retrofits, but to achieve substantial household carbon reduction in the short term, carbon neutral cities in the long-term, and robust local low carbon economies, all while creating a more livable, resilient and socially engaged community. In other words, bringing to life the vision of possibility described earlier.

At its core, the Cool City Challenge is bringing to scale Empowerment Institute's proven behavior change methodology and community engagement systems. It is centered on household level GHG reduction and uses the existing social infrastructure present in neighborhoods, community organizations, and businesses. The strategy is based on two decades of rigorous research that has demonstrated how peer-to-peer commitment and clear, simple action set in the context of a compelling and achievable community vision, move citizens to act. Key co-benefits of the program include neighborhood-level disaster preparedness, local economic development/green jobs, strengthening of the social connectedness of neighbors, and a new model for interaction between citizens and their local governments.

Empowerment Institute and its team of content experts will support each city to achieve the following over a three-year period.

1. Engaging between 25% and 75% of their residents to reduce their carbon footprints by a minimum of 25% with a minimum of 40% of these program participants doing home energy retrofits.

2. In collaboration with Lawrence Berkeley National Laboratory developing a plan to become carbon neutral by 2025.

3. Developing a low carbon economic development strategy around the increased residential demand generated by the campaign for low carbon goods and services, energy efficiency retrofits, and renewable energy.

4. Redeploying the social capital generated through EcoTeams to enhance the resiliency, sustainability and livability of the community's neighborhoods.

5. Creating a whole system solution through engaging and building the transformative leadership and community organizing capacity of the city's local government, civic and faith-based groups, university and high school students (Cool Community Corps) and businesses (Cool Corporate Citizen). This approach will not only enable the campaign to accomplish its EcoTeam recruitment goals, but leave a legacy of enhanced community leadership, strengthened community partnerships, and a deepened environmental stewardship ethic.

6. Document, measure and evaluate the GHG reductions, retrofits, community participation levels, economic and social outcomes, and community engagement

processes to assist in future dissemination of the Cool City Challenge. The lead research partner for this is Lawrence Berkeley National Laboratory.

7. Design and build an information management system for carbon aggregation and participation tracking in all sectors of the community. Additional features include comparison and analysis of participating cities climate action plans and results in attaining AB 32's goals, a cool city simulator that demonstrates success of the program at different levels of scale and carbon reduction, a community of practice for program implementation, and program management software. This information management system will serve as the backbone for the campaigns and for scaling up the Cool City Challenge initiative statewide. UC Berkeley's Renewable & Appropriate Energy Lab (developers of the Cool California carbon calculator) will assist in the design of this information management platform.

8. Encourage and recognize extraordinary carbon reduction accomplishment of these cities, and those that will follow in their footsteps, by establishing three incentive funds. One incentive fund is in recognition of achieving 25% carbon reduction at each of these three levels of community participation – 25% of households (silver), 50% of households (gold) and 75% or more of households (platinum). Another incentive fund is in recognition of establishing a minimum of five carbon-neutral neighborhood blocks in a city. A final incentive fund is for those cities that achieve the ultimate goal of carbon neutrality by 2025.

9. At the completion of the three-year Cool City Challenge disseminate this methodology throughout California, nationally and internationally. In the interim, provide interested cities with the on-line tools to prepare themselves for participation in the Cool City Challenge. Based on available funding, provide seed capital to interested cities that meet the participation criteria. This preparatory effort could be supported by ARB's Cool California web tools.

To impact global climate change the Cool City Challenge needs to be taken to scale internationally, and in particular, in the emerging high growth countries where much of the planet's future carbon will be generated. To that end the Cool City Challenge demonstration phase will also be taking place in three Sao Paulo, Brazil neighborhoods of comparable size to the California cities. The objective is to help them move toward low-carbon, environmentally sustainable lifestyles that leapfrog over America's high carbon, environmentally unsustainable lifestyles. The ultimate goal of the Cool City Challenge is to develop a game changing intervention around greenhouse gas reduction starting in these four cities and then spreading across the state of California, nationally and internationally.

