

# DRAWDOWN: MARIN STRATEGIC PLAN



- STORIES ARE PERSUASIVE + ENGAGING
- STORIES CAN HELP PEOPLE GET EXCITED ABOUT DRAWDOWN
- WE ARE PASSIONATE ABOUT CLIMATE CHANGE ACTION AND PPL WILL PICK UP ON THAT



## DRAWDOWN

December 2020

Prepared by County of Marin Sustainability Team

# ACKNOWLEDGEMENTS

## Honoring the Land and its Original Stewards

Marin County acknowledges that we are currently gathered on the ancestral homelands of the Coast Miwok. The Coast Miwok people have been the stewards and caretakers of these lands since time immemorial. Today, the Coast Miwok are one of two Tribal groups, alongside the Southern Pomo, who comprise the citizenship of the Federated Indians of Graton Rancheria.

The following Strategic Plan makes clear that our collective climate goals cannot be realized without a commitment to community, consideration for and attention to the role we play in our local ecosystem, and a willingness to build a future that serves and protects all residents of Marin County.

## 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
Federated Indians of Graton Rancheria	Organizing for Action (OFA) Marin
FireSafe Marin	Resilient Neighborhoods
GRID Alternatives	Sanzuma
In-home Social Services	Shore up Marin City
Local Government Commission	Sustainable Marin
Marin Bicycle Coalition	Sustainable San Rafael
Marin Carbon Project	Systems Thinking Marin
Marin City People's Plan	The Climate Center
Marin Climate Action Network	Transportation Authority of Marin
Marin Climate and Energy Partnership	West Marin Community Services
	Zero Waste Marin

## County of Marin Staff:

Supervisor Kate Sears, District 3  
Supervisor Damon Connolly, District 1  
Sarah Estes-Smith, Aide to Supervisor Sears  
Mary Sackett, Aide to Supervisor Connolly  
Dana Armanino, Community Development Agency (CDA)  
Alex Porteshawver, CDA  
Jennifer Kinion, CDA

Liz Darby, CDA  
Max Korten, Parks  
Chris Choo, Department of Public Works (DPW)  
Roger Leventhal, DPW  
Dr. Matt Willis, Health & Human Services  
Stefan Parnay, Agriculture, Weights and Measures  
Bret Uppendahl, Office of the County Administrator

## Cited As:

County of Marin. 2020. Drawdown: Marin Strategic Plan.

## Image Credits

Unless otherwise noted, photographs and graphs that appear in this Strategic Plan are by Drawdown: Marin.

## Document Accessibility



Requests for disability accommodations for this document or any of its Appendices may be made by phoning (415) 473-3292 (Voice), CA Relay 711 or by e-mail at [drawdown@marincounty.org](mailto:drawdown@marincounty.org).

# TABLE OF CONTENTS

CALL TO ACTION .....	1
ACTION IN TODAY’S WORLD.....	2
ROADMAP – HOW DO WE GET TO “DRAWDOWN”? .....	3
ACHIEVING THE 2030 GOAL.....	4
ACHIEVING THE 2045 GOAL.....	5
EQUITY AND COMMUNITY EMPOWERMENT .....	6
WHAT’S NEXT FOR DRAWDOWN: MARIN?.....	7
WHAT CAN YOU DO NOW?.....	8
WHAT IS DRAWDOWN: MARIN?.....	10
DRAWDOWN: MARIN VISION AND GOALS .....	11
MARIN COUNTY’S CLIMATE IMPACT.....	12
Consumption-Based Emissions Inventory (CBEI).....	13
DRAWDOWN: MARIN LOCAL CLIMATE CHANGE SOLUTIONS.....	15
Now (2021-2023) – Endorsed Solutions .....	15
Now (2021-2023) – Additional Solutions.....	17
Then (2024-2030) .....	20
Next (2031-2045).....	21
MEASURING PROGRESS.....	23
EQUITY AND COMMUNITY RELATIONSHIPS.....	24
Lack of Diverse Participants Representing All Marin Communities .....	24
Past and Existing Equity Work .....	24
Future Equity Initiatives.....	25
COMMUNITY ENGAGEMENT AND EMPOWERMENT .....	26
Background.....	26
Community Outreach Partnership .....	26
Future Outreach Efforts .....	27
ORGANIZATIONAL FRAMEWORK AND FUNDING – 2021 AND BEYOND .....	29
Nonprofit-County Joint Endeavor.....	29
LESSONS LEARNED .....	33
Steps Needed for Continued Growth .....	33
Measuring Success – Years 1-2 .....	34
ACT NOW!.....	35



# CALL TO ACTION

Imagine by 2030 that:

- All Marin County residents are represented and integrated into a collective effort to address climate change.
- Marin farms and ranches are implementing proven techniques developed in the County to keep carbon in the ground while improving local air and water quality.
- Bicyclists commuting to work on bike paths under clear blue skies.
- Close to half of vehicles on the road no longer cause air pollution.
- We closed the loop on growing food locally and feeding those who live here with fresh, healthy produce.
- Thousands of Marin residents shift to clean energy sources and consume less.

We can and will work toward this future through Drawdown: Marin, 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 and implement 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 under "normal" circumstances much less the times we find ourselves in. 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 other pressing challenges, 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
- Appendix F Responses to Public Comments on the July 2020 Public Draft Strategic Plan

# ACTION IN TODAY'S WORLD

We need to continue our push to dramatically reduce GHG emissions. We do not have the luxury of waiting for things to get “back to normal”. Normal is no longer good enough, we must create a different future. Climate change is and will remain a critical area of public concern.<sup>1</sup> That being said, we do need to act in the context of other equally critical issues like systemic racism and COVID-19. We need to develop climate solutions with direct input from the community and these solutions must be accessible by a broad segment of our community. We need to examine our own biases and how those biases may impact how we approach climate change and how we develop and implement programs and policies. We must also consider that individuals and families are faced with new and pressing priorities that may be just as or more important – home schooling, mental and physical health, and a secure place to live, to name a few.

