MEMORANDUM

TO: **UTILITIES ADVISORY COMMISSION**

FROM: **UTILITIES DEPARTMENT**

DATE: **FEBRUARY 7, 2018**

SUBJECT: **Update on Outage Management System Operational Issues**

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<u>**BACKGROUND**</u>

This report is an update on the current state of and issues related to the City's Outage Management System (OMS). This report is offered in light of recent events that highlighted problems in the current system when customers called in during outages.

The problem that occurred in the recent outages was that customers were unable to report an outage because they were placed in an endless loop and were unable to exit the OMS system. This situation was caused by a software error in the OMS which was created by a software update.

The main functions of the OMS are to accumulate outage reports, determine the extent of the outage, create a map of the outage for the City Website and provide customers status updates of the outage (i.e. time of outage, estimated restoration time).

To understand the problem and the challenges related to the system a brief explanation of the how this system works follows. The OMS uses two sources of data: the Customer Information System (CIS) in SAP and the geographical and attribute data stored in the Topobase Geographical Information System (GIS). The OMS uses these two data sources to create a geographic circuit model with customer information assigned to a location and an electrical circuit. When a customer calls the electrical outage hotline number (650-496-6914) to report an outage, the OMS identifies the customer phone number and searches the database for a matching phone number. If there is a matching phone number the customer is prompted to report an ongoing outage and the system logs an outage at the customer address in the system for that phone number. In the case where the customer phone number is not stored in the system, the OMS forwards the customer to a different line where either a live person answers the call or the customer can leave a voicemail.

Recent problems with the OMS occurred when customers called in from phone numbers that did not have corresponding or matching numbers stored in the OMS. As the result of an OMS system update, a software error was introduced into the system where customers were not being forwarded to the alternate line where the customer can either speak to a live person or leave a voice mail.

DISCUSSION

The reason the software bug was introduced into the City's OMS system has to do with the fact that the City uses only the OMS module, which is typically one subpart of a fully integrated CIS system (National Information Solutions Cooperative - NISC). NISC serves primarily electric cooperatives and telecommunication companies. Palo Alto is the only utility using the OMS module which does not also subscribe to the entire NISC suite. The City implemented the OMS module in 2010 and developed interfaces to the City's existing SAP CIS and GIS systems. Accommodating these interfaces requires changes in the vendor's software code. During a recent system update, the vendor failed to modify the software to accommodate the unique characteristics of the City's OMS-only system.

In addition, there are other limitations to the system that present challenges, including the inability to store multiple phone numbers for each address. It is common for residents to hold multiple phone numbers (i.e. home, work, cellular) from which they may call from to report an outage. Currently, the OMS system stores only one phone number per customer. If the customer number is not found in the system, the customer is routed to a live person or voicemail which reduces the automated benefits and features of the system. A more robust system would allow customers to modify and add new phone numbers linked to their addresses. The system is difficult to maintain and manage due to multiple interfaces for extracting and organizing customer, geographical, and circuit data. These interfaces require extensive validation and verification of data each time they are run.

NEXT STEPS

The following short-term actions are being taken by the software vendor and/or Utilities staff, as appropriate, to correct the existing situation:

- Correcting the errors in the software.
- Implementation of a more rigorous process for testing the program after system update to ensure that it performs as designed
- The system and phone tree are being reviewed to determine if there is a more effective or efficient way for customer to report outages.
- Increasing the number of call in lines from 10 to 97 allowing multiple customers to report outages simultaneously.
- Continuous social media outreach and push (e.g. City website, Facebook, Nextdoor, Twitter) to inform community of outages and status.
- Determining whether the addition of modules in the OMS to store multiple phone numbers is feasible, and if so, implementing.

For the long-term, staff will assess operational efficiency and address functionality issues of the OMS. The system will be reevaluated during the CIS and GIS upgrades, advanced metering infrastructure (AMI) project, and citywide 311 system review to improve customer service and reduce system maintenance requirements.

RESOURCE IMPACT

None at this time. May require funding for a new system in the future.

ENVIRONMENTAL REVIEW

The UAC's review of this update does not meet the definition of a project under the California Environmental Quality Act (CEQA), pursuant to Public Resources Code Section 21065.

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