

# DRAWDOWN: MARIN STRATEGIC PLAN



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Prepared by County of Marin Sustainability Team

# ACKNOWLEDGEMENTS

Many individuals and organizations contributed to the completion of this document including:

## Community Groups & Agencies

Several groups, agencies, and organizations contributed significant time and resources to Drawdown: Marin between 2017-2020. It is not possible to capture all of these groups on this page, but some are listed below:

Aging Action Initiative	Marin Conservation League
Agricultural Community Events Farmers Markets	Marin County Cities and Towns
Agricultural Institute of Marin	Marin County Health and Human Services
Bay Area Air Quality Management District	Marin County Parks
Canal Alliance	Marin Municipal Water District
CarboCulture	Marin Resource Conservation District
Carbon Cycle Institute	Marin Sanitary
Ecologically Sound Practices Partnership	Marin Transit
Environmental Forum of Marin	MCE Clean Energy
ExtraFood.org	Multicultural Center of Marin
FireSafe Marin	Resilient Neighborhoods
GRID Alternatives	Sanzuma
In-home Social Services	Shore up Marin City
Local Government Commission	Sustainable Marin
Marin Bicycle Coalition	The Climate Center
Marin Carbon Project	Transportation Authority of Marin
Marin City People's Plan	West Marin Community Services
Marin Climate Action Network	Zero Waste Marin
Marin Climate and Energy Partnership	

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## Document Accessibility

To obtain an ADA-accessible PDF version of this plan or any of its Appendices, please contact Drawdown: Marin at [drawdown@marincounty.org](mailto:drawdown@marincounty.org).



# TABLE OF CONTENTS

CALL TO ACTION .....	1
WHAT IS DRAWDOWN: MARIN? .....	2
DRAWDOWN: MARIN VISION AND GOALS .....	3
MARIN COUNTY’S CLIMATE IMPACT.....	4
Production-based or geographic boundary approach .....	4
Consumption-based emissions inventory (CBEI).....	5
DRAWDOWN: MARIN LOCAL CLIMATE CHANGE SOLUTIONS.....	7
Now (2021-2023) – Endorsed solutions.....	7
Now (2021-2023) – Additional Solutions.....	8
Then (2024-2030) .....	11
Next (2031-2045).....	12
EQUITY AND COMMUNITY RELATIONSHIPS.....	13
Lack of Diverse Participants Representing All Marin Communities .....	13
Past and Existing Equity Work .....	13
Future Equity Initiatives.....	14
COMMUNITY ENGAGEMENT AND EMPOWERMENT .....	15
Community Outreach Partnership .....	15
Outreach Efforts .....	15
ORGANIZATIONAL FRAMEWORK AND FUNDING – 2021 AND BEYOND .....	17
County and Non-Profit Joint Endeavor.....	17
LESSONS LEARNED .....	20
Steps Needed for Continued Growth .....	20
Measuring Success .....	21
ACT NOW!.....	22



# CALL TO ACTION

Drawdown: Marin is a community-driven campaign to dramatically reduce greenhouse gas (GHG) emissions, sequester carbon, and prepare for climate change impacts. Drawdown: Marin seeks to engage and empower all community members to share their priorities and to brainstorm local solutions to climate change. Climate change and human behavior are linked. Collectively, government, the private sector, and individuals contribute to and are responsible for addressing climate change. The time to act is now, while we can still proactively identify local solutions that will reduce GHG emissions, increase community resilience, and address historic and existing social, racial, and financial inequities.

This plan attempts to summarize 150 volunteers' work over 2 years to design local climate change solutions and engage and empower the public to participate and act. It outlines what we can and should do to address climate change and to meet the Drawdown: Marin goals. The plan is intended to create a sense of urgency, but it is not intended to be rigid. It outlines recommended strategies to achieve our goals while allowing enough flexibility to change course if and when a particular approach is not working. Designing and implementing climate change solutions is not easy. If only we implement the solution with the highest greenhouse gas (GHG) emissions benefit, *then* we will be on track to solve the climate crisis. This work is far more dynamic and requires the assessment and analysis of many factors and data points including but not limited to funding availability, equity, political support, community buy-in, staff availability, and timing.

Background Reports (Available Separately):

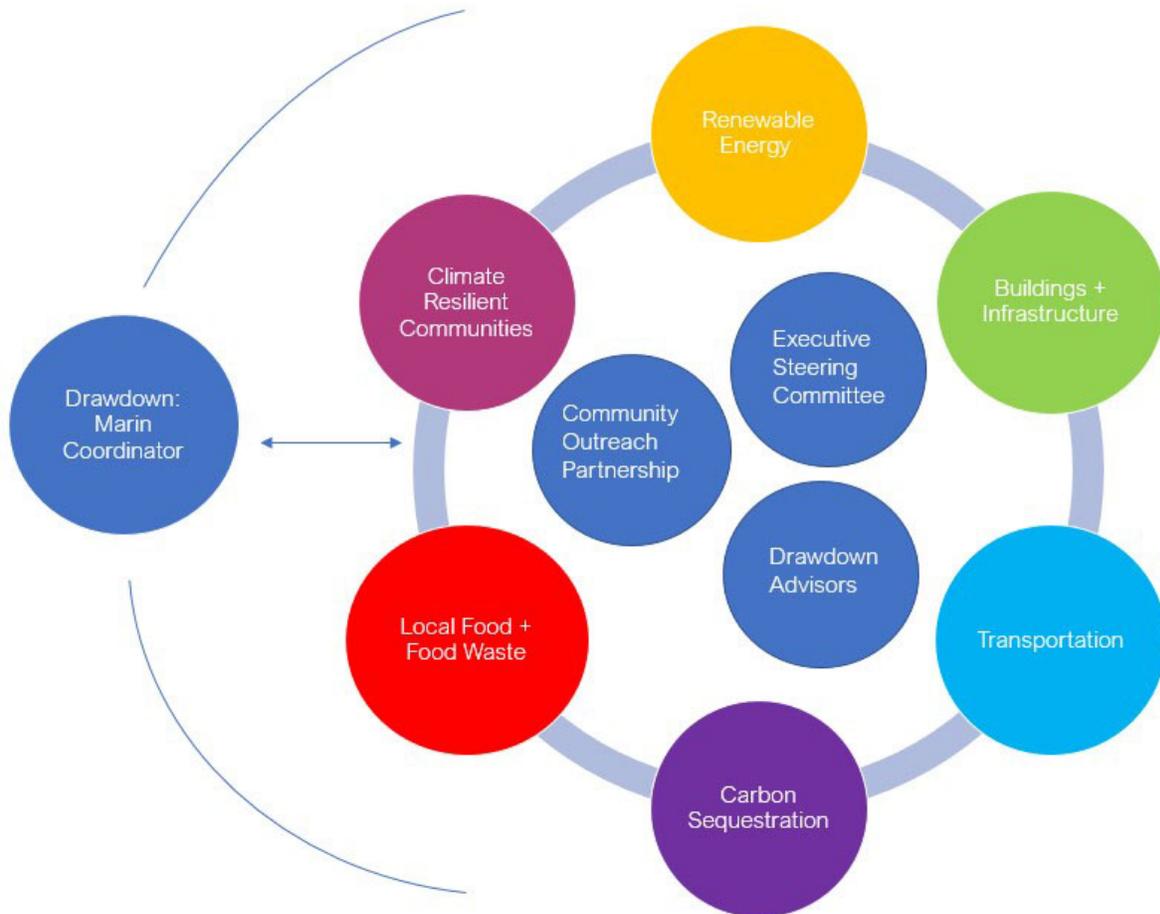
- Appendix A What is Drawdown: Marin?
- Appendix B Equity in Practice
- Appendix C Year 1 Survey Results and Analysis
- Appendix D Drawdown: Marin Guiding Principles and Solutions Evaluation Criteria
- Appendix E Drawdown: Marin Solutions – Detailed Solutions Information and Comparison Spreadsheet

# WHAT IS DRAWDOWN: MARIN?

Drawdown: Marin originated from an idea developed by the Marin Climate Action Network (MCAN) and was formally launched by the Board of Supervisors in October 2017 by adoption of Resolution 2017-04 – “Supporting Actions to Dramatically Reduce Carbon Emissions and Achieve a Climate Resilient Future”. The County of Marin served as the backbone organization and sought to coordinate and collaborate with all Marin County cities and towns, organizations, and individuals to design a comprehensive, countywide strategy to address climate change that includes long-term funding mechanisms and an organizational structure that involves all jurisdictions and the public.

