



City of Palo Alto

Utilities Advisory Commission Staff Report

UAC MEETING

February 02, 2022

☒ Received Before Meeting

Staff: Tomm Marshall

3

(ID # 13923)

Meeting Date: 2/2/2022

Title: Discussion and Presentation on the Electric Distribution Infrastructure Modernization for S/CAP

From: Director of Utilities

Lead Department: Utilities

Recommended

This is for discussion purposes and no action is requested.

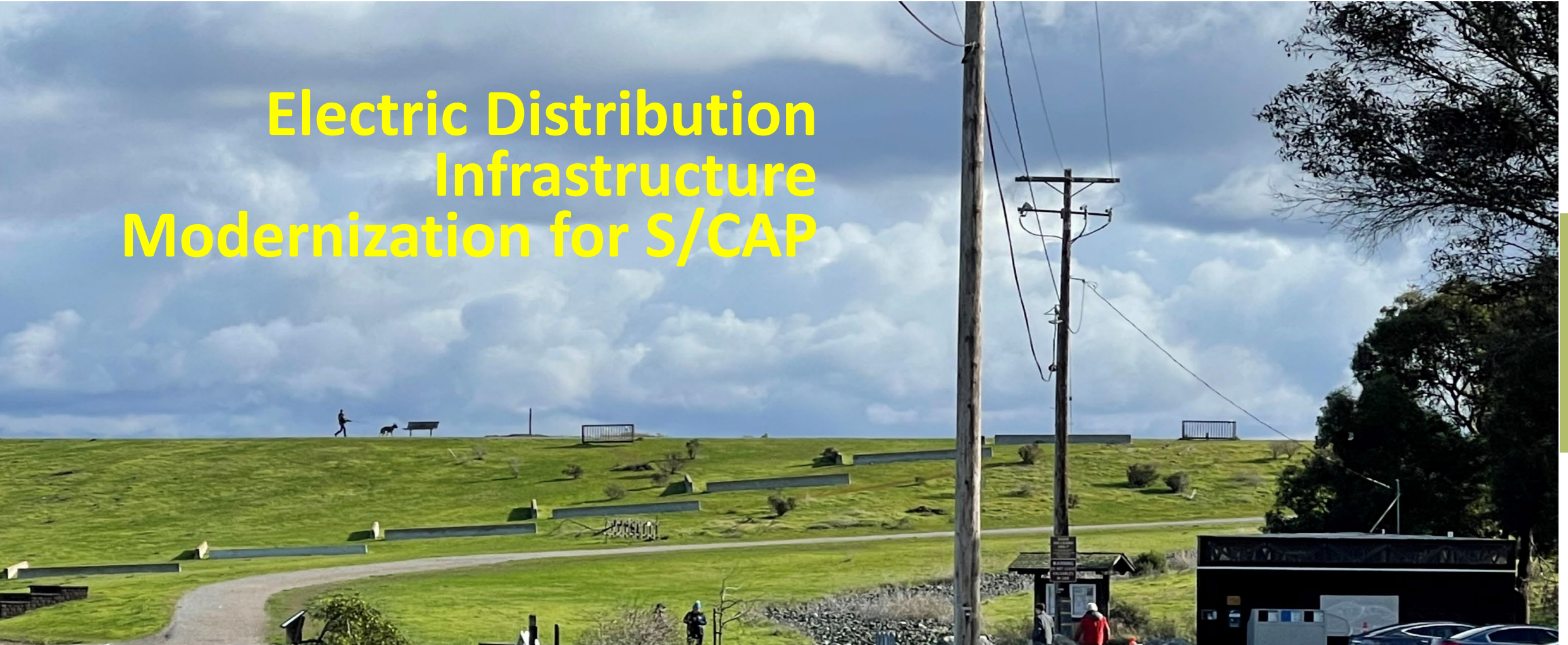
Background

The Utilities Advisory Commission requested an update on the status of the electric distribution and how staff is working with the S/CAP process.

Attachments:

- Attachment A: Presentation

Electric Distribution Infrastructure Modernization for S/CAP



February 02, 2022

www.cityofpaloalto.org



Existing Infrastructure

- Reaching the end of its useful life.
- Insufficient capacity for electrification of EV transportation and electrical heating.
- System was designed for one-way power flow.
- Limits the energy from rooftop solar, battery storage, and other local generation.



Future Grid Attributes

- **Allows two way power flow.**
- **Meets capacity, voltage regulation, and system protection requirements.**
- **Incorporates local generation sources.**
- **Provides higher levels of reliability and resiliency.**
- **Changes funding for the grid away from an energy consumption model.**



Option 1 for Transitioning to a Modern Grid

Upgrade the system as load and generation emerges.

Pros

- **Promotion of electrification and Distributed Energy Resources can begin now.**

Cons

- **Insufficient staff to review, design, and construct system upgrades.**
- **Inefficient construction of upgrades.**
- **Inability to support marketing efforts.**
- **Long delays for the customer.**
- **Delays in reaching climate goals.**



Option 2 for Transitioning to a Modern Grid

Upgrade the System in Advance

Pros

- Creates an organized plan to upgrade the grid.
- Allows time to recruit and train staff to manage the grid upgrades.
- Strengthens the system to accept electrification and generation sources onto the grid.
- Improves reliability and resiliency of the grid.
- Allows citywide goals to be reached in the most timely and cost effective way.
- Continues to support the natural progression towards electrification, solar rooftop, and other generation.

Cons

- 3-4 years before promotional activities can begin.
- Customers may experience near-term delays in their upgrades.



Steps for Modernization

- Prepare a general study by a contract consultant to determine universal changes needed to modernize the grid.
- Analyze and prioritize feeders and substations requiring upgrades.
- Establish contracts to design and build improvements for each circuit and associated substation.
- Establish marketing plans for electrification that are targeted toward modernized circuits.



Staffing Needs for Grid Modernization

Engineering and Operations Staffing

- Insufficient staffing to manage existing programs due to on-going vacancies.
- No staffing to manage Grid Modernization program and contracting.
- Need to attract and retain qualified personnel for positions.
- Compensation needs to be set at levels higher than surrounding agencies.
- Incentives need to be developed to retain existing staffing.



Other Needs for Grid Modernization

Streamlined Contracting

- Reduce timelines for developing, bidding, and awarding of contracts.
- Approval limits for SCAP should be changed to allow the City Manager to approve larger contracts.

Governance

- Consideration should be given to setting up a separate governance structure to advance SCAP goals.
- Current structure does not integrate policy with infrastructure needs.
- Electrification, Solar, Battery Storage, and Microgrid integration should be a program managed in the Utilities Department.