



# RESILIENT CARE

Community-led  
Action for  
Resilient Health  
Eco-Systems

## BACKGROUND PAPER:

Health and Climate Resilience Profiles  
March 2025



We acknowledge the Traditional Custodians of the lands on which we work and live, and recognise their continuing connection to land, waters and community. We pay our respect to them and their cultures; and to Elders past, present and emerging.

We are committed to embracing diversity and eliminating all forms of discrimination in the provision of health and other services. We welcome all people irrespective of ethnicity, lifestyle choice, faith, sexual orientation and gender identity.



Resilient CARE supports people to live healthy, connected lives—no matter how the climate changes or disasters unfold. The program focuses on the regions of Rockhampton, Livingstone, Gladstone, Bundaberg and Fraser Coast. The program is funded through Country to Coast Queensland by the Australian Government National Emergency Management Agency and the Department of Health and Aged Care. The program is delivered through a partnership model. Learn more at [resilientcare.com.au](https://resilientcare.com.au)



- SAFER FUTURE -

## **BACKGROUND PAPER:** Health and Climate Resilience Profiles March 2025

### **Introduction**

Climate events are projected to increase in frequency and severity, with significant impacts on population health, particularly for socially and economically disadvantaged populations who may have fewer resources to mitigate these impacts<sup>i</sup>. Country to Coast Queensland (CCQ) acknowledges the health risks that climate change brings to people in the Central Queensland, Wide Bay, and Sunshine Coast regions, and has developed the *Resilient CARE* initiative to reduce the adverse health impacts of disasters by enhancing the capacity of the health system and building stronger community resilience across the local government areas of Rockhampton, Livingston, Gladstone, Bundaberg and Fraser Coast.

Safer Future and ClimateWell have been engaged by CCQ to enhance, amplify and kickstart the *Resilient CARE* program through *RAPID Resilient CARE*, which includes delivering RAPID assessment, engagement and codesign to support joined-up health and wellbeing planning, prioritisation and capacity building across health, community services and disaster management sectors.

Understanding hazard risks and their potential consequences both now and into the future is a critical shared responsibility<sup>ii</sup>. Building capacity and disaster resilience requires shared knowledge of local hazards<sup>iii</sup> and ways to mitigate these. Climate and Health Vulnerability Assessments (CHVA) identify how climate change affects health, which populations are most at risk, and what can be done to reduce these risks. It combines data on climate impacts, health outcomes, and community vulnerabilities to guide planning and adaptation efforts for better resilience and health and wellbeing<sup>iv</sup>. By integrating climate, environmental, and socio-economic data, CHVAs help to inform targeted adaptation strategies<sup>v</sup>.

### **Contents of this document**

Drawing from the evidence, this document provides the following information, synthesised for appropriateness to the Resilient CARE program:

1. Understanding Climate and Health Risk
2. Tools and methods for assessing climate and health vulnerability
3. Analysis of Climate and Health Vulnerability Assessments
4. Proposed approach for Resilient CARE Climate and Health Vulnerability Assessments
  - a. Structure of the Health and Climate Resilience Profiles (HCRPs)
  - b. Engagement approach for Resilient CARE HCRPs
5. Summary

**This high-level review of global and national approaches to developing CHVAs will inform the content and structure of CCQ RAPID Climate and Health Vulnerability Assessments across the Rockhampton, Livingston, Gladstone, Bundaberg and Fraser Coast LGAs. This ensures that the RAPID CHVAs draw on the best available evidence, practice and research, and align with the broader Resilient CARE program.**

**Terminology note:** While the literature focuses on “Climate and Health Vulnerability Assessments” CCQ has opted to take a strengths-based approach, referring instead to “Health and Climate Resilience Profiles”. Readers will note that CHVAs are referred to in the evidence scan components of this document, but this terminology pivots to refer to HCRPs in the sections that address the implications for Resilient CARE.

## 1. Understanding Climate and Health Risk

Climate change affects health in numerous ways, including increases in mortality and illness due to more frequent and severe extreme weather events like heatwaves, storms, and floods. Climate change also disrupts food systems, contributes to the spread of diseases, and exacerbates mental health challenges. These compound in the weakening of key social determinants of health, such as economic stability, equity, access to healthcare, and social support systems<sup>vi</sup>.

The health system stands at the front line of these direct and indirect impacts<sup>vii</sup>, with climate-related health risks disproportionately affecting the most vulnerable populations, including women, children, older people, people with a disability, First Nations communities, people experiencing socioeconomic disadvantage, and people with pre-existing health conditions<sup>viii</sup>. The Intergovernmental Panel on Climate Change’s (IPCC) Sixth Assessment Report is clear that adaptive action is urgently required to address the rapid increase in disaster frequency and severity and the challenges that rising global temperatures pose to population health<sup>ix</sup>.

**BOX 1**<sup>54,55</sup>

- **Hazard:** the actual or potential occurrence of a physical event, trend or physical impact that may cause health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, ecosystems, and environmental resources.
- **Exposure:** the presence of either of the following in places and settings that could be adversely affected by a hazard:
  - People, livelihoods, species or ecosystems, environmental functions, services
  - Resources, infrastructure, or economic, social, or cultural assets.
- **Vulnerability:** the propensity or predisposition to be adversely affected by exposure to a hazard. This encompasses:
  - **Adaptive capacity:** the ability of a system, population or individual to adjust to the impacts of climate change
  - **Sensitivity:** the degree to which a system, population or individual is likely to be affected by a given exposure to a hazard.