Between September 2018 and December 2020, 150 volunteers participated in 6 Stakeholder Collaboratives representing 6 focus areas, the Community Outreach Partnership (COP) (formerly the Community Partnership Council), on the Executive Steering Committee (ESC), and as on-call Drawdown Advisors. For additional information, see Appendix A.

Figure 1: Drawdown: Marin Organizational Structure (September 2018 – December 2020)



# DRAWDOWN: MARIN VISION AND GOALS

The ESC developed the Drawdown: Marin Vision and Goals collaboratively in Fall 2018. It received input from members of the public as well as the six Stakeholder Collaboratives.

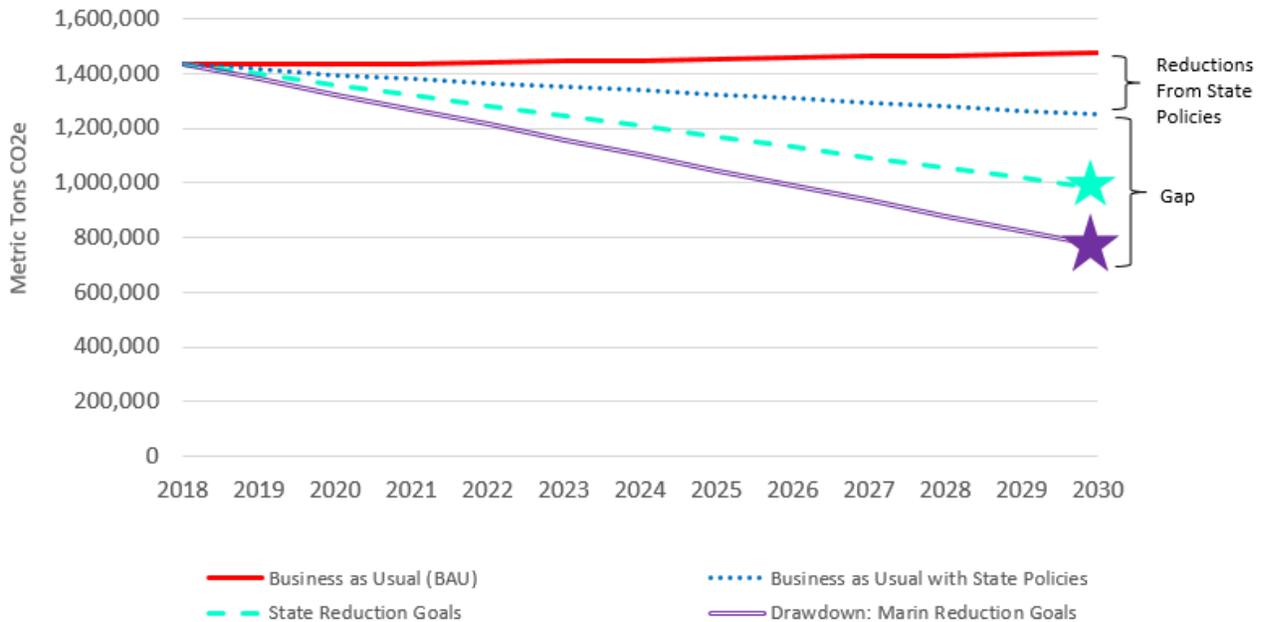
Vision: Marin reverses its impacts on climate change by implementing local solutions as we create a thriving, equitable, and resilient future for all.

Goals:

- 60% reduction in GHG emissions below 2005 by Marin County by 2030
- Drawdown GHG emissions by Marin County below zero by 2045

The ESC intentionally set goals more aggressive than the State of California as a symbol to the community and County jurisdictions that we must accelerate our work to solve climate change now. These are recommended goals – each jurisdiction can set its own goals in its Climate Action Plans. For example, the City of San Rafael set a minimum 40% reduction in GHGs by 2030. The County is currently updating its Climate Action Plan and reduction goals.

Figure 2: Projected Countywide Greenhouse Gas Emissions, Reduction Targets, and Gaps



# MARIN COUNTY'S CLIMATE IMPACT

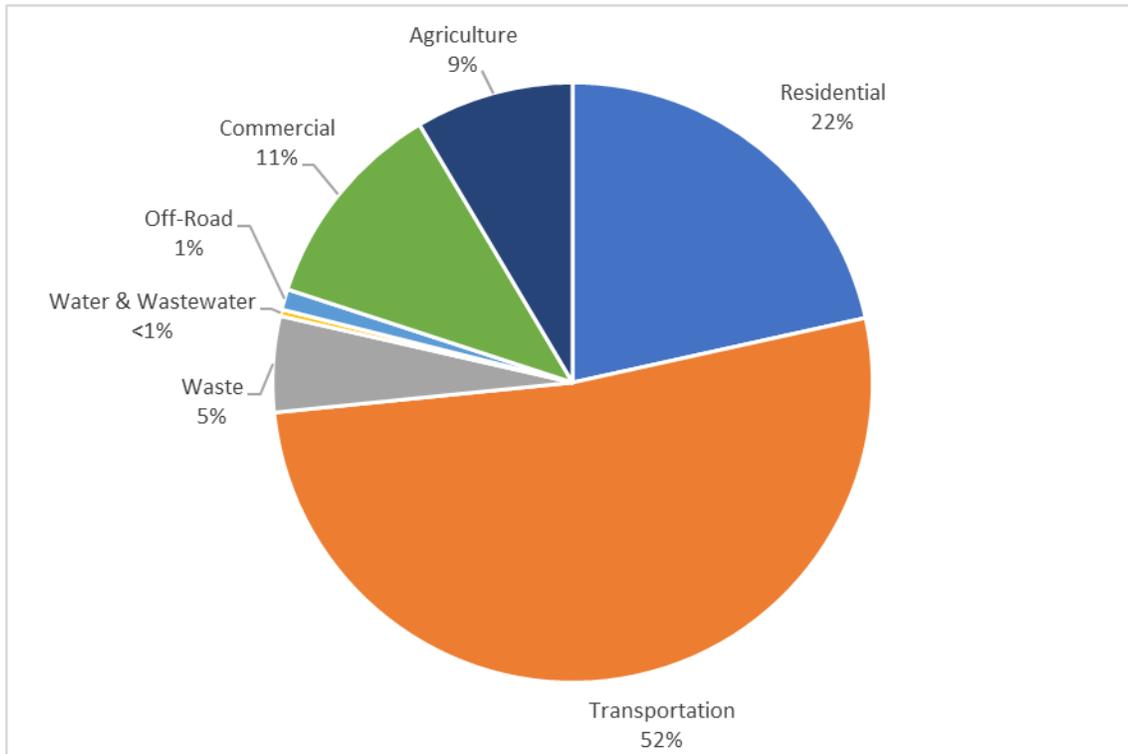
Marin County is one of the most affluent counties in California and the United States. With wealth comes purchasing power. The more we collectively consume, the higher our GHG emissions are and the more significant our impact on the planet. Currently, local governments can measure GHG emissions two ways: production-based (current adopted protocol<sup>1</sup>) or consumption-based (some jurisdictions are measuring and reporting these emissions, but it is not the formally adopted protocol).

