ATTACHMENT A

October 2019

Public Safety Power Shutoff Events

After-Action Report

CITY OF SAN JOSE

February 2020

Table of Contents

Executive Summary 1
Key Strengths 1
Key Areas for Improvement 2
Introduction 3
Purpose 3
Methodology 3
Incident Background 4
PSPS Event #1 6
Weather Data 9
Public Costs 10
Reimbursement of City Costs for PSPS Emergency Planning 10
Private Costs 10
PSPS Event #2 11
Weather Data 12
Public Cost 13
Private Cost 13
PSPS Event #3 13
PSPS Event #4 14
After-Action Review Results 15
Overall Assessment 15
Summary of Areas of Focus 20
1. Area of Focus - People 20
2. Area of Focus – Process 27
3. Area of Focus - Technology 34
Appendix A: Chronology of PSPS Preparedness and Planning Activities 42
Appendix B: Event Related Maps 43
Map 1 – PSPS #1 Situation Map 43
Map 2 – PSPS #2 Situation Map 44
Map 3 – PG&E Fire Safety Map 45

Executive Summary

On May 13, 2019, the Office of Emergency Management received the first official documentation describing Pacific Gas and Electric Company's (PG&E) "Public Safety Power Shutoff (PSPS) Program." PG&E developed a Wildfire Safety Program to reduce the risk of wildfires caused by downed power lines that included the action to shut off power in "high threat" locations, otherwise known as a PSPS.

The novelty of a PSPS event created uncertainty, and City of San Jose staff responded by creating a cross department PSPS Leadership Team, with focus on addressing the concerns. Staff engaged in presentations and workshops over the next several months with PG&E to get clarity on how the PSPS program would impact the City and essential services. Additionally, staff reached out to both Santa Clara County and the California Office of Emergency Services to engage them on what to expect and to understand the program. The result was the creation of a Power Vulnerability Plan in a very compressed timeline.

Implementing this Power Vulnerability Plan would require a robust information campaign, coordinated with the County and PG&E, designed to lessen the anxiety surrounding a PSPS event and providing instruction on how to prepare for a multi-day power shutoff event. On October 6, 2020, the Duty Officer for the Office of Emergency Management was notified of the potential first PSPS event.

Over the next three weeks City staff activated the Power Vulnerability Plan, responding to back-to-back power shutoff events between October 9 and October 28, 2020. The City's response included deployment of power generation and refueling teams, a stepped up media campaign including press conferences and a call center, enhanced traffic management solutions, activation of the City's Emergency Operations Center, establishment of City managed Community Resource Centers, and neighborhood outreach operations. Overall, the City and the community responded appropriately to power shutoffs. City staff worked within pre-established frameworks to creatively solve problems and continue to provide services to the City under challenging circumstances.

Staff documented event activities and identified areas of strength and areas needing improvement. This process continues to improve our operations and planning for future events. This report provides a synopsis of events and examines the response. Key strengths and areas for improvement are described below.

Key Strengths

1. Staff established a Situation Room in the City Manager's Office prior to each event providing early coordination and continuity;

2. A robust emergency public information campaign and effective use of social media clearly allowed the EPIO team to get ahead of event information challenges;
3. The early development of a crowd-sourcing app and map-based data-sharing tools by City staff had a tremendous impact on situational awareness and operational response efforts;
4. The strategic use of DOT's traffic sensor network, electronic message signs, and temporary traffic signs and cones lead to zero reported accidents during the events.

Key Areas for Improvement

1. Renew focus on Access and Functional Needs (AFN) planning, with an approach to solidify the City's commitment to our vulnerable populations;
2. Update the Power Vulnerability Plan to include lessons learned, including further study of critical facility redundant power and transportable power generation to ensure future resiliency to PSPS events;
3. Continue to improve relationship with PG&E and the County to allow for ongoing open communication before, during and after an event;
4. Conduct a review of how to leverage existing City data platforms to capture costs more efficiently; and
5. Update EOC technology tools to better capture situation status and reporting, including dedicated Geographic Information Systems resources.

The Office of Emergency Management will work with the Emergency Management Working Group to add the recommendations to the Emergency Management Roadmap. Plans and programs will be updated accordingly to reflect progress on the recommendations.

Introduction

Purpose

Existing guidance and protocols governing the management of emergencies in the State of California obligate local jurisdictions proclaiming an emergency to subsequently prepare a report that captures activities related to the emergency and provide a foundation for making improvements. These reports are traditionally called an "After-Action Report" (AAR). The Standardized Emergency Management System (SEMS), Section 2450(a) states that "Any city, city and county, or county declaring a local emergency for which the governor proclaims a state of emergency, and any state agency responding to that emergency shall complete and transmit an after-action report to the California Governor's Office of Emergency Services (Cal OES) within ninety (90) days of the close of the incident period…"

Without a proclamation of a state of emergency signed by the Governor, this rule does not bind the City of San José. However, as a best practice and accepted process for all incidents, the City continues to be committed to improving its emergency procedures. Therefore, the Mayor and City Council directed that this report be prepared by the City Manager's Office of Emergency Management (OEM) and coordinated with City staff who were involved with preparing for and responding to the Public Safety Power Shutoff (PSPS) events. This report is intended to capture the lessons learned from the recent series of PSPS events. The evaluated incident period for the PSPS events begins on October 7, 2019, and ends on November 20, 2019.

Methodology

After significant events, organizations dedicated to continuous improvement conduct after-action reviews. Depending upon the magnitude of the event and the organization's perception of its response and recovery operations, this process may range from a series of informal discussions, more formal meetings that pull together key participants for an ongoing discussion of issues that need to be addressed, or a comprehensive after-action review process requiring the commitment of significant resources to ensure a clear accounting of events. Unlike the after-action review process used after the 2017 flood event utilizing a contractor, this review and report was conducted using in-house staff.

In the weeks after two PSPS events, the City of San José engaged in numerous informal discussions, many more formal event-related leadership meetings, and completed an online survey process where all participants were provided an opportunity to provide input prior to preparing this important after-action review. These activities are indicative of the City's strong desire to identify its shortcomings, identify lessons learned, and continue to build a comprehensive strategy for improvement moving forward.

The internal City After-Action review activities included:

- PSPS Leadership Team meetings on November 6, November 20, and December 15, 2019.
- PSPS Events Debrief conducted at the November 7, Emergency Management Work Group meeting.
- Official City responses to both Pacific Gas & Electric (PG&E) Event Reports for October 9 and October 26.
- Online PSPS Event Survey sent to participants on November 1, 2019.
- Targeted interviews and comprehensive review process facilitated by the City Manager's Office of Emergency Management the week of December 9, 2019.
- Opportunity for Staff to review the Draft PSPS Event After-Action Review from January 6 thru February 7.

External After-Action Report actions included:

- Commented on PG&E's October 9-12 Public Safety Power Shutoff (PSPS) Report to the CPUC, served on November 19, 2019 to the Executive Director of the Safety and Enforcement Division;
- Commented on PG&E's October 26 and October 29 Public Safety Power Shutoff (PSPS) Report to the CPUC, served on December 3, 2019 to the Executive Director of the Safety and Enforcement Division;
- Commented on PG&E's Post-PSPS Event Report for October 9-12, 2019, filed on January 7, 2020 as part of the De-Energization Rulemaking;
- Commented on PG&E's Post-PSPS Event Report for October 26 & 29, 2019, as part of the De-Energization Rulemaking; and
- Responded to Order Instituting Investigation (OII) and Response to Pacific Gas & Electric Company's Response to OII, filed on January 10, 2020, as part of a separate investigation proceeding

Incident Background

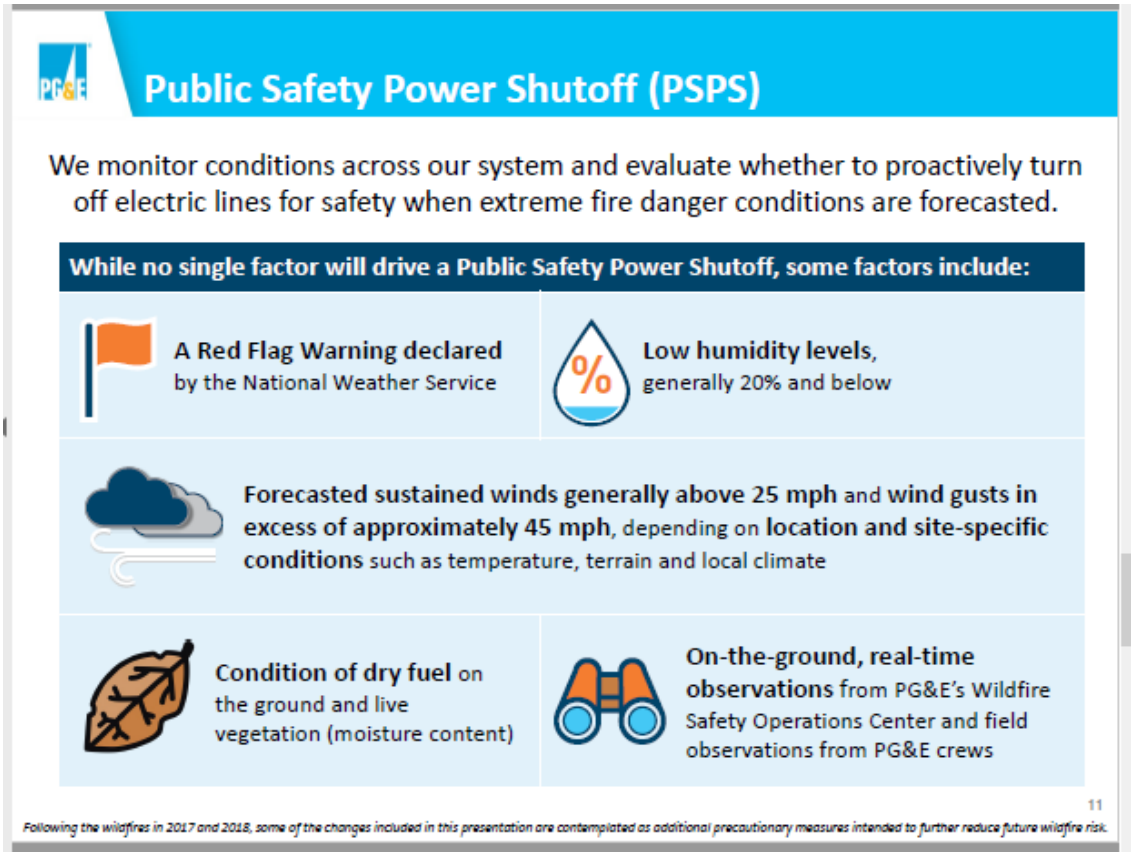
Throughout California a rash of destructive wildfires ravaged local communities. Dry weather climate in recent years has given us an abundance of dry fuels in many of the urban interface where homes are built right up to forested areas. A large number of these wildfires are reported to have started by downed lines along the electrical transmission corridors. When coupled with a deteriorating electrical system infrastructure and high wind events, it's a recipe for disaster. These events have created circumstances that now threaten the energy stability long enjoyed by residents of the City of San José and other communities throughout California.

In early 2018, unknown to City officials, the California Governor's Office of Emergency Services (CalOES) entered into discussions with the primary energy provider in northern California, Pacific Gas and Electric Company (PG&E). These discussions included what we now know as the "Community Wildfire Safety Program/Public Safety Power Shutoff," unveiled to local jurisdictions in mid-2019. In preparation for the PSPS Program, PG&E rolled out an outreach

program that consisted of a series of regional workshops, mass media spotlights and public education materials.