CONCLUSION

Achieving AB 32's goal of reducing carbon emissions 20 percent from 1990 levels by 2020 will be difficult without some sort of game changing social innovation or multiple social innovations. And California's GHG reduction trajectory goals get significantly steeper thereafter. The social change policy tools of command and control and financial incentives, as we have seen with residential retrofits, just don't move that fast; all the more so when addressing a second-order change problem like GHG reduction. However, given

the state's ability to invest up to a billion dollars of cap-and-trade revenues per year in carbon reduction activities brings a new variable into the system – *this funding can be used to catalyze the needed social innovation and bring it to scale.*

As I have been sharing throughout this paper, I believe the place where the greatest potential exists for spawning such social innovation are California's many progressive communities because they are bubbling with talent in the form of creative people, community-based organizations, small businesses, and local governments. And by bringing all these sectors of a community together many new points of intersection can occur and as a consequence more intelligent solutions can be generated. Further, when we cast a wide net, particularly among people and organizations that are looking at this issue with fresh eyes, all manner of imaginative new possibilities can be born.

With limited resources and a small window of time before 2020, each dollar spent needs to be invested in social innovations capable of producing significant short-term GHG reductions and be brought to scale relatively quickly. Because the residential sector of a community is the source of so much available GHG reduction and cities are networked for rapid diffusion of best practices, again they are a natural choice for investment.

Finally, it is wise to make these investments in a manner that can also stimulate California's economy. Since the low hanging fruit for both substantial GHG reduction and green economic development both rely on home energy retrofits, investing in cities who wish to deploy the sort of whole system solution described in this paper is a smart choice.

As the UN HABITAT 2012 report stated, "cities have become the real battleground in the fight against climate change. What goes on in cities lies at the core of the problem." Unleashing the potential of California's cities and citizens to become part of the solution significantly increases our chances for success.

David Gershon, one the world's foremost experts in environmental behavior change and community engagement, is the author of eleven books including the award-winning Social Change 2.0: A Blueprint for Reinventing Our World and best-selling Low Carbon Diet: A 30 Day Program to Lose 5,000 Pounds. Mr. Gershon has lectured at Harvard, MIT and Johns Hopkins and served as an advisor to the White House and United Nations. He is CEO of Empowerment Institute and co-directs its School for Transformative Social Change. For more information on the Cool City Challenge or the community-based whole system solutions described in this white paper contact David Gershon at dgershon@empowermentinstitute.net or visit www.empowermentinstitute.net and www.socialchange2.com.

Chapter from the book ***Creating a Climate for Change: Communicating Climate Change and Facilitating Social Change:*** Edited by Susan Moser and Lisa Dilling, Cambridge University Press, 2006

Changing the World One Household at a Time:
Portland's 30 day program to lose 5000 lbs

By Sarah Juniper Rabkin

> *On playing fields and battlegrounds, challenges that would be daunting and impossible if faced alone are suddenly possible when tackled in a close-knit group. The people haven't changed, but the way in which the task appears to them has.*
>
> —Malcolm Gladwell, in *The Tipping Point: How Little Things Can Make a Big Difference*

In late 2001, denizens of several residential areas in Portland, Oregon, began knocking on doors, inviting their neighbors to take part in a campaign to reduce household carbon dioxide emissions. In doorway conversations, these volunteer "team initiators" emphasized the power of their low carbon campaign not only to improve environmental quality, but also to promote a sense of community and enhance neighborhood life. Residents who showed interest were invited to attend a block-based information meeting in their neighbor's home.

Altogether, 130 Portland householders opened their doors to peer recruiters, and an additional 22 received invitations to introductory meetings via speakers and literature tables at large public events such as a local conference on sustainability. Seventy-two of those approached were sufficiently intrigued to attend meetings, and all but one of the 72 decided to join carbon-reducing teams. Ultimately, nine block-based teams representing 54 households came together in a pilot program to help each other diminish their impact on global climate.