## PRODUCTION-BASED OR GEOGRAPHIC BOUNDARY APPROACH

Traditionally, per the US Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions, local governments measure GHG emissions occurring within their geographic boundaries. To measure these emissions, local governments collect data on activities in the following sectors:

- Energy - residential and commercial
- Transportation – 100% of trips that take place entirely within the County, 50% of trips that start elsewhere and end in the County or start in the County and end elsewhere
- Agriculture – domesticated animal operations and row crop operations
- Water & Wastewater – processed, treated, and delivered
- Off-Road Equipment – lawnmowers, construction equipment, agricultural equipment etc.
- Waste – disposed at landfills in the County and waste sent to outside facilities

Figure 3: 2018 Countywide Greenhouse Gas Emissions by Sector



<sup>1</sup>ICLEI USA, Local Governments for Sustainability, developed the U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions (Community Protocol). Local governments use this protocol to measure and report the emissions associated with their communities.

The latest year data is currently available is 2018.

Countywide, Marin County's total GHG emissions for 2018 were 1,435,431 metric tons of carbon dioxide equivalent (MTCO<sub>2e</sub>).

Production-based or geographic-boundary based GHG emissions inventories do not account for “life cycle” emissions - the overall impact of particular behavior or activity from production to disposal. Therefore, some local governments have started to calculate consumption-based GHG emissions, those emissions that result from the products and services bought regardless if they happen within or outside a community's physical boundaries.

## CONSUMPTION-BASED EMISSIONS INVENTORY (CBEI)

CBEI allocates GHG emissions to the final consumers of those goods and services, rather than to the original producers of those GHG emissions. Communities rely heavily on the supply of goods and services from outside their physical boundaries. GHG emissions associated with supply chains are significant. Historically, local governments have focused on production-based/location-specific emissions because they occur from sources over which local governments often have more direct influence, are easier and more reliable to estimate and monitor.<sup>2</sup>

CBEIs follow the flow of dollars through the economy to track production and consumption of goods and services. These inventories include emissions related to 5 basic sectors of consumption by households:

- Transportation
- Housing
- Food
- Goods
- Services

The Bay Area Air Quality Management District (BAAQMD) and the University of California Berkeley collectively prepared inventories for all nine Bay Area counties including all jurisdictions within those Counties. Marin County is the third highest emitter behind San Mateo and Santa Clara Counties. Additional information can be found on BAAQMD's website.<sup>3</sup>

The latest year a consumption-based GHG emissions inventory was completed was for year 2013.

Marin County's total consumption-based GHG emissions for 2013 were 4,819,880 MTCO<sub>2e</sub>.

According to a report recently released by C40 cities<sup>4</sup>,

- 80% of the cities have larger consumption-based GHG emissions than sector-based (63 out of 79)
- Over 50% of the cities have consumption-based emissions at least twice the size of their sector-based GHG emissions
- 16 cities, mostly in Europe and North America have CBEs at least three times the size

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<sup>2</sup> See *Consumption-Based Emissions of C40 Cities*, available at <https://www.c40.org/researches/consumption-based-emissions> (last visited Mar. 18, 2020).

<sup>3</sup> Information is available at <https://www.baaqmd.gov/about-air-quality/research-and-data/emission-inventory/consumption-based-ghg-emissions-inventory>, last visited March 16, 2020.

<sup>4</sup> *Consumption-Based GHG Emissions of C40 Cities*; for more information the C40 cities, visit <https://www.c40.org/cities>.

Marin County's consumption-based footprint is roughly 3 times that of its production-based inventory.

We must consider how our purchasing decisions directly lead to increased GHG emissions and how our decisions are and will continue to impact all of the County and the Bay Area region. For example, marginalized communities and communities of color are already experiencing worse air quality, increased levels of water and ground pollution, and shorter life expectancies. This is happening *now* in Marin City and the Canal District of San Rafael.<sup>5</sup> Additionally, our neighbors living in the City of Richmond experience much worse air quality<sup>6</sup> due to the Chevron refinery's operations (and other large industrial emitters). Many of us purchase fuel and that fuel comes from refineries around the Bay Area that we are privileged to *not* have located within Marin County.

Drawdown: Marin attempted to integrate this data and these considerations as solutions were developed understanding that projects, programs, and policies must address individual and corporate purchasing power and decisions and the upstream and downstream impacts of those decisions.

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<sup>5</sup> Marin County CalEnviroScreen 3.0 results, *available at* <https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30>, (last visited Mar. 18, 2020).

<sup>6</sup> *See id.* Contra Costa County and City of Richmond CalEnviroScreen 3.0 results.

# DRAWDOWN: MARIN LOCAL CLIMATE CHANGE SOLUTIONS

Together we can solve climate change. This plan demands action now – we must try, fail, and try again until we have a series of projects, programs, and policies in place that will dramatically reduce GHG emissions, increase carbon sequestration, increase personal and community resilience and address historic and current racial and social inequities.

The County of Marin, in its role as the backbone of Drawdown: Marin, worked with over 150 people over 2 years through 6 Stakeholder Collaboratives to develop ideas for local solutions to climate change. Based on this process and input, the following is a list of recommended actions we must collectively take:

- Now (2021- 2023, 0-2 years) (includes Endorsed Solutions)
- Then (2024-2030, 3-6 years), and
- Next (2031 – 2045, 7-15 years)

Detailed information on each solution, including how each addressed equity, is found in Appendix E.

**If all, Now (including Endorsed Solutions) and Then (2021-2030) solutions were implemented by 2030, estimated annual GHG emissions reductions are approximately 503,000 MTCO<sub>2</sub>e annually, exceeding the 2030 goal of 474,000 MTCO<sub>2</sub>e reduction.**<sup>7</sup> These GHG emissions reductions estimates were developed by volunteers in each Stakeholder Collaborative and may need to be refined based on a variety of ever-changing factors, e.g. participation rates, energy data, technology adoption, etc. and to ensure the estimates are consistent with Community Protocol quantification methodologies. Drawdown: Marin will implement solutions based on but not limited to funding availability, staff time, political will, community support, and other factors.

## Now (2021-2023) – ENDORSED SOLUTIONS

The ESC developed Guiding Principles and Solutions Evaluation criteria (see Appendix D) to so it could evaluate each Collaborative's solutions and determine if each solution would help Drawdown: Marin achieve its goals; if it would and it was shovel-ready, then the ESC offered Endorsement. Six collaboratives presented to the ESC and it chose to endorse seven solutions for immediate implementation. The Drawdown: Marin Coordinator provided various support to the lead implementers including: funding research, funding recommendations, relationship building with key partners to accelerate implementation, marketing of the solutions, and assisted with research related to program and policy design and implementation.

### MARIN CARBON FARMING INITIATIVE

This initiative would expand Carbon Farm Planning and implementation to reach a large scale of acreage and operations in Marin County; by 2045, it would engage 180 Marin farms and ranches across 90,000 acres, sequestering over 525,000 MT CO<sub>2</sub>e.

