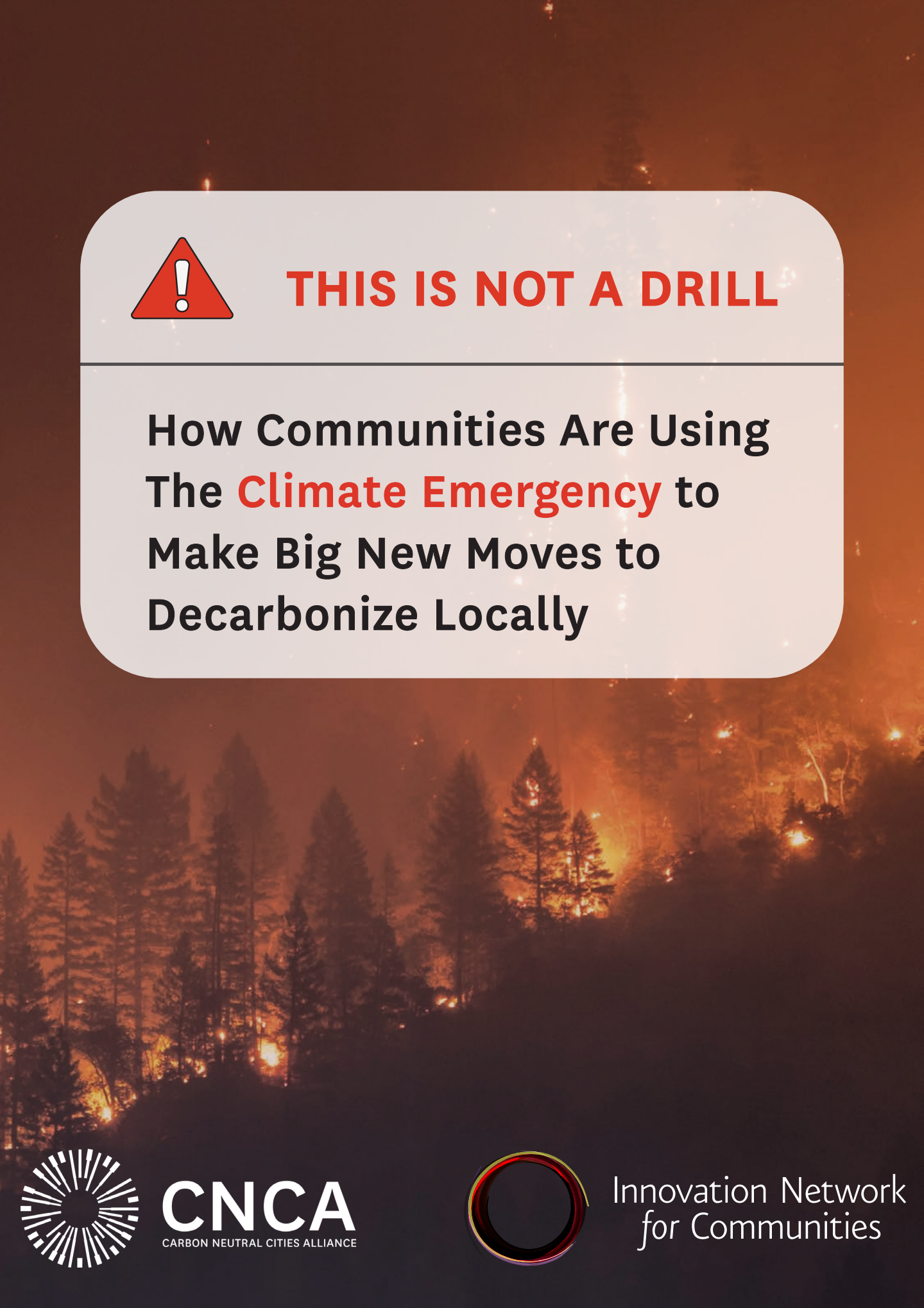


THIS IS NOT A DRILL

How Communities Are Using The Climate Emergency to Make Big New Moves to Decarbonize Locally

CNCA
CARBON NEUTRAL CITIES ALLIANCE

Innovation Network *for* Communities

CONTENTS

INTRODUCTION

"This is not a drill, the house is on fire. Time has run out and there are no shortcuts." — Barcelona Mayor Ada Colau

"Facing hard truths is how you create transformative change."
— Margaret Klein Salamon, founder of Climate Mobilization

The Covid-19 pandemic has thrown cities worldwide into crisis mode. They have launched emergency responses that demonstrate a remarkable capacity to rapidly take bold and difficult actions, repurpose substantial resources, educate and mobilize citizens, and acknowledge and address deep social and economic inequities. In short, cities have provided effective leadership in a time of danger.

The Covid emergency arrived in the midst of an even more perilous emergency: the climate emergency, which more than 1,750 communities across the globe have acknowledged with official declarations.[2] Parallels between the two crises have been noted. For instance, both require societal action; an individual alone cannot solve the problem. And both bring the greatest risk and harm to the most vulnerable among us. But cities and experts have also recognized that while the pandemic's speed and deadliness demand our full attention, we cannot set aside the essential work of eliminating greenhouse gas (GHG) emissions and preventing climate turbulence.

This is why more and more cities' elected officials are taking a stand, by officially declaring a climate emergency and seeking to drive down local carbon emissions more rapidly and extensively than once thought feasible. A small portion of these communities have gone a big step further. They are developing and implementing extraordinary new actions to rapidly reduce emissions.[3]

For this report we studied 15 large and small urban jurisdictions that are among those taking meaningful climate-emergency action since the International Panel on Climate Change (IPCC) warned in late 2018 that global warming must be limited to 1.5°C.

- **Barcelona, Spain**
- **Bristol, UK**
- **Copenhagen, Denmark**
- **Glasgow, UK**
- **Iowa City, USA**
- **London, UK**
- **Melbourne, Australia**
- **Mornington Peninsula Shire, Australia**
- **Oslo, Norway**
- **Portland (Oregon), USA**
- **San Francisco, USA**
- **Stockholm, Sweden**
- **Sydney, Australia**
- **Toronto, Canada**
- **Vancouver, Canada**[4]

We identified five strategies that these places are pursuing in response to the hard truth of climate danger and their own harrowing experiences with climate-driven disasters. These strategies add significantly to what is already known about effective local climate action.

The 15 communities, like the large majority of local governments that have declared climate emergencies, are located in Australia, Europe, and North America.[5] They range in population from under 100,000 to multiple millions of people and most have been growing economically and in population. They have different climatic contexts and different energy-supply legacies and national policies to address climate change. Some have been at the forefront of urban decarbonization efforts, others have not. All, however, have been stirred by the emergency to embrace a higher level of ambition and change.

These and other communities take similar steps to convert their awareness of the climate emergency into local decarbonization strategies. Their elected leaders and government staff declare an emergency, develop a menu of action options, decide which actions to undertake and prioritize, and disseminate their plans to the public in ways that emphasize the economic, environmental, health, and other benefits that will be created.

These steps replicate what communities that already took ambitious climate actions have been doing for nearly three decades—setting goals, making plans, and implementing them. But the climate emergency stimulated the communities in this study to go further than before. They are adding new targets, strategies, and actions to the playbook for urban climate action.

Local government advocacy for climate action by other levels of government also matters greatly, of course. Ambitious cities recognize that they cannot fully achieve their emergency goals without dramatic policy changes by national and state/provincial levels of government. Some communities have been able to take advantage of higher-level government efforts to decarbonize, but many have been stymied by government inaction or resistance.

The communities featured in this report are not all doing the same things. But they have embraced similar accelerated targets and then designed their new efforts to fit local context, capacities, and possibilities. Their pathways build on previous climate-action planning methods and emphasize climate justice and communicate the broader benefits for communities that decarbonization can bring. Their strategies don't just accelerate their carbon-reduction target, they also substantially expand the emissions for which cities take responsibility to include emissions embodied in products and services that community residents consume and emissions already in the atmosphere, which must be reduced. In response to the emergency, these communities have been evolving the basic climate-action template to meet the urgency of the situation.

Hopefully, this information from around the globe provides other communities with inspiration and practical knowledge they can use to urgently step up their own local decarbonization efforts.

