BAY AREA UASI

Bay Area Emergency Agreements Analysis

Summary Report

Bay Area Urban Areas
Security Initiative (UASI)

The Bay Area UASI
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DATE PREPARED: July 2015

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Executive Summary

Project Purpose

The goal of the Bay Area Emergency Agreements Analysis was to evaluate the extent of overlapping agreements across Bay Area jurisdictions in regard to receiving support during an emergency from partner agencies and non-governmental organizations (NGOs), including the private sector, as they relate to transportation, debris removal, electrical power, fuel distribution, water systems, and communication connectivity.

Key Question

Are Bay Area jurisdictions establishing agreements with the same vendors, entities, agencies and NGOs, and thus running the risk of inadequate resources during emergency response and recovery?

Project Approach

The analysis included interviews with Office of Emergency Services (OES) managers and subject matter experts and collection of emergency vendor names from participating jurisdictions, largely focusing on emergency vendors identified by public works departments.

Key Findings

- More than 60 vendors throughout the Bay Area have agreements with two or more jurisdictions to support emergency response and recovery efforts in the public works sector.
- More than 9 vendors have public works agreements with four or more jurisdictions.
- The role of OES offices in establishing emergency agreements is often unclear.
- Emergency Operations Center (EOC) staff are untrained in emergency procurement or protocols for activating emergency agreements to access necessary resources in an emergency response effort.
- There are many unofficial relationships that are expected to provide aid and support during an emergency, but these have not been documented as official agreements.
- Most jurisdictions plan to utilize mutual aid agreements with other local emergency providers (fire, police, etc.) as well as the California Master Mutual Aid Agreement.

Results and Recommendations

- Collection of vendor names from public works departments resulted in the identification of several vendors which have emergency agreements with four or more jurisdictions in the Bay Area. These are shown in red in *Table 1. Overlapping Vendor Agreements*. Further research to identify additional overlapping agreements through other departments is necessary to fully comprehend the potential for a strain on resources in an emergency in the Bay Area.
- Through interviews with OES managers, it was clear that there is more to understanding emergency agreements than collecting identified vendor names. Thus, a series of recommendations are presented in Section 3. Regional Catastrophic Planning Team (RCPT) Recommendations for future consideration.

Next Steps

The UASI Management Team and the RCPT recommend follow up on the recommendations in this report, with a focus on one critical lifeline service area each calendar year.

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1. Introduction

Background

"Emergency agreements" are defined as written contracts, Letters of Agreement (LOAs), Memorandums of Understanding (MOUs), Blanket Purchase Agreements (BPAs), and any other type of documented official paperwork or verbal "handshake" agreements that explicitly describe an understanding of expectations and responsibilities between vendor(s), private sector, and government organizations to support an emergency response and recovery effort.

California has one of the most comprehensive strategies in the country for rapidly accessing emergency resources. Its state strategies include jurisdictional agency resources, limited local agreements, and large-scale resource mobilizations through the California Master Mutual Aid System (CMMAS). Due to this, automatic or mutual aid contracts are routinely used as part of the initial response to a large scale emergency. Once an incident exhausts the capabilities of the local jurisdiction and its emergency agreements with neighboring entities, the next steps usually involve requesting aid through the CMMAS.

In many ways, the Bay Area region exemplifies all of the best practices of the state in managing emergencies. The Bay Area Emergency Agreements Analysis aimed to showcase the region's strongest capabilities while also providing insight on capabilities that may use some further improvement through the development of emergency agreements to support a large scale, regional emergency response. The Bay Area expects successful utilization of mutual aid agreements both with the state and between jurisdictions. This report illustrates and analyzes the identified overlapping vendors anticipated to provide emergency support services and resources throughout the Bay Area.

Goal and Justification

The goal of the Bay Area Emergency Agreements Analysis project was to evaluate the extent of overlapping agreements across Bay Area jurisdictions in regard to receiving support during an emergency from partner agencies and non-governmental organizations (NGO's), including the private sector, as they relate to transportation, debris removal, electrical power, fuel distribution, water systems, and communication connectivity.

Ensuring secure and reliable agreements with vendors and partners for assistance during times of disaster is critical for local governments to provide efficient emergency response and recovery. Through the development of the Regional Emergency Coordination Plan (RECP) with nine RECP Subsidiary Plans and the eight Bay Area Regional Catastrophic Earthquake Plans, the Bay Area jurisdictions realized that vendors and partners may have engaged in overlapping commitments. Prior to this analysis, there had been no research conducted to assess the number or types of emergency agreements in the Bay Area. Thus, it was unknown whether the Bay Area jurisdictions could potentially face a shortage of resources in an emergency due to vendors having committed

to supporting multiple jurisdictions. This project was identified as a priority at the August 2014 Approval Authority meeting in order to build the region's capabilities in the infrastructure systems core capability, which continues to be the region's most critical risk and gap area.

Impact

The results and recommendations based on this analysis provide a foundational understanding of current vendors and agreements the Bay Area jurisdictions plan to utilize for services and resources to support disaster response and recovery efforts. Establishing a combined inventory of vendor names and agreements helps the region identify where potential strains for emergency resources and support may occur. Members of local government will benefit from the identified recommendations to help the region continue developing response and recovery capabilities.

Participants

Interviews were conducted with the Bay Area UASI jurisdiction OES managers and/or their recommended subject matter experts in the cities of Oakland, San Francisco, San Jose and the following counties: Alameda, Marin, Monterey, San Benito, San Mateo, Santa Clara, Santa Cruz, Solano, and Sonoma. A full list of the interview questions can be found in Appendix B.

Vendor agreement information was requested from all of the Bay Area UASI Operational Areas and Core Cities. This report includes analysis of information received from the following agencies:

1. County of Alameda, Department of Public Works (DPW)
2. County of Marin, Department of Public Works (DPW) and Fire Department
3. County of San Benito, Department of Public Works (DPW)
4. City and County of San Francisco, Department of Public Works
5. City of San Jose, Department of Transportation
6. County of San Mateo, Sheriff's Office
7. County of Santa Clara, Procurement
8. County of Santa Cruz, Department of Public Works (DPW)
9. County of Solano, Purchasing/ Central Services Division
10. County of Sonoma, General Services

2. Analysis and Results

Overlapping Vendor Agreements

Many Bay Area jurisdictions have agreements with vendors to help repair critical lifelines after a disaster or damaging event, but some have not pre-established agreements for use during an emergency. Bay Area UASI jurisdictions were asked to provide a list of vendor names and the anticipated services they would provide to support disaster response and recovery efforts. This analysis did not involve any exchange of legal documents or copies of contracts. An excel database was developed to consolidate the collected vendor names and cross-reference each jurisdiction's provided list. Refer to *Table 1: Overlapping Vendor Agreements* for an illustration of the overlapping vendor agreements. At the time this report was completed, information had been collected largely from public works departments in ten participating jurisdictions and the State of California.

The results of this analysis show that nearly 60 vendors have agreements with two or more jurisdictions within the Bay Area and/or the State of California. Commitments to multiple entities may make it difficult or impossible to deliver adequate assistance supporting disaster response and recovery. Further research is necessary, but for the purposes of this report, it is assumed that there could be a consequence of strained resources where any vendor has made agreements with four or more jurisdictions. These situations have been highlighted in red in *Table 1: Overlapping Vendor Agreements.*

"VENDOR LISTS CONSIST OF CONTRACTORS WHO ARE *INTERESTED* IN PERFORMING EMERGENCY WORK."
SF DPW
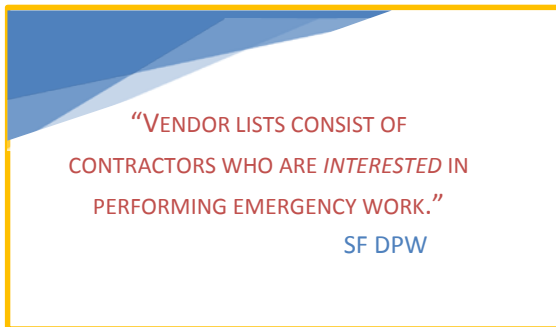
A full list of the 1,400+ vendor names collected from each participating jurisdiction is available upon request. The jurisdictions highlighted in gold in Table 1 had not provided vendor names at the time this report was produced.

OES Manager Interviews

Of the fourteen Bay Area UASI jurisdictions, twelve participated in the OES manager interview process. Based on interview feedback, the data collection efforts focused on collecting vendor information from the various departments of public works (DPWs). It is understood, or expected, by most OES managers that DPWs have a "pool of vendors" to be utilized in times of emergency.