In short, the $C0_2$-reducing campaign garnered a recruitment rate of about 43 percent: almost twice that of a similar environmental-action campaign that preceded it in Portland. By community organizing standards, this is remarkable recruitment rate, according to David Gershon whose Empowerment Institute provided the blueprint and implemented the program.

The outcome was also impressive. With the help of a web-based carbon-dioxide emissions calculator, members of each participating household estimated their baseline CO_2 footprint, then set out to shrink it. Drawing on suggestions provided in a workbook titled *Low Carbon Diet: A 30-Day Program to Loose 5,000 Pounds*, they shortened their showers, re-set their water heaters, donned extra sweaters, and turned down their thermostats. Some installed energy-efficient appliances or insulated their attics. Others pumped up their tires, tuned up their engines, traded in gas-guzzlers for fuel-efficient cars, or left their vehicles at home.

By adopting these and other carbon-busting practices suggested in the workbook's checklist, the first 31 households to complete the 30-day program succeeded in reducing their household-based carbon dioxide emissions by an average of about 22 percent, with an average absolute reduction of 6,700 pounds per household.[1] In the process, they strengthened their ties with fellow residents. As participant Amanda Lewis noted, "I like the community-building aspects of this. One of the best things was getting to know my neighbors."

This successful climate-control program could potentially inspire city governments everywhere. Its success suggests that groups of citizens can slash residential CO_2 emissions, through neighborhood-based initiatives that provide practical carbon-saving tools and that focus on climate protection as a goal. A lack of further funding prevented the Empowerment Institute and the City of Portland from expanding the residential low carbon campaign beyond the initial pilot project. It therefore remains to be seen whether CO_2 belts tightened during a 30-day period can stay cinched over the long-term. Another open question is whether the program would garner such an enthusiastic response in areas less receptive to climate issues, or whether climate protection would need to be combined with other, more tangible benefits in a broader program (for example, see Watrous and Fraley, this volume).

However, city staffers who helped oversee the project believe that its approach can be exported to a broad variety of communities, including those lacking Portland's reputation for environmental initiative. For municipal governments, grassroots activists, and other interested parties, the "Low Carbon Diet" merits a closer look.

Slashing the "ignorance tax"

So why was the "low carbon diet" so successful at mobilizing neighborhoods? The approach focused on individuals and motivation. Portland citizens reduced their $C0_2$ emissions as the result of collaboration between the city's Office for Sustainable Development (OSD) and the Empowerment Institute (EI), a private organization that specializes in behavior change and public participation. Led by founder and CEO David Gershon, EI develops community-based behavior change programs and builds the capacity of local non profits and government agencies in implementing them.[2]

Individuals and households were a natural target for the city to engage in climate protection goals, but a challenge from a behavior change perspective. The City of Portland's visionary Commissioner of Public Utilities, Mike Lindberg, initially engaged Empowerment Institute to deliver its Sustainable Lifestyle Campaign. He was not only its advocate, but did the program himself. He said this about it: "You have the entire household involved in a voluntary way instead of having a program that is mandated by the government. This is at the most grassroots level possible, and that makes it more effective."

This initiative enables municipal agencies to help citizens use natural resources more efficiently. The campaign operates on the premise that 35 to 85 percent of a

---

[1] Figures are from the Empowerment Institute's project summary. These self-reported data were gathered from participating households over a period of 30 days and extrapolated to one year.