The Office of Emergency Management was first advised of the program in mid-April 2019, but it took PG&E another month to begin sending out documentation regarding the program. The first official document received by OEM was on May 13, 2019. But it wasn't until May 17, 2019 that OEM staff attended a presentation by PG&E on the PSPS Program. On that day, PG&E held a local workshop where they provided additional information to local officials as noted in the graphic below. The conditions that would prompt a PSPS event was brought into a little better focus, as well as general guidelines on the timing of any potential event. Instead, PG&E also announced that it would be utilizing the State's Standardized Emergency Management System, which meant PG&E would communicate with the Santa Clara County Operational Area, and in turn the County would share information with the City of San José.

Graphic 1: PG&E's PSPS Decision Factors Notice



On May 23, 2019, OEM sent a list of questions prepared by City staff to the PG&E Liaison, which was followed up with a letter sent to PG&E's Chief Executive Officer by the City Manager outlining various concerns that the City had with how the PSPS program was rolling out. A second PG&E PSPS Workshop occurred on June 14, 2019, at Santa Clara County (SCC) facilities where additional City staff were encouraged to attend.

Planning efforts by the City to address the looming PSPS events began in May 2019, when a City PSPS Leadership Team was formed, and the team discussed the framework for a Power Vulnerability Plan (PVP). An estimated 650 staff hours were invested in the planning efforts at the department level. This included actions such as:

- June 27, 2019: PSPS Tabletop Exercise (TTX), to review the first draft of the Power Vulnerability Plan, led by City OEM;
- July 9, 2019: City PSPS Leadership team and additional staff met the third and final time with PG&E personnel;
- July 10, 2019: City Communications Team conducted a TTX on procedures to follow during a PSPS;
- July 31, 2019: Staff reviewed the gaps in the Power Vulnerability Plan and identified actions to address them;
- August 14, 2019: City Communications Team conducted a second TTX to refine protocols; and
- September 25, 2019: Staff finalized the Power Vulnerability Plan.

For a more detailed list of actions, see **Appendix A Chronology of Staff PSPS Preparedness and Planning Activities**.

The City of San José received its first official notification of a potential PSPS event from the County of Santa Clara Office of Emergency Management on October 6, 2019. The first Operational Area Conference Call related to the event occurred on October 7, 2019. The City Office of Emergency Management set up a Situation Room in the City Manager's Office, and preparations for the first PSPS event to impact the City began. City Emergency Operations Center Director made the decision to increase the activation level of the Emergency Operations Center on October 9, 2019, from monitoring to a partial activation, and City Staff were notified to prepare to report to their emergency roles.

PSPS Event #1

On Sunday, October 6, 2019, at 9:40pm, the City of San Jose Duty Officer for Office of Emergency Management (OEM)was notified by the Santa Clara County (SCC) Operational Area Duty Officer, that Pacific Gas and Electric Company (PG&E) would de-energize portions of the City of San José during a Public Safety Power Shutoff beginning October 9, 2019. This communication included notification of an Operational Area conference call. Subsequent to the Operational Area message, the CSJ Duty Officer received a communication from the CSJ Fire Department's (SJFD) Assistant Fire Chief at 12:10am, October 7, 2019, that Fire Communications had been contacted as well by a PG&E representative. The SJFD communication included information on PG&E's conference call schedule. CSJ Office of Emergency Management notified the City Manager's Office of

intention to participate in both PG&E and County Operational Area conference calls on the morning of October 7.

On the morning of Monday, October 7, 2019, the CSJ OEM Director confirmed a significant PSPS event could impact the City on October 9. Since the true nature of the event was unknown, OEM established a Situation Room in the City Manager's Office for monitoring and developing a game plan. Planning and coordination continued in earnest as it became clear that the PSPS event was likely to occur. As more and more information became available, the public information campaign began by establishing an EPIO Situation Room also on the 17th Floor. PG&E and the County Operational Area established ongoing conference calls to share information and coordinate activities, and CSJ OEM as well as other City departments participated in these calls in preparation for the PSPS event.

Over the next two days, the EOC Director met with the Office of Emergency Management and managers from the Office of Economic Development, Office of Communications, Fire Department, Public Works Department, Department of Transportation, and Parks, Recreation, and Neighborhood Services Department. The engagements included discussion on the courses of action to take per the Power Vulnerability Plan, and to determine the appropriate time for Emergency Operations Center (EOC) activation. A conference call to brief EOC staff was conducted. Outreach was made to the Mayor and City Council members, agency representatives, and regional partners, advising them that portions of Districts 2, 4, 5, 8, 9 and 10 would be impacted.

The Parks, Recreation, and Neighborhood Services, Transportation, and Public Works departments activated the respective Department Operations Centers (DOC) to manage the various field activities taking place before the actual power shutoff. This included door knocks at medical baseline residences, staging of traffic signs and cones, and setup of City directed community resource centers (CRC). The City established CRCs at Mayfair Community Center, Camden Community Center, and Southside Community Center, while PG&E established a CRC at Avaya Stadium. At 4:45pm on October 8, 2019, the Mayor held a press conference to provide the public with an update of the current situation and preparedness actions to take.

The biggest challenge was determining the scope of resources needed to effectively mitigate the PSPS event. The Situation Room remained active through close of business Tuesday, October 8, 2019. It was determined that the EOC would be officially activated the next day, Wednesday, October 9, 2019. Multiple notifications were sent to assigned EOC staff providing awareness information and advising that the CSJ EOC Blue Shift would be activated at 7am, followed by Gold Shift beginning at 7pm. The National Weather Service (NWS) issued a Red Flag Warning that coincided with the wind event projected by PG&E. During this time period, the website that PG&E was using to post information for both public consumption and local officials developed problems with freezing and inability to access the information. This condition persisted through the end of this event.

On the morning of Wednesday, October 9, 2019, the EOC was activated at 7am and staffed with Blue Shift personnel. Concurrently, City officials held a press conference to provide the public with the most current information that was available. Final preparations began for the anticipated PSPS event scheduled to begin at approximately 10pm. PG&E announced on its 12:30pm conference call that it would discontinue the calls and would communicate only with each County Operational Area. At 2pm the EOC Director proclaimed a Local Emergency. At 3pm, City officials held a press conference to provide the public with the most current information that was available. The Public Works Geographic Information System (GIS) Team developed a crowd-sourced geo-spatial tool and the Emergency Public Information Officer Team prepared City webpages to display information related to the event, and with the assistance of PRNS, deployed a field team to contact the medical baseline customers that PG&E was unable to contact. This responsibility was left to local government to protect the public.

Field staff and equipment deployed by Department of Transportation provided direct observation of the outage areas, traffic conditions and traffic operations. The Department of Public Works monitored multiple critical sites, staged generators at identified community centers serving as resource facilities for residents, as well as refueled existing generators at fire stations located in the impacted area. The Fire Department increased staffing in anticipation of the high fire conditions and potential PSPS event.

The Parks, Recreation, and Neighborhood Services (PRNS) Department operated three City Community Resource Centers directly adjacent to PSPS impact zones to provide residents with water, snacks, and charging stations. San José community centers and libraries sustained operations throughout the PSPS event. The City of San José staffed over 150 employees from the various departments for this PSPS event, including dedicating 10 bilingual staff, Spanish and Vietnamese, to operate a call center to reach out to approximately 900 at-risk PG&E Medical Baseline residents and patients. Moreover, to provide and disseminate adequate information, alerts and updates were translated into two additional languages and disseminated on various communication platforms to residents in Council Districts 2, 4, 5, 8, 9 and10.

There was an EOC shift change between Blue Shift and Gold Shift at 7pm, Wednesday, October 9, 2019. PG&E continued to indicate that de-energization of transmission and distribution lines impacting the City of San Jose would begin at 10pm. Ultimately it was at 10:45pm that PG&E began shutting off power to portions of the City of San José. By approximately 11:30pm the power de-energization was complete.

City employees worked to determine the actual impacts to the city. Utilizing the geographic information system (GIS) polygons provided by PG&E and further refining the data through analysis of the transmission line data and crowdsourcing data from the public, it was determined that 22,974 customer accounts (an estimated 100,000+ residents) were impacted by the power shutoff. City GIS cross-analysis of the data indicated that the shutoff impacted 39 schools, 10 healthcare facilities, approximately 100 traffic signals, 11 arterial transportation routes, 2 community centers, 2 lift & pump stations, and 5 fire stations.

At 7am, October 10, 2019, there was another EOC shift change with Blue Shift taking over from Gold Shift. City officials concurrently held a press conference at 7am, providing the public with the known impacts of the power shutoff and current actions being taken by the City. After a relatively quiet night with little to comment on, PG&E announced it would begin power restoration operations at 10am. It was communicated during the 9am County Operational Area conference call that restoration had been pushed back to 12pm. PG&E gave the weather "All Clear" at 12pm and began energy restoration operations. City officials held a final press conference at 4:15pm to provide the public with energy restoration information. The CSJ EOC began demobilization towards the end of the third operational period and started releasing employees from the EOC at 5pm. The CSJ EOC officially de-activated at 6pm.

During the Monday, October 10, 2019, Operational Area Conference Call, it was reported by PG&E that the City had 92% of the shutoff customer accounts restored with power. The CSJ OEM Duty Officer and other OEM staff continued to monitor the situation throughout the remainder of the restoration period. The Local Proclamation of Emergency was ratified and terminated on October 16, 2019, at a regular City Council session.

Weather Data

As listed in the PG&E After Action Report, the weather stations utilized by PG&E (PG370 and PG483) to measure winds and humidity were well outside the boundaries of the City on the peaks of hills where the weather can be drastically different than in the urban interface areas depicted in PG&E's maps for Tier 1 and Tier 2 zones. For comparison, National Weather Service (NWS) stations adjacent to City boundaries (LSGC1, RJSC1, and PG477) are all publicly available. The readings taken at the NWS stations are significantly different than the ones used by PG&E.

Table 1: PSPS #1 Weather Station Reports

Area	Date Time	Station Reference	Wind Speed	Gusts	Relative Humidity
PG&E					
Santa Cruz	10/9/2019 10:30pm	PG370	34 mph	54 mph	Not Reported
Santa Clara	10/10/2019 3:30am	PG483	13 mph	36 mph	Not Reported
NWS					
Los Gatos Almaden	10/9/2019 932pm	LSGC1	6 mph	12 mph	44%
Alum Rock	10/9/2019 9:52pm	RJSC1	3 mph	5 mph	71%

Area	Date Time	Station Reference	Wind Speed	Gusts	Relative Humidity
Evergreen	10/9/2019 10:00pm	PG477	4 mph	14 mph	41%

Public Costs

There can be no doubt that the financial burden of preparing for and responding to these Public Safety Power Shutoff events has been tremendous. Whether we're discussing redundant power solutions for the City's critical infrastructure, standing up Community Resource Center's near de-energized neighborhoods, or planning for the incident was costly. The estimated cost of the first PSPS event between October 4 and October 11 is $746,000, which includes labor costs and $40,000 in supplies and equipment. There is currently no comprehensive way to track individual work hours spent on planning and preparedness other than invites to PSPS specific meetings.

