

Emergency Operations Center (EOC): Function, Structure, and Effectiveness in Largo, FL

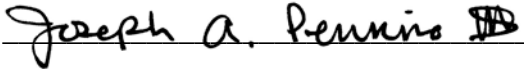
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CERTIFICATION STATEMENT

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that the appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

Signed: Joseph A. Pennino 

Abstract

Local governments can have a difficult time organizing the personnel and resources needed to respond to disasters. The problem was that the City of Largo had not developed effective standard procedures for the use of its emergency operations center (EOC) which resulted in inefficient processes and frustration amongst EOC staff. The purpose of this applied research was to use the descriptive research method to identify industry best practices for EOC operations to include activation, deactivation, and the appropriate personnel assignments in order to develop effective standard procedures for the use of Largo's EOC. The procedures for this research consisted of a focused literature review followed by the assemblage of data using various sources including city policy, information from city personnel who served in the City of Largo EOC during Hurricane Irma, and personal observations. The data were then analyzed to determine (a) What are the shortcomings of the City of Largo's EOC operating procedures? (b) What standards and best practices exist regarding the operation of EOCs? (c) What physical layout is the most efficacious for EOCs? (d) What roles and responsibilities are necessary to staff the City of Largo's EOC? The results highlighted areas within the City of Largo's EOC procedures, physical layout, and staffing that warrant improvement. Following the analysis, recommendations were made concerning the development of policy to address EOC activation and deactivation. Additional suggestions included the formation of project teams to assess the EOC's physical layout and to evaluate and refine EOC staffing assignments.

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Emergency Operations Center (EOC): Function, Structure, and Effectiveness in Largo, FL

General George S. Patton once said, “Prepare for the unknown by studying how others in the past have coped with the unforeseeable and the unpredictable” (Lung & Prowant, 2010). Every significant event presents a unique and valuable opportunity for growth and learning. Concerning the field of emergency management, such events are occurring more and more frequently. Climate change and global warming have and are anticipated to continue to make weather-based disasters such as wildfires, hurricanes, landslides, extreme rainfalls, and flooding more common (Oppenheimer & Anttila-Hughes, 2016). During these disasters, many local and state governments utilize Emergency Operations Centers (EOCs) as a centralized headquarters from which to mitigate these events. EOCs can be anything from commandeered churches that are capable of holding a handful of people to dedicated, purpose-built, hurricane-rated buildings designed to house dozens of people for weeks at a time.

The National Fire Protection Association defines an EOC as “The physical location at which the coordination of information and resources to support incident management (on-scene operations) activities normally takes place” (2014, p. 10). EOCs are a vital component of any government’s resiliency plan. They are not merely a building, but a place where all essential government and even private sector personnel come together to lead a business, city, county, or state through a disaster. However, for an EOC to operate efficiently, it must be organized correctly and have the necessary equipment and technology. Additionally, the governing body must have sufficient policies regarding the activation, operation, and deactivation of its EOC. Perhaps most importantly, for an EOC to function well, it must contain the proper people, who have received adequate training, and who are serving in the appropriate roles.

The problem was that the City of Largo had not developed effective standard procedures

for the use of its emergency operations center which has resulted in inefficient processes and frustration amongst EOC staff. The purpose of this applied research was to use the descriptive research method to identify industry best practices for EOC operations to include activation, deactivation, and the appropriate personnel assignments in order to develop effective standard procedures for the use of Largo's EOC. The research questions were (a) What are the shortcomings of the City of Largo's EOC operating procedures? (b) What standards and best practices exist regarding the operation of EOCs? (c) What physical layout is the most efficacious for EOCs? (d) What roles and responsibilities are necessary to staff the City of Largo's EOC?

Background and Significance

Incorporated in 1905, the City of Largo is located in central Pinellas County on the west coast of Florida. It is home to roughly 7,000 businesses and approximately 83,000 people. In addition to being a popular retirement and seasonal destination, it is the third-largest city in Pinellas County. Pinellas County's population is nearly one million, making the county the 6th most populated as well as the densest county in Florida, with almost 3,500 people per square mile (Florida Legislature, 2017). Pinellas County's economy relies heavily on tourism, which generates more than \$9 billion in revenue annually (Pinellas County Tourist Development Council, 2016).

Largo Fire Rescue was founded in the early 1900s as an all-volunteer department. The department became fully career-staffed in 1970. Today, the department provides fire protection and prevention, community education, emergency medical services (EMS), technical rescue and hazardous materials response, and conducts disaster planning for more than 110,000 residents in a service area of approximately 30.5 square miles (Largo Fire Rescue, 2017). It maintains an

Insurance Services Office (ISO) rating of one, employs 142 sworn firefighters, and ten civilian employees. The department's response district includes the City of Largo, the Highpoint Community, the Town of Belleair, unincorporated portions of Pinellas County, and the City of Belleair Bluffs (Figure 1).

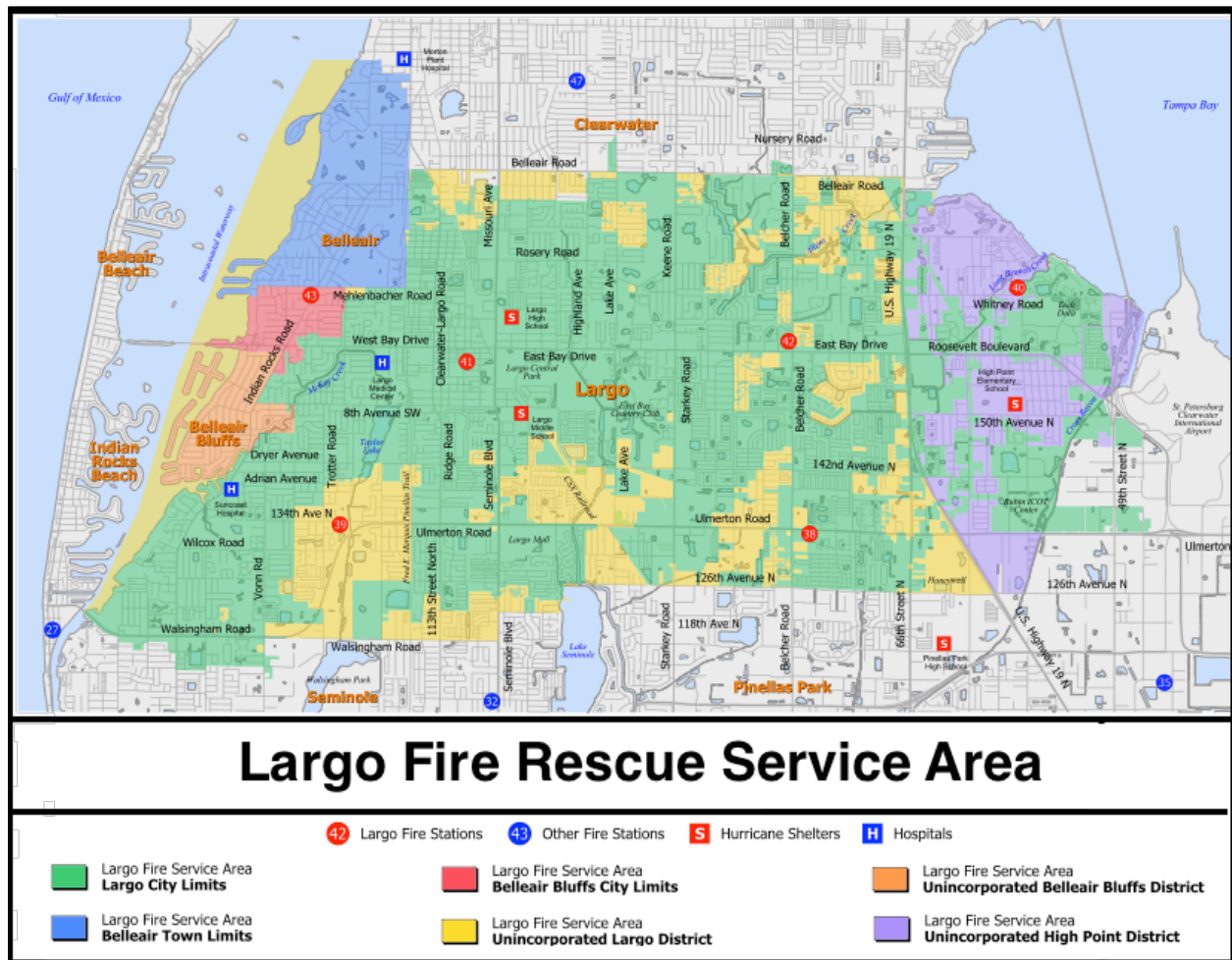


Figure 1. Largo Fire Rescue Service Area.

As is ordinarily the case, the fire chief manages the department and directly oversees the deputy chief. In turn, the deputy chief supervises four division chiefs and serves as the emergency management coordinator for the city. Additionally, the deputy chief chairs the City of Largo Disaster Management Group (DMG). The four division chiefs manage fire prevention, operations, professional standards, and logistics. Combined, these division chiefs direct four

assistant chiefs and six shift commanders who collectively manage emergency response, special operations, training, EMS, and fire prevention. Largo Fire Rescue uses a combination of five advanced life support (ALS) engines, two ALS squads, one ALS truck, three ALS rescues, and one basic life support (BLS) aerial platform to respond to an excess of 29,000 calls for service annually. In conjunction with the department's two shift commanders, these vehicles respond out of six fire stations. Additionally, Largo Fire Rescue takes part in a multi-hazard automatic aid program that incorporates the 18 municipal fire departments and independent special fire districts within Pinellas County. The department is also an active member of both Pinellas County's Technical Rescue and Hazardous Materials Response Teams.