EXECUTIVE SUMMARY

This report presents the five big strategies of 15 communities worldwide in which residents, elected officials, community-based and environmental organizations, and local government staff worked intensively to turn the global climate emergency into new efforts to reduce carbon emissions at the local level. Each strategy is described using numerous examples drawn from the communities studied:

1. Accelerating carbon-reduction targets
2. Expanding solutions for reducing local emissions
3. Tackling emissions produced outside local boundaries
4. Drawing down carbon through natural means
5. Upgrading local government's decarbonization capacities

The report then presents two mini cases of very different communities—**Vancouver**, Canada, and **Mornington Peninsula Shire**, Australia—that show how they used the climate emergency to boost their decarbonization commitments and develop more aggressive actions.

The study concludes with observations about additional trends in the communities' emergency declarations and plans, including the use of new tools, the pursuit of new legal powers to enable more decarbonization, the embrace of a "just transition" and climate equity, and communications with stakeholders and the public that evoke a vision for a better city.

In their use of the strategies and other approaches, these climate-emergency communities serve as beacons of urban decarbonization that illuminate pathways out of climate disaster and toward a better urban future.

EMERGENCY ACTION STRATEGIES

"Some may say that a 2030 target isn't achievable, but I say we can't afford not to try." — London Mayor Sadiq Khan

ACCELERATING CARBON-REDUCTION TARGETS

Until recently, the foremost goal for reduction of a community's emissions was to cut emissions 80% by 2050. This reflected the scientific consensus about what it would take to hold global warming down to 2°C. Many cities set this as their long-term reduction target and calculated how much GHG was being produced by their key emissions sectors: energy supply, buildings, transportation, and waste. Then they developed short- and long-term climate action plans for implementing policies, regulations, investments, programs, and other solutions.

This model of climate-action planning has several benefits. It is science-based. It sets long-, intermediate-, and short-term targets that help drive planning for complex local systems and provides a way of monitoring progress. And the use of ambitious targets drives cities to seek and support innovations that will achieve the goals.

Setting New Targets and Deadlines

Faced with a climate emergency, the 15 communities have accelerated and/or expanded their targets for overall emissions reduction. Their new goal is a 100% reduction to zero emissions or net zero emissions. And the new deadline for most of these communities is well ahead of 2050; for some it is 2040, others seek to go faster than that.[8]

Sydney, for instance, slashed a decade off the time it would need to achieve net zero GHG emissions, resetting its deadline to 2040. **Bristol** also cut a decade, and now aims to be carbon neutral by 2030. Meanwhile, **Mornington Peninsula Shire** expanded its carbon-reduction focus to include communitywide emissions, not just corporate/municipal emissions—a vast growth in the scope of its target.

For these communities, advancing their decarbonization target is more than an act of political will or public relations. It is usually based on an in-depth analysis of what the community might actually be able to achieve. **San Francisco**, for example, produced a 40-page technical report, "Focus 2030: A Pathway to Net Zero Emissions," to show how deeper emissions reductions were possible. **Vancouver's** city council received a 22-page staff report detailing the "big moves" that could be used to align with the 1.5°C guiding goal.

Adjusting Interim Reduction Targets

Advancing the overall community target also means adjusting shorter-term milestone targets on the way to the ultimate goal. **Iowa City**, for example, is seeking a 40% emissions reduction by 2030 on its way to reaching net zero by 2050.

A month before the IPCC 2018 report, **Barcelona's** city council set a new target of reducing greenhouse gas emissions by 45% by 2030 on its way to carbon neutrality in 2050. Nine months later, however, the city set up a Climate Emergency Committee that reset the 2030 milestone target to a 50% reduction.

Accelerating Targets for Emissions Sectors
As the 15 communities adjusted their overall carbon-reduction targets, they also fine-tuned their targets for decarbonization of key emissions sectors within the community: energy supply, buildings, transportation, and solid waste. Although each community has a somewhat different emissions profile—a smaller or larger portion of all emissions from each sector—much of the emergency-driven effort has focused on the buildings and transportation sectors, which tend to be the largest local carbon emitters.

Barcelona, for instance, estimated that 35% of its carbon reduction would come from the transportation/mobility sector and nearly 35% would come from the energy sector. **London** calculated that 70% of all buildings in the city would need to achieve adequate energy efficiency performance by 2030. Also, by 2050, all motorized road transport in the city would need to be battery electric or fuel cell electric vehicles.

Still, it is essential to address emissions across the board. **San Francisco's** emergency approach, for example, identifies goal scenarios for each sector:

Energy Supply:	A continued increase in renewables, with 100% renewable electricity by 2030;
Buildings:	New buildings are net zero emissions by 2030; about 3% of existing buildings are retrofitted for energy efficiency ever year, resulting in a nearly 100% efficient existing building stock that is all-electric no later than 2050;
Transportation:	By 2030, 80% of all trips in city are taken by walking, biking, or transit, and 25% of private vehicles registered in San Francisco are electric;
Zero Waste:	Refuse generation is reduced 15%, and disposal is reduced 50% by 2030 despite population growth.

Definitions of Communities' Carbon Emission Targets:
Communities use several different terms to describe their emissions reduction targets, some of which mean the same thing, while others mean something a little different. Below are definitions of all the targets that the communities in the study are using.

Carbon Neutral means that whatever human caused GHG emissions remain ("residual emissions") after climate actions are used to reduce emissions as close to zero as possible are balanced out by removing carbon from the atmosphere.

Net Zero Emissions is the same as "carbon neutral" but the phrase signals that the primary goal is to phase out fossil-fuel energy and only have small amounts of "residual" carbon to offset.

Zero Emissions means that all energy sources in the community—engines, motors, processes, etc.—emit no GHGs. Essentially this means 100% renewable electricity and electrification of everything.

Fossil-fuel free (used by Stockholm) means the city has eliminated use of fossil-fuel energy to the extent that its powers permit. The residual carbon must be offset using local means to capture carbon.

Climate positive means going beyond achieving net zero or zero emissions to actually create an environmental benefit by removing additional carbon dioxide from the atmosphere. Another term for this is "**carbon negative**."

Community Carbon Emission Targets:

	Emergency Target	Previous Target
Barcelona, Spain	Carbon Neutral by 2050	Same (adopted 2018)
Bristol, UK	Carbon Neutral by 2030	Carbon Neutral by 2040
Copenhagen, Denmark	Carbon Neutral by 2025	Same (adopted 2012)
Glasgow, UK	Carbon Neutral by 2030	Carbon Neutral by 2037
Iowa City, USA	Net Zero Emissions by 2050	80% Reduction by 2050
London, UK	Zero Emissions by 2030[9]	Zero Emissions by 2050
Melbourne, Australia	Zero Emissions by 2040	Zero Emissions by 2050
Mornington Peninsula Shire, Australia	Zero Emissions by 2040	Carbon Neutral in Shire / Corporate Emissions by 2021
Oslo, Norway	95% reduction by 2030	Same (adopted 2016)
Portland (Oregon), USA	Net Zero Emissions Before 2050	80% Reduction by 2050
San Francisco, USA	Net Zero Emissions by 2050	80% Reduction by 2050
Stockholm, Sweden	Fossil-Fuel Free & Climate Positive by 2040[10]	Fossil-Free by 2040
Sydney, Australia	Net zero by 2040	Net Zero by 2050
Toronto, Canada	Net zero by 2040	80% Reduction by 2050
Vancouver, Canada	Carbon Neutral by 2050	80% Reduction by 2050

"To improve the city's environmental conditions and move towards a new urban model, it is essential that the climate variable is included in all urban management and transformation processes." — Barcelona Climate Emergency Declaration

EXPANDING SOLUTIONS FOR REDUCING LOCAL EMISSIONS

Thanks to the previous efforts of many communities worldwide, a great deal is already known and available about how cities can reduce carbon emissions in their main emissions sectors: buildings, transportation, solid waste, and energy supply.

But as the studied communities reset their targets for community, sector, and corporate emissions reductions, they had to figure out how they would actually reduce more emissions faster than previously anticipated. In response, they have developed and adopted policies, regulations, investments, and programs to achieve their more aggressive ambitions.

Reducing Emissions Sector by Sector

Toronto, which reported a 44% reduction in emissions based on 1990 levels, set the tone for what most climate-emergency communities face in trying to accelerate decarbonization: "Turning these commitments into reality is still going to take a lot of work—keeping up the pressure in a context of competing budget priorities and a pro-fossil fuel lobby that never quits. . . The easy reductions, however, are largely gone. Getting to net-zero is going to be harder."[12]

Communities seeking to up their decarbonization game have to pioneer new innovations and plans, as well as adopt efforts tested and proven elsewhere, to tackle emissions that they did not previously target or that have been hard to reduce. To do this, communities rely on tools that many places have already been using:

- Regulations that guide residential and business decisions
- Investments in public infrastructure and equipment
- Financial incentives for residents and businesses
- Advocacy that encourages other governments and utilities to pursue decarbonization

This strategy section focuses on developments in each of the key urban emissions sectors. Mostly the communities are adding or enhancing actions to the foundational strategies they have already pursued.

