

Moonshot Climate Action Plan **Empowering a City to Become Carbon Neutral by 2030**

An Initiative of Empowerment Institute

“We choose to go to the Moon in this decade and do the other things, not because they are easy, but because they are hard; because that goal will serve to organize and measure the best of our energies and skills, because that challenge is one that we are willing to accept, one we are unwilling to postpone, and one we intend to win.” — President John F. Kennedy, September 12, 1962

“That's one small step for a man, one giant leap for mankind.” — Astronaut Neil Armstrong, upon being the first human being to walk on the moon, July 20, 1969

OVERVIEW

Climate scientists tell us we must [achieve by 2030](#) what humanity is trying to accomplish by 2050 to avoid irreversible ecological tipping points. In other words, we must accelerate time by 3x. To achieve this, we need to change the way we think about change. Business as usual climate solutions are not up to the task. We need a climate moonshot strategy.

Empowerment Institute's [Cool City Challenge](#) initiative is a climate moonshot strategy. Its mission is to accelerate the decarbonization of the world's cities which emit 70% of the planet's CO2 through empowering its citizens – 70% of a city's carbon footprint.

It is a whole system climate solution which integrates bottom-up and top-down change strategies. It develops the transformative leadership skills of a multi-sector team to facilitate a Moonshot Climate Action Plan (MCAP) in a city. The MCAP is built upon the foundation of the [Cool Block](#) of 5 to 8 households and Cool Neighborhood of approximately 8 adjacent Cool Blocks. This creates the foundation for creating a carbon neutral neighborhood. *The goal of the MCAP is to scale up carbon neutral neighborhoods citywide.*

A Cool Neighborhood simulator integrates the Cool Block and Cool Neighborhood actions to increase engagement and impact. This is done through its simulation, modeling, and guidance functions. The synergistic feedback loops from these three functions increases overall actionability and scalability. By combining the MCAP strategy with these empowerment tools, a city is able to accelerate the speed and magnitude of change needed to become carbon neutral by 2030.

It is technologically possible to achieve carbon neutral cities by 2030, but it is a speed and scale challenge. This is a second order change problem requiring a second order change solution, aka a transformative social change intervention. The Cool City Challenge is such a robust second order change climate solution. It is based on Empowerment Institute's four decades of experience designing and implementing [transformative social change](#) strategies.

Over 5,000 people on 325 Cool Block teams across eight California cities (Los Angeles, San Francisco, Palo Alto, Mountain View, Santa Barbara, Isla Vista, Irvine, and Petaluma) have participated in the program pilot phases. They achieved an average household carbon reduction of 31% (5 metric tons), took 25 actions, and had a 45% block recruitment rate.

The intent of the Cool City Challenge is to create 100 climate moonshot cities across the US and worldwide over the next several years. This will provide the knowledge, models, and momentum for its larger mission of accelerating the decarbonization of the world's cities.

PRINCIPLES

1. **Empowerment** – Empowers individuals at the household, block, and neighborhood levels to envision and create a planet friendly, disaster resilient, and community rich future.
2. **Bottom Up** – Driven from the bottom up through engaging households, blocks, and neighborhoods.
3. **Demand Side** – A demand side intervention that activates the supply side of policy, clean technology adoption, and new markets for carbon neutral technology and financing innovations.
4. **Whole System Climate Solution** – Integrates bottom-up and top-down climate solutions into a synergistic whole.
5. **Last Mile Access** – Addresses the most difficult part of climate action, engaging the end user at the household and block level.
6. **Distributed Climate Action Plan** – Enables engagement with a city's climate action plan at the hyper local level of households, blocks, and neighborhoods.
7. **City and Citizenry as Partners** – Provides an operating system upgrade for a city by empowering citizenry to become full partners with local government in the process of creating a carbon neutral city. This is because residents of a community are both a significant part of the carbon footprint and a significant part of the climate solution. They also represent a vast untapped reservoir of untapped intellectual capital, volunteer time, and financial resources.

MCAP STRATEGY

“Cool Block is an exemplary how-to guide for local communities to make a significant impact on climate change. This program demonstrates the untapped potential to engage at the grassroots level in an effective and achievable way. Very cool, indeed!” — California Governor, Gavin Newsom

- Cool Blocks > Cool Neighborhoods > Carbon Neutral Neighborhoods at scale = 70% on average of a city's carbon footprint.
- Cool Blocks and Cool Neighborhoods create the economic driver combined with social pressure for local businesses to become carbon neutral = 30% on average of a city's carbon footprint.
- Scaling Elements: These are the building blocks of the strategy

Cool Block: The MCAP strategy to create a carbon neutral city is built upon the foundation of a Cool Block. This represents the smallest replicable unit for scaling and provides last mile access.