Through interviews with the OES managers, it was confirmed that there is no consistent or centralized method for documentation of emergency vendor agreements held in the Bay Area. Each jurisdiction manages emergency vendor agreements individually and through a variety of methods. For example, many jurisdictions, like San Francisco, San Jose, and Solano Counties, maintain pre-qualified vendor pools in key departments such as DPWs. In order to create these vendor pools, DPWs invite interested contractors to apply by answering a series of

questions, concerning their services and capabilities, and providing their contactor license number. This process validates interested parties as eligible contractors for emergency procurement, and Bay Area jurisdictions include them in their emergency contractor list.   Essentially, this process manages emergency vendor agreements by creating and populating a vendor registry. It is vital to highlight that the majority of identified vendors are for *intended* use, and not necessarily *guaranteed* use. Vendors may be added to a list of possible resources, but this does not mean that there has been a formal MOU, or equivalent, determined between the vendor and the jurisdiction.

Debris management is an exceptional example of why a jurisdiction may not actually enter into an official contract with a vendor. According to San Jose's Construction and Engineering Emergency Action Plan, FEMA actually discourages pre-contracting for debris removal due to potential unfavorable or inflexible terms during a disaster.

> THIS AVAILABILITY, WE HAVE NOT HAD TO MAINTAIN AN EMERGENCY RESOURCE DIRECTORY FOR MANY YEARS."
> Marin county Fire Department
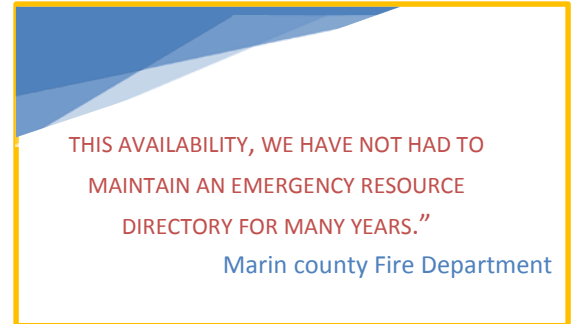
A different approach to managing vendor agreements comes from Marin County, which no longer keeps a registry of vendors. According to Deputy Fire Chief, Mark Brown, through Marin's ordering system with CAL FIRE, the fire department no longer maintains a list of vendors. In the past, this list was referred to as their Emergency Resource Directory. Instead, Marin utilizes CAL FIRE's system through the Resource Ordering Status System (ROSS) and Hired Equipment Management System (HEMS). Marin's approach also serves as a clear example as to why efforts to understand vendor and agreement capabilities goes beyond exclusively collecting vendor names. It is vital that continuing efforts to understand emergency agreements include an in-depth interview component to allow jurisdictions to provide specifics on their city or county's vetting process, relationship development methods, and/or specific challenges they may face. See *Appendix A* at the end of this document for summary information from the interviews conducted with participating jurisdictions during this analysis.

Table 1: Overlapping Vendor Agreements

Vendor	Service	Critical Lifeline	Alameda	Contra Costa	Marin	Monterey	Napa	Oakland	San Benito	San Francisco	San Jose	San Mateo	Santa Clara	Santa Cruz	Solano	Sonoma	State BOC	Total
IBM	business machines	Communications									x		x					2
MOTOROLA INC	mobile phone provider	Communications	x										x					2
COMCAST	Mass media services	Communications	x											x				2
AMERICAN REPROGRAPHICS CO LLC	technology enabled solutions to document and information management	Communications	x										x					2
ADVANCED COMMUNICATION DESIGNS INC	developer and manufacturer of interactive digital audio and video delivery systems	Communications	x							x								2
PITNEY BOWES INC	ecommerce solutions, shipping and mailing	Communications								x			x					2
U S BANK TRUST NATIONAL ASSOCIATION	banking services and solutions	Communications	x										x					2
VERIZON WIRELESS	wireless service provider	Communications	x										x					2
GRAINGER	commercial and industrial supplies	Debris	x								x					x	x	4
GRANITEROCK COMPANY	concrete, Building Materials	Debris	x							x	x	x	x	x				6
GRANITE CONSTRUCTION	construction materials and management	Debris	x						x		x							3
ASHBRITT	dump trucks	Debris	x		x	x										x		4
ENNIS PAINT INC	pavement marking	Debris	x								x		x					3
HERTZ EQUIPMENT RENTAL	rental equipment for heavy construction, industrial, government projects	Debris			x									x	x	x		4
GHILOTTI	road repair and construction	Debris	x		x					x						x		4
ALL AMERICAN RENTALS	construction materials and industrial equipment rentals	Debris								x					x			2
CRESCO EQUIPMENT RENTALS	equipment rentals	Debris										x		x	x	x		4
HILTI, INC	Production of construction tools and applications	Debris	x							x								2
NIXON EGLI EQUIPMENT COMPANY	road construction equipment specialists	Debris	x												x			2
PAPE MACHINERY INC	heavy equipment dealer	Debris	x								x				x	x		4

Vendor	Service	Critical Lifeline	Alameda	Contra Costa	Marin	Monterey	Napa	Oakland	San Benito	San Francisco	San Jose	San Mateo	Santa Clara	Santa Cruz	Solano	Sonoma	State BOC	Total
UNITED RENTALS NORTHWEST, INC.	rental equipment and tool classes that serve industrial and construction sites	debris												x	x	x		3
ZAP MANUFACTURING INC	traffic sign recycling	Debris	x							x								2
HOME DEPOT	building supplies	Debris-volunteer							x	x				x		x	x	5
PETERSON TRACTOR CO	Caterpillar dealer	Debris, Transportation	x													x		2
KOFFLER ELECTRICAL MECHANICAL APPARATUS	varied electrical repair services	Electrical	x													x		2
COLUMBIA ELECTRIC INC	Electrical contractor, public electrical utilities (ie. Street lights & traffic signals)	Electrical	x							x								2
GRAYBAR ELECTRIC COMPANY	industrial and electrical supplies distribution	Electrical	x										x					2
PETERSON POWER SYSTEMS INC	Provides diesel and natural gas generators	Electrical	x										x					2
IRON MOUNTAIN	document shredding, data and records management	NA-facilities	x										x					2
OWEN EQUIPMENT SALES	environmental equipment sales, rental, and service	NA-Facilities	x							x								2
PRO SWEEP INC	commercial maintenance	NA-facilities									x		x					2
RICOH USA INC	copier and printing solutions	NA-facilities	x										x					2
STEEL FENCE SUPPLY	fence materials and accessories	NA-facilities									x			x				2
SYAR INDUSTRIES INC	construction supplies	NA-facilities	x													x		2
POWER ENGINEERING CONTRACTORS INC	builds complex marine construction and civil engineering projects	NA-facilities	x							x								2
SEARS	various services including department store and construction equipment retail	NA-facilities											x			x		2
COMPUTER MAGIC TRAINING	computer training	NA-facilities									x		x					2
PRO DOOR AND GLASS	doors and glass	NA-facilities									x		x					2

Vendor	Service	Critical Lifeline	Alameda	Contra Costa	Marin	Monterey	Napa	Oakland	San Benito	San Francisco	San Jose	San Mateo	Santa Clara	Santa Cruz	Solano	Sonoma	State BOC	Total
KONE INC	elevators	NA-facilities									x		x					2
CINTAS	facilities supplies	NA-facilities									x		x					2
MISSION LINEN SUPPLY	linen and uniform service	NA-facilities	x										x					2
HEWLETT PACKARD CO	multinational information technology company - provides hardware and software	NA-facilities	x										x					2
TARGET SPECIALTY PRODUCTS	agricultural chemicals, products, supplies	NA-landscaping									x		x					2
LOWES COMPANIES INC.	home improvement	NA-volunteering							x		x						x	3
TELFER OIL COMPANY	production, transfer, and distribution of asphalt products	Transportation	x													x		2
REED & GRAHAM	asphalt / road repair	Transportation									x	x	x					3
MARK THOMAS & CO INC	civil and structural engineering	Transportation	x								x							2
WATTIS CONSTRUCTION COMPANY	general contracting	Transportation							x		x							2
CONTRACT SWEEPING SERVICES	road cleaning	Transportation									x		x					2
MUNICIPAL MAINTENANCE EQUIPMENT INC	Provides municipal maintenance and stocks parts, also provides training for municipal equipment	Transportation	x								x							2
SAFEWAY SIGN COMPANY	manufacturer in traffic control signs and reflective metal guidance	Transportation	x								x					x		3
TOM LOPES DISTRIBUTING CO INC	oil company	Transportation	x										x					2
URS CORPORATION	provider of engineering, construction, and technical services	Transportation	x								x							2
FEDEX	global courier delivery service	Transportation	x										x			x		3
JMB CONSTRUCTION, INC	pipeline construction, pump stations, treatment plants	Water System	x								x							2
BURR PLUMBING AND PUMPING	plumbing and pumping	Water system									x		x					2
UNITED SITE SERVICES	portable toilets	Water system	x										x	x		x		4