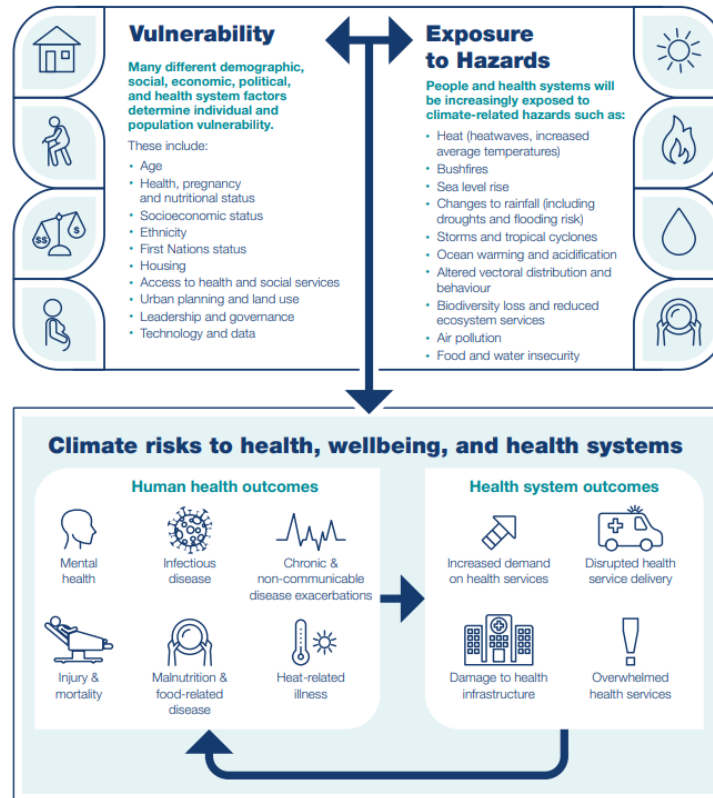
Source: National Climate and Health Strategy

The level of health risk associated with these hazards depends on exposure and the vulnerability of affected individuals, populations, or systems. Definitions of these terms are included in Box 1, above. Effective climate and health risk assessments integrate these factors to shape comprehensive strategies for adaptation and resilience<sup>x</sup>. According to the *Special Report: Update to the economic costs of natural disasters in Australia* (2021), Queensland has the greatest risk profile of any state due to geography and population density and is expected to incur the largest increase in costs related to natural disasters into the future. More frequent and compounding disasters will have profound and long-lasting effects on people's health and wellbeing, and the long-term sustainability of health systems<sup>xi</sup>.

Conducting climate and health vulnerability assessments (CHVAs) and developing health adaptation plans are widely recognised as foundational steps in building climate-resilient communities and health

systems. These assessments provide an evidence base for strategic actions that protect human health and wellbeing from the effects of climate change<sup>xii</sup>. A key priority of the National Climate and Health Strategy is to undertake a National Health Vulnerability, Capacity and Adaptation Assessment to develop a National Health Adaptation Plan.

## Climate-related risks to health & wellbeing



*Source: National Climate and Health Strategy*

Given Australia’s geographic, demographic, and climatic diversity, risk profiles vary significantly across the country, and there is a need for localised vulnerability assessments that support tailored, place-based approaches. These must also consider the disparities in healthcare system resources and capabilities in local regions to ensure equity and effectiveness<sup>xiii</sup>.

To support local and regional health systems in conducting vulnerability and adaptation assessments within a consistent national framework, the Australian Government will develop guidance and implementation tools. In the absence of available national guidance at this time, Resilient CARE will utilise existing global climate and health vulnerability assessment guidance documents to develop the first-pass CHVAs for the identified LGAs of Rockhampton, Livingston, Gladstone, Bundaberg and Fraser Coast.

## 2. Tools and methodology for assessing climate and health vulnerability

The leading climate and health vulnerability assessment frameworks are consistent across many elements and provide flexible guidance on the structure and content of assessments based on local contexts, socioeconomic conditions, and decision-making needs.

Key inclusions:

- A well-executed assessment enables critical, locally relevant insights to guide effective health adaptation efforts.
- Managing climate-related health risks requires an ongoing, iterative approach, and inclusive stakeholder engagement is essential to build a shared understanding of climate-related health risks and to shape responsive resilience and adaptation strategies.
- Health sector leadership in driving cross-sector collaboration to build climate and health-resilient communities underpin the approach.
- Continuous monitoring and evaluation to refine and improve adaptation strategies over time is considered best practice<sup>xiv</sup>.

There are a small number of overarching frameworks that are utilised internationally, an overview of the dominant approaches is provided below:

### a) **World Health Organisation: *Protecting Health from Climate Change Vulnerability and Adaptation Assessment***

The World Health Organisation (WHO) is a pioneer in the development of Climate and Health Vulnerability Assessments, advocating for vulnerability and adaptation assessments since the early 2000s. In 2013, WHO published its landmark report, "Protecting Health from Climate Change," which provided a framework for conducting CHVAs. Since then, the WHO has supported the development and implementation of climate and health vulnerability and adaptation assessments in over 50 countries. The WHO, (alongside technical partners such as Health Canada), have drawn learnings from CHVA application across various contexts and geographics, at both national and local levels. At the same time, knowledge of climate change and health has increased. In 2021, the WHO, the Pan American Health Organisation and Health Canada produced an updated version of the framework to better support countries in their assessments, by bringing forth a simpler tool that incorporates all lessons learned.

