

Principles to Guide Climate Resilience Planning in the Utility Sector

By Marissa Steketee and Shaun Seaman

The recent wildfires in Oregon, Washington, and California have made the reality of a changing climate all too clear. Rising average temperatures, shifting precipitation patterns, and more frequent extreme weather events will continue to impact electric utilities in a variety of ways, including altering the availability and predictability of water resources, impacts to physical assets and operations, and evolving policy and regulations. Considering the increasing influence climate change will have on daily operations, evaluating long-term investments is possible, prudent, and necessary to becoming climate resilient.

Over the last four years, Chelan County PUD and Sapere Consulting have been working together to make climate resilience part of normal planning and operations at the PUD. Climate change initiatives commonly focus on the mitigation (i.e. reduction) of greenhouse gases. As a hydropower generator, the PUD has focused its climate-related initiatives on understanding impacts to assets and operations, as well as policy impacts on business operations. Below we share the five principles that have helped develop a climate resilience program for the PUD.

1. Get all areas of the business involved

Because climate change has both a physical and policy influence over the PUD’s assets and operations, the first step was to understand how climate change effects (or changes) could directly or indirectly impact operations (e.g., physical assets, maintenance programs, source materials, or service providers), legal compliance, finance, natural resources, and customer/ stakeholder relations. Sapere compiled data on potential climate change effects in the PUD’s geographic region and used the information to guide interviews with

stakeholders across the organization. Through these interviews, they identified vulnerabilities and defined the likelihood of occurrence as well as the velocity (i.e., the timeframe when each vulnerability may take place). The stakeholder engagement was an integral part of the comprehensive assessment of climate vulnerability.

2. Use risk principles to help prioritize and manage potential vulnerabilities in existing business processes

The vulnerabilities identified as part of the comprehensive climate vulnerability assessment were categorized and prioritized based on a risk score derived from likelihood and velocity. The highest priority vulnerabilities were evaluated further for consequence (i.e. impact) and District preparedness prior to integrating them into the PUD’s risk management program for routine monitoring and management. The remaining vulnerabilities, generally projected to occur three or more years in the future, are reviewed periodically based on new information and changing environmental conditions so that they can be integrated into existing business processes if and when the vulnerability meets the threshold to be actively managed. If an enterprise risk management program has not been established to identify and monitor risks, business processes

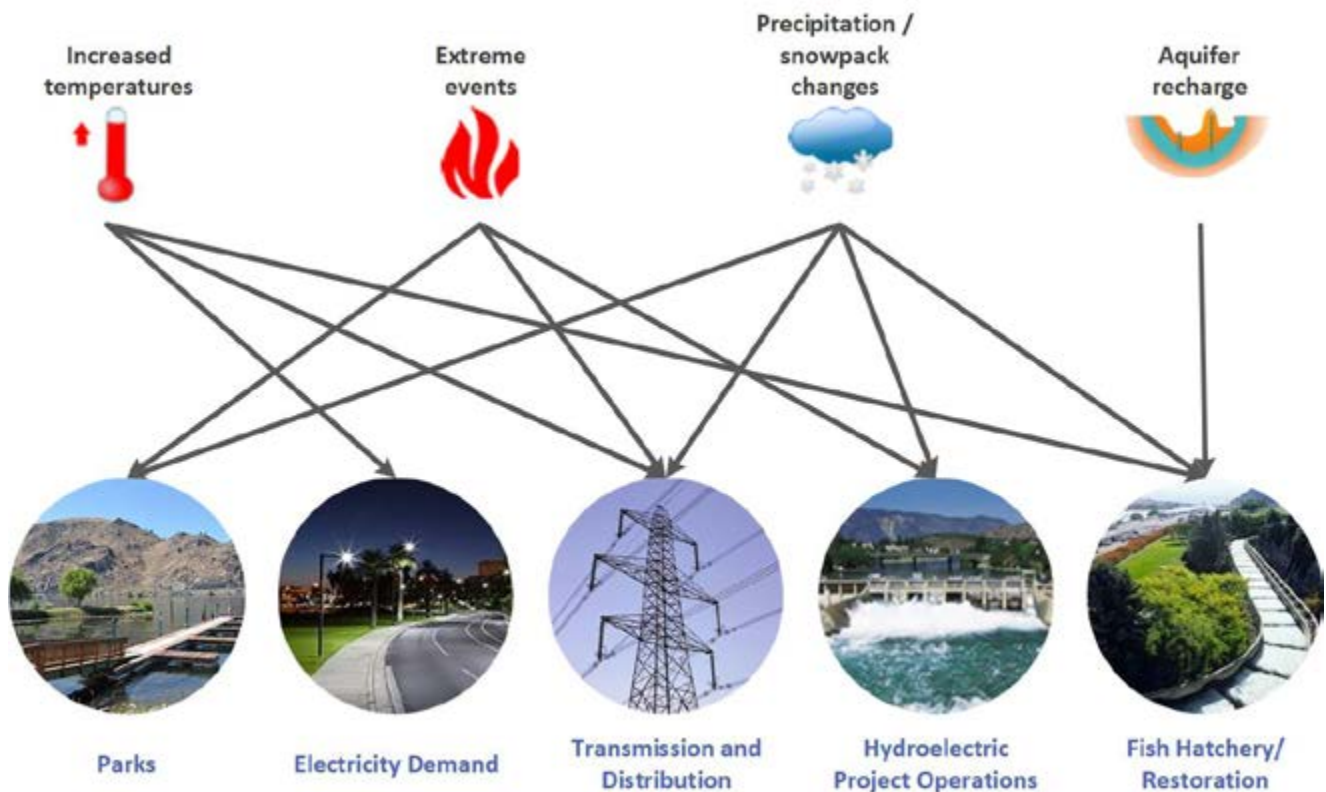
to identify and manage risk can be developed to track risks across the enterprise.