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Vendor	Service	Critical Lifeline	Alameda	Contra Costa	Marin	Monterey	Napa	Oakland	San Benito	San Francisco	San Jose	San Mateo	Santa Clara	Santa Cruz	Solano	Sonoma	State BOC	Total
RAIN FOR RENT	portable water tanks	Water system								x						x		2
ALPHA ANALYTICAL LABORATORIES	water / environmental testing	Water system											x			x		2
FERGUSON ENTERPRISES INC	plumbing and building supplier	Water System	x													x		2
PACE SUPPLY CORP	plumbing	Water system											x			x		2
BKF ENGINEERS	engineering, surveying, planning	Water, Debris	x								x							2
EXARO TECHNOLOGIES CORPORATION	Public engineering and building	Water, Transportation, Debris	x							x								2
JA MOMANEY SERVICES INC	Landscaping and construction	NA-facilities	x										x					2

3. Regional Catastrophic Planning Team (RCPT) Recommendations

Recommendations

Based on the results of the interviews with OES managers and the vendor name data collection process, the Bay Area UASI Regional Catastrophic Planning Team (RCPT) realized there is more to understanding emergency agreements than just collecting pre-identified vendor names. The RCPT developed several recommendations to continue improving response and recovery capabilities within the region. Each are presented as a solution to identified gaps and the completed analysis.

The following gaps and recommendations apply to the Bay Area region and were developed based on the shared concerns and suggestions of participating OES managers

Vendor Contracts and Agreements

GAP 1
The Bay Area region does not have a comprehensive understanding of emergency vendors or agreements held by the Operational Areas and major cities.

Analysis
The results of this Bay Area Emergency Agreements Analysis show that several jurisdictions have agreements to seek services and resources from the same vendors in the public works sector alone. Additional analysis is needed to evaluate whether these vendors have the capacity to serve multiple jurisdictions in a critical incident. In addition, further research is needed to create a more complete understanding of emergency agreements as they relate to restoration of critical lifelines.

Recommendation
The Bay Area UASI Management Team should continue collecting vendor names and emergency agreement information from the various departments within the Bay Area footprint, as well as analyze the consequences of any overlaps that are identified. The UASI Management Team will need the support of Local OES managers to provide introductions and other helpful information to effectively collect the data as well as review and provide comments on the results.

Gap 1	Recommendation
1.	UASI to continue vendor agreement data collection in critical lifeline service provider areas of transportation, debris removal, electrical power, fuel distribution, water/wastewater systems, and communications. UASI to provide OES managers with jurisdiction specific information collected.
2.	UASI to prepare regional summary of overlapping emergency agreements
3.	UASI to analyze consequence of overlapping agreements, with input from regional stakeholders and SMEs

Utilizing Vendor Resources

GAP 2

EOC staff and OES managers are not trained on how to develop or utilize available vendor resources to support an emergency response and recovery effort.

Analysis

Many jurisdictions have pre-arranged agreements with vendors to provide services and resources in an emergency situation. Emergency procurement policies and procedures may vary with each jurisdiction. It is critical for Finance and Administration and Logistics Section EOC staff to be aware of pre-arranged vendor agreements and trained on the process to execute emergency procurements in a timely manner.

OES managers need to clearly understand their roles in establishing and tracking emergency agreements. It is expected that each jurisdiction's Department of Public Works (DPW) has an available "pool of vendors" with whom predetermined expectations and services have been developed. Many DPW vendor lists function as a registry, largely consisting of contractors who are interested in performing emergency work.

Recommendation

The UASI Management Team can continue to provide training and exercise opportunities to practice operational coordination supporting the procurement of resources or activation of emergency agreements to restore critical lifelines.

The Bay Area UASI's Training and Exercise Program offers Finance/Admin and Logistics Section EOC section training at no cost to local government staff within the Bay Area. The RCPT Training & Exercise Sub-Committee should work with the UASI Training & Exercise Workgroup to vet and confirm the course curriculum to ensure it meets the needs of training EOC staff on how to activate emergency agreements.

Gap 2	Recommendation
1.	UASI Management Team to vet and confirm Finance/Admin and/or Logistics EOC Section training curriculum as it relates to emergency vendor agreements.
2.	UASI to conduct Finance/Admin and/or Logistics EOC Section training
3.	Clarify the role of the OES Manager in establishing emergency agreements
4.	UASI to conduct operational coordination trainings and exercises (i.e. Yellow Command)

GAP 3

Transportation agencies' plans for restoring service following a disaster are not well understood in local jurisdictions.

Analysis

Transportation agencies are critical partners in establishing transportation routes and services following a disaster event. Often times, Bay Area transportation agencies prepare emergency operations plans (EOPs) separate from those of local government. It is critical for local government EOPs to coordinate with transportation agency EOPs to facilitate an effective emergency response and recovery. It is only when such plans are better understood that the region can investigate the potential for overlapping emergency agreements in this sector.

Recommendation

Working through the RCPT, the Bay Area UASI should conduct a regional workshop discussion to review EOP efforts regarding transportation resources and procedures in a disaster. In partnership with the Metropolitan Transportation Commission (MTC), and through the RCPT, the Bay Area UASI should establish a regional working group to confirm/validate transportation agency roles in a disaster and investigate the potential for overlapping emergency agreements in this sector.

Gap 3	Recommendation
1.	UASI and MTC to create a Regional Transportation Working Group through the RCPT
2.	UASI to review and implement After Action Improvement items from 2015 Yellow Command Exercise which tested regional transportation and evacuation roles/responsibilities.
3.	In partnership with MTC, UASI to conduct a transportation coordination workshop discussion to further understand emergency planning between local OES staff and transportation agencies.

Electrical Power Restoration and Fuel Distribution

Gap 4

Many OES managers expressed concern that, unlike their electrical power capabilities, their jurisdiction's fuel capabilities and needs following a large scale emergency are not effectively anticipated, pre-planned, or documented in a clear manner, which in turn has made it difficult to prepare vendor agreements in advance.

Analysis

Coordination between local government and private sector fuel companies / transportation agencies regarding plans for accessing and distributing fuel in an emergency critical. In many jurisdictions the everyday processes of the General Services Agency may be leveraged to understand local government fuel needs and resources for procurement. PG&E is the primary electrical service provider for the Bay Area. Since PG&E is integrated into the local EOCs, where they hold a seat, and exercises regularly with the jurisdictions there is no real concern about establishing emergency agreements. PG&E partnerships currently follow the ICS Agency Liaison model.

Recommendation

Working through the RCPT, the Bay Area UASI should conduct a regional workshop discussion to review local continuity of operations planning efforts regarding fuel distribution in a disaster. Based on the results of the workshop discussion, the Bay Area UASI should conduct a regional assessment to document jurisdictional fuel type needs, existing resources, and storage and distribution capabilities, as well as document gaps and provide recommendations

Gap 4	Recommendation
1.	UASI to conduct a fuel focused regional workshop discussion to identify fuel resources and private sector partners.
2.	As determined by the workshop results, UASI to complete a regional assessment of fuel type needs, available resources, and storage and distribution capabilities.

Water Systems Restoration

GAP 5

It is unclear to many EOC staff within the Bay Area which agencies or districts should be coordinated with for restoration of water systems in a disaster.

Analysis

The restoration of water is a major concern for many OES managers since they have little knowledge about emergency agreements in this area and are lacking strong partnerships with water/wastewater service providers. OES managers expressed uncertainty regarding how water will be transported into and stored in areas where water systems are hindered. The California Water/Wastewater Agency Response Network (CalWARN) coordinates mutual assistance processes for public and private water and wastewater utility agencies. EOCs must coordinate with the water and wastewater utilities serving their jurisdiction to effectively respond to and recover from a disaster. In many cases, working with CalWARN can streamline that coordination.

Recommendation

Working through the RCPT, and in partnership with CalWARN, the Bay Area UASI should conduct a regional workshop discussion to review local water system restoration and distribution capabilities. Based on the results of the workshop discussion, the Bay Area UASI should conduct a regional assessment to document existing water service provider resources and distribution capabilities, such as water system equipment repair needs and mobile water truck availability. The assessment should also document other water storage gaps and capabilities within Bay Area jurisdictions as well as provide recommendations.