Buildings

The general strategies for decarbonization of buildings divide between new and existing buildings. For new buildings, communities around the world have mandated and incentivized high levels of energy efficiency and prohibited the use of fossil fuels for heating and other purposes. (These standards have also been applied to major remodeling or expansions of existing buildings.) For existing buildings, communities have incentivized property owners' investments in increasing buildings' energy efficiency and the replacement of fossil-fuel heating systems with electric systems such as heat pumps.

As communities press for buildings to rely increasingly on electricity, they have also pushed for the electric supply to become more renewable. At the same time, many communities have required that building owners make public the amount of energy their facilities use. This is a way of informing

potential buyers and renters about buildings' energy performance and, therefore, prompting owners to invest more in energy efficiency and decarbonization.

Among the 15 climate-emergency communities, several have focused action on eliminating fossil fuels, especially natural gas, from buildings.

Vancouver has set limits for new building construction so that by 2023 the vast majority will be zero emissions and has targeted 2025 for beginning carbon limits on existing buildings. The city expects that heat pumps will be an important solution for both. For existing buildings, the city developed a retrofitting strategy with incentives to support voluntary transitioning before 2025 and, ultimately, new regulations that require replacement of heating systems with zero emissions equipment. Beginning in 2025 the city will fine targeted building owners whose facilities exceed specified GHG-emissions levels—a policy that can lead owners to switch from natural gas to electric heating systems. (The city's mostly hydro-electricity supply is nearly 100% clean.) The regulatory regime will start with large commercial and large single-family buildings, since they have the best business case for and ability to fund the retrofits.

Mornington Peninsula Shire plans to restrict new natural gas connections for buildings and will develop a natural gas phaseout strategy for existing buildings.

Bristol plans to expand its district heating network, fueled by low-carbon sources, to buildings in the central city. It estimated that 160,000 gas boilers in buildings across the city have to be replaced with electric heat pumps, which will require providing financial incentives to building owners as well as regulations requiring a phase out.

Iowa City, meanwhile, is advancing a number of policies to drive increased energy efficiency. It intends to encourage local realtors to include energy performance in property listings, a way to help homebuyers make educated decisions and drive sellers to improve energy efficiency. In another effort to generate energy-performance data it will require owners of larger buildings to annually report energy performance to the city. The city will launch an incentive program to encourage local industries to reduce energy consumption and will consider rebating a portion of building-permit fees for construction projects that meet enhanced energy standards.

CNCA Resources:

Adopting a Zero Emissions Standard for New Buildings

Two Approaches To Buildings Decarbonization

Transportation

The general strategies for decarbonizing transportation involve two main approaches: reduction of travel by gas-fueled automobiles—a "mode shift" to walking, rolling, or using public transit—and the electrification—a "fuel shift"—of all transportation, public transit systems and electric vehicles. Communities worldwide have developed numerous actions along these lines, but they are most successful when policies of higher-level governments, which provide much of the funding for transportation infrastructure and public transit and also regulate the automobile market, are aligned with ambitious decarbonization goals.

Many of the 15 communities are promoting mode shift in different ways.

Iowa City is studying the use of discounted or no fares for riding the city's bus system as a way to increase transit ridership.

Oslo is raising the age limit for free child travel on public transit to six from four.

San Francisco intends to use congestion pricing and expansion of its transit system—more Bus Rapid Transit corridors, system upgrades, and facility investments. It will also expand its bicycle and pedestrian networks and continue to develop housing and businesses near transit stations.

Barcelona is improving conditions for pedestrians and bicyclists, increasing the number of traffic-calmed streets (reducing speed limits on more than half of the city's streets), and improving the quality, connectivity, and safety of its bicycle network.

Glasgow is rolling out car-free zones at schools and other locations that have large numbers of potentially vulnerable pedestrians, building on a pilot at a school.

Vancouver plans to increase efforts to make the city more walkable by developing more neighborhoods that are livable, compact, and complete, with daily destinations, such as shops, services, jobs, parks, schools and community centres within walking distance of where people live. It seeks to double by 2030 the 45% of city residents who currently live within an easy walk/roll of their daily needs. As a starting point, the city will develop a tool to evaluate how walkable and resilient each neighborhood is. It will also invest in upgrading major public transit projects. The city's plan calls for "transport pricing" on vehicles driving in the city centre and for introduction of a parking permit and pricing regime for city streets that will include a surcharge on vehicles based on their carbon emissions.

Bristol is developing a plan to consolidate freight transport in the city, drastically reducing the number of delivery trips. And the city plans to reduce parking capacity for non-ultra-low emission vehicles and increase car parking charges.

Communities are also making new efforts to accelerate the use of zero emissions vehicles.

San Francisco, seeking to achieve a 25% electric vehicle adoption rate, will accelerate efforts to develop a publicly available electric vehicle charging network, including in off-street parking facilities.

Vancouver intends to expand the electric vehicle charging infrastructure in the city and adopt parking policies that encourage and eventually require zero emissions vehicles. The city plans to institute "zero emissions zones" in areas and corridors of city to discourage and eventually ban polluting vehicles. By 2030, according to the emergency plan, 50% of the kilometers driven on Vancouver roads will be by zero emissions vehicles. Vancouver plans to add 500 electric-assist bicycles to the public bike-sharing system. And the city intends to levy a fee on vehicles driving into the central core.

Oslo plans to convert all public transport, including busses and ferries, to zero emissions by 2030.

In addition, **Copenhagen** is working to establish clean shore-based power for moored cruise ships, an alternative to the ship's traditional use of diesel-fuel generators.

CNCA Resources:

The World's First Mass Market for Electric Vehicles — The Oslo Case Study

Stockholm's Experience With Reducing GHG Emissions from Transport

Solid Waste

The emissions-reduction focus of local governments has been mostly on organic waste, which produces methane as it decomposes. Increasingly, though, there are efforts to reduce plastic and construction waste. An important aspect of these and related efforts is the creation of a "circular economy" in which waste becomes an input to a product, rather than something to dispose of.

Among the 15 communities a variety of actions to decarbonize waste systems are being tried:

San Francisco, already a global leader in waste reduction and the collection and composting of food scraps, is exploring new technologies that can recover all organic materials before disposal, with a goal of deploying these before 2030.

Mornington Peninsula Shire intends to reduce emissions from landfills by adopting a zero-waste strategy to achieve 100% diversion of materials from landfills by 2030.

Iowa City intends to expand efforts to engage the local construction and development sector to reuse and recycle construction waste. It is developing a policy to require construction projects above a certain size to submit a waste management plan before beginning construction.

Barcelona is rolling out a zero-waste strategy by greening city festivals and events, using reusable cups/glasses, cutlery, and plates, and organizing repair workshops and low-waste fairs and conferences.

Glasgow wants its school system to eliminate plastic waste—a concern children and young people expressed in city surveys—by moving toward "plastic-free" meal service.

Energy Supply

Local governments have already developed numerous actions to increase the use of renewable energy and to reduce energy consumption in their communities. The emergency plans of communities add to this menu of actions, but also acknowledge that much of the energy supply is controlled by higher levels of government.

A focal point of emergency communities has been to increase the amount of solar energy generated within the community.

Glasgow is accelerating the development of an energy service company that will produce more locally generated low-carbon energy.

Barcelona is easing regulations and increasing financial incentives for property owners to install rooftop solar facilities.

Bristol also focused on rooftop solar generation on residential and non-residential buildings, noting that there is the potential to generate 500 megawatts of solar energy, but only 28 megawatts are being produced so far.

Iowa City expects its main electricity provider to deliver 100% renewable energy by 2021, primarily by adding wind power, but the city is also partnering with the University of Iowa, which has a large local campus, to help it eliminate the use of coal at its power plant by 2025.

Melbourne, which has already purchased 100% renewable energy for municipal operations, plans to increase renewable energy purchasing by businesses and residents in the city.

