



Colorado Local Resilience Project Key Actions for Implementation

May 2016

Prompted by growing evidence of local climate change impacts, the Colorado Climate Network and the Colorado Municipal League convened a statewide Local Resilience Project (LRP) in which 78 representatives of 30 local governments charted a path forward to help improve the resilience of Colorado communities to climate-related risks. From the 36 recommendations in the LRP report, the Colorado Climate Network has identified the following four key action areas on which to concentrate its efforts to win implementation of the agenda identified by the project participants.

1. Regional collaboration: model efforts

The LRP participants, in their recommendations numbered 8 and 9, called for local governments to collaborate with one another in assessing and addressing climate-related risks and in some cases to set up regional collaborative efforts among neighboring jurisdictions within particular parts of the state. To bring these recommendations to life, the Colorado Climate Network will work with individual local governments and others to promote and seek funding for one or more models of climate preparedness collaboration among local governments on a regional basis.

As the LRP report points out, collaborative efforts can enable local governments to do more to address common issues across a region, with greater cost-effectiveness. Collaborative efforts also can lead to consistent and reinforcing approaches, avoid duplication, and help local governments learn from one another and others. Plus, the first regional climate preparedness efforts in Colorado may attract outside funding to demonstrate the success of that concept.

Two regions that could be good candidates for model collaborative efforts are:

- The Denver metro region, including Denver, perhaps initial focused on protecting public health during heat waves. Denver in its preparedness plan identified heat waves as one of three top climate-related risks. Individual participants in the Local Resilience Project from other metro local governments last year expressed interest to RMCO in being part of a Denver metro resilience collaborative.
- Boulder and Larimer counties, building on and taking advantage of the various grants from the state to those two counties and their municipalities of federal disaster recovery funds to promote resilience to future flooding and wildfire disasters.

A California Regional Project

In the Sacramento area, cities, the county and municipal governments, councils of local governments, businesses, electric utilities, universities, and nonprofit organizations are working together in a Capital Region Climate Readiness Collaborative. The project first compiled information on regional risks and potential solutions, and now is working to develop a set of coordinated adaptation strategies its members can take.

2. State-local cooperation: public health

Many LRP recommendations aim to bring about greater cooperation on climate preparedness between the Colorado state government and local governments. The Colorado Climate Network is focusing on bringing about that increased cooperation with respect to one type of climate-related risks—the potential impacts on public health, which have so far received less attention in our state than in many other places.

Among the specific LRP recommendations for state-local cooperation on public health risks are:

- Recommendation 23, that the Colorado Department of Public Health and Environment (CDPHE) collaborate with local public health officials and others to determine how CDPHE can best factor climate-related risks into state public health programs and regulatory decisions.
- Recommendation 31, that the Colorado Department of Public Health and Environment take the lead in convening an annual workshop involving state and local health officials and other experts to review the latest information on climate-change-driven public health risks and implications for action in Colorado.
- Recommendation 39, that the Colorado state government lead a collaborative process, with input from local health departments and others, to (1) assess the existing capacity of state and local health departments and other relevant organizations to reduce climate-related risks to public health and (2) develop proposals for increasing that capacity as necessary.

Excess Deaths from Extreme Heat

A comprehensive State of Washington climate change impacts assessment includes a study by researchers on historic and projected deaths from extreme heat. They assessed mortality in Seattle from extreme heat events that occurred on average 1.7 times a year in 1980–2006. With high emissions of heat-trapping pollution, those events could occur nine times a year by 2045, causing an additional 400 excess deaths. By 2085, the extreme events could occur ten times a year, and last almost three times as long, leading to nearly a thousand additional deaths a year.

Climate models also projected major increases in extreme heat in Colorado. In 1970–1999, Fort Collins averaged two days a year 95° and hotter. The average projection is that if global emissions continue growing at a high rate the city would get 24 such days a year by mid-century and 58 a year near the end of the century. (These projections are from a forthcoming state-funded analysis by the Rocky Mountain Climate Organization.)

In Colorado, there has not yet been any study of what more extreme heat could mean in terms of death rates and other public health impacts.

“Although rarely discussed in Colorado, heat is perhaps the most devastating climate-related public health impact in the country.”