Key steps in the WHO framework include:

- *Scoping and planning:*
  - Define the objectives, scope, and scale of the assessment.
  - Identify stakeholders and establish a multidisciplinary team.
- *Assessing current vulnerabilities:*
  - Analyse existing health data to identify populations and regions most affected by climate-sensitive health outcomes.
  - Evaluate the capacity of health systems to manage current climate-related health risks.
- *Projecting future impacts:*
  - Use climate models and scenarios to estimate future health risks.
  - Assess how changes in climate variables (e.g., temperature, precipitation) may influence health outcomes.

- *Identifying adaptation options:*
  - Develop and prioritise strategies to reduce vulnerabilities and enhance adaptive capacity.
  - Engage stakeholders to ensure proposed measures are feasible and context-specific.
- *Implementation and monitoring:*
  - Integrate findings into health policies and adaptation plans.
  - Establish mechanisms for monitoring and evaluating the effectiveness of adaptation measures.

b) **The US Centres for Disease Control: *Building Resilience Against Climate Effects (BRACE) Framework***

BRACE is a structured, five-step process designed to help public health agencies prepare for and address the health impacts of climate change. The framework is highly adaptable, allowing for customisation to the needs of specific areas or regions, whether large or small. It integrates scientific data, stakeholder input, and iterative evaluation to support evidence-based and locally relevant climate resilience planning.

A distinctive feature of BRACE is the integration of justice, equity, diversity, and inclusion (JEDI) principles. These ensure that the needs of populations disproportionately affected by climate change are prioritised. JEDI principles guide efforts to reduce health inequities by addressing systemic barriers and promoting inclusion in decision-making. Additionally, before undertaking the BRACE process, health sector organisations assess their capacity and map opportunities for collaborative cross-sector partnerships with local organisations and community leaders. These preparatory steps are essential for ensuring the sustainability and effectiveness of public health adaptation efforts.

Key steps in the BRACE framework include:

- *Forecast climate impacts and assess vulnerabilities:* Identify potential climate impacts, related health outcomes, and the populations and regions most vulnerable to these risks.
- *Project the disease burden:* Quantify the additional health impacts expected due to climate change, such as increases in heat-related illnesses or vector-borne diseases.
- *Assess public health interventions:* Evaluate and prioritise interventions to address the identified health risks.
- *Develop and implement a climate and health adaptation plan:* Create a comprehensive plan that includes actionable strategies for adaptation, followed by dissemination and implementation.
- *Evaluate impact and improve over time:* Continuously monitor and evaluate the effectiveness of activities and refine the process accordingly.

c) **Health Canada: *Climate Change and Health Vulnerability and Adaptation Assessments Workbook***

This work is built on the WHO's *Protecting Health from Climate Change: Vulnerability and Adaptation Assessment* guidance. It integrates insights from Canada's first local assessment pilots, developed in partnership with the WHO. Expanding on the WHO approach, the Canadian Workbook incorporates key elements tailored to the national context, including a strong focus on

health equity and an additional sixth step that explicitly evaluates the co-benefits and potential harms of adaptation and mitigation actions from other sectors. Designed for practical use, the Workbook includes comprehensive templates and tools to streamline data collection and stakeholder engagement, increasing the utility of the tool<sup>xv</sup>.

**d) CHVAs in the Australian context:**

Australia's approach to CHVAs is maturing. The release of the National Climate and Health Strategy (2023) is a significant step in prioritising mitigation of the risks that climate change poses to health and wellbeing. Australia has made some progress in integrating climate change considerations into health planning, but there are few examples of climate and health vulnerability assessments.

- The Queensland Strategy for Disaster Resilience 2022-2027 includes the impact of disasters on Human and Social system resilience and provides an overview of opportunities for future planning and evidence-based case studies.
- Victoria and Queensland have each incorporated climate-health considerations into broader adaptation plans at the state level, though these are not health-specific CHVAs.
- In 2015 in Tasmania a region-specific climate and health vulnerability assessment was piloted to support local community decision-makers in planning health adaptation responses to climate change. This initiative is presented as a case study below.

## Tasmania case study:

The 2015 Tasmanian pilot study focused on developing a community health and wellbeing risk assessment (CHWRA) tool to address climate change impacts on rural communities. This initiative aimed to empower local decision-makers by translating climate change data into actionable health adaptation strategies. The approach involved iterative development and stakeholder engagement through workshops in three rural Tasmanian regions: Southern Inland, Rural North Coast, and Remote North-Western Highlands. Participants included local government staff, healthcare professionals, and community leaders.

The workshops followed a structured process:

1. **Climate projections and health dynamics:** Climate scientists presented localised projections, while facilitators discussed climate-health interactions.
2. **Community profiling:** Participants shared their observations of climate-related health impacts in their regions.
3. **Risk and opportunity assessment:** Individual and group exercises identified health risks, opportunities, and adaptation priorities.
4. **Consensus building:** Data from participants were integrated into the CHWRA tool, enabling visual representation and group consensus on key risks and strategies.

The iterative nature of the tool's development allowed for continuous refinement based on participant feedback. It incorporated features like geospatial mapping, dynamic visualisation of climate data, and integration of local knowledge.