We should also link our climate change work to other planning efforts and required processes. For example, Senate Bill (SB) 379 requires local general plans to address climate change adaptation and resilience strategies and SB 1000 requires local governments to identify disadvantaged communities within the area covered by their general plan and promote meaningful engagement of those communities in the development of an environmental justice plan. These are just two examples of existing mandates that could be met in part by implementing Drawdown: Marin solutions. This creative thinking is necessary as all local governments experience extreme budget shortfalls as a result of COVID-19.

We must also create new and innovative ways to engage with people virtually and consider the many demands on people's time and resources. By continuing to connect with people, we let them know we are working to address climate change and their opinions and priorities matter. These deeper connections will have ripple effects and allow Drawdown: Marin to connect community members with resources they need to lead more sustainable and healthy lives.

---

<sup>1</sup> Gary Yohe, Benjamin Santer, Henry Jacoby, and Richard Richels, Key messages about climate change: an introduction to a series, available at <https://yaleclimateconnections.org/2020/09/key-messages-about-climate-change-an-introduction-to-a-series/> (last visited Sept. 17, 2020).

# ROADMAP – HOW DO WE GET TO “DRAWDOWN”?



“Drawdown” refers to the point in time when GHG emissions are reduced below zero and we begin to sequester more than we emit. Drawdown: Marin set an interim goal of 60% reduction of GHG emissions below 2005 levels by Marin County by 2030 and drawdown of GHG emissions by Marin County below zero by 2045.

If we implement the below listed mitigation and sequestration solutions we can exceed the Drawdown: Marin 2030 goal on a path to meet the 2045 goal. Addressing climate change is far more complex than meeting numeric goals. We must address climate change holistically by addressing whole ecosystem degradation, preserving existing trees and vegetation that are already storing carbon, and acknowledging that we, humans, are part of a complex system that we do not and should not control.

We need to work rapidly to address human interference and impacts on these complex systems. Implementation of these solutions, and new solutions developed over the coming years, will depend on a variety of factors including available funding sources. Therefore, the path forward is not prescriptive. Drawdown: Marin will support the implementation of solutions in 2021 and beyond as staff time and funding permits.

# ACHIEVING THE 2030 GOAL

The Drawdown: Marin Collaboratives calculated *estimated* GHG emissions reductions for some of the solutions they developed. There are other solutions (endorsed and not endorsed) that can be implemented between 2021-2030, but GHG emissions reductions are currently unknown (see Appendix E for more information). The estimates below reflect countywide implementation of the solutions – including cities, towns, and unincorporated Marin County.

The annual GHG emissions reductions listed below are estimates. The calculation methodology may or may not be aligned with best-practices and current protocols. Drawdown: Marin recommends that GHG emissions reductions are calculated again, in line with current protocols, when implemented and/or when integrated into the County's and city and town's climate action plans.

Table 1 Achieving the Drawdown: Marin 2030 Goal

	Estimated Annual GHG Emissions Reductions (MTCO <sub>2e</sub> )	Estimated Total Funding Needed to Achieve Reductions (\$) (2021-2030)	Endorsed by ESC?
Zero Emissions Vehicles – Drive Clean Bay Area	408,000 (by 2030)	1,371,000	Yes
Marin Carbon Farming Initiative (Manure Management, Mitigation Only)	79,336 <sup>2</sup>	See table below.	Yes
Microgrids – Fairfax Pavilion Pilot Project	34 (by 2021)	25,000	Yes
Resilient Neighborhoods – Climate Protection and Resilience (CPR) for the Planet	9,427 (by 2030)	1,800,000	Yes
Load Shift Pilot Program	2,500-7,500 (depending on participation) (date unknown)	Unknown	No
Community-based Integrated Mobility Services	22,850 (3 years after launch)	2,200,000 (3 years only)	No
Organic Waste Diversion & Public Compost Use	12,475 (date unknown)	510,000 (one-time expenditure)	No
<b>TOTAL Mitigated/Funding Needed</b>	<b>534,622 MTCO<sub>2e</sub></b>	<b>\$5,906,000</b>	
<b>2030 Reductions Needed to Meet Goal (60% below 2005 levels)</b>	<b>482,629 MTCO<sub>2e</sub></b>		
<b>Met 2030 Goal?</b>	Yes, exceeded by 51,993 MTCO <sub>2e</sub>		

<sup>2</sup> Manure management directly mitigates agricultural-related emissions. Other practices sequester additional carbon beyond what is directly emitted at a farm or ranch (see Table below).

# ACHIEVING THE 2045 GOAL

In addition to implementing the solutions listed above (and others listed in Appendix E), we must preserve and enhance our natural and working lands so that carbon remains stored in trees, vegetation, soil, and water. The solutions below must be implemented to achieve the Drawdown: Marin 2045 goal.

It is currently not best practice to calculate potential GHG emissions reductions resulting from state and local policies in 2045 because methodologies, technologies, legislation, etc. are likely to change between now and then. For purposes of this Roadmap, the below is an estimate of the potential gap between projected countywide emissions after implementation of the Drawdown: Marin solutions and the “Below 0” 2045 goal. These estimates will need to be recalculated as methodologies and programs change. It is possible that additional state and local policies may reduce the gap listed below.