Colorado Climate Change Vulnerability Study

3. Vulnerability assessments: natural resources

Many LRP recommendations are for further scientific assessments of Colorado's particular vulnerabilities to climate change impacts. The Colorado Climate Network is prioritizing more work to assess the risks to our natural resources and related outdoor recreation, subject matter specifically called out in the LRP report:

- Recommendation 21, that a comprehensive, detailed, and quantified assessment of climate-related risks to natural resources and recreation in Colorado be prepared.

This new, ongoing process could build on the Colorado Climate Change Vulnerability Study by the University of Colorado Boulder and Colorado State University for the state government. That is a general compilation of existing information, which explicitly recommended additional research on risks to ecosystems and outdoor recreation and tourism, as well as other sectors. The new work could assess increases in wildfires, insect infestations, and other ecosystem disturbances; decreases in forest extent and the ranges of aspens and other tree species; impacts to skiing and other snow-based recreation, rafting and kayaking; and risks to hunting and fishing.

Involvement by the Colorado Department of Natural Resources would be essential in bringing about these assessments, but universities, not the state government, might have the lead roles. Engagement by local governments and other stakeholders would help ensure that the information would have practical application by decision makers. Federal agencies, beginning with the U.S. Forest Service (which manages half of Colorado's forested land), are potential participants and funders.

As described in LRP recommendation 13, the assessments of climate-related risks to natural resources, recreation, and tourism might be in the form of a single comprehensive report, or in an ongoing process of multiple studies.

Colorado's Vulnerabilities

Projected impacts to Colorado's natural resources and outdoor recreation include:

- Increases in wildfire. One projection is that even a modest rise in temperature could lead to nearly a sevenfold increase in burned area here.
- Reductions in forested area and many tree species. Colorado could lose 45 percent of our aspens, according to U.S. Forest Service scientists.
- Less skiing. Aspen's slopes could have skiable snow by the end of the century only if emissions of heat-trapping pollution are sharply limited, according to an assessment funded by the City of Aspen.

The U.S. Forest Service's Role in Other States

In Idaho, Nevada, Utah, and Wyoming, the U.S. Forest Service has launched an Intermountain Adaptation Partners project, to assess the vulnerability of forest resources and ecosystem services, raise awareness of climate change impacts, and develop science-based adaptation strategies.

In Minnesota, the U.S. Forest Service led in bringing about a comprehensive assessment of potential climate change impacts to the state's forests, prepared by 15 experts from universities, 14 from the Forest Service, five from the state government, three from nonprofit organizations, two from businesses, one from a Native American tribe, and one who is retired. The assessment is part of a Northwoods Climate Change Response Framework, a collaborative effort among scientists, managers, and landowners to incorporate climate change considerations into natural resource management.

4. Technical assistance: climate change clearinghouse

The LRP report emphasizes that local governments need additional information, technical assistance, funding, and other resources to help them manage the new risks posed by climate change. The report makes several recommendations on what the state government and others can do to help provide those resources. The Colorado Climate Network is focusing on bringing about realistically achievable actions to implement two related items:

- Recommendations 26 and 27, that the Colorado state government catalogue and distribute information to help local governments develop and implement effective preparedness actions, including through a comprehensive online clearinghouse of information on climate change, climate impacts, and climate actions in Colorado, for the use of local governments and others.

The online clearinghouse could help local governments and others readily obtain the information they need on climate change and its risks and on actions that are possible or have succeeded elsewhere to address them. This would make it easier for local government program staff members and other stakeholders to take advantage of the research and activities of others in charting a path forward to assess and address the new risks posed by climate change.

The California state government has available online a wealth of information to assist local governments and others in developing and implementing effective preparedness actions. Perhaps most important is the [California Cal-Adapt website](#), a web-based climate adaptation planning tool which allows local governments and other users identify local climate change risks in specific geographic areas throughout the state.

Among the other tool kits and other information resources developed by the state government and others, and easily findable on state government websites, are:

- The [California Adaptation Planning Guide](#), developed by state agencies and others to provide guidance for local and sub-state regional climate change preparedness planning;
- The California Department of Health's [Climate Action for Health: Integrating Public Health into Climate Action Planning](#); and
- A California Department of Transportation-commissioned publication, [Addressing Climate Change Adaptation in Regional Transportation Plans: A Guide for California MPOs and RTPAs](#), to help metropolitan planning organizations and regional transportation planning agencies in incorporating the risks of climate change impacts into their existing decision-making.

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