Largo Fire Rescue's response district exists within the peninsula of Pinellas County, which is positioned on the greater peninsula that is the State Florida. Consequently, "The population, demographics, and geographical location of the Largo Fire Rescue response district make it susceptible to a variety of different natural and man-made risks" (Pennino, 2016, p. 22). Some of the inherent natural hazards confronting the City of Largo include floods, tropical storms and hurricanes, thunderstorms and tornadoes, wildfire, lightning, extreme heat, winter storms, sinkholes, and disease outbreak (Pinellas County Government, 2015).

Disasters, whether human-made or natural, can devastate a community and cause an extensive and costly recovery process (Willis, 2011). The abundance of low-income and retirement mobile home communities that would not be able to withstand hurricane-force winds further complicates the situation. The City of Largo and the service areas it is contracted to serve depend on the city's EOC and the staff who operate it to manage disaster successfully. The lack of adequate standard procedures outlining the use of the City of Largo's emergency operations center has resulted in inefficient processes and frustration amongst EOC staff.

Such a consequence became evident during Hurricanes Hermine, Matthew and, most recently, Hurricane Irma which made landfall in Florida in September of 2017 (Figure 2). Irma cost the City of Largo over \$3 million in damage, operating costs, debris removal, and personnel expenditures. The city's EOC was open for several days before, during, and after the event. However, the absence of adequate standard procedures for the use of the emergency operations center left EOC staff unsure as to when they should report, what role they would play, how they would be compensated, where they would sleep, and when they would be permitted to leave. If practical EOC guidelines are not established, the city will be ill prepared to face future disasters. This could result in decreased preparation, inefficient operations, and a prolonged recovery.

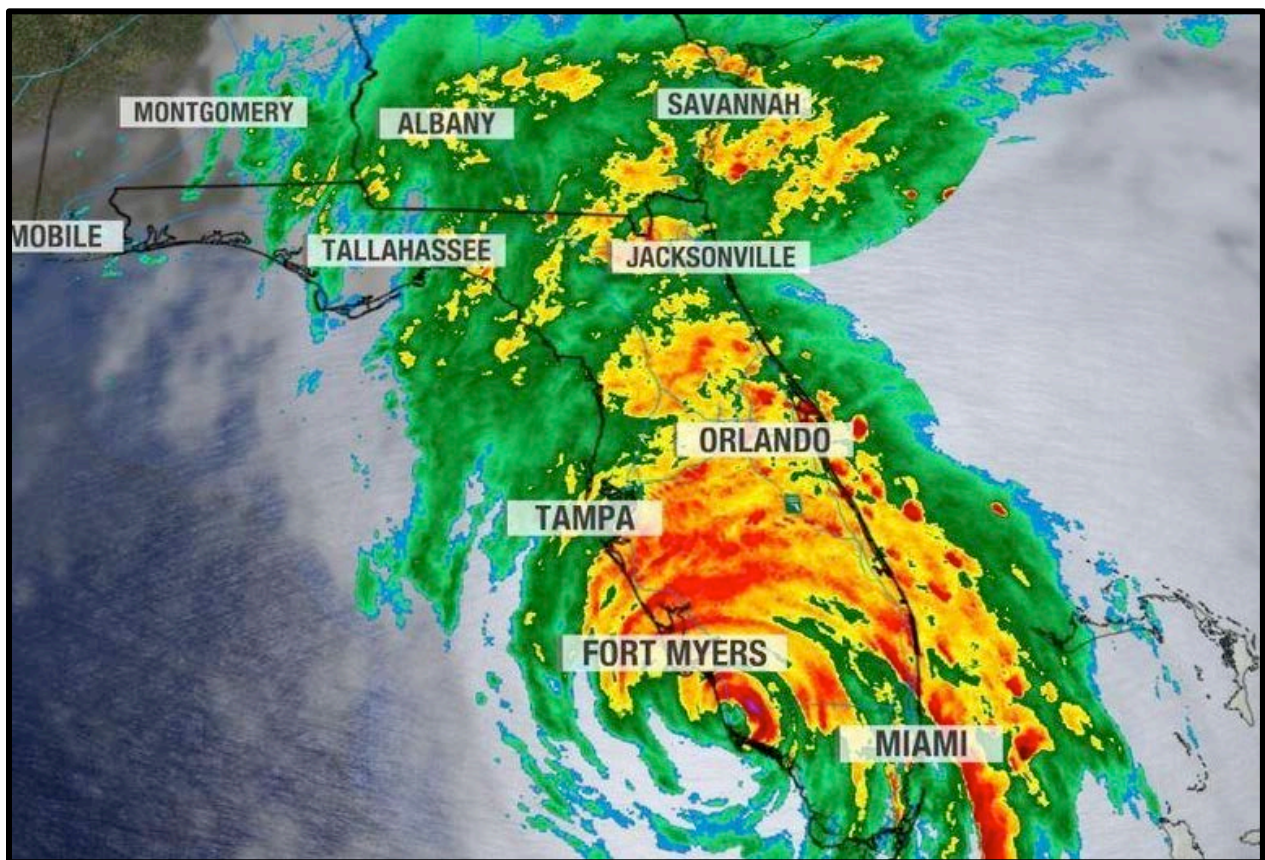


Figure 2. Radar image of Hurricane Irma on September 10, 2017, at 5 p.m. Retrieved from <http://wlrn.org/post/president-trump-approves-disaster-declaration-florida>.

The United States Fire Administration outlines five operational goals in its strategic plan. This purpose of this research was to particularly accomplish goals one through three, which include:

1. Reduce Fire and Life Safety Risk Through Preparedness, Prevention and Mitigation
2. Promote Response, Local Planning and Preparedness for All Hazards
3. Enhance the Fire and Emergency Services' Capability for Response to and Recovery from All Hazards. (United States Fire Administration, 2014, p. 1).

Additionally, this research directly correlates with the Executive Fire Officer Program's Executive Leadership course. One of the goals of the course was for students to learn how to think systematically as a way to deal with adaptive challenges. Additionally, the course outlined the need for the Executive Fire Officer (EFO) to acquire the ability to analyze and then operationalize the fundamental processes and interpersonal skills used by effective executive-level managers (United States Fire Administration, 2015, p. 458). Finally, this research aligns with Largo Fire Rescue's mission statement which asserts, "Largo Fire Rescue is dedicated to providing education, prevention, and emergency services to safeguard the lives and property of our community" (Largo Fire Rescue, 2017, p.1).

Literature Review

It is imperative that public servants and elected officials address their organization's ability to manage disasters (Tampa Bay Regional Planning Council, 2010). However, before evaluating the City of Largo's own current EOC practices, policies, and procedures, the findings of others were reviewed. The literature review for this study was focused on ascertaining industry best practices for EOC operations to include activation, deactivation, and appropriate staff assignments. The information gathered aided in determining the weaknesses of the City of

Largo's EOC operating procedures, the most effective physical arrangement for EOCs, and the various roles and responsibilities that might be necessary to staff the City of Largo's EOC during times of disaster.

For EOCs to be effective, local governments must have policies in place ahead of time that address operations and staff functions for before, during and, post-disaster. Wachtendorf and Kendra stress that "disaster plans are a principal tool for mapping allocation of resources to problems" (2012, p. 250). An organization will either improvise or follow existing plans depending on whether or not the plans are suitable and whether personnel are capable of executing the plans as designed (Wachtendorf, 2004). Lindel, Prater, and Perry acknowledge that time is usually limited in emergencies and they stress that improvisation consumes more time than executing preplanned actions (2006).

Worldwide, EOC use and planning still has a long way to go. Wenger, Quarantelli, and Dynes maintain that the use of EOCs, particularly in smaller organizations, is still sporadic, occasionally improvisational, and insufficiently understood (1989). Perry attributes this to the infrequency of largescale incidents, emergency managers' failure to consider the political aspect of these emergencies and the public's need for information, and some emergency managers' inability to understand the functions of an EOC (2003). Berke and Campanella are advocates of placing a greater focus on resiliency planning, such as ensuring EOC functionality and addressing barriers impeding post-disaster resiliency planning (2006).

According to Vogel, local governments often pay too little attention to policies to limit vulnerability (2013). These policies could relate to anything from emergency management training, to mitigation strategies, to EOC operations. In fact, Burby suggests that local and federal governments should focus more energy and resources on emergency preparedness

planning and routinely update policies as needed (2006). Pinellas County does have a Local Mitigation Strategy (LMS) to “establish an ongoing process that will make hazard mitigation part of the daily functioning of the entire community, including both public and private sectors and our residents themselves” (2015, p. 1).