Gap 5	Recommendation
1.	UASI and CalWARN to create Regional Water Systems Coordination Working Group through the RCPT
2.	In partnership with CalWARN, UASI to conduct a regional workshop with water service providers to further understand emergency planning efforts and coordinate EOPs between the utilities and local government.
3.	As determined by the workshop results, UASI to complete a regional assessment of water service provider resources and distribution capabilities as well as local water storage capabilities.

Communications Restoration

GAP 6

Following a large scale emergency, damaged communications infrastructure may often lie within a secured area as determined by safety protocols. As a result, private sector service providers often face challenges in accessing the infrastructure to complete repairs. Some jurisdictions believe these are logistical issues that could be solved through development of an emergency agreement.

Analysis

Advance planning and coordination among the local government OES and communications systems providers is needed to facilitate access and efficient restoration of communications systems following a large scale disaster. Private sector partners such as Cisco can deploy mobile units to a disaster scene that provide additional capacity for cellular communications. EOC staff need to be familiar with the availability of and how to request these types of resources.

Recommendation

Working through the RCPT and BayRICS, the UASI should conduct a regional emergency communications systems workshop discussion to plan for allowing emergency access to private sector repair services. UASI should research the protocols for requesting mobile communications systems resources such as Cell On Wheels (COWs).

Gap 6	Recommendation
1.	UASI to create Regional Communications Working Group through the RCPT and BayRICS.
2.	UASI to conduct a regional workshop with communications entities and private sector partners to plan for allowing emergency access to private sector repair services.

Private Partnerships

Gap 7

Protocols for public private partnerships have been researched and established, but not well socialized in all Bay Area EOCs. Many jurisdictions cited struggles with establishing ongoing public private partnerships, specifically with large corporate businesses, for the purpose of efficient disaster response and recovery.

Analysis

The California Governor's Office of Emergency Services (Cal OES) has MOUs with global businesses to support local disaster response and recovery efforts. Many large businesses prefer to receive and coordinate resource requests through the Business Operations Center (BOC) at the State Operations Center (SOC) rather than working with multiple operational areas or cities. Most local jurisdictions are unaware of how to access such resources at the state level. On the other hand, most jurisdictions feel comfortable reaching out to local business or organizations, such as churches, community centers, or fairgrounds, for response assistance. However, further research should be conducted to ensure that jurisdictions are not creating conflicting commitments, such as booking the same community center as a shelter and a point of distribution, with key facilities and straining local resources.

Recommendation

The Bay Area RCPT recently developed and delivered guidance materials for local governments to establish public private partnerships within their EOCs. Jurisdictions should utilize these materials for training. These guides provide information and guidelines on how to best facilitate communication and coordination with the private sector and a government Emergency Operation Center. These guidelines can also be used to better develop and track relationships and communicate effectively with local resources, such as community centers and local fairgrounds, the two most cited local resources. The UASI Management Team is available to support training and implementation of these materials to local jurisdictions. Please see www.bayareauasi.org or contact Janell Myhre at Janell.myhre@sfgov.org for more information

The Bay Area UASI should expand the work completed on the June 2015 public private partnership guidance materials to include instruction on how Operational Areas can leverage the State established partnerships. The revised materials should clarify how local governments can order resources through the State BOC.

Gap 7	Recommendation
1.	UASI to expand public private partnership guidance materials to include resource ordering protocol through the State BOC.
2.	UASI to conduct training on public private partnerships in the EOC.
3.	UASI to organize workshops by Hub to discuss major facilities such as fairgrounds and identify any overlapping commitments for use in a disaster.

4. Conclusion

The RCPT expressed concern that taking action on all of the above recommendations simultaneously would be too ambitious to accomplish meaningful results. Therefore, the recommended path forward for carrying out the above recommendations is for the UASI Management Team to work with the RCPT to prioritize the recommendations and develop a program plan for one gap each year. For example, the focus during 2016 may be on accomplishing the Water System Restoration (Gap 6) recommendations. During 2017, the UASI Management Team would develop a program plan and implement it for a different gap. The prioritizations of which gaps to work towards first will be determined based on the potential consequences of overlapping vendor agreements and/or the current regional response capability in that area.

Action Items

The UASI Management Team will work with the RCPT to identify a gap area to focus on for calendar year 2016. Then the UASI Management Team will develop a project plan detailing the actions required to approach that gap including further research on existing vendor agreements, determination of potential consequences due to overlapping agreements, development of regional work groups, and appropriate collaboration through workshops and planning to establish appropriate agreements.

Summary Comments

The Bay Area Emergency Agreements Analysis project has brought to the forefront the importance of having up to date and combined documentation of emergency vendor contracts, agreements, and partnerships in order to ensure a swift and effective emergency response. There is a role for the Office of Emergency Services to coordinate and/or track emergency agreements throughout the jurisdiction. In many jurisdictions this particular role for OES needs to be recognized and further refined. The RCPT recommendations are intended to continue improving response and recovery capabilities for all jurisdictions within the Bay Area.

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Appendices

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Appendix A: Interview Results

This appendix summarizes the information gathered from interviews with OES managers and subject matter experts from Bay Area jurisdictions. The interviews focused on the types of agreements jurisdictions have in place to respond to emergencies, including partnerships. One key issue discovered through these efforts is that many jurisdictions place high importance on the existence and development of relationships and partnerships with entities, organizations, and key departments in order to collectively respond to emergencies.

General Analysis

Each interview began with general questions to find out what, if any, emergency agreements are held by the jurisdiction. It then continued to address specific topic areas relevant to disaster recovery processes regarding transportation, debris removal, electrical power, fuel distribution, water systems, communication connectivity, and partnerships.

Table 2 General Analysis: Points Discussed
• **Overarching pattern: the majority of jurisdictions are expecting to utilize the California Master Mutual Aid Agreement (CMMAS) as their primary emergency agreement.** • **4 jurisdictions did not cite or directly recognize the California Master Mutual Aid Agreement as an emergency agreement.** • **Most common results included agreements/ undocumented relationships with:**   ○ **Local military bases, local food banks, local faith groups, schools/ college campuses** • **Inter-jurisdictional agreements are the second most mentioned form of emergency agreement. Jurisdictions are expecting to be able to utilize the resources of their surrounding jurisdictions if disaster strikes. These types of agreements are predominantly very broad and do not specifically outline expected aid.**
• **Relationships with the local Voluntary Organizations Active in Disaster (VOAD) appear to be important to many jurisdictions, but do not necessarily have official written agreements to outline aid.**
• **4 jurisdictions stated they have some sort of official policy for emergency purchasing.** • **2 jurisdictions expressed uncertainty as to how updated procurement agreements were, or if they were still in existence.** • **3 jurisdictions said they have no process or protocol to practice emergency procurement.**
• **Only half of the jurisdictions claimed that the OES is the agency that holds the most emergency agreements in the jurisdiction.**

ANALYSIS

After the opening questions, it became apparent that the main agreement jurisdictions have in place to help them respond to a large scale emergency is the California Master Mutual Aid Agreement and mutual aid with local jurisdictions within the operational area.

Under the Master Mutual Aid Agreement, jurisdictions are guaranteed assistance if local capabilities have been exhausted. The statewide mutual aid system does allow the mobilization of resources to and from local governments, operational areas, regions and the state after a state of emergency has been declared and requests have been submitted.

Although this may seem very effective in theory, it highlights that local jurisdictions are depending on each other to have resources. Additionally many OES managers do not have a clear understanding or awareness as to which departments hold emergency agreements. Only half of the jurisdictions reported that the OES is the agency that holds the majority of emergency agreements. When asked about emergency procurement, less than half were certain there was official documentation somewhere in their jurisdiction to make emergency purchases.

In order to ensure truly efficient use and allocation of resources, individual jurisdictions should centralize an inventory of their emergency agreements to better understand what aid is actually available to support emergency response. Master mutual aid agreements are made with reciprocity in mind, and it is critical that operational areas bolster their own official documentation to better track and execute aid.

The rest of this report goes into further detail of the agreements in place to support disaster response regarding transportation and debris removal, electrical power restoration and fuel distribution, water systems, communication capabilities, and partnerships.

Transportation and Debris Removal

The operability of transportation networks will critically impact a jurisdiction's ability to facilitate the movement of people and supplies in responding to a large scale emergency. Due to this, a section of the interview process was dedicated to understanding what kinds of agreements jurisdictions have in place to repair and/ or clear transportation routes.   The following key issues were discussed during this conversation.

