ACCELERATING RESILIENCE: WILDFIRE AND HEAT STRATEGIES FOR COLORADO'S NORTH FRONT RANGE

Summary Report of the 2023 Climate Resilient Communities Accelerator

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EXECUTIVE SUMMARY

Colorado is facing increasing climate impacts from extreme weather events like wildfires and heat waves. The state already sees more than 2,400 wildfires annually and is expected to see even more large fires due to future warming. Wildfire risks are further exacerbated by the state's expanding population and development in vulnerable areas.

The Center for Climate and Energy Solutions (C2ES) launched the first regional Climate Resilient Communities Accelerator (Accelerator) in 2023, in partnership with Colorado State University (CSU) Climate Action Partnership, to support communities and businesses that operate in the North Front Range of Colorado prepare for these impacts. Many local leaders are eager to coordinate on resilience issues as they actively engage in local, state, and federal programs to address wildfire risks and begin to grapple with the emerging risks presented by heat.

The Accelerator model aims to gather stakeholders to align resilience-building efforts, bring in additional federal and private sector partners and resources, and form relationships critical for continued collaboration. The Accelerator builds on and complements existing climate resilience programs and is designed to scale across multiple U.S. regions to elevate policy gaps and opportunities to federal lawmakers.

The 2023 Accelerator convenings—a Climate Resilient Economies Roundtable in October and a Resources Connector Forum in November—connected communities and businesses to each other and helped expand the pool of potential partners, including economic development groups, community-based organizations, nonprofits, and state and federal agencies. The discussions were designed to augment local resilience efforts by uncovering strategies that can reduce the impacts of more than one climate hazard and that would require action from a broad range of actors to succeed.

Through the Accelerator convenings, a diverse set of leaders identified and explored seven Key Action Areas to advance the North Front Range's resilience to wildfire and heat. These areas cover a range of crucial resilience components and can serve as a road map moving forward:

- improve air quality and protect public health through built environment interventions
- deploy proactive wildfire hazard mitigation measures in the Wildland Urban Interface (WUI)
- invest in microgrids and community resilience hubs
- reduce urban heat islands with trees and nature-based solutions
- align workforce development programs for a climate-resilient economy
- build a resilience community of practice
- prepare businesses for climate impacts.

The Accelerator convenings also featured federal agencies and private businesses that provide support in the key action areas, highlighting the increasing amount and variety of available resilience resources.

By linking increasing public and private resilience funding with local solutions to access and stack resources, the events were intended to help some of the challenges that arise from limited local capacity. The Accelerator will continue engagement for a second year to help position leaders for collaborative action to build off the foundation created by these initial convenings.

INTRODUCTION

In Colorado, climate change is intensifying droughts, flooding, heat, severe storms, and wildfires. While climate change is a global issue, the physical impacts from these hazards are felt locally, often disproportionately affecting vulnerable populations. Communities need help understanding, planning for, and responding to the increasing hazards they face, and a regional, multi-stakeholder approach can support resilience-building across jurisdictions that share common challenges.

Building on a history of stakeholder convenings, thought leadership, and research on local climate resilience, C2ES launched its first regional Climate Resilient Communities Accelerator to support communities and businesses that operate in the North Front Range of Colorado. Local governments and organizations in the North Front Range, defined generally as the corridor between Fort Collins and Denver, applied to host the pilot Accelerator and build regional coordination and capacity. Many leaders across Colorado are actively engaged in local, state, and federal programs that address wildfire risks and are beginning to grapple with the emerging risks presented by heat.

The Accelerator serves to gather these stakeholders to align resilience-building efforts, bring in additional federal and private sector partners and resources, and form relationships critical for continued collaboration. By participating in the initiative, these local leaders:

- **jointly identify strategies for regional economic prosperity through climate resilience** by engaging fellow leaders from the public sector, community organizations, and the business community
- **strengthen regional coordination and leadership** by identifying opportunities and new, actionable commitments, as well as **gain new insights** into existing climate resilience and economic development efforts, including nature-based solutions
- **connect with key federal agencies** to understand new opportunities and funding to address barriers and **elevate local and regional policy needs** to federal lawmakers.

C2ES designed the Accelerator to build on and complement existing climate resilience programs in the pilot region. Over the longer term, C2ES hopes to scale learnings from this Accelerator across multiple regions to elevate policy gaps and opportunities to federal lawmakers.

This summary report captures discussions from two Accelerator convenings in the fall of 2023. We detail the stakeholder engagement process, current and projected wildfire and heat impacts, the shared regional vision for a prosperous future, key action areas for resilience, and opportunities and resources to accelerate resilience action.

LAUNCHING THE NORTH FRONT RANGE ACCELERATOR

C2ES launched the 2023 Accelerator to support regional action-oriented dialogues to address wildfire and heat. To that end, public and private sector leaders, economic development organizations, federal agencies, and organizations representing underrepresented populations participated in these dialogues.

In preparation for the Accelerator's launch, C2ES reviewed local demographic information, future climate projections, historical climate events and associated economic impacts, existing climate resilience and adaptation activities, and private sector roles in existing resilience activities. Research highlighted key business sectors that are impacted by wildfire and heat and have a role to play in providing solutions. Sectors include buildings and infrastructure, finance, manufacturing, public health, tourism and recreation, and technology.

With CSU's input, C2ES mapped stakeholders and carried out strategic outreach to identify local private sector businesses and community-based organizations that could participate in the Accelerator. Scoping calls with over 60 stakeholders informed the Accelerator's focus on wildfire and heat hazards and helped build the goals, agendas, and participant lists for the convenings.