In addition to the DMG and LMS, the city’s code of ordinances references emergency management responsibilities and disaster procedures (Appendix A). According to the City of Largo’s Code of Ordinances (Code 1978, § 26-4; Ord. No. 94-24, § 4, 2-15-1994) Sec. 8-23, the fire chief, when acting as the emergency manager, shall have the following responsibilities and duties:

1. To direct the development and maintenance of the city's emergency plans, including annual revisions;
2. To designate a fire department staff officer as the emergency management coordinator;
3. To direct the development of a city emergency operations center (EOC) to include equipment, staffing, and operational procedures necessary for the management and control of emergency conditions;
4. To develop and submit an annual budget to the director of emergency management for the operation, maintenance, and training of an emergency response system and infrastructure.

The emergency management coordinator (currently the deputy fire chief) shall have the following responsibilities and duties:

1. To plan, develop, and maintain the city's emergency plans, including annual updates;
2. To chair the emergency management planning committee;
3. To plan for and develop an emergency operations center (EOC) to include equipment,

staffing, and operational procedures necessary for the management and control of emergency conditions;

4. To provide and coordinate a city training program in emergency response and management.

The emergency management planning committee (also known as the DMG) shall have the following responsibilities and duties:

1. To function as part of the EOC during an emergency or state of local emergency;
2. To assist in the creation, revision, and exercise of emergency operations plans;
3. To advise the emergency management coordinator of resource requirements necessary for the creation, maintenance, and exercise of a capable, efficient emergency response capability. (City of Largo, 2008, p. 116).

However, before an organization can even begin to establish or revise specific EOC plans, policies, or procedures, several essential factors must be considered. According to Rouse, it is imperative that EOC policy and procedures have support from stakeholders, they must take into considerations the specific structure of the EOC building, and the plans should be comprehensive enough to consider a wide variety of hazards (2013).

According to the Department of Homeland Security, an EOC is utilized to support on-scene mitigation efforts through the prioritization of activities and available resources, not as an on-scene incident command post focused on specific tactics (n.d.). Furthermore, Quarantelli believes that an EOC should be able to accomplish six primary functions including coordination, policy making, operations, information gathering, public information, and visitor hosting (1979).

There are numerous different models for structuring EOCs, most of which are based on specific agency representation (Perry, 1995). The objective for arranging an EOC is that it will

ultimately follow, supplement, and espouse the Incident Management System and on-scene operations (Brunacini, 2002). For example, the Jefferson Transit Authority in Port Townsend, Washington has a maintenance/facilities officer in their EOC. This individual is responsible for coordinating the chaining of buses and for the removal of snow at Jefferson Transit Facilities, shelters, and Park and Ride Lots during winter storm events (Jefferson Transit Authority, 2017). Agencies in warmer climates, including the City of Largo, would not need these representatives in their EOC, but may need other specialized positions filled. Primarily, the EOC's role and structure are designed to coordinate and integrate multiple agencies to provide a unified response during an event (Moeller, 2014).

According to the Federal Emergency Management Agency (FEMA), there are typically four ways to structure an EOC. Emergency operations centers can be organized by significant management activities, around the Incident Command System (ICS), by Emergency Support Functions (ESFs), or as a Multiagency Coordination System (MAC) Group (FEMA, n.d.). When organizing by major activity, the EOC will be comprised of a policy group, a resource group, an operations group, and a coordination group. Though this configuration is relatively easy to understand, it does not always pair well with the on-scene ICS structure. Conversely, while structuring the EOC around the incident command system may provide an easily recognizable compliment to on-scene operations, it can also lead to confusion regarding who possesses command authority. Organizing an EOC by ESFs can also allow proper coordination with the on-scene ICS system. However, this configuration necessitates a substantial amount of training, and local ESFs do not always parallel state and federal ESFs. Finally, structuring the EOC as a MAC group can be beneficial when coordination is needed with other MAC entities or when multi-agency decision-making and coordination is necessary. The downside to this method of

organizing is that its structure is poorly defined, making it hard to use as a self-sufficient EOC.

Ensuring that EOC staff are qualified and trained to work in emergency situations is vital to an organization's ability to mitigate a disaster. Figure 3 below shows several ways to educate personnel and assist them in being successful while operating in an EOC:

Developing position descriptions (PDs) for every position.	<ul style="list-style-type: none"> • PDs provide a list of the general responsibilities for each EOC position. • PDs serve as a good starting point for determining training needs.
Developing an overall training strategy.	Work with other agency key personnel to create orientations, classroom training, on-the-job training, and a mentoring program.
Providing training opportunities for common tasks.	Consolidate training needs for personnel from the multiple agencies represented in the EOC.
Using information from exercises and actual operations.	Prior experience, as noted in after-action reports, is a guideline for the skills and knowledge that require training.

Figure 3. Ways to facilitate the training of EOC staff. Retrieved from

<https://emilms.fema.gov/is775/eocsummary.htm>

Most jurisdictions outline different levels of readiness for their EOC operations. For instance, the Miami-Dade EOC operates at one of three levels of readiness in order to carry out its mission. A Level III activation is described as a monitoring and assessment phase where a particular threat or situation is being actively monitored. Level II is a partial activation where staff and agencies with a role in incident response are required to report to the EOC. Level I is a full-scale activation where the EOC is activated on a 24-hour basis due to an impending threat or disaster. During a Level I activation, all staff are required to report to the EOC (Miami-Dade County, 2015). The State of Florida's Division of Emergency Management follows a similar

outline for their EOC activation levels (Florida Division of Emergency Management, 2016).

Additionally, the City of Largo utilizes an equivalent three-level activation scale (City of Largo, 2012)

Determining when to activate the EOC is an essential milestone in the course of an emergency. According to FEMA's Emergency Management Institute, "EOCs are activated for various reasons based on the needs of a jurisdiction, organization, or Incident Commander; the context of a threat; the anticipation of events; or in response to an incident" (2017). While some agencies give their emergency manager, city manager, or elected officials discretion as to when to open the EOC, other organizations follow objective guidelines or trigger points. FEMA's Emergency Management Institute positions that, though each jurisdiction's policy determines when their EOC may be mobilized, several possible circumstances could elicit an EOC activation including:

- A Unified Command or Area Command is established.
- More than one jurisdiction becomes involved in a response.
- The Incident Commander indicates an incident could expand rapidly or involve cascading events.
- A similar incident in the past required EOC activation.
- The Chief Executive Officer (CEO) directs that the EOC should be activated.
- An emergency is imminent... hurricane warnings, slow river flooding, predictions of hazardous weather, elevated threat levels.
- Threshold events described in the Emergency Operations Plan (EOP) occur. (FEMA, n.d., para. 2).

The City of Largo's Comprehensive Emergency Management Plan (CEMP) dictates that the city

manager, assistant city manager, fire chief, police chief or public works director may order the activation of the EOC to whatever level may be necessary to support a specific disaster or event (2012). However, the document does not provide specific instances when the EOC should be activated, such as the issuance of a hurricane warning or a mass casualty incident.

The design and physical layout of an EOC are crucial to its success. FEMA lists the six main factors involved in designing an EOC as:

- Accessibility
- Safety
- Size
- Systems Capability
- Survivability
- Versatility (FEMA, n.d.).

The EOC must be accessible to both staff and suppliers. Therefore, care should be taken to establish EOCs in areas that are protected from as many threats as possible. In Pinellas County, this would exclude areas that are prone to storm surge. EOCs should be safe for staff, comply with the Americans with Disabilities Act (ADA), and comply with local building codes (FEMA, n.d.). Furthermore, the EOC should be able to accommodate the number of people required to manage large-scale incidents. Space should exist for private planning meetings, and its configurations must allow for efficient operations, communication, and access to needed technology.

In addition to accessibility, safety, and size, EOCs must be capable of supporting extended operations and surviving both natural and manmade disaster. Therefore, they should possess adequate climate control systems, redundant water supplies, emergency generators

capable of providing an uninterrupted power supply, and backup communications systems (FEMA, n.d.). According to FEMA, EOCs can be hot, warm, or cold. Hot EOCs are maintained in a constant state of readiness but are the most expensive to maintain. Warm facilities have only critical infrastructure in place, items like computers and utilities may need to be added ahead of its activation. Cold facilities are the cheapest to maintain but require a significant amount of work before they can become operational during a disaster (FEMA, n.d.).

The exploration of relevant literature was instrumental in understanding industry best practices for EOC operations including activation, deactivation, and appropriate staff assignments. The information gathered aided in determining the shortcomings of the City of Largo's EOC operating procedures, the most effective physical arrangement for EOCs, and the various roles and responsibilities that might be necessary to staff the City of Largo's EOC during times of disaster. Without analyzing the conclusions, conceptions, and observances of others, the research would not have been as concentrated and deliberate.

Procedures

The descriptive research method was employed to ascertain the shortcomings in the utilization of the City of Largo's EOC and to determine industry best practices to assist in the development of effective standard operating procedures. This approach involved gathering information from city employees who have served in the City of Largo's EOC during Hurricane Irma. Additionally, personal observations during Hurricane Irma, during which the City of Largo's EOC was activated, were utilized. Finally, the City of Largo's current procedures and policies regarding EOC operations were analyzed and compared to industry best practices. This combination of techniques was utilized in order to strengthen the results. It is understood that gathering data in several ways allows the researcher to add scope and breadth to the research and

to seek convergence of the results (U.S. Fire Administration, 2013).

