

Mountain West Climate-Health Engagement Hub

Evaluation Report

March 2024

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Photo Credit: Jess Bailey, Unspalsh

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Executive Summary

Established in March 2023, the Mountain West Alliance for Community Engagement for Climate and Health (ACE-CH) Hub was developed to support the overall National Institute of Health (NIH) ACE-CH mission of building strong and sustainable community partnerships to facilitate climate change adaptation, knowledge exchange, and improved awareness of strategies that support climate resilience and health equity. The first phase of this project focused on expanding and strengthening our established community relationships in the San Luis Valley and West Denver to better understand how communities are experiencing climate stressors common in the western United States (drought, wildfires, air quality, extreme heat). Through Phase I, we identified priorities, opportunities, and assets to advance climate resilience. Additionally, we built capacity for innovative and effective research and action.

In Year 1, we established two Community Advisory Boards (CABs), one each in West Denver and the San Luis Valley of Colorado. Additionally, we convened a Climate Science Advisory Board (CSAB) and a Policy and Practice Advisory Board (PPAB). These advisory boards met on a regular basis to allow for knowledge exchange, capacity building, and the documentation of community priorities for actions to support climate resiliency and health equity. Utilizing outputs from advisory board meetings, evaluation activities, and qualitative data from in-depth interviews with advisory board members, we produced an engagement report on the current state of community experience, knowledge, and attitudes towards climate stressors, adaptation readiness, resilience, and priority actions for climate health. The Community Voices Volume 1 report is available online, in both English and Spanish. It was shared with the communities who helped create it.

In Year 2, advisory boards were transformed into the Climate Conversation Core (CCC), the Action Planning Core (APC), and the Youth Climate Core (YCC) to better reflect community interests and lessons learned throughout Year 1. Community members from Year 1 continued and new members were recruited to ensure representation from priority groups from both the West Denver and San Luis Valley communities. In Year 2, working with community members, we submitted a funding proposal to the Colorado Department of Public Health and Environment to support climate resilience for San Luis Valley communities and laid the groundwork for West Denver to pursue specific actions to support climate resilience through partnership with Denver's Office for Climate Action, Sustainability, and Resiliency. In close collaboration with communities, we also designed climate conversation guides that were designed to spark conversations based on the identified climate needs in each community. A series of four online education modules were developed that addressed extreme heat, wildfires, drought, and air quality. Finally, we co-developed a video series where community members from both WD and the SLV shared their stories about the impacts of climate stressors and actions they are taking in their communities to increase resilience. The YCC in both the SLV and WD communities also met to advance the involvement of youth members into the work of the Hub. In WD, this primarily occurred through hosting events and connecting with groups who were doing work in the same climate space to find intersections. In the SLV, four high school YCC members developed a book club and reading program for younger children to engage in climate conversations.

The detailed evaluation report is presented below. Section 1 provides an overview of our academic and community partners, highlighting their participation in meetings and community or

professional presentations, such as the 2024 Public Health in the Rockies and the 2024 Partnership for Environmental Justice Public Health conferences, where members from both the SLV and WD communities presented work from the Hub. Section 2 highlights the results from our on-going survey administered to meeting participants, with data from the beginning of the Phase I project period, end of Year 1, and end of Year 2. In general, feedback about the research team started at a high level and became more positive over time. There were minor variations in the ratings of health impacts that people experienced over time. Finally, section 3 highlights evaluation findings of implementation and dissemination activities. Further evaluation will occur as more dissemination activities occur based on recently completed work including for the *Climate Resiliency and You* video series, the Climate and Health in the Mountain West report, educational modules, and the Climate Conversation guide materials. [REDACTED]