CNCA Resource:

The Melbourne Renewable Energy Project

"To realize the greatest global emissions reductions, San Francisco must significantly decrease the consumption of goods and services and the amount of refuse the city generates." — San Francisco, "Focus 2030: A Pathway to Net Zero Emissions"

TACKLING EMISSIONS PRODUCED OUTSIDE LOCAL BOUNDARIES

Until recently, cities focused almost exclusively on reducing "direct" or "operational" emissions produced within their borders (called Scope 1 and 2 emissions) and didn't tackle the problem of emissions generated elsewhere in the production of goods and services that community residents consume (called Scope 3 emissions). But emergency communities also see a need to reduce the embodied emissions in the products they consume.[14] "Cities are moving towards gathering [consumption] information to get a more accurate picture of the emissions generated from urban centers," notes the **Iowa City** emergency plan.[15]

Bristol calculates that about 50% of the city's emissions footprint are due to "imported consumption emissions" produced outside of the city to create goods and services used by city residents and businesses. The city's emergency plan notes that consumption emissions have equity implications: "As individuals we can influence the size of our carbon footprint by how much and what we buy, and those people on higher incomes have larger footprints and are therefore able to make the greatest contribution to reducing emissions."[16]

Barcelona found that nearly 13% of its emissions were generated by the city's port and airport, including from the fossil fuels burned by cruise ships, ferries, and international flights. "We want a city with a critical and responsible attitude towards consumption," the city's emergency plan says.[17] It called for the port and airport to reduce emissions and review their growth plans.

Iowa City obtained a grant to inventory the consumption-based emissions that its residents and businesses are generating. The funding came from the Urban Sustainability Directors Network, which connects more than 180 local governments in North America to accelerate the work of their sustainability and climate professionals. The tool had been created by **Vancouver**, another USDN member. **Toronto** is also going down this path, planning to measure, monitor, and reduce consumption-based emissions.

Targeting Food Systems

In most communities, the food supply chain—from land-use changes such as deforestation to methane emissions from cows to emissions during food processing, transportation, and refrigeration at retailers—is a major source of consumption

Definitions of Emissions Scopes: As the problem of climate change became more recognized, governments and nonprofit organizations developed a standard framework for measuring the carbon footprint of a community, nation, or company. It has three different scopes.

Scope 1: Direct emissions from activities of residents, businesses, and governments in the community. This includes from fuel combustion by vehicles and gas boilers in buildings.

Scope 2: Indirect emissions from electricity purchased and used by residents, businesses, and governments in the community. The emissions are created during the production of electricity from fossil fuels.

Scope 3: All other indirect emissions from activities of residents, businesses, and governments in the community from sources they do not control or own. These include emissions from residents' air travel outside of the community and emissions created during the production of goods, such as food, that are made outside of the community but consumed by residents. Also known as consumption or imported or embodied emissions.

emissions. It is estimated that food systems generate up to 30% of global GHG emissions.[18] **Bristol** notes that the majority of food consumed in the city and in most other communities is produced outside of the city and transported into the city.

Vancouver estimated that 20% of its consumption-based emissions comes from food. The city encourages residents and restaurants to shift to more plant-based diets, which are less carbon intensive to produce: "Given that limited food production occurs within city limits, the City's role . . . will likely focus on residents' eating habits and institutional food provision."[19]

Barcelona describes a range of actions that could reduce food-based emissions: "We need to opt for local, agro-ecological production, increase the supply of and access to local, ecological fresh produce, reduce the consumption of animal protein and highly processed foods, and offer everyone the tools to facilitate the transition to a healthier and more sustainable way of eating."[20] Among the city's actions: restricting the opening near schools of food establishments selling highly processed fast food that is high in protein.

Other Embodied Emissions

Communities have begun to target a range of other consumption emissions.

Portland, for example, required the offset of carbon emissions from city-related air travel.

Barcelona identified a number of ways it might reduce the carbon emissions of the city's port and airport, including electrification of wharfs, machinery, and fleets at the port and a study of how to promote trains instead of short flights (distances under 1,000 kilometers).

Oslo set a target for reducing maritime traffic emissions by 85% by 2030, an increase over the previous 50% target. Replacing or converting the Oslo port's passenger and local ferries to non-fossil fuels could produce about half of the desired reduction.

Vancouver targeted embodied emissions in new buildings and construction projects to be reduced 40% by 2030 from a 2018 baseline. This will mean a shift in construction practices to use more mass timber, low carbon concrete, prefabricated and modular construction, recycled aggregates and asphalt, and eliminate spray foam insulation.

Oslo, meanwhile, requires that all new public buildings be built with "fossil-free" construction machinery and established what is thought to be the world's first zero emission, all-electric jobsite.[21] An added benefit of the effort: improvements in air quality and reductions in noise.

"In addition to carbon sequestration benefits, forests and coastal ecosystems play an important role in supporting cultural practices and providing ecosystem services and resilience to people and wildlife." — Vancouver, "Climate Emergency Response"

DRAWING DOWN CARBON THROUGH NATURAL MEANS

The IPCC and communities have acknowledged that even the best decarbonization efforts are likely to leave some amount of "residual emissions" between now and 2050. **San Francisco**, for instance, calculates that it may still have to contend with 12% of business-as-usual emissions that cannot be eliminated before 2050. These residual emissions would come mostly from buildings that reduce but cannot eliminate natural gas due to physical constraints, historic preservation issues, and other barriers, and from maritime ships and off-road equipment. **London's** 2018 plan notes that reaching zero emissions by 2050 would involve 10% residual emissions that would have to be offset through carbon capture and storage or tree planting.

As communities recognize the likelihood of residual emissions, they are looking for ways to remove CO_2 from the atmosphere, but the effectiveness of removal techniques is mostly unproven. Some geo-engineering schemes for removal (e.g., atmospheric manipulation to capital intensive technologies that can extract carbon from the atmosphere) carry significant environmental risks, the IPCC has said.

A number of the 15 communities in this report are pursuing natural removal, as the next examples show. They are turning organic waste, mostly from food systems, into compost for agricultural soils. They also plant forests and vegetation to capture carbon and they burn biomass to produce high-carbon biochar that can be added to soil.

Composting

Composting uses microorganisms to break down organic materials—especially food waste—into the essential component of soil called humus, which can replace fertilizers made from fossil fuels. Compost added to the soil increases plant biomass that can draw CO_2 out of the atmosphere and enhance the soil's capacity to sequester/hold the carbon. This is especially the case in no-till situations, such as in orchards, vineyards, and grazing lands, where the soil is not disturbed in ways that would release the CO_2.

San Francisco has been a world leader in producing compost from locally collected organic materials. Nearly 100% of residential and commercial properties in San Francisco are equipped for organics collection service. The city currently generates approximately 187,500 tons of urban green and food waste per year, which when processed yields 70,000 tons of compost. The city will continue to add to the 750,000 tons of compost the city has provided to farms, vineyards, and fruit and nut orchards since 1997. It reports that 1 ton of organic waste with food scraps can produce .37 tons of compost and 1 ton of compost applied to rangeland soil can sequester up to .66 tons of CO_2 annually.

CNCA Resource:

Three Reasons and Five Ways Cities Need to Get in the Sequestration Game

Planting Trees and Vegetation

Climate scientists say that planting billions of trees worldwide is a big way to take CO_2 out of the atmosphere. As trees grow, they absorb and store the carbon. Research completed in 2019 found that as much as two-thirds of emissions due to human activities could be removed by planting trees without intruding on crop land or urban areas.[23]

Communities are increasing their attention on this natural solution.

Vancouver directed that by 2030 enough restoration work on forest and coastal ecosystems in the city

and surrounding region will have occurred to remove 1 million tons of carbon pollution annually by 2060. Among the strategies: increase the city's tree canopy; collaborate with indigenous peoples to restore lands; undertake large-scale restoration of shorelines; and conserve large tracts of coastal forest.

Glasgow will build on partnerships within the region to increase tree planting. "Immediate action should be taken to significantly increase the numbers of trees within the city to capture carbon," states priority #71 in the city's plan. But, it emphasizes, "given the very tight nature of Glasgow's boundaries . . . the city needs to take a more expansive look across the metropolitan area to see what opportunities there are for tree planting and other forms of carbon sequestration."[24]

San Francisco has identified thousands of city-owned acres with opportunities for more restoration. It plans to add 50,000 street trees during the next 20 years.

Sydney intends to increase tree canopy cover and vegetation on public lands and support private landowners in increasing their tree canopy.

Oslo is focusing on increasing urban farming by preserving school gardens and establishing new public land for gardening/farming.

Mornington Peninsula Shire intends to develop and implement a carbon sequestration implementation plan that will emphasize local terrestrial revegetation, soil carbon, and blue/teal carbon programs.

Melbourne, which has planted 22,000 trees since 2012, plans to increase canopy cover to 40% from 22% by 2040.

Copenhagen committed to supplementing its ongoing efforts to plant 100,000 trees in the city by purchasing farmland outside of the city and planting a new, semi-urban woodland in cooperation with neighboring cities.