Table 3 Restoration of Transportation lines and Debris Removal: Points Discussed
• **3 operational areas confirmed they have a debris removal or debris management contract; all 3 are with AshBritt Environmental, a debris management contractor.**   o **In addition one operational area explained they had begun conversation with AshBritt, but had nothing finalized yet.** • **8 jurisdictions do not have agreements in place to manage debris removal. This was generally expressed as confidence that mutual aid between jurisdictions or in-house capability is strong enough to not have to contract out.**
• **Across the board, jurisdictions reported the Department of Public Works (DPW) has a pool of contractors that can be utilized for road repair/management. Set agreements for transportation restoration are not held by any jurisdiction.**
• **Repairs of public transportation networks are the responsibility of local transportation agencies in all of the jurisdictions.**   o **Many described that transportation representatives have a seat in the Emergency Operations Center (EOC) if they so choose to utilize it.**
• **There are no agreements to manage large scale traffic control.**   o **Operational areas expect to utilize the CMMAS and relationships with police, California Highway Patrol (CHP), Disaster Service Workers (DSW) and in one case the military presence.**

ANALYSIS

It should be noted that several operational areas have contracted with AshBritt Environmental for debris removal and/or management. AshBritt is a national rapid-response disaster recovery and special environmental services contractor based in Florida. Although AshBritt is technically committing to overlapping contracts all of their recovery efforts are conducted under the authority and oversight of the Federal Emergency Management Agency (FEMA) and it appears that they would be unlikely to express strain in terms of providing aid to several jurisdictions at once.

Besides AshBritt contracts, jurisdictions did not express having any official agreements with any particular debris management agency or company. The majority of jurisdictions are expecting that the combination of in-house capabilities and mutual aid with neighboring jurisdictions will be strong enough.   In particular, there appears to be a shared understanding by most jurisdictions that their operational area's Department of Public Works will be a resource they can utilize. Across the board, OES managers were under the impression that DPW has an existing pool of vendors to whom they would contract out in case of an emergency. However, many OES managers were unfamiliar with the specific details of which vendors are in this pool. This could potentially be a pool of overlapping responsibilities, and is therefore

addressed in the recommendations section of this report. The state owns and is responsible for the restoration of major highways, road and bridge infrastructure.

When discussing the maintenance of transportation networks, all jurisdictions agreed that restoration of public transportation is predominantly the responsibility of individual local transportation agencies. The jurisdictions may utilize relationships with California Highway Patrol (CHP) other police enforcement that often manages traffic control or road side assistance equipment. In addition, transportation agency representatives are welcome to participate in the EOC during times of exercise or actual disaster.

Electrical Power Restoration and Fuel Distribution

Comprehensive and actionable restoration of electrical power and fuel distribution has consistently been an intricate and key issue when discussing response and recovery in a large scale emergency. In particular, conversations focusing on the impacts of fuel restrictions have highlighted physical access, not just fuel availability, to fuel as a significant gap. The following data depicts a broad analysis of the emergency agreements in place to address electric power restoration and fuel distribution.

Table 4. Restoration of Power and Fuel: Points Discussed

• **PG&E is the primary electrical power provider for the Bay Area region.**
    o **There is no written agreement describing the role of PG&E in restoring electricity. The main reason being the expectation that, as an enterprise, it is in the best interest of PG&E to restore power as soon as possible.**
    o **The majority of OES managers explained they have provided PG&E a prioritization list outlining the key infrastructure that needs critical attention.**

• **Local fueling stations are expected to be available for emergency procurement, largest concern lies in the availability of equipment to make the actual fuel extraction. Relationships with fuel stations are not consistently documented.** • **4 jurisdictions reported to have a contract in place to acquire generators in case of an emergency.** • **2 said they had no agreements because they have in house availability of generators** • **6 appear to have no agreements or generators in house.**
• **In most jurisdictions, the General Services Administration (GSA) coordinates fuel logistics on an everyday basis.**

ANALYSIS

Although it has already been recommended that comprehensive planning efforts between service providers and governments are crucial in developing a realistic and operational restoration plan for electrical power and fuel distribution, this report suggests that more joint planning is needed.

As the main electrical power provider, PG&E is encouraged to participate in local and operational area EOCs. Although many have, not all jurisdictions have provided a prioritization list for PG&E outlining where to focus restoration efforts; nor are there any official written agreement describing the role of PG&E in restoration. However this appears to be due to the fact that PG&E is an enterprise, and operational areas are confident that it is in PG&E's best interest to restore services as soon as possible.

On the other hand, fuel availability appears to be a much larger concern for jurisdictions. Only four out of twelve jurisdictions reported having agreements in place to either acquire generators or fuel for generators in case of an emergency. Of the eight jurisdictions without agreements, only two have no agreements because they are confident in their in house capabilities. The need for adequate fuel distribution capabilities is also a predominant pattern that arose from the data collection. Many jurisdictions expressed concerns about their ability to bring in fuel, both due to closed transportation routes and limited transportation resources.

Although there are many oil refineries in the Bay Area, they could all experience varying degrees of damage. In order to bolster fuel distribution capabilities, jurisdictions should consider creating fuel agreements, or at least relationships, with agencies outside of the Bay Area. Sonoma County's contract with a trucking company outside of the Bay Area that specializes in fuel delivery will be exceptionally helpful as an immediate connection to fuel in the event fuel sources in the region are compromised.

Overall, many jurisdictions expressed the importance of maintaining close relationships to the General Services Administration (GSA) because of their everyday involvement in providing the cities with services. For example, Sonoma County has a full list of the services their GSA provides for the operational area, ranging from tree services to employment investigations. Part of this list includes agreements that are particularly meant to be used during an emergency that will provide the city with commodities such as batteries and groceries, as well as sandbags and equipment rentals. Clearly these are important resources for the OES to have at hand after an emergency. In particular to fuel distribution, the GSA is involved in coordinating fuel logistics through a daily process. It is important for jurisdictions to consider how these daily processes could be modified to support an emergency response.

Water Systems

The Bay Area region is particularly vulnerable to water system infrastructure damages for many reasons, one of them being the sheer amount of water providers in the region. Knowing that there is an aging water system, it is critical that our ability to move water above ground in a comprehensive distribution network is addressed. The following section briefly illustrates the region's ability to help distribute water.

Table 5. Restoration and Access to Water: Points Discussed
• **All jurisdictions cited local water providers as those responsible in restoring water.**   o **Water providers/ service representatives are encouraged to participate in the activation of the EOC.** • **No jurisdictions have agreements to manage water leaks** • **2 mentioned East Bay MUD as the responsible party for restoring water systems.**
• **All participating operational areas expressed that their main responsibility is providing safe drinking water via bottled water or large water trucks, to communities who do not have access to their usual water sources.** • **Many jurisdictions are concerned with their ability to render and move large quantities of water.**
• **Operational areas across the board would like to see more joint planning efforts between water providers within the jurisdiction, as well as efforts between water districts and the OES.**

ANALYSIS

All twelve OES managers explained they are not responsible for any kind of structural water system repairs, nor do they have any plans to help manage leaks due to disasters. Across the board, operational areas are expecting their local water service providers to utilize their own internal continuity of operations plans to ensure timely restoration. All twelve jurisdictions encourage water providers to partake in the activation of the EOC during an emergency.

The number of water districts/ providers in the entire region is quite large, and coordination between services would be difficult for the OES to manage on their own. Water districts all have their own governmental boards which make developing agreements very complex. Nevertheless, several jurisdictions expressed a desire to be more aware of the plans water districts and water providers have in place. Therefore, jurisdictions should consider encouraging their water and wastewater providers to join the California Water/ Wastewater Agency Response Network (CalWARN) which offers membership to all public and private entities in the State of California. Water and wastewater utilities who enter into the CalWARN agreement participate in an Intrastate Program for Mutual Aid and Assistance to coordinate response activities and share resources during emergencies, recognizing that emergencies may require assistance in the form of personnel, equipment, and supplies from outside the area of impact.

Issues to consider are the effect of the statewide drought on how operational areas are preparing for water disruptions during times of emergency. Operational areas are aware that limited water will be an issue, but are more concerned with the ability to access that water. Very similarly to the concerns over fuel distribution, many operational areas are apprehensive with their ability to render and move large quantities of water in and out of their jurisdictions, so official contracts with water trucks are particularly important in this particular situation.

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Communication Connectivity

In order to recover from a disaster, response efforts need to be timely and effectively coordinated. With the development of intricate communication technologies, jurisdictions are able to react and disperse needed information faster than ever to save lives and property. Nevertheless, with the threat of damaged infrastructure obstructing those communication networks, information sharing requires considerable planning efforts.