The procedures for carrying out this research were concentrated on satisfying the following four questions: (a) What are the shortcomings of the City of Largo's EOC operating procedures? (b) What standards and best practices exist regarding the operation of EOCs? (c) What physical layout is the most efficacious for EOCs? (d) What roles and responsibilities are necessary to staff the City of Largo's EOC? Preliminary research began with a broad investigation of EOC-related published material. This information was accumulated through conducting internet searches using Google's search engine, Google Scholar, and Georgia Library Learning Online (GALILEO) Scholar, a virtual library available through the University System of Georgia. City of Largo policies, procedures, and ordinances were also consulted and evaluated.

Additional information regarding EOC best practices, policies, and procedures was gleaned from the National Fire Academy in Emmitsburg, Maryland throughout the March 2017 Executive Analysis of Fire Service Operations in Emergency Management and the November 2017 Executive Leadership courses. Edification and literature were received outlining, among other things, the process for policy evaluation and implementation, how to achieve cooperation from stakeholders and elected officials, and how to organize and manage an EOC. Additionally, multiple group activities were undertaken so that students could better comprehend fire department functions relating to emergency management and the typical functions needed in an EOC.

Personal observations were accomplished during Hurricane Irma in September of 2017. Serving as the City of Largo's emergency management coordinator and as a member of unified command, it was possible to participate in and study the city's response before, during, and after

the storm. It was understood that personal observations can be especially vulnerable to observer bias and that steps should be taken to guard against partiality. Measures that were implemented include the maintenance of strict objectivity, reporting all observations (not just those which were favorable to the research outcomes), not allowing initial impressions to influence subsequent observations, and being as discreet as possible (U.S. Fire Administration, 2013).

Finally, information was requested from the more than 50 city employees who served in the City of Largo's EOC during Hurricane Irma. Members of this group included city management, department directors and assistant directors, operational managers, and members of the city's DMG. These personnel served in various EOC assignments including unified command, as section chiefs, and various ESFs. The questions developed related to needed resources and equipment, areas and processes to improve, as well as the areas and processes that worked well. The questions were emailed to participants, and their responses were kept anonymous to encourage honesty and to increase participation. These responses are summarized in Appendix C.

The procedures outlined above aided in establishing the shortcomings in the City of Largo's EOC's performance and in determining industry best practices. These procedures will assist in the future development of effective standard operating procedures. The most noteworthy limitation of the study involved the personal observations that took place during Hurricane Irma. Records and commentary were transcribed for each operational period. However, the storm was a significant event for the City of Largo and disaster mitigation often took precedence over documentation. Another limitation included the pursuance of industry best practices. Though there are many recommendations for EOC configuration, when to activate, staffing, and the like, it must be acknowledged that each community, city, county, and

jurisdiction is unique. There is no universal or one-size-fits-all approach to EOC practices, policies, or procedures.

Results

The research results were derived from information gleaned from those who served in the City of Largo's EOC, personal observations during Hurricane Irma, and through the evaluation of various resources. The first research question was: (a) What are the shortcomings of the City of Largo's EOC operating procedures? Perhaps one of the most frequently noted shortcomings of the City of Largo's EOC during Hurricane Irma concerned food. It was noted in the employee feedback that coordination was lacking both at the EOC and at the employee and family shelters. It was suggested that there should have been a centralized food service unit in the logistics section. Additionally, city personnel went to the store for food and water the week leading up to the event. Employee feedback also recommended that the city should "stock up on emergency supplies seasonally, not just before the storm," and that "having to make food/water runs right before a storm takes people away from other duties at a critical time" (City of Largo employee, personal communication, November 2017).

Another deficiency of the City of Largo's EOC operating procedures included the frequency and design of ongoing training. For the past several years, the city's emergency management coordinator has developed and executed EOC activation drills. However, many employees were critical and questioned the extent to which these drills prepared them for an actual event. Employee feedback included requests for more practical training and the suggestion that there should be at least one full-blown hurricane drill each year before the start of storm season (City of Largo employee, personal communication, November 2017). Other opinions relating to training involved the completion of the various ICS forms. Several

employees mentioned that, in general, the ICS forms were incomplete and additional education is needed on how to fill them out correctly. In fact, the city's assistant finance director spent several weeks reviewing stacks of ICS forms after the event and sent hundreds back to the various city departments for correction.

The second research question was: (b) What standards and best practices exist regarding the operation of EOCs? The first observation related to this question involved the most appropriate time to activate and deactivate the EOC. Current city policy dictates opening the EOC when a hurricane warning is issued for the area. However, this may be too late. During Hurricane Irma, it was noted that the EOC both activated too late and deactivated too early. This created difficulties when trying to organize tasks and resources. The week leading up to Hurricane Irma's landfall, city administration decided to begin holding daily Executive Leadership Team (ELT) meetings. These meetings consisted of city administration and the various city department directors. The meetings migrated into planning meetings where the fire chief would update city staff on storm events, forecasts, and updates from Pinellas County's EOC. While the expectation was that department staff would return and disseminate the information, this was not the case. In hindsight, the City of Largo should have activated its EOC as soon as Pinellas County was forecasted within the cone of uncertainty. One city employee stated, "There were Executive Leadership Team (ELT) meetings leading up to the event. Instead, the EOC should have been opened sooner, and unified command should have been used during the planning phase" (City of Largo employee, personal communication, November 2017).

The City of Largo closed its EOC the day after Hurricane Irma impacted the city. Many employees had been detained for several days and were anxious to go home, while city officials were restless to have the city to resume normal services. However, the decision to close the

EOC may have been made in haste. Though the winds died down and the rain stopped, the lull in calls for service was not an indicator of things to come. Over the next 24 to 48 hours, the fire department responded to three-times the number of incidents it was accustomed to. Most of the incidents were related to power surges, arching power lines, and fires caused by the restoration of power. Fire department employees later recommended to “Continue to staff storm units for a couple of days after the event. There was a significant call load on the days following that were of the low priority nature” personal communication, November 2017).

Not only was the city inundated with low-priority fire and emergency medical services calls following the storm, but it was also bombarded with requests from the Pinellas County EOC. Dozens of Largo residents were transported to shelters located in public schools before the storm. Many of these residents lived in mobile homes which were especially susceptible to hurricane-force winds. Some of these residents could not evacuate on their own and were reliant on power to run their medical devices or home oxygen systems. After the storm, the school board wanted to prepare the schools to open and needed the evacuees out. However, before these residents could return home, city staff had to ensure their homes were tenable. Each day, the fire department received a list of addresses from the county’s EOC that it was required to check and report back on. Also, people were calling from out of state asking about family members that lived in the City of Largo whom they had not heard from. Since the city had already closed its EOC, this workload could not easily be coordinated and distributed. Therefore, all of these operations were run out of the City of Largo’s fire administration offices. Collectively, this increased workload added a tremendous strain on the fire department.

The third research question was: (c) What physical layout is the most efficacious for EOCs? The City of Largo’s EOC building itself was also often criticized for being too small for

the number of staff required to work and reside there. The original plan called for off-duty personnel to report to the employee shelter. However, during Hurricane Irma, conditions were not conducive for travel. The second floor of the EOC was where all of the on-duty staff operated. Therefore, off-duty personnel were confined to the first floor where the city stockpiles spare office furniture. There were no designated sleeping areas and much of the staff ending up sleeping wherever they could find room. One City of Largo employee stated, “The EOC building is either a proper EOC used to handle all functions needed to support an event or it is a warehouse, it cannot be both” (personal communication, November 2017). Adequate space was one of the frequent criticisms concerning the EOC during Hurricane Irma (Figure 4).



Figure 4. The City of Largo’s EOC at shift change during Hurricane Irma.

There were other issues noted regarding the City of Largo’s EOC’s physical layout as

well. Some employees argued that the tables in the EOC were too small to provide a proper work area. Others felt that there were certain positions in the EOC that should have had access to two computer monitors to assist them in the tasks they were conducting. One of the employees stated that there was:

Not much value in having televisions hooked up as the Section Chiefs' computer monitors. I do think those screens could be better used with live-feeds of our remote locations (ECC, County EOC, fire stations, shelters) to better monitor their status. Alternatively, they could be set up to just show a view of the Web EOC activity log. (personal communication, November 2017).

Other criticisms of the EOC's layout included the addition of shower facilities, seating for off-duty personnel who were not working and were winding down before rest, and the need for more technology including a functional scanner and technology for the planning room.

One of the more significant personal observations noted during Hurricane Irma was the lack of dedicated meeting space. There were many times during the event where private meetings and phone calls needed to take place. Perhaps the most essential reason for a private space was to allow those in unified command to conduct briefings at shift change. It is crucial that oncoming and off going unified commanders have a quiet, isolated space to share significant information in the midst of a disaster.

The last research question was: (d) What roles and responsibilities are necessary to staff the City of Largo's EOC? While the purpose of this research was not to revise the current EOC's organizational chart, it did identify issues and gaps in the current staffing plan. During Hurricane Irma, the City of Largo's EOC was set up using a modified ESF model. There was a unified command, four operational sections, and several ESFs within each section. Though there

were several benefits to this configuration, there were also numerous weaknesses.