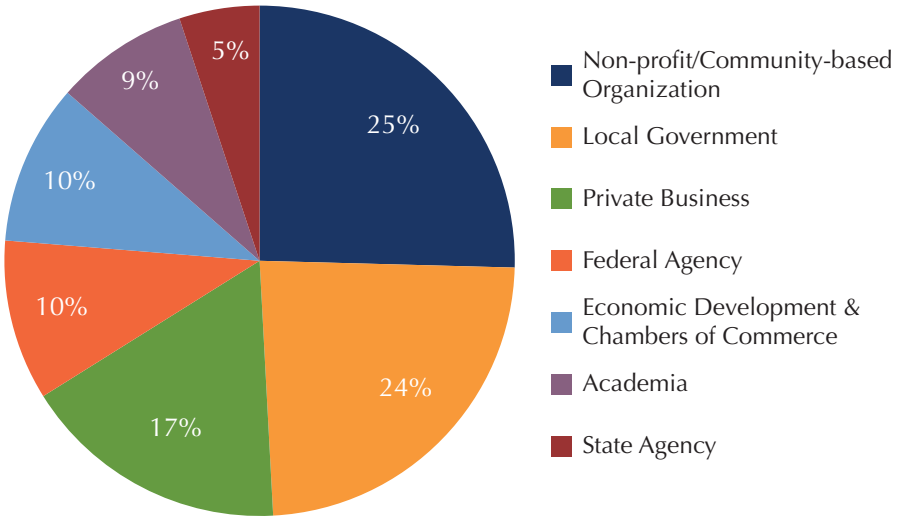
The Accelerator convened two interactive events in fall of 2023: the Climate Resilient Economies Roundtable in October and the Resources Connector Forum in November.

The October Roundtable established a baseline understanding among participants about the region's climate projections and physical impacts of wildfire and heat. This provided a common starting point for participants to identify and explore opportunities to accelerate action toward long-term climate and economic resilience.

The November Forum reconvened the Roundtable participants to explore the challenges and opportunities and to connect with relevant private and federal resources. Facilitated discussions offered participants space to brainstorm specific needs, potential partnerships, and tangible next steps on select strategies identified in the previous event.

The 64 participants represented a range of leading organizations, many developing innovative solutions on climate mitigation, environmental sustainability, and social equity, and others deeply engaged in wildfire response (see Figure 1). Participating jurisdictions ranged in size and included Boulder and Larimer counties, City and County of Denver, cities of Fort Collins, Longmont, Westminster, and Wheat Ridge, and towns of Erie and Superior. Community-based organizations brought expertise and perspective on broader regional needs including housing, health, and workforce. The cohort was further complimented by private businesses, economic development groups, academic institutions, and state and federal agencies. Meeting agendas are available at this *link*.

FIGURE 1: Participation by Organization Type



Breakdown of the types of organizations that were represented in the 2023 Accelerator convenings.

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ESTABLISHING A BASELINE: UNDERSTANDING WILDFIRE & HEAT RISKS

The Accelerator kicked off with a session from the assistant state climatologist, who shared that Colorado faces growing impacts of wildfires (high confidence) and extreme heat (very high confidence) due to increasing temperatures, dryer air, and more extreme precipitation patterns, as detailed in the third edition of the Climate Change in Colorado Report.[1]

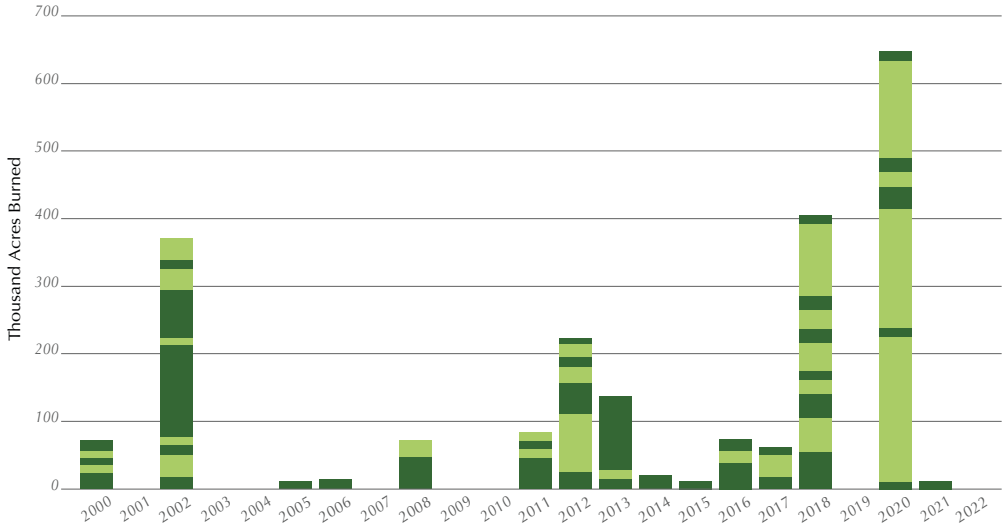
Colorado, home to fire-dependent ecosystems, experiences over 2,400 wildfires each year—with large fires burning more acres and longer fire seasons as the climate continues to change.[2] Further, communities are becoming more vulnerable as development increases in the Wildland-Urban Interface (WUI), the area where human development and infrastructure intermingle with wildland vegetation, creating higher wildfire risks and challenges in managing these risks (see Figure 2).[3] The state suffered its three largest fires in 2020, and in 2021, the Marshall Fire killed two people and destroyed over 1,000 homes and businesses, resulting in over $2 billion in damages (See Table 1).[4] These risks present significant costs; the State Forest Service estimates that wildfires will cost Colorado $440 million in annual damage and fire suppression alone by 2050.[5]

According to the assistant state climatologist, wildfire risk is projected to increase as warmer and dryer years become normal in our future climate, and the North Front Range is at particular risk to wildfire impacts due to high housing density in the WUI.