A Cool Block is 5 to 8 households who live in geographic proximity and participate in a 9-meeting program over 4.5 months. The program empowers households to create low carbon lifestyles, disaster resilient and livable blocks, and become community climate advocates.

Cool Neighborhood: A Cool Neighborhood is approximately 8 adjacent Cool Blocks of between 150 to 200 households that wish to become more self-sufficient and resilient. British anthropologist Robin Dunbar's research indicates this is the number of people with whom one can maintain stable social relationships.

It invests the Cool Block's agency, social capital and team building skills to increase the quality of life of the entire neighborhood. It is built around the Cool Block values of connection, cooperation and collaboration. It also provides an opportunity to engage neighbors who did not participate in Cool Block teams.

Carbon Neutral Neighborhood: A carbon neutral neighborhood is built upon the foundation of the Cool Neighborhood. A key goal of the MCAP strategy is to scale up carbon neutral neighborhoods citywide.

EMPOWERMENT INSTITUTE / CITY PARTNERSHIP FRAMEWORK

A strategic partnership is formed between the Empowerment Institute and the City government to implement the moonshot climate action plan over five years. A partnership MOU is developed that includes the following.

- Empowerment Institute Partner Responsibilities:
 1. Cool Block and Cool Neighborhood Platform.

2. Access to the Moonshot Climate Action Plan with implementation support.
 3. Training and ongoing coaching of the climate moonshot team and staff in behavior change, community empowerment, whole system design, transformative social change, and program delivery.
 4. Collaboration with the City in integrating the MCAP with its Climate Action Plan.
 5. Startup support coaching.
 6. CRM technology and impact tracking.
 7. In partnership with the City, recruitment of 1.5 FTE Program Managers to lead the program.
 8. Fundraising support.
- City Partner Responsibilities:
 1. A Climate Moonshot Team (multi-sector project steering committee). Each member needs to lead a Cool Block team.
 2. Facilitation of full alignment with the City Council, key city staff and other relevant city players around the MCAP.
 3. Collaboration with Empowerment Institute in integrating its Climate Action Plan with the MCAP.
 4. A commitment and strategy to engage the city residents, community groups and businesses to participate in the MCAP.
 5. In partnership with Empowerment Institute, recruitment of 1.5 FTE Program Managers to lead the program.
 6. Startup capacity of 10 pilot Cool Block teams, 50 additional Cool Block leaders and 25 civic, private and public sector partners.
 7. Commitment of the City government to become carbon neutral by 2030.
 8. Implementation funding and fundraising support.

Note: At the heart of the Moonshot Climate Action Plan is moonshot thinking. This is a mindset comfortable in going to a place that is not fully known at the beginning and a willingness to learn, grow and evolve as an inherent part of the journey.

IMPLEMENTATION PLAN AND GOALS

- **Year 1 Goals**

1. Minimum of 175 Cool Blocks meet the basic performance requirements.
2. Minimum of 5 Cool Neighborhoods are created. These Cool Blocks are included in 175 total.
3. [Master the Cool Block Form](#) of recruitment, retention, results, and replication.

- **Year 2 Goals**

1. Minimum of 400 Cool Block teams meet the basic performance requirements. (This includes the 175 Cool Block teams already established in Year One.)
2. Minimum of 10 new Cool Neighborhoods are created. These Cool Blocks are included in Cool Block total.
3. Cool Neighborhoods are invited to apply for startup grants to become carbon neutral. These grants include technical support and the possibility of future cleantech funding.

- **Year 3 Goals**

1. Minimum of additional 150 Cool Block Teams meet the basic performance requirements.
2. Minimum of 20 new Cool Neighborhoods are created. These Cool Blocks are included in Cool Block total.
3. Cool Neighborhoods are invited to apply for startup grants to become carbon neutral. These grants include technical support and the possibility of future cleantech funding.

- **Year 4 Goals**

1. Minimum of 150 additional Cool Block Teams meet the basic performance requirements each year.
2. Minimum of 30 new Cool Neighborhoods are created. These Cool Blocks are included in Cool Block total.

3. Cool Neighborhoods are invited to apply for startup grants to become carbon neutral. These grants include technical support and the possibility of future cleantech funding.

- Year 5 Goals

1. Minimum of 150 additional Cool Block Teams meet the basic performance requirements each year.
2. Minimum of 40 new Cool Neighborhoods meet the basic performance requirements. These Cool Blocks are included in Cool Block total.
3. Cool Neighborhoods are invited to apply for startup grants to become carbon neutral. These grants include technical support and the possibility of future cleantech funding.