While some employees applauded the communication that took place within the City of Largo's EOC during Hurricane Irma, the lack of a clear communications plan was frequently mentioned as well. In fact, one city employee stated, "Communications staff in EOC were recreating phone lists the entire time – no actual communications plan or communication was happening" (personal communication, November 2017). Though there was an ESF position within logistics dedicated to communications, personnel filling this role were untrained and unprepared to develop a communications plan that encompassed the myriad of different communication processes within the city.

Another observation was that lack of public works ESF staffing in the EOC. Often, the operations section chief had a difficult time contacting public works (PW) staff working in the field. Employee feedback indicated that "PW needs to have a seat in the EOC at operations" (City of Largo employee, personal communication, November 2017). Public works had a significant role during Hurricane Irma. Not having a representative within the EOC slowed down the transference of information and hampered decision-making.

There was also a noticeable lack of information technology (IT) support within the EOC. This is a needed position in the City of Largo's EOC due to the reliance on technology. The city uses Web EOC for ordering resources, documentation, and communicating with Pinellas County. Furthermore, the city used geographic information system (GIS) to predict storm surge, the number of residents that would be affected, and to create windshield survey and damage assessment maps for after the event. As one City of Largo Employee stated, "There was no IT Tech support in the EOC, which was a huge problem" (personal communication, November 2017). Additionally, GIS personnel working in the planning division were overwhelmed,

especially after the storm. They were having a difficult time managing the massive amounts of information coming in from damage assessment teams.

Perhaps one of the most significant observations regarding the roles and responsibilities necessary to staff the City of Largo's EOC did not involve specific functions at all. There was quite a bit of employee feedback regarding the training needed for positions as well as the philosophy of rank in relation to EOC assignments. Some employees recommended that ICS 300 and ICS 400 should be mandatory for anyone serving in the EOC as well as for department directors and assistant directors. It was observed that many employees did not have the proper skill sets for their assigned role and that some of the EOC roles appear to have been assigned based on job title and not an employee's ability to perform in emergency situations. One city employee stated, "Department directors should not be default players in the EOC. While some could be very effective, others appeared to struggle in a role that required quicker decision making and more advanced technological skills than they would normally encounter" (personal communication, November 2017).

The results of this research were collected from various sources including City policy, feedback from personnel who served in the City of Largo EOC during Hurricane Irma, and personal observations. The information assisted in answering the research questions which, in turn, assisted in identifying industry best practices for EOC operations to include activation, deactivation, and appropriate personnel assignments. This research intended to gather information in order to develop effective standard procedures for the use of the City of Largo's EOC.

Discussion

The outcomes of this applied research exposed several industry best practices for EOC

operations. Procedures that relate, not only to the activation and deactivation triggers for EOCs, but also to the appropriate personnel assignments needed. It is imperative that governments have plans in place beforehand that outline operations and staff functions for prior, during and, post-disaster. According to Wachtendorf and Kendra “disaster plans are a principal tool for mapping allocation of resources to problems” (2012, p. 250). If plans are well thought out, and staff are trained to execute them, they will be followed. Otherwise, personnel are likely to improvise (Wachtendorf, 2004). Improvisation is costly and can devour precious time, which is usually in short supply during times of emergency (Lindel, Prater, & Perry, 2006).

According to Vogel, local governments often pay too little attention to policies to limit vulnerability (2013). Burby suggests that local and federal governments should focus more energy and resources on emergency preparedness planning and routinely update policies as needed (2006). Berke and Campanella are advocates of placing a greater focus on resiliency planning, such as ensuring EOC functionality and addressing barriers impeding post-disaster resiliency planning (2006). The City of Largo accomplishes this by maintaining a Disaster Mitigation Group (DMG). This emergency management planning committee is chaired by Deputy Fire Chief Joseph Pennino and meets monthly concerning emergency preparedness and certain EOC related operations. Additionally, City of Largo personnel have and continue to participate in the development of Pinellas County’s Local Mitigation Strategy (LMS).

According to Pinellas County, “The purpose of the Local Mitigation Strategy is to establish an ongoing process that will make hazard mitigation part of the daily functioning of the entire community, including both public and private sectors and our residents themselves” (2015, p. 1).

According to Rouse, it is imperative that EOC policy and procedures have support from stakeholders. Moreover, plans must take into considerations the specific structure of the EOC

building and should be extensive enough to encompass a wide array of hazards (2013). During Hurricane Irma, the City of Largo followed several of its pre-existing written plans. One of these plans included when certain facilities were closed and shuttered (Appendix B). For instance, during a hurricane warning, city buildings should be secured, and all non-essential vehicles and personnel should be taken off the roads (City of Largo, 2017). Other plans, such as where off-duty EOC personnel would sleep, did not exist. Therefore, off-duty EOC staff had to improvise, sleeping wherever they could find space.

According to Wenger, Quarantelli, and Dynes, the use of EOCs, particularly in smaller organizations, is still not standardized (1989). This could be partially attributed to the rarity of large-scale incidents and some emergency managers' failure to understand the full purpose of an EOC (Perry, 2003). FEMA's Emergency Management Institute states, "EOCs are activated for various reasons based on the needs of a jurisdiction, organization, or Incident Commander; the context of a threat; the anticipation of events; or in response to an incident" (2017). Although it is probable that each jurisdiction has their own policy as to when their EOC may be mobilized, there are several possible conditions that FEMA suggests would provoke an EOC activation including:

- A Unified Command or Area Command is established.
- More than one jurisdiction becomes involved in a response.
- The Incident Commander indicates an incident could expand rapidly or involve cascading events.
- A similar incident in the past required EOC activation.
- The Chief Executive Officer (CEO) directs that the EOC should be activated.
- An emergency is imminent... hurricane warnings, slow river flooding, predictions of

hazardous weather, elevated threat levels.

- Threshold events described in the Emergency Operations Plan (EOP) occur. (FEMA, n.d., para. 2).

The City of Largo's Comprehensive Emergency Management Plan (CEMP) dictates that the city manager, assistant city manager, fire chief, police chief or public works director may order the activation of the EOC to whatever level may be necessary to support a specific disaster or event (2012). However, the document does not provide specific circumstances when the EOC should be activated.

During Hurricane Irma, it was noted that the City of Largo's EOC appeared to remain open for as short of time as possible. City staff stated, "There were Executive Leadership Team (ELT) meetings leading up to the event. Instead, the EOC should have been opened sooner, and unified command should have been used during the planning phase" (City of Largo employee, personal communication, November 2017). Furthermore, after the storm passed, the fire department was besieged with calls for services and saddled with additional storm-related responsibilities for several days. City employee feedback included, "Continue to staff storm units for a couple of days after the event. There was a significant call load on the days following that were of the low priority nature" (personal communication, November 2017). Research and prior experience suggest that it would be wise to at least partially open the EOC as soon as the local area is forecasted within the cone of uncertainty and to delay closing it until city departments completely resume normal operations.

Personal observation and employee feedback exposed several shortcomings of the City of Largo's EOC during Hurricane Irma. Employees suggested that there should have been a centralized food service unit in the logistics section which is congruent with FEMA's

recommendation for EOCs (FEMA, n.d.). This would have prevented the EOC and remote city locations from having to deal with food supplies separately. City personnel went to the store for food and water immediately before the event. It was suggested that the city should “stock up on emergency supplies seasonally, not just before the storm,” and that “having to make food/water runs right before a storm takes people away from other duties at a critical time” (City of Largo employee, personal communication, November 2017).

The design and physical layout of an EOC are also crucial to its success. EOC’s must be accessible to both staff and suppliers. Therefore, it is imperative they are established in areas that are protected from as many threats as possible. EOCs should be safe for staff, comply with the Americans with Disabilities Act (ADA), and comply with local building codes (FEMA, n.d.). Furthermore, the EOC should be able to accommodate the number of people required to manage large-scale incidents. Lastly, space should exist to accommodate private planning meetings, and its configurations must allow for efficient operations, communication, and access to needed technology.

In addition to accessibility, safety, and size, EOCs must be capable of supporting extended operations and surviving both natural and manmade disaster. Therefore, they should possess adequate climate control systems, redundant water supplies, emergency generators capable of providing an uninterrupted power supply, and backup communications systems (FEMA, n.d.). The City of Largo’s EOC building itself was often criticized for being too small for the number of staff required to work and reside there. The original plan called for off-duty personnel to report to the employee shelter. However, during Hurricane Irma, conditions were not conducive for travel. The second floor of the EOC is where all of the on-duty staff were operating. Therefore, off-duty personnel were confined to the first floor where the city

stockpiles spare office furniture. There were no assigned sleeping areas so personnel ending up sleeping wherever they could find room. One City of Largo employee stated, “The EOC building is either a proper EOC used to handle all functions needed to support an event, or it is a warehouse, it cannot be both” (personal communication, November 2017).

Also regarding the EOC’s physical layout, some employees contended that the tables were not big enough to provide adequate working space and that some positions should have had access to dual computer monitors. One of the employees stated that there was:

Not much value in having televisions hooked up as the Section Chiefs’ computer monitors. I do think those screens could be better used with live-feeds of our remote locations (ECC, County EOC, fire stations, shelters) to better monitor their status.

Alternatively, they could be set up to just show a view of the Web EOC activity log.

(personal communication, November 2017).