### ZERO EMISSIONS VEHICLES – DRIVE CLEAN BAY AREA

Fuel-switching to zero-emission passenger vehicles to address 40%+ of Marin Countywide GHG emissions. This solution will accelerate widespread adoption of zero-emission vehicles by Marin's residents and employees through a new collaborative campaign, Drive Clean Bay Area.

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<sup>7</sup> It is currently not best practice to forecast GHG emissions beyond 2030 to 2045 because there are too many data uncertainties. If and when this becomes an option, Drawdown: Marin can evaluate additional reductions needed to meet its 2045 goal.

## AGRICULTURAL INSTITUTE OF MARIN'S (AIM) CENTER FOR FOOD AND AGRICULTURE

The Center for Food and Agriculture and the Zero Waste Farmers Market will be the connection point between those who need quality, nutrient-dense foods and those who make their livelihood providing it in a way that regenerates healthy soils, healthy pastures, and healthy seas.

## BIOMASS STUDY/RECOVERY PATHWAYS

Study existing biomass sources and uses and their potential impacts on GHG emissions and wildfire protection. The study would assess the types of biomass currently generated and estimate increases due to the passage of Measure C – Marin Wildfire Prevention Authority. Generally, the purpose of the study is to identify type and quantity of biomass generated countywide and support the sustainability of existing uses that may decrease overall GHG emissions, e.g. biomass to energy or reuse of woody material as ground cover on ranches. Funding is needed to conduct the study.

## MICROGRIDS – FAIRFAX PAVILION PILOT PROJECT

The Town of Fairfax and its partners will build a Community Resilience Center at the Fairfax Pavilion. This project will leverage existing solar photovoltaic (PV) systems at the Fire and Police Stations and the Pavilion and will add additional solar, batteries, and a new inverter. The project will leverage Self-Generation Incentive Program (SGIP) funding, the MCE Resilience Fund, and other funding sources to build the project. When complete, it will provide a community gathering space, childcare center during public safety power shut-off (PSPS), showcase the latest battery storage technology, and educate and inspire other cities and town to pursue similar projects.

## COMMUNITY RESILIENCE HUBS

The City of San Rafael and County of Marin propose two Community Resilience Hubs at the Albert J. Boro Community Center/Pickleweed Park and the County Health and Wellness Campus. Working with Canal District-based community organizations and non-profits and the County's Health and Human Services Department, the City and County will build Hubs that serve the community and coordinate communication, distribute resources, reduce GHG emissions, and helps prepare the community for emergencies. The Hubs will include community gardens, health clinics, communications center, green power, and recreational/educational opportunities.

## RESILIENT NEIGHBORHOODS - CLIMATE PREPAREDNESS AND REDUCTION (CPR) FOR THE PLANET

CPR for the Planet will adapt Resilient Neighborhoods' (RN) proven program to engage residents throughout Marin in reducing consumption-based GHG emissions and becoming resilient to climate-linked emergencies. CPR for the Planet will provide a replicable model to engage 1,000 residents to reduce 2,642 MTCO<sub>2e</sub> annually by 2023 and 3,713 residents to reduce 9,427 MTCO<sub>2e</sub> annually by 2030. CPR for the Planet will test five pilot training programs, designed with community input, to equitably reach audiences including: Spanish speakers, low-income, older adults, parents, individuals with high carbon footprints, and others, through online and offline programs that emphasize consumption, address climate anxiety, and engage everyone in achieving climate protection goals.

## Now (2021-2023) – ADDITIONAL SOLUTIONS

The solutions in the previous section are currently being implemented and need to be accelerated between now and 2023.

Additional solutions are categorized as follows:

- Existing, lead implementer identified and already implementing
- New solutions (may or may not be ready for implementation)
- Additional potential actions (not ready for implementation)

## **Existing, lead implementer identified and already implementing**

### **ADVANCED COMMUNITY ENERGY (ACE) PILOT**

Proposed statewide legislative initiative and program to develop local energy resources across all California cities and counties, addressing today's energy grid needs. State would provide funding, technical assistance, and other support so communities can implement ACE systems, e.g. microgrids, solar plus battery back-up.

### **ALL-ELECTRIC SHARED MOBILITY HUB (NEW SOLUTION, BUT IMPLEMENTATION STARTED)**

Expand electric mobility services and charging equipment at the Larkspur Ferry Terminal (Terminal), allowing for electric bikes, electric carsharing, additional electric vehicle (EV) charging, and electric shuttles to serve commuters going to and from the Terminal. These electric mobility services would be integrated with infrastructure improvements to prioritize and improve transit, biking, and walking to this hub.

### **BLUE CARBON HOG ISLAND OYSTER COMPANY PILOTS**

In 2019, a pilot project between Hog Island Oyster Company and Salt Point Seaweed was completed. The pilot project aimed to grow edible seaweed in Tomales Bay and measure the carbon sequestration and water quality benefits that resulted. To conduct additional studies, additional funding is needed. In some instances, results may indicate that regulatory or legislative changes are needed to advance aquaculture.

### **LOAD SHIFT PILOT PROGRAM**

Use deployed devices to shift energy use during the day and provide grid services, e.g. reduce energy in the evenings when electricity comes from dirtier sources like natural gas. Shifting energy use to the daytime means that use is likely solar or wind generated. Additionally, reducing energy use in the evenings can reduce customers costs since time of use rates are higher in the evenings. Devices can be controlled by third-parties, e.g. OhmConnect, that send signals to high energy-using devices such as refrigerators.

### **BUILDING ELECTRIFICATION PROGRAM**

The County of Marin received a Bay Area Air Quality Management District (BAAQMD) grant (\$296,997) and contributed \$150,000 of matching funds to implement a "building decarbonization pilot project" also known as Electrify Marin. In January 2019, this program started offering rebates to single family property owners for the replacement of natural gas appliances with efficient all-electric units. The County may continue to issue rebates using County funds post-2020.

### **COMMUNITY-BASED INTEGRATED MOBILITY SERVICES**

A prototype mobility system that will be designed from the bottom up with wide community involvement from the beginning, conducting a thorough needs assessment to determine the barriers to participation and the transit services that have the highest chance of success. It would include a mobility app with both private and public transportation options and would feature disbursement for all services with one easy payment. The program would be packaged as a "membership" program with 100% community participation to foster a culture based on sustainable travel.

### **AGRICULTURAL COMMUNITY EVENTS FARMERS MARKETS (ACEFM) CURBSIDE PICK-UP PROGRAM**

ACEFM developed an online ordering and curbside pick-up program in response to COVID-19. This program ensures high-risk producers, farmers, vendors, and customers can still sell and purchase items. ACEFM wants to expand this program by offering delivery options, pick-up locations or "food hubs" in low and moderate income communities where there is no access to farmers markets, and to track and report program metrics, e.g. reduced food waste, new jobs, and reduced vehicle miles traveled.

## **New Solutions (may or may not be ready for implementation)**

### **ORGANIC WASTE DIVERSION & PUBLIC COMPOST USE**

Prevent organic waste from being landfilled (one pillar in the resilient food system) by implementing three measures: 1) increased organics processing capacity by supporting compost facility expansion permitting, 2) investment in food

scrap diversion technology, and 3) scale up existing initiatives to increase compost use through community gardens and backyard composting.

## FOOD RESILIENT MARIN

Expand upon existing collaborative work to launch a county wide initiative that leverages the COVID induced food system awareness to showcase the elements of a resilient food system and ways that consumers can engage directly in solutions. There are three components to the initiative: reporting on food resiliency statistics as part of the recovery effort, mapping where community members can “join the resilient cycle”, and more effectively linking resources and marketing/outreach efforts across the Marin food network.

