

# CLIMATE FUTURES FORUMS

A Model for Engaging Communities in  
Building Climate Resilience and  
Reducing Emissions



TRIG Guidebooks 2013



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# An Overview of Climate Futures Forums



The physical, economic, and environmental damage as well as psycho-social distress experienced in 2012 due to extreme weather events such as the historic drought and Hurricane Sandy have made the need to prepare for and build resilience to the impacts of climate disruption, and reduce greenhouse gas emissions, all the more urgent. Many communities are searching for effective ways to engage citizens in climate solutions.

The Resource Innovation Group (TRIG) developed Climate Futures Forums to address this need. A Climate Futures Forum (CFF) is a locally based, collaborative process designed to build social resilience, which involves positive social relationships that allow groups to plan together and take mutually beneficial actions that allow them withstand and bounce back from stresses. By enhancing social resilience, Climate Futures Forums help community member's work together to prepare for and build resilience to the likely impacts of climate change within built, economic, cultural and ecological systems. Engaging in resilience building, in turn, spurs greater interest in emission reductions.

Climate Futures Forums were successfully implemented in four different regions in the Pacific Northwest. Evaluations indicate that they generated a deep understanding of the causes and likely impacts of climate disruption among participants, along with the development of a suite of practical recommendations for preparing for and building resilience to climate impacts and acting to reduce local greenhouse gas emissions. Participants reported that these recommendations also yielded numerous co-benefits and led to changes in organizational behaviors.

This handbook provides guidance for practitioners who wish to replicate the Climate Futures Forum process in their communities. The first section gives an overview of the Climate Futures Forum process, including the theory of personal, group, and organizational change on which it is based. Sections that follow provide concrete suggestions and guidelines for those who will administer the process, including preliminary preparations, hosting of workshops, and report writing. A final section includes resources and references.

# I. Climate Futures Forums:

## Theory of Change and Keys to Success

Climate Futures Forums are organized around an evidence-based theory of change about the way people learn and alter their thinking and behavior.<sup>1</sup> Enhanced social resilience is a central goal. CFFs are also grounded in a systems approach to analysis and planning that focuses on the interactions between ecological, economic, built, social and cultural systems in a local area. The mobilization of effective practices, technologies, and policies related to climate preparedness, resilience, and reduction of greenhouse gas emissions must be based on an understanding and integration of all of these dynamics.

### A. The Pyramid of Change

The basic organizing principle of a Climate Futures Forum is the Pyramid of Change (see Figure 1). Individuals, groups, and organizations strive to achieve certain results. These can include economic, social, political, environmental and other outcomes. Those results are produced by a set of actions: behaviors, practices, technologies, policies etc. Most climate preparedness/adaptation and emission reduction programs emphasize results and the actions required to achieve them, which constitute the top of the Pyramid of Change. Focusing primarily on the top of the Pyramid of Change, however, often results in limited progress, or even failures that produce unintended negative consequences.

That's because nestled below the actions groups and organizations employ are a set of beliefs - assumptions, perspectives, and values - that lead them to engage in certain types of actions and discount or ignore others. And, underneath those beliefs are experiences people have had that lead them to hold their current beliefs.

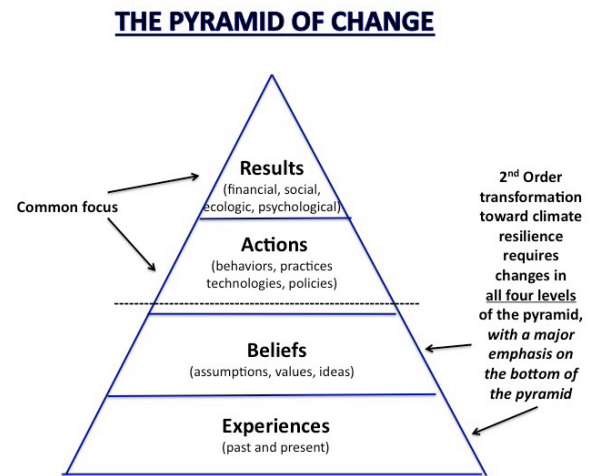


Figure 1

In short, experiences shape beliefs, which in turn determine the type of actions people engage in, which generate certain outcomes. Although concern about climate disruption is growing, the level of understanding among people in many communities about the causes, likely consequences, and solutions to climate disruption remains low. To identify and engage in effective climate preparedness, resilience building, and emissions reduction activities people must be engaged in new experiences that help them alter their beliefs and thus implement new and expanded actions that can produce different results.

CFFs are thus explicitly structured to engage people in each of the four levels of the Pyramid of Change. Participants engage in new experiences that allow them to internalize information about climate impacts in ways that lead to new assumptions and perceptions about the need for and means of preparing for and building resilience to climate impacts. Engaging in the process also increases motivation to diminish the causal factors by reducing emissions.

<sup>1</sup> See the 5-D Theory of Change by Bob Doppelt described in *The Power of Sustainable Thinking* (Earthscan Publishing 2008), which is a modification of the Trans-theoretical model of change developed by Prochaska et al.

## B. Building Social Resilience: A Shift “From Me to We”

Due to the structure of our economy, the nature of our technologies, and today’s cultural narrative of extreme individualism, in most communities people and organizations pursue their self-interests with little regard for the consequences on other organizations, systems, or processes. Climate disruption, however, poses expanded and new stresses that in most cases can be successfully addressed only when everyone works for the good of the entire community rather than for themselves at the expense of others. In other words, successful responses to climate disruption require a shift from a ‘Me’ focus to ‘We’ based thinking and acting.<sup>2</sup> CCFs seek to create these conditions by building social resilience.

Social resilience can be thought of as the capacity for individuals to build and sustain positive interpersonal relationships that allow them to plan and work constructively with others to prepare for, withstand, and recover from stresses such as those posed by climate impacts. To be socially resilient people need to be exposed to and grasp the different experiences and needs of others. Respect for diverse perspectives, concern for the welfare of others, and inclusiveness are important because they signal reciprocity—i.e. by taking care of others your needs and those of your organization will also be met. The strength of these factors is dependent on both the personal characteristics of the individuals involved and the design of the social structures in which they interact.

CCFs are designed to encourage resilience-building thinking and behaviors. The process begins by engaging participants in the work of a team of scientists who have analyzed the likely consequences of climate disruption on the natural environment in the local area.

