

MEMORANDUM

TO: UTILITIES ADVISORY COMMISSION

FROM: UTILITIES DEPARTMENT

DATE: FEBRUARY 7, 2018

SUBJECT: CPAU's Role in Community Resiliency – Defining Framework and Principles

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RECOMMENDATION

This report is provided for discussion by the Utilities Advisory Commission (UAC). Feedback is requested on staff's plan to conduct two workshops with the UAC to establish a framework and key working principles that will guide ongoing efforts on CPAU's role in community resiliency. The UAC may consider forming a subcommittee to work with staff to develop content and structure for the workshops.

EXECUTIVE SUMMARY

The purpose of this report is to lay out next steps for development of City of Palo Alto Utilities (CPAU) resiliency efforts. CPAU is proposing to work with Bluepoint Planning, LLC., one of the City's strategic planning consultants under Contract No. S17168751, to facilitate a UAC discussion of community interests in this arena. This will start with pre-workshop planning, which could involve one or two UAC commissioners to ensure our approach is in line with community interests. The anticipated deliverables from this effort are a framework of priorities and guidelines CPAU will use to develop initiatives that reflect community interests as well as direction on communication tools for residents that facilitate their role in reinforcing a more resilient Palo Alto. Before CPAU finalizes the project scope we are seeking your feedback on this approach.

DISCUSSION

Over the past year, CPAU has been actively engaged with internal and external stakeholders in updating the Utility's strategic planning document with a focus on CPAU's strategic destination and specific actions and/or initiatives to be carried out by staff over the next three to five years. During the public outreach sessions, the topic of resiliency was a consistent theme, from service recovery expectations, to the resiliency of the utility business model against disruptive market forces, to the community's ability to adapt to the impacts of climate change. With that feedback the CPAU team working on the "Financial Efficiency and Resource Optimization" priority developed a "community resiliency" strategy and list of action items. The workshops with the UAC would set staff on the path to complete Action 1:

Strategy 5. Engage stakeholders and define CPAU's role in supporting and facilitating community resiliency.

Action 1. Engage in community outreach to identify what aspects of resiliency are important to the community for each utility to support development of a resiliency work plan. Complete by December 2018.

Action 2. Define minimum emergency service commitments and targeted full system recovery times in case of a major disaster(s) and communicate general guidance on recovery times to the public. Implementation to be determined and dependent on A1.

Action 3. Develop an outreach and education program to facilitate individual customer resiliency efforts. Implementation dependent on A1.

Action 4. Identify high priority issues that could interfere with emergency service commitments and recovery times and develop a plan to improve resiliency in these areas. Implementation dependent on A1.

Action 5. Complete evaluation of redundant/backup transmission service to CPAU and communicate to stakeholders. Complete by December 2018.

With its full complement of utility services and integrated Office of Emergency Services, City of Palo Alto has already made significant inroads with its Threat and Hazard Identification and Risk Assessment (THIRA), which identified a number of risks and hazards with the potential to disrupt utilities, ranging from natural disasters, accidents and technological failures, to deliberate attacks on CPAU infrastructure.

<https://www.cityofpaloalto.org/thira>

<https://www.cityofpaloalto.org/lhmap>

CPAU recognizes its responsibility for the protection of the Utility's critical infrastructure and key resources for our own customers as well as for those governments (City included) likely to send public safety and other responders (multi-agency, multi-jurisdiction, multi-echelon) in the event of a disruptive event. CPAU is updating departmental emergency plans to address findings in THIRA and develop an integrated plan to coordinate responses for all of our utilities.

Emergency management can be defined by phases: mitigate, prevent, prepare, respond, and recover. Resilience means different things to different people, one definition being it is the ability of infrastructure to withstand risks and hazards and then the ability to recover in some expected time frame. However, most of what might be considered for the emergency preparedness element of "resilience" may not be compelling from a normal financial or operations point of view. Hardening of infrastructure requires designing and building to address low probability/high impact contingencies. Fast recovery from disaster and outages can be achieved by building in redundancy of supply and distribution: more reservoirs for water supply; local generation and storage to enable microgrids and islanding; storing replacements for key supplies and long-lead time components, such as distribution elements. However, bolstering systems and maintaining stocks of redundant supply and distribution resources will come at high cost. Therefore, a considered, deliberative process is needed to evaluate such options under a comprehensive framework of potential costs, opportunity costs and potential future benefits.