## YOUTH ENGAGEMENT – HEALTHY FOOD VIDEOS VIA TIKTOK

Create a fun series of TikTok videos on how students can reduce plate waste. Sanzuma and San Rafael City School (SRCS) will share the videos with all Marin County students through a variety of outlets such as: Instagram, Facebook, text messages to parents, classrooms, and on school TVs while students are in line for lunch.

## WATER-ENERGY NEXUS – MICRO-HYDRO TURBINES, MARIN MUNICIPAL WATER DISTRICT (MMWD)

Harness sustainable energy throughout Marin County’s water distribution cycle by installing micro-hydroelectric turbines within MMWD’s existing water pipeline infrastructure. These turbines generate energy from the natural flow of water and excess pressure in pipelines. This on-site renewable energy generation will reduce the amount of grid power MMWD needs to purchase, therefore reducing GHG emissions. It will also create a more resilient water supply, e.g. MMWD could still generate energy during public safety power shut-off (PSPS) events.

## RESILIENCE COORDINATING COUNCIL (RCC)

A Resilience Coordinating Council (RCC) can counter the adverse psychological & psycho-social-spiritual reactions to climate-enhanced traumas and toxic stresses by bringing together a wide range of uncommon partners to co-create and implement innovative local networks that foster and sustain mental wellness and resilience before, during, and after climate disasters. Using a “train the trainer” model to train frontline workers, agency staff, educators, climate activists, and community leaders in mental wellness and resilience tools, these individuals they care for themselves and help others affected by climate related toxic stresses and trauma. Additional research into potential partners and Council structure needs to be completed.

## “KNOW YOUR BLUE LINE” SEA LEVEL RISE PUBLIC ART PROJECT

Sea level rise is already happening and will get worse as time passes. Critical infrastructure is at risk and rising waters have and will have serious impacts on Marin County’s most vulnerable populations. Increasing awareness about sea level rise is crucial to moving forward with a variety of strategies to deal with this disaster. The “Know Your Blue Line” public art project will demonstrate to the public where expected sea levels will rise and by what time horizon. The blue line will be accompanied by additional public service announcements in advance of high tide and flooding events and planning/training (expand upon Community Emergency Response Team (CERT) program) for floods in at-risk communities.

## **Additional potential actions (not ready for implementation)**

### COUNTYWIDE DECISION-MAKING PLATFORM

The Drawdown: Marin Buildings + Infrastructure Collaborative proposed a “decision-making platform” solution so the County (and other jurisdictions) could evaluate and prioritize climate change projects across the County. The Drawdown: Marin Coordinator investigated options for this platform including:

- EarthShift Global’s Sustainable Return on Investment (S-ROI) tool
- Global Footprint Network’s Net Present Value Plus (NPV+) framework
- DecisionLens Project Prioritization software/tool

The ESC decided to pursue DecisionLens, but only when cities, towns, and County Staff were able to designate staff time to complete a no-cost Proof of Value pilot. This pilot would involve forming a stakeholder group, developing evaluation criteria (social, environmental, and financial), selecting 3-5 projects to analyze, and assessing results.

## TRANSPORTATION ORDINANCES AND POLICIES

A mix of Government and private sector policies are needed to lower transportation emissions. For example, electric vehicle (EV) and bus-only purchase/lease policy, required EV charging for businesses of a certain size, required pre-wiring for EV charging stations at renovated or new multi-family dwellings, banning the issuance of business licenses for new gas stations, and allowing 5G communications technology to support the interconnection and use of EV charging stations, smart phones, and other smart devices.

## MARIN CLIMATE MOBILIZATION DECADE

Generate public funds through one or more public funding mechanisms. Potential mechanisms include property tax assessments, a sales tax, and/or issuing bonds. These additional revenues would allow for the implementation of a comprehensive Marin Climate Mobilization ensuring that Drawdown: Marin objectives are funded for the coming decade, when they are most critically needed.

## Go100

Increase residential (then commercial) solar and solar plus storage installations countywide; increase Deep Green enrollment and MCE opt-in by providing technical assistance to customers, increasing outreach and engagement efforts, and offering additional incentives. MCE Clean Energy is leading efforts to increase residential solar plus storage. There are mixed opinions about the need to install more local solar generation without battery since we have more solar than we use during the day and this energy is not available in the evenings.

# THEN (2024-2030)

## Existing, needs to be scaled

### TRANSIT ORIENTED MIXED-USE DEVELOPMENT

Transit-oriented, mixed use development is “the creation of compact, walkable, pedestrian-oriented, mixed-use communities centered around high-quality train systems.”<sup>8</sup> Over 50% of countywide emissions are attributed to the transportation sector and this development approach would decrease dependence on cars for mobility. Existing zoning may need revisions to allow for increased density and mixed-uses near transit, e.g. SMART train stations.

### REZONING OF SINGLE-FAMILY HOMES

Marin is experiencing both a housing crisis and a climate crisis. Seventy-two percent of existing housing in Marin County is zoned single-family. Permitting more density in existing neighborhoods, via “cottage overlays” will allow more people to live near transit and job sites, reducing transportation-related GHG emissions. It will also allow Marin to house its workers and residents without encroaching on our protected open space. Without rezoning, there is limited opportunity for new housing development in Marin. Additionally, Marin’s aging population is often isolated, in large homes with no support structure. This type of ordinance would have multiple benefits including increasing housing stock, connecting older individuals with others, and increasing financial health of older adults.

### AFFORDABLE HOUSING ON STATE-OWNED PROPERTY

Governor Newsom signed Executive Order (EO) N-06-19 Affordable Housing Development to address the shortage of housing for Californians. Specifically this EO addresses communities that do not build their “fair share of housing” and identifies an opportunity to build additional housing on state-owned land, which is often times located in and near urban areas.<sup>9</sup> Using the interactive maps developed by the State, local jurisdictions should understand what state-

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<sup>8</sup> Homepage, <http://www.tod.org/> (last visited Apr. 10, 2020).

<sup>9</sup> See Executive Order N-06-19 Affordable Housing Development available at <https://www.dgs.ca.gov/RES/Projects/Page-Content/Projects-List-Folder/Executive-Order-N-06-19-Affordable-Housing-Development> (last visited Apr. 10, 2020).

owned parcels are ideal for new housing development. The State Department of General Services will then issue RFPs to develop priority parcels across the State.

## **Existing, lead implementer identified and already implementing**

### **BLUE CARBON WETLANDS RESTORATION**

The Marin County Public Works Department is already working to restore tidal wetlands at McInnis Marsh and the Novato Baylands. Both projects are under way - McInnis Marsh is finalizing design and environmental review and Deer Island (one of several potential Baylands projects) is in design phase. Construction funding is needed for both, and both will require significant capital. County Staff assumes both projects will seek Measure AA<sup>10</sup> (\$25 million available annually) and other wetlands restoration-type grant funding.

## **New Solutions**

None.

## **Additional potential actions (not ready for implementation)**

None.

## **NEXT (2031-2045)**

All of the solutions listed in the previous section should continue to be implemented year-over-year or until program or project specific goals are met. There are no solutions that Drawdown: Marin should wait to implement until 2031. It is feasible that new ideas will emerge in the coming months and years. Those ideas should be considered and phased in as appropriate to the Drawdown: Marin plan to meet our 2030 and 2045 goals.

