

KEY INSIGHTS ON BUSINESS, STATE, AND CITY COLLABORATION FOR A RESILIENT ANCHORAGE



C2ES held a two-day Solutions Forum workshop in March 2016 in Anchorage, Alaska, focusing on opportunities for collaboration in building a climate-resilient Anchorage. About 50 business leaders, city, state, federal and tribal officials, nonprofit organizations, and other experts shared their experiences addressing climate change impacts and enhancing resilience. Discussion focused on the role each stakeholder group can play in planning for resilience. This paper summarizes the key insights of the meeting and areas of focus moving forward.

For more information about the C2ES Solutions Forum, see: <http://www.c2es.org/initiatives/solutions-forum>

EXPERIENCE MANAGING NATURAL HAZARDS/RISKS CAN HELP INFORM CLIMATE RESILIENCE PLANNING

Anchorage has experience in dealing with both acute shocks (e.g., wildfires, earthquakes, volcanoes, infrastructure failures) and chronic stresses (e.g., shifting macroeconomic trends, lack of affordable housing, inequality, aging infrastructure). This experience has helped the city in enhancing resilience in some areas, and will help to inform further efforts to address climate resilience. The institutional knowledge gained in building resilience for one type of disaster (e.g., earthquakes) can be transferred to other types of disasters (e.g., wildfires). Moreover, disaster resilience is a process spanning multiple activities and timescales.

Alaska is on the front lines of climate change. Businesses, cities, and Alaska Native communities are all experiencing firsthand the impacts of climate change and extreme weather. Alaska has warmed at more than twice the rate of the rest of the United States. Anchorage experienced its two warmest years on record in 2014 and 2015. The region has also seen less snow than normal,

with 2015 snowfall totals measuring 54 percent below average. These changes have already impacted winter recreation activities, including the Iditarod in recent years. Warming temperatures lead to more frequent icing conditions and low visibility, impacting aviation—an important mode of transportation for the state as more than 80 percent of the communities are not served by roads. Warming temperatures have also contributed to earlier snowmelt, which can potentially lengthen the fire season by a month.

In recognition of these impacts, the Municipality of Anchorage, along with stakeholders, is working to develop a resilience strategy to protect and strengthen the city's infrastructure, economy, society, and environment.

IDENTIFYING CRITICAL INFRASTRUCTURE CAN HELP IDENTIFY VULNERABILITIES

Because of its location and its contribution to the economy, the resilience of Anchorage is essential to the overall resilience of the state. Many companies are headquartered in Anchorage, and the city serves as an entry point for economic activity.

THE PORT OF ANCHORAGE IS CRITICAL FOR THE ENTIRE STATE

Alaska functions like an island because of its geographic isolation, and its dependence on imports for most goods, including food. Nearly 90 percent of inbound goods arrive by sea, and almost half the cargo arriving at the Port of Anchorage is bound for other parts of the state. Each year, the port handles more than 3.5 million tons of goods that serve 85 percent of Alaskans. A disruption in port operations or shipping would severely impact the supply of food and other goods within the state.

After more than half a century of service, the Port of Anchorage is dealing with the impacts of corrosion and age. The resilience of the port infrastructure is threatened by various factors, including deteriorating wharf pile conditions due to corrosion and changing tidal conditions. The condition of the port infrastructure makes it more vulnerable to disasters, like earthquakes. Port operations are also impacted by changing conditions. Cook Inlet is subject to extreme weather, strong tides, and seasonal ice conditions that have a significant impact on shipping. Changing conditions could impact the ability for cargo ships to reach the Port of Anchorage.

The port is an intermodal transportation hub that is connected to other critical infrastructure necessary for the transport of goods, including the marine, air, road, rail, and pipeline systems. Because of this reliance on the port, many stakeholders are involved in coordinating on logistics, planning, and emergency management. Fuel supply is one particular area of coordination that is of high importance to the functioning of the transportation system in Anchorage and the state.

CITY RESILIENCE REQUIRES COLLABORATION ACROSS BUSINESS SECTORS AND MULTIPLE LEVELS OF GOVERNMENT

The ability for a city to plan for, respond, and recover from risks can be enhanced through coordination among various stakeholders. Businesses, public agencies, community groups, and citizens are all experiencing the impacts of climate change. All of these stakeholders have something to contribute to the discussion on community resilience, as described below.