In addition to increasing wildfire risks, Colorado is warming faster than national and global averages, leading to more annual heat waves. According to the assistant state climatologist, 1.5 degrees F of the state's projected warming has already been observed and models estimate an additional 1 degree F to 4 degrees F of warming by 2050. This warming means that the number of days above 90 degrees F in the state will continue to increase and that the summer season will extend into fall. By 2050, Fort Collins could experience 18 more days over 90 degrees F each year, and Denver an additional 49 days.[6]

Wildfire and extreme heat are examples of climate risks that act as "threat multipliers" for public health and have many impacts on communities, including impaired air quality, water supply, and mental health, some of which participants have experienced and shared with the group. Heat is the leading cause of weather-related deaths in the United States with impacts on businesses and communities and disproportionate effects on vulnerable populations, including people earning low incomes, indigenous communities, communities of color, children, older adults, people with chronic illnesses, outdoor workers, and people experiencing homelessness.[7]

FIGURE 2: Large Wildfires in Colorado (2000–22)



Graphical representation of wildfires that burned more than 10,000 acres from 2000–2022 represented by total acreage burned. Each band represents a single wildfire event.

Rocky Mountain Area Coordination Center.[1]

TABLE 1: Top 10 Most Destructive Fires in Colorado (2002–22)

Fire (Year)	Structures Destroyed
Marshall Fire (2021)	1058
Hayman (2002)	600
East Troublesome Fire (2020)	580
Black Forest (2013)	533
Cameron Peak (2020)	444
High Park (2012)	371
Waldo Canyon (2012)	347
Spring Creek (2018)	225
Fourmile Canyon (2010)	172
Missionary Ridge (2002)	83

National Fire and Aviation Management (FAMWEB) and National Interagency Fire Center (NIFC).[2]

DEFINING A RESILIENT FUTURE IN THE NORTH FRONT RANGE

Resiliency is one lens through which leaders can seek solutions to wildfire and heat hazards and their related impacts. The *Colorado Resiliency Office* defines resilience as "the ability of communities to rebound and positively adapt to or thrive amidst changing conditions or challenges including human caused and natural disasters and maintain quality of life, healthy growth, economic vitality, durable systems and conservation of resources for present and future generations."[8]

Participants shared visions for a resilient and prosperous future in the North Front Range, which were characterized by healthy, connected, diverse, and inclusive communities with affordable housing, thriving natural systems, and diverse partnerships.

Participants added more detail to this desired future in pre-event surveys, explaining that near- and mid-term organizational success includes development of approaches and systems to address cross-cutting sustainability and equity issues, more cross-sectoral collaboration, higher capacity, and continued organizational growth and investment.

IDENTIFYING KEY ACTION AREAS

Through the Climate Resilient Communities Accelerator convenings, a diverse set of leaders identified Key Action Areas to advance the North Front Range's resilience to wildfire and heat. The areas serve as strategies that can reduce the impacts of more than one climate hazard and require action from a diverse set of actors to succeed.

Participants identified these areas in the October Roundtable when sharing and prioritizing existing efforts they would like to accelerate or expand, new strategies, and resources needed. These Key Action Areas cover a range of crucial resilience components and can serve as a road map moving forward (see Figure 3).

C2ES shared the Key Action Areas with public and private resource providers to help uncover funding and support to make these visions and the steps to achieve them more possible.

During the November Forum, participants considered potential partnerships, specific needs, and opportunities to accelerate these areas, summarized in the section below.

OPPORTUNITIES TO ACCELERATE THE SEVEN KEY ACTION AREAS

Participants of the November forum discussed the Key Action Areas, considered crucial to addressing emerging challenges and achieving a resilient future in region. Each group explored regional strengths they could build on, opportunities to accelerate action, potential partnerships, and how to leverage resources, including those presented during the forum.

These discussions are summarized here for each Key Action Area, focused on need, opportunities to accelerate action, and potential coordinators and partners. Together they represent an early-stage, high-level road map for coordination on latest regional wildfire and heat resilience strategies.

Please see Appendix B for a list of table participants at the breakout discussions on Key Action Areas.

FIGURE 3: Seven Key Action Areas to Advance Wildfire & Heat Resilience in the North Front Range

Accelerator participants co-developed these seven key action areas to build regional resilience to wildfire and heat.

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KEY ACTION AREA: Improve air quality and protect public health through built environment interventions

Need: Both increased wildfires and extreme heat events lead to poor air quality and negative health impacts in the North Front Range. For example, the metro Denver area is among the worst regions in the country for poor air quality, as Denver and northern Colorado have failed ozone standards for over 15 years.[9] Wildfires are also a major source of particulate matter, which can cause premature death and adverse birth outcomes.[10] Air filtration, reducing building and transportation emissions, and other interventions in the built environment have the potential to reduce these health impacts.[11]

Opportunities to Accelerate Action:

- expand electrification of buildings and transportation systems
- convene public health and communication specialists to develop community air quality safety programming for climate events like wildfires, learning from programs like Denver's *Love My Air*
- adapt public health educational resources and share with patients
- meet with organizations who could fund early communication and education efforts
- support research collaborations on plant science, focused on which species are most effective at improving air quality and can thrive in Colorado's changing climate
- promote the use of plants and green infrastructure in strategic locations, including along highways.

Potential Coordinators and Partners: academic institutions and community-based organizations for plant and green infrastructure research; health-focused NGOs for communication strategies; healthcare companies and sector partnerships for education.

KEY ACTION AREA: Deploy proactive wildfire hazard mitigation measures in the Wildland Urban Interface

Need: Much of the North Front Range has relatively high development density in the WUI, the zone of transition between human development and wildland vegetation that can serve as fuel for wildfires. The 2021 Marshall Fire was a devastating example of how wildfires that start in the natural environment can spread quickly to the built environment. Communities are now looking to create proactive wildfire mitigation measures in the WUI to protect themselves against these events.