[2] The Empowerment Institute has designed programs for dozens of cities in the US and Europe on topics varying from environmental sustainability to neighborhood revitalization to emergency preparedness. The Institute offers its services to local and national government agencies, non-profit groups and corporations. See the web at: http://www.empowermentinstitute.net/Default.htm

community's natural resources are used at the household level—and that up to 75 percent of those resources are wasted through inefficiency and lack of awareness.[3]

With its emphasis on grooming savvy citizen resource stewards, the campaign strives to lower household utility bills and reduce municipal government service-delivery costs. The Institute provides participants with an accounting of financial savings resulting from their participation — savings EI refers to as relief from an "ignorance tax."

The linchpin of the Sustainable Lifestyle Campaign is the Household EcoTeam Program, which has been adopted by dozens of cities and over 150,000 individuals in the U.S. and Europe. An EcoTeam usually comprises five or six neighborhood households that meet eight times over a four-month period, helping each other—with the aid of a step-by-step workbook and a trained volunteer coach—to reduce waste, pollution, and water and energy use; to become environmentally conscious consumers, and to bring additional neighbors into the fold.

"The program is designed", says EI, "to help households systematically evaluate their environmental impact, learn of actions they can take to lower it, set up a support group to help them follow through on the choices they make, and provide feedback to positively reinforce the benefits of the actions taken so they are sustained over time.[4]"

EcoTeams achieve significant average annual resource savings: 35 to 51 percent reductions in waste-stream garbage; 25 to 34 percent reductions in water use; nine to 17 percent in energy used; 16 to 20 percent in transportation fuel use; and

---

[3] EI derives these figures in part from the "factor four" concept developed by Amory Lovins. "Factor four" posits that resource sustainability can be quadrupled using existing conservation technology.
[4] http://www.empowermentinstitute.net/files/SLC.html

financial savings in the hundreds of dollars per household.[5] In addition, the process of forming teams and following through on goals can foster social cohesiveness in participating neighborhoods.

EI points out that by refining its management of natural resources and improving local environmental quality, a community may increase its appeal as a place in which to live and work. Strengthening the character and attractiveness of neighborhoods may slow flight out of the community. And increasing the efficiency of citizens' resource use may defer the cost of major infrastructure projects such as water treatment plants and landfills, freeing up funds for other community development projects.

Lang Marsh, Director of Oregon's Department of Environmental Quality was another strong proponent of bringing Empowerment Institute's environmental behavior change program to Portland. He noted that, "We see [this program] as a significant opportunity to achieve citizen behavior change, which has been one of our most difficult challenges in advancing environmental protection." And Mike Lindberg, Portland's Commissioner of Public Utilities, said of the program: "You have the entire household involved in a voluntary way instead of having a program that is mandated by the government. This is at the most grassroots level possible, and that makes it more effective."

Success in forming over 200 effective EcoTeams led OSD to request Empowerment Institute adapt its program methodology specifically for reducing CO_2 emissions—an explicit Portland goal since 1993. EI collaborated with OSD to create a tailor-made workbook for this purpose, and thus was launched the "Cool Portland" campaign and the "Low Carbon Diet."

Knowing vs. doing

As human beings ... we can only handle so much information at once.
—Malcolm Gladwell, in *The Tipping Point*

[5] EI calculates these percentages based on self-reported before-and-after resource-consumption data

One essential element of the program was the careful minimizing, selection, and packaging of information conveyed to participants. In observing a variety of municipal citizen-education projects, EI researchers had concluded that while a community may increase environmental awareness via glossy brochures, financial incentive programs, and access to information, these approaches usually fail to engender behavior change. "Citizens are generally willing to cooperate," said Gershon, "but they have a hard time changing ingrained habits."

Overwhelmed with extraneous information, residents may simply bog down in fear or guilt or confusion, and give up on the possibility of making a difference. Or they may come to see information as an end in itself: "We've observed that information by itself can be an undermining factor in getting people to act," said Gershon. "People think that if they've thought about something, they've *done* something."

Particularly in the case of global climate change— "an issue," said Gershon, "that seems almost unmanageable, out of control"— one element of what citizens need is to have the information broken down into bite size actions. These actions need to contain concise facts about their role in the problem and step-by-step guidance for how to adopt the necessary new behaviors and practices.