<sup>2</sup> For more information on social resilience as thinking and acting for the good of the whole rather than simply considering oneself see *From Me to We* (B. Doppelt, Greenleaf Publishing 2012)

Projections are made about changes in local temperature and precipitation patterns, water resources, forests, soils, plants, and biodiversity, along with the frequency and intensity of extreme weather events.

Participants are then asked to personally reflect on, and then engage in extensive group discussion on how those ecological changes are likely to impact the resources or assets they are responsible for, such as transportation systems, domestic water supplies, or emergency response, as well as things they care about, such as public health or quality-of-life. These experiences help people examine and alter their beliefs about current and future conditions and risks.



Participants are then engaged in a highly interactive process aimed at identifying practices, strategies and policies for preparing for and building resilience to the projected climate impacts while also reducing emissions.

The Climate Futures Forum process concludes with interactive sessions focused on analyzing how the recommended actions for building resilience and reducing emissions might detrimentally affect other local systems and resources. From this, participants are asked to identify actions that generate co-benefits for, rather than undermine, other systems and resources in the area.

### C. Dissonance, Efficacy, and Benefits: The Three Keys to Change

In addition to focusing on all levels of the Pyramid of Change and building social resilience, Climate Futures Forums strive to motivate people to shift their beliefs and behaviors by continually emphasizing the three keys to personal, group, and organizational change: *dissonance, efficacy, and benefits*.

To make a fundamental change in thinking and behavior people must feel a significant 'dissonance,' or gap between their current status and a desired condition that creates the emotional tension required to motivate change. Dissonance promotes awareness of the risks of maintaining the status quo and of the need for action. A basic axiom of change management is: "no tension, no change."

Dissonance alone, however, is not enough; to make a fundamental change, people must also feel sufficient levels of 'efficacy.' This means they must be sufficiently confident they have the knowledge, tools, and skills required to do what is needed to reduce the gap and minimize the dissonance.

Just as importantly, people must believe that the advantages of adopting new actions - behaviors, practices, technologies or policies - far outweigh the downsides. Usually this means they must see at least two upsides for every downside of a change.

To build dissonance, the Climate Futures Forum model uses global climate impact projections downscaled to the local level along with an analysis of the likely consequences of those impacts on ecological, built, economic, social and cultural systems. CFFs build efficacy and confidence in the advantages of action by having participants identify effective preparedness and resilience building as well as emission reduction actions, along with their co-benefits. Thus, the CFF process helps participants understand the need for change by building confidence in their capacity to make the adjustments required in ways that will leave people better off.

### D. The CFF Systems Approach

Another distinctive aspect of the Climate Futures Forum model is its use of a systems approach to continually emphasize the interactions that occur among multiple systems. Climate disruption can produce surprising and cascading shifts in the structure and composition of ecological, built, economic, social, and cultural systems. For instance, a change in mountain snowpack can alter summer water supplies for major population areas, which in turn impacts agricultural production and reduces water quantity and quality for native fish species. These ecological changes will have potentially strong impacts on economic, human, and cultural systems, such as changes in employment opportunities, increased cost of energy, the emergence of new infectious diseases and impacts on traditional Native American foods.

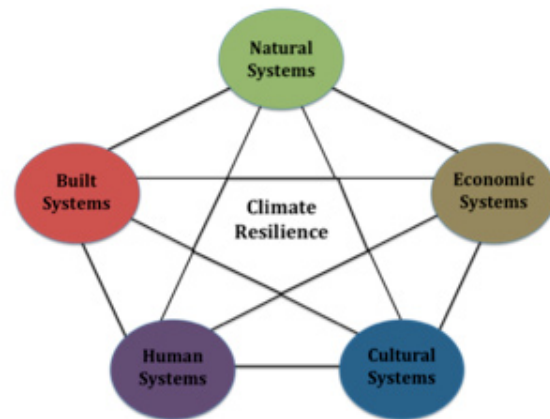


Figure 2

Likewise, a resilience building decision made in one sector, such as reducing physical infrastructure such as roads or buildings in a floodplain, may have positive cascading effects in some sectors, such as improving public health and aquatic ecosystems, as well as negative impacts in others, such as reduced opportunities for economic development.

Climate Futures Forums are explicitly designed to help participants think about these issues systemically by focusing on the interactions between, and consequences of, resilience building and emission reduction actions on all of the systems at play within a community (see Figure 2):

- **Natural Systems:** e.g. aquatic, avian, and terrestrial ecosystems and species.
- **Built Systems:** e.g. communication and transportation infrastructure, buildings, drinking, irrigation, and wastewater infrastructure, etc.
- **Economic Systems:** e.g. employers and industry, such as manufacturing, timber, agriculture, recreation, retailers, fisheries, etc.
- **Human Systems:** e.g. public health, education, emergency response, social services, etc.
- **Cultural Systems:** e.g. communities, places, species and artifacts of cultural importance including those essential to traditional tribal practices, historical architecture, burial grounds, etc.

In sum, the Climate Futures Forums are designed to be “climate learning systems” that engage individuals in experiences that lead to new ways of thinking, which produce the identification of different types of actions that ultimately generate greater climate preparedness, resilience and emission reductions.

Evaluations indicate the CFF model achieves its goals. Participants said in assessments following the workshops that they developed increased understandings of the system-wide impacts of climate disruption. They also produced a suite of effective recommendations for resilience building and emission reducing actions that cut across multiple issues and sectors. Subsequent follow-up surveys found that participating organizations were also much more likely than those that did not participate in a Climate Futures Forums to increase their actions to prepare for climate impacts and reduce their greenhouse gas emissions.

## E. Keys to Success

Our experience, combined with feedback obtained from participants, indicate that there are several keys to the success of Climate Futures Forums.

First, rather than using broad state or multi-state climate impact projections to help people personalize and internalize the risks, it is important to provide credible impact projections for the local region. This helps stakeholders and decision makers conceptualize the likely consequences of climate disruption for the assets and resources they are responsible for and care about and helps them identify opportunities for action. Localized impact projections increase dissonance and help participants internalize the need for new and expanded actions to build resilience and reduce emissions.



Second, CFFs succeed because they involve local expertise from a range of sectors and constituencies in the planning and decision making process rather than relying on outside experts. It is difficult to generate sufficient levels of dissonance, efficacy, and a sense of benefits when the information about likely impacts are presented from outsiders that local citizens perceive as having little knowledge of local economic, social, or environmental conditions. In addition, the involvement of locals with different types of expertise and experience with changes in local conditions generates buy-in and support for locally appropriate solutions.