Note: The expectation is that by five years of careful guidance a tipping point will be achieved where Cool Blocks, Cool Neighborhoods, and Carbon Neutral Neighborhoods will grow exponentially on their own momentum.

PROGRAMS AND TOOLS

Cool Block Program

The [Cool Block](#) program has grown out of designing and implementing block-based empowerment programs over the past 30 years, serving millions of people around the world. It integrates the content, knowledge and best practices gleaned from these years of experience.

The program had its humble beginnings as a book and now is a sophisticated website platform designed to help people and their neighbors become planet friendly, disaster resilient and community rich.

Each Cool Block begins with a Block Leader – a volunteer who is ready to make change right on their block. Using Cool Block leadership resources, each Block Leader goes door to door to invite the households on the block to an information meeting. By the end of the meeting or sometimes after a second meeting, a Cool Block team of 5 to 8 households has formed.

The Cool Block Leader then holds a team building meeting where a vision for the journey takes shape. Members volunteer to lead the different Cool Block topic meetings biweekly over 4.5 months.

The team explores 120 actions divided into eight topics: disaster resiliency, energy resiliency, low carbon lifestyles, low carbon systems, water stewardship, a safe, healthy and green block, a resourceful and community rich block, and empowering others.

Each topic includes a menu of action recipes to choose from that apply to both houses and apartments. Team members select actions to take based on desire, affordability and time availability. Many actions are completed over time.

At the start of the program households are working to change habits and systems within their home. By the end of the program, the team is working together on actions that will impact their block and neighborhood.

Cool Neighborhood Program

A Cool Neighborhood is approximately 8 adjacent Cool Blocks of between 150 to 200 households that wish to become more self-sufficient and resilient. This definition is adjusted for large urban blocks with multiple apartment buildings.

- **How it Works**
 1. The Cool Neighborhood program consists of three topic modules: resilient neighborhood, regenerative neighborhood, and carbon neutral neighborhood.
 2. Each module has a menu of neighborhood scale actions that utilize the proven Cool Block behavior change and peer support system methodology. A Cool Neighborhood chooses actions according to their interests and implementation capacity.
 3. Actions weave in community-based organizations to educate and assist in implementation.
 4. The structure consists of Block Leaders who liaison with their Cool Block teams, multi-block teams who implement the actions, and neighborhood events for all people living in the Cool Neighborhood. This engagement model empowers all residents to participate at their level of interest.
 5. A carbon neutral neighborhood is built upon the foundation of the Cool Neighborhood program.

Scaling Structure

1. A Cool Neighborhood can either be started from scratch or through an action introduced in Topic 8 of the Cool Block program.

2. If the latter, the action explains how Cool Block teams organize information meetings in their immediate neighborhood to recruit new teams, serve as their coaches, and evolve into a Cool Neighborhood.
 3. When each Cool Block completes the program they are encouraged to either start or participate in a Cool Neighborhood.
 4. After approximately ten nearby Cool Blocks are established they become a Cool Neighborhood. They then support other proximate Cool Blocks to create Cool Neighborhoods who in turn repeat the process.
 5. Multiple Cool Neighborhoods evolve into a Cool District. The number of Cool Neighborhoods in a Cool District comport to the specific geography, political district, and other differentiating factors.
 6. Cool Neighborhoods and Cool Districts are designed to replicate citywide and align with the City's climate action plan.
- Topic Modules and Action Outlines

The Cool Neighborhood program consists of the following three topic modules and actions.

- Resilient Neighborhoods: Neighborhoods that withstand or recover quickly from difficult conditions.
 1. Inclusion
 - Support people who are feeling excluded by virtue of some difference – racial, social, age, ethnic, ability, or economic.
 - Enable the neighborhood to be more cohesive and support one another better.
 - Honor the native people's land upon which the neighborhood resides.
 2. Emergency preparedness hub
 - Store extra food, water, blankets and other emergency supplies for the neighborhood.
 - Support at risk neighbors for at least one week.
 - Establish protocols for housing people and animals.
 - Create backup power generation.
 3. Heating and cooling center

- Design as a support system for at-risk people in the neighborhood.
- Develop strategy for using public buildings.
- Develop transport systems for shut-ins or mobility challenged individuals.
- Create backup power generation.

4. Safety resilience

- Organize neighborhood watch.
- Establish a safety committee.
- Create a community oriented policing system.
- Establish a social norm around supporting one another's safety and well being.