Opportunities to Accelerate Action:

- educate community-based organizations and homeowners associations (HOAs) on best management practices
- create shared, centralized capacity and technical assistance to implement practices
- fund and mandate system-wide monitoring of mitigation measures to evaluate effectiveness
- increase efforts on private lands by initiating conversations with HOAs and insurance companies
- create a standard application for multiple grants or grants navigators to help develop and manage applications
- advocate for policy change at the federal level, including reducing the complexity of grants, especially for small communities.

Potential Coordinators and Partners: state agencies; code commissions; academic institutions; forest health and insurance councils.

KEY ACTION AREA: Invest in microgrids and community resilience hubs

Need: Heat waves and wildfires can cut off residents and businesses from power, water, and other life-saving resources and services. Microgrids and community resilience hubs are two solutions that can be used individually or in tandem to help communities continue to function during disruptions like extreme weather. A microgrid is a small-scale power grid that can operate independently or in conjunction with the area's main electrical grid. It typically includes power generation sources (like solar panels or small wind turbines), energy storage systems (like batteries), and a control system. Resilience hubs are enhanced community facilities that provide services, communication, power, and operations continuity during normal and emergency situations.[12] For example, a resilience hub can act as a cooling center during a heat wave or a shelter during a wildfire or storm.

Opportunities to Accelerate Action:

- form a resilience hub working group to expand efforts on a regional level
- learn from successful examples of microgrids and community resilience hubs
- educate regional leaders on the benefits of microgrids and community resilience hubs
- identify existing facilities with community resilience hub potential and support adding the remaining elements (e.g., renewable power systems and energy storage) needed to be full-fledged resilience hubs.

Potential Coordinators and Partners: local emergency managers; community groups; electric utilities; broadcast meteorologists; state and federal emergency management agencies.

KEY ACTION AREA: Reduce urban heat islands with trees and nature-based solutions

Need: Since 2010, Colorado has been ranked the 6th fastest growing state, with significant growth expected in the urban areas in the North Front Range.[13] Developed areas experience higher temperatures than surrounding environments, known as the urban heat island (UHI) effect, because concrete and other hard surfaces absorb and reradiate heat. In addition to a growing urban population, Colorado faces heightened UHI risks due to its rapid temperature increase—since 1970 it has been the 20th fastest-warming state.[14] Taken together, this presents greater heat risks to certain communities during extreme heat events. Several communities in the region have already documented the impact of UHI through on-the-ground heat mapping initiatives. Development strategies that include urban trees, green spaces, and other nature-based solutions could help protect community heat levels and reduce the impact of UHIs by providing shade and through evapotranspiration.[15]

Opportunities to Accelerate Action:

- expand efforts to map UHIs across the region
- communicate and collaborate with the state regularly on funding strategy
- engage Colorado Housing and Finance Authority to discuss funding available and how it can be used for green infrastructure solutions
- convene those who have funding available to streamline and consolidate
- integrate heat mitigation holistically into hazard mitigation plans and city efforts.

Potential Coordinators and Partners: community-based organizations; local governments; local water utilities; state agencies focused on local affairs, housing, finance, and public health.

KEY ACTION AREA: Align workforce development programs for a climate-resilient economy

Need: Workforce development is an important way to strengthen local economies. These programs address critical human resource needs of businesses and provide pathways to sustainable jobs for residents. Participants of the Accelerator convenings expressed a strong desire to build a local workforce to implement climate resilience initiatives such as proactive building improvements and post-disaster rebuilding.

Opportunities to Accelerate Action:

- investigate Opportunity Now Colorado, a new program offering $85 million in grants to create and expand innovative workforce development efforts across the state
- conduct workforce planning using labor market information and gap analysis
- communicate and coordinate existing efforts, opportunities, and funding
- embed resilience jobs into existing sectors, like energy, construction, and tourism.

Potential Coordinators and Partners: state labor agencies; universities; economic development corporations; investors; regional grant navigators; sector partnerships; industry associations.

KEY ACTION AREA: Build a resilience community of practice

Need: Communities and practitioners in the North Front Range can better prepare for climate hazards by learning from one another's strategies and avoiding what participants called "reinventing the wheel." Participants envisioned a resilience community of practice that could provide structure and support to learn, share knowledge, and develop expertise through ongoing interaction to individuals who share a common interest in climate adaptation and resilience. The resilience community of practice would create opportunities for members to make connections, learn from each other, collaborate on research and projects, consolidate resources, and access technical assistance to make resilience decisions.

Opportunities to Accelerate Action:

- seek opportunities to coordinate with or integrate into existing networks
- identify an appropriate base of operations, like a non-political academic institution with reach across the state
- seek funding and identify champions to begin developing the resilience community of practice.

Potential Coordinators and Partners: state agencies; business and housing membership organizations; community-based organizations; academic institutions.

KEY ACTION AREA: Prepare businesses for climate impacts

Need: Businesses in the North Front Range also feel the effects of wildfire, extreme heat, and poor air quality. To respond to these climate-induced impacts, businesses must incorporate resilience into all levels of decision making and operations. Participants discussed that the focus for businesses has been primarily on climate mitigation and sustainability, leaving paths to improve climate resiliency undefined. Businesses attending the October and November roundtables also expressed desire to increase financial resilience to impacts from these hazards.

Opportunities to Accelerate Action:

- research cost-effective risk mitigation measures to enable business continuity during extreme events like wildfires and heat waves
- curate informational resources and grant opportunities, especially for small businesses
- convene partnerships around resilience challenges and opportunities for regional businesses.

Potential Coordinators and Partners: economic development corporations; industry and trade associations; state and federal agencies; conveners.

RESOURCES TO ACCELERATE RESILIENCE

An increasing amount and variety of resilience resources are becoming available across federal and state agencies and the private sector, making it more difficult for communities to stay apprised of current opportunities. To bring these resources to local leaders, the Accelerator convenings featured federal agencies and private businesses that provide support in the key action areas.