Producing Biochar

Another way to sequester carbon is the use of biochar, a charcoal produced from plant matter and added to soil.

Stockholm plans to address its projected residual emissions, mostly from plastics in waste incineration, by capturing and storing carbon and increasing biochar production. Since 2017 the city has been producing biochar by collecting garden and yard waste and using a carbonization process to turn the waste into biochar. The biochar is used in gardens and sold to other local authorities for use to grow plants and trees in parks and public spaces. The city plans to add more biochar plants to its single plant; at full capacity this could sequester more than 25,000 tons of CO2.[25]

Additional Resource:

Urban Drawdown Initiative

"It will take serious collaboration and partnership working to achieve this vision . . . Bristol's culture of collaborative working puts us in a fantastic position to achieve this together." — Bristol Chief Operating Officer Lizzi Testani

UPGRADING LOCAL GOVERNMENT'S DECARBONIZATION CAPACITIES

Communities in our case study have decided that future city programs and projects must assess their decarbonization impacts. Some have also initiated new decision making, monitoring, and accountability structures in government—ways to increase their capacity to deliver emissions reductions. These local governments are engaging their residents extensively in planning processes to ensure that they have accurate representation of the public's views.

Barcelona, **Bristol**, **Stockholm**, **Sydney**, and **Vancouver** are initiating carbon budgets, a tool launched by **Oslo** in 2017 to boost the effectiveness of local climate action management. **Barcelona**, **Mornington Peninsula Shire**, and **Sydney** are adding low-carbon and sustainability criteria to their procurement guidelines for the goods and services they purchase and the assets, such as property, that they own.

Bristol, **Melbourne**, and **Portland** are reaching out to neighboring communities, local businesses, and universities for decarbonization collaborations, as described below.

Iowa City imposed a small, emergency property tax increase to raise nearly $1 million USD-a-year to fund climate-emergency actions. The increase will cost property owners a relatively small amount—only $24 USD yearly on every $100,000 USD of property value. The city's authority for an emergency increase is part of existing state law and has been used in the past to deal with flooding.

Mornington Peninsula Shire and **Iowa City** favor grant programs to fund carbon-reducing initiatives by residents and community organizations. In addition, **Mornington Peninsula** will be facilitating competitive offers to encourage community uptake of sustainable options such as solar panels, batteries, electric vehicle charging infrastructure, and electrical equipment to replace gas appliances.

London works with pension funds and other investors to divest from fossil-fuel businesses and boost investments in energy efficiency, and low-carbon transport and heating.

Several cities are fast-tracking climate actions. **Vancouver**, for example, identified 53 "accelerated actions" already under development or awaiting approval that it could implement without delay. The list provided to city council covered a wide range of actions, including pilot programs to reduce use of motor vehicles by developing more compact, pedestrian-and bike-friendly neighborhoods, to increase decarbonization of existing buildings, and more.

Melbourne fast tracked the switch of 10 Council buildings from gas to electricity and delivery of 44 kilometers of protected bike lanes in four years.

Barcelona is speeding up the installation of renewable-energy generation in municipal buildings (nursery schools, cultural and sports facilities, etc.).

Using Carbon Budgets

A carbon or climate budget is a tool to convert a community's climate goals into concrete, annual, measurable actions. It establishes a maximum GHG emissions level for the budget year, based on the city's longer-term emissions goal. The budget details the city's proposed short-term emissions-reduction actions to stay within the maximum amount, their projected impact, and cost. Carbon budgeting requires city administrators and elected officials to be concrete, specific, and public about what short-term actions they want to take to achieve long-term GHG-reduction goals, and to submit their

proposals to open political debate and public discussion. It sets up the potential for tough decisions if the city is not progressing well toward its targets. It makes monitoring and reporting on progress in reducing GHG emissions a part of the city's regular budget review process.

Bristol turned to **Oslo's** carbon budget tool so the city will "be able to quantify its carbon emissions and understand the impacts of all new major plans, policies, and projects."[26] The budget, the city says, will be "a way of ensuring that the council knows the cumulative climate consequences of its decisions and its progress toward its carbon neutrality goal."

Vancouver began to develop a carbon budgeting and accountability framework. The budget "can help enforce more rigorous approaches to managing carbon" and help to "communicate the impact of carbon-reduction efforts to the public." The city plans to develop and test a carbon budget for corporate emissions first, involving nearly all city departments.

CNCA Resource:

How The City Of Oslo Manages Carbon Like It Manages Money

Decarbonizing Procurement

Local governments spend substantial sums to obtain goods and services that they need, which makes their procurement a target for decarbonization.

Mornington Peninsula Shire, which annually purchases about $18 million AUD of goods (about $11.6 million USD), not including capital projects, is setting sustainability and recycled-content standards for Shire procurement.

Barcelona is drawing up guidelines for public procurement with low-carbon criteria.

Melbourne fast-tracked changes to its purchasing model to increase the use of recycled materials.

Iowa City is establishing a city policy to mandate purchase of electric and alternative-fuel vehicles.

Building Collaborations and Alignment

By forging alliances outside of local government, communities are increasing their capacity to achieve more aggressive decarbonization goals.

Melbourne, for instance, is building a local business coalition to advance efforts to develop circular economies that eliminate waste.

Vancouver's emergency response acknowledged that the carbon-reduction plan of the British Columbia, the province within which it is located, provides "an excellent foundation" for aligning city-province efforts. And the city is engaged at the metropolitan level in developing a regional response for reducing carbon, guiding growth, and updating the regional transportation strategy. "The higher the degree of alignment between the City and the region," Vancouver states, "the more likely that the collective regional response . . . will align with the objective of limiting global warming to 1.5°C."[27]

Portland's leading climate-change agency, the Bureau of Planning and Sustainability, was directed by the mayor to work collaboratively with Multnomah County and community-led organizations to establish a new, ongoing governance structure to engage youth and "frontline communities" in developing recommendations to guide the city's climate actions. The new structure will develop and recommend actions that guide the city "in its delivery of community benefits that meet the city and county's 2030 carbon reduction goals."[28]

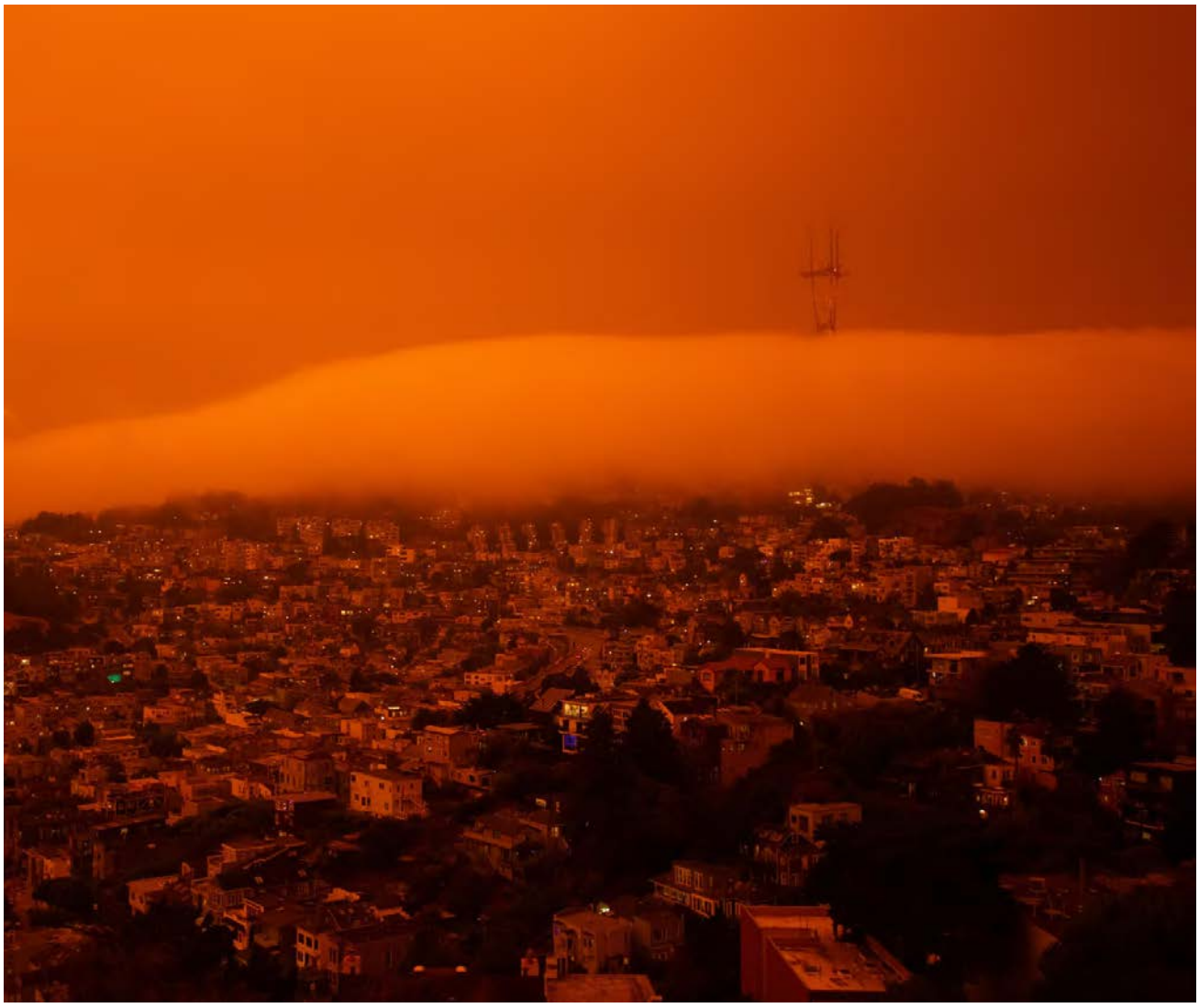
Bristol established an Environmental Sustainability Board, co-chaired by the mayor and containing about 15 organizations from inside and outside of city government, to manage its accelerated climate-action approach. Also, in response to Bristol's request, two local universities established an advisory committee on climate change that provides technical expertise to organizations in the city.