From the community perspective, resiliency may be achieved at a customer or neighborhood level rather than relying on utility sized solutions. In this case, the utility role could include facilitating customer side resiliency efforts (e.g., microgrids and islanding) in the short term (next 5-10 years). A final comprehensive plan will likely be a hybrid of utility and customer

scale solutions, combined with robust communications with the community to inform the public of the expectations they should have of the utility and their role in community resiliency.

Initiating Action 1:

CPAU will work with BluePoint Planning, LLC. (Consultant) to facilitate two workshops (anticipated to be around two hours each) with the UAC with the following objectives: 1. Provide information and education about what resiliency means and help develop a clear definition for the City of Palo Alto; and 2. Establish a framework and key working principles developed with the UAC that will guide ongoing planning and efforts by CPAU. A two workshop format is proposed as an iterative process where the UAC has the opportunity in the first workshop to lay out their priorities and focus for a more action orientated second workshop.

Step 1: Develop educational materials and information for the workshops

Consultant will identify and help develop effective materials and information for the workshops. CPAU staff and Consultant will work on materials for the workshops to facilitate discussion, such as preliminary scenarios for resiliency, and a visual map of the City that identifies high load areas, community centers and critical services. A UAC subcommittee of one or two commissioners may be involved in this planning stage to guide the content and structure of the workshops to best engage the UAC.

Step 2: Workshop #1. Define Scope and Understanding of Resiliency and Facilitate Brainstorm

Consultant will facilitate and manage an initial workshop with the UAC. This first workshop will focus on presenting the current conditions of the City, including plans, issues and concerns; and facilitating a conversation to establish a clear definition of resiliency and preliminary guiding principles. Consultant will lead a brainstorm session to explore various scenarios and possibilities for the City.

Step 3: Workshop #2. Review and Refine Framework and Scenarios

If a second workshop is needed, the Consultant will facilitate and manage this workshop with the UAC. The second workshop will be designed to refine and establish a working Resiliency Framework and Guiding Principles. In addition, in coordination with CPAU, consultant will provide more refined scenarios to help inform and shape the framework. Scenarios may include developing a second transmission line and/or developing a robust Distributed Energy Resources network. Further, a goal for this workshop will be developing clear timing for implementing resiliency efforts.

Step 4: Implementation of identified resiliency efforts

In addition to new efforts identified through the workshops, CPAU has the following ongoing activities related to resiliency:

- An assessment of the City's electric distribution system ability to accommodate Distributed Energy Resources (DER) growth;
- A community DER survey to assess residential customers' interests, issues, concerns, priorities, and preferences to inform CPAU's DER Plan development. The purpose of the survey is to identify the various attitudinal and/or behavioral characteristics within each customer segment toward different home energy investment options and more broadly, their interest in energy and water use issues;

- Evaluation of a second transmission line to provide redundant (backup) connection of the City's electric distribution system to the California electric grid;
- Water reservoir study, which, when the system model is complete, can be used to analyze the City's ability to maintain water delivery under a number of disaster/system failure scenarios;
- Recycled water strategic plan: while the purpose of this is to look at long-term options for alternative water sources, it may also provide insight for short term emergency supplies;
- Smart grid applications that may enhance trouble-shooting capability to more efficiently detect and fix faults and resume service, and also increase customer control over their energy use and allow customers to respond in the event the utility requests reductions in load use; and
- Day-to-day maintenance and infrastructure replacement plans designed to keep our utility systems safe and reliable.

While CPAU has a comprehensive view of resiliency and reliability for all its utilities (electric, fiber, natural gas, water, and wastewater collection), staff's expectation is that the focus initially for new initiatives will be with the electric utility.

RESOURCE IMPACT

Funds of \$12,310 for this work are included in the FY 2018 budget. Staffing resources to manage the consultant and to finalize the work product have also been identified within existing staff. Funding for projects identified for Step 4 implementation will be subject to Council approval in subsequent years.

POLICY IMPLICATIONS

This recommendation sets no new Council policy and is consistent with the Council-approved 2011 Utilities Strategic Plan's strategy objectives for reliable supply of utility resources.

ENVIRONMENTAL REVIEW

Discussion of conducting workshops to develop a framework and principles for resiliency planning and efforts does not meet the definition of a project, pursuant to Section 21065 of the California Environmental Quality Act, thus no environmental review is required.

PREPARED BY: DEBRA LLOYD, Acting Assistant Director, Utilities Engineering 

REVIEWED BY: DEAN BATCHELOR, Chief Operating Officer, Utilities 
KEN DUEKER, Director, Office of Emergency Services (OES Chief)

DEPARTMENT HEAD: 
ED SHIKADA
General Manager of Utilities