In the pages that follow the terms “local experts” and “participants” are used interchangeably, reflecting the acknowledgement of the vast amount of local expertise communities possess.

The third key to the CFF success is the use of a systems perspective as it helps participants understand the impacts of and solutions to climate disruption. The simultaneous focus on natural, built, economic, human and cultural systems is a cornerstone of the process because impacts are analyzed and recommendations are framed around these five systems and the sectors and constituencies within them. Using a systems perspective helps empower participants as they envision community resources in a broad holistic framework.

## **F. Organization of The Handbook**

The following sections provide “how-to” advice for anyone interested in organizing Climate Futures Forums in their area. The process will need to be tailored to meet the needs, culture, and economy of your community. The material is divided into three sections:

- Organizing and preparing for the Climate Futures Forums
- Hosting and facilitating the workshops
- Follow-up activities

The process described in the following pages should serve as a starting, not an end point, for the development of climate resilience and emission reduction plans. The workshops and assessments that result should generate a better informed and more motivated public, as well as a substantive platform for the long-term process of preparing for and building resilience to climate impacts and reducing emissions. We hope the information provide here will help communities plan for the many shifts that will occur as climate disruption unfolds.

## II. Organizing and Preparing for Climate Futures Forums

**S**uccessful Climate Futures Forums require careful planning and preparation. Six steps are important to the process:

- A. Identifying the geographic scope to be covered by the CFF
- B. Organizing a steering committee composed of local practitioners
- C. Producing a narrative describing local climate impact projections
- D. Preparing a narrative on the local socio-economic characteristics
- E. Identifying and inviting CFF participants and organizing the event
- F. Follow-up

In the sections below detailed information and advice is provided about how you can address each of these areas. Checklists are included to help planners keep track of the many details that are involved. Examples of our experiences and decisions are also provided.

### A. Identify the Geographic Scope of the CFF

The first step is to determine the geographic region to be covered by the Climate Futures Forum. This is important because the area the CFF will address will determine the range of people invited to participate in the process.

When defining the area your CFF will cover, consider how local people think about their sense of place, how the local economy functions, and the range of governments. Do citizens think of themselves as living in a watershed (e.g. the Rogue basin), in a specific town (e.g. Hampstead), or in a certain region (e.g. southeast Florida)? Is the local economy linked together by certain agricultural products (e.g. potatoes in the Snake River basin of southern Idaho and eastern Oregon) or specific industries (e.g. tourism, high tech)? Is there a

regional government agency that defines the politics of the area? Another issue to consider is the availability of scientifically credible climate impact projections. Check local universities and other sources to determine the size and locations that can be covered by impact projections. These and other similar issues must be addressed to determine the area covered by the CFF.

In Oregon, for example, many people think of themselves as living in a specific watershed. Land use and other forms of planning often occur at the watershed level. Government agencies frequently collaborate across jurisdictional boundaries. Residents are therefore accustomed to working with others in their river basin. And, climate impact projections could be produced for regions the size of local river basins. TRIG therefore decided to use watershed boundaries as the geographic range of our CFFs, even when they include multiple cities and counties, and in some cases included two states (e.g. Oregon and California).

#### Checklist 2-A: Identify CFFs Geographic Scope

*Assess region for:*

- ☐ How people think about their sense of place
- ☐ Local culture
- ☐ Watersheds/river basins
- ☐ Historical collaboration
- ☐ Structure of local economy
- ☐ Political commonalities
- ☐ Area covered by climate impact projections

In contrast, most people living in Florida think of themselves as living in specific regions of the state (SE, NW), not in watersheds. Therefore, when TRIG proposed the idea of developing a regional climate resilience compact in the southeast section of the state it was organized around four counties.

Consider the items in checklist 2-A when determining the geographic area to be covered by your Climate Futures Forum.

## B: Organize Local CFF Steering and Science Committees

After the geographic scope of your CFF has been determined, the next step is to organize a project steering (or advisory) committee composed primarily of local residents. This committee should help guide the entire process, from identifying who to invite to participate in the CFF, to when and where it should be held, the agenda and materials to be provided, through to contributing to development of strategies for building resilience and reducing emissions.

A steering committee is typically most efficient with 10-15 individuals. This is a manageable number of people to work with, yet large enough to include representation from a range of stakeholder groups. The committee should be composed of knowledgeable and respected individuals from all of the key systems the CFF will focus on: natural, built, human, cultural, and economic.

People to consider for the advisory committee include:

- Local representatives from state and federal government agencies (including those responsible for natural resources and the environment, economic development, emergency management, public health, etc.)
- Local governments (elected officials and/or key staff from counties and city agencies)
- Key small and large local businesses (e.g. high tech, timber, agriculture, retail, tourism)
- Watershed councils
- Faith organizations
- Neighborhood associations
- Conservation organizations
- Labor organizations
- Social service agencies (e.g. food banks)
- Transportation managers and associations
- University researchers including Extension

staff (especially those with knowledge of the local environment, natural resources, and economy)

- Public health managers
- Emergency response managers
- Water, sewage and electrical utility managers
- Organizations representing low-capacity and vulnerable populations (the poor, elderly, infirm, youth, communities or color)

It is usually helpful to personally meet each potential steering committee member prior to the start of the process to make sure they understand the goals and process to be used and are likely to be able to meaningfully participate. After organizing the committee, hold a meeting to discuss the goals, methods, and desired outcomes of the project and the goals, roles, and responsibilities of committee members. Although these factors should be clearly described prior to the first full meeting, the steering committee should play a major part in identifying the most appropriate means for implementing them.

### Checklist 2-B: Develop Steering and Science Committees

- ☐ Identify potential participants from key sectors/constituencies
- ☐ At first meeting clarify goals, roles, responsibilities and desired outcomes
- ☐ Committee should develop a work plan suitable to the local community
- ☐ Organize scientific committee (optional)

If there is enough scientific expertise in your area about the local ecological conditions, you might consider establishing an 8-12 person "Science Advisory Committee." Their role would be to translate the downscaled climate impact projections into a credible and easy to understand analysis of the likely consequences on local ecosystems and species (see below). The steering committee or government agencies can help identify potential participants of this group from local universities, public agencies, private firms, and non-profit organizations. The team should consist of scientists with expertise in aquatic, avian, and terrestrial species, plants, ecosystems, soils, forests, waterways etc.