Reimbursement of City Costs for PSPS Emergency Planning

On October 25, 2019 Governor Gavin Newsom, in consultation with the League of Cities, launched the Local Government PSPS Resiliency Program that includes $75 million in funding to support state and local government efforts to protect public safety, vulnerable populations and individuals and improve resiliency in response to utility-led PSPS actions. Under this program the cities of Los Angeles, San Jose, San Diego and Oakland received $500,000 each based on city population.

The Local Government PSPS Resiliency Program is a grant program requiring the submission of a Request for Proposal (RFP) to receive a PSPS Resiliency allocation, and the deadline to submit a request was November 12, 2019. On January 25, 2020 The City Council accepted the Cal OES grant. The period of the grant is three years, and the City will be required to submit annual reports on the use of the fund provided. The purpose for the use of the funds provided under this grant are solely for planning and mitigation. For example, staff costs for the creation of a response plan, or the cost of providing public education materials distributed to impacted neighborhoods, are eligible. Costs associated with response to PSPS events are not eligible for this grant.

Private Costs

To identify the impact of the outages on our business community the Office of Economic Development conducted an analysis using the Interruption Cost Estimate (ICE) Calculator, which is an electric reliability planning tool, developed by Freeman, Sullivan & Co. and Lawrence Berkeley National Laboratory. Data input included PG&E's 2018 annual SAIDI (System Average Interruption Duration Index) and SAIFI (System Average Interruption Frequency Index) averages for San Jose, which are required by the ICE tool to run the model. The total cost for all customers and small business was estimated to be $778,221.

At this time, those affected by the PSPS can submit reimbursement requests to PG&E. There is no guarantee of payment. Currently legislative efforts are underway to require PG&E to reimburse.

PSPS Event #2

City of San Jose OEM personnel participated in a CalOES conference call on Wednesday, October 23, 2019. There was an indication that changing weather could produce conditions by which a PSPS event could occur in the South Bay if the weather system moved farther south. City leadership were notified of the potential and that CSJ OEM would continue to monitor. CSJ OEM reached out to PG&E because there were mixed messages being created at the State level throughout the day and the PG&E Liaison Officer for San José could not confirm the report. Later that day, at 5:17pm, the Santa Clara County Operational Area Duty Officer forwarded the CalOES State Operations Center 10am Situation Status Report. The report stated "Another round of gusty winds with potential for critical fire weather conditions are possible late this weekend into next week although **confidence is low at this time** on this developing." Contrarily PG&E decided that it was going to conduct another PSPS event. The report did not name Santa Clara County, nor did it indicate that Santa Clara County was being looked at in the context of a PSPS event. The southern-most county identified was San Mateo. CSJ OEM representatives participated in the 5:30pm PG&E conference call where indications were that the wind/fire weather system was shifting to the south. Upon notice, City leadership decided to start preparations the following morning.

On Thursday, October 24, 2019, at 7:30am the CSJ OEM activated a Situation Room in the City Manager's Office and began checking in with City departments. The PSPS event two weeks prior created considerable efficiencies in PSPS #2. Notifications for CSJ Emergency Operations Center (EOC) staffing were sent out and updated media and public information messages began going out in the form of Flash Reports as soon as information was provided. At 1:16pm, Fire Communications received a call from PG&E's Wildfire Safety Operations Center informing the City of San José that PG&E was looking at a potential PSPS event on Saturday, October 26, 2019. Fire Communications immediately notified CSJ OEM Duty Officer about the phone call, which was the first official notification from PG&E that they were considering a PSPS event in Santa Clara County.

PG&E began posting information on its website in the early morning hours of Friday, October 25, 2019, and followed up with additional information during their 7am conference call. The PSPS Event #2 was anticipated to begin at 6pm, Saturday, October 26, 2019 and continue until Monday, October 28, 2019. As a weather-dependent event PG&E advised that times could change. The City began planning for up to four shifts in the CSJ EOC beginning mid-day Saturday.

Based on the experiences from PSPS Event #1, changes were made to the PSPS Event #2 staffing roster to accommodate the gaps identified in the previous event. The GIS mapping with polygons provided by PG&E indicated that the footprint for the PSPS Event #2 would be significantly smaller than the previous event. More specifically, the number of customer accounts estimated to

be impacted was just over 7,000, mostly in the Alum Rock and Almaden Valley areas which are often referred to as wildland-urban interface areas. The list of medical baseline customers that PG&E was unable to contact was reported as seven (7).

At 9am on October 26, 2019, the Mayor held a press conference to provide the public with an update of the current situation and preparedness actions to take. A Proclamation of Local Emergency was signed at 2pm, just prior to the CSJ EOC Gold Shift activated at 4pm, Saturday, October 26, 2019. After several timing changes due to the weather conditions, PG&E finally began de-energization of the power lines in San José at approximately 10pm. By 11pm PG&E reported that a total of 7,512 customer accounts had been de-energized.

As with PSPS Event #1, there was little to report in the way of emergency situations caused by PSPS Event #2 except for one item. On the morning of Sunday, October 27, a sensor attached to a communications tower supporting primary communication frequencies for the San José Fire Department sent a signal to Fire Dispatch indicating that the generator supporting the tower was running critically short on fuel. A Santa Clara County contractor maintained the tower site emergency power. After determining that the contractor was unable to remedy the situation, CSJ DPW worked with the County to send personnel to refuel the generator and mitigate the threat to critical communications infrastructure.

There was a shift change between CSJ EOC Gold Shift and Blue Shift at 6am, Sunday, October 27, 2019. At 10am, City officials held a press conference to provide the public with an updated event information. CSJ EOC monitored for impacts and event stabilization, and determined that 7,512 customer accounts had been de-energized. Ongoing data was gathered by continuing to coordinate with Santa Clara County Operational Area and PG&E. The determination was made by the EOC Director that the EOC was no longer needed to manage the event, and the demobilization process began. EOC staff were let go beginning at 1:30pm up until the EOC de-activated at 4pm, when the CSJ EOC was officially de-activated.

The weather "all clear" was given by PG&E at 4am on October 28, and preparation for power restoration began. Customer accounts in San José began being restored at 3pm, October 28, 2019, and continued at a steady pace until 9am, Monday, October 29, 2019, when all but 259 of the 7,512 accounts had been restored. In a 2pm communication on Monday, October 29, PG&E announced that all City of San José accounts were back online. The Proclamation of Local Emergency was terminated on December 10, 2019, at a regularly scheduled City Council session.

Weather Data

Once again, the weather stations utilized by PG&E (PG370 and MIPC1 as listed in their AAR) to measure winds and humidity were well outside the boundaries of City on the peaks of hills where the weather can be drastically different than in the urban interface areas depicted in PG&E's maps for Tier 1 and Tier 2 zones. For comparison, the weather stations adjacent to City boundaries

(LSGC1, RJSC1, and PG477) are all publicly available. The readings taken at those weather stations are significantly different than the ones used by PG&E.

Table 2: PSPS #2 Weather Station Reports

Area	Date Time	Station	Wind Speed	Gusts	Relative Humidity
PG&E					
Santa Cruz	10/26/2019 10:30pm	PG370	Not Reported	71 mph	Not Reported
Santa Clara	10/26/2019 3:30am	MIPC1	Not Reported	47 mph	Not Reported
NWS					
Los Gatos Almaden	10/26/2019 9:32pm	LSGC1	3 mph	9 mph	42%
Alum Rock	10/26/2019 9:52pm	RJSC1	1 mph	5 mph	45%
Evergreen	10/26/2019 10:30pm	PG477	1 mph	3 mph	70%

Public Cost

The estimated cost of the second PSPS event between October 24 and October 28 is $ $499,465. The smaller impact area, the shorter outage, and efficiencies learned from PSPS #1 resulted in less cost.

Private Cost

Using the same Interruption Cost Estimate (ICE) Calculator developed by Freeman, Sullivan & Co. and Lawrence Berkeley National Laboratory, the estimated total interruption cost for residential and small business customers was $41,310. The total loss of PSPS #1 and PSPS #2 is approximately $819,531.

PSPS Event #3

On October 27, 2019, while in the middle of the response to PSPS Event #2, EOC staff participated in the regularly scheduled 9am County Operational Area Conference Call hosted by Santa Clara County OEM. It was during this conference call that the announcement was made that PG&E was looking at a potential third PSPS event for October 29, 2019. To that end PG&E had begun sending out public notices to the residents of Santa Clara County.

The CSJ EOC, which was currently activated, began preliminary discussions and planning for the new event while concurrently responding to PSPS Event #2. During the 2pm Operational Area Conference Call PG&E informed listeners that the decision to de-energize would be made at 7am on October 28, 2019. The scheduled de-energization plan indicated that the event would begin at 4:30am on October 29, 2019. During the October 28, 9am Operational Area Conference Call, it was noted by PG&E that the scope of the event had decreased and data on their website had been removed pending updates to customer impacts.

The Santa Clara County Operational Area provided the City of San José at 5:22pm, October 28, 2019, a data list of 143 San José customer accounts that included critical facilities that were expected to be impacted the next day. Due to the small number of customer accounts City leadership made the decision not to activate the EOC for PSPS Event #3. Changing weather conditions pushed back the start time of the October 29 PSPS event to 10pm. City staff successfully made all contacts with medical baseline customers and encountered no needs due to the event. The "all clear" was given the next morning at 9am, October 30, 2019. Reportedly all accounts were reenergized by mid-day.

PSPS Event #4

On November 17, 2019, PG&E began sending out public notices to the residents of Santa Clara County about a potential PSPS event that was being scheduled for November 20, 2019. At the time, no official notification had been received by City officials. The prospect of another PSPS event generated concerns by City leadership and initial inquiries began in earnest. The Duty Officer for the Office of Emergency Management (OEM) reached out to the PG&E Liaison Officer to confirm the notice and to request additional information. That same day the Liaison from PG&E sent the OEM Duty Officer an email with press release information and a PDF document of the map with GIS polygons identifying impacted areas. The next day, on November 18, 2019, PG&E posted the same maps with the expected shutoff areas on their website.

Initial conversations and contingency planning began on November 17, 2019, as soon as the City received the event information from PG&E. Based on the GIS polygon provided on the map, the City of San José was on the periphery of the event. City staff confirmed the information provided on the map, and determined that the scheduled PSPS event would not impact City residents. Fortunately, on November 19, 2019, PG&E decided to cancel the November 20 PSPS event due to changing weather conditions. The Office of Emergency Management resumed Duty Officer status and other operational departments returned to normal business activities.

After-Action Review Results

Overall Assessment

By many accounts, the impacts of a short-duration Public Safety Power Shutoff pales to the potential physical damage and loss of life of a major disaster or emergency. However, the wide-area disruption to economic activity, increased threats to "at-risk" populations, and wide-ranging impacts to transportation systems lay the groundwork for cascading health, safety, and economic impacts that would ultimately have the same destructive effects to the community.

Recognizing that while the overall response to the PSPS events were successful and reactions from the public to the City's actions were favorable, there were also several concerns identified that indicate the need for additional planning and preparedness efforts. Specifically, there are upgrades needed to City and private infrastructure, supporting redundant power supplies, as well as further development of the City's Power Vulnerability Plan.

The success or failure of an emergency response should ultimately be judged by the outcomes, and in the case of the recent Public Safety Power Shutoffs, the overall results are as follows:

- Early activation of a Situation Room at City Hall preceding PSPS Event #1 and PSPS Event #2 assisted with the familiarization of executive staff with the pre-event monitoring stage of large-scale events. Historically the monitoring stage occurs remotely or virtually and is managed by emergency management staff. However, the uniqueness of this new type of event lent credence to more intimate involvement of a broader range of executive staff in the discussions. Albeit a resource intensive activity, it will pay dividends in future events of this type.