Table 2 Achieving the Drawdown: Marin 2045 Goal

Source of Sequestration	Carbon Sequestered Annually (MTCO <sub>2e</sub> )	Estimated Total Funding Needed to Achieve Reductions (\$) (2021-2030)	Endorsed by ESC?
Marin Carbon Farming Initiative (Sequestration)	185,839 (by 2030) and 525,000 (by 2045)	20,600,000	Yes
Planting New Trees	106	Unknown	No; not presented to the ESC
<b>TOTAL Sequestered</b>	525,106		
<b>TOTAL Mitigated</b>	534,622 (assumes mitigation actions listed above continue from 2030-2045)		
<b>TOTAL Mitigated + Sequestered/Funding Needed</b>	<b>1,059,728</b>	<b>\$20,600,000</b>	
<b>2045 Goal</b>	Below 0		
<b>2045 Projected Countywide Emissions</b>	1,454,166		
<b>Remaining Gap to Meet 2045 Goal</b>	<b>394,438</b>		

# EQUITY AND COMMUNITY EMPOWERMENT

Engaging and empowering the entire community to participate in Drawdown: Marin is crucial to achieving our goals. Additionally, Drawdown: Marin must continue to link equity and climate – interconnected issues that cannot be addressed individually. Drawdown: Marin must consider the following ideas as it addresses climate change.

- Climate change poses the greatest threat to those least responsible for causing it and these same individuals are often left out of climate change and implementation planning processes. Drawdown: Marin acknowledges that it has much work to do to incorporate the opinions of all Marin communities including communities of color, senior citizens, youth, lower income persons, and non-English speakers. Without their involvement, our efforts to address climate change will not be successful or lead to long-term change.
- Solutions should support or directly increase local affordable housing near public transit and job centers.
- Solutions and community engagement must support vulnerable communities to implement existing community priorities and projects and new climate change solutions.

# WHAT'S NEXT FOR DRAWDOWN: MARIN?

The next phase of Drawdown: Marin is focused on engaging the community, identifying funding to implement the solutions, and implementing projects and programs that reduce GHG emissions, address equity, and increase community resilience. As of Fall 2020, the ESC determined that a nonprofit-County joint endeavor is necessary to accomplish the above-stated goals (see Organizational Framework and Funding section below for more details).

When formed, the nonprofit Board of Directors will include government officials, city and town elected officials and staff, and community members. Additionally, development staff may need to be hired. This staff, along with the Executive Director, administrative personnel, and other support staff will work together to secure funding including public money, grants, and private dollars. The Board of Directors will hold Drawdown: Marin staff accountable to achieving the Drawdown goals.

## 2021 Timeline

- Continue recruiting Board Members (January-May)
- Continue implementing Drawdown: Marin solutions (January-December);
- Identify funding to accelerate solutions implementation (at least \$500,000) (January-December)
- Identify funding to develop a comprehensive marketing and behavior change campaign (April)
- Form new nonprofit (July)
- Consider hiring development staff (July)



# WHAT CAN YOU DO NOW?

The above-listed solutions require several agencies and organizations to start or continue complex planning and implementation processes. While this work is happening, there are actions you can take right now that will make a difference and help to meet the Drawdown: Marin goals.



## RENEWABLE ENERGY

- Switch to MCE Deep Green or PG&E Solar Choice 100% renewable electricity at <https://www.mcecleanenergy.org/opt-up/#optupform>.
- Install a solar energy system on your home or business and consider battery storage.
- Replace appliances that use natural gas for ones that use electricity and apply for an Electrify Marin rebate.
- Investigate heat pump technology so you can swap out heaters and furnaces that use natural gas when it's time to replace them.



## BUILDINGS + INFRASTRUCTURE

- Replace indoor and outdoor lights with LED bulbs and turn them off when not in use.
- Have an energy assessment done for your home or business.
- Upgrade insulation, seal leaks, and install a programmable thermostat.
- Purchase Energy Star appliances and equipment.
- Unplug electronic appliances when not in use.



## TRANSPORTATION

- Bike, walk, or take transit whenever possible.
- Drive an all-electric or plug-in hybrid vehicle.
- Reduce the number of miles you drive by working from home when possible.
- Shut your car off when waiting in line at the ATM or in the school pick up/drop off lane.
- Encourage your child to walk or bike to school.



## CARBON SEQUESTRATION

- If you are a farmer or rancher, consider developing and implementing a carbon farm plan.
- Support local farms that produce products in a sustainable way.
- Plant a tree.



## LOCAL FOOD + FOOD WASTE

- Buy only as much as you need and compost what you can't use.
- Buy locally grown food and eat less meat.
- Put your food scraps in the green can and/or compost them at home.
- Donate extra food.