Other recommendations for the EOC’s layout included the addition of shower facilities, seating for off-duty personnel who are not working and winding down before rest, and the need for more technology including a functional scanner and technology for the planning room.

Additional isolated meeting space was one of the more noteworthy personal observations noted during Hurricane Irma. Without such space, it is very difficult to hold private meetings or to make confidential phone calls. Possibly the most important reason for adequate private meeting space was to allow those in unified command to conduct briefings at shift change. Members of oncoming and off going unified command need a calm, secluded space to share significant information during shift change.

The applied research also exposed problems with the present City of Largo EOC staffing plan and the roles and responsibilities that are needed. According to FEMA, there are typically

four ways to structure an EOC. They can be organized by major management activities, around the Incident Command System (ICS), by Emergency Support Functions (ESFs), or as a Multiagency Coordination System (MAC) Group (FEMA, n.d.). During Hurricane Irma, the City of Largo's EOC was set up using a modified ESF model. It included a unified command made up of the city manager/assistant city manager, fire chief/deputy fire chief, police chief/deputy police chief, and public works director/assistant public works director. Additionally, EOC staffing included section chiefs for planning, operations, finance, and logistics. There was also a safety officer and a liaison to Pinellas County who reported to the county EOC once it was activated.

While some employees commended the interaction that took place within the City of Largo's EOC during Hurricane Irma, others condemned the lack of a clear communication and the inexistence of a clear communications plan. One city employee wrote, "Communications staff in EOC were recreating phone lists the entire time – no actual communications plan or communication was happening" (personal communication, November 2017). There was an ESF position within the logistics section dedicated to communications. However, the specific staff who filled this role were unprepared to develop the complicated communications plan that was required to include all of the city's different communication methods.

Another observation was that lack of public works ESF staffing in the EOC. Often, the operations section chief had a difficult time contacting PW staff working in the field. Employee feedback indicated that "PW needs to have a seat in the EOC at operations" (City of Largo employee, personal communication, November 2017). During a hurricane, public works has a significant role before, during, and after the storm. It is imperative that staff be available at the EOC to participate in planning, decision-making, and operations. The EOC's primary role and,

the driving force behind its structure, is to coordinate and integrate multiple agencies to provide a unified response (Moeller, 2014). Having representatives offsite delays the dissemination of information and puts unified command at a disadvantage.

There was also a noticeable lack of information technology (IT) support within the EOC. The lack of IT technical support in the EOC was a problem (personal communication, November 2017). This is a needed position in the City of Largo's EOC due to the city's reliance on technology. Furthermore, GIS personnel were inundated after the storm with information coming in from the damage assessment teams. Relating to shortages in specific EOC positions Perry explains that, although there are several different ways to structure an EOC, care must be taken to determine what specific agency representation is required (1995).

The principles involving how EOCs are staffed and what training staff members receive vary from one organization to the next. Some of the feedback received from City of Largo employees suggested that department directors, assistant directors, and anyone serving in the EOC should be required to have ICS 300 and ICS 400. It was apparent during Hurricane Irma that many employees' strengths were not aligned with their assigned role in the EOC. Additionally, some of the EOC positions were appointed based on job title as opposed to individual ability. As one city employee stated, "Department directors should not be default players in the EOC. While some could be very effective, others appeared to struggle in a role that required quicker decision making and more advanced technological skills than they would normally encounter" (personal communication, November 2017).

Though training is conducted annually by the city's emergency management coordinator, many employees felt it had not prepared them for an actual event. Employee feedback included "More practical training is needed. Should be running at least one full-blown hurricane drill

each year before storm season starts. We need to run a serious drill at least once a year before hurricane season.” (City of Largo employee, personal communication, November 2017). FEMA lists several ways to educate personnel and help them to be successful while operating in an EOC including:

- Developing position descriptions (PDs) for every position
- Developing an overall training strategy
- Work with other agency key personnel to create orientations, classroom training, on-the-job training, and a mentoring program.
- Provide training opportunities on common tasks.
- Consolidate training needs for personnel from the multiple agencies represented in the EOC. (FEMA, n.d.).

Ensuring that EOC staff are qualified and trained to work in emergency situations is vital to an organization’s ability to mitigate a disaster.

The results of this research were collected from various sources including city policy, feedback from personnel who served in the City of Largo EOC during Hurricane Irma, and personal observations. The information aided in answering the research questions which assisted in finding industry best practices for EOC operations including activation, deactivation, and appropriate personnel assignments. The goal of this research was to accumulate information useful for developing practical standard procedures for the use of The City of Largo’s EOC. If applied, the findings of this study could have far-reaching impacts on how the City of Largo operates its EOC in the future as well as the EOC’s overall effectiveness.

Recommendations

Based on the research conducted, several suggestions can be made regarding the ongoing

analysis of the City of Largo's EOC policies and procedures as well as prudent next steps. In the short-term, the City of Largo should continue to adopt a philosophy of citywide emergency preparedness. Historically, as exemplified in the city's code of ordinances, the fire department has taken on the lion's share of emergency management. This is not only dangerous, but it is unrealistic. Though fire departments are typically well-trained in the National Incident Management System and tend to work well under pressure, most do not have the resources to expand their operations to cover all of the citywide emergency management functions required during an EOC activation.

The City of Largo's current policy regarding EOC operations is lacking. Clear and objective measures should be adopted as to when the EOC should be activated and to what level. Current city culture places a heavy emphasis on keeping city operations functioning as normal. Though it is desirable to have recreation centers open to the public and allow businesses to apply for permits the week leading up to a hurricane's landfall, perhaps the more judicious course of action would be to halt routine operations and transition into a mode of citywide planning and preparation as soon as a threat is recognized. Policy should also include who reports to the EOC during each level of activation and who is responsible for communicating both intra and inter-departmentally. The City of Largo's disaster management group should develop several subcommittees to work on developing this policy.

Having an EOC that is capable of supporting long-term operations is crucial to a city's ability to mitigate disaster. The City of Largo's current EOC is too small for the number of staff required to work and reside there and lacks the physical layout necessary to support efficient operations. The ground floor of the building is currently being used for storage leaving no room for off-duty personnel to congregate, eat, or sleep. Additionally, several technological needs

were identified during Hurricane Irma and in the employee feedback provided afterward. The current EOC configuration lacks shower facilities, adequate kitchen and dining areas, and private meeting space. The City of Largo's city administration, emergency management staff, and facilities personnel should work collectively to clean out the current EOC and rearrange it so that it can support long-term emergency operations.

The final recommendation involves the City of Largo's EOC staffing. Observations and feedback from Hurricane Irma indicate that there are several positions in the City of Largo's EOC that are either not needed, understaffed, or staffed with the wrong people. Moving forward, the city's emergency management staff should meet with unified command, city administration, and all of the section chiefs to complete an in-depth evaluation of each position within the EOC and whether it fits the needs of the city. Some positions may need to be added, while others can be discontinued or moved to other sections to make them more productive. Additionally, this group will need to have the courage and support to evaluate the people serving in the EOC and make changes to better align individual strengths with specific position requirements. Once these assignments are made, city administration must assist emergency management staff in mandating that personnel assigned to the EOC attend outside training. Pinellas County offers a tremendous amount of relevant free courses at their emergency services complex in the City of Largo. Additionally, section chiefs, elected officials, and city management would benefit significantly by attending FEMA's Emergency Management Institute (EMI).

The development of effective standard procedures for the use of its emergency operations center will not happen overnight. Clearing out the City of Largo's EOC and rearranging it to be more efficient will take time and money. Furthermore, there is no easy way to train all city staff to become, and to remain, well-versed in emergency operations. However, the City of Largo can

adopt a culture of preparedness when it comes to emergency management. If elected officials, city administration, and department directors are dedicated resiliency, the rest will likely follow. Readers wishing to conduct similar research should keep in mind that even the best laid plans are often found to be imperfect when exercised. For those who have not participated in an actual EOC activation, it is highly encouraged that you reach out to someone who has. For it is at the intersection of arduous research and actual EOC experience where policy, plans, and procedures can best be cultivated.

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Appendix A

City of Largo Code of Ordinances, Chapter 8 Civil Emergencies

Chapter 8 CIVIL EMERGENCIES

Article I. In General

Secs. 8-1--8-18. Reserved.

Article II. Emergency Management

Sec. 8-19. Intent.

Sec. 8-20. Definitions.

Sec. 8-21. Applicability of article provisions.

Sec. 8-22. Emergency management structure.

Sec. 8-23. Powers, duties, and responsibilities.

Sec. 8-24. State of local emergency--Declaration.

Sec. 8-25. Same--Termination.

ARTICLE I. IN GENERAL

Secs. 8-1--8-18. Reserved.

ARTICLE II. EMERGENCY MANAGEMENT

Sec. 8-19. Intent.

(a) It is the intent of this article to provide the necessary organization, powers, and authority to enable the timely and effective use of all available city resources to prepare for, respond to, and recover from emergencies or disasters, natural and manmade, likely to affect the security, safety, or health of the city and its residents, whether such events occur within or beyond the corporate limits of the city.

(b) Nothing herein shall be intended to relieve city departments of their normally assigned duties, responsibilities, and functions.

(c) Nothing herein shall be construed as a delegation of authority to abridge or diminish the legislative powers of the city commission.