Table 6. Restoration of Internet and Phone Connectivity: Points Discussed
All jurisdictions stated they have unofficial relationships with the telecommunication and internet service providers in their operational area in lieu of official written agreements.   **The hands-off approach is preferred because they trust that it is in the best interest of the service providers to restore connectivity as quickly as possible.**   **Top service providers in the Bay Area are Verizon and AT&T.**   **Several jurisdictions also have relationships with:**   **CISCO**   **ECOM**   **RACES (Radio Amateur Civil Emergency Service)**   **SVRIA (Silicon Valley Regional Interoperability Authority)**
3 jurisdictions referred to the Government Emergency Telecommunications Service (GETS) as their main agreement for communications aid and coordination.
Many jurisdictions claimed that the biggest concern facing restoration of connectivity will be access to damaged infrastructure.   **OES role lies in granting service workers safe access into areas that need restoration.**   **Multiple jurisdictions wished they had contracts in place to receive telecommunication services on wheels.**

ANALYSIS

When discussing communication with operational areas, the focus on understanding not just interoperable communications across emergency response agencies, but also the connectivity of the region. Due to this, discussion included access to mobile and landline services as well as internet connectivity. All twelve jurisdictions stated they had unofficial relationships with service providers, but no formalized agreements. Relationships generally consist of service providers being given a prioritization list, similar to that for power restoration, and trusting service providers to restore services because it is in their enterprise's best interest to do so swiftly.

Relationships instead of official agreements tend to be the primary pattern of this report, and communications isn't an exception. Although there is an array of agencies that can provide communication support to operational areas, there is a lack of tangible and immediate contracts. For example, several jurisdictions suggested their operational area could strongly benefit from access to mobile "cell on wheels" services. This would require an agreement between an operational area and their service providers. Unfortunately, most operational areas are utilizing the same service providers, so contracting out may in fact create the overlapping commitments that this analysis wanted to highlight in order to deconflict.

Although there are repetitive relationships in the region, due to the nature of limited service providers, there is little that can be done in the realm of having independent service providers. However, it is interesting to note that multiple jurisdictions cited the Government Emergency Telecommunications Service (GETS) as a support resource. GETS is a White House directed emergency telephone service provided by a division of the Department of Homeland Security that use enhancements based on existing commercial technology to provide connectivity coordination. Although this is an overlapping commitment because multiple jurisdictions are utilizing it, it is very unlikely that this will pose a danger since they provide such far reaching, high level service.

Similar to the other difficulties that come with coordinating with service providers, a major concern with communications is that the service providers will struggle to gain access to critical areas. Jurisdictions explained that often areas with structural damage are deemed unsafe and service staff are prevented from making repairs.

Partnerships

This section of the data collection process aimed to illustrate the types of agreements in place that connect jurisdictions to their surrounding communities through partnerships. When discussing partnerships, interviewees were encouraged to address other government agencies, NGOs, and the private sector. Partnerships can be critical assets when it comes to providing both commodities and coordination to areas in need.

Table 7. Utilization of Partnerships: Points Discussed

• **All jurisdictions have a relationship with the American Red Cross (ARC), but no official written documents.**
    o **ARC can, and does, enter into Memorandums of Understanding (MOU) with operational areas to define a working relationship and provide a broad framework for cooperation, rendering assistance and service to victims of disaster, as well as other services for which cooperation may be mutually beneficial.**
• **Other organizations that the Bay Area jurisdictions have relationships with include:**
    o **Salvation Army, Goodwill, Community Emergency Response Teams (CERT), National Voluntary Organizations Active in Disaster (VOAD), local churches, food banks.**

• **All jurisdictions have agreements in place to assist with animals in an emergency.**   o **Popular agencies are: the Humane Society, local Animal Care and Control, the Food and Drug Administration (FDA) mutual aid agreement, one case of the local sheriff's office and one case utilizes a Pets Act.**
• **11 jurisdictions stated they do not have direct agreements with big box stores (global businesses).**   o **The California Governor's Office of Emergency Services (Cal OES) has a MOU with global businesses, so agreements are conducted above the local government level. Many businesses may prefer to receive and coordinate resource requests through the Business Operations Center (BOC) at the State Operations Center (SOC) rather than working with multiple affected operational areas or cities, even if the retailer may have locations, employees, and customers in the local area. Many of these companies have national Emergency Operations or Incident Command Centers that manage critical incidents.**

ANALYSIS

When it comes to partnerships, Bay Area jurisdictions tend to have a significant amount of unofficial relationships. The Bay Area is fortunate to have access to a wide variety of relief organizations. The most popular partnership is with the American Red Cross. As one of the longest standing relief organizations since its inception in 1881, it is no surprise that all operational areas would have a relationship with the humanitarian organization. Similar relationships are held with the Salvation Army and Goodwill. On a more local-specific level, many jurisdictions cited their CERT and VOAD organizations providing secure partnerships. Local food banks and churches have been particularly helpful in terms of organizing donations for relief efforts during emergencies. The reasoning behind keeping these relationships contract free tends to revolve around the notion that a contract may actually be limiting if it is overly specific.

However, an area in which jurisdictions would prefer to have written documentation of agreements is with big box stores. Eleven out of the twelve jurisdictions stated they do not have any agreements with stores. Currently, these types of agreements happen between the state and corporate headquarters. Across the board, all operational areas want to have more direct access to commodities. Some expressed that they would prefer to have the local agreements broken down by district. Solano County has ensured that their dispatch center at least has the contact information for big box stores as

well as the manager's direct phone to call after hours in case of an emergency. The manner in which big box stores can be utilized would be similar to the ways emergency procurement was discussed in the opening section of this report. Jurisdictions would use store specific credit cards to make large scale purchases. However, the most common complication with big box stores that jurisdictions cited is that nearly all operational areas will rely on the same stores. Having official emergency procurement clauses written into the jurisdiction's administrative code appear to be key in having timely access to resources. Through their emergency procurement, Santa Cruz County has been able to exercise acquiring showers, port-a-potties, and hay for horses.

The Cities of Oakland and San Jose, as well as the Counties of San Mateo and Solano described their partnerships with schools, including universities/ colleges, as invaluable additions to their emergency response capabilities. School facilities are predominantly utilized for shelter operations, and appear to require quite a bit of negotiation due to liability issues. The most common challenge is finding the right point of contact in the school system to develop a partnership with. Inviting school representatives to sit on strategic planning committees or meetings ensures school staff/ facility will be ready to respond to the needs of the jurisdictions.

Another partnership system that seems to be particularly strong is that with animal and disaster related organizations. All twelve jurisdictions have agreements in place to assist with animal coordination. The most cited is the Humane Society, as well as the local Animal and Control Unit. Unlike many of the other points discussed in this report, this seems to be the least complicated in terms of legality issues and wait time.

Appendix B: Interview Questions for OES Managers

- Does your Operational Area (OA) have official, written agreements with outside agencies or organizations to assist you in responding to and recovering from disasters?
- What types of organizations or agencies are these agreements with?
- Can you please name the organizations?
- When was the last time these agreements were updated?
- Do you have any provisions for Emergency Procurement during a disaster?
  - Is there anything written into your jurisdiction's admin code when you contract out to vendors?
- Is the Office of Emergency Services the agency that holds the most agreements with outside organizations for disaster response and/or recovery work?
- Have you practiced or exercised the activation or operations of any of these agreements?
  - What kinds of scenarios have you practiced using these agreements?
  - Can you share some of the lessons learned?

Transportation and Debris Removal Needs

- Do you have agreements with outside organizations to manage large scale debris removal operations, for the primary purpose of opening transportation routes?
- Do you have agreements for assisting in repairing roads and bridges that your jurisdiction is responsible for?
- Do you have any agreements to assist with repairs of public transportation resources that your jurisdiction might use such as buses, trains, subways, etc.?
- Do you have agreements with any local agencies to manage large amounts of traffic due to road closures or evacuation, whether that is equipment or personnel for traffic control?
- Do you have any other agreements that pertain to transportation that we have not yet discussed?
- When was the last time these agreements were updated?
- Have you practiced or exercised the activation or operations of any of these agreements?
  - What kinds of scenarios have you practiced using these agreements?
  - Can you share some of the lessons learned?
- Are there any agreements you wish you had that are not currently in place?

Electrical Power and Fuel Needs

- Do you have agreements with electrical power providers such as PG&E to restore electrical power?
- Are there agreements of what key facilities in your OA will be prioritized, in terms of restoring power?
- Do you have any agreements to receive generators and/or fuel for generators?
- Do you have any other agreements that pertain to power or fuel that we have not yet discussed?
- When was the last time these agreements were updated?
- Have you practiced or exercised the activation or operations of any of these agreements?
  - What kinds of scenarios have you practiced using these agreements?
  - Can you share some of the lessons learned?
- Are there any agreements you wish you had that are not currently in place?