## CLIMATE RESILIENT COMMUNITIES

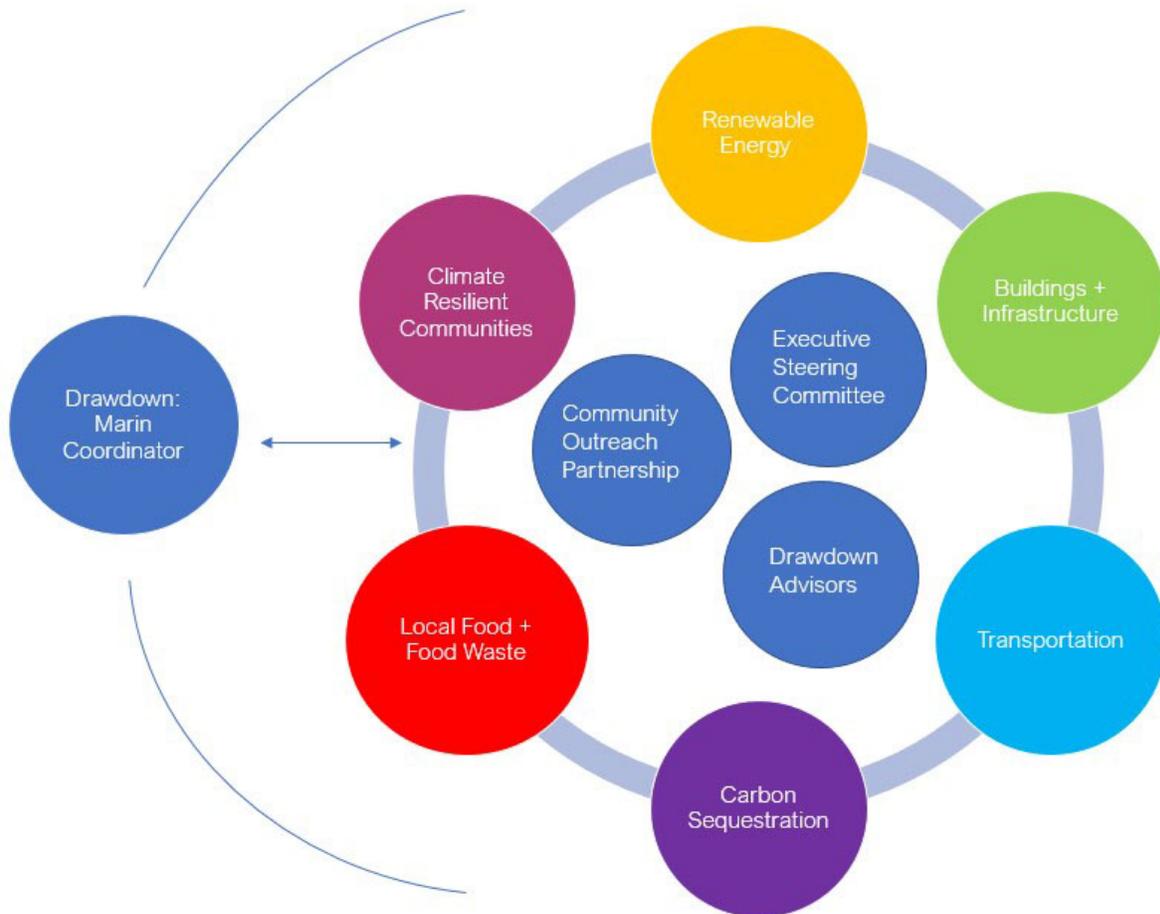
- Find out if your home or business is vulnerable to sea level rise at Our Coast Our Future.
- Prepare for more wildfires. Join or create a Firewise community; create a defensible space, harden your home, and have an emergency evacuation plan. Learn how at [www.firesafemarin.org](http://www.firesafemarin.org)
- Install solar with battery storage to get through power outages.

# 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.

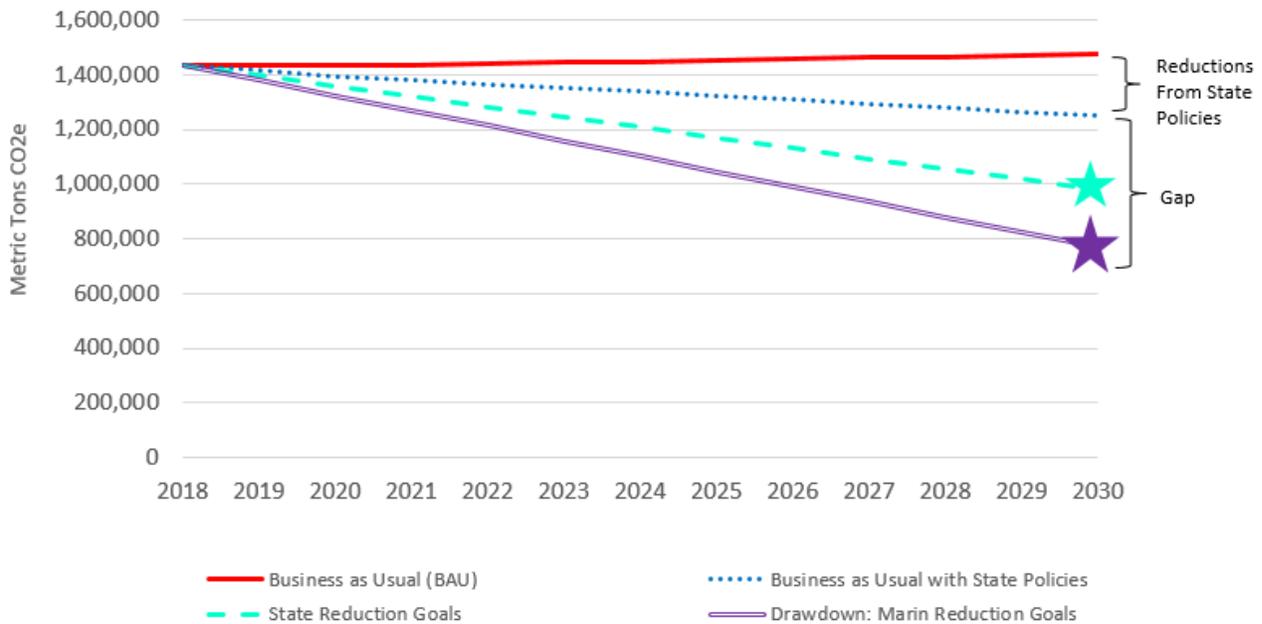
Vision: Marin reverses its impacts on climate change by implementing local solutions as we create a thriving, equitable, and resilient future for all.