FEDERAL RESOURCES

For the federal government, climate resilience is coming to the forefront across agencies and their community support programs. Both the 2021 Infrastructure Investment and Jobs Act (IIJA) and the 2022 Inflation Reduction Act (IRA) provide unprecedented funding for climate resilience. Issues and solutions that once were disparate—such as social equity, nature-based solutions, energy, decarbonization, and housing—are now converging under the theme of resilience (e.g., *Green and Resilient Retrofit Program [GRRP]* in the Department of Housing and Urban Development [HUD]).

The Accelerator convenings offered a unique opportunity for two-way engagement between federal and local practitioners to connect these emerging resources. Federal agency representatives highlighted a diverse set of funding, tools, and technical assistance that could advance resilience investment, including:

- The **Federal Emergency Management Agency (FEMA)** offers multiple funding programs to promote climate resilience and highlighted its pre-hazard mitigation program, *Building Resilient Infrastructure and Communities* (BRIC), which supports large resilience investments that incorporate equity and prioritize nature-based solutions. The agency will also manage activities to accelerate resilience investment in newly designated *Community Disaster Resilience Zones* (CDRZs), which are census tracks that are at high risk for climate impacts, including several in Larimer County, Colorado.
- The **U.S. Economic Development Administration (EDA)** noted millions of dollars in available *Disaster Supplemental* funding to support recovery from the 2021 Marshall Fire. More broadly, the EDA's funding priorities include equity, recovery, resilience, and environmentally sustainable development, opening the door to a variety of potential funding opportunities for climate resilient communities, including around workforce development, public infrastructure, and planning.
- The **U.S. Department of Housing and Urban Development (HUD)** is focused on supporting inclusive communities and quality affordable housing, both key elements of climate resilience. Their funding streams include *Healthy Homes and Community Development Block Grants* (CDBG), and the *Green and Resilient Retrofit Program* launched in 2023 to fund capital improvements in multi-family housing.
- **U.S. Department of Energy (DOE)** created the *Office of State and Community Energy Programs* (SCEP) in 2022 to increase the capacity of states, tribes, local governments, schools, and community-serving organizations to complete clean energy projects. Many of these programs also provide resilience benefits, including the *Weatherization Assistance Program* (WAP) for households, the *State Energy Program* (SEP) for energy emergency preparedness, community energy programs that include workforce and training grants, and technical assistance partnerships that support public-private partnerships. DOE also announced a new $1 billion for building codes adoption grants for states and local governments, and that Denver received an allocation over $655,000 for a community resilience hub under the *Energy Efficiency and Conservation Block Grant* (EECBG) Program.
- The **National Oceanic and Atmospheric Administration (NOAA)** provides decision support tools and initiatives for heat and drought risk management, including *Heat.gov* and the *Urban Heat Island Mapping Campaign*. Several communities in the region are already utilizing and benefitting from the Heat Island Mapping Campaign, which is available annually to communities across the United States.

STATE RESOURCES

The *Colorado Resiliency Office*, created under the state's Department of Local Affairs in 2018, collaborates across communities and state agencies to identify needs and provide resources "to support a long-term adaptable and vibrant future for all Coloradans by building stronger, safer, and more resilient systems in the face of natural disasters and other shocks and stressors." The office provides a variety of climate adaptation tools, funding, and support to local governments, including the *Commu-*

nity Readiness and Resilience Toolkit, the $20 million *Climate Resilience Challenge,* and *Microgrids for Community Resilience grant program*. The resiliency office also offers resources specific to wildfires (e.g., the *Wildfire Recovery Resources clearinghouse* and *Peer Exchange)* and extreme heat (e.g., the *Extreme Heat in CO Data Dashboard).*

In 2022, the Colorado Department of Local Affairs also began funding 14 *Regional Grant Navigators* to help local governments identify and apply for federal grants. These navigators are tasked with helping localities access and leverage increasing resources being made available by the IIJA, two of which are available to support communities across the North Front Range.

PRIVATE SECTOR RESOURCES & ACTIVITIES

The November event explored emerging private sector activities and resources to support resilience to wildfire and heat. Several local companies—Xcel Energy, Vaisala, and AT&T—shared their risk mitigation activities and highlighted where they could work with communities to advance resilience. Xcel Energy's Wildfire Mitigation program includes long-term prevention through system hardening, situational awareness, and piloting innovative technologies like PanoAI, an intelligent fire detection platform. The utility noted that a diverse workforce with many skill sets will be needed to implement these efforts. Vaisala, a global weather sensing company, offers weather sensing tools and digital platforms through their Xweather brand to cities for detecting and responding to extreme heat risks.

AT&T is building a telecommunications network more resilient to natural disasters through climate-informed decisions using forward-looking, neighborhood-level climate data that the company developed in collaboration with Argonne National Laboratory. Telecommunications play an important role before, during, and after a disaster, including when it comes to coordinating emergency response and communications between affected communities. AT&T uses the data to understand risk across their infrastructure and prioritize improvements, such as placement of backup generators.

At the Accelerator, AT&T shared its belief that the climate data that guides its resilience-building efforts could help communities as well. The company has partnered with FEMA and Argonne to build the *Climate Risk and Resilience Portal* (ClimRR), a free tool with forward-looking, actionable data about future climate hazards such as temperatures and heat, wildfire risk, rainfall and wind speeds. ClimRR is designed to help communities, businesses, government entities and others better understand and address future climate threats. AT&T recently aided Idaho's Office of Emergency Management to *integrate ClimRR's forward-looking climate data* into the state's Hazard Mitigation Plan update. AT&T is offering to assist local communities in the North Front Range to apply the ClimRR tool to help solve their resilience planning questions.