Section 1. Overview of Community and Academic Partners

Climate Conversations Core

Name	Organization	Region	Year 1 Affiliation
Carrie Makarewicz	CU Denver Community Collaborative Research Center	Denver	CSAB
Christine Wiedinmyer	CU Boulder Cooperative Institute for Research in Environmental Sciences	Denver, Boulder	CSAB
Anna Lee Vargas	SLV Ecosystems Council	SLV	SLV CAB
Hannah Thill	Rio Grande Watershed Conservation and Education Initiative	SLV	SLV CAB
Christine Canaly	SLV Ecosystem Council	SLV	SLV CAB
Emily Brown	Lifelong Resident, Farmer, SLV Public Health Partnership	SLV	SLV CAB
Julie Geiser	Rocky Mountain Prevention Research Center CAB; Retired Public Health Director, Resident since 1970s	SLV	SLV CAB
Shakari Hood	Colorado Black Health Collaborative	Denver	WD CAB
Jaime Aguilar	Colorado Gives Foundation	Denver	WD CAB
Erica Luevano	Denver Housing Authority, West Denver Resident	Denver	WD CAB
Evon Lopez	Community Activist, The Park People	Denver	WD CAB
Heidi Newhart	West Denver Resident, Broker Associate, Madison and Company	Denver	New YR2
Adriana Lopez	Community Activist, West Denver Resident	Denver	New YR2
Augusto Basterrechea	Research Professional, SLV Area Health Education Center	SLV	New YR2
Patrick Ortiz	SLV Regional Representative, Senator Hickenlooper's Office	SLV	New YR2
Caleb Yoder	CU Denver Urban & Regional Planning	Denver	New YR2
Elena Miller-ter Kuile	Lifelong Resident, Farmer	SLV	New YR2

Action Planning Core

Name	Organization	Region	Year 1 Affiliation
Willem Schreuder	CU Boulder, Principia Mathematica	Denver, Boulder	CSAB
David Rojas	CSU & Colorado Department of Public Health & Environment	Fort Collins	CSAB
Clare Burchenal	Children's Hospital Colorado	Denver	CSAB
Guy Keene	Rio Grande Headwaters Land Trust and retired Wildland Fire Fighting Management	SLV	PPAB
Patricia Valverde	Latino Research & Policy Center	Denver	PPAB
Kyler J Brown	SLV Rocky Mountain Farmers Union	SLV	PPAB
Shaina Burkett	Denver Housing Authority	Denver	WD CAB
Ean Tafoya	Green Latinos	Denver	PPAB
Svetlana Bresnitz	SLV Health - pediatrician	SLV	SLV CAB
Joni Adelman	Silver Thread Public Health	SLV	PPAB
Don Hanna	La Puente PALS Children's Program	SLV	SLV CAB
Kathy Woods	Alamosa Economic Development	SLV	PPAB
Dawn Melgares	San Luis Valley Housing Coalition	SLV	PPAB
Sean Brady	West Denver resident, Denver Mayor's Bicycle Advisory Committee	Denver	WD CAB
Macarrah Vaughn	Denver Housing Authority	Denver	WD CAB
Jennifer Villalobos Gonzalez	West Denver resident, CU Anschutz Community and Behavioral Health	Denver	WD CAB
Thai Nguyen	Kaizen Food Rescue	Denver	WD CAB
Airille Ogawa	Mercy Housing	Denver	New YR2
Karla Shriver	Rancher, Banker, founder NFO, wildlife conservationist	SLV	New YR2
Dawn Anderson	Conservative/moderate voice passionate about drought and adaptation	SLV	New YR2
Shirley Romero Otero	Community Activist, historian and heritage expert	SLV	New YR2
Paul Wertz	Director, Costilla County Public Health	SLV	New YR2
Kathy Sandoval	Villa Park resident, West Area Plan Steering Committee	Denver	New YR2

Evaluation of Academic-Community Partnerships			
Construct	Indicator(s)	Data Source(s)	Findings
Advisory Boards (CABs (2), CSAB, and PPAB) convened and meetings held as scheduled	Number of meetings and number/percent of members who attend	Meeting attendance	Year 1 all advisory board attendance - 94%
Project Cores (CCC, APC, YCC) are convened and meetings held as scheduled	Number of meetings and number/percent of members who attend	Meeting attendance	Year 2 all core attendance - 79%