Goals:

- 60% reduction in GHG emissions by Marin County below 2005 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 must set its own goals in its Climate Action Plans. For example, in 2020 the City of San Rafael set a minimum 40% reduction in GHGs by 2030. The County updated its Climate Action Plan and set GHG reduction and sequestration goals aligned with Drawdown: Marin’s. To reach our countywide goals, all cities and towns must set aggressive goals and implement a variety of GHG reduction measures, including the Drawdown: Marin solutions.

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



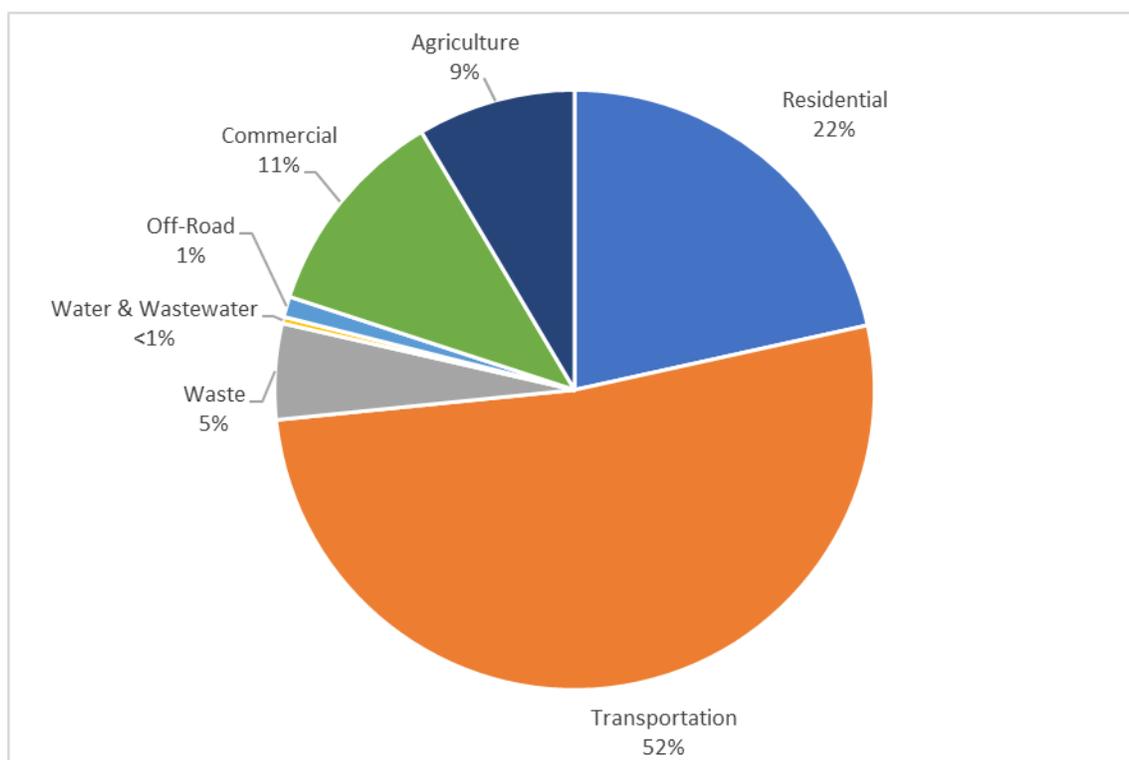
# MARIN COUNTY'S CLIMATE IMPACT

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>3</sup>) or consumption-based (some jurisdictions are measuring and reporting these emissions, but it is not the formally adopted protocol).

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



The latest year data is currently available is 2018.

<sup>3</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.

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)

CBEIs 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>4</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>5</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>6</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.

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

---

<sup>4</sup> See *Consumption-Based Emissions of C40 Cities*, available at <https://www.c40.org/researches/consumption-based-emissions> (last visited Mar. 18, 2020).

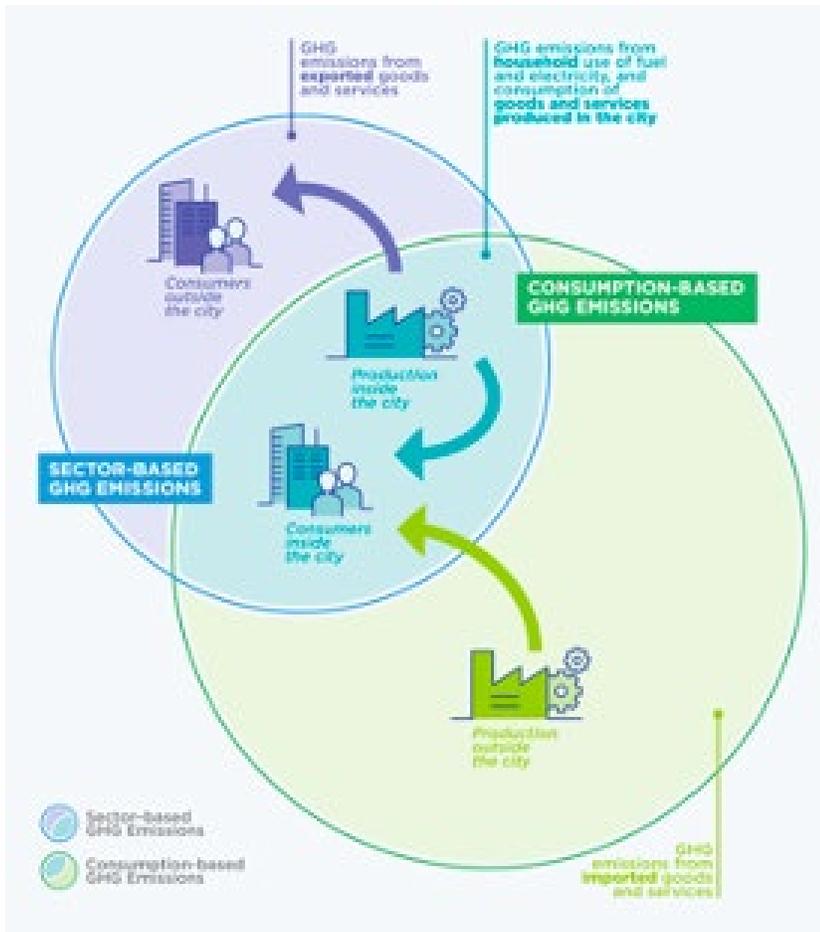
<sup>5</sup> Information is available at <https://www.baaqmd.gov/about-air-quality/research-and-data/emission-inventory/consumption-based-ghg-emissions-inventory>, last visited March 16, 2020.