### Significance for rural communities

Rural communities are particularly vulnerable to climate change due to geographic isolation, limited infrastructure, and socioeconomic challenges. These factors amplify health risks such as bushfires, waterborne diseases, and mental health issues linked to climate stressors. The pilot emphasised the importance of community engagement and localised knowledge in addressing these vulnerabilities. By involving rural stakeholders, the study highlighted the need for tailored adaptation strategies that reflect the unique challenges and strengths of these communities.

## 3. Climate and Health Vulnerability Assessment Comparison




Safer Future and ClimateWell have reviewed ten Climate and Health Vulnerability Assessments (noted in Appendix A) from a range of countries and regional contexts. All the CVHAs included in the review were developed using the WHO and/or BRACE assessment tools and included the following:

- **Climate hazards** – a review of current and projected climate risk
- **Health impacts of climate hazards** – a focus on a range of region-specific risks like floods, heatwaves, vector-borne diseases, air quality issues, and waterborne illnesses.
- **Vulnerable populations** – identification of at-risk populations such as older people, children, Indigenous communities, people with a disability and people with preexisting health conditions.
- **Data presentation and analysis** – presentation of the intersection of hazards, exposure and vulnerability including climate projections, health, data, and socio-economic indicators.
- **Health equity** - While this varies in depth, most CHVAs integrate some level of discussion around disparities in vulnerability and adaptation capacity.

The length, technical language and utility of CVHAs vary widely, from two-page snapshot-style overviews to 220-page technical reports. Some long-form technical reports are accompanied by a CHVA summary document that improves the utility for people outside of the health system, these focus on drawing out key issues of vulnerability and equity and are generally presented in more accessible formats. Points of difference were observed primarily in the presentation and translation of data and the positioning of equity in CHVAs.

The list below provides some insight into the variances in these approaches:

- a) **The Vancouver Coastal Health and Fraser Health Climate Change and Health Vulnerability and Capacity Assessment 2022** presents a 229-page technical report and a 14-page summary report. The summary report includes vulnerability to climate change across 12 identified priority populations and provides data at the local health district level.

PRIORITY POPULATIONS	VULNERABILITY TO CLIMATE CHANGE	VANCOUVER COASTAL HEALTH	FRASER HEALTH
 <p><b>CHILDREN</b> Source: <a href="#">Stats Canada</a>. Data reported at the Health Service Delivery Area level.</p>	Higher sensitivity to environmental exposures, behaviors that increase exposure risk and great dependence on caregivers. During heat events, children's greater surface area to body mass ratio than adults, production of more metabolic heat per kilogram of body weight, blunted thirst response, and lower cardiac output increases their sensitivity (NCCEH, 2010b). During poor air quality, their still-developing lungs are more sensitive (BC Centre for Disease Control, 2020).	11-15%* of the population was 0-14 years old	15-18% of the population was 0-14 years old
 <p><b>OLDER ADULTS</b> Source: My Health My Community 2014. Data reported at the MHMC neighborhood level. The number of people 65 and over is estimated to grow 63% between 2020 and 2041 (<a href="#">source</a>).</p>	Higher sensitivity to environmental exposures, more likely to have existing chronic disease (e.g. cardiovascular disease) and increased risk of falls and non-fatal injuries. During heat events, older people's increased burden of chronic disease and decreased thermoregulation increase their sensitivity (Kafeety et al., 2020). Older people who experience greater social isolation and poorer mental health are at even greater risk during extreme heat events. Older adults are at increased risk of health effects from short-term exposures to poor air quality because of their higher prevalence of pre-existing lung and heart diseases, and because important physiological processes decline with age (Stone, 2019).	6-40% of the population was 65 years and older	15-18% of the population was 65 years and older
 <p><b>PEOPLE EXPERIENCING SOCIOECONOMIC DISADVANTAGE</b> Source: My Health My Community 2014. Data reported at the MHMC neighborhood level.</p>	Higher likelihood of suffering from chronic medical conditions. People may reside in areas with older infrastructure and increased exposure (e.g. urban heat islands) and to experience social isolation (Vancouver Foundation, 2017). Some people experiencing poverty lack the means and opportunity to take protective health measures such as affording extra medications, accessing quality housing and/or air filtration (NCCEH, 2010b). Certain populations are also more likely to experience income inequality (e.g. single parents, new immigrants, seniors, etc.). In the FH health region, some cities are seeing increases in low and very low income earners and a shrinking middle income demographic (Gold, 2017).	14-76% of households had incomes under \$40,000	30-32% of households had incomes under \$40,000
 <p><b>INDIVIDUALS WITH EXISTING CHRONIC ILLNESSES</b> Source: My Health My Community 2014. Data reported at the MHMC neighborhood level.</p>	Increased susceptibility to environmental exposure such as temperature, poor air quality, vector-borne disease and food- and water-borne diseases. During heat events, individuals with one or more of these conditions experience amplified health risks (Health Canada, 2011). People taking certain medications (e.g., antihypertensives, antidepressants) are more sensitive, as are those who are confined to bed or dependent on assistance for daily living. During poor air quality, people with respiratory conditions such as asthma or chronic obstructive pulmonary disease (COPD) are at highest risk, as are those with heart disease, diabetes, cancer, or mental illness (BC Centre for Disease Control, 2020).	15-43% reported that a doctor had diagnosed them with one or more chronic condition±	16-48% reported that a doctor had diagnosed them with one or more chronic condition±

\*Ranges represent differences between neighbourhoods or regions  
± includes diabetes, heart disease, stroke, high blood pressure, or a chronic breathing condition

- b) **The Regional Climate and Health Monitoring Report: Clackamas, Multnomah, and Washington Counties (Oregon, 2021-2022)** is a 52-page document that positions the disproportionate impacts of climate change on vulnerable communities for each health indicator.