Section 2. Survey Data – Community Participants

Rate your agreement with the following statements:	Overall (n = 27) Beginning Year 1		Overall (n = 15) End Year 1		Overall (n = 26) End Year 2	
	M (SD)	Range	M (SD)	Range	M (SD)	Range
I can influence the work on the Mountain West ACE-CH team.	4.2 (0.6)	3-5	4.1 (0.7)	3-5	4.4 (0.6)	3-5
When the advisory group makes major decisions, there is enough time for me to take information back to my community to confer with them about what the decision should be	3.6 (0.6)	3-5	4.0 (0.6)	3-5	4.2 (0.7)	3-5
People in the advisory group are open to different approaches to how we can do our work. They are willing to consider different ways of working.	4.2 (0.5)	3-5	4.1 (0.7)	3-5	4.5 (0.6)	3-5
This project has increased the capacity of the community to address health impacts of climate change.	n/a	n/a	3.7 (1.1)	2-5	4.2 (0.7)	3-5
Local knowledge from the community was successfully incorporated into the Mountain West ACE-CH meetings and objectives.	n/a	n/a	4.2 (0.8)	2-5	4.4 (0.6)	3-5

1 = strongly disagree; 2 = disagree; 3 = neither agree nor disagree; 4 = agree 5 = strongly agree

Rate how the research team does in the following:	Overall (n = 27)	Overall (n = 15)	Overall (n = 26)
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	Beginning Year 1		End Year 1		End Year 2	
	M (SD)	Range	M (SD)	Range	M (SD)	Range
Focuses on problems important to the community	3.9 (1.0)	2-5	4.1 (1.0)	2-5	4.3 (0.7)	2-5
Builds on strengths and resources within the community	3.9 (0.9)	2-5	4.1 (1.0)	2-5	4.4 (0.9)	3-5
Implements processes that support trust among all partners	4.0 (0.9)	2-5	3.9 (1.1)	2-5	4.3 (0.8)	3-5
Shows respect to all partners	4.4 (0.9)	1-5	4.5 (0.6)	3-5	4.6 (0.6)	3-5

1 = poor; 2 = fair; 3 = good; 4 = very good; 5 = excellent

Rate how the research team does in the following:	Overall (n = 27) Beginning Year 1		Overall (n = 15) End Year 1		Overall (n = 26) End Year 2	
	M (SD)	Range	M (SD)	Range	M (SD)	Range
Being available	4.7 (0.6)	3-5	5.0 (0.0)	5-5	4.8 (0.5)	3-5
Following through on promises	4.5 (0.8)	3-5	4.6 (0.7)	3-5	4.8 (0.5)	3-5
Communicating clearly	4.5 (0.8)	2-5	4.4 (1.0)	2-5	4.7 (0.6)	3-5
Listening to others' ideas	4.7 (0.6)	3-5	4.7 (0.7)	3-5	4.8 (0.5)	3-5
Spending time in the community	4.4 (0.8)	2-5	4.2 (0.9)	2-5	4.5 (0.7)	3-5
Sharing decision making	4.5 (0.8)	2-5	4.5 (0.7)	3-5	4.8 (0.5)	3-5
Being transparent and truthful	4.6 (0.6)	3-5	4.8 (0.4)	4-5	4.8 (0.5)	3-5
Respecting race, power, class, and cultural difference	4.7 (0.6)	3-5	4.9 (0.3)	4-5	4.9 (0.3)	4-5

1 = not at all well to 5 = very well

An open-ended question asked respondents to state one specific success from the Mountain West ACE-CH Hub team. At the beginning of the project period, most respondents mentioned: convening people or that it was too soon to tell. The responses at the end of year one and two were more varied and are presented below.