<sup>6</sup> *Consumption-Based GHG Emissions of C40 Cities*; for more information the C40 cities, visit <https://www.c40.org/cities>.

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>7</sup> Additionally, our neighbors living in the City of Richmond experience much worse air quality<sup>8</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.

Figure 4: Production-based vs. Consumption-based



The following consumption-based emissions icon is used in this document and appendices to represent measures that address consumption-based or embodied emissions in the goods and services we purchase and use.



<sup>7</sup> Marin County CalEnviroScreen 3.0 results, available at <https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30>, (last visited Mar. 18, 2020).

<sup>8</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 (mitigation) were implemented by 2030, estimated annual GHG emissions reductions are approximately 534,622 MTCO<sub>2</sub>e annually, exceeding the 2030 goal of 482,629 MTCO<sub>2</sub>e reduction.** An additional 525,106 MTCO<sub>2</sub>e can be sequestered, beyond direct emissions mitigation by 2045. There is still a “gap” of 394,438 MTCO<sub>2</sub>e that needs to be reduced or sequestered to meet the 2045 goal. Some of this gap could be filled by State and local policies not yet enacted.

The GHG emissions reductions and sequestration 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) 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.



### 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.



### MARIN CARBON FARMING INITIATIVE

This initiative would expand Carbon Farm Planning and high impact measure implementation to reach a large scale of acreage and operations in Marin County; by 2030, it would engage, 60 Marin farms and ranches across 30,000

acres, sequestering 185,839 MTCO<sub>2</sub>e<sup>9</sup> and by 2045, it would engage 180 Marin farms and ranches across 90,000 acres<sup>10</sup>, sequestering over 525,000 MTCO<sub>2</sub>e.



#### 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 (🔄💰)

Assess the biomass recovery flows in Marin County and analyze different sequestration and GHG emissions reduction potential of alternative recovery pathways. The study will inventory existing biomass flows and increased flows due to SB 1383 (2016) and Measure C (2020). Funding is needed to conduct the study.



#### MICROGRIDS – FAIRFAX PAVILION PILOT PROJECT (🔄💰)

The Town of Fairfax and its partners are working to 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 nonprofits 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 may include community gardens, health clinics, communications center, green power, and recreational/educational opportunities.



#### RESILIENT NEIGHBORHOODS - CLIMATE PROTECTION AND RESILIENCE (CPR) FOR THE PLANET (🔄💰)

CPR for the Planet will adapt Resilient Neighborhood's (RN) proven comprehensive behavior-change program to engage residents throughout Marin in reducing 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>2</sub>e annually by 2023 and 3,713 residents to reduce 9,427 MTCO<sub>2</sub>e 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

---

<sup>9</sup> Estimates provided by Jonathan Wachter, Marin Agricultural Land Trust, Sept. 23, 2020.

<sup>10</sup> There are 167,000 acres of farms and ranches in Marin County. The University of California Cooperative Extension (UCCE), Amazing but True Facts about Marin County Agriculture, available at <https://ucanr.edu/sites/uccemarin/files/30457.pdf>.

programs that include consumption, reducing climate anxiety, and engage everyone in achieving climate responsible lifestyles.

## 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 use in the evenings when electricity often 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. Load shift programs are also available for business customers. Shifting when they use electricity to non-peak times can dramatically reduce demand charges on their electricity bills lowering their overall operating costs.



## 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 post-2020 and/or leverage lessons learned to design and implement a more comprehensive program that results in more appliance conversions. The County should continue working with MCE Clean Energy to educate people about MCE’s GHG Free campaign and the ability to opt up to 100% renewable energy.



## 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, working with local jurisdictions to coordinate a food recovery network as required by SB 1383.



## 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<sup>11</sup> 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>12</sup> Over 50% of countywide emissions are attributed to the transportation sector and this development approach would decrease dependence on cars for mobility. Inventory the existing areas, such as those in the Countywide Plan, that have TOD zoning or overlays. Existing zoning may need revisions to allow for increased density and mixed-uses near transit, e.g. SMART train stations.

---

<sup>11</sup> Drawdown: Marin does not have an official stance on whether expanding 5G in Marin County is necessary to support the interconnecting and use of EV charging stations, smart phones, and other smart devices. It will need to be further assessed as part of development of ordinances and policies.

<sup>12</sup> Homepage, <http://www.tod.org/> (last visited Apr. 10, 2020).