## C. Generate Local Climate Impact Projections

One of the most important aspects of the Climate Futures Forums process is providing localized projections of the impacts of climate disruption. These projections should be as localized as possible. Multi-state and broad regional projections will not have the same effect as downscaled information for the area where the communities involved with the CFFs are found.

This information can often be obtained from universities in your state, the NOAA-sponsored Regional Integrated Science and Assessment (RISA) program in your region, from the National Climate Assessment, or from other public or non-profit organizations. If projections are not available from any of those sources, you may need to contract the project to a private company or institution outside of your region. This usually involves selecting, downscaling, and comparing information generated by 2-4 different global climate change computer models for your chosen region. The projections often include different temperature change scenarios and their effects on different resources or issues. For example, you might want to ask for impact projections under conditions of average temperature increases of 1° and 2°Celsius (1.8° and 3.6°F) over different time periods that show both monthly and seasonal changes in:

- Temperature
- Precipitation
- Stream flow for a selection of major tributaries
- Fire (acres of forests burned)
- Vegetation (type and diversity)
- Snow water equivalent/snowpack
- Extreme weather events

Your steering committee should determine the most appropriate format to share the results with the CFF participants. At a minimum,

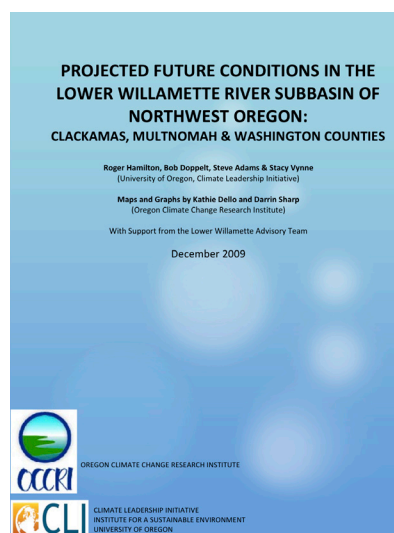
include a narrative form readable for the layperson along with spatial maps, bar graphs, and line graphs so that readers can visually see the projected changes.

### Checklist 2-C: Local Climate Modeling

- ☐ Identify institution with impact projections that can be tailored to your local area
- ☐ Alternatively, contract with an organization to develop local climate impact projections

## D: Prepare Narrative of Climate Impact Projections

Upon completion of the climate impact projections, the above-mentioned narrative should be developed that provides a brief overview of the methods and findings. The narrative should explain the raw findings (e.g. likely changes in precipitation under one degree temperature increase) without suggesting the consequences for local ecosystems, species, and humans. This interpretation should be left to the participants in the CFF workshops because considering these issues will help people utilize their local expertise to internalize the possible risks and generate informed conclusions about likely vulnerabilities. Allowing participants to analyze likely risks and vulnerabilities will also help generate buy-in for the outcomes.



*Climate Projections Report for Lower Willamette River Sub-basin of NW Oregon. This and similar reports can be found at: <http://www.theresourceinnovationgroup.org/climate-preparedness-pubs/>*

For instance, you might describe predicted changes as follows: “Climate Model A shows an increase in summer temperatures of 2-3°F in the eastern part of the basin by 2040, while Model B shows a warming of 3-4°F.” This neutral wording allows participants to analyze how the temperature changes will likely affect streams, fisheries and other resources. The climate impact reports on the TRIG website provide examples of how to present the information in this manner. ([www.theresourceinnovationgroup.org](http://www.theresourceinnovationgroup.org))

## E. Develop Narratives of Local Ecology and Socio-Economic Characteristics

In addition to the narrative describing the projected climate impacts, provide a narrative that describes the ecological as well as socio-economic-political history and characteristics of the region covered by the CFF. Participants will be better able to analyze the likely impacts of climate disruption if they have an understanding of the history and current economic, social, cultural, and political characteristics of the area. A five to ten page narrative should cover the following:

- **Natural systems:** historic climate conditions and weather patterns; threatened and endangered species; invasive species; watershed conditions; air and water quality.
- **Built systems:** Age, condition, and location of key public and private highways, bridges, airports, railroads, energy, water, wastewater and communication infrastructure; average age and conditions of local housing stock and other buildings.
- **Economic systems:** major industries, businesses, and employers in the region; average wages; unemployment rate and trends; degree of dependency on imported energy and raw materials; local energy mix (e.g. percent of fossil fuels vs. wind, solar, and other renewables); major markets for locally produced goods; homeownership rates.
- **Human systems:** educational institutions;

population with high school, college, and advanced degrees; public health and emergency service operations; key diseases in area; number of early childhood deaths etc.

- **Cultural systems:** historical and current Native American tribes, key historical architecture.
- **Other:** history of extreme weather events and their consequences (e.g. most recent major flood, wildfire or heat wave and the socio-economic impacts).

### Checklist 2-D,E: Develop Narrative Describing Local Area

- ☐ Prepare narrative of modeled climate impact projections
- ☐ Prepare narrative of ecological, social and economic characteristics of geographic area covered by the CFF
- ☐ Obtain feedback and approval from steering committee

This information can be gathered from city and county websites, the chamber of commerce, US Census data, state economic agencies, the state climatologist, National Weather Service, United States Department of Agriculture, Environmental Protection Agency, and, and other sources.

Once again, your steering committee should be engaged in the development and proofing of this information.

## F. Identify CFF Participants

As the narratives described above are being developed, you can identify appropriate participants for the CFFs. Careful selection is important because the people who are invited to attend will identify the likely consequences of climate disruption on the local area.

They will also develop recommendations for preparing for and building resilience to climate impacts and reducing greenhouse gas emissions. Consequently, invited participants should have sufficient credibility and clout to motivate a wide range of public, private, and non-profit organizations to implement the recommendations. Moreover, CFF workshops

provide a unique opportunity to build partnerships that can work together over the long run to advance climate preparedness, resilience, and emission reductions.