BUSINESSES CAN PROVIDE EXPERTISE AND RISK MANAGEMENT SUPPORT

Companies deal with risk every day. Many businesses recognize the threats that extreme weather and climate change pose to their supply chain, operations, and infrastructure. Risk management and emergency management plans help businesses prepare for events, along with drills and training exercises with employees. This experience in risk management can be coordinated with city and state agencies to build and maintain local resilience. Anchorage is home to many oil and gas companies, which have experience in disaster response planning. In addition, these companies and others may have access to more detailed data and scenario planning that could be shared with public agencies for planning efforts.

Businesses can share their experience in building climate resilience with cities and states. In its recently released [vulnerability assessment](#), Pacific Gas & Electric Company (PG&E) shared how it has taken a multifaceted approach in dealing with climate risks. Many of the risks PG&E encounters in California, such as wildfires and extreme weather, are similar to those being experienced in Anchorage. PG&E has an in-house team of scientists, who help translate climate and weather information into planning scenarios to help the utility understand where future asset and operations risks may lie. PG&E collaborates with local agencies on understanding risks, evaluating future scenarios, and coordinating planning efforts.

REGIONAL, STATE, FEDERAL, AND TRIBAL COORDINATION IS NECESSARY

Because of its importance to the state, Anchorage will need to work with neighboring communities, regional organizations, state agencies, and other stakeholders to evaluate potential risks and take steps toward enhancing the community's resilience.

In addition to coordinating with federal agencies to learn more about resilience funding opportunities, the city can also work with federal agencies to get access to climate data, scenarios, and other resources for community resilience planning. For example, the [Climate Resilience Toolkit](#) provides case studies and other resources for community resilience planning. The [National Oceanic and Atmospheric Administration](#) provides various resources for local decision makers, including observa-

tion data, weather outlooks, scenarios, and other tools. In addition, federal agencies are helping to facilitate collaboration between rural and Alaska Native communities to ensure the safety and resilience of these populations.

“RESILIENCE DIVIDEND” CAN BE FACTORED INTO INVESTMENTS AND EXPENDITURES

Funding resilience specific projects can be difficult in budget-limited cities and states. However, public agencies are already examining how to enhance existing infrastructure and develop better future investments. Instead of viewing infrastructure projects and resilience investments separately, public and private stakeholders can think holistically about how investments and expenditures can provide the greatest benefit for least-cost. For example, if a locality is replacing port infrastructure, it should incorporate sea level rise projections to ensure the resilience of the port as conditions change. These types of efforts help minimize long-term costs, as they may decrease the need for future repairs and increase the lifespan of the asset.

RESILIENCE IS AN IMPORTANT PART OF COMPETITIVENESS

Managing risks effectively and systematically will help communities to be better prepared for acute shocks and chronic stresses. Beyond ensuring the safety and security of citizens, communities have other reasons to enhance local resilience. Companies consider the resilience of a community as a factor in determining where to locate their business. For example, a business may be more likely to move to a location where there is extensive coastal flood protection, versus an area that is less prepared for coastal risks. By increasing the ability for the community to plan for, respond to, and recover from risks, cities can remain competitive in the economic marketplace.

EVALUATING A CITY’S LEVEL OF PREPAREDNESS HELPS PROVIDE A RESILIENCE BASELINE

This workshop used the **Disaster Resilience Scorecard**, developed by IBM and AECOM. The scorecard is a multi-dimensional tool used to measure how resilient a city currently is to natural disasters. It provides a set of assessments that can help cities to establish a baseline measurement of their current level of disaster resilience, identify priorities for investment and action, and track their progress in improving their disaster resilience over time. Various cities around the world have used this scorecard to help set a baseline for current resilience and identify areas to focus on for future action on resilience planning.

ANCHORAGE PREPAREDNESS

Participants used the Ten Essentials of disaster management outlined in the scorecard to assess the city’s current level of preparedness for disaster events. Because of Anchorage’s experience with past disasters (e.g., 1964 earthquake, and recent wind storms), many aspects of the city are well prepared with existing planning structures, coordination efforts, and ongoing tracking in place. The scorecard exercise also helped to identify areas where the city could focus future planning efforts, where preparedness is not as strong. Because climate change will also introduce challenges that are not necessarily tied to disasters, the city is also examining how to prepare for long-term changes.

C2ES will continue to work with stakeholders to explore these insights and questions. We will develop ideas with stakeholders and reconvene with the goal of helping businesses, states, and cities develop plans for moving forward in collaborating on climate resilience.



The Center for Climate and Energy Solutions (C2ES) is an independent, nonprofit, nonpartisan organization promoting strong policy and action to address our climate and energy challenges. The C2ES Solutions Forum brings together businesses, states, and cities to expand clean energy, reduce greenhouse gas emissions, and strengthen resilience to climate change.