- c) **The Colorado Health Institute 2022 Health and Climate County Profile** provides two-page snapshots for every County (LGA equivalent) in Colorado.

**COLORADO HEALTH INSTITUTE** 2022 Health and Climate County Profile

### Jefferson County

What factors influence the risk of climate change to human health?

Social Factors	Health Conditions	Exposure Risk	Plans and Perceptions
Moderate Risk	Moderate Risk	High Risk	Lowest Risk

Social factors, and health conditions that influence residents' climate-related health risks.

#### Sensitive Populations

	Jefferson County	Regional Average
<b>Social Factors</b>		
<b>Groups sensitive to climate change in the county</b>	Moderate Risk	High Risk
Percentage of the population under age 5	5%	6%
Percentage of the population under age 18	20%	23%
Percentage of the population ages 65 and older	16%	12%
Percentage of the population that is Black or African American	1%	5%
Percentage of the population that is American Indian or Alaska Native	0%	0%
Percentage of the population that is Hispanic/Latino/a	15%	23%
Percentage with household incomes below the Federal Poverty Level	7%	8%
Percentage of the labor force that is unemployed (ages 16 and older)	4%	4%
Percentage of the population without a high school diploma (ages 25 and older)	5%	9%
Percentage of the population living in homes built before 1980	55%	42%
Percentage of the population that speaks a language other than English at home (ages 5 and older)	11%	20%
Percentage of the population with a cognitive difficulty	4%	4%
Percentage of the population with an ambulatory difficulty	5%	4%
<b>Health Conditions</b>		
Accessibility of health care and prevalence of health conditions sensitive to climate change in the county	Moderate Risk	Moderate Risk
Percentage of adults ages 18 and older who have chronic obstructive pulmonary disease	4%	4%
Percentage of adults ages 18 and older who have diabetes	6%	7%
Percentage of adults ages 18 and older who have asthma	10%	9%
Percentage of adults ages 18 and older who have cardiovascular disease	4%	4%
Percentage of adults ages 18 and older who are diagnosed with depression	16%	16%
Percentage of adults ages 18 and older who are obese	22%	23%
Percentage of the population without health insurance	6%	7%
Percentage of the population that did not get needed health care in the past 12 months	22%	24%

### Exposure Risk

Climate-influenced environmental exposures, including extreme heat, wildfires, and drought, that put Coloradoans' health at risk.

#### Climate Exposures

	Jefferson County	Regional Average
Environmental exposures and climate factors in the county	High Risk	Moderate Risk
Number of extreme heat days (at or above 90 degrees Fahrenheit)	0	41
Percentage of land rated moderate to highest risk for possible loss or harm from a wildfire	65%	33%
Percentage of weeks that any percentage of the county's population is in severe, extreme, or exceptional drought	53%	50%
Percentage of population who live in a wildland urban interface (WUI)	53%	50%
Community flooding risk	Moderate	Minor


#### Plans and Perceptions

Plans to address climate change impacts and local perceptions on climate change in the county.

	Jefferson County	Regional Average
Current state of plans related to climate impacts and perceptions about the connection between climate and health in the county	Lowest Risk	Moderate Risk
Percentage of the population that believes that global warming is currently happening	73%	75%
Percentage of the population that believes that the impacts from global warming will harm them personally	45%	49%
Percentage of the population that believes global warming will harm future generations	69%	73%
Percentage of the population that believes local officials should do more to address global warming	58%	59%
Percentage of the population that believes global warming is already harming people	58%	62%
Has a county hazard mitigation plan	Yes	Yes, more than half have plans
Has a community wildfire plan	Yes	Yes, more than half have plans
County or most populated city has a climate action plan	Yes	Yes, more than half have plans
Global Covenant of Mayors for Climate and Energy member	Yes	Yes, more than half are members
Colorado Communities for Climate Action member	Yes	Half or fewer are members

\*Regional averages include Adams, Arapahoe, Denver, Douglas, and Jefferson counties

Questions? Refer to the full report: Think Globally, Adapt Locally: Colorado Counties Health and Climate Index  
<https://www.coloradohealthinstitute.org/pressroom/2022-climate-change-health-index>



While the snapshots require a level of technical ability to conclude the data, the website has a range of questions for users to consider based on their local County snapshot. This is meaningful because it draws audiences without a health background into critical thinking and conversation about the implications of the impacts of climate change on health.

### QUESTIONS TO CONSIDER

EXPAND TO READ MORE

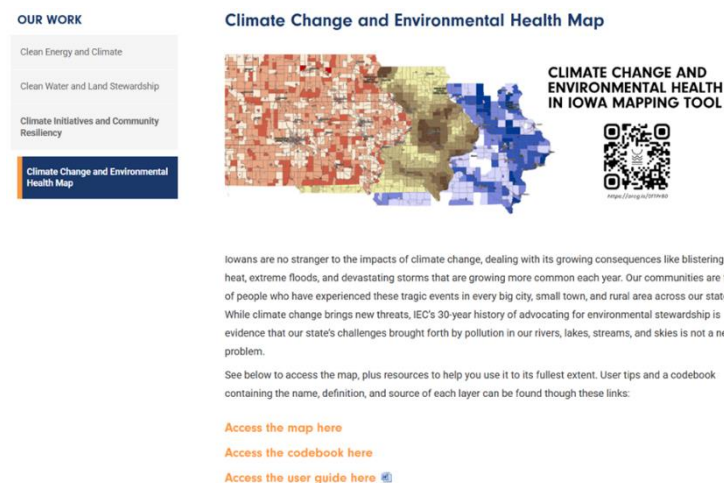
- ▶ What are the most prominent environmental exposures in your county identified in the Index? (See county profiles)
- ▶ What additional climate exposures, such as poor air quality, infectious diseases, or changes to water or food systems, does your county experience?
- ▶ What exposures are likely to become more common over time?
- ▶ Are these exposures addressed in current individual or community planning efforts? What additional plans or resources are needed?
- ▶ What programs are available in your community to assist with personal and property damages caused by floods, wildfires, or other hazards?
- ▶ Do your county's residents have access to broadband internet or other ways to receive emergency alerts?