3. Keep learning and connecting

Benjamin Franklin said, “Involve me and I learn.” A critical aspect of climate resilience is to be involved in building networks and continuing to learn. Throughout the year, PUD personnel engage in legislative, regulatory, science, and industry activities. Engagement in science helps improve assessments of vulnerability to PUD assets and operations. Engagement in legislative and regulatory changes allow the PUD to identify potential changes to regulations that may impact it and provide an opportunity



Climate change is projected to increase the risks of many extreme events, including wildfires. Chelan PUD grubs and paints poles as a proactive measure.



Climate change drivers and impacts to PUD physical assets and operations.

to participate in the regulatory process. As a result of the initial vulnerability identification, the utility is conducting additional research and climate change impacts analyses for the Columbia River and Lake Chelan basin hydrologic flow projections, and out-year distribution system load projections. Recently, the PUD has been actively participating in Chelan County’s “County-Wide Climate Resilience Planning,” which has expanded the network of connections and opportunities for collaboration and support in the community.

4. Incorporate climate change analysis and resilience into existing business processes

A key objective for the PUD was to ensure that the management of physical and policy risks associated with climate change are effectively institutionalized across the PUD within business units and across disciplines. This led Sapere and the PUD to review existing management and operational processes in the organization and identify where and how climate change resilience should be considered as part of both asset management and project planning processes.

Those recommendations have been integrated into each of the processes and are now part of the standard operating procedures.

5. Don’t wait

Climate change impacts are here, and we will continue to experience these impacts. In 2018, the 4th National Climate Assessment stated, “Climate change is projected to increase the risks from many of these extreme events [flooding, landslides, drought, wildfire, and heat waves] potentially compromising the reliability of water supplies, hydropower, and transportation across the region [Northwest US].” We have seen the financial impacts to investor-owned utilities such as Entergy, PG&E, and PacifiCorp resulting from extreme events linked to climate change. We know that resiliency and planned adaptation can result in lower costs and is more effective than reactive responses during emergency situations. From a cost perspective, the Canadian National Round Table on the Environment and the Economy suggests that the benefit-to-cost ratio of proactive adaptation for electric utilities ranges from 9:1 to 38:1

depending on growth and climate change scenarios. Thus, proactive adaptation can result in significantly lower financial impacts compared to passive approaches that ultimately result in reactive responses during emergency situations.

Becoming climate resilient means acting now to understand and quantify your risks from climate change and institutionalizing a process that enables ongoing reevaluation and integration of practices that help organizations adapt and be resilient to a changing climate. Once the risks are understood, they can be translated into actionable information to protect a utility’s assets and focus operations to be ready for the future. **NWPPA**

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