The 31-page Low Carbon Diet workbook was designed in this format. Attractively illustrated on every page with cartoons and with graceful photographic images of water lilies, it spends just three short paragraphs summarizing, in stark terms, the overarching problem of global climate change ("*the* major environmental threat facing our planet"). By the top of the second page, it is pitching Portland's prospects as a world leader in reducing global climate impact:

> It is now up to the citizens of Portland to take moral leadership by making the lifestyle choices that will lower their $C0_2$ emissions. If enough citizens step forward it will be noticed and spread to other communities. ...If ever

---

provided by participants.

there was a time when a community and its citizens could make a difference in the world—this is the time and Portland is the place!

In its behavior change workbooks, what Gershon calls the "why-act" for each action is kept to a minimum. "If we can't capture the heart of the matter in an initial sound bite," he said, "we won't be successful in engaging someone to take action." Recipe-style instructions and checklists for action emphasize doable steps and clear targets. In keeping with its weight-loss analogy, the Low Carbon Diet assigned CO_2 savings values to every recommended action.

Like members of a weight-loss club counting calories, participants were able to track and quantify their progress. They could visualize, said Gershon, "where they currently were on the American continuum: from a climate-neutral profile—nobody can really live that way unless they purchase carbon credits—to the high end of the American profligate 100,000-pounds-of-CO_2 lifestyle."

Participants cited the workbook as one of their favorite aspects of the Diet. "I love the workbook," commented Portlander Sergio Diaz. "It's easy to follow with all the information in one place. I thought we would be overwhelmed with information, but we weren't. It's clear and concise. The way it is put together sets up a good challenge."

"It's a pretty cool thing to know your CO_2 footprint," noted participant John Wadsworth. "Bringing my daughter (age nine) to one meeting helped her get on board for a five-minute shower. This inspired me to look into solar hot water heating, and in the normal course of things, I wouldn't have done that."

But a well-designed workbook is only one component of a successful behavior-change program. Participants also need a peer-support network to motivate them to take the actions and celebrate changes in longstanding habits.

Preaching from the choir

Participants were not only supported to make changes in their own lifestyles, they were encouraged to reach out to others to do the same. The rationale is based upon the notion that to truly make a difference we need to be the change and engage others in the change. Participants were encouraged therefore to pass along their knowledge and enthusiasm to prospective participants.

In helping Portland bring participants aboard the Cool Portland campaign, EI drew on its expertise in the field of social diffusion. Scholars in this discipline attempt to identify what it is that enables new ideas, behaviors, values, technologies, products—all kinds of innovations—to spread through populations. The doyen of the field is Everett Rogers, a Stanford social scientist who has studied 1,500 cases of innovations and their dispersion for the last couple of decades.

Social diffusion's take-home message is straightforward. Innovations do not ripple out evenly across city blocks, apartment buildings, boards of directors, neighborhoods, conference attendees, or any other sort of population. Key to the successful dissemination of an innovation is a category of people that Rogers calls "early adopters": people who are attracted to the innovation and who have a high tolerance for experimentation. If such individuals make up some 10-20 percent of a given population, said Gershon, then "you began to hit a tipping point, a critical mass point where if the innovation is going to take off, it will start diffusing on its own momentum."

"Rogers says that the way the innovation diffuses is from peer to peer, neighbor to neighbor, not outward from an expert," said Gershon. "What I began to learn from that, and to apply, was how to choose my targets for the early adopters. The key is not to try to get everyone anywhere to do something, but to let them come to you. The early adopters self-select. You want to preach to the choir *because the choir will sing loud enough to get everybody into the church."*

Early adopters, or "neighborhood initiators," for the Low Carbon Diet program came largely from lists of Portland activists compiled at sustainability-related public events. These individuals were trained to use simple talking points to invite neighbors to information meeting led by a paid staff person or a trained volunteer. Those who attended meetings and ultimately joined carbon-reducing teams were not necessarily self-identified environmentalists or sustainability advocates, EI's Gershon points out, but rather the neighbors of environmentalists.