- Public information resources are a valuable commodity for any organization. The decision to frontload a large portion of the City's emergency public information staff early in the planning for and response to PSPS #1 created tremendous efficiencies during PSPS Event #2. The volume and quality of messages created in the first event allowed for downsizing the number of emergency public information staff required to be activated for the second event. The wide range of knowledge and abilities of public information staff, as well as their demonstrated versatility facilitated a strong relationship with the media throughout both events**.**

- An important resource utilized in support of residents who were impacted by both PSPS Events were the Community Resource Centers (CRC). It was decided early in the planning process that the remoteness of the identified location for PG&E's CRC (Avaya Stadium) would not meet the needs of the neighborhoods impacted by the power shutoff. Several city-run CRCs were stood up in areas deemed most at-risk. Pre-event site identification,

resource staging, and staffing coordination were instrumental in ensuring a successful activation of the CRCs at Camden Community Center, Mayfair Community Center and Southside Community Center. The use of Parks, Recreation, and Neighborhood Services part-time personnel was key to alleviating resource challenges and allowed for a robust response in other areas**.**

- The core imagery used by PG&E for outlining power outage areas for each PSPS event were Geographic Information Systems (GIS) polygons created around their transmission lines. The DPW GIS team was able to refine the polygons using a combination of targeted transmission line data provided by PG&E, and a social media based crowdsourcing tool that allowed residents experiencing a power shutoff to provide their exact location. This improvement in mapping assisted operational planners to focus their resources where they were most needed, as well as helping improve messaging by the EPIO team. Ongoing improvements to this process created valuable efficiencies in PSPS Event #2.

- The public information staff's effective use of social media tools transmitting a predictable message schedule not only kept pace with local media's need for ongoing information but helped assure the public that the City was managing the events with a sure hand. By using Facebook, Twitter, Nextdoor, City website, and just-in-time videos, the EPIO team garnered 147,883,660 impressions with an estimated media value of $2,422,340, while over 175,000 clicks lead to an estimated 2,251,000 digital impressions.

- The City's Transportation team's strategic use of electronic message signs, temporary traffic signs, traffic sensor network, and traffic cones contributed significantly to the reduction of risk at intersections where the power shutoff took out traffic lights. Early messaging reminding residents that intersections without power are to be treated like stop signs also helped lead to no documented traffic accidents during the power shutoff events.

- Early in the PSPS planning process, PG&E insisted that jurisdictions throughout northern California were to complete a Nondisclosure Agreement (NDA) to access medical baseline customer information. After the City Attorney's Office reviewed the NDA, it was determined that changes needed to be made to support the City's needs. In the midst of these negotiations the first PSPS event happened. During this event, and into the second event, an evolution of access to information occurred whereby the City was ultimately able to secure the information. This assisted the City in contacting its residents who were part of this program to ensure that their needs were being met. It is believed that access to medical baseline information will not be an issue in future events of this type.

Along with this overall positive outcome, the response by the City of San José could be improved. Among the most significant issues are:

- A critical resource during any PSPS event are the transportable power generators used to provide backup power to critical facilities or operations. Notwithstanding the lack of sufficient generators to meet the City's needs, the lack of remote sensors on the generators the City does own meant that throughout the PSPS events employees had to be deployed to check on the fuel status of each generator throughout the impacted areas. This was a significant resource drain and was identified as a clear inefficiency in the process. An example of a positive discovery was the recognition that a small communications tower critical to fire response was not connected to redundant power inside a de-energized area. This could have had serious impacts to command and control over time had the PSPS event lasted longer than it did. The City has identified its critical facilities that do not currently have backup electric generation equipment in place and is working to procure and install such systems either with current generator units available on the market or with new sustainable technologies.

- Early in the PSPS planning process, jurisdictions throughout northern California were notified by PG&E that in order to access medical baseline customer information, a Nondisclosure Agreement (NDA) would have to be entered into with PG&E. The City Attorney's Office was working with PGE on the terms of the NDA when the first PSPS event happened. Initially, PG&E only provided the Santa Clara Operational Area with aggregate information on the whole county and did not separate out information specific to the City of San Jose. However, during this event, and into the second event, an evolution of access to information occurred whereby the City was ultimately able to secure the information specific to the City, through the emergency manager's portal created by PG&E. This assisted the City in making contact with its residents who were part of this program to ensure that their needs were being met. It is believed that access to medical baseline information will not be an issue in future events of this type.

- A tool widely used in City operations for small procurements is the P-Card. To provide adequate logistics support to the CSJ EOC, a number of P-Cards have been issued under the "emergency" designation with a different set of rules to facilitate purchases during an activation of the EOC. A number of City employees that attempted to use their P-Card during the PSPS events found out that their card had been flagged by U.S. Bank fraud protection operations. This occurred even after City supervisors had contacted U.S. Bank in advance of an anticipated purchase for ongoing operations. On numerous occasions this hampered emergency operations by creating inefficiencies in the process that required additional personnel time and resources to accomplish the objectives.

- As in all large-scale emergencies or disasters, clear communication amongst all parties and at each level of command is critical to a common set of objectives and operations. An example of this is the variety of ways that the CSJ EOC and City leadership were receiving situational awareness information about the status of a particular PSPS event.

Understanding that power outages are not considered a recognized emergency pursuant to the Emergency Services Act definition, and that PG&E is a private company, a situation was created where the normal channels of communication that City staff train to were not followed in their entirety. The State took a neutral seat in the process, and PG&E, after initially hosting open conference calls, declared that they would only communicate with the County Operational Area. This lead to nontraditional lines of communication, creating uncertainty and confusion when information varied from source to source, especially at the highest levels (i.e., CalOES, PG&E, Santa Clara County, etc.).

- During both PSPS events there were gaps in coordination with the County. When the PSPS events began, the County EOC had already been activated for a labor dispute. When the City EOC Director requested a Liaison from the County locate themselves in the City EOC, the request was denied, citing staff fatigue due to the extended activation. So too was the request denied when the City offered to send a liaison to the County's EOC, citing confidentiality reasons due to the ongoing labor dispute. This situation created a communications void between the City EOC and the County EOC.

- During both PSPS#1 and #2, it was reported from the field that City employees tasked with notifying medical baseline customers of a pending event encountered situations where they were told that some other agency had preceded them in the notification process. In other words, a representative from the County had conducted a door knock operation, followed by a City representative conducting a door knock operation at the same address as well as receiving a notice by telephone from either the City or PG&E. If found to be true, this would be a duplication of effort during an emergency event. As Operational Area partners, the City should always be aware of when County resources are operating in the City jurisdiction.

- It was reported by numerous City employees that they received too many notifications through Everbridge, even after they had acknowledged receipt of the first notification. When activated, Everbridge can be configured to transmit a notification message via multiple platforms, i.e., SMS text, voice landline, voice cellphone, and email. Once a notification is received and acknowledged, the transmission of other forms of notification are suspended. This apparently did not work as expected, creating frustration for those who were repeatedly notified of the same message.

- As the effort in the EOC increased and the need for those most vulnerable were clearly critical, the Office of Emergency Management activated a position in the EOC to address the needs of those with Access and Functional Needs (AFN). The Silicon Valley Center for Independent Living identified staff who could join the EOC staff during PSPS #2 and provide insight into the needs of the public affected by the outages. The input was valuable. The need to make this a permanent position was clear.

This After-Action Report structurally presents three fundamental areas of focus: People, Processes, and Technology. The result being a series of recommendations designed to improve the City's resilience and capacity to respond to future PSPS events. Additionally, a chronology of staff preparedness and planning activities is included to demonstrate the team commitment that City staff has in mitigating the impacts of a PSPS event.

Summary of Areas of Focus

1. Area of Focus - People:

The City of San José remains committed to ensuring the community is prepared for any potential emergency.

1.1. EOC Staffing. The ongoing challenge of staffing the City's EOC presents itself in a variety of different ways. One must first understand that the EOC, by its very nature, is a slice of the City organization and its functions. During a large-scale event, there are three areas that are relevant when discussing personnel. The first area is "those impacted by the event"; the second area is "those tasked with responding to the event"; and the third area is "those tasked with resumption operations", i.e., Continuity of Government (COG)/Continuity of Operations (COOP). The first group could be significant, depending on the event, and will set the stage for the remaining two groups. The second group is a targeted group with specialized training needs in most cases. The second group is traditionally 5-10% of the City's workforce designated to support sustained EOC operations. The third group is comprised of whomever is left guided by executive leadership.

This discussion is about the second group and its relationship to the EOC. The Office of Emergency Management has identified 82 functions that comprise the organizational structure of the EOC. Each function is activated on an "as needed" basis, depending on the type of event it is managing. When activated, each function can be comprised of a single individual up to a small group. The EOC normally operates on a 24-hour clock, with two shifts of 12 hours each. As it tends to be a high-stress environment, a unique training opportunity, and needed for staff working towards the EOC position credential, rotating staff over multiple days is a common practice. A best practice is that each function in the EOC should have a cadre of at least three staff trained for each of the 82 positions.

It is also important to understand where EOC staffing resources come from. As a "slice of the City," staffing comes from each City department. Whether a department representative, or a subject-matter-expert, the employee transitions from their normal routine to the EOC when notified to respond. In the EOC they apply their knowledge, skills, and abilities to respond to, stabilize, and recover from an emergency or major

disaster. This is accomplished by utilizing the laws, regulations and doctrine that guide preparedness, response, recovery, and mitigation.

City EOC staff must be trained on the protocols of the National Incident Management System and the State of California's Standardized Emergency Management System, which includes the Master Mutual Aid Agreement and the Multi-Agency Coordination System. Over the last two years the City has considered the need for staff to obtain credentialing from the California Office of Emergency Services for the position they fulfill.

The City Manager's Office of Emergency Management plays a crucial role in building the City's emergency management capabilities and capacity. The ability to effectively engage in the activities necessary to achieve a "Quake Ready" posture depends heavily on force multipliers. Force multipliers are resources that help you amplify efforts to increase output. During the response to the two PSPS events, EOC management recognized the need to increase OEM staffing with capabilities in Geographic Information System skills and support to the Emergency Public Information Officer Team.

In this case, building a cadre of emergency managers who can sustain efforts to plan, train, and exercise City staff in preparedness for a major disaster like an earthquake. These efforts will always be ongoing due to normal attrition in the City work force due to things like retirement, career progression, and normal employee turnover. It is impossible to envision, given the inherent risks and hazards the affect the City, a place where a priority of sustaining a competent, effective workforce to address emergencies and disasters would diminish.

Recommendations:

1.1.1. Emergency Management Force Multiplication Strategy. It is recommended that the City continue to strengthen a sustainable force multiplication strategy that has been evolving since the City Council accepted the 2017 OES Assessment Report. As staffing for OEM have increased, the staff have force multiplied their impacts on multiple departments and the community. For example, in one year, designated OEM staff trained over 300 residents in the Community Emergency Response Team program, and another staff helped departments create seven plans. Staff are to continue to explore resources to support additional OEM resources.

1.2. Individuals with Access and Functional Needs (AFN). The concept of access and functional needs refers to those within our communities who are more at risk to the impacts of disaster (i.e., people with disabilities, seniors, children, limited English

proficiency, and transportation disadvantaged.) For more than a decade both FEMA and CalOES have been promoting the use of AFN materials that emergency management personnel can use in their planning efforts. In the State of California these materials have been coordinated with members of the AFN community through the leadership of the CalOES Office of Access and Functional Needs (OAFN) established in 2008. More recently the State has passed a series of changes to the Emergency Services Act requiring the involvement of the AFN community in all disaster planning efforts, as well as the integration of AFN-specific guidance in all emergency plans.