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<sup>10</sup> "Measure AA, or the San Francisco Bay Clean Water, Pollution Prevention and Habitat Restoration Measure, was a revenue generating measure placed on the June 2016 ballots of the nine-county San Francisco Bay Area by the Restoration Authority. The measure proposed a 20-year, \$12 parcel tax to raise approximately \$25 million annually, or \$500 million over twenty years, to fund restoration projects in the Bay.", <http://sfbayrestore.org/overview> (last visited June 22, 2020).

# EQUITY AND COMMUNITY RELATIONSHIPS

Climate change and equity are interconnected. “Frontline communities including low-income communities, communities of color, indigenous peoples and tribal nations, and immigrant communities suffer first and worst from climate disasters[,]”<sup>11</sup> while producing the least GHG emissions. Frontline communities (also referred to as underserved, marginalized, and “disadvantaged”) often develop resiliency practices long before other communities and build those practices into their social structures. **Drawdown: Marin acknowledges these communities have existed and still exist in Marin County and seeks to design and implement solutions with them. This requires internal and external on-going work to normalize, organize, and internalize equity principles and approaches.** It is critical to implementing our Vision and achieving our Goals. See Appendix B for additional information on the need to address equity, an overview of past and existing work, and lessons learned.

## LACK OF DIVERSE PARTICIPANTS REPRESENTING ALL MARIN COMMUNITIES

Climate change solutions must be designed with all communities in mind, regardless of race, socio-economic status, gender, or class. However, based on initial qualitative and quantitative observations and estimates, the dominant culture of Drawdown: Marin participants is white, 45-65+ years old, highly educated, and upper-middle class to affluent. Additionally, the majority of current participants possess experience related to one of the six Drawdown: Marin focus areas and have had or do have decision-making power, e.g. leaders in their fields, elected officials, heads of companies or non-profits, etc. These characteristics, although not necessarily negative, do represent a lack of diversity and do not reflect all Marin County communities.

The current lack of diversity can be problematic because represented life experiences and beliefs may not be diverse, similar biases and perspectives may build off of each other and lead to solutions that perpetuate dominant culture. Excluding frontline communities likely means the solutions created do not include the wisdom from lived experience, ancestral and place-based knowledge, and traditional ecological knowledge. To achieve Drawdown: Marin’s Vision of creating a healthier, more resilient and equitable future, Drawdown: Marin determined it needed to understand the disproportionate impacts on some groups (primarily communities of color), the impacts of excluding (even if unintentional) those groups from the process, and how it could improve so that the implementation of solutions will be equitable.

## PAST AND EXISTING EQUITY WORK

Drawdown: Marin attempted to address equity and integrate it meaningfully into the initiative between 2018-2020. Acknowledging the need for and breadth of this work, Drawdown: Marin sought financial support from the Marin Community Foundation (MCF) for equity-related efforts. It applied for a grant in early 2019 and was awarded \$126,451 to “deeply engage communities of color in Drawdown: Marin.” This 1-year project included the following components:

- Dedicated CivicSpark Fellow (managed all project aspects with Drawdown: Marin Coordinator)
- Diversity, Equity, and Inclusion Trainings (3) for all Drawdown: Marin participants
- Equity Progress Report (measures progress and reports to the public)
- Community meetings, gatherings, and one-on-one meetings to build relationships and learn from Marin County communities of color
- Community Ambassadors (existing community leaders) – recruit, train, and compensate leaders so they can connect with their peers on climate change-related and other community priorities and share this information with Drawdown: Marin

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<sup>11</sup> Greenlining Institute, “Making Equity Real in Climate Adaptation and Community Resilience Policies and Programs: A Guidebook”, August 2019, available at <https://greenlining.org/wp-content/uploads/2019/08/Making-Equity-Real-in-Climate-Adaption-and-Community-Resilience-Policies-and-Programs-A-Guidebook-1.pdf>.

- Storytelling Training (online, 7-week course) to empower Community Ambassadors and other individuals to learn about additional tools and methods to share stories so decision-makers listen and act on community needs

## FUTURE EQUITY INITIATIVES

Addressing equity and antiracist work are an on-going efforts. Future work includes the following:

- Create a Racial Equity Task Force made up of Drawdown: Marin participants committed to advancing equity within Drawdown: Marin; this group would serve as stewards to update and hold Drawdown: Marin accountable to its goals and specific actions as outlined in the Equity Progress Report
- Create a Drawdown: Marin Equity Action Plan: a plan outlining ongoing actions and accountability metrics tied to racial equity goals
- Create an equity resource guide for Stakeholder Collaboratives and the COP when developing and implementing solutions and engaging the community, and for the Steering Committee when evaluating solutions
- Offer additional Diversity, Equity, and Inclusion trainings to participants
- Continue to evaluate and report on “equity” metrics as outlined in the Equity Progress Report
- Ensure representation on the board of a pending new non-profit (see Section VIII. for more information) is diverse and represents communities of color and other marginalized populations in Marin County, by practicing equity principals (see Equity Progress Report) throughout all steps of organizational development and implementation

# COMMUNITY ENGAGEMENT AND EMPOWERMENT

Between September 2018 and December 2020, engagement efforts were largely focused on building awareness of Drawdown: Marin, supporting existing organizations already addressing climate change and related issues, and inspiring people to take individual actions to reduce their carbon footprints. There is no budget for this outreach or engagement.

## COMMUNITY OUTREACH PARTNERSHIP

The COP, formerly known as the Community Partnership Council, led outreach and engagement efforts with support from the Drawdown: Marin Coordinator, CivicSpark AmeriCorps Fellow, and the County's Sustainability Team. The COP varied in size and participants changed frequently. Subcommittees were created to increase accountability between members and identify specific tasks for completion, but the groups still experienced varying levels of participation and commitment over time.

The COP formed four subcommittees to effectively engage the community and build partnerships with existing organizations:

- **Communications/Marketing:** Focused on developing a marketing plan and outreach assets (flyers, brochures, etc.)
- **Community Ambassadors and Events Tracking:** Trained individuals to speak about Drawdown: Marin, recruited volunteers to table at events, and coordinated public-facing outreach efforts generally
- **Network Mapping:** Developed a 300+ list of existing organizations doing work somewhat connected to climate change. Attempted to connect with those organizations to offer support for their efforts and to request promotion of Drawdown: Marin through organizations' existing outreach channels
- **Youth:** Students and young people were invited to participate on the COP and Stakeholder Collaboratives. Some students did participate and helped design Drawdown: Marin solutions and community engagement tactics. However, youth should have been more actively engaged in Drawdown: Marin and also put in decision-making roles. The AmeriCorps CivicSpark Fellow helped to form the Youth Subcommittee to identify barriers to youth participation, opportunities for improvement, and unique ideas for engaging the public in Drawdown: Marin

## OUTREACH EFFORTS

### Accelerating Community Engagement and Empowerment

Below are strategic initiatives Drawdown: Marin should implement between now and 2023 to accelerate community engagement in Drawdown: Marin.

#### ENGAGE MORE DIVERSE AUDIENCES

Drawdown: Marin must reach diverse demographic groups and those that traditionally do not engage in climate change related efforts or do, but have not participated in Drawdown: Marin for a variety of reasons. Specifically, youth and underserved or marginalized communities. Young people and frontline communities are active in and shaping the environmental movement. Drawdown: Marin has much to learn from these individuals and needs to understand how it can create spaces where these groups of people feel welcome and excited to participate. They have much to share when it comes to local activism and have already designed and implemented climate change engagement campaigns and activities that help solve the climate crisis.