## 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>13</sup> Using the interactive maps developed by the State, local jurisdictions should understand what state-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>14</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

---

<sup>13</sup> See Executive Order N-06-19 Affordable Housing Development available at <https://cadgs.maps.arcgis.com/apps/webappviewer/index.html?id=392e5e687e9041bb8f20e3acc5b211c7> (last visited Nov. 18, 2020). There are 4 potential sites in Marin totaling 19.93 acres. See *id.*

<sup>14</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).

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.

# MEASURING PROGRESS

Various governments, organizations, and individuals will ultimately be responsible for implementing the above-described solutions. Drawdown: Marin may also serve as lead implementer and will continue to coordinate and accelerate collaboration and partnerships needed to implement programs and projects and achieve our 2030 and 2045 goals.

The new (see below) nonprofit-County joint endeavor will develop annual progress reports and publish those reports for public consumption. The new Board of Directors will hold nonprofit staff accountable for reaching the Drawdown: Marin goals. These reports will cover a variety of topics including but limited to:

- Number of solutions implemented.
- GHG Emissions reductions achieved and carbon sequestered.
- Dollars raised to support Drawdown: Marin and solutions implementation.
- Cost of programs and projects implemented.
- Partners engaged; partnerships/collaborations formed.
- Board goals, activities, and fundraising.

Additionally, the County will track and report on the status of Drawdown: Marin solutions included in the 2020 Climate Action Plan Update. The County measures GHG emissions reductions and strategy implementation efforts on an annual basis to the Climate Action Subcommittee (made up of County department heads and two County Supervisors).

# 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>15</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 nonprofits, 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 AmeriCorps 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

---

<sup>15</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 on-going efforts. Future work includes the following:

- Create a Racial Equity Task Force focused first on internal equity initiatives; this group will identify ways to diversify the task force (internally and by integrating community members when an inclusive space has been created), increase the accessibility of the solutions, increase diversity of Drawdown: Marin leadership and working groups, and identify ways to 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 new nonprofit Board of Directors (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

## BACKGROUND

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.

Drawdown: Marin hosted a launch event held at the Marin Center, which was attended by over 400 people. It featured high school students, a panel discussion that included Paul Hawken, and “ambassadors” in the exhibit hall who represented 5 sectors and engaged with attendees, explaining the issues and ways each person could act. County staff also developed a DRAWDOWN Marin page on the Marin County website in early 2018.

In September of 2018, Drawdown: Marin co-sponsored Time to Lead on Climate’s event, “Getting to Paris Without Stopping in Washington”, attended by 800 people. Flyers, posters, and 6 flag banners were designed and produced for use at the event. A month later, Drawdown: Marin presented at Bioneers and was promoted at the Sustainable Enterprise Conference, both held at Embassy Suites in San Rafael. As of 2020, Drawdown: Marin is also one of three “Drawdown Communities” in the United States. Closer to home, Drawdown: Marin has also been featured in local publications including the March 2020 issue of Marin Magazine as one of five “climate warriors” in Marin County.

## 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 made numerous presentations to community groups, produced flyers, staffed a booth for 5 days at the 2019 Marin County Fair, tabled at numerous local events, including “Drive EV” events, the 2019 Sustainable Enterprise Conference, and the Community Heroes Day of Giving at MCOE in March of 2020.

The COP varied in size and participants changed frequently. The COP does have dedicated group of approximately 15 members representing a variety of sectors. The COP attempted to include and work with high school students and 2-3 students did attend COP meetings sporadically. A youth subcommittee was formed and it met outside of monthly COP meetings to discuss how it could help promote Drawdown: Marin. It did not have the opportunity to present its ideas to the COP before COVID-19 interrupted the COP’s regularly scheduled meetings. Subcommittees (see below) 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

## FUTURE OUTREACH EFFORTS

### Accelerating Community Engagement and Empowerment

Drawdown: Marin will continue work to engage the entire Marin community to dramatically reduce Marin's GHG emissions. This will require the new Board of Directors, the Executive Director, and Drawdown: Marin staff to thoughtfully engage with all people through creative communications that people can understand, support, and act on. Until March of 2020, outreach efforts were largely conducted in public settings: one-on-one meetings with community members, conferences, community events, group meetings, and other public gatherings. The COVID-19 era requires a completely new approach to outreach and engagement.

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.

#### SOCIAL MEDIA AND WEBSITE

Drawdown: Marin primarily relies on Facebook to share and promote relevant content. These posts focus on Drawdown: Marin events, plans, and activities, share partner organizations' efforts, and re-post relevant content from a variety of aligned organizations and media outlets. These efforts should continue in the short-term. Additionally, Drawdown: Marin staff maintain the website, currently housed on the County's platform. The website provides information on the initiative, ways to act on climate, and relevant events, meetings, and documents. It may need to be updated to draw additional traffic and excite users. The importance of updating the website will be evaluated as part of the Comprehensive Marketing and Behavior Change Campaign referenced below.

#### 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 that focuses on promoting Drawdown: Marin generally, motivating individuals to support and take action on climate change and equity issues, and supporting partner organizations already implementing behavior change programs, policies, and projects. For example, "sign up for a Resilient Neighborhoods team" or educate the public about MCE Clean Energy's GHG Free campaign and the need to switch to electric appliances that use this clean energy. To do this, it needs to identify funding to complete the plan, identify specific tactics and approaches to effectively engage 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 understand existing community priorities and integrate those in the 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>16</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." Finally, as part of our MCF grant-funded work, close to 25 community members and students signed up to serve as Ambassadors and will complete a storytelling training, connect with their peers, and identify community projects that address climate change and improve their quality of life. It is possible that both Ambassador programs can be combined in the future to reach more communities.