(Code 1978, § 26-1; Ord. No. 94-24, § 1, 2-15-1994)

Sec. 8-20. Definitions.

The following words, terms and phrases, when used in this article shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Emergency means the actual or threatened existence of conditions which adversely affect the health, safety, or welfare of citizens, visitors, or property within the city which can be controlled or combated by city services, personnel, equipment, or facilities.

State of emergency means the existence of conditions which adversely affect the health, safety, or welfare of the citizens, visitors, or property within the county or the state and such conditions, by reason of their magnitude, are beyond the control of the services, personnel, equipment, and facilities of any single city or county and require the combined forces of an entire region to control or combat and is declared by the county and/or the state.

State of local emergency means the existence of conditions which adversely affect the health, safety, or welfare of citizens, visitors, or property within the city which may be beyond the control of the services, personnel, equipment, and facilities of the city and require the combined forces of other political subdivisions to control or combat.

(Code 1978, § 26-2; Ord. No. 94-24, § 2, 2-15-1994)

Sec. 8-21. Applicability of article provisions.

All officers, employees, contractors, vendors, boards, commissions, authorities, and other agencies of or within the city are subject to the provisions of this article.

(Code 1978, § 26-3; Ord. No. 94-24, § 3, 2-15-1994)

Sec. 8-22. Emergency management structure.

(a) The city manager is designated the director of emergency management, and shall implement, manage, and report on all actions authorized and taken under the provisions of this article.

(b) The city manager shall appoint the fire chief as the emergency manager. The duties of the emergency manager shall include the ongoing planning for and coordination of those actions necessary, for the creation and maintenance of an effective emergency response capability, to prepare for and manage emergency conditions.

(c) The fire chief shall designate a fire department staff officer as the emergency management coordinator.

(d) The fire chief shall establish an emergency management planning committee composed of designated department directors or their representatives. This committee will be chaired by the emergency management coordinator or another designated member of the planning committee.

(Code 1978, § 26-4; Ord. No. 94-24, § 4, 2-15-1994)

Sec. 8-23. Powers, duties, and responsibilities.

(a) The city manager, when acting as the director of emergency management, shall have the following powers, duties, and responsibilities:

(1) To recommend the declaration of a state of local emergency to the mayor and/or city commission, and to inform them of the reasons for and status of events requiring the declaration;

(2) To direct the creation, revision, and exercise of emergency response plans conforming to state and county emergency plans for the mitigation of, preparation for, response to, and recovery from emergencies or disasters;

(3) To direct the efforts of the emergency manager (fire chief) in the preparation for, response to, and recovery from emergency conditions;

(4) To recommend a budget to the city commission for the creation and maintenance of an emergency response capability as provided herein;

(5) To promulgate emergency regulations necessary for the protection of life and property, establishment of public order, and control of adverse conditions affecting public welfare resulting from an emergency or disaster;

(6) To establish and designate a public information office to develop and coordinate a city emergency awareness program.

(b) The fire chief, when acting as the emergency manager, shall have the following responsibilities and duties:

(1) To direct the development and maintenance of the city's emergency plans, including annual revisions;

(2) To designate a fire department staff officer as the emergency management coordinator;

(3) To direct the development of a city emergency operations center (EOC) to include equipment, staffing, and operational procedures necessary for the management and control of emergency conditions;

(4) To develop and submit an annual budget to the director of emergency management for the operation, maintenance, and training of an emergency response system and infrastructure.

(c) The emergency management coordinator shall have the following responsibilities and duties:

(1) To plan, develop, and maintain the city's emergency plans, including annual updates;

(2) To chair the emergency management planning committee;

- (3) To plan for and develop an emergency operations center (EOC) to include equipment, staffing, and operational procedures necessary for the management and control of emergency conditions;
- (4) To provide and coordinate a city training program in emergency response and management.
- (d) The emergency management planning committee shall have the following responsibilities and duties:
 - (1) To function as part of the EOC during an emergency or state of local emergency;
 - (2) To assist in the creation, revision, and exercise of emergency operations plans;
 - (3) To advise the emergency management coordinator of resource requirements necessary for the creation, maintenance, and exercise of a capable, efficient emergency response capability.

(Code 1978, § 26-5; Ord. No. 94-24, § 5, 2-15-1994)

Sec. 8-24. State of local emergency--Declaration.

- (a) The mayor shall have the authority to declare a state of local emergency by proclamation after consulting with the director of emergency management. Upon the absence or unavailability of the mayor, the vice-mayor, the members of the city commission in order of their seniority on the commission, and after every effort has been made to contact same, the city manager, the assistant city manager, or the emergency manager, in the order named, may issue such a declaration.
- (b) Any declaration of a state of local emergency and all emergency regulations activated under the provisions of this article shall be confirmed by the city commission by resolution within two working days of such declaration, or at the next regularly scheduled meeting of the city commission, unless the nature of the local emergency renders a meeting of the city commission impractical. Confirmation of the declaration of local emergency shall disclose the reasons for, anticipated impacts of, actions proposed and taken to manage the local emergency, and other pertinent data relating to the emergency requiring the declaration.
- (c) Emergency ordinances, policies, and proclamation and resolution put into effect.
 - (1) Upon the declaration of a state of local emergency, pursuant to this article, the enforcement of the provisions of the following emergency ordinances shall, as necessary, be effective during the period of such emergency to protect the health, safety, and welfare of the community:

<i>Ordinance No.</i>	<i>Subject</i>
94-25	Curfew; declare certain areas off-limits
94-26	Regulation of the use of water
94-27	Prohibition of price gouging and over-charging
94-28	Restrictions on the sale of alcohol, firearms, explosives, and combustibles

In addition, pursuant to this article, the enforcement of the provisions of the emergency ordinances referenced in this subsection shall be rescinded upon a termination of the state of local emergency.

- (2) The following policies shall, as necessary, also be effective during the period of a state of local emergency:
 - a. Utilize all available resources of the city as reasonably necessary to cope with the disaster or emergency, including emergency expenditures not to exceed \$50,000.00, and report made to the city commission subsequent to the termination of the state of local emergency;
 - b. Make provisions for availability and use of temporary emergency housing and emergency warehousing of materials;
 - c. Confiscate merchandise, equipment, vehicles, or property needed to alleviate the emergency. Reimbursement shall be within 60 days and at customary value.
- (3) In addition to the emergency ordinances and policies in subsections (c)(1) and (2) of this section, this

article shall also include the proclamation to declare the state of local emergency; the resolution to confirm the state of local emergency; the proclamation terminating the state of local emergency which shall be confirmed by resolution within two working days of such declaration or at the next regularly scheduled meeting of the city commission and rescinding the enforcement of the provisions of the emergency ordinances put into effect as referenced in subsection (c)(1) of this section.

(d) Pursuant to F.S. § 252.38(6)(e), a declared state of local emergency will last for a period of up to seven days, which may be extended by proclamation in increments of up to 72 hours. In addition, F.S. § 252.38(6)(e) provides authority for a political subdivision, such as the city, to declare a state of local emergency, and to waive the procedures and formalities otherwise required of political subdivisions by law pertaining to:

- (1) Performing of public work and taking whatever action is necessary to ensure the health, safety, and welfare of the community;
- (2) Entering into contracts;
- (3) Incurring obligations;
- (4) Employing permanent and temporary workers;
- (5) Utilizing volunteer workers;
- (6) Renting equipment;
- (7) Acquiring and distributing, with or without compensation, supplies, materials, and facilities;
- (8) Appropriating and expending of public funds.

(e) Upon the declaration of a state of local emergency the director of emergency management shall notify the media within 24 hours.

(f) The proclamation declaring a state of local emergency shall specify which emergency ordinances are to be enacted by such declaration.

(g) Notice to the public shall be given via the city's government access television channel.

(Code 1978, § 26-6; Ord. No. 94-24, § 6, 2-15-1994; Ord. No. 99-55, § 1, 6-1-1999)

Sec. 8-25. Same--Termination.

A state of local emergency shall be terminated by proclamation stating that the conditions leading to or causing the emergency conditions no longer exist, and that the city's departments are able to manage the situation without extraordinary assistance and powers. The termination shall be confirmed by the city commission by resolution within two working days of such termination, or at the next regularly scheduled meeting of the city commission. Notice of such termination shall be made to the public by the director of emergency management by the same means as the notice of the declaration of the state of local emergency.

(Code 1978, § 26-7; Ord. No. 94-24, § 7, 2-15-1994; Ord. No. 99-55, § 2, 6-1-1999)

Appendix B

City of Largo Administrative Policies and Procedure EM-17-01, Facility Closures

CITY OF LARGO ADMINISTRATIVE POLICIES AND PROCEDURES MANUAL	
Policy: Facility Closures	Policy Number: EM-17-01
Originating Department/Division: Administration	
Effective Date: January 3, 2017	Approved By:
Supersedes Policy: N/A	Dated: N/A

POLICY

The City of Largo shall close its facilities, and/or suspend activities, during emergency situations to protect the life, health and safety of citizens and employees.

PROCEDURE

City facilities shall be closed, and/or activities suspended, based on emergency situations. Emergency situations may include weather, natural disaster, man-made threats, or site/facility specific issues. For weather/natural disaster related threats, closures shall be authorized by the City Manager or designee, using the attached matrix as guidance.