Recommendations:

1.2.1. Renewed Focus on Access and Functional Needs (AFN) Planning. It is recommended that the City adopt a renewed focus on AFN issues in emergency planning based on the growing attention to the needs of the AFN community as an at-risk population in emergencies and disasters, and due to the recent legal and regulatory guidance being enacted by the State. The forward-leaning approach to AFN planning would solidify the City's commitment to this very important aspect of emergency planning.

1.2.2. Creation of a Permanent AFN Position in the EOC. It is recommended that a permanent AFN position be created in the EOC in that recent legal and regulatory guidance being provided by the State give credence to this action. Based on the successful use of staff in the EOC with knowledge of the AFN community during the PSPS events, the new AFN position would be useful as an advisor to the EOC Director, as a liaison with the independent living community, or in the Operations Section as a conduit between the EOC and our regional AFN partner organizations. While access and functional needs considerations are integrated into the City's strategic conversations, the growing attention to the needs of the "at-risk" population in emergencies and disasters has lead the Office of Emergency Management to begin planning on the integration of this function into EOC operations.

1.3. Dual Roles in the EOC. While the EOC was activated during the PSPS events there were occasions where one individual was assigned to cover two distinct functions in two different sections of the EOC. Though a worthy effort from an efficiency perspective, the individuals were ultimately unable to meet the expectations of both positions. It is common for a Section Coordinator, Branch Director, or Unit Leader to be delegated the responsibility for more than one function within a section. It maintains the concept of the "unity of command" doctrine of reporting to only one supervisor. When the operational tempo in the EOC peaks, additional staff can be assigned to take up the workload when needed. That is the protocol for EOC

staffing. The strategy of covering two separate functions in two distinct sections can lead to inefficiencies and unnecessary conflicts in the EOC, and therefore should be avoided.

Recommendations:

1.3.1. Initiate Citywide Emergency Management Document Review. It is recommended that a comprehensive review of City documentation related to EOC staffing and that appropriate updates be made to reflect the changing environment we work in. This includes the City Emergency Management ordinance and related personnel policies, labor agreements, emergency plans, and departmental procedures. The foundation of EOC staffing is the commitment from departments to provide adequate staffing for the functions they represent or for which they have been assigned a responsibility. Confusion with staffing occurs when: department leadership is unaware or unsure of their responsibility to support the EOC; or, that employees are unprepared to support the EOC and fulfill their department's responsibility.

1.3.2. Conduct Department Leadership Orientation. It is recommended that department leadership and key managers are provided a high-level orientation on what to expect and to have a clear understanding of existing protocols related to EOC activations. Not all departments have operational roles, but all City employees are Disaster Services Workers. To better manage their personnel resources, Department Directors need to be aware of the broader picture of EOC assignments as they occur. This will improve the coordination between the City Manager's Office of Emergency Management and the respective departments.

1.3.3. Use of Contracted Services in Support of EOC. It is recommended that staff explore alternative support services contracts for specific EOC support roles. This option requires research in efficacy and impacts depending on the assigned position. Emergency Management Services Agreements can increase the available resources and knowledge of how to manage the incident. The exact support should be verified for fiscal and legal viability.

1.4. EOC Shift Composition. It was noted during the PSPS Event Debrief that a level of uncertainty existed about the composition of the October 9 EOC team being activated. This was due in part to not previously having experienced a PSPS event. Initial assignments were made based on anticipated activities. In some instances, the assignments were appropriate to the need. For example, the Emergency Public Information resources assigned to the first event were three times the size of the resources used in second event. This was a result of having successfully created the

templates for related messages that did not then need to be created for the second event. In other instances, the lack of assignment to a function, or the under-staffing of a function in the EOC, simply reflected the transient nature of all emergencies.

Within the Standardized Emergency Management System (SEMS) doctrine is the overarching perspective that each event will determine the size and scope of an activated EOC. The determination of the resources needed to initially address an event is made during the assessment of the event that occurs early. A key aspect of SEMS doctrine, utilizing the structure of the Incident Command System (ICS), is flexibility. This flexibility was observed during both PSPS events, as well as the adjustments to EOC staffing that were made between the two events. This is as it should be, and this report confirms the use of this doctrine.

Recommendations:

1.4.1. Comprehensive EOC Assignment List. It is recommended that the Emergency Management Working Group (EMWG) members collaborate with the Office of Emergency Management on comprehensive EOC staffing lists. These lists will help bring clarity to mission areas and the resources needed to accomplish them. Once created, the lists will be utilized by the EOC Director, General Staff, Operations Section, and Planning Section in the EOC to assist in determining appropriate staffing levels during the initial assessment phase of each event requiring activation of the City EOC. There is enough historical information available to create EOC staffing assignment lists based on a variety of emergency or disaster scenarios.

This would also include an evaluation of additional positions that may be required in the EOC. When the County cannot send a Liaison to the City or the City cannot be in the County EOC, staffing needs to consider a person able to spend time working with the county and facilitating dialogue.

1.5. Use of Scribes in the EOC. On those occasions where a scribe was utilized in the EOC to support Section activities, the results were universally positive. This was especially true when a Section, or a Function, was only staffed by a single Coordinator. The pace of information flow during an activation is such that continuity is lost when the person taking action on the information is not able to capture the information.

Recommendations:

1.5.1. Proscribed Use of Scribes. Recommend that existing plans and doctrine be reviewed to determine if they need to be updated to reflect the need for scribes

in the EOC or DOCs. A best practice would be to require that a scribe be provided when a Section or Unit has assigned only a single Coordinator to the function, or when operational tempo requires administrative support to assist in effectively capturing event-related information and data.

1.5.2. Include Scribes in EOC Staffing. Recommend that the concept of creating a standard checklist and job aids to support the role of a scribe in the EOC be evaluated as an additional EOC resource. A best practice would be to include in the organizational chart for the EOC a list of scribes that should be considered when determining staffing needs. Scribes would be required to complete the same core training requirements for all EOC staff.

1.6. Health and Welfare of EOC Staff. Working a 12-hour shift in the EOC is a stressful activity. Ensuring that EOC staff stay fed and hydrated during these extended shifts is an integral part of EOC operations and the Logistics Section activities. The challenge is acquiring healthy food at all hours of the day and night from existing businesses in proximity to the EOC. What often happens is that the majority of meals most easily acquired are things like sandwiches and pizza, especially when feeding 40+ people per meal. This type of food tends to be high in carbohydrates and low in other healthy nutrients, which can lead to higher stress and sap one's energy. Additionally, there is no dedicated "quiet space" where EOC staff can relax for a few minutes to reduce stress and recharge their batteries.

Recommendations:

1.6.1. Provide Healthy Choices for EOC Feeding. It is recommended that a list of catering services be contracted with to provide healthy meals to EOC staff. Though challenging to find, there should be businesses that provide catering services with whom the City may be able to engage through a contract that are willing to provide a flexible menu with a variety of healthy dishes and items that appeal most EOC staff.

1.6.2. Create a Quiet Space to Support EOC Personnel. It is recommended that a space near the EOC be identified to accommodate staff with short rest periods and/or a place for EOC staff to relax/unwind for brief periods of time. Emergency Operations Centers are historically known as high-stress working environments for prolonged periods of time. This can have a deleterious effect on EOC staff based on the circumstances of the existing emergency or disaster. By allowing EOC staff to remove themselves from the stressful work for short periods of time, much like breaks provided to Dispatch Center personnel, can lead to a healthier work environment. As the new Measure T

funded Emergency Operations Center is designed, a Quiet Room will be included.

2. Area of Focus – Process:

Foundational processes are the key to community resilience.

2.1. Standardized Emergency Management System (SEMS). In the State of California SEMS is the structure used for responding to all emergencies and disasters. There are four components to SEMS: the Incident Command System; the Master Mutual Aid System; the Multi-Agency Coordination System; and the Operational Area System. It provides a process for managing DOCs, EOCs, Operational Area EOCs, Regional EOCs and the State Operations Center. It provides a doctrine for use by all jurisdictions and political sub-divisions of the State, to include community-based organizations and private businesses. Adherence to SEMS creates a consistent platform on which all organizations active in disaster can communicate and understand one another.

Early on in the PSPS discussions PG&E stated that it would utilize SEMS to work closely with their State, County Operational Area, and jurisdiction-level partners in a Unified Command relationship. However, when the PSPS events began to materialize, PG&E adjusted course and amended their previous statement to inform us that they would only work with their State and County Operational Area partners, not local jurisdictions. This stance was contradictory to the earlier stated desire to work closely with local jurisdiction, especially when it came to field operations like brush clearance within City boundaries. This action also contradicted the intended purpose of SEMS given that, "The use of SEMS facilitates the flow of emergency information and resources within and between involved agencies at all SEMS organizational levels." This does not mean decision-making, but the sharing of how the decisions came to be. Information sharing clearly supports the process of coordination between responding agencies. Ultimately, the lack of information left San José, one of the state's largest metropolitan areas, operating more in the dark than it should have, both figuratively and literally.

Though it can be argued that PG&E slowly deviated from its "Operational Area only" posture over the course of several events in Santa Clara County, it was arguably obvious that they have a long way to go in providing the communication and information necessary to manage a complex incident like a wide-area power shutoff. The City of San Jose desires to pursue an environment where this is not the case.

Recommendations:

2.1.1. Continue to Build a Relationship with PG&E. It is recommended that PG&E and the City engage in more detailed discussions about how the two parties can better communicate and collaborate on remedies that benefit the community.

A PSPS event impacts a jurisdiction universally, with little recourse for at-risk populations, residents and businesses alike. Due to the serious impacts of a PSPS event, and the harm that it could potentially inflict upon those within its boundaries, it is imperative that a solution be found. From an operational perspective, this can only be accomplished through a cooperative planning environment at the regional and local level throughout the duration of any PSPS event. Activities would include workshops and exercises. OEM is currently working with PG&E to get them to commit to these events.

In early 2020, PG&E representatives agreed to set up a series of workshops to address concerns that the City had concerning future PSPS events, including: Critical infrastructure inspection, data access, circuit maps, weather data interpretation, notification and communication protocols, and medical baseline.

2.2. Leadership Roles. Historically it has been the practice of the City executives to personally take on EOC assignments. One reason for this is the limited impact that emergencies have had on the City in recent memory. A recent review of this practice raised the question about the impacts of larger scale events and the affect it would have on the areas of Continuity of Government (COG) and Continuity of Operations (COOP). In a post-disaster setting, both areas will require active engagement of top tier executives, possibly while response to the event is ongoing. The challenge of service resumption during recovery will become a top priority for the City.

Recommendations:

2.2.1. Continuity Government/Continuity of Operations Planning. It is recommended that when resources are available, planning efforts be expanded to include COG/COOP planning. When discussing response to and recovery from a major disaster, it is considered a best practice to represent their function in the EOC by assigning staff with delegations of authority. Thought should be given to three important and distinct roles occurring concurrently: sustaining department operations to address critical operations that must continue; assignment of representatives to the EOC; and responsibilities inherent with running a Department Operations Center focused on resource management.