ACCESSING AND STACKING RESOURCES

The Accelerator convenings highlighted the North Front Range's collaborative strengths and existing network of state agencies, NGOs, and academic institutions that are providing communities with up-to-date data, tools, and support programs. Still, regional leaders noted the need for assistance to keep up with the increasing amount of available federal, state, and private sector resources, with many participants considering local capacity as the primary barrier for pursuing funding and action at the local level.

Leading strategies and innovative examples for accessing and stacking funding in Colorado and across the region emerged in the discussions:

- **Accessing resources**: The *Colorado Resiliency Office* works across communities and state agencies to identify needs and provide support resources, trainings, and exchanges to communities. New state-funded *Regional Grant Navigators* are available to help fill these gaps by assisting communities in identifying and applying to federal and state grants.
- **Stacking resources**: Downtown Denver Partnership, a business improvement district, is stacking public and private funding to scale the *Urban Forest Initiative* and improve tree canopy in downtown Denver. Impact Development Fund, a Community Development Financial Institution (CDFI), built a unique "one-stop shop" *Disaster Recovery Program.* One streamlined funding application allows households to access multiple disaster recovery, rebuilding, and resilience funds made available after the devastating 2021 Marshall Fire.

SHARED CHALLENGES AND LOCAL SOLUTIONS

Leaders and practitioners brought expertise to the discussions and shared their challenges and innovative approaches to building climate resilience. Several overarching challenges, as well as local examples of solutions, emerged while launching the 2023 Accelerator.

- **Adapting to wildfire, heat, and other physical risks of climate change often falls on local communities that have limited capacity to plan, invest, and implement resilience projects.** Despite unprecedented federal funding and increasing private sector resources, it can still be challenging for localities to access resources. To address this challenge, Colorado began funding full time *Regional Grant Navigators* to help communities identify and apply for federal grant opportunities. Impact Development Fund, a CDFI, worked with the state to create the *Disaster Recovery Program* that combines multiple post-Marshall Fire funding sources to offer one application process for households for disaster recovery and rebuilding. They have a vision to expand this "one-stop shop" strategy to include more pre-disaster resilience funding in the future.
- **Although increasing community climate resilience directly benefits businesses that operate locally, there is a lack of clarity around private sector roles in regional resilience efforts.** This was a theme in a November Forum panel where C2ES introduced a spectrum of leadership opportunities for companies across planning, investment, hazard preparation, and emergency response and recovery activities, further detailed in *An Emerging Blueprint for Companies to Advance Local Climate Resilience.* Private sector panelists offered local examples of the resilience roles companies can play, such as community partner, solutions provider, and risk management leader. During stakeholder engagement, C2ES uncovered additional resources for area businesses to reduce their risks in B:Civic's *Planning For Resilience: Disaster Response Toolkit.*
- **Workforce development is a common need across sectors to integrate proactive resilience and post-disaster recovery into existing sectors.** Colorado Strategic Wildfire Action Program (COSWAP) created a new *Workforce Development Grant* to support workforce development for wildfire mitigation and response. Groundwork Denver's *Green Infrastructure Training (GRIT)* trains and compensates young professionals in green infrastructure careers.
- **Risk mitigation efforts, planning, and resources are often inconsistent over time given the intermittent "boom and bust" cycle of climate hazards**. To build and keep up momentum for proactive solutions in communities and the region, participants discussed the importance of ongoing engagement and education. For example, since 2014, Boulder County's *Wildfire Partners* educates residents on wildfire risks and provides assessments and services for households and communities. *Peaks to People Water Fund* provides an investment model for forest restoration to reduce wildfire and water quality risks at the watershed scale. CSU's *Climate Transitions Dialogue* is a three-year program to convene a wide range of stakeholders for regional discussions on climate mitigation, adaptation, and sustainability.
- **Alongside growing climate risks, communities face challenges to social equity, including issues of affordable housing and health equity**. Communities are broadening their definition of resilience and incorporating social considerations and benefits into their efforts. For example, Larimer County's *Climate Smart and Future Ready* plan assesses climate hazards and creates holistic strategies for adaptation and mitigation across built environment, mobility, and natural environment. The City Longmont's *Resiliency for All* project helps increase representation for their Latino population and other underserved communities when it comes to hazard response, rebuilding and resilience efforts. The City of Westminster is considering a pilot program to provide air purifiers to vulnerable communities. Impact Development Fund, a CDFI, is incorporating energy efficiency and climate resiliency into its goals for creating more affordable housing.

NEXT STEPS

The North Front Range Climate Resilient Communities Accelerator is building momentum for coordinated action. With the engagement and leadership from public, private, and community stakeholders, the convenings have illuminated a path forward for the region. Between the first two events, participation increased, with participants noting strengthened relationships and alignment around specific needs and action areas.

In 2024, C2ES will build on this progress by continuing to engage a diversity of regional stakeholders and hosting additional convenings focused on driving impact in a subset of the Key Action Areas. C2ES will share insights and lessons gained from the Accelerator convenings to cultivate broader awareness, alignment, and action, and explore federal grant opportunities and policy needs that could accelerate these efforts in the pilot region and beyond.

CONCLUSION

The Climate Resilient Communities Accelerator is true to its name: it is accelerating regional coordination on wildfire and heat resilience in the North Front Range of Colorado. The collaborative efforts of the 2023 convenings successfully brought together a diverse array of leaders, identifying seven Key Action Areas that begin to outline a resilience road map. These areas—ranging from improving air quality and health equity to investing in microgrids and resilience hubs—reflect a shared commitment to proactive, integrated strategies that prioritize public health, sustainable economic development, and inclusive communities.

The Accelerator process was designed to augment local resilience efforts by elevating and uncovering strategies that can reduce the impacts of more than one climate hazard and will require action from a diverse set of actors to succeed. Linking increasing public and private resilience funding with local solutions to access and stack resources will help position the region to overcome the challenge of limited local capacity. The Accelerator will continue engagement for a second year to help position leaders for further collaborative action to build off the foundation created by these initial convenings.