Funding Community Action
To catalyze local action by community organizations, some communities are providing small grants to support actions that advance the community's decarbonization strategies.

Iowa City's Community Climate Action Grants program is designed to inspire and promote public involvement in implementing the city's climate-emergency plan. It provides up to $5,000 USD to local community-based organizations for projects that promote or implement one of 35 actions in the city's plan and that can be completed in a year or less.

Mornington Peninsula Shire intends to establish a grants program to fund community groups and business associations to achieve climate emergency goals.

Bristol has also included small grants for community-led climate action in its plans.



HOW TWO COMMUNITIES MADE BIG EMERGENCY DECARBONIZATION MOVES

This section presents two mini cases that show how quite different communities followed similar pathways to convert their alarm over the hard truth of the climate emergency into public commitments and ambitious plans to use the emergency-action strategies detailed in this report.

Communities that convert the climate emergency into these strategies for local decarbonization tend to follow a sequence of steps toward that outcome.

Declare:
Their elected leaders respond to the IPCC guidance and increasing public demands by adopting an emergency declaration—often unanimously. The declaration usually sets an accelerated target for getting to zero or net-zero emissions, although some communities study what may be feasible to achieve before setting a target.

Develop:
The local government staff takes over--developing a menu of action options, often in consultation with community members and advocacy organizations, as well as experts and other communities or networks of communities with decarbonization experience.

Decide:
Local elected officials and the public receive from city staff a proposed approach or plan for achieving emergency emissions reductions goals. After public deliberations, the council/mayor approve a set of actions for implementation. They adopt dozens, or even hundreds, of actions, including some big moves along the lines of the five strategies this report documents. Often, they pilot carbon-reduction innovations on buildings, vehicles, and other assets owned by the local government—a "leading by example" tactic. Many local governments include advocacy and local prioritization of a "just climate transition" away from the fossil-fuel economy as a part of their plan.

Disseminate:
When local governments communicate with stakeholders and the public about proposed or adopted emergency climate actions, they explain that plans are not just about decarbonization, they're about creating a better city for its residents. And they draw images of what a better future will look like.

This general pathway for emergency responses was evident in the experiences of two communities more than 8,000 miles apart: **Vancouver**, an affluent Canadian city of nearly 640,000 residents, and **Mornington Peninsula Shire**, a popular Australian tourist destination near Melbourne with 164,000 residents living in 44 towns and villages.

VANCOUVER'S EMERGENCY PATHWAY

"This plan means change. It means residents, businesses and the City doing our part to transition off fossil fuels. It is designed to make it easier for you to live a carbon-free life."

— Vancouver, "Climate Emergency Action Plan"

Recognizing the Emergency

Vancouver has been on the leading edge of carbon reduction. But city officials knew in 2018 that it was falling short of the decarbonization target for 2020, detailed in the "Greenest City Action Plan" plan initiated in 2011. Citywide emissions had decreased 12% since 2007, but the plan called for a 33% reduction by 2020. Two harsh winters had driven up fossil-fuel energy consumption in buildings and prevented the desired reductions.

Declaring an Emergency

By late 2018 most of Vancouver's city's council members and the mayor who had driven development and implementation of the far-reaching plan were no longer in office. The city staff had anticipated the expiration of the Greenest City plan in 2020 and started assembling ideas about what to do next. The new council wanted to put its own stamp on Vancouver's locally popular greening efforts and to respond to the IPCC's alarm. Several council members met with staff to talk about declaring a climate emergency and find out what might be possible to do about it.

"When they approached us," recalls Doug Smith, the city's director of sustainability, "we said, 'We're not going to give you something fluffy or just regurgitate what we've been doing for 10 years. We have to accelerate the work we're doing. We have to change the work." The city council agreed.

In January 2019, the council unanimously declared a climate emergency and tasked the city staff with presenting a framework for action by late April.

Developing an Emergency Plan

"It was pretty intense for three months," Smith says. The staff had been reviewing the Greenest City plan to see what had worked well and what could be improved. It had consulted with numerous stakeholder groups and conducted public surveys to get a sense of what city residents supported. But it didn't yet have a comprehensive set of new policies and actions for city government to pursue. And the action agenda to be produced had to be more ambitious than the city's efforts of the past decade.

By April the council was reviewing a 22-page framework document in which staff proposed that the city become carbon neutral by 2050 to align with IPCC goals. It recommended six "Big Moves"—new decarbonization targets that would drive the development of policies. All of the moves "are intended to be technically feasible," a memo to council explained, but "they will push the limits of what staff think can be accomplished in the next decade and staff realize that there will likely be political, financial and 'pace-of-change' challenges to their implementation."[29]

Some of the moves accelerated existing targets for transportation and building heating systems—the two main sources of carbon emissions in the city. Others responded to the emergency in a way that had not been a focus of previous decarbonization plans. They called for increased compactness of the city, reductions in embodied emissions in new buildings and construction projects, and carbon drawdown by planting forests.

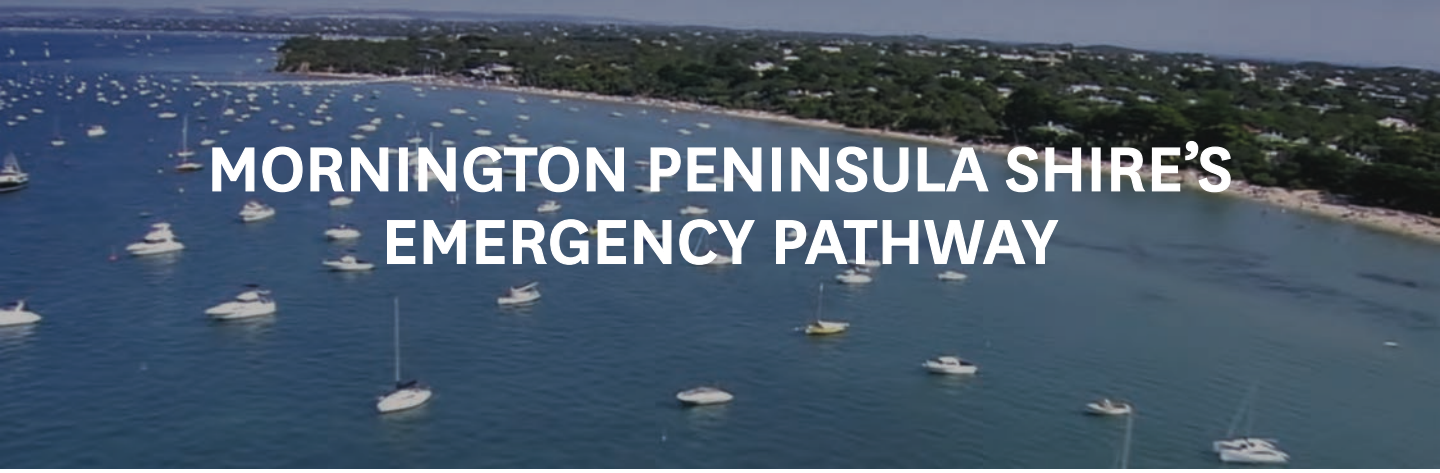
Adopting the Emergency Action Plan
In April 2019, the Vancouver council adopted the proposal, directing that the targets and other actions be incorporated into the city's overall planning activities and developed into full-scale plans by the fall of 2020. That plan was made public in late October 2020, with an estimated five-year cost of C$500 million.[30] By then, the Canadian federal government had decided to raise the price it puts on carbon emissions to C$170 per tonne by 2030—a boost that will make renewable energy even more price competitive with fossil fuels.