2.3. EOC Action Planning. Action Planning is the primary process for all activities occurring in the EOC during activations. It is basically an internal clock that guides the focus of EOC staff, ensuring that the appropriate conversations, documentation, and production of each Operational Period's Action Plan occurs. The Planning Section Coordinator is

responsible for leading the variety of meetings that comprise the action planning cycle, and guiding section staff on their input that is captured in the Action Plan and passed on to the next EOC Shift. This can be a challenge depending on the operational tempo of the event, so it is critical that sufficient planning section staff are activated to support this core process.

The Planning and Intelligence Section staff engage all the other EOC sections (Management, Operations, Logistics, Finance/Admin, and Recovery) during a shift to collect and document EOC activities. It is crucial that the other EOC sections take the time to provide the information or the Action Plan produced for that shift will have gaps that are difficult to capture after-the-fact. This requires that all EOC staff are knowledgeable of and comfortable with the action planning process.

Recommendations:

2.3.1. EOC Section Training. It is recommended that all staff assigned to a position in the EOC complete a basic level of EOC-related coursework, and attend regularly scheduled EOC Section Training to be provided by OEM. Action Planning is a process that requires a moderate level of training and practice in preparation for an EOC activation. To be successful will require a high-level of direction and commitment from department leadership to ensure their representatives in the EOC are properly trained. OEM is currently working on a Multi-Year Training and Exercise Plan that supports this position.

2.4. Conference Calls. During every event communication is a key element of success. Multi-agency coordination and the sharing of information can be the difference between success and failure. Fortunately for the City, we work in a culture that blends process with technology to create virtual workspaces. In the context of the PSPS events, an ongoing series of County Operational Area coordination calls became the backbone of coordination between the variety of responding agencies and local jurisdictions. The conference calls began days before each event, and included the participation of key stakeholders, both locally and regionally. Daily conference calls conducted by PG&E, the National Weather Services, the Santa Clara Operational Area, and at times, CalOES, provided an opportunity to receive information, query partner agencies on items of interest, and ensure some level of continuity of ongoing operations.

This is not to suggest that every conference call provided the information that was desired or needed. It was often the case that the information that was available and provided in the PG&E conference calls was either inadequate or exposed the actual lack of information or guidance useful to local officials. PG&E specifically excluded local jurisdictions from participating in the calls. It was only with the assistance of the County

Operational Area that we were able to listen in during the calls and get the available information. The lack of clarity in the information provided by PG&E was clearly demonstrated by the length of time it took to try and answer all of the questions that local jurisdictions had about the impacts of the PSPS events on their communities. This gave rise to frustration on the part of local officials as they worked to mitigate the impacts of each event.

Recommendations:

2.4.1. Unified Approach in Communication. It is recommended that in the continuing dialogue with PG&E, that the concept of unified information sharing be the driving factor in communications with the City. Clear expectations need to exist, from both perspectives, in order for each organization to provide meaningful information that can be used to mitigate the impacts of a PSPS event. The mutual understanding of each organization's objectives can help eliminate many of the gaps experienced in the PSPS events. The only way to effectively bridge the gaps that were identified in the PSPS events is to adopt a more unified approach to information sharing than is already being provided. OEM is currently working with PG&E to bridge this gap.

2.5. Early Planning. From the moment that the Office of Emergency Management was made aware of the potential for a Public Safety Power Shutoff (PSPS) event, City staff began planning. This planning effort focused on critical facilities, mass care, emergency public information, and essential operations. The product of this planning effort was named the Power Vulnerability Plan. The plan encompassed a variety of meetings and exercises, ultimately using over six-hundred hours of staff time. The plan proved invaluable during both PSPS events. Based on what transpired, during response, gaps were identified in the plan, that require some effort to address.

2.5.1. Power Vulnerability Plan Maintenance. It is recommended that the Power Vulnerability Plan be updated to include lessons learned. This includes further study of critical facility redundant power and transportable power generation to ensure future resiliency to PSPS events.

2.6. Situation Room to initiate action and "lean forward". For both PSPS events, an impromptu "situation room" was established within the City Manager's Office. The Situation Room activities allowed the City leadership to meet with key departments and develop pre-event coordinated plans to support the Power Vulnerability Plan. The functions engaged in the situation room were those of EOC Director, Emergency Public Information Officer, Legal Officer, Operations Section Coordinator, and Planning/Intelligence Section Coordinator. Other functions visited the situation room as well.

The situation room process facilitated a smooth transition from preparing for the PSPS events, to responding to the events from an active EOC. It should be noted that the coordination could be accomplished virtually. However, the unknowns surrounding a PSPS event, and the benefit of conducting face-to-face conversations within the City Manager's Office, gave credence to following this methodology.

Recommendations:

2.6.1. Establish a Situation Room at City Hall. It is recommended that this process be integrated into local emergency management procedures, and alternative venues be developed that ensure that adequate pre-event planning occur. It is also recommended that rooms T1752 and T1753 be dedicated for this purpose. By engaging in this process on a consistent basis, the ability to respond appropriately is greatly increased by reducing unknowns and providing clear direction. The use of a Situation Room demonstrated the value of Management and General Staff conferring prior to an activation of the EOC.

2.6.2. Establish Pre-Event Communications Rhythm. It is recommended that a Flash Report system for staff be devised, similar to the methodology used for communications with the media, to inform Staff who are not yet formally activated. They would then have been able to familiarize themselves with event information and the tools used to provide it. While the use of the Situation Room demonstrated the value of Management and General Staff conferring prior to an activation, it also showed the need for a comprehensive plan to communicate the information being gathered to other City staff members.

2.7. Coordination with the County Operational Area. As described in Section 2.1, the County Operational Area concept is one of the four pillars of California's Standardized Emergency Management System (SEMS.) It is the centerpiece of the State's emergency management chain: Field, Local Government, County Operational Area, Region, and State. By definition, the Santa Clara Operational Area manages and/or coordinates information, resources, and priorities among local governments within the operational area, and serves as the coordination and communication link between the local government level and the regional level. The County EOC can potentially play two roles during an event. The first role is public safety service responsibility for the unincorporated area. The second role that the Santa Clara Operational Area has is to communicate the status and needs of the political subdivisions within the county to the Region and the State for action.

In addition to its Operational Area role, Santa Clara County is also responsible for other county-wide functions and services provided to all residents within the county. Through delegated authority from the State, these include Agriculture, Child Support Services, Environmental Health, Health Services, Sheriff-Coroner, and Social Services, to name some of the relevant functions. In many of these functions, if not all, the City does not duplicate the services provided. It may in some cases augment the services provided by the County with those targeting specific needs of city residents. Since the services provided by Santa Clara County to residents of the City of San José are not duplicated, it is important that the City understand the application of these services during an emergency or disaster.

During PSPS responses there were gaps in coordination with the County. The City EOC Director requested a Liaison from the County who would locate themselves in the City EOC. Citing extended activation of their own EOC this request was declined by the County. In addition, when San Jose offered to send a liaison to the County's EOC, this too was rejected, for confidentiality reasons due to an ongoing labor dispute. Fortuitously, a representative from County Public Health agreed to come to the City EOC for a couple of hours and assist with setting up our call center and what to ask medical baseline customers.

Ultimately, the lack of a liaison in either EOC lead to a duplication of effort in field-level activities.. An example of this is when PRNS deployed personnel to contact medical baseline customers to make sure their needs were being met. PRNS staff, when interacting with city residents, were told that County employees had already reached out to them. The EOC was not aware that the County was conducting any field operations within the city boundaries impacting city residents.

The Office of Emergency Management is working closely with the County OEM counterparts to explore ways in which City staff can meet and confer with County staff on a recurring basis. These meetings would be focused on identifying ways that the City can assist the County in coordinating and providing services to City residents during an emergency or disaster.

Recommendations:

2.7.1. Improve Relations with the County Operational Area. It is recommended that the City work to improve its relationship with County officials and establish standard liaison protocols for use during emergencies and disasters. Traditionally, it is an accepted protocol and best practice to both invite and send liaisons to other EOCs to enhance coordination and communication between jurisdictions. This can be accomplished through more frequent

meetings between counterparts, co-sponsored emergency management workshops that bring together department-level counterparts, and periodic exercises. Additionally, efforts should be made to better understand the services being provided to city residents by the County, and how the City can assist with or augment those activities. OEM is currently pursuing the development of workshops with the County for City EOC personnel to learn about the roles, responsibilities, and resources o the County services during an emergency.

In early 2020, City Staff began meeting with the Santa Clara County Office of Emergency Management to develop stronger lines of communication with County agencies providing services to City residents. The goal is to conduct workshops with county departments providing services in the City of San Jose, such as Public Health, Social Services, etc., to gain a better understanding of what the County will provide and coordinate and where the City can support.

3. Area of Focus - Technology:

Advances in Technology can help ensure desired outcomes.

3.1. AlertSCC and WebEOC Though there are several technologies used during response to an event, there are two that stand out as being the most impactful to EOC operations throughout the state: AlertSCC, an Everbridge® alert, warning and notification platform utilized by the County and the City, and WebEOC, a Juvare© emergency operations and management platform also utilized by the State, the County and the City. Both systems are subscriber-based, and the City currently taps into the County system.

AlertSCC is the Santa Clara County Emergency Alert System, to which the City of San José is a subscriber. It can send SMS text, voice, and email messages to those residents who have signed up for the alert service, or using a database with telephone numbers, to send SMS texts using Nixle®, a zipcode-based alert system you can also sign up for. Nixle® is a component of the Everbridge® platform. Users who are trained to use the system can send a single message on a media, or on text, voice, and email all at once.

One of the features of AlertSCC is the ability to acknowledge that a message has been received, and turn off subsequent versions of the message. For example, a text alert is received and acknowledged by the recipient, and the transmission of the voice and email messages is canceled. There are reports that this function did not work correctly during the PSPS events, and a number of employees were contacted multiple times which in turn disrupted their sleep when they were trying to rest between shifts. In part, this was due to changing staff needs which resulted in multiple notifications before a shift.

Accessible to AlertSCC users is the federal Integrated Public Alert & Warning System (IPAWS) that includes Wireless Emergency Alert (WEA) capabilities. WEA alerts are pushed through existing cell towers indiscriminately to any supported cell phone within range of the tower. You know this system as having pushed AMBER and SILVER alerts in your community. The use of WEA is strictly regulated, and may only be utilized for life-threatening situations. Abuse of this system can lead to loss of credentials to access it.

WebEOC is a flexible platform that can be integrated into many other existing systems, like GIS for example. It can create common workflows and bi-directional data sharing, however, front end programming of forms, processes and workflows determine its effectiveness. California's State Operations Center has integrated WebEOC into its response protocols, calling it CalEOC, however, access is limited to County

Operational Areas by policy and SEMS. The County hosts the current version available to the City, and the County manages how the system is used.

Due to the delays with improving the functionality of WebEOC, an online app called *Slack* has been utilized in the past few events. Relatively easy to use, Slack provides an information sharing platform that can be accessed from anywhere and ramped up in minutes. A drawback of using private sector apps is ownership of the data generated and placed on the platform during an event. Though archiving of the data is possible, it would not be readily available should the app be taken down. Easy access to archived information is an important element of facilitating responses to PRA requests, which are normally time-bound.

The Office of Emergency Management is currently studying design elements for the new EOC. This includes the design for information sharing platforms such as workflow/communications/collaboration solutions.