5. Disaster resilience

- Build a support system for vulnerable people in the neighborhood.
- Establish a medical support system for the neighborhood.
- Establish a neighborhood-based Community Emergency Response Team for first responder support in case of disaster.

6. Food resilience

- Create community and home gardens to serve as a backup food system for the neighborhood.
- Develop a strategy for allocation of land and what is grown where.
- Establish a food management, communication, and distribution system.

7. Energy resilience

- Develop a plan to support households who lose power from those who have an alternative energy system.

8. Water resilience

- Dig a neighborhood well if feasible and permitted or utilize someone's well as a backup water supply,
- Set up a neighborhood rainwater catchment system.
- Clean water as part of a closed loop system and then reuse it.
- Establish a water management and distribution system.

9. Transportation resilience

- Establish a shared non motorized transportation system including bikes, scooters, etc.
- Design a transportation system to get access to food and water.
- Establish ride and car sharing to get to a job.

10. Economic resilience

- Develop a support system for neighbors in economic need.
 - Develop employment opportunities within the neighborhood.
 - Patronize neighborhood merchants.
- Regenerative Neighborhoods: Neighborhoods that renew the health of the land and its human systems.
1. Organic community gardens
 - Use organic principles in growing all food.
 - Educate people about eating healthy and nutritious food.
 - Create weekly or biweekly pot luck organic vegetarian meals.
 2. Food forests
 - Create food forests as part of the neighborhood food system.
 - Plant fruit trees in public spaces and donated private yards.
 - Establish a communication and food distribution system.
 3. Collect rainwater for community gardens and food forests
 - Establish a rainwater collection and distribution system for growing food.
 4. Compost for community gardens and food forests
 - Invest in row or vessel composting.
 - Develop a compost collection and distribution system.
 - Share with all community gardens to enhance soil health.
 5. Urban forestry
 - Create an open space and urban forestry plan to plant more trees.
 - Design to reduce heat island effect and improve soil health.
 6. Repair services

- Develop repair expertise.
- Develop a neighborhood plan and app for connection and distribution.

7. Tool and resource sharing

- Access a greater variety of equipment.
- Access a greater variety of clothing.
- Access to toys and sports equipment.
- Develop a plan and app for connection and distribution.

8. Sharing economy

- Develop a neighborhood bartering system.
- Develop neighborhood local currency.
- Develop mentoring and skill sharing.

9. Community building social events

- Create neighborhood picnics, parties and other social capital building events.

○ Carbon Neutral Neighborhoods: Neighborhoods that have net zero carbon emissions.

1. Climate equity

- Design climate solutions to enable lower income households to benefit from economic opportunities and jobs.
- Create energy efficiency and solar financing to support lower income households.

2. Neighborhood Carbon Footprint

- Do a baseline carbon footprint assessment for the neighborhood.

3. Microgrid

- Establish a neighborhood scale microgrid with backup battery.
- Establish a neighborhood association to manage a microgrid distribution and financing associated with it.

4. Community solar and backup battery

- Establish a neighborhood scale community solar array with battery backup.
- Establish a neighborhood association to manage the community solar distribution and financing associated with it.

5. EV charging stations

- Establish EV charging stations with backup batteries distributed around the neighborhood including people's houses.
- Establish a neighborhood association to manage the distribution and financing associated with it.

6. Ride sharing

- Develop a ride sharing plan for the neighborhood including an app.

7. Car sharing

- Develop a car sharing plan for the neighborhood including an app.

8. Fossil free transportation zone

- Create the neighborhood into a no fossil fuel zone using EVs, golf carts, electric bikes and scooters.

9. Soil carbon sequestration

- Connect with food forests, community gardens and xeriscaping.
- Connect with the carbon footprint definition of the neighborhood.

10. Tree planting for carbon sequestration

- Connect with urban forestry action.
- Develop around trees that provide the best carbon sequestration.
- Connect with the local government to get approvals

11. Carbon credits from sequestration

- Transform green infrastructure and food producing land into carbon credits.
- Develop opportunities to produce economic resources for the neighborhood through selling carbon credits.

Note: Actions will be linked to the Cool Neighborhood Simulator (see below) for calculating the neighborhood carbon footprint, modeling a carbon neutral neighborhood and different budget scenario pathways to achieve it.