The "next cutting edge"

Portland's $C0_2$ reduction campaign stands apart from other such efforts not only by dint of EI's behavior change program, but also because of its explicit focus on climate change. For David Gershon, this distinction lies at the project's heart. "The idea that I could be part of something that's directly tackling climate change, when this is the most important environmental issue we face as citizens of the world was very appealing to early adopters." he said.

The emphasis on climate impact represented a natural evolution for EI. "We began our [environmental] work in the early 90's," said Gershon, "when the major UN Earth Summit in Rio hadn't even yet occurred. At that point we decided to use the term 'environmentally sustainable lifestyle' before that phrase was in vogue. We were helping people understand that the environmental choices they made in living their life made a difference."

But the new millennium, in Gershon's view, brought a need for new language. He believes that the power of concepts like "energy sustainability" and "sustainable lifestyle" to motivate behavior change has reached a kind of plateau—at least in some communities like Portland. By focusing explicitly on climate change, we were able to appeal to people who were looking for the next cutting edge in environmental responsibility."

Gershon approached the campaign as a research initiative to determine whether citizens could "buy climate change directly" as a motivator, rather than other,

seemingly more direct benefits such as cost savings, waste reduction, etc. "We knew our [EcoTeam] methodology would work," he said, " if we could get people behind the notion of climate change."

What he and his colleagues discovered was that with climate change as the primary motivating issue, neighbor-to-neighbor recruitment yielded 20 percent higher participation rates than Portland's previous EcoTeam campaigns. And the participants not only met the city's original goal of a 10 percent reduction in residential CO_2 emissions; they more than doubled it.

Beyond the "Early Adopters"

Indeed, Low Carbon Diet program participants evinced a degree of enthusiastic, effective participation that surprised and delighted Portland city staff. "It was quite remarkable, the lengths to which people went, and how much each individual household was able to do," said Michael Armstrong, an OSD management analyst who developed the Portland specific calculations for the Low Carbon Diet workbook and served as the city's main liaison for the project.

In a pilot-project evaluation report published in Spring 2002, Portland OSD Manager Anthony Roy (a former EI employee) wrote, "It was satisfying to discover so many knowledgeable citizens ready to assist with teams. When people knew the truth about the issue, they wanted to help."

"The people who actually got on the train were really enthusiastic," said Armstrong. "Others said, 'that's great, but not for me.' ... I think I agree with Gershon that [the Low Carbon Diet] can work. ...My suspicion is it works great for some people—more than I would initially have guessed—but not at all for others."

While the "Low Carbon Diet" experienced tremendous success in its first 30 days, it is unknown what the limits are to a scaled-up energy conservation campaign based primarily on climate-protection goals. The program didn't continue long enough to see how people were "drawn into the church by the choir." As Roy

speculates, time and competing priorities may limit how active the "later adopter" category might be. There may be different approaches needed for those more initially reluctant audiences.

One additional possibility for expanding the participant base, suggested Michael Armstrong, is to consider reaching out not only to neighborhoods but also to organized communities such as religious congregations (see chapter by Bingham, this volume). He provided as an example the "1-2-3 Campaign," a CO_2-reduction program spearheaded by Portland-area clergy. "1-2-3" organized churchgoers to reduce their household emissions through three simple steps: reducing thermostat settings by about one degree, replacing three incandescent light bulbs with compact fluorescents, and reducing driving speed by about two miles per hour.

"For the program to go to the next level, I think it needs to create a way to make global warming tangible," speculates Anthony Roy, "and for the community to rally around the goal of x... [total] tons of CO_2 reduced. There needs to be a directly discernible benefit to the participant for the program to succeed. For instance, each participant gets their name carved on a statue or work of art that is created to symbolize Portland's foresight and its efforts to reduce global warming."