Recommendations:

3.1.1. Upgrade EOC Technology Tools. It is recommended that the City continue to improve its technology. The tool currently used for alerts, warnings, and notifications has received complaints, is adequate for now, but the tool used for situation status and managing operations needs significant upgrades to be effective. There is ample evidence that the EOC needs a solid platform of tools to effectively manage a large-scale emergency or disaster. Staff are to determine which platform (WebEOC or Slack) provides the necessary tools and addresses public document access. This will require close collaboration with the County OEM and dedicated programming resources to build out the desired forms, processes, and workflows, something that has never been pursued by either the City or the County in recent memory.

3.2. Alert, Warning and Notification. The nexus between alerts, warnings, and notification, as compared to crisis communications cannot be understated, especially when it involves a variety of technology platforms. Simply put, an alert provides members of the community a "heads up" in relation to an upcoming or ongoing event. Alerts do not necessarily require action, they just inform. A warning provides direction for actions desired by officials managing an event. Warnings are designed to lead people out of harm's way and include the need for decisive action. Notifications are related to the management of resources, i.e., an official request for people or stuff, sent to those who can provide it. An example would be sending notification to EOC staff that they are being activated. Generally speaking, alerts, warnings, and notifications, are all short bursts of information sent by voice or text as the quickest means to disseminate messages.

The City of San José has an Emergency Public Information Officer (EPIO) team that communicates with the public during emergencies. In the EOC, the EPIO team used a variety of platforms to get messages out, to include Facebook, Twitter, Nextdoor, AlertSCC (Everbridge), the City's website, press conferences, and a call center. They even utilized employees to go door-to-door to get the warning out and ensure the public was aware of the coming PSPS event. Generally speaking, crisis communications utilize the bulk of technology resources to saturate the public with the desired messaging. Media, which includes video and sound bites as well as printed publications, were used for articles and television interviews. One example scenario that comes to mind is the run-up to flu season and the messaging utilized by Public Health. As we get closer to the flu season, the pace of messaging picks up and includes websites, social media, and emails disseminated to targeted audiences.

Crisis communications can be described as "robust messaging that provides enough information to answer common questions that both the public and responders may have about a given event." Often times this is where officials get out in front of an event with the "back story" to provide context to the reader. An example would be when the National Weather Service begins messaging that we're entering a season of wet weather conditions and to begin preparing for potential flood conditions. It doesn't require immediate action, but it does require an assessment of one's situation before deciding what to do. The media can assist with pushing out alerts and warnings, and is often used to do so. The pace of messages picks up as we near the event itself and the public is more engaged.

Another aspect of the alert and warning process is the topic of language support. When communicating and assisting the public during an emergency or disaster, information must be produced in multiple languages that reflect the City's population, then distributed through a broad range of channels, including social media. Translations should be provided through interpreters as many languages don't formally translate well due to missed colloquialisms that are important for local or regional understanding. The EPIO Team created a variety of translated materials in Vietnamese and Spanish during the two PSPS events.

Recommendations:

3.2.1. Joint Information System (JIS). It is recommended that the City continue to evolve its public information planning to adopt a JIS that helps set expectations. The very definition of a Joint Information System captures the intent of having one. "Joint information system means a system that merges incident information and public affairs into a united organization intended to provide consistent, coordinated, and timely information during a crisis or incident operations."

3.2.2. Dedicated Translation/Interpreter Resources. It is recommended that the City enhance the availability of interpreter resources that can be utilized by the EOC, including the additional training of translators across the organization who can operate in an emergency environment. The EPIO team's translation abilities are currently a limited resource and cannot necessarily provide for the specific interpreter services described in this report. As evidenced during both PSPS events, documents that were either created or that were received from other agencies for use during the events were distributed to the public. Feedback for the materials included the observation that some translations utilized a more formal version of the language not widely used.

3.3. Geographic Information System Capability. Managing the response to a PSPS event requires a variety of tools, including the geo spatial capabilities to identify how data collected can be presented in intelligent and comprehensive methods. Both preceding and during the PSPS events PG&E provided maps and map data indicating where the events were taking place. These maps delineated impacted areas of the city using GIS polygons that were roughly drawn around electric distribution lines that were anticipated to be de-energized. The challenge that City officials encountered is that the polygons were so broad, sometimes creating a quarter-mile boundary, that it was difficult to ascertain the more precise de-energized areas being impacted. With such broad metrics, it was difficult to determine who needed to be notified, and where the at-risk populations were at.

To assist with this challenge, the Public Works GIS team collaborated on a variety of approaches to help EOC staff determine where resources needed to be placed. The first remedy was plotting transmission line data on a new map and precisely drawing a technically more accurate GIS polygon. The data was provided by PG&E on their responder website portal. The second remedy was the creation of a survey tool that used social media platforms to collect real-time data on who had power and who didn't. The data gathered was provided by the residents themselves from first-hand knowledge. Each of the responses would be plotted on a map and compared to the polygons that had been created to provide even more precise mapping method of the de-energized areas. This proved to be extremely helpful in determining where field teams should focus their efforts, and gaging the true impacts of the events.

Recommendations:

3.3.1. Dedicate Geographic Information System Resources. It is recommended that the City enhance the availability of GIS resources, including additional training of GIS specialists across the organization to operate in an emergency environment, and utilizing the budget process to include a GIS position within the Office of Emergency Management. The PW Geographic Information System (GIS) team is currently a limited resource and cannot effectively

sustain a high-level of operations over multiple days. As evidenced during the first PSPS event, the first day utilized every GIS specialist available to find solutions. On the second day it proved difficult to retain these resources for a sustained effort.

3.4. Integration of Support Systems. There is a long list of databases and systems that support City operations. Anything from facility work orders to payroll system. Many of these systems are either utilized by EOC staff during an emergency or impacted by the various outcomes created by the emergency. This is especially true when discussing decision-making during response or calculating city-wide costs in the immediate aftermath of an event for reimbursement purposes.

A key element of EOC computing and documentation is directly tied to a jurisdiction's ability to realize mitigation funding and reimbursement for response and recovery costs when conditions for emergency proclamations at the state level and disaster declarations at the federal level exist. This funding can be at risk if record-keeping is not sufficient to meet state and federal requirements. Secondarily, there is always the risk of litigation resulting from actions taken by a local jurisdiction during and after an emergency or disaster. These realities demand an efficient, comprehensive, and resilient system of computing in the EOC, the department DOCs, and field-level activities designed to support cost-recovery efforts after an event.

Though many, two of these systems play a critical role: a facilities inventory, and the payroll system. An example would be the availability of a city-wide list of facilities that could be used for Mass Care operations that are coordinated. As is often the case, finding appropriate facilities to fit a need is challenging, even more so if the data is not available to those coordinating the response. As for payroll, this one should be intuitive. Shifting from 8-hour work days to 12 hour shifts in the EOC, documenting, and calculating eligible costs for reimbursement claims provided to the State or FEMA is difficult. Especially when mechanisms and policies supporting a change in operating environments doesn't exist or are inadequate to address the need.

Recommendations:

3.4.1. Conduct Policy and Systems Review. It is recommended that any system that is used as a tool in the EOC (WebEOC, Everbridge, Slack), or is used to capture event information or costs (FMS, Timekeeping, Biddingo), be part of a comprehensive review to identify possible updates or upgrades to facilitate the City's response and recovery from an emergency or disaster. In order to meet the needs of an emergency or disaster operating environment, critical systems should be updated to capture emergency response costs and provide

key information to EOC staff when the EOC is activated. Some existing systems are flexible enough to allow for small changes in configuration. However, many systems do not provide for integration outside of their operating environment and create inefficiencies in capturing cost data. Most, if not policies govern all existing systems affecting statutes or codes.

3.5. Cloud-based vs. Server-based Computing. Advancements in technology have opened the way for more document collaboration and information sharing platforms to become part of our day-to-day activities. While this technology can offer numerous efficiencies in organizational workflow, it also has limitations that can affect processes that are designed for other reasons. The City's geography, sandwiched between three of the world's largest fault lines, demands a critical look at the technology systems utilized in its Emergency Operations Center. The goal must be to create a hybrid system and fail-over processes to take advantage of emerging workflow/communications/collaboration solutions, and at the same time allows for a secure, redundant system capable of functioning in the best of times and the worst of times.

When discussing workflow platforms that are used in the EOC during activations, the best practice has always been to create a "bunkered" system that is impervious to the impacts of disasters. On-site data center capabilities housing core support systems for City operations to continue, even if access to extended services and tools are damaged and/or are otherwise unusable, continues to be a common practice in EOC design. But relying solely on this traditional approach to computing in EOCs would ignore the clear advantages of collaboration and data access services that are available and which can make a positive difference in response and recovery. Products currently available are more agile and user friendly than most traditional closed/narrow platforms, and provide for efficiencies not previously seen.

Supported by situational awareness and communications applications like social media or live feeds from a helicopter, EOC staff can make more informed assessments and decisions. Platforms like SharePoint, Office365, Teams, Slack, and the like, which can be commonly used throughout the City to collaborate on projects and documents. When architected properly and staff are trained, they also support records searches for PRAs, legal activity, and reimbursement documentation post-event. There is no doubt that some technologies provide workflow efficiencies not previously found in the typical EOC. However, access to new technology also gives rise to other legal and operational considerations that may not be readily apparent.

Efforts in innovation are driving solutions for the integration of records and data that operate under different rules and can at times be challenging. Federal and State contracting standards, as well as security certifications of some providers, indicate that

there are cloud-based platforms that are robustly secure, and are currently used by City government. How these systems would perform during a major earthquake is still unknown. Preliminary consultations with the City Attorney's Office shared that caution should be taken when placing sensitive event-related records and data in the hands of third-party vendors without understanding the legal ramifications of doing so.

During the most recent PSPS events, information related to those events generated by the EOC and DOCs, as well as other departments supporting the response efforts, was placed on cloud-based platforms outside the domain of local file-share servers on a pilot basis. These included documents created in the EOC Action Planning, situational awareness information, EOC staff deliberations and coordination conversations shared by key stakeholders. Being new to many, these platforms were surprisingly agile and staff quickly adapted to the new workflow platform with few exceptions. Though preliminary feedback is positive, before investing more in process integration, further work needs to be done to ensure that the appropriate agreements are put in place with the third-party software vendor so that the City is not exposed to undo risk. Solution administration, configuration of policies, locks on sharing sensitive information, training, and similar controls and program elements require attention for future use.

The emergency management communications software currently used by the State Operations Center (called CalEOC) and the Santa Clara Operations Area is Juvare's WebEOC platform. As discussed in Section 3.1 in this report, this is a server-based hybrid platform with a cloud-based mirrored backup system to ensure that data is not lost. Ultimately, the long-term goal of the Office of Emergency Management is to create a hybrid solution that utilizes both cloud-based and server-based solutions to ensure the most resilient operational working environment practicable.

Recommendations:

3.5.1. Conduct an Information Process and Workflow Review. It is recommended that a team be convened to create a comprehensive framework that includes a thorough review of how information is captured, processed, stored, and safeguarded. This should include a legal review by the City Attorney's Office and the Information Technology Department as well as other key stakeholders. Ongoing concerns about cyber threats, public concerns about privacy, operational concerns related to efficiency and capacity, and most importantly, concerns about resiliency, require that staff review all requirements and options. In cases where cloud-based solutions can provide value and are added to the EOC Technology Portfolio, aspects of solution administration, configuration of policies, locks on sharing sensitive

information, training, and similar controls and program elements must be planned and managed.