### 3.1 Format, interface and technology

There is a growing shift towards geospatial (GIS) mapping of CHVA data as well as climate change and social vulnerability data, and this was observed by Safer Future and ClimateWell in our review of 4 geospatial mapping tools. The literature suggests that while technology and visualisation of data can be an enabler to building knowledge of climate change risk, there are notable barriers to accessibility for GIS data, particularly for community members, as well as community-based and grassroots organisations (first highlighted by Public Participation GIS (PPGIS) scholars in the 1990s and 2000s). These barriers include concerns around unequal access, power imbalances, limited opportunities for involvement, and inadequate representation of diverse knowledge systems<sup>xvi</sup>.

Research has shown that GIS technology alone is not sufficient to foster community engagement and adaptation. Effective community and organisational mobilisation requires integrating GIS tools with participatory processes like workshops, storytelling, photos, and data-sharing. This combination facilitates social learning, helping communities understand risks, engage in decision-making, and co-create culturally relevant solutions, fostering ownership and resilience-building efforts<sup>xvii</sup>. It is noted that developing an interactive CHVA is not within the scope of the RAPID Resilient CARE program, but these are important considerations that will inform the recommendations for interactivity to be provided as part of the recommendations report.

**Challenges with technical approaches:** A number of GIS-only CHVA mapping tools demonstrate the barriers identified in the literature, such as the *Iowa Climate Change and Environmental Health Mapping tool* and the *Minnesota Climate Change Vulnerability Assessment Tool*. Navigation of these tools requires a level of technical skills and data literacy. Instead of working to democratise data, applying these tools requires a level of privilege (including education, digital literacy, up-to-date technology and internet connectivity). The Iowa mapping tool provides three separate guidebooks to assist users in understanding the information provided.



**OUR WORK**

- Clean Energy and Climate
- Clean Water and Land Stewardship
- Climate Initiatives and Community Resiliency
- Climate Change and Environmental Health Map**

**Climate Change and Environmental Health Map**

**CLIMATE CHANGE AND ENVIRONMENTAL HEALTH IN IOWA MAPPING TOOL**

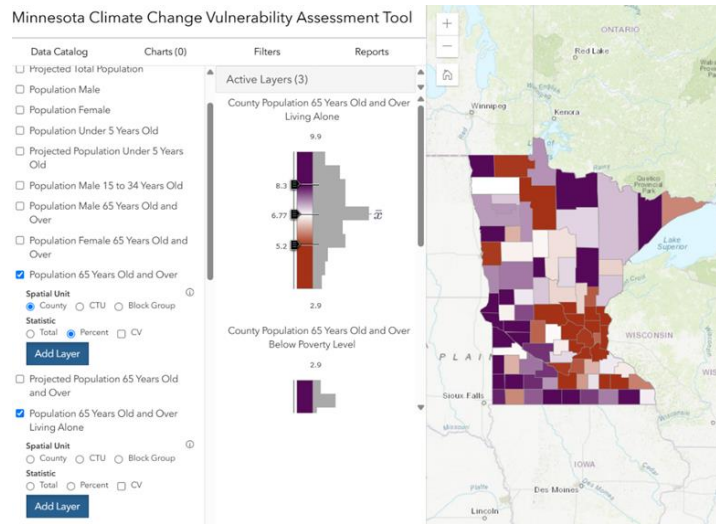
lowans are no stranger to the impacts of climate change, dealing with its growing consequences like blistering heat, extreme floods, and devastating storms that are growing more common each year. Our communities are full of people who have experienced these tragic events in every big city, small town, and rural area across our state. While climate change brings new threats, IEC's 30-year history of advocating for environmental stewardship is evidence that our state's challenges brought forth by pollution in our rivers, lakes, streams, and skies is not a new problem.

See below to access the map, plus resources to help you use it to its fullest extent. User tips and a codebook containing the name, definition, and source of each layer can be found through these links:

[Access the map here](#)

[Access the codebook here](#)

[Access the user guide here](#)



**Success in a technical approach:** By comparison, the ClimateAtlas of Canada is an exemplar of a well-executed, integrated approach. It combines mapping, indigenous knowledges, video storytelling, tools, resources and local “climate cards”. As a national-level resource, ClimateAtlas demonstrates some of the ways that an integrated, multi-modal approach can support information accessibility for diverse audiences and applications.



**SPECIAL REPORT**  
**Crippling Climate Adaptation**  
**Disability Justice and Climate Change**

Because of multiple intersecting factors, people with disabilities are more vulnerable to the health effects of climate change and could be disproportionately impacted during extreme weather events. Inequalities exacerbated by climate change could be addressed and prevented, by ensuring a full and effective participation of disabled persons in climate action at all levels.