Water System Needs

- What agreements do you have to repair multiple leaks or damages to the water system?
  - What agency turns water on/off?
- What kinds of agreements are in place to support communities without access to water?
- Do you have any other agreements that pertain to restoring water systems or securing drinking water that we have not yet discussed?
- When was the last time these agreements were updated?
- Have you practiced or exercised the activation or operations of any of these agreements?
  - What kinds of scenarios have you practiced using these agreements?
  - Can you share some of the lessons learned?
  - Are there any agreements you wish you had that are not currently in place?

Communication Needs

- Do you have any agreements with wireless service providers?
- Do you have any agreements to restore or maintain internet connectivity?
- Do you have any other agreements that pertain to restoration of communication systems that we have not yet discussed?
- When was the last time these agreements were updated?
- Have you practiced or exercised the activation or operations of any of these agreements?
  - What kinds of scenarios have you practiced using these agreements?
  - Can you share some of the lessons learned?
- Are there any agreements you wish you had?

Additional Partnerships within Your Jurisdiction

- What are your agreements with the American Red Cross and other relief organizations?
- Do you have agreements with private property owners?
- Do you have any agreements regarding animals and disaster?
- Does your operational area have any agreements with big box stores?
- Do you have any other agreements that we have not yet discussed?
- When was the last time these agreements were updated?
- Have you practiced or exercised the activation or operations of any of these agreements?
  - What kinds of scenarios have you practiced using these agreements?
  - Can you share some of the lessons learned?
- Are there any agreements you wish you had?

Closing

- Do you have any final suggestions or comments?
- Anyone in another department whom you think would be able to provide further details?

Appendix C: Sample Vendor Tracking Tool

In order to continue vendor data collection efforts and development of a combined emergency vendor agreement database for the Bay Area, the UASI management team developed a vendor tracking tool using Excel. This tool includes areas to input the following information regarding vendor agreements:

- Vendor Name
- Agency: Who "owns" the vendor agreement/where the vendor name is housed?
- Agreement Type: MOU, unofficial, lease, rental, etc.
- Services to be provided: Heavy equipment, traffic control, sandbags, etc.
- Critical Lifeline: Applicability of the support service to a critical lifeline
- City Location of Vendor: Where is this vendor coming from?
- Date of Last Update: When was the last time this vendor's contact information was verified?
- Date of Last Use: When was the last time this agreement was activated?

Per the recommendations of the RCPT and based on direction by the UASI Approval Authority, the UASI management team will continue to develop the vendor agreement database using the prepared vendor tracking tool. The tracking tool will be housed within the UASI Management Team internal server.

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Appendix D: Methodology

The analysis was conducted through phases as described in the following table.

Methodology		
Phase	**Description**	**Results**
I. November 2014	**Case Studies Research** Research was conducted on past emergency events (i.e. Hurricane Sandy, Hurricane Katrina, and the World Trade Center 9/11 attacks) to provide context and lessons learned regarding the importance of critical lifelines after large scale disasters. Review of these catastrophic events provided context to better compare/contrast the similarities/differences of natural vs. manmade emergencies, the effects of warning periods, and obstacles that can prevent a fast recovery. Case studies were then connected to the Bay Area's potential threats and hazards. This connection was used to refine the focus of the interview questions used to gather data.	**Case studies in Appendix C**
II. February 2015	**Office of Emergency Services (OES) Interview Development** OES managers and subject matter experts participated in interviews to identify existing emergency agreements held by their jurisdiction.	**Full list of interview questions in Appendix A**
III. March 2015	**Data Collection Through Interviews** The Data Collection phase primarily consisted of inventorying collected information and conducting relevant follow up research and interviews.	
IV. April 2015	**Data Analysis** Phase IV focused on analyzing the interview and data collection results to identify overarching patterns and highlight any overlapping vendor commitments as they relate to restoration of critical lifelines. In addition, best practices or lessons learned were identified.	**Data summaries and analysis on page 10-20**

Methodology		
Phase	**Description**	**Results**
V. May 2015	**Development of Initial Summary Report** This report summarizes the analysis results and will be used to present recommendations for next steps to the UASI Regional Catastrophic Planning Team (RCPT).	
VI. June 2015-July 2015	**Initial Distribution and Vendor Agreement Collection** Initial Report draft distributed to participating OES managers, time provided for feedback. Continued efforts made to create a combined list of vendors per jurisdiction in order to cross examine for overlapping commitments.	**Full List of Vendors will be available upon request**
VII. August 2015	**Project Closeout** Presentation to the Approval Authority to confirm project's Next Steps	

Appendix E: Project Points of Contact

Participating OES Managers/ Subject Matter Experts per Operational Area				
1	Alameda	Paul Hess	Emergency Services Manager	phess@acgov.org;	925.803.7803
		Lt. Pace Stokes	DOC Chief	pstokes@acgov.org	
2	Marin	Christopher Reilly	Emergency Services Manager	creilly@marinsheriff.org	415.473.6586
3	Monterey	Sherrie Collins	Emergency Services Manager	CollinsSL@co.monterey.ca.us	831.796-1901
5	Oakland	Cathey Eide	Interim Emergency Services Manager	ceide@oaklandnet.com	510.238.6069
5	San Benito	Kevin O'Neill	Emergency Services Manager	KONeill@cosb.us	831.630-5100
6	San Francisco	Rob Dudgeon	Director	Rob.Dudgeon@sfgov.org	415.760.8736
7	San Jose	Ryan Broughton	OES Director	DLRyan@SolanoCounty.com	408.794.7055
8	San Mateo	Jeff Kearnan	OES Director	jkearnan@smcgov.org	650.599.1295
		Steve Mahaley	District Coordinator	smahaley@smcgov.org	650.363.4955
		Don Mattei	District Coordinator Supervisor	dmattei@smcgov.org	650.599.1294
9	Santa Clara	David Flamm	Deputy Director of EM	David.Flamm@oes.sccgov.org	805.266.8512
10	Santa Cruz	Paul Horvat	Emergency Services Administrator	paul.horvat@co.santa-cruz.ca.us	831.458.7150
11	Solano	Don Ryan	Emergency Services Manager	DLRyan@SolanoCounty.com	707.784.1616
12	Sonoma	Brendan Kearney	UASI Program Manager Sonoma	Brendan.Kearney@sonoma-county.org	707.565.2820
		Chris Helgren	Emergency Manager	chelgren@sonoma-county.org	707.565.1152

Vendor List Points of Contact					
1	**Alameda**	**Chuck Swan**	**DPW**	**chuck@acpwa.org**	**925-803-7010**
2	**Marin**	**Dodie Goldberg**	**DPW and Fire**	**dgoldberg@marincounty.org**	**473-7067**
3	**San Benito**	**Kevin O'Neill**	**DPW**	**KONeill@cosb.us**	**831.630-5100**
4	**San Francisco**	**Cynthia Chono**	**DPW**	**Cynthia.Chono@sfdpw.org**	**415.554.6901**
5	**San Jose**	**Kevin O'Connor**	**Department of Transportation**	**kevin.o'connor@sanjoseca.gov**	**(408) 535-3563**
6	**San Mateo**	**Don Mattei**	**Sheriff's Office**	**dmattei@smcgov.org**	**650-599-1294**
7	**Santa Clara**	**Jenti Vandertuig**	**Procurement**	**jenti.vandertuig@prc.sccgov.org**	
8	**Santa Cruz**	**Mike Bennet**	DPW	**Michael.Bennett@santacruzcounty.us**	**831-477-3923**
9	**Solano**	**Perry A Sauro**	**Central Services**	PASauro@SolanoCounty.com	**(707) 784-6335**
10	**Sonoma**	**Brendan Kearney**	**General Services**	**Brendan.Kearney@sonoma-county.org**	**707.565.2820**

Appendix F: Case Studies Summary

Introduction

Knowing where to go and what critical functions need to be restored provides confidence when responding to a disaster. Hurricane Katrina, Superstorm Sandy and 9/11 are case studies from which emergency management can learn lessons about preparedness and recovery.   These case studies will focus on lessons learned in regards to communication and transportation, the most common points of improvement as reported by those affected by the disasters, but asks the audience to keep in mind the implications that issues with transportation and communication have on, and are affected by, electricity, fuel, and water. The use of Katrina, Sandy, and 9/11 are particularly valuable due to the large scale nature of the events. Both Katrina and Sandy were caused by natural phenomenon and included a warning period during which jurisdictions had the opportunity to set a plan in motion; whereas 9/11 came with little warning and highlighted a much different kind of disaster.