Closures related to site/facility specific issues shall be determined by the representative Department Director or City official (Building Official, Fire Marshall, Facilities Manager, or City Engineer). Each of these individuals may either suspend activities or close the affected facility. In these instances, the City Manager or Assistant City Manager shall be notified at the time of any action.

Closure/Response Matrix

Notice	Condition	Largo Operations	Closure	Shutter Buildings	Open EOC	Open CIC	Provide Temporary Child Care	Ready OP Commission
Severe Thunderstorm	Watch	1	No	No	No	No	No	No
Tornado	Watch	2	No	No	No	No	No	No
Tropical Storm	Watch	2	No	No	No	Partial	No	No
Hurricane	Watch	2	No	No	No	Partial	No	No
NoTornado	Warning	3	Maybe	No*	No	Maybe	Maybe	Yes
YesTropical Storm	Warning	3	Maybe	Yes	Monitor/ Partial	Yes	Maybe	Yes
Hurricane	Warning	4	Yes	Yes	Full	Yes	Maybe	Yes
State/County/Local (Depend on Severity)	Declaration of Emergency	4	Yes	Yes	Yes	Yes	Maybe	Yes
*Shuttering shall only proceed if there is enough time from the declaration of the warning to the event impact.								
Key								
1	Business as usual							
2	Communicate with staff to secure buildings, possibly pull non-essential vehicles/personnel off of roads.							
3	Secure buildings, pull non-essential vehicles/personnel off roads. If Warning duration is for more than one hour (i.e., associated with a tropical system), CM consideration on canceling activities / closure of City facilities / activate child care provision.							
4	Secure buildings, pull non-essential vehicles/personnel off roads. CM determines start time for cancellation of all activities and closure of City facilities.							
Notes								
	<ul style="list-style-type: none"> Under partial closures, City may require primary personnel to respond during the event. In those instances, RPA and other support departments may be required to provide child care in the event of PCSB closures. 							
	<ul style="list-style-type: none"> Under Level 4 closures, City will require primary personnel to respond during the event. In those instances, child care will NOT be provided until post event activities. 							

	<ul style="list-style-type: none">• During either partial or full closures, staff may be required to participate in Emergency Management functions in addition to, in combination with, or in place of, their regular work assignments.
	<ul style="list-style-type: none">• When Ready Alert OP used for incident briefings to Directors and Administration, it shall also be used for the City Commission.
	<ul style="list-style-type: none">• Temporary Child Care – When Pinellas County Schools are closed, but the City is still open. 7 am – 6 pm.

Appendix C

City of Largo Employee EOC Feedback Request, Combined Responses

Needed Resources and Equipment

- Each section needs their own Web EOC entry person who is proficient. There shouldn't just be one in the Finance Section.
- Tables in the EOC are too small to have a keyboard, drink, and a piece of paper/pen.
- Need collaborative technology for incident reporting. Logging incidents and sending info was done by copying and pasting from a spreadsheet.
- Need a functional printer/scanner.
- The planning/meeting room needs technology.
- Need one person in the EOC to handle support of EOC staff (cook, clean, make coffee).
- Poorly prepared EOC building. The EOC building is either a proper EOC used to handle all functions needed to support an event, or it is a warehouse, it cannot be both.
- The first floor of the EOC needs to be cleared out and made habitable for employees to use in an emergency.
- Not enough seating for off-duty personnel who are not working and who are winding down before rest.
- Need shower facilities in the EOC.
- Need a dedicated budget for the EOC, so we are not in a scramble to set up.
- Not much value in having televisions hooked up as the Section Chiefs' computer monitors. I do think those screens could be better used with live-feeds of our remote locations (ECC, County EOC, fire stations, shelters) to better monitor their status. Alternatively, they could be set up to just show a view of the Web EOC activity log.

- Setup electronic file folder organization and documents ahead of time.
- Better planning for storm season: Stock up on emergency supplies seasonally, not just before the storm. Having to make food/water runs right before a storm takes people away from other duties at a critical time.

Areas and Processes to Improve

- Over-reliance on cell phones (observed within Unified Command).
- Need to revamp communications and radio policy.
- Communications staff in EOC were recreating phone lists the entire time – no actual communications plan or communication was happening.
- There were no public works ESF staffing in the EOC and no line of communication to Public Works (PW) staff working in the field. PW needs to have a seat in the EOC at operations.
- There was no IT Tech support in the EOC, which was a huge problem.
- Should designate one person in the Operations section to be a scribe/answer phones.
- The relationship between Operations and Logistics was unclear.
- PW does not need a debris monitoring dedicated staff person in the ECC before the storm.
- While all employees were fed, there could've been better coordination of food requirements and locations.
- Food service needs a crew leader assigned for every meal. Need a specific person tasked with personnel counts and needs for food.
- Need to centralize in Logistics a food service unit - coordinate activities of other

locations to have efficient preparation, consolidated plan across city enterprise.

- It should be clearly outlined who is responsible for food and water in remote locations/shelters.
- Need the site coordinator to give direction to all staff assigned to shelters.
- Clarify pay and benefits information ahead of time for emergency operations staff.
- Unclear roles for many staff – too many staff in EOC.
- Many employees did not have the proper skill set for the assigned role.
- Many EOC roles appear to have been assigned based on job title and less on need or ability in emergency operations.
- Department directors should not be default players in the EOC. While some could be very effective, others appeared to struggle in a role that required quicker decision making and more advanced technological skills than they would normally encounter.
- Roles in the EOC are very different than in normal operations and require a knowledge and understanding of the entire city structure that many executive management and even operational management staff lack.
- Even on a good day, the City is still very silted, and those cracks showed during the storm as people struggled to know whom to call for what issues.
- Need more bench strength for longer incidents, availability was only one person deep for some positions. Succession planning for ICS positions.
- Planning section needs the ability to have/scale up to Situation Unit and Resource Unit.
- Recommend using the ICS structure, not modified ESF.
- May not necessarily need to have entire staff available during the event. Figure out how to transport them in after the storm, make everybody happier and more comfortable

before and during by not crowding in with nothing to do.

- Need to evaluate how we scale up/down staff in the EOC.
- Need to reevaluate the standard EOC roles and if they are necessary for Largo.
- Finance section not necessary in the EOC – can be done remotely with air cards. Can bring in staff after the storm – not before or during. Use space to house PW and environmental services (ES) staff.
- Evaluate information flows within, into, and out of EOC. Evaluate how information comes in from field operations, PW and ES to Operations, Logistics, and Planning.
- The once a year tabletop exercise is insufficient to address all required topics.
- Previous training exercises were not meaningful/not serious.
- There were Executive Leadership Team (ELT) meetings leading up to event. Instead, the EOC should have been opened sooner and Unified Command should have been used during the planning phase.
- Another suggestion was to continue to staff storm units for a couple of days after the event. There was a significant call load on the days following that were of the low priority nature.
- ICS Forms were filled out poorly. City staff need more training on how to fill them out.
- Forms were difficult to understand and related more to firefighters who work true shift work. Need a meaningful electronic way of filling out forms.
- Staff needs to complete ICS training. This would help clarify the chain of command since the city's organizational chart changes dramatically during an emergency event.
- More practical training is needed. Should be running at least one full-blown hurricane drill each year before storm season starts.

- Need to have staff have ICS 300/400 training and position specialty training. Mandatory for those with EOC role and Department Directors/Assistant Directors
- Everyone needs to be trained on Resource Request form, and those answering phones need to capture information required on the form to fill the request.
- Need a better process for special needs evacuation calls. Pre-set team to make calls with appropriate information to answer questions from evacuees.
- Post-storm - we need more GIS staffing. GIS efforts were redundant with the County's. Work with Pinellas County to find out what we, as a municipality, need to map and what the county is mapping. Then perhaps we can publish our map layer to them instead of duplicating efforts, or vice versa.
- Use one product (device) not multiple brands, i.e., Windows, Android or iPad, or be efficient in the use of one device and be assigned that particular device.

Areas and Processes that Worked Well

- The second floor of the EOC set up went well and it was easy to communicate with all sections.
- Communication was excellent, not too much, not too little.
- The Operations section stated all my tasks clearly at the beginning of each operational period as well as provided updates when necessary during each period.
- The entire EOC updates were helpful as well, to know what was going on around us in the fire room so we could better anticipate the needs of all involved.
- Emails were sent about storm updates, county updates, plus shelter, and community updates.

- The communication flow made it much simpler to be prepared for when the fire room got bombarded with work, as we mostly sat around waiting. But when it did hit (and boy did it), we were prepared and weathered the storm appropriately.
- Ready Op, the city's communications software, worked well when used appropriately.
- Having a set of primary damage assessment teams that were sheltered and ready after the storm, and then a secondary set of damage assessment teams that could be activated when we needed to give the primary teams a rest day was very effective.
- Having planning staff help review the grids for missed areas was very helpful, as they were able to use their land-use maps and determine which areas were non-residential and which were residential.
- Areas were mapped for each team ahead of time, but we had the flexibility to send more than one team to harder hit areas.
- The Collector damage assessment software was straightforward to use.
- It was effective to have the damage assessment vehicles in a protected facility during the storm.
- Having a separate room at the EOC for the damage assessment team worked well.