To develop the invitation list, begin by working with the steering committee to identify organizations and individuals associated with each of the major sectors within each system on which the CFF will focus. For example:

- **Natural Systems:** Local, state, and federal natural resource and environmental agencies; faculty from local universities with expertise in natural systems; non-profit organizations (e.g. watershed councils, conservation, and wildlife organizations)
- **Built Systems:** Public works departments for cities/counties, water managers, state department of transportation and local transportation systems, utilities, builders, city and county planners, port authorities, rail managers, land use organizations, energy facilities, etc.
- **Economic Systems:** agriculture, manufacturers, other large and small businesses, the chambers of commerce, business associations, economic development agencies, etc.
- **Human Systems:** public health agencies, community health organizations, emergency managers, vulnerable population services (e.g. low-income, elderly, youth, homeless, minorities), educators, hospitals, social services (food banks, homeless shelters, etc.), police, fire departments, university extension offices, neighborhood associations, Rotary and other service clubs, etc.
- **Cultural Systems:** Native American representatives, historical preservation associations, etc.
- **Other:** Local mayors, commissioners, council members, state legislators, congressional staff, regional governments, sustainability commissions, etc.

After identifying the list of organizations to invite to the CFF, identify specific individuals within those entities. Make sure the steering committee is comfortable with each of the people identified. Invitations should be sent to potential participants at least six weeks in advance of the first meeting, along with background information about the CFF process. Make sure you ask for an RSVP so that you know who will attend and have ample time to find substitutes for people that decline.

At the same time, you might search for volunteers that can help with logistics for the CFFs. Willing workers can often be found within the organization represented on the steering committee, or from local schools, including local colleges or high schools.

#### Checklist 2-F: Identify Workshop Participants

- ☐ With steering committee, identify sectors/constituents to be represented
- ☐ With steering committee identify individuals
- ☐ Invite participants at least 6 weeks in advance and ask for RSVP



### III. Operating the CFF Workshops

**A**s previously described, the CFF workshops are designed to help community members use a systems approach to analyze how climate disruption is likely to affect local economic, social, and environmental conditions. This assessment should be used as a platform for the development of integrated and collaborative recommendations for scaling up preparedness, resilience, and emission reduction practices, technologies, and policies.

One of the end products should be a set of recommendations for building resilience and reducing emissions described in a document written and supported by a diverse collection of well-connected community members. Just as importantly, another result should be a diverse group of credible community leaders that have internalized the risks of climate disruption, grasped the need for resilience building and emission reduction actions, and are willing to publicly advocate for those strategies and policies. Achieving these outcomes requires careful attention to the content, process, and logistics of the workshops. In this section we offer recommendations for operating successful CFF workshops. The section covers:

1. Effective size and composition of workshops
2. Pre-workshop communications with attendees
3. Agenda planning
4. Skilled facilitators
5. Attention to logistical details

#### **A. Workshop Sequence, Size, and Composition**

A three-step sequence seems to work best for CFF workshops.

If you have organized a scientific advisory committee, or if a sufficient number of biophysical scientists and other natural systems specialists with knowledge of local ecosystems reside near the CFFs geographic scope, the first workshop should focus on how the downscaled climate impact projections are likely to affect local ecological systems and species. Prior to the workshop, the scientists should be provided with the narrative, charts and graphs describing the projections. Then, at the workshop the scientists should discuss the changes that are likely to occur in water resources, fisheries, soils, forests, wildlife, plants and other aspects of the natural environment. The people invited to participate in the other CFF workshops can be invited to observe the discussions and ask questions. The result should be a short written analysis of the ecological changes that are likely to occur as a result of the projected changes in temperature, precipitation and other climate variables.



The natural system workshop should be followed by a workshop focused on an analysis of how the ecological changes will affect built, economic, social, and cultural systems in the area.

The final workshop should identify recommendations for preparing for and building resilience to the projected impacts as well as actions to reduce greenhouse gas emissions.

Experience indicates that the maximum optimal size for each of the CFF workshops is between 30-40 people. If the geographic focus of your CFF is sizeable and includes a large population, you might need to hold more workshops in multiple locations within your chosen area. You will need to decide how many workshops to hold.

In communities with a large number of natural systems experts, it might be advantageous to hold separate workshops for them, followed by workshops for practitioners involved with built, economic, social, and cultural systems. An advantage of this approach is that the natural system experts can provide detailed analysis of how the anticipated climatic changes can affect ecosystems and, in turn, have cascading impacts on social, health, and economic systems. In areas with a fair amount of geographic diversity (e.g. river basins that contain mountainous areas as well as coastal plains) and related variations in climate impacts, we have held multiple workshops to provide a more homogeneous range of concerns for participants within each natural systems workshop. In regions that are geographically quite large or where travel is more difficult, we have had multiple workshops around the region to ease travel burden for participants.

If you decide to hold separate workshops, consider spacing them by two to eight weeks to allow time for summarizing findings to share with subsequent groups. We found this procedure to be especially useful when the natural systems experts met separately, as their expertise can then be more easily shared with others.

On the other hand, there are advantages to having representatives of all systems participating in a single workshop. Such cross-sector communication helps reinforce a systems

perspective of the impact of climate change and can also be extremely helpful in developing recommendations that have co-benefits across sectors.

## B. Pre-Workshop Communications

Communicating with participants before the workshop is crucial for ensuring good attendance and also for helping participants prepare for the event. “Save the Date” invitations should be sent out approximately 6-8 weeks prior to the Forum including a short explanation of the purpose of the event, why they were invited, the time and place, and sponsoring groups, including, if desired, names of the advisory team. A formal invitation should then be sent out 3-4 weeks in advance, allowing for RSVPs for up to one week prior to the workshop. There is a link to an example of an invitation that we used in the Resources Section at the end of this report.

### Checklist 3-B: Pre-Workshop Communication

- ☐ Save the Date Notice
- ☐ Formal Invitation
- ☐ Pre-workshop Survey (optional)
- ☐ Distribute modeling and community narratives, details on event, agenda



Consider sending a short survey to participants a few weeks before the workshop to help determine participants' knowledge and concern regarding climate change and its impact. There is a link to an example of a pre-workshop survey in the Resources Section of this report. This information can be very helpful for speakers and facilitators. It can also be useful, when combined with post-workshop assessments, in examining changes in knowledge, activities and policies that have occurred in your community, including implementation of adaptation and mitigation strategies. Areas that might be useful to assess include information on participants':

- Organization and area of expertise
- Perceptions on the severity of global climate change
- Personal knowledge of global and local impacts
- Expectation for impacts to their sector
- Responsibility and efforts to manage/adapt to impacts
- Information needs
- Barriers to working on adaptation

The most important pre-workshop communication is the report describing local climate impact projections as well as the summary of the ecological and socio-economic characteristics of the area. Send these narratives, supporting graphs and maps to participants seven to ten days prior to the workshops. A secure website could also be established where participants can access the materials. See the Resources Section at the end of this handbook for an example of materials that TRIG has used.