BOX 1: About the Pilot Climate Resilient Communities Accelerator

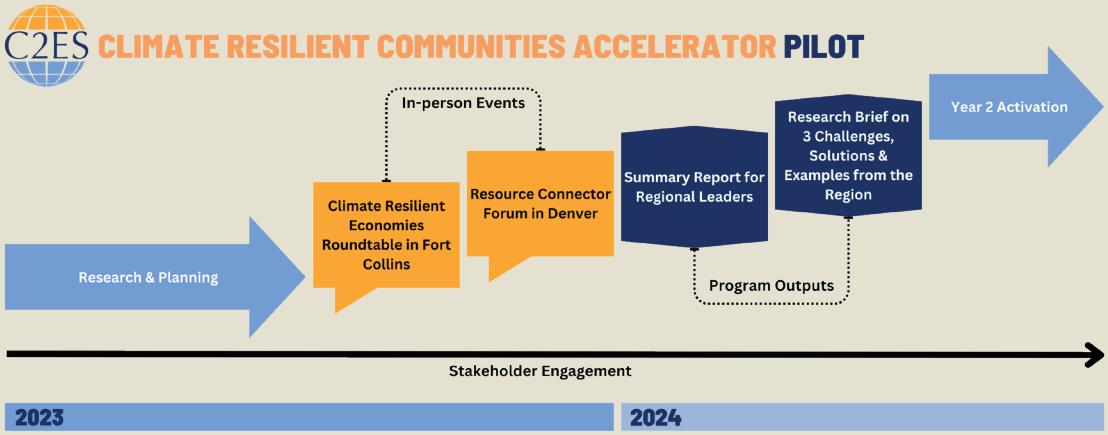
In designing the Accelerator, C2ES conducted an extensive landscape analysis of existing resilience programs in the United States to identify gaps that the program could help fill. Through this review, C2ES decided to focus on less commonly addressed and more recently emerging climate hazards and to sharpen engagement with federal agencies and the private sector.

To select a pilot region for the Accelerator, C2ES identified ten regions with significant climate hazards and high social vulnerability as defined by FEMA's *National Risk Index*, existing climate resilience efforts, and presence of partners from C2ES's Business Environmental Leadership Council (BELC). Organizations in these regions were invited to express their interest through a simple application process.

C2ES received interest across all eligible regions and selected the North Front Range for the first Accelerator in part because of the level of community interest and opportunities to learn from and contribute to existing efforts.

The 2023 Accelerator hosted two convenings to connect leaders around opportunities to accelerate regional resilience to wildfire and heat. A diversity of stakeholders was engaged throughout the planning process and informed the meeting agendas and participants.

C2ES created this summary report of the two convenings for participants, regional stakeholders, and funders to support future action and decision making. C2ES will also publish a research brief introducing key challenges, strategies, and local solutions from the North Front Range for a national audience.



ACKNOWLEDGEMENTS

C2ES designed and launched the pilot Climate Resilient Communities Accelerator with the generous support of the Bank of America Charitable Foundation.

C2ES hosted the 2023 convenings in partnership with CSU Climate Adaptation Partnership, and would also like to thank ICF's Climate Resilience team for their expertise and assistance to realize the pilot Accelerator.

APPENDIX A

Participants of the 2023 Accelerator Events

Name	Organization	Attended October Roundtable	Attended November Forum
Grace Rink	AECOM	•	•
Kaitie Workman	Anheuser-Busch	•	
Blythe Johnston	AT&T and Colorado State University	•	
Jessica Filante	AT&T	•	•
Erica McIntire	Bank of America	•	•
Katie Arrington	Boulder County	•	•
Tatiana Hernandez	Boulder County Community Foundation	•	
Jim Webster	Boulder County Wildfire Partners	•	
Carol Cochran	Horse & Dragon Brewing Company	•	•
Mel Englund	Cities of Englewood and Sheridan	•	•
Lis Cohen	City and County of Denver	•	•
Khaihoan Nguyen	City and County of Denver		•
Matthew Newman	City and County of Denver		•
Katy McLaren	City of Fort Collins	•	
Kerri Ishmael	City of Fort Collins		•
Lisa Knoblauch	City of Longmont	•	•
Bridger Tomlin	City of Westminster	•	•
Mary Hester	City of Wheat Ridge	•	
Dr. Becky Bolinger	Colorado Climate Center	•	
Mark Thompson	Colorado Division of Homeland Security and Emergency Management		•
Karam Ahmad	Colorado Health Institute	•	
Marguerite Harden	Colorado Resiliency Office	•	•
Janae Malpas	Colorado State Forestry Service	•	•
Jeff Muhs	Colorado State University College of Business		•
Dr. Elicia Ratajczyk	Colorado State University Institute for the Built Environment	•	•
Dr. Courtney Schultz	Colorado State University Warner College of Natural Resources	•	•
Eliisa Carter	Colorado State University Warner College of Natural Resources	•	•
Guadalupe Solis	Cultivando	•	
Fede Ulbrich	Dashboard Agency		•
Maddy Nesbit	Denver Regional Council of Governments	•	•
Paul Jesaitis	Denver Regional Council of Governments		•
Amanda Miller	Downtown Denver Partnership		•
Corrina Marshall	Ember Alliance	•	