#### COMPREHENSIVE MARKETING AND BEHAVIOR CHANGE CAMPAIGN

Drawdown: Marin needs to develop, with the help of a third-party, a comprehensive marketing and behavior change campaign/plan. To do this, it needs to identify funding to complete the plan, identify specific tactics and approaches for effectively engaging the Marin community, and implement those tactics/activities. One approach is Community Based Social Marketing (CBSM). CBSM involves the following: identifying barriers to behavior change, developing

and piloting a program that overcomes these barriers, implementing the program across a community, and evaluating the effectiveness of the program. Another approach is User Centered Design (UCD) is the process of developing a tool from the perspective of how it will be understood and used by a human. A tool can be developed to reflect users' existing beliefs, attitudes, and behaviors and create a more pleasant experience for the user. Additionally, different messages need to be developed and tested with the public to see what ones resonate and generate excitement. The campaign/plan will need to address all demographics, with a special focus on youth, communities of color, and high carbon footprint households, in Marin County and tailor messages and approaches to each unique group.

## AMBASSADORS

Drawdown: Marin needs all the help it can get to raise awareness of the Drawdown: Marin effort, to encourage individual and collective action, to pilot Drawdown: Marin solutions, and to raise funding to continue Drawdown: Marin. The COP started to recruit volunteers and these efforts should be continued and expanded. Additionally, Drawdown: Marin should consider creating a Community Ambassador program similar to One Tam's.<sup>12</sup> "One Tam's volunteer Ambassadors connect people to Mt. Tam and raise financial and volunteer support for One Tam's projects and programs. Ambassadors are our lead "friend-raisers", planning and hosting events, leading hikes, giving presentations, representing One Tam at community events and festivals, and expanding the mountain's support network."

## ENGAGE THE CITIES AND TOWNS

The cities and towns have been engaged in Drawdown: Marin to varying degrees. For example, representatives from the Marin County Council of Mayors and Councilmembers and Marin Climate and Energy Partnership serve on the Drawdown: Marin ESC. Additionally, elected officials and city/town/County staff are members of individual Stakeholder Collaboratives. Drawdown: Marin could and should do more to engage the cities and towns so that all local governments are equally engaged in, supportive of, and helping to implement the Drawdown: Marin Vision. Below is an overview of potential actions to accelerate inclusion of and action by all local governments:

- Recruit Marin County Council of Mayors and Councilmembers (MCCMC), Marin Climate and Energy Partnership (MCEP), and staff representative(s) to serve as a Board member on pending non-profit (see Section VIII for more information)
- Drawdown: Marin Coordinator (or representative) regularly attends Marin Climate and Energy Partnership (MCEP) meetings and reports on Drawdown: Marin's progress
- Present to all city and town councils and sustainability commissions about Drawdown: Marin generally including GHG reduction, resilience, and equity goals
- Assist Marin County jurisdictions to identify and implement climate change projects and programs; develop clear benefits and deliverables

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<sup>12</sup> OneTAM, Community Ambassadors, <https://www.onetam.org/community-ambassadors> (last visited Apr. 21, 2020).

# ORGANIZATIONAL FRAMEWORK AND FUNDING – 2021 AND BEYOND

The County of Marin has served as the backbone organization, coordinating and managing the Drawdown: Marin initiative since October 2017. Between October 2017 and September 2018, there was not a designated staff person focused on implementing Drawdown: Marin. In September 2018, one staff person was hired to coordinate the effort until September 2020. In Fall 2020, the Board of Supervisors will consider a budget request intended to provide continued funding for the Drawdown: Marin Coordinator and Media Tech (supports Drawdown: Marin by assisting with social media, newsletter creation, volunteer engagement, and website maintenance) positions through 2022.

The Drawdown: Marin Coordinator, Drawdown: Marin participants, the ESC, and members of the public all identified the need to develop a new organizational structure and secure long-term funding (in addition to the County allocation) so that Drawdown: Marin could continue beyond 2020.

## COUNTY AND NON-PROFIT JOINT ENDEAVOR

In March 2020, the ESC directed the Drawdown: Marin Coordinator to investigate the possibility of creating a County/non-profit partnership, which includes forming a new non-profit. The purpose of this joint endeavor is to increase fundraising ability and effectiveness and shift decision-making authority from the County to the new Board, made up of local jurisdictions and agencies, community members, non-profits, and business members.

### Current Status

The Drawdown: Marin Coordinator developed a formation process document and worked with a Marin Climate Action Network (MCAN) representative to develop a draft organizational chart and governance structure. This information was presented to an ESC Subcommittee in May 2020 who provided feedback and direction to the Coordinator.

### Next Steps

Based on feedback from the ESC Subcommittee, the following actions should be taken between June 2020 and December 2020:

- Form a 501c3, establish bylaws, file with the state, etc.
- Recruit Board members (15); indicate to them that we are just getting started, duties will be limited initially, but we need to set up the non-profit so we can effectively raise funding for Drawdown: Marin
- Identify 1-3 projects for implementation over the next 1-2 years; selected projects should be a mix of Drawdown: Marin solutions and other projects, e.g. priority projects from other jurisdictions or organizations; this will help show what is the value of Drawdown: Marin to Board members and the greater community
- Begin seeking one-time funding sources to implement projects, e.g. grants, County funding, etc.
- Use project implementation successes to fundraise
- Consider hiring a part-time development person with County funding (or other source) to raise private dollars in years 1-2; understand that funding is extremely uncertain considering existing circumstances

### Joint Endeavor Formation Timeline

- April 2020 – initial research/draft focused feedback questions
- May 2020 – develop brief overview document describing joint endeavor, purpose, etc.; present to ESC Subcommittee for feedback
- June – July 2020 – revise overview document; develop outline for recruiting board members; identify legal counsel or third-party assistance to form non-profit (if needed)

- September – October 2020 – finalize Drawdown: Marin Strategic Plan (to inform purpose/scope of non-profit); confirm initial operating budget (after County budget is approved in fall (likely October) 2020)
- November 2020 – begin formation process (see below for steps); develop Board Member solicitation/recruitment process
- November 2020 – develop job description and recruit for Development Manager/Director position (if funds are available)
- April - May 2021 – finalize formation of non-profit
- July 2021 – first Board meeting; apply for federal and state tax-exempt status, file required forms with state, obtain an Employer Identification Number (EIN)

## Funding

Additional funding is needed to continue the Drawdown: Marin initiative. The County, serving as the initial backbone organization, allocated funding for a 2-year full-time equivalent position and set aside \$20,000 for an operating budget, which was primarily used to reimburse staff for Drawdown: Marin meeting related expenses, trainings, Community Partnership Council outreach expenses, e.g. flyers, events, etc., and other small miscellaneous expenses. In June 2019, the Marin County Community Development Agency (Drawdown: Marin is a program of CDA) was awarded a \$126,451 grant by the Marin Community Foundation to implement work described in Section VII. In Fall 2020, the Board of Supervisors will consider a budget request for general Drawdown: Marin expenses, including, but not limited to: outreach/engagement, solutions implementation, participant trainings, etc. Additional funding is needed beyond the County’s initial contribution (see Table 1 below).

The magnitude of funding needed to continue this initiative is wide ranging and depends on the number and type of solutions implemented, scale of community engagement, number of additional Drawdown: Marin staff, and on-going initiative needs, e.g. workshops and trainings for initiative participants. Multiple different funding sources must be leveraged including grants, local government and agency contributions, individual and corporate donors, foundations, and possibly public funding mechanisms such as a sales or parcel tax.