The Vancouver item that drew concern from realtors and business associations was the recommendation that motorists be charged a fee to drive into the city center. The council directed staff to provide it with an assessment of a "transport pricing" system, outline its costs and benefits, and engage with the business community and others affected by the plan. The council supported aiming for implementation by 2025.

On November 17, after public hearings on the plan, the city council approved the 371-page document. "This is the sort of leadership that young people have been calling for," said councilor Christine Boyle, "and that health professionals and faith leaders and parents and many, many other folks and residents across our city have been calling for."[31]

Communicating Community Benefits
In its emergency response Vancouver declared that "going 'green' is good for business and great for the local economy."[32] It noted that city's green economy employs 1 in 15 local workers and has grown at nearly 8% a year on average for last three years.

Image credit: detail from the cover illustration of the City of Vancouver's Climate Emergency Action Plan



MORNINGTON PENINSULA SHIRE'S EMERGENCY PATHWAY

"We have heard the sirens. Climate change is now an emergency. We are collectively at risk." —Mornington Peninsula Shire, "Ensuring Our Future 2020"

Recognizing the Emergency

Mornington Peninsula Shire, a coastal community in a high-risk fire and heat-stress zone, had tackled climate change in 2016, setting a goal of carbon neutrality for shire government operations by 2021. Then in 2017, the Shire Council engaged with residents and businesses to identify ways it could help them to cut emissions. That produced a November 2018 action plan focused on helping people reduce emissions from the area's biggest sources, energy supply and transportation. The Shire committed to reduce GHG emissions on a pace—at least 2.9% annually—that would meet the goal of keeping global warming within the 2°C limit set by the 2016 Paris Agreement.

Less than a year later, though, the 11-member Council decided that goal was not good enough. The IPCC announcement had occurred and in the Shire there was "a significant push from the community, which petitioned the Council asking it to declare a climate emergency," says Melissa Burrage, the Shire manager for climate change, energy, and water.

Declaring an Emergency

As uncontrolled bushfires spread through much of Australia in August 2019, Mornington Peninsula Shire's Council unanimously declared a climate emergency, becoming the 34th council in Australia to do so. The Council gave staff six months to develop plans to expand and accelerate efforts to reduce carbon emissions. At a meeting packed with community members, Shire councillors spoke passionately about the need to shift into emergency mode.

"We need to accept the urgency, roll up our sleeves, join forces and just start healing the planet," said then-Councillor Bev Colomb. "This isn't a call to greater anxiety," said then-Councillor Sam Hearn. "It is a call for courage and leadership. There are opportunities for us to discover better, more collaborative and more harmonious ways to live together on the journey to a sustainable way of life."[33]

The Council's declaration called on the Australian and state governments to also declare an emergency and legislate programs to reverse global warming. Then-Mayor David Gill underscored the need for alignment across the levels of government because there are limits to what communities can do alone: "We'll do everything we can to address and mitigate climate change at a local level but it's going to take action from the state and federal government to make a real difference. This is a time to put political preferences aside for the sake of our environment and the future of our next generation."[34] The declaration was strongly supported by the Mornington Peninsula community, with over 90% of 650 survey respondents registering their support for the declaration.

Developing an Emergency Plan

Shire staff had never prepared a community wide emissions-reduction plan. "Pretty much all of it was blue sky," said Burrage. "We had to shift our way of thinking." As the work proceeded, Australia's bushfire rampage engulfed the nation and underscored the urgency for more ambitious decarbonization. Although Mornington Peninsula Shire didn't burn, smoke dropped air quality in the area to hazardous levels for several weeks. In January 2020 the Shire received two naval ships carrying 1,000 people

evacuated from burning coastal communities 300 miles away.

In the spring of 2020, the Council received a nearly 100-page plan, "Ensuring Our Future 2020," that called for the shire to reduce the community's carbon emissions to zero by 2040 and laid out numerous actions to achieve the goal. It called for 50% of all buildings to be powered by renewable energy by 2030 and transportation emissions to be cut 50% by then. It specified that 50% of all kilometers driven on shire roads should be by zero emissions vehicles and that, by 2023, zero organic waste would go to the landfill. It listed more than 20 new actions the Shire could take.

Communicating Community Benefits

The Shire's plan sketched a vision for the future in which "The Peninsula is a beacon of sustainability, a safe place where people and nature thrive." It described numerous benefits that could help the community advance toward the vision:

- A resilient, connected community who understands the local impacts and risks of climate change and is able to prepare for the impacts of extreme weather events. The community's voice is clearly and honestly amplified to all levels of government and industry so that climate action is accelerated
- Increased community deliberative engagement in the Shire's Climate Emergency decisions
- A thriving and diverse local economy "where businesses are part of the climate change solutions"
- Major economic hubs and schools will be more accessible by a network of footpaths, school walking bus lanes, bike lanes, or public transport
- Easy, affordable access to local, sustainably grown food

Adopting a Climate Emergency Plan

After extensive community consultation, Mornington Peninsula Shire Council unanimously adopted its climate emergency plan, "Ensuring Our Future: Our Climate Emergency Response," on August 25, 2020.

"Since the declaration," said Shire Mayor Sam Hearn, "we've talked with our community, listened to concerns, gathered ideas and nutted out how we can collaborate to build a better future. Along the way, we have encountered a stark reminder that we are all connected, and our current and future well-being is collective."[35]

The plan was among the first seven climate emergency plans developed and adopted by an Australian local government. It guides the Mornington Peninsula toward zero carbon emissions by 2040 with interim emissions targets set for every five years. Target actions are described in the seven summits and 21 action steps. It is a 10-year plan, but it looks ahead 20 years to a world in which the Mornington Peninsula municipality has transitioned to net zero emissions. To get there, interim targets have been identified. These targets are a shared responsibility between the Shire and the community.

The plan's seven key summits are:

- Leadership and governance
- Climate advocacy
- Zero carbon energy
- A resilient and adaptive community
- Sustainable transport and travel
- Sustainable land use and environmental restoration
- Circular economy and zero waste

Shire teams are focusing on achieving the targets of the plan and have accelerated many projects based on the climate emergency declaration.

Image credit: detail from the cover illustration of Mornington Peninsula's Climate Emergency Action Plan

CONCLUSION: GOING BEYOND EMERGENCY ADVOCACY

"We didn't want this to be a purely rhetorical declaration, but rather a document of measures that will mark a before and after."

—Barcelona Mayor Ada Colau, declaring the city's climate emergency

The rising urgency and growing worldwide emergency mobilization have spurred new thinking and action by communities looking to do more than press national and state/provincial governments to do their part to reverse global warming.

These climate-emergency communities are building local capacities for decarbonization, accelerating their reduction targets, and initiating new urban climate actions that add to the knowledge and plans many cities have already been implementing. Urban communities that were not as aggressive about reducing emissions are identifying numerous actions, immediate and long-term, that they will take. Some local governments that focused only on emissions from their own operations are expanding their scope to include the much larger and complex realm of emissions throughout the community.

Most significantly, these communities are expanding the frontier of local decarbonization to include consumption emissions and drawdown of carbon in the atmosphere. They are using new tools and approaches.

They are also seeking new powers to address global warming.

Barcelona, for example, seeks to amend legislation in Spain to enable new municipal taxes to be created in the area of tourism, which would generate local funds for climate action.

Bristol calls on the UK government to "grant us increased powers and resources to reduce particulate emissions, particularly from industrial and domestic uses, including from private wood burners."[37] The city also advocates for the national government to establish a Sustainable Energy Investment Fund for local governments to use to stimulate private sector investment in renewable-energy projects.

Iowa City is urging the state legislature to allow communities to control their energy codes for buildings.

Oslo is seeking authority from the national government to require zero emissions construction in its zoning plans.

The communities are taking up a cause that just a few years ago only had a few advocates: the need for a just transition to a post-fossil fuel economy.