YEAR ONE
Strong community teams
Community resources gathering and gearing up to action
Working collaboratively
Creating a list of climate change fears and realities for both SLV and DW communities and overlap.
Bringing two very different communities together to discuss concerns and possible solutions.
The interviews made one feel like someone was listening.
The breadth of people, positions, locations, and organizations gathered for this project.
Love the website. Great resource.
Displaying the importance of community input and access
Collecting diverse individuals to participate on the advisory board.
They treat everyone with the utmost courtesy, dignity and respect. Always willing to help and offer insight on educational platforms, theory or understanding on social injustice.
Focusing on what matters in communities
Viewing survey results
YEAR TWO
Producing great educational materials and communications
Comprehensive final online document
Identifying potential hazards and discussing possible ways of mitigation
Bringing rural and urban communities together to understand how much we share in common. This is so important and is the backbone of the story telling, which we hope will continue.
ability to foster strong collaboration across diverse stakeholders, ensuring that research efforts are both community-centered and impactful.
Bringing the rural and urban community together to share experiences and resources.
group work
Collaboration among partners
Creating climate related mapping
Encouragement and Empowerment
One specific success has been the utilization of community voices and partners to ensure cultural understanding to support all needs of the community.
Bringing various view points together
Involving youth and the materials we have all contributed to getting out to the community.
The SLV youth and there contributions

Respondents were also asked about the biggest challenge the Mountain West Hub team faced and how it was addressed. Responses from the end of years one and two are presented below.

YEAR ONE
Unclear mission/purpose of the hub - still working on this!
Communication barriers; creation of website with all community partners and info in one space
There hasn't been too many challenges. We work well together.
Putting any data into action. Is a website action? I don't know, but doubt it.
I'm not sure I noted anything specific.
Differences in the 2 communities needs and resources. The first year separate groups were focused on separate needs.
It has been slightly confusing what our role actually is - what are we supposed to do?
Developing a coherent message. I think they have done a good job pulling diverse groups and ideas together.
How to educate on next steps and having community be heard with action by the decision makers
For me it is a matter of an 8,000 sq miles to reach
Getting everyone to join the convo, helping to ensure those who are quiet are also heard. And we need more systems thinking. Fair minded critical thinkers who can offer more connectedness, what is this city agency offering and what is the stakeholders doing, offer more key collaborations.
Creating a structure that doesn't exist and building from community support
Defining deliverables and purpose. We reviewed previously discussed deliverables at the start of each meeting
YEAR TWO
Making decisions among a large group - done through successful feedback and rating systems
Many needs SLV has, they are waiting to be addressed. Prioritized and gathered info from locals on what's most pressing and important
I think it's gone well.
Funding obviously and I think the conversation was very clear in terms of what we might be facing. Thanks for outlining that.
ensuring continued funding amid transitions to a new administration. Policy shifts and changing funding priorities created uncertainty, requiring the team to proactively adapt.
There were no big challenges. We worked well together as a team, and we had good leadership.
Many viewpoints - allowed time to work through
Funding. The team focused on finding funding mechanisms to implement priorities.
Understanding how this program will help West Denver with funding to combat climate change.
Not enough time
With the above, it can be hard to design a report of even website to suit all races/cultures as all underserved communities have different SDOH.
I joined late, it took a bit to catch up, and still not quite as well versed to the goals as some on the committee.
Sometimes understanding how I really help.
Bringing West Denver and the SLV together to address climate issues. I think they have done an excellent job doing that.

Have you or a member of your household experienced any of the following climate change-related health impacts?	Overall (n = 27) Start Year 1	Overall (n = 15) End Year 1	Overall (n = 24) End Year 2
Air pollution-related health effects (such as asthma)	63%	33%	50%
Health effects from wildfires (such as respiratory)	63%	67%	29%
Drought or water scarcity impacts	48%	73%	42%
Mental health impacts (such as stress, anxiety)	48%	47%	58%
Climate anxiety (constant fear or worrying about climate change)	44%	40%	50%
Extreme heat-related impacts of daily life	41%	53%	38%
Impacts on relationships (such as distance between friends due to differing perspectives)	22%	27%	21%
Loss of homes, tribal lands, and/or cultural practices	7%	7%	4%
Waterborne illnesses caused by polluted/poisonous drinking or recreational water	4%	0%	4%
Drowning or injuries due to storms	0%	0%	0%
Extreme heat-related illnesses or deaths	0%	13%	8%
Foodborne illness/food poisoning (eating contaminated or toxic food)	0%	7%	17%
Malnutrition due to less availability of food in natural habitats	0%	0%	4%
Zoonotic diseases (illnesses passed from animals to humans, like dengue)	0%	0%	4%
Not listed, please describe:	15%	0%	0%
None	7%	0%	8%