Table 1: Estimated Funding Needs

Item	Amount Required (2021-2023)	Additional Information
Behavior Change and Outreach Plan and Campaign	\$250,000 - 500,000	Hire third-party individual or company; build on draft marketing and outreach plan developed by the Community Partnership Council; develop behavior-change campaign, marketing, outreach, engagement/empowerment, and advertising strategies.
Additional staff to coordinate Drawdown: Marin	\$135,000 per year (\$270,000 total)	Hire a Development Director or Manager to lead all fundraising efforts.
Solutions Implementation	\$150,000 - \$15,000,000	Depends on the solution, how many solutions are implemented, and the scale of implementation.
Countywide Decision-making Platform	\$50,000 per year (\$100,000 total)	Multiple licenses for use of DecisionLens tool; would be used by County and local government staff to evaluate sustainability projects using consistent criteria. Ability to generate public-facing reports.
Drawdown: Marin participant trainings, workshops, etc.	\$20,000 per year (\$40,000 total)	Strengthen the initiative by offering trainings and workshops on a variety of topics to Drawdown: Marin participants, e.g. diversity, equity, and inclusion, self-resilience, collective impact, etc.
Measuring Impact	\$250,000	Finalize impact evaluation criteria and develop comprehensive report to measure the impact of

Item	Amount Required (2021-2023)	Additional Information
		Drawdown: Marin; model after One TAM's 4- year study. <sup>13</sup>

The total funding needed for 2021-2023 for the items described in Table 1 is \$1.06m - \$16.3m. In June 2020, the Board approved 1-year extensions for the Drawdown: Marin Coordinator and Sustainability Team Media Technician (supports Drawdown: Marin's communication efforts). Any additional County of Marin Budget allocation is to be determined in Fall 2020. At that time, the Board will consider a request for funding Drawdown: Marin implementation efforts.

Drawdown: Marin proposes, as part of the formation of the joint County/non-profit endeavor described above, to hire a Development Director to actively pursue and secure funding The Director would be expected to raise at least \$500,000 in one year.

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<sup>13</sup> Amy Mickel, Ph.D. and Leigh Goldberg, *Generating, Scaling Up, and Sustaining Partnership Impact: One Tam's First Four Years*, available at [https://www.onetam.org/sites/default/files/pdfs/Generating\\_Scaling\\_Up\\_and\\_Sustaining\\_Impact-One\\_Tam's\\_First\\_Four\\_Years.pdf](https://www.onetam.org/sites/default/files/pdfs/Generating_Scaling_Up_and_Sustaining_Impact-One_Tam's_First_Four_Years.pdf) (last visited June 22, 2020).

# LESSONS LEARNED

Climate change is a complex problem and one that is not easy to solve. Bringing together hundreds of people and organizations to create and implement a common agenda is important yet challenging. The Marin Climate Action Network (MCAN) and the County of Marin chose to use several frameworks to address this complexity, relying most heavily on the Collective Impact model (see Appendix A for more information). As the backbone organization, the County was and is in a unique place to observe what went well and what could be improved.

## STEPS NEEDED FOR CONTINUED GROWTH

As Drawdown: Marin moves from its initial phase (2017-2020), it must consider the following opportunities for change and growth:

- One dedicated staff person is not enough to coordinate the initiative. Additional staff must support fundraising, outreach, and general operations of the initiative
- Volunteer commitment varies and is unpredictable. Without monetary compensation or other significant support, volunteers are likely not to be committed to the initiative consistently and long-term
- Existing organizations remained partially siloed and struggled to balance the goals of Drawdown: Marin with their own organizations' goals, including fundraising
- Cities, towns, and local agencies were involved and committed to varying degrees, which impacted how realistic the Drawdown: Marin solutions were and the chances they are implemented successfully
- The County was perceived as slow and bureaucratic. Organizations regularly voiced concern about "how things were going" and this led to decreased overall morale and support for Drawdown: Marin among the 150 volunteers
- Lack of committed funding to support volunteers, solutions development and implementation, fundraising, and community engagement and empowerment was a consistent barrier to buy-in from Drawdown: Marin participants and the general public
- Each working group had unique challenges; some are described as follows:
  - ESC
    - Participation varied by meeting
    - Only some members were willing to serve on subcommittees and do work outside of monthly meetings
    - Group struggled to make decisions at times
  - COP
    - Participation varied by meeting
    - Subcommittee members were enthusiastic at all-COP monthly meetings, but struggled to complete tasks between meetings
    - Lack of funding for outreach materials and to compensate COP members for time spent at events
    - Lack of diversified outreach tactics
    - Lack of group cohesion and vision
  - Stakeholder Collaboratives
    - Participant burnout
    - Participants struggled to collaborate via Google Drive
    - Participants brought forward underdeveloped proposals or proposals linked to a personal project

- Some Collaboratives functioned better than others – those with strong Chairs and small group leaders flourished
  - Participants lost faith in the process – once solutions were presented to the ESC, they wanted clearer next steps and funding to implement or continue working
  - Participants were unable to commit time to the initiative long-term unless it was considered part of their workday/job description
- Collective Impact encourages collaborative and consensus decision-making, which ensures all voices are heard and considered, ideas are connected, and siloes are broken down, but can also slow things down. For some, Collective Impact is at odds with their sense of urgency and desire to act quickly to solve climate change. However, climate change is a complex problem, one that cannot be solved by one organization. Drawdown: Marin felt it necessary to slow down, build relationships, develop a common agenda among dozens of existing non-profits and government entities already addressing climate change, and to create a system where progress could be measured and results reporting regularly. It is still a work in progress, but the framework is set up to continue this work beyond 2020.

## MEASURING SUCCESS

Drawdown: Marin believes it is important to understand the impact of formalized, collaborative efforts and so, the ESC developed Impact Evaluation Criteria so it could measure the success of the initiative over the 2-year initial project timeline. The ESC developed criteria to measure impact in the following areas: Collective Impact Initiative, Environmental, Equity, and Economic. The Drawdown: Marin Coordinator referenced these criteria when developing the participants surveys described below.

Drawdown: Marin developed a participant survey and hosted a Collective Impact Workshop in November 2019 to measure the opinions of ESC, Community Partnership Council, Collaborative, and Advisor participants to determine if the initiative was valuable, well-managed, and collaborative.

## Overview of Year 1 Results

The survey was sent to over 150 people and 58 responded. The majority of participants believe that Drawdown: Marin is:

- Advancing a collective vision that transcends organizational boundaries
- Effectively coordinating the effort by facilitating meetings, connecting people, and developing new ideas
- Bringing together entities from across the county to limit redundancy of climate change focused efforts

Participants also identified the following challenges or areas for improvement:

- Need more funding for all aspects of Drawdown: Marin
- Need to increase marketing/branding/publicity/communication with the public
- Need to implement solutions now
- Keep connecting people and organizations across the county
- Pilot solutions by implementing, reviewing, and implementing again
- Build community awareness and engagement with Drawdown: Marin
- Continue to advance equity by working with underserved/vulnerable communities throughout the county
- Seek and secure funding, e.g. grants, donations, etc.

Additional surveys and evaluation efforts may be developed in the future.

## ACT NOW!

We must act now. Our opportunity to proactively address climate change is slipping away. We know what we need to do and it will require us to try new ideas, fail, and try again. It also requires us to allocate real resources to this crisis. We need long-term funding, we need time and dedicated people to build meaningful relationships with our communities, and we need to address climate change as part of “normal” operations. The Plan is ambitious and describes several paths forward. It will only be valuable to Marin and other communities if we implement the solutions developed by 150 plus volunteers over two years. We have amazing privilege and opportunity and the ability to set an example for other local governments.