Hurricane Katrina

By the morning of August 29, 2005, Hurricane Katrina had become the deadliest and most destructive Atlantic tropical cyclone of the season. Moving across the East coastline with 100-400 mph winds and massive flooding, its path resulted in thousands of deaths and $100 billion of damages. As one of the deadliest hurricanes in North American history, Katrina became widely publicized in the months that followed. Perhaps due to the wide media coverage of the event, the image of New Orleans flooded under many feet of water fueled the wave of heavy criticism towards local, state, and especially federal jurisdictions.

It is important for emergency management to use disasters like Katrina as sources of learning as it moves forward in making our communities safer and better prepared.   In terms of Katrina, one of the biggest complaints communities had towards the local and federal jurisdictions was response time. Many have said that Katrina highlighted the unrealistic expectation that governments can work in isolation, and instead need to form comprehensive planning *within* local, state, and federal levels while simultaneously keeping an open line of communication *between* them.

Due to the scale of Katrina's destruction, Federal assistance was not able to reach state and local jurisdictions in a timely manner, which placed much of the responsibility on operational areas and local EOCs. Transportation was significantly impacted due to destruction of numerous bay and river crossings within southern Mississippi, Louisiana and Alabama, which were damaged by the storm's considerable storm surge, wave action, and the following debris. Local relief efforts were severely delayed in reaching the hardest hit areas due to local jurisdictions inability to utilize most of their response vehicles. The struggle over transportation, debris and aid delays highlighted the ineffective staffing strategies EOCs had in place.

The stress of working with little preparation meant that responder staff was exhausted even before impact. It is important for the Bay Area region to learn from Katrina as it looks to fine tune communications as well as transportation. Staffing strategies are especially important in areas like the West Bay, where there is a serious

potential for staffing shortages as very few of city employees actually live in the cities they work in. Developing, testing, and updating a contact list for senior management, employees, customers, vendors, and key government agencies with multiple communication platforms is very important.

In summary, Katrina showcased the need for a unified management plan for national response, command and control structures within the Federal government, and more effective regional planning and coordination within local jurisdictions.

Hurricane Sandy

Hurricane Sandy was the deadliest hurricane of the 2012 season; luckily, the government had seven years of hard learned lessons from Katrina waiting to apply to the disaster. Perhaps the biggest lesson Sandy responders utilized from Katrina was the need for early warning in order to prepare critical infrastructure. Prior to Sandy making landfall, East Coast local governments worked with utility providers in order to anticipate long-term power failures. Many power companies utilized connections with independent contractors in order to lay out quick storm repair plans. These plans helped anticipate how many areas would be without power and how rapidly they could restore them. This kind of planning creates a lot of necessary trust among communities and local jurisdictions, which clearly were not present in the after math of Katrina.

In addition to reaching out to public services, local governments made many attempts to maintain open and informative lines of communication with its residents in order to sustain awareness of community actions and needs. A major trend in social media use during hurricane Sandy was the centralization of information which allowed local jurisdictions, agencies, nonprofits, and volunteers to add information to a unified online source. This created an aggregate source of information that was reliable and more user friendly, unlike during hurricane Katrina, when the use of many separate websites made it extremely difficult to find information.

Although emergency response was depicted as much more positive overall than in 2005 when Katrina hit, Sandy still highlighted many struggles that emergency management can learn from. For example, New York, one of the hardest hit areas, suffered from intense transportation issues which were reminiscent of Katrina's transportation issues. New York's underground railway system was completely flooded and all rail activity was closed, which as a highly dense population city similar to much of the Bay Area, had massive amount of traffic for everyone trying to get back to normal after the storm. Although the Bay Area is unlikely to experience the kind of flooding that occurred during hurricane Sandy, it is important that we have plans to deal with the disruptions that a large scale earthquake could have in our underground systems as well as our roads and bridges. Looking to Sandy and Katrina's transportation disruptions as examples for how local jurisdictions should deal with mass congestion is a good way to prepare for a regional catastrophe. Although there are many response lessons to be taken away from both Katrina and Sandy, they were both disasters that were seen coming weeks ahead of time. With earthquakes being the largest natural risk in the region, the Bay Area needs to be prepared to react at the blink of an eye. Due to this, 9/11 can provide insight on some "best practices" when faced with the unexpected.

9/11 World Trade Center Attacks

Unlike hurricane Katrina and Sandy, which provided weeks' notice before making impact, the 9/11 attacks on the World Trade Center towers occurred with no time for warnings, evacuations, or precautions. Its sudden and devastating impact is much more similar to the kind of destruction that a large scale earthquake would bring to the Bay Area region. With multiple fault lines running through the Bay Area region, and a 63% likelihood of a 6.7 or larger earthquake in the next 30 years, the Bay Area needs to be prepared to respond to an emergency with little warning and massive impact.

Dissimilar to the hurricanes, which had city wide devastation, 9/11 had to respond to targeted and dense destruction. Arguably, the biggest issues in the 9/11 response was communication. Many communication facilities that had been in the immediate areas around the attacks were knocked down by the force and debris, which mean that the unusual traffic of calls from police, fire, and EMS quickly overwhelmed dispatchers and available phone systems. This is without even taking into account the numbers of individuals who simply missed each other because agencies were using incompatible equipment and different frequencies. This resulted in large scale confusion and hesitant response. Response was additionally hindered by a lack of communication plans; when discussing communications, infrastructure and equipment is generally what one tends to focus on. While it is undeniable that these aspects are vital, we must also discuss communication plans.

Many of the first responders were private-sector civilians who worked for businesses in the area. This highlighted the need for communication between emergency responders, governments and businesses. Managers and employees of telephone service providers, banks, and commodity stores need to be informed on emergency response, as they are generally the first on the ground presence. Some have marked 9/11 as a crisis of communication and post 9/11, it became very clear that there needed to be more communication plans set in order for local and state emergency response agencies to reach out to private businesses as well as federal governments in the event of a large scale unpredicted emergency.

Bay Area Context and Conclusions

Due to the key regional infrastructure, high density population, and frequent earthquake activity along the six regional fault lines, the Bay Area can be considered highly vulnerable to a large scale emergency. Preparedness is a cycle of planning, practicing, and learning from the past. Thus case studies are vital in gaining insight on effective emergency response. Although the Bay Area is constantly experiencing small seismic activity, the 1906 and 1986 earthquakes have been the most forceful and informative.

The 1906 earthquake has been the most devastating earthquake the Bay Area has ever experienced. Thousands of individuals lost their lives, were injured, and were left homeless. In terms of monetary loss, there was over $400 million worth of infrastructure lost. As a result of the astronomical destruction, particularly in San Francisco due to its proximity to the epicenter, the earthquake prompted sweeping building code changes as well as a revamping of fire and water protection practices. Those new standards helped result in a significantly different outcome to the 1989 earthquake, which although forceful, resulted in significantly less destruction and shorter recovery time. These changes, especially recovery time, can be attributed to the increase in emergency

preparedness and planning. Regional response determines the long-term recovery of the region's communities and economy. Comprehensive planning efforts require service providers and governments to develop operational relationships and plans in restoration efforts.

Such plans have been developed by the Regional Catastrophic Planning Team, who identifies, assesses, and prioritizes areas of concern using capabilities-based and scenario-based planning models. The RCPT worked on developing the Regional Emergency Coordination Plan (RECP) which provides an all-hazards framework for collaboration among responsible entities. Similarly, the Regional Catastrophic Earthquake Logistics Response Plan describes the general structure for how to respond to a large scale regional earthquake emergency. As part of its response capabilities development, the plan discusses the regions ability to restore activities, including the repair or replacement of critical lifelines infrastructure. However, the plan is meant to serve as a guideline and does not include detailed specifications of actual response. Following the Regional Catastrophic Earthquake Logistics Response Plan, a Gaps and Recommendations Report highlighted that "while the Plan briefly addressed critical lifelines and efforts to restore them post-disaster, actionable and comprehensive restoration plans for all critical lifelines either do not exist or have not been exercised." The Bay Area Emergency Agreements Analysis aims to fill that gap.

As part of the ongoing effort to best equip the Bay Area with updated and accurate emergency preparedness methods, the Bay Area Emergency Agreements Analysis hopes to provide information and recommendations for future comprehensive restorations plans. Although brief, analysis of these case studies highlights some gaps in our emergency responding techniques and depicts some of the lessons that have been learned as emergency management moves forward. That progress has been made is irrefutable, but we mustn't forget to look back occasionally in order to avoid making the same mistakes twice.

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