This report by the Prairie Climate Centre conveys the perspectives on Disability Justice at the intersection of climate change, as expressed by participants at the event: Crippling Climate Adaptation.

- [PDF Report](#)
- [Plain Text Version of Report](#)
- [Insights from Conversations](#)



**Climate Crisis? Health Crisis!**  
How climate change affects the health of Canadians

🕒 1:48

Did you know that the climate crisis is also a health crisis? Climate change impacts the health of Canadians - from increasing heat stroke to spreading new infectious diseases - and these impacts are getting worse. At the same time, there is a lot that we can do to protect ourselves and reduce climate pollution for healthier, safer futures.



**Climate Lens**

🕒 5:55

The First Nations "climate lens" seeks to disrupt mainstream thinking -- that characterizes First Nations as vulnerable and passive to climate impacts -- and positions First Nations as leaders that are cultivating and scaling up urgent and transformative climate action within communities and across territories. Through interconnectivity and collaboration, a holistic approach to First Nations climate action emerges that redefines what solutions look like, and are grounded in knowledge and teachings that have been...

This evidence will be applied to the approach to ensure high-quality outcomes for the CCQ region. We will use the available literature to pose questions in stakeholder engagement workshops that explore enablers that build knowledge of climate change risk and mobilize stakeholders to act.

#### 4. Proposed approach for the Resilient CARE climate and health vulnerability assessments

*This section outlines the proposed structure, engagement approach and the outputs of this process to develop HCRPs for the CCQ region.*

The objectives of the RAPID Resilient CARE program include:

- Enhanced common understanding of local climate and disaster risks on health, existing resilience and challenges.
- Strengthen stakeholder relationships.
- Established local shared priorities.
- Enhanced collaborative networked action - Stakeholders are supported to begin to collaborate and design initiatives/solutions for priority areas.
- Grant Applications – stakeholders have submitted applications for Resilient CARE Round 1 Grants to implement solutions/initiatives for priority areas.
- Advice for future phases.

##### 4.1 Structure of the Health and Climate Resilience Profiles (HCRPs)

To meet the RAPID Resilient Care objectives, Safer Future and ClimateWell propose the following structure for the HCRPs:

###### 1. Local climate change hazards:

- Regional and Local Government Area (LGA) level overview of climate hazards and community exposure.
- Current and future projections using data from the Queensland Reconstruction Authority, disaster risk profiles, regional resilience profiles, NARClm, CSIRO, and other sources.

2. **Health risks of climate change (local context):**
  - Key climate-sensitive health risks associated with regional climate hazards.
  - Identification of direct and indirect health impacts.
3. **Health impacts and vulnerable groups:**
  - Assessment of potential health impacts on vulnerable populations (includes ABS data, profile.ID, CCQ Health Needs Assessment (HNA), Disaster Resilience Index, and Social Vulnerability Index).
  - Consideration of health system vulnerabilities where data is available.
  - Prioritisation of key health risks and contributing factors.
  - Analysis of factors that support or challenge community adaptive capacity.
4. **Climate hazard and health equity narratives:**
  - Narrative interpretation of data to clearly articulate vulnerability and equity considerations.
  - Local stories or case studies to support the translation of data and ensure it is meaningful to the audience.

## 4.2 Engagement approach for Resilient CARE HCRPs

Stakeholder engagement workshops play a pivotal role in refining the HCRPs, ensuring they are meaningful and practical. Workshops will assist to benchmark current climate change and health knowledge and to build additional locally relevant inputs into the HCRPs that build capacity and support planning and improved decision-making. The intention of the high-level first-pass health and climate resilience profiles is to provide climate change and health hazards and risks in an easily digestible and accessible format that ignites conversations and shared understanding.

**4.2.1 Engagement 1: Information sessions – Healthy Communities, Resilient Futures: Building climate and health risk knowledge.** While climate change is a global issue it is experienced locally. This 2hr workshop introduces the Resilient CARE initiative and steps participants through the program goals. The workshop includes:

- **[10mins] Welcome and Introduction to Resilient CARE – RAPID and DEEP**
- **[10mins] Overview of climate change impacts on health:** globally, nationally and locally (high-level regional data and the intersections of vulnerability and exposure).
  - **Discussion: Why vulnerability matters**
- **[25mins] Climate Health Vulnerability Assessments (CHVA) as a methodology** for health resilience at a local level:
  - **Participatory exercise: Present examples of CVHAs**
    - **Explore the content** what is useful, and what is locally relevant
    - **Explore climate and health vulnerability locally** and what impacts we can already see

### Break – 10mins

- **[30mins] Participatory exercise: ‘Lite’ Climate Scenario** – Extreme heat warning, sit rep slide.
  - Identify those most at risk

- Map local assets & who and what is missing
- Highlight gaps – what we don't know and what's not there.
- **[15mins] Roles and collaborations:** Primary care, community services, and grassroots resilience organisations to building health resilience.
- **[20mins] Introduce Resilient CARE grants and process, next steps**
- **[45mins] Interactive networking lunch:** Invite participants to explore collaborations
- **[5mins] Wrap up & close**

**Resources in the room:**

- **“Big Map” of current disaster resilience activities** – invite contributions in the breaks

***Outcome:** This approach ensures that participants have a clear understanding of the goals of the Resilient CARE program, and that HCRPs are meaningful. Relationships are strengthened through shared understanding. Engagement and momentum are generated around the program and the program grant round encouraging collaborative applications.*

Feedback from the first stakeholder engagement workshop will be incorporated into the high-level HCRPs to be presented at the second workshop. Any feedback that falls outside of the RAPID phase scope for HCRPs will be provided to CCQ in the recommendations report to support further iteration.