## C. Developing Agendas

A carefully planned agenda is crucial to the success of the CFF process. As you plan, consider how each element contributes to your goal: identifying likely local climate impacts along with recommendations for preparing for

and building resilience to those impacts while reducing emissions. At the end of the process you should have all the information needed to develop a sound report for the community that outlines the recommended actions.

An agenda that combines short plenary talks with breakout discussion sessions is usually most effective. To set the stage and provide a framework for the entire process, it is useful to have the welcoming comments or the first presentation of the day include an overview of the systems perspective. The comments should also acknowledge the expertise of participants, emphasizing their knowledge of each sector and their specialties. In discussing the day's agenda the welcoming speaker can reinforce the notion of inter-related systems and the co-benefits that come from planning and collaborating across sectors. The second major speaker(s) in a plenary session might best focus on the local climate impact projections and the analysis of what these impacts would mean for the ecology of the local area. This information will help participants begin the process with the same baseline information in mind.

### Sample Agenda

9:00-9:30 a.m.	Welcome, introductions and purpose of CFFs
9:30-10:00 a.m.	Projected climate impacts
10:00-10:15 a.m.	Break
10:15-11:30 a.m.	Breakout groups to discuss effects of projected impacts
11:30-12 noon	Report back from groups
12:00-1:00 p.m.	Lunch (include speaker and/or structured discussions)
1:00-2:15 p.m.	Breakout groups to discuss resilience-building strategies
2:15-2:30 p.m.	Report back from groups
2:30-2:45 p.m.	Break
2:45-4:00 p.m.	Breakout groups to discuss mitigation strategies
4:00-4:30 p.m.	Report back from groups
4:30-4:50 p.m.	Integrating resilience and mitigation
4:50-5:00 p.m.	Concluding remarks and next

Agenda items can be solicited from your steering team. For instance, they should be able to determine if participants would benefit from an introduction to climate change science before delving into local impacts. The committee should also determine if separate sessions or separate days are needed to cover different systems (natural, cultural, etc.). In addition, the members should know if local studies exist that should be included in the presentations such as watershed assessments or public health reports. Finally, your steering team can also help select quality presenters.

It will be important to work with the presenters to ensure they are comfortable presenting to a general audience and that they keep the use of acronyms and professional jargon to a minimum. One effective strategy is to ask presenters to provide their slides to you for review prior to the workshop.



If you decide to hold separate workshops for participants focused on different systems (e.g. built, social), two workshops might be sequenced as follows: The first workshop would bring together experts in natural systems who give brief presentations on the climate projections for the region and key ecosystem and species to consider. The majority of the day would then be devoted to breakout groups where participants identify the likely ecological impacts in their area of expertise (aquatic species, aquatic ecosystems, etc.) and then identify potential strategies to prepare for, build resilience, and support adaptation. The second workshop could then include experts of from the other systems (built, economic, cultural and social) and be formatted in a similar way. This session, however, would begin with a presentation about the likely impacts on local environment described in the natural systems workshop. The balance of the day would then focus on cross-sectoral discussions about the likely consequences for other systems as well as on strategies for preparedness and reducing emissions. The Resources Section at the end of this report includes a link to examples of agendas used by TRIG.

#### **D. Skilled Facilitation of Breakout Sessions**

The outcome of the CFFs - systems-based recommendations for preparing for and building resilience to climate impacts as well as for reducing emissions – will result from the dialogue that occurs during breakout sessions. Therefore, the breakouts require careful planning and skilled facilitators. Participants can be assigned to breakout sessions based on their area of expertise, such as those working in built systems and infrastructure, emergency management, or public health. This can help assure that participants have the same basic level of expertise while also promoting more detailed discussions. At the same time, however, facilitators should continually ask how each recommendation might affect other sectors or systems as a means of encouraging

participants to identify strategies that have co-benefits across sectors. Participants should also be encouraged to identify strategies that not only increase preparation and resilience efforts, but can also help reduce locally generated emissions. A simple example: planting trees in urban areas provides a carbon sequestration benefit, can reduce the urban heat island effect, improves air quality (reducing respiratory conditions), and provides wildlife habitat.

Breakout groups can either be highly structured or semi structured. For highly structured groups, provide a spreadsheet pre-populated with projected climate trends and key topics of concern based on their expertise, e.g. fish species, types of aquatic ecosystems, types of diseases, categories of vulnerable populations. (See Section D for a link to an example matrix.) For semi-structured discussion groups, provide the facilitators with a list of questions to pose to the groups, but also allow the participants to identify the topics to cover.



*CFF Participants Discussing Their Ideas  
During A Breakout Session*

Prior to the day of the CFF, all facilitators and note takers should be given detailed instructions for how to facilitate breakout group. In addition, a document that identifies the process to be used, specific questions to ask participants, the goals of the different sessions, and standard facilitation best practices should be provided.

#### **Checklist 3-D: Breakout Sessions**

- ☐ Prepare materials for highly or semi structured breakouts
- ☐ Identify skilled facilitators
- ☐ Identify note-takers
- ☐ Provide information to facilitators and note-takers

## **E. Logistical Details**

As with any type of meeting, attention to logistical details help to ensure that the day goes smoothly. For instance, the steering committee should help identify dates for the workshops that would not preclude participation by certain members of the community such as farmers, employees in natural resource areas, or others that have field seasons. The committee can also recommend facilities where the workshops can be held, such as a city hall or community center. Using a space provided by an advisory team member manifests collaboration and provides an opportunity for welcoming remarks from the host. We recommend a venue that has tables and chairs that are moveable and can be continually rearranged. Also, ensure there is accessible public transportation and parking for participants and universal access.

## IV. Following-up: Report Development & Implementation

**A**ctive involvement in the workshops is one of the most important aspects of the CFF process because it immerses participants in new experiences that can help generate different assumptions and beliefs that lead to new and expanded ideas for preparing for and building resilience to climate impacts and for reducing the root cause of the problem by mitigating locally generated emissions. Even without a final report, this type of experience can produce a long-term commitment to implementing climate solutions.

A final report describing the goals of the CFFs, the process that was used, and the recommendations is also very important. This report can be distributed throughout the community to stimulate discussion and spur action among individuals and organizations that did not attend the CFF. Just as importantly, the final report can over time serve as a reminder to those who attended the CFF of the risks and solutions identified during the process.