Portland's emergency response states, for example, that "A transition to a low-carbon future and building resilience to the impacts of the climate emergency is an opportunity to redress historical inequities in our community and must be just." They city's declaration focuses on "frontline communities"—"Black and Indigenous people, communities of color, immigrants, refugees, low-income individuals and workers, people living with disabilities, youth and individuals experiencing homelessness"—that are least responsible for contributing to climate change but "are disproportionately affected by its impacts." These people, the city says, "must be the ones that

benefit first from the transition to a renewable energy economy."[38]

Meanwhile, **Bristol**, **Sydney**, and other communities call on their national governments to ensure a fair transition to a carbon-free economy, including alternative employment for workers and small businesses dependent on the fossil-fuel economy.

Lastly, cities pursuing more aggressive carbon reduction explain that emergency plans are not just about climate change, they're about creating a better city for residents. Evoking the "better city" ties a community's climate action to the deep concerns of its residents about the quality of urban living. It establishes a vision for the future that can unify public opinion and support for decarbonization efforts. "It's really crucial," states the **Glasgow** emergency plan, "to highlight that most of the [actions planned] will make our city a much more pleasant place to live, regardless of their impact on greenhouse gas emissions."[39]

The cities in this study draw quite similar visions of what the better future they seek will look like.

Barcelona's emergency plan declares: "We want to be a metropolis with balanced neighbourhoods that foster habits of short distances and healthy mobility, with a much more efficient and sustainable building stock." "We want a comfortable, traffic-calmed city with lots of green spaces that contribute to people's good health and well-being, and biodiversity."[40]

Bristol's plan describes its broader goals for the city: "A future that delivers improvements in public health, reduced costs for public services, improved air quality, reduced congestion, reduced inequalities and reduced poverty, increases in jobs and economic opportunities across society, greater community engagement, improved biodiversity alongside wider environmental benefits such as soil and water quality, and more."[41]

Copenhagen notes that investing in the city's renowned bicycling networks makes traffic flow more freely and generates health and financial benefits for bicyclists, while also reducing air pollution. Investments in energy efficiency cut heating bills "and the better indoor climate has documented effects on health and productivity."[42]

Many of the communities realize that they will need to continue to adapt their emergency responses—as they discover which actions are effective and new ideas emerge. "As the world around us evolves in terms of knowledge, legislation and policy, technology and the market," notes **Bristol's** "One City Climate Strategy, "we will adapt to take advantage of these opportunities."[43]

When these communities declared climate emergencies and took dramatic local action, they served as beacons of urban decarbonization. Today these beacons are shining more intensely than ever, illuminating pathways out of climate disaster and toward a better urban future.

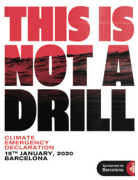
CNCA Resource:

Rethinking Climate Action in Portland

RESOURCES

Climate Emergency Plans:

Barcelona

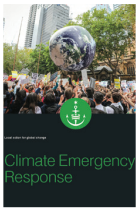


Glasgow

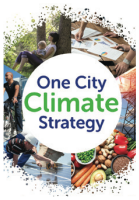
Melbourne

Portland

Sydney



Bristol



Iowa City

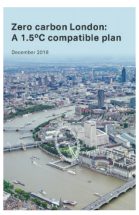
Mornington Peninsula

San Francisco

Toronto

Copenhagen

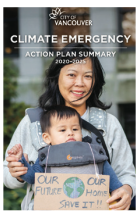
London



Oslo

Stockholm

Vancouver



Other Resources:

Carbon Neutral Cities Alliance: A collaboration of leading global cities working to achieve carbon neutrality in the next 10-20 years—the most aggressive GHG reduction targets undertaken anywhere by any city.

- Website — **https://carbonneutralcities.org**
- Report — **"Game Changers: Bold Actions by Cities to Accelerate Progress Toward Carbon Neutrality"**

The Climate Mobilization: A movement to mobilize Climate Emergency Response in the United States.

- Website — **www.theclimatemobilization.org**
- Report — **"Climate Emergency Campaign: Three Years of Impact"**

NOTES

[1] https://www.nytimes.com/2019/07/05/nyregion/-climate-emergency-nyc.html

[2] For updated number of local government climate emergency declarations see https://www.theclimatemobilization.org/climate-emergency/

[3] Most local governments declaring climate emergencies have not been developing emergency plans for reducing local emissions. In Australia, for example, 96 local councils have declared a climate emergency, but at the end of 2020 only seven had developed and adopted a plan for responding to the emergency. In 2019 researchers at the University of Exeter studied 237 local authorities in the United Kingdom that had declared a climate emergency and found that 73 (30%) contained a deadline for achieving community-wide zero emissions and directed development of an action plan. An additional 33 declarations included development of an action plan for local government operations only. See http://projects.exeter.ac.uk/igov/new-thinking-climate-emergency-declarations-accelerating-decarbonisation/

[4] The 15 communities include CNCA members: Copenhagen, London, Melbourne, Oslo, Portland, San Francisco, Stockholm, Sydney, Toronto, and Vancouver.

[5] For nation-by-nation inventory of climate-emergency communities see "Governments emergency declaration spreadsheet," https://docs.google.com/spreadsheets/d/1tb-LklFWLujYnjmCSvCWRcLUJCCWAL27dKPzVcFq9CQ/edit#gid=0

[6] Mayor Colau quote: https://english.elpais.com/elpais/2020/01/16/inenglish/1579177477_798192.html?prm=enviar_email

[7] Mayor Khan quote: Kate Proctor, "Sadiq Khan vows to make London carbon-neutral by 2030 if re-elected," The Guardian, January 17, 2020, https://www.theguardian.com/politics/2020/jan/17/-sadiq-khan-vows-to-make-london-carbon-neutral-by-2030-if-re-elected-mayor

[8] https://www.nytimes.com/interactive/2019/09/25/climate/un-net-zero-emissions.html

[9] London's 2030 target adopted by Mayor Sadiq Khan in January 2020, see https://www.theguardian.com/politics/2020/jan/17/-sadiq-khan-vows-to-make-london-carbon-neutral-by-2030-if-re-elected-mayor

[10] Stockholm's 2040 target is proposed in a new Climate Action Plan under consideration by city council.

[11] Barcelona quote: "This is Not a Drill," https://www.barcelona.cat/emergenciaclimatica/en

[12] Toronto quote: City of Toronto, "Declaring a Climate Emergency and Accelerating Toronto's Climate Action Plan," http://app.toronto.ca/tmmis-/viewAgendaItemHistory.do?item=2019.MM10.3

[13] San Francisco quote: https://sfenvironment.org/download/focus-2030-a-pathway-to-net-zero-emissions-climate-report-july-2019

[14] For more about consumption emissions, see C40 Cities, "Consumption-Based GHG Emissions of C40 Cities," https://www.c40.org/researches/consumption-based-emissions

[15] Iowa City quote: "Accelerating Iowa City's Climate Actions," https://www8.iowa-city.org/WebLink/0/edoc/1898237/100%20Day%20Report-Nov.2019.pdf

[16] Bristol quote: "One City Climate Strategy," https://www.bristolonecity.com/wp-content/uploads/2020/02/one-city-climate-strategy.pdf

[17] Barcelona quote: This is Not a Drill," 22, https://www.barcelona.cat/emergenciaclimatica/en

[18] Food system emissions: Numerous studies estimate that food system emissions range from 15-30% of total worldwide GHG emissions. See, for example, Our World In Data, "Food production is responsible for one-quarter of the world's greenhouse gas emissions," 2019, https://ourworldindata.org/food-ghg-emissions

[19] Vancouver quote: "Climate Emergency Response," https://vancouver.ca/green-vancouver/climate-emergency-response.aspx

[20] Barcelona quote: "This is Not a Drill," https://www.barcelona.cat/emergenciaclimatica/en

[21] Oslo: https://cleantechnica.com/2020/04/09/worlds-first-zero-emission-electric-construction-site/

[22] Vancouver quote: "Climate Emergency Response," https://vancouver.ca/green-vancouver/climate-emergency-response.aspx

[23] Tree planting: Damian Carrington, "Tree planting 'has mind-blowing potential' to tackle climate crisis,' The Guardian, July 4, 2019, https://www.theguardian.com/environment/2019/jul/04/planting-billions-trees-best-tackle-climate-crisis-scientists-canopy-emissions

[24] Glasgow quote: "The report and recommendations of Glasgow City Council's climate emergency working group," 8, http://www.glasgow.gov.uk/councillorsandcommittees/viewSelectedDocument.asp?c=P62AFQDNOGZLZ3DNDX

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