**4.2.2 Engagement 2: Healthy Communities, Resilient Futures: Deepening insights and action planning** - A high-level overview is provided below for a full day workshop (9.30am-3pm) that ensures the engagement activities inside the RAPID program meet the program goals and inform the Resilient CARE DEEP phase. The details of this approach will be finalised following the delivery of the first workshop and other engagement exercises. As a draft, the workshop includes the following:

- **Welcome, Resilient CARE program overview**
- **Present local HCRPs** including regional context, ‘why’ HCRPs, local utility and application
- **Introductory activity:** At group tables, then a facilitated ‘who’s in the room’ exercise
- **What does the research say:** Overview of health resilience.
- **Participatory exercise: ‘Imagined future’** - A facilitated exercise based on a 10-year probable local forecast to generate creative, collaborative thinking. This process will develop an ‘ideal future state’ and a shared vision.
- **Prioritisation process including affinity mapping and a decision matrix**
- **What is needed to achieve the shared vision:**
  - **Asset mapping exercise** – looking at clinical and community resources
  - **Mapping existing local resilience activities** – what can be built on, expanded or learned locally?
  - **Opportunity assessment & consensus building** – work to generate ‘buy in’ and future engagement
- **Local Health and Climate Resilience Plans - next steps**
  - **Agreed action, collaborations and measures of success**
  - **Resilient CARE DEEP, incubators**
- **Wrap up and close.**

**Outcome:** *Establish a shared vision, support local leadership and collaboration, information that feeds into LGA-specific Health and Climate Resilience Plans, improved alignment of local initiatives with broader resilience initiatives.*

### **Iterative and participatory approach**

HCRPs will be refined through usability testing, feedback loops, and participatory discussions. The goal is to develop profiles and plans that are:

- Useable: with a focus on practical information that supports improved understanding and decision-making.
- Accessible and engaging: utilising infographics, plain language and images to build understanding.
- Story-driven: Using real-world case studies to highlight emerging priorities and opportunities for adaptation locally.
- Reflective of shared priorities: Strengthening networks and coordination for climate resilience.

### **Outputs**

Climate Well and Safer Future will provide high-level first-pass HCRPs and their associated local Plans, alongside a Recommendation Report from engagement workshops to CCQ to continue iteration and support future phases of the Resilient CARE program.

## **5. Summary**

This review of global and national Climate and Health Vulnerability Assessments (CHVAs) underscores the pivotal role of climate health vulnerability assessments in shaping evidence-based strategies for climate-resilient health systems. As climate-related risks continue to intensify, the need for comprehensive, locally relevant assessments has never been more urgent. Through the RAPID Resilient CARE initiative, CCQ is taking a proactive stance in embedding resilience into health and community systems across the Rockhampton, Livingstone, Gladstone, Bundaberg, and Fraser Coast LGAs. The outputs of this initiative—high-level HCRPs, local Health and Climate Resilience Plans, and a detailed recommendation report—will provide CCQ with a solid foundation for continued innovation in climate-health adaptation across the DEEP phases of the Resilient CARE program.

## Appendix A

<b>Climate and Health Vulnerability Assessments</b>	
<b>Title of the CHVA</b>	<b>Framework used</b>
Think Globally, Adapt Locally <i>Colorado Counties Health and Climate Index</i>	BRACE State-level website that includes 2-page PDFs of LGA-level risk profiles, and link to GIS mapping tool.
Iceland: Health and Climate Change Country Profile 2022	WHO 20-page infographic and text-based
Maryland Climate and Health Profile Report April 2016	BRACE 67-page traditional technical report delivered by health agency and a university partner
York Region Climate Change and Health Vulnerability Assessment 2016	WHO Summary report 13 pages Full report 220 pages
Climate Change and Health Vulnerability and Capacity Assessment Vancouver Coastal Health and Fraser Health 2022	WHO Summary report 14 pages Full report 179 pages
Climate Change and Health Profile Report Humboldt County 2017	BRACE 36 pages predominantly text Action plan
Climate Change and Health Vulnerability Report: Windsor-Essex County Health Unit 2020	WHO 69-page traditional technical paper
The Regional Climate and Health Monitoring Report: Clackamas, Multnomah, and Washington counties 2021-2022	BRACE 52-pages with specific health vulnerability narratives
Columbia Climate and Health Vulnerability Assessments 2024	WHO 40-pages text heavy, quite technical
<b>Climate and Health Interactive Mapping Tools</b>	
California Climate Change Health Visualisation Tool CCHViz	<a href="https://skylab.cdph.ca.gov/CCHViz/">https://skylab.cdph.ca.gov/CCHViz/</a>
The Minnesota Climate & Health Vulnerability Assessment Tool	<a href="https://maps.umn.edu/climatehealthtool/app/index.html">https://maps.umn.edu/climatehealthtool/app/index.html</a>
Canada Climate Atlas	<a href="https://climateatlas.ca/">https://climateatlas.ca/</a>
Iowa Climate Change and Environmental Health Map	<a href="https://www.iaenvironment.org/our-work/climateinitiatives/climateandhealthmap">https://www.iaenvironment.org/our-work/climateinitiatives/climateandhealthmap</a>

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