- **Features and Benefits**

1. Direct household, block and neighborhood benefits of taking the actions.
2. Opportunity to repurpose Cool Block agency, social capital, and team building skills to achieve neighborhood scale benefits.
3. Recruitment vehicle for scaling Cool Blocks.
4. Opportunity to engage neighbors who did not participate in Cool Block teams.
5. Capacity to implement many neighborhood scale actions. I.e. 1 to 3 actions can be led by each Cool Block team.
6. Natural interest and support of local government agencies, non profits, and businesses wishing to increase engagement in their programs and services.
7. An ecosystem of resource providers.
8. Right scale to meet the technology and financing requirements needed for a carbon neutral neighborhood.
9. A cadre of committed volunteers.

Cool Neighborhood Simulator

This tool, currently under construction, is designed to enhance the impact and increase the scalability of Cool Blocks and Cool Neighborhoods. It includes the following features and benefits.

1. Provides an augmented reality version of actions placed throughout the neighborhood to better envision it and increase buy-in.
2. Provides a virtual reality version of actions via a digital twin to explore different scenarios for taking it.
3. Matches actions with metrics to demonstrate its impact at different levels of scale.

4. Calculates neighborhood carbon footprint.
5. Models a carbon neutral neighborhood and pathways to achieve it.
6. Models budget scenarios for creating a carbon neutral neighborhood.
7. Provides a neighborhood crowdfunding feature for investing in actions.
8. Enables recognition of neighbors who contribute to actions.
9. Engages multiple stakeholders in designing a Cool Neighborhood including Cool Block participants, youth, local non profits and city agencies.

CARBON NEUTRAL NEIGHBORHOOD GRANT PROGRAM

A carbon neutral neighborhood is built upon the foundation of the Cool Neighborhood program. The Carbon Neutral Neighborhood Fund, established and co-led by Empowerment Institute and its City partner, supports the pioneering efforts of Cool Neighborhoods wishing to become carbon neutral. It does this by providing startup grants and technical support.

Additionally, Empowerment Institute will attempt to secure funding for installing cleantech neighborhood infrastructure including microgrids, battery backup systems and EV charging stations.

ABOUT EMPOWERMENT INSTITUTE

Empowerment Institute is the world's foremost expert in [empowerment](#) and [second order change](#). Over the past thirty years it has empowered millions of people worldwide to reduce their environmental footprint and over two hundred cities to become more sustainable. Since 2006, it has applied its behavior change methodology to empower tens of thousands of households to create low carbon lifestyles. It has participated in a number of [research studies](#) on its behavior change methodology with one academic study describing it as "unsurpassed in changing behavior."

Empowerment Institute has received much recognition over the years for its transformative social change initiatives, but one award in particular was quite empowering. [NASA](#), in a global competition, awarded Cool City Challenge first prize as "the most outstanding solution in addressing human impact on the planet's sustainability." Having achieved the mother of all [moonshots](#), NASA's recognition strengthened our resolve to confidently walk the climate moonshot path.

CONCLUSION

What will it take to pull off the unprecedented moonshot goal of creating a carbon neutral city by 2030? Cities courageous enough to embark on this journey will need a lot of help to execute such a bold commitment. That's where the Moonshot Climate Action Plan comes in.

It empowers residents accountable for most of the city's carbon footprint with the vision, strategy and tools to change and advocate for change. This becomes a virtuous spiral that generates the political will needed for a city to sustain momentum for this magnitude and speed of change.

An entire community is needed to raise a carbon neutral city. Not just any community, but a carbon literate, empowered and galvanized community where everyone has a stake in its future. The Moonshot Climate Action Plan will do just that!

MCAP RESOURCES

1. Cool City Challenge Vision: <https://coolcity.earth/a-glimpse-into-the-future/>
2. Second Order Change — *Social Change 2.0* book: <https://reinventing.earth/social-change-2-0-study-circles>
3. Moonshot Thinking: <https://youtu.be/pEr4j8kgwOk>
4. Climate Change Technology Adoption Timeline: <https://static1.squarespace.com/static/585c3439be65942f022bbf9b/t/6107fd0ed121a02875c1a99f/1627913876225/Rethinking+Implications.pdf>
5. Science Behind 2030 Timeline: <https://theclimatecenter.org/wp-content/uploads/2021/10/Kammen-et-al-Accelerating-California-timeline-for-climate-action-Mar-2021.pdf>
6. Carbon Neutral Frontier: Urban Consumption Footprint https://www.c40.org/wp-content/uploads/2021/08/2270_C40_CBE_MainReport_250719_original.pdf
7. European Union 100 Climate Neutral Cities by 2030: <https://netzerocities.eu>

FURTHER INFORMATION

David Gershon
dgershon@empowermentinstitute.net
<https://coolcity.earth>
<https://coolblock.org>