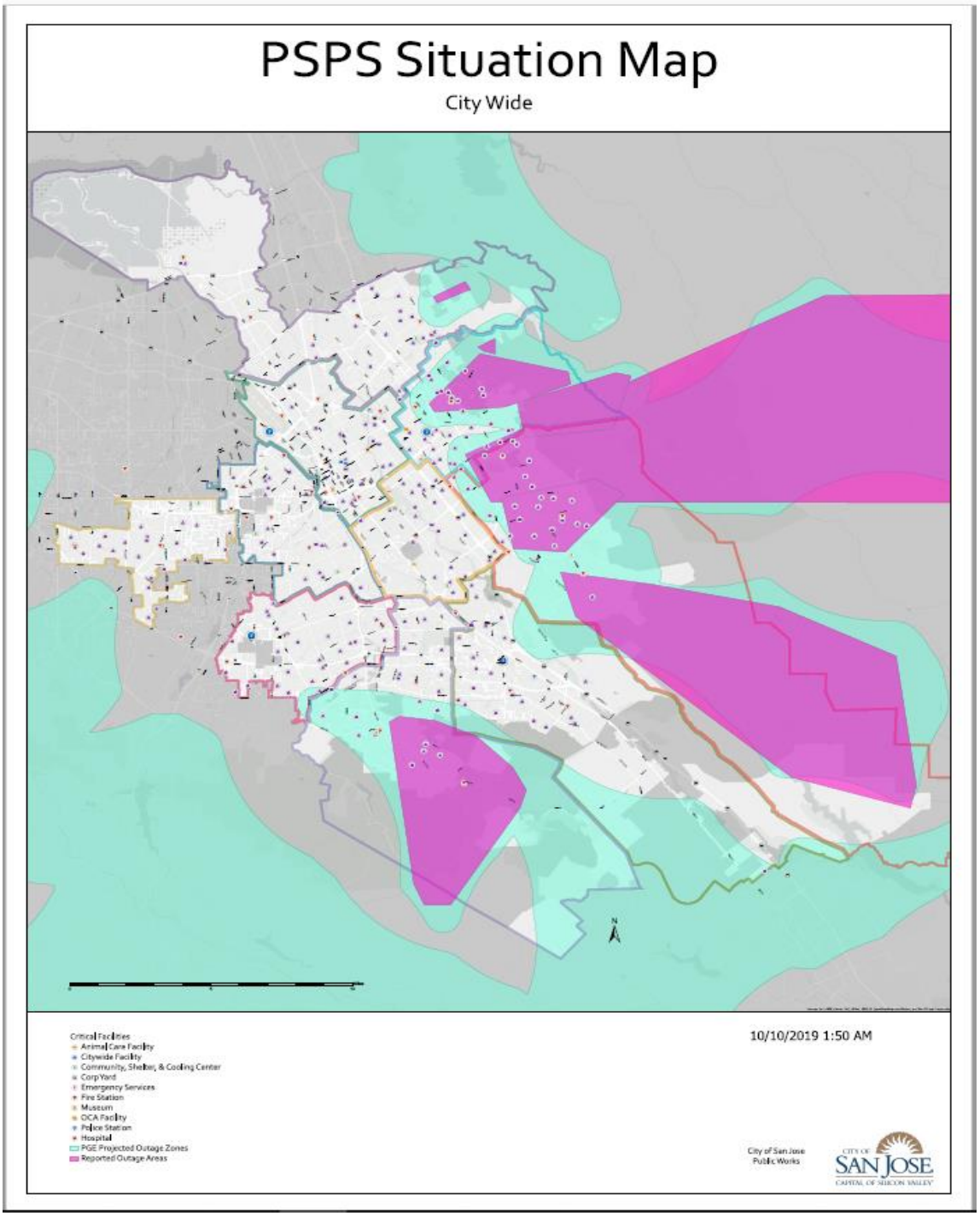
Appendix A: Chronology of PSPS Preparedness and Planning Activities

1. 5/17/19, 1:00pm-2:00pm, **PSPS Orientation for Senior Staff**
2. 5/23/19, 4:00pm-5:00pm, **CSJ PSPS Communication Plan Meeting**
3. 5/29/19, 2:00pm-3:00pm, **Regional Coordination Call on PSPS with PG&E**
4. 6/10/19, 8:15am-9:00am, **City Executive Team Meeting Re: PSPS**
5. 6/14/19, 8:00am-12:00pm, **PG&E PSPS Workshop – Santa Clara Operational Area**
6. 6/26/19, 8:15am-9:00am, **PSPS Lead Team Meeting**
7. 6/27/19, 2:30pm-5:30pm, **PG&E Public Safety Power Shutoff Strategy Meeting**
8. 6/28/19, 3:00pm-5:00pm, **PG&E Potential Power Shutoff – City Facilities Meeting**
9. 7/2/19, 11:00am-11:30am, **PSPS Planning Agenda Call**
10. 7/5/19, 10:00am-11:00am, **PSPS Planning Call**
11. 7/8/19, 4:00pm-5:00pm, **PSPS and Employee Actions**
12. 7/9/19, 11:30am-4:00pm, **CSJ Planning with PG&E**
13. 7/10/19, 9:00am-10:00am, **PSPS Lead Team Meeting**
14. 7/10/19, 3:00pm-5:00pm, **PSPS Communications Tabletop**
15. 7/12/19, 2:30pm-3:30pm, **PSPS Leadership Call**
16. 7/24/19, 9:00am-10:00am, **PSPS Lead Team Meeting**
17. 7/31/19, 3:00pm-5:00pm, **Power Vulnerability Plan Review**
18. 8/12/19, 4:00pm-5:00pm, **PSPS Coordination Call w/CalOES**
19. 8/14/19, 3:00pm-5:00pm, **PSPS Communications Tabletop II**
20. 8/28/19, 8:15am-9:00am, **PSPS Lead Team Meeting**
21. 9/1/19, 2:00pm-3:00pm, **PSPS Event Transportation Impacts Meeting**
22. 9/8/19, 8:15am-9:00am, **PSPS Lead Team Meeting**
23. 9/25/19, 8:15am-9:00am, **PSPS Lead Team Meeting**
24. 10/7/19, 11:00am-12:00pm, **URGENT: PGE PSPS Event Planning Meeting**
25. 10/7/19, 2:30pm-3:15pm, **PSPS Operational Area Conference Call**
26. 10/7/19, 3:30pm-4:00pm, **PSPS Event Law Impacts Meeting**
27. 10/8/19, 10:00am-10:45am, **PSPS Operational Area Conference Call**
28. 10/8/19, 11:00am-12:00pm, **PSPS All Staff Planning Brief**
29. 10/8/19, 2:30pm-3:30pm, **PSPS Operational Area Conference Call**
30. 10/9/19, 9:00am-10:00am, **PSPS Operational Area Conference Call**
31. 10/24/19, 3:00pm-4:00pm, **PSPS Operational Area Conference Call**
32. 10/25/19, 11:00am-12:30pm, **PSPS Lead Team Meeting**
33. 10/29/19, 8:15am-9:00am, **PSPS Lead Team Meeting**
34. 11/5/19, 8:15am-9:00am, **PSPS Lead Team Meeting**

Appendix B: Event Related Maps

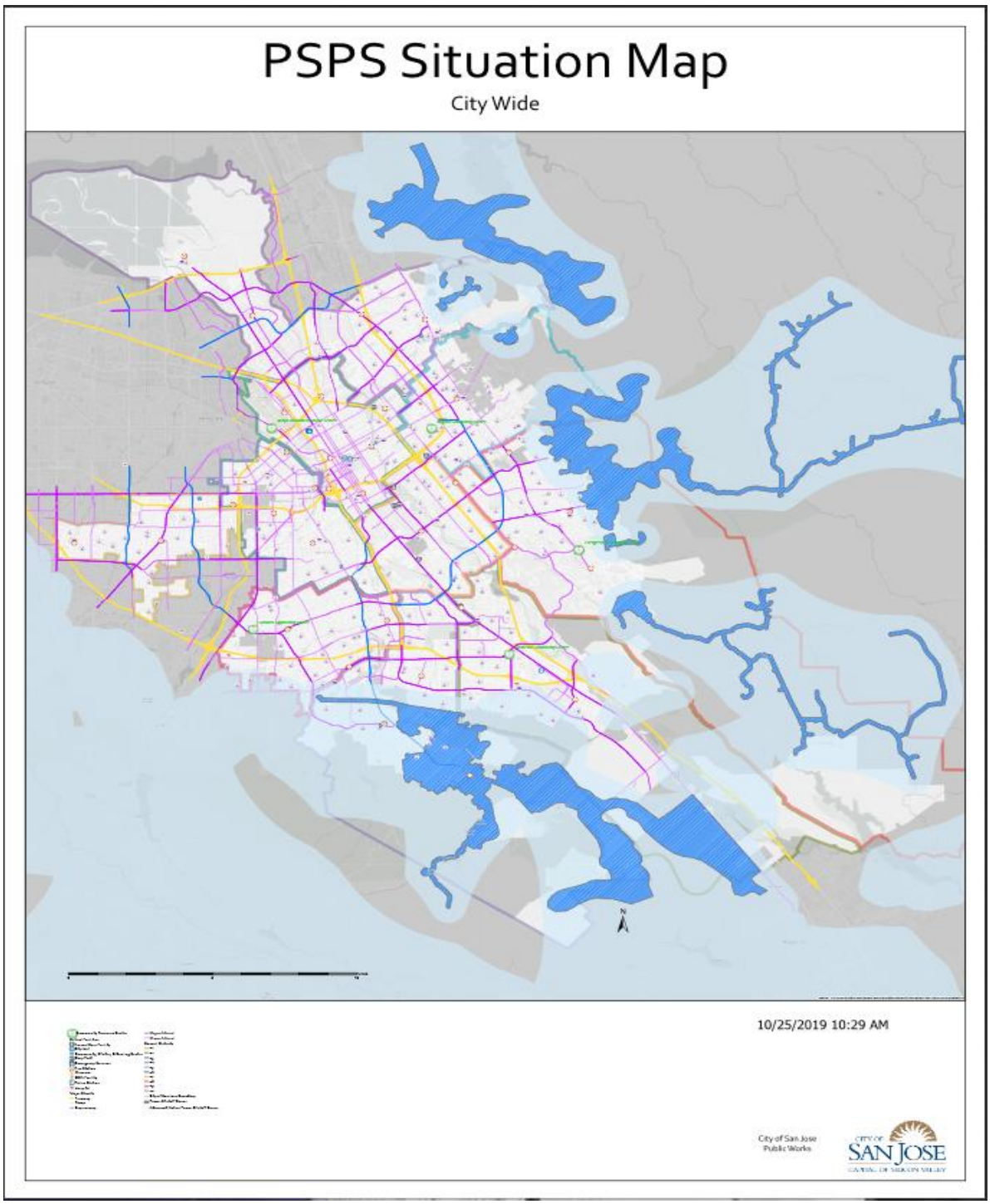
Map 1 – PSPS #1 Situation Map

The green color represents what PG&E identified as potential de-energization. The purple is the actual outage determined by the GIS app and field confirmation.



Map 2 – PSPS #2 Situation Map

This map represents the outages during the second PSPS. The light blue color represents what PG&E identified as potential de-energization. The dark blue is the actual outage determined by the GIS app and field confirmation.



Map 3 – PG&E Fire Safety Map

This map represents what PG&E has determined as their risk map. Tier 1 is urban setting. Tier 2 is intermix (where homes are built into open spaces and wooded areas). Tier 3 is the high risk zones with dense forest.