Complementing the basic methodology of neighborhood teams and empowerment for behavior change, such strategies may indeed prove a powerful combination for addressing climate change.

Beyond Portland

Communities that contemplate following Portland's example may be initially daunted by that city's exceptional record for commitment to energy conservation. In 1993, Portland became the first U.S. city to adopt a strategy for reducing CO_2 emissions. The city's aggressive, multifaceted Local Action Plan on Global Warming has significantly decreased per capita greenhouse-gas emissions through a combination of electricity-conservation efforts, waste-biogas fuel-cell

power, use of hybrid-electric vehicles in city fleets, replacement of incandescent traffic signals with LED bulbs, and other programs.[6]

Portland's environmental "edge" notwithstanding, however, the city's sustainability experts see the Low Carbon Diet as easily transferable to other communities. "I think it's *eminently* transferable," says OSD's Michael Armstrong. "I think it could work anywhere. I think it would work in *Houston*—for some people. I think it's important to acknowledge that it's not going to work for everyone, but it does work for a certain slice [of the population]. The size of the slice may differ from one community to another" (see various community experiences in Young, this volume and Watrous and Fraley, this volume).

No matter where they live, activists who launch the Low Carbon Diet in their own communities will require some financial resources. In Portland, a $50,000 foundation grant from the Meyer Memorial Trust, secured by EI covered the cost of the pilot program, including preparation and production of the workbook, and staffing while the City provided office space and staff labor at about 10% time over a period of several months. As Michael Armstrong noted, the "Low Carbon Diet" required "a lot of work getting team leaders and coaches up to speed and equipped with the materials they needed."

But needed resources can come from a variety of sources. Much of the support for Portland's pilot project came in the form of in-kind donations from businesses, government agencies, and non-profits. Nine organizations in all, from the federal Environmental Protection Agency to the Portland public transportation network, donated resources, time, and information.

One of the challenges to any new program is transitioning to long-term financial support or institutional practice. City budgets are limited and pioneers must often be creative at finding financial mechanisms to ensure longevity of the

[6] From http://www.sustainableportland/org/stp_glo_home.html

program (see Young, this volume). Grants that might be available for piloting a new program may not entertain requests for long-term support. In addition, raising financial resources from granting organizations can be time-consuming and uncertain.

"Knowing how to scale [the program] up is a relatively straightforward process," said EI's Gershon. "We tried...but it wasn't a high enough political priority for the City at the time." But a citizen groundswell can influence policy priorities, and Gershon believes that participation in effective program like the Low Carbon Diet can shift the political seas. "A lot of policy makers try not to address problems where there's no workable strategy or program in sight," he said.

The Portland initiative provides a clear vision for such a strategy, he said—one that has the power not only to inspire activists, but to "help policymakers think more imaginatively and boldly" about serious programs for reducing climate impact. "Once you get individuals changing their lifestyle," he said, "they become advocates and start to look for policy-level changes. People become part of advisory councils and start influencing decisions at the municipal level."

A call to early adopters

The good news is that if people are the problem, people can also be the solution.

—David Gershon, founder and CEO, Empowerment Institute

David Gershon describes the opportunity this way: "Despite its global reach, climate change is very much a local issue. The causes of global warming come in large part from the everyday actions that take place in our communities, with individuals accounting for from 50 to 90% of a community's emissions and half of America's total emissions. While progressive local governments and businesses have developed strategies and programs to lower their CO_2 emissions, individual citizens have not."

The Low Carbon Diet offers a way to bring individual citizens into the mix—and even if the program does not engage the majority of a city population, it enables

those who do come on board to help create a culture of possibility for everyone else. Says Gershon, "I would hope that the success of our Portland pilot program motivates early adopters to say, 'you know what, I'm going to do this—build a groundswell. You have to start somewhere. Why not my block? Why not my community?'