Three important tasks are therefore involved at this stage:

- A. Follow up with workshop participants
- B. Writing a final report and disseminating it to stakeholders
- C. Working with stakeholders and policy makers to help implement the recommendations.

### A. Follow-up With Participants

It is very important to acknowledge the time and effort given by participants. Within one week after the workshops, send a thank you to participants along with any materials you want to distribute. At this time you should also distribute an evaluation of the CFF process,

using an on-line survey program if possible, and give participants a timeline for report development.

Approximately 3 months later, a second post-workshop survey should be sent to document changes in participants' views about resilience and mitigation along with their involvement in activities since the CFF process ended. This survey could be modeled on the pre-workshop survey described above, and a link to a pre-workshop survey follows in the Resources Section.

#### Checklist 4-A: Workshop Follow up

- ☐ Distribute thank you and timeline to participants
- ☐ Evaluation distributed and reviewed
- ☐ Redistribute survey to assess change in awareness and action among participants (optional)

### B. Develop and Distribute Report of the Forum

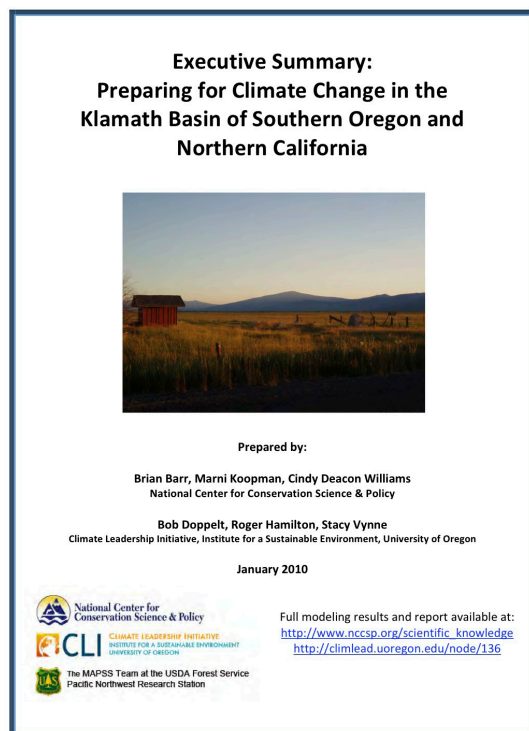
Within a few days after the last workshop, develop an outline for the CFF final report and circulate it among your steering team for input. While the structure will vary by your region and outcomes of the workshops, a sample outline may include:

- Summary of workshop purpose and process
- Overview of current characteristics of local systems (e.g. natural, built, economic, human, political)
- Climate impact projections for the region
- Consequences for local natural, built, economic social and social systems identified by participants
- Recommendations for preparing for and building resilience to climate impacts, as well as for reducing emissions, as identified by participants

- Case studies on adaptation projects/initiatives from the region (optional)
- Research needs (optional)
- Resources
- Participant list

When writing the final report, provide citations from published research when possible for the projected impacts and recommendations. This may require following up with individuals or research teams to identify studies mentioned in the workshops.

Descriptions of case studies can be captured during the workshop or by contacting participants and asking them to prepare written summaries of their projects. For example, groups might, in the past, have shared details on proposed or existing projects such as a floodplain restoration project to protect key infrastructure, a multi-county vector monitoring program, or a riparian restoration project to provide fish habitat and protect drinking water sources.



*Klamath Basin Executive Summary* Find this and other reports here: <http://www.theresourceinnovationgroup.org/climate-preparedness-pubs/>

These are examples of the types of case studies that could be included in the report to describe known solutions that might benefit from being scaled up.

In some cases conflicting statements might be found among the proceedings of different breakout groups. They should be described in the report because they highlight areas of uncertainty. The tone of the report will depend on your audience. Remember when writing the report that you are writing for a mix of knowledgeable practitioners and also non-expert citizens. Try to describe issues in simple, non-technical jargon, explain concepts, and avoid acronyms as well as uncommon terms.

The report should reflect the systems perspective that underlies the CFFs. One way to do this is to show the ways in which recommendations cut across sectors and provide co-benefits to multiple areas of the community. Highlight the local expertise – the contributions of the local experts in developing the recommendations and, by extension, in being able to carry them out.

After a draft of the report is completed, circulate it among workshop participants. All participants should be given an opportunity to provide input. When asking participants to review the document, you can also request that they provide additional case studies and submit photos or other material to be included.

From initiating the draft to finalizing the layout, developing the report should take 1-2 months, depending on staff capacity and participant input. Taking longer than that runs the risk of the recommendations fading as priorities.

In addition to the longer detailed report, consider preparing a condensed summary for policy makers. Summarize the recommendations and identify existing policies or regulations that can be used for implementation of the recommendations along with new policies that need to be considered. See [The Resource Innovation Group website](http://www.theresourceinnovationgroup.org/) for an example of summaries for policymakers from the Willamette Project.

After the final report is completed, send out a media release that highlights the key findings (see the Resources Section for a link to an example). All participants as well as key stakeholders and decision-makers should receive a copy of the report prior to the media release. Depending on your capacity and the size of the region you are working in, you may want to hold a webinar(s) or public event to present the findings (with participants leading the session if possible). You can also create a template presentation that participants can use to deliver public presentations on the findings to their stakeholder groups or constituents. Again, the steering committee should be helpful in determining the best ways to contact policy makers in the local area.

#### Checklist 4-B: Developing and Disseminating the Report

- ☐ Develop a report outline and distribute to steering committee
- ☐ Collect case studies and additional research to back-up recommendations as appropriate
- ☐ Draft final report and distribute to participants for review
- ☐ Incorporate comments and finalize report
- ☐ Develop summary report for policy makers
- ☐ Distribute report to the media with a release
- ☐ Hold public meetings and presentations on findings

### C. Implement Recommended Actions and Strategies

Following completion and dissemination of the final report, public, private, and non-profit organizations within the region should be encouraged to implement the recommendations. If your organization has the capacity, you can assist local groups in finding the best means to move forward. Below are a few examples of how federal and local governments are applying the results of CFFs to their planning and implementation processes.

- In rural Klamath County, Oregon, the US Fish and Wildlife Service has used the findings of the Klamath Watershed CFF report to inform landowners of the climate

impacts on the viability of a partnership to provide cattle grazing on refuge lands in exchange for agreements to protect wetlands in the waterfowl refuges. The findings underscored the need for enhanced water conservation and drought resilience strategies.