Name	Organization	Attended October Roundtable	Attended November Forum
Kyle McCormick	Federal Emergency Management Agency	•	•
Aracely Navarro	Groundwork Denver		•
Cassandra Bhat	ICF	•	
Katrina Starbird	ICF	•	
Emily Nilsen	Impact Development Fund		•
Megan Ferguson	Impact Development Fund	•	
Natasha Albert	Impact Development Fund	•	
Dawn Paepke	Kaiser Permanente	•	•
Lisa Romero	Kaiser Permanente		•
County Commissioner Shadduck-McNally	Larimer County	•	
Heidi Pruess	Larimer County	•	•
Jonathan Galindo	Latino Chamber of Commerce of Boulder County		•
Erin Fosdick	Longmont Economic Development Partnership	•	
Krista Colehower	Longmont Economic Development Partnership		•
Gretel Follingstad	National Oceanic and Atmospheric Administration		•
Evan Wendlandt	Northern Colorado Regional Economic Development Initiative	•	
Julie Dubin	Peaks to People Water Fund	•	
Sandi Good	Peaks to People Water Fund		•
Kellie Falbo	Sustainable Living Association	•	
Jane Allen	The Alliance for Collective Action	•	•
Keeley Stokes	The Alliance for Collective Action		•
Ryan Campbell	The Alliance for Collective Action		•
Eryka Thorley	Town of Erie	•	•
Allison James	Town of Superior	•	•
Jamie Hackbarth	U.S. Department of Energy		•
Mercedes Maestra	U.S. Department of Housing and Urban Development		•
Scott Serafin	U.S. Department of Housing and Urban Development		•
Trent Thompson	U.S. Economic Development Administration	•	•
Alison Pegg	Upstate Colorado Economic Development Corporation	•	•
Scott Mackaro	Vaisala		•
Mark Nolan	Xcel Energy		•

APPENDIX B

Table participants of the breakout discussions on Key Action Areas at the November 14 Resource Connector Forum

Key Action Area	Discussion Participants
Improve air quality and protect public health through built environment interventions	Lisa Romero (Kaiser Permanente, table lead), Eliisa Carter (CSU), Libby Zemaitis (C2ES)
Deploy proactive wildfire hazard mitigation measures in the Wildland Urban Interface (WUI)	Elicia Ratajczyk (CSU, table lead), Mercedes Maestas (U.S. Department of Housing and Urban Development), Mel Englund (Cities of Englewood and Sheridan), Katie Arrington (Boulder County)
Build a resilience community of practice	Courtney Schultz (CSU, table lead), Khai Nguyen (City and County of Denver), Mark Thompson (CO Division of Homeland Security and Emergency Management), Allison James (Town of Superior), Janae Malpas (Colorado State Forestry Service), Mark Nolan (Xcel Energy), Paul Jesaitis (Denver Regional Council of Government), Emily Nilson (Impact Development Fund), Sandi Good (Peaks to People), Alison Pegg (Upstate Colorado), Jessica Filante (AT&T)
Reduce urban heat islands with trees and nature-based solutions	Amanda Miller (Downtown Denver Partnership, table lead), Kerry Ishmael (City of Fort Collins), Scott Serafin (U.S. Department of Housing and Urban Development), Lisa Knoblauch (City of Longmont), Kyle McCormick (Federal Emergency Management Agency)
Align workforce development programs for a climate-resilient economy	Ryan Campbell (The Alliance for Collective Action, table lead), Jane Allen (The Alliance for Collective Action), Heidi Pruess (Larimer County), Erica McIntire (Bank of America), Trent Thompson (U.S. Economic Development Administration), Keeley Stokes (The Alliance for Collective Action), Maddy Nesbit (Denver Regional Council of Governments), Bridger Tomlin (City of Westminster)
Invest in microgrids and community resilience hubs	Lis Cohen (City and County of Denver, table lead), Matthew Newman (City and County of Denver), Eryka Thorley (Town of Erie), Jamie Hackbarth (Department of Energy), Marguerite Harden (Colorado Resiliency Office), Scott Mackaro (Vaisala), Dawn Paepke (Kaiser Permanente)
Prepare businesses for climate impacts	Jeff Muhs (CSU, table lead), Carol Cochran (Horse & Dragon Brewing), Grace Rink (AECOM), Amy Bailey (C2ES)

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FIGURE ENDNOTES

1 "Intelligence," Rocky Moountain Area Coordination Center, accessed February 7, 2023, *https://gacc.nifc.gov/rmcc/intell.php*

2 "Wildfires destroy thousands of structures each year," National Fire and Aviation Management (FAMWEB) and National Interagency Fire Center (NIFC), as reported by Headwaters Economics, last modified January 2023, *https://headwaterseconomics.org/natural-hazards/structures-destroyed-by-wildfire*

C2ES Resources

Climate Resilient Communities Accelerator
https://www.c2es.org/building-climate-resilience/climate-resilient-communities-accelerator/

Emerging Blueprint for Companies to Advance Local Climate Resilience
https://www.c2es.org/content/an-emerging-blueprint-for-companies-to-advance-local-climate-resilience/

The Resilience Factor: A Competitive Edge for Climate-Ready Cities
https://www.c2es.org/document/the-resilience-factor-a-competitive-edge-for-climate-ready-cities/

Climate-related Financial Risks and Opportunities: A Primer for Local Governments
https://www.c2es.org/document/climate-related-financial-risks-and-opportunities-a-primer-for-local-governments/

Extreme Weather and Climate Change
https://www.c2es.org/content/extreme-weather-and-climate-change/

Billion-Dollar Extreme Weather Events Map
https://www.c2es.org/document/billion-dollar-extreme-weather-events/

Resilience Strategies for Extreme Heat
https://www.c2es.org/document/resilience-strategies-for-extreme-heat/

Resilience Strategies for Wildfire
https://www.c2es.org/document/resilience-strategies-for-wildfire/

C2ES CENTER FOR CLIMATE AND ENERGY SOLUTIONS

The Center for Climate and Energy Solutions (C2ES) is an independent, nonpartisan, nonprofit organization working to secure a safe and stable climate by accelerating the global transition to net-zero greenhouse gas emissions and a thriving, just, and resilient economy.

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