## 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 nonprofit (see Section VIII for more information).
- Utilize the email lists of cities, towns, and special districts to share Drawdown: Marin events, ideas, solutions, and opportunities to become involved at the local level.
- 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; encourage cities and towns to incorporate Drawdown: Marin goals and solutions in their CAPs as they are updated for 2030.
- Assist Marin County jurisdictions to identify and implement climate change projects and programs; develop clear benefits and deliverables.

---

<sup>16</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.

## NONPROFIT-COUNTY JOINT ENDEAVOR

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

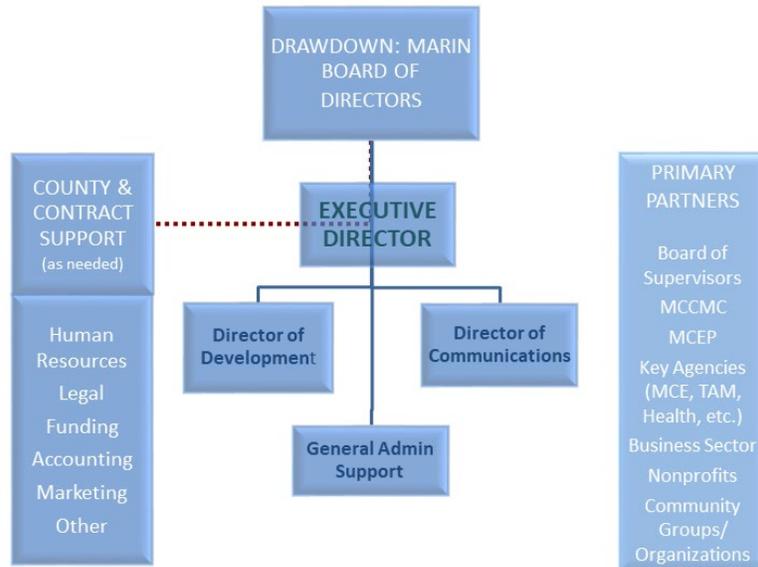
### Key Functions of Drawdown: Marin Board of Directors

- Oversee implementation of Drawdown: Marin vision, mission, goals and solutions implementation
- Endorse new solutions to achieve goals
- Identify and coordinate funding for solutions implementation and nonprofit operations
- Support comprehensive public outreach
- Exercise fiduciary responsibility, oversight, and reporting
- With Executive Director, set policy direction
- Review performance of Executive Director and Development Director
- Support the nonprofit via active committees (solutions, policy, funding, outreach, etc.)

### Suggested Composition of Drawdown Marin Board:

- 9 community members (representing diverse communities and interests)
- 1 County Supervisor (or 2 for broader & balanced representation)
- 2 City/Town Council members (selected by Marin County Council of Mayors and Councilmembers (MCCMC) Climate Action Committee)
- 2 City/Town/County sustainability or planning staff (selected with input from the Marin Climate and Energy Partnership (MCEP))
- 3 directors of climate-related agencies (MCE Clean Energy, Marin Municipal Water District (MMWD), Transportation Authority of Marin (TAM), Marin Resource Conservation District (RCD), etc.)

Figure 5: Potential Drawdown: Marin Governance Structure



## 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 July 2021:

- Begin the process to form a 501c3, establish bylaws, file with the state, etc. ESC/Coordinator decide if outside legal assistance is needed to support the process
- Develop Board recruitment process to recruit Board members (15); indicate to them that we are getting started, duties will be limited initially, and we need to set up the nonprofit 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 or full-time development person with County funding (or other source) after nonprofit is formed 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
- December 2020 – finalize Drawdown: Marin Strategic Plan December 2020 – begin formation process; develop Board Member solicitation/recruitment process with ESC assistance; identify legal counsel or third-party assistance to form nonprofit (if needed)
- January - December 2021 – identify funding needed to implement solutions; continue Board recruitment and nonprofit formation
- July 2021 – finalize formation of nonprofit; confirm initial operating budget (after County budget is approved in Spring 2021, exact date is TBD); consider hiring a part-time or full-time development person after nonprofit is formed

## 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 Spring 2021, 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.

The Drawdown: Marin Coordinator regularly tracks a variety of funding sources and assesses whether they can support Drawdown: Marin activities. The Coordinator reaches out to lead implementers of solutions to educate them about opportunities and offer assistance in securing funds. Lead implementers of solutions also ask the Coordinator for assistance researching and securing funding. For example, the Coordinator worked/is working on funding research to support the Zero Emissions Vehicles Endorsed Solution, securing Proposition 68 grants for two other Endorsed Solutions, investigating funding from the Creative Growth Fund to create a public art project featuring DearTomorrow promises, and assisted the ACEFM to apply for a USDA grant that would have allowed it to expand its curbside pick-up program in Marin and Sonoma counties. In addition to grants like these, there are also local funding sources that may be leveraged to support Drawdown: Marin activities including Measures C and A and MCE Clean Energy. The Drawdown: Marin Coordinator understands the need to monitor all funding sources on a regular basis and leverage multiple sources moving forward.

Table 3: 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 development staff to assist with all fundraising efforts.
Solutions Implementation	\$150,000 - \$26,500,000	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 Drawdown: Marin; model after One TAM's 4- year study. <sup>17</sup>

The total funding needed for 2021-2023 for the items described in Table 1 is \$1.06m - \$26.5m. 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 Spring 2021. 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 nonprofit-County endeavor described above, to hire development staff to actively pursue and secure funding.

<sup>17</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. Drawdown: Marin used 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 nonprofits 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 – YEARS 1-2

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. Additional convenings may be offered in 2021 and beyond and additional survey may be developed to measure Drawdown: Marin's impact.

### Overview of 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 now. We have amazing privilege and opportunity and the ability to set an example for other local governments.