- In Oregon's Willamette Valley, a Willamette Valley Resilience Compact was initiated by cities and counties due in large part to CFFs conducted throughout the Willamette basin. The CFFs identified risks and vulnerabilities to climate change impacts for agriculture, forestry, emergency services, public health, hunting and fishing, outdoor winter recreation, and homeowners, among other sectors.
- The City of Eugene, Oregon has used CFF findings to inform its climate action plans and implement a system of trails and corridors to provide wildlife connectivity for its parks and recreation program.



## **D. Summary and Conclusions: CCFs Motivate People to Increase Resilience and Reduce Emissions**

In 2010 TRIG evaluated the effectiveness of the Climate Futures Forum process.

Public sector participants were surveyed from 14 counties in Oregon and Southwest Washington, eleven of which had been the focus of Climate Futures Forums. Although the survey was designed to address a range of issues, one of the most important findings was the nexus between participation in climate preparedness and resilience building projects and attitudes toward emission reductions.

The findings indicate that the respondents that participated in the Climate Futures Forums (or other adaptation-related workshops) reported higher concern for local climate impacts than non-participants (58.7% to 49.9%). Further, these participants demonstrated a greater sense of urgency with respect to the timing of engagement and were more active in educating the public about climate change issues (52% vs. 18%). Workshop participants were also more likely to allocate staff time to climate preparedness (48% to 22%). Each of these differences was statistically significant.

In addition, a majority of people that participated in Climate Futures Forums answered “Yes” to the question: “Has involvement (learning about, taking action) in adaptation/preparedness efforts led you to an increased interest or action in mitigation?” (69.62%).

In the aggregate, a majority of all survey respondents agreed that considerations of climate preparedness led to increased interest or action on climate mitigation (58% Yes, 10% No, 23% Not Sure). Of those providing a definitive “Yes” or “No” answer, a full 75% reported that learning about climate preparedness had increased local commitments to mitigation. The majority of respondents said that the reverse is true as well, with mitigation efforts leading to increased interest and action in preparedness/adaptation. (For more information see *Can Climate Change Preparedness Efforts Spur Greater Interest in Emission Reductions?: The Influence of Adaptation Planning on Attitudes Toward Climate Mitigation, Evidence from Oregon* found on the TRIG website: [www.theresourceinnovationgroup.org](http://www.theresourceinnovationgroup.org))



# Case Study: A Vulnerability Assessment of The City of Portland and Multnomah County, Oregon

To build from the Climate Futures Forums process and begin to implement priority projects, the City of Portland and Multnomah County are currently undergoing a vulnerability assessment. In 2009, the City of Portland and Multnomah County released their Climate Action Plan (CAP) that tasked the City and County with developing a separate vulnerability assessment and adaptation action plan. City and County staff began by focusing primarily on internal operations and departments. They identified three teams: Natural Resources, Infrastructure, and Human Systems and Health. Each team was headed by a staff “champion” and was made up of ten to twelve representatives from relevant departments. The City and County Sustainability Offices provided overall coordination and facilitation. When possible, they used existing processes (such as ongoing meetings and projects) to bring forward suggestions and receive input.

Each team was tasked with analyzing impacts of climate change on city and county owned, managed, regulated or relied upon systems and developing recommendations for adaptation independently and in conjunction with the other teams. While they were provided the King County, WA Climate Plan (2007) as a possible process to work from, each team was given the freedom to develop their own path to reach the deliverable. In the end, they all ended up following a similar process. The task list developed by the Natural Resources Team included the items below and provides an example of their process:

TASK	DELIVERABLE
Literature review of existing data on climate change impacts to the region	White paper
<u>Impacts Assessment</u> : 1) tabulate impacts on natural resources in region; 2) identify natural resources that are owned, managed, regulated or relied on by city or county bureaus	Tables
<u>Vulnerability Assessment</u> : 1) assess the impact of change on the identified natural resources; 2) identify best practices for responding to climate change impacts; 3) identify bureau programs and actions within those best practices that are current practices; 4) identify any gaps in actions and need for priority reassessment	Tables
<u>Recommendations for Adaptation</u> : 1) Develop new recommendations with prioritization and costs; 2) reconcile recommendations, find synergies, conflicts and “no regret” alternatives with other teams; 3) map development	Tables and maps
Prepare findings	Draft adaptation plan

Where possible, the final report (to be released in December 2012) will identify where recommended strategies or actions can be incorporated into existing planning efforts. Actions will be presented by impact and sector. In addition to the final report, an annual summit is planned for city and county staff and partners during which they can present updated information on the climate change science, report on progress towards implementation, and continue to build capacity and knowledge of staff within their departments. The CAP and more information can be found here: <http://web.multco.us/sustainability/climate-change>.

## V. Resources

### A. Sample Workshop Timeline

Item	When to Take Action														
	Pre-workshop												Post-workshop		
Months	12	11	10	9	8	7	6	5	4	3	2	1	1	2	3
Develop Advisory (and Science) Team	X	X	X	X	X										
Modeling Results					X	X	X	X							
Develop Modeling and Community Reports									X	X					
Develop Invite List										X					
Book Venue, Caterer										X					
Develop Agenda										X					
Distribute Save the Dates to Invitees											X				
Finalize Facilitators/Presenters											X				
Develop Pre-Workshop Survey												X			
Reminder to Invitees												X			
Finalize RSVPs												X			
Distribute Background and Modeling Reports, Survey, Agenda and Venue Information to Participants												X			
Finalize Presentations and Collect on One Computer												X			
Finalize Numbers with Caterer/Venue												X			
Develop Sign-In List, Nametags, Other Materials												X			

## B. Resources and Sample Materials

On the TRIG website at the URL below, you can find an example of the following materials:

- Advisory committee invitation
- Workshop participant invitation
- Pre-workshop materials (specifically, a report sent to participants)
- Pre-workshop survey
- Workshop agendas
- Press release
- Matrix for working groups (to discuss in breakouts at the meeting)
- Recommendations coming out of the CFF process

<http://www.theresourceinnovationgroup.org/climate-futures-forums/>

## C. CFF Reports and Materials

Climate Futures Forum final reports, modeling results, executive summaries, and maps/graphs can be found on the TRIG website:

<http://www.theresourceinnovationgroup.org/climate-preparedness-pubs/>

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