This article appeared in the book, "Creating a Climate for Change"

Attachment B

Pilot Program Results
Source: The Empowerment Institute

The City of Palo Alto alpha and beta Cool Block Pilot Programs achieved the results summarized below.

Key Program Results:

- Number of Palo Alto Cool Blocks: **24**
- Number of participating households (approximate): **175**
- Number of household member participants (approximate-2.5 per household): **440**
- Average households participating on Cool Block teams: **6.5**
- Percentage of households on a block participating on a Cool Block team: **41%**
- Average recruitment rate per block (people invited who participated): **55%**
- Average carbon reduction per household: **7 tons** (14,000 pounds)
- Average CO_2 reduction per household: **32%** (goal was 25%)
- Average number of disaster resiliency actions taken per household: **9** (goal was 7)
- Average number of program actions taken per household: **27**

Participating Blocks: The Empowerment Institute formed Cool Block teams on 24 diverse blocks in a variety of neighborhoods including Professorville, Community Center, Duveneck/St Francis, Triple E, Midtown, Cal Ave, Barron Park, Palo Verde, and St. Claire Gardens.

Household Recruitment Results:

Recruitment Results Achieved on Participating Blocks	**Percentage**
Interested Blocks *(Percentage of households who agreed (said **Yes**) to an in-person information meeting)*	67.9%
Followed Through *(Percentage who showed up of those who said Yes)*	84.5%
Information Meeting Recruitment Rate *(Percentage who agreed to join a team, of those who showed up)*	67.4%
Overall Recruitment Rate *(Percentage who agreed to join a team of those who said Yes to the information meeting)*	54.9%

Actions Taken:

Results of Actions	**Total**	**Pilot Average***
Pounds of CO_2 Saved	1,306,707	13,471
Total Actions Taken	2,625	27
Average % CO_2 Reduction		31.8%

***With 97 Households Reporting**

Attachment B

Theme of Actions	Total Actions Taken
Carbon Reduction	787
Water Stewardship	585
Resiliency	949
Livability	298
Empowerment of Others	26

Action Analysis:

- The most popular **carbon-reducing actions** were reducing waste, using less hot water in personal and kitchen use, moving toward a vegetarian diet, efficient lighting, shopping less, ensuring an efficient car. In addition, over 25% of reporting households did retrofit actions.

- The most popular **resiliency actions** were creating seven-day stores of food and water, establishing an alternate lighting and news source, and preparations for fires and earthquakes.

- The most popular **water-reducing actions** were reducing water used in personal care, gardening, and car washing. Many households (35-40%) also acted to reduce toxins in the environment.

- The most popular **livability actions** taken up at the block level were safety, block parties, tool-sharing, and helping neighbors when needed.

Partnership with the City of Palo Alto: The Palo Alto Cool Block Program Manager gathered over 65 local resources for the program. These resources span four key themes addressing carbon reduction (20), resiliency (30), water stewardship (3), and livability (10). Each resource was mapped to relevant Cool Block action recipes and made available on an action-by-action basis through the Cool Block website. The City provided in-person demonstrations and videos at the team meetings to encourage uptake of the City's various programs. These included demonstrations on Zero Waste, energy auditing, emergency preparation, and a short video on keeping toxins out of the City's watershed.

Software Platform: A new and improved user experience was designed for the Beta Pilot, and a strong level of data reporting was achieved. Improvements were identified and will be addressed through software evolution in the next phases of the Cool Block Program.

Coaching: Four volunteer coaches emerged from successful alpha pilot teams to support beta pilot teams. This enabled beta teams to sustain their commitment and achieve good results.

Cultural Adaptation: The Empowerment Institute added Google language translation functionality into the Cool Block website. It supports a wide range of languages. As a result of this functionality, program managers received feedback that it allowed non-English speaking residents to engage with the program in a meaningful way.