Other responses beginning of year one: The winds are more constant now, so preparing for the outdoors has gotten more complicated. More particulate matter in the air, weather is more inconsistent (SLV CAB); Not sure how to prioritize to deal with climate change, but just trying to stabilize the land, resources, and people around me (SLV CAB); worse seasonal, almost year round allergies (CSAB); impacted by wildfire – evacuation, had to clean home, neighbors worried (CSAB)

Other responses end of year one: Fear of loss of livelihood and way of life due to a lack of water and climate change to agriculture (PPAB); Heart issues from long term exposure to wildfire smoke (PPAB); The governments are amazing trying to bring awareness and understanding, grant money for disenfranchised neighborhoods together, but there is no coordination of benefits (WD CAB); High radiation potential (SLV CAB)

Other responses end of year two: none

Section 3: Other Evaluation Metrics

Evaluation of Data Collection & Analysis			
Construct	Indicator(s)	Data Source(s)	Findings
Create a comprehensive understanding of publicly available data on climate and health	Number of data sets identified and accessed	National, regional, state, and local government, academic, and non-governmental agencies	89 unique sources summarized in Climate and Health in the Mountain West report <ul style="list-style-type: none"> - 50 national level - 27 state or tribal nation - 12 local
Climate and health data collected through existing surveys	Climate and health survey questions added into two existing community surveys	The Attitudes and Behaviors Surveys (TABS) on Health Survey	980 respondents to TABS; 25% response rate; results summarized in the Climate and Health in the Mountain West Report

Evaluation of Dissemination			
Construct	Indicator(s)	Data Source(s)	Findings
How many people were reached by report findings through publications, presentations, and other means?	Number of peer reviewed publications (& with community co-authors) Number of academic presentations (& with community presenters)	Internal tracking; Meeting attendance	Peer reviewed publications will be forthcoming 9 conference presentations; 2 with community members
How many people were made aware of Mountain West ACE-CH Hub	Number of website visits (unique) Number of social media impressions	Google analytics; Social media analytics	Homepage 908 website sessions Educational Modules Landing Page – 78 website sessions Social media to be tracked during Phase I dissemination

Evaluation of Dissemination			
Construct	Indicator(s)	Data Source(s)	Findings
How many people accessed the Community Voices Volume 1 report	Number community groups presented to Number of unique website views	Internal tracking Google analytics	Presented at 2 community meetings Link shared with all AB members Community Voices V1 – 203 website sessions

Evaluation of Implementation			
Construct	Indicator(s)	Data Source(s)	Findings
How community-led action is supported by Mountain West ACE-CH Hub	Grant proposals submitted to support climate justice projects undertaken by community Success of grant proposals List of additional actions that our community partners are engaged in	Internal tracking Community follow-up (qualitative)	SLV: proposal submitted 11/25/2024 to Colorado Department of Public Health and Environment – awaiting funding decision WD: co-development process with WD community and Denver’s Office of Climate Action, Sustainability and Resiliency to fund community priorities
How to help communities have conversations about the health impacts of climate change through the development of Climate Conversation guides	Guides developed with community input Number of people/community groups guides are disseminated to	Internal tracking	SLV: materials developed for public school science night; science fairs, healthcare facilities WD: Climate conversation guide developed All available on website, dissemination will be tracked

Evaluation of Implementation			
Construct	Indicator(s)	Data Source(s)	Findings
How climate actions were implemented with Hub members	Description of implementation activities	Survey of Core members	<p>Two implementation reports summarize activities</p> <ul style="list-style-type: none"> - 86% have job responsibilities that focus on air quality 64% share MWH info through job - Qualitative responses provided in reports

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For More Information

For additional information about the Mountain West Climate-Health Engagement Hub and the National Institutes Alliance for Community Engagement in Climate and Health Program, please see the following:

<https://www.mw-climatehealth.com>

<https://nihceal.org/programs/alliance-community-engagement-climate-and-health>

