

Designing an Emergency Operations Center for Central Pierce Fire and Rescue

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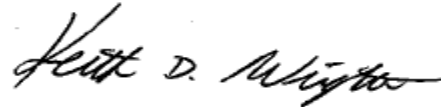
Central Pierce Fire and Rescue

Tacoma, Washington

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Signed:



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### **Abstract**

Central Pierce Fire and Rescue (CPFR) is a large fire department, based on geographic size and employees, located in Pierce County Washington. There are several significant hazards that could happen within the boundaries of the department. Some of these hazards include: train accidents, highway vehicle accidents, terrorism events, weather related events, and flooding. CPFR has developed an Emergency Operations Center (EOC) about 20 years ago to prepare for these events. Over these past 20 years the EOC has not been updated in regards to technology or the working space it is located in. The problem is that CPFR does not have a fully designed emergency operations center that can also function as a training facility. The purpose of this Applied Research Paper is to identify the necessary requirements for an EOC that can be utilized for large scale disasters/emergencies and be a usable space for other department needs. Through action research the author answered the following questions: 1. What are the Federal, State, and local requirements for an EOC? 2. What equipment do other regional EOC's use inside their buildings? 3. What building design features are used for EOC's? 4. How have other fire departments used their EOC for other department operations? The author conducted a literature review and did subject matter expert interviews (SME) to develop this ARP. The results indicated that most EOC's have similar equipment and set-ups for operational use. The processes to design locate and equip the EOC's in the SME interviews uncovered that most organizations followed a similar plan and research process. Recommendations for this ARP emphasize the need to form a working committee at CPFR to identify the hazards and potential frequency of occurrence which will help to identify the EOC location, size and equipment needed. In addition, once the EOC is developed, it must be tested for efficiency and

proper function. Located in the Appendix section is a recommended drawing of the EOC space and training room that will be the primary function of the room when the EOC is not activated.

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## Introduction

Every community has the potential for some type of significant emergency to happen that will challenge the emergency responders beyond the day to day incidents they typically respond to. This could include a flood, tornado, snow storm, hazardous materials spill, or terrorist attack, to name a few potential issues. One of the key functions of a fire department is to be prepared and respond to the emergency needs of their community. Fire departments generally have the capabilities to respond to the daily needs of their citizens, it is the large scale, significant events that challenge the fire service.

One of the best ways to be prepared and handle a significant event is to have an established Emergency Operations Center (EOC). An EOC has five primary functions that include:

- Direction and control
- Information collection, evaluation, and display
- Coordination
- Priority establishment
- Resource management (Fagel, 2008, p. 239)

Central Pierce Fire and Rescue (CPFR) was formed in 1996 through a merger of several fire districts. In 2009 the City of Puyallup, WA, merged into CPFR adding to the service area. The service area of CPFR covers approximately 85 sq. miles and a population of approximately 200,000 citizens (*CPFR 2013 Annual Report*, 2014, p. 4). There are several potential large scale incidents that could happen within CPFR. Central Pierce currently has a training room that can function as an EOC, but it was developed in the mid 90's and has never been updated nor built

to meet the large scale emergency needs of the district. Fagel notes in his book, *Emergency Operations, EOC Design*, that:

Every community, large or small, urban or rural, will be able to improve its ability to centralize its flow of information during an emergency by establishing an EOC. The key to a community's disaster planning, response, and recovery lies in the EOC. In fact, the EOC is crucial to saving lives and reducing property damage. (Fagel, 2008, p. 244).

The problem for this Applied Research Paper is that CPFR does not have a fully designed Emergency Operations Center that can also function as a training facility. The current training room does function as an EOC but it has not been updated to include improved technology and needed space. The purpose of this ARP is to identify the necessary requirements for an EOC that can be utilized for large scale disasters/emergencies and be a usable space for other department needs. The research will be done using the action research method to answer the following questions: (1) What are the Federal, State, and local requirements for an EOC? (2) What equipment do other regional EOC's use inside their buildings? (3) What building design features are used for an EOC? (4) How have other fire departments used their EOC for other department operations?

### **Background and Significance**

Central Pierce Fire and Rescue is a career fire department with a uniformed staff of 246 personnel and 25 non-uniformed personnel. The department responded on 27,201 emergency responses in 2013. The majority of those responses were for emergency medical service (EMS) with a total of 21,516 EMS calls and 612 fire responses. CPFR also has a Technical Rescue Team

and a hazardous Materials Response Team, prepared to handle high risk and low frequency incidents (*CPFR 2013 Annual Report, 2014, p. 4, 8-9*).

The fire district protects areas that are considered rural to suburban to include the City of Puyallup. There is a wide spectrum of potential significant events that could happen within the boundaries of CPFR. Potential threats range from an earthquake to the eruption of Mt. Rainier, on a large scale, that would affect areas well beyond the borders of CPFR. Within CPFR there is a major highway that has potential for a hazardous materials transportation accident. In addition to the highway, there is also a main railroad line that travels through the core of the City of Puyallup. The rail line is owned by Burlington Northern Santa Fe Railway and is a major North/South line that travels the entire West coast ("BNSF Facts," 2013). The District also has one University, Pacific Lutheran University, which has the potential for domestic terrorism. The Washington State Fair takes place annually in the City of Puyallup. It is an event that runs for 17 days and has approximately 1 million people attend the fair (The Fair website, n.d., p. 1). This event has great potential for terrorist activity.

Significant events that relate to weather include the potential flooding of the Puyallup River which runs through downtown Puyallup. The Puyallup River begins on Mt. Rainier and travels throughout Pierce County with a significant potential for flooding and a lahar. Each winter the chance of a snow or wind storm presents itself which has an impact to the entire fire district.

One of the Department's Battalion Chief's, Wayne Garden, was a key person in establishing the original EOC which was developed in the mid 1990's in one of the station training rooms. It is designed so that the room will primarily be utilized for training and



meetings but when a significant event takes place it will be converted into the department's EOC (W. Garden, personal communication, September 10, 2014). Central Pierce tracks the use of their EOC through the finance department as there is generally some type of reimbursement for the incident that the EOC was activated for. In a personal conversation with Stephany Carter-Hoskinson, the department's senior accountant, the following incidents are activations of the EOC: December of 2006 for severe winter storms, January of 2009 for flooding of the Puyallup River, and January of 2012 for an ice/snow storm (S. Carter-Hoskinson, personal communication, September 19, 2014).

There are several reasons why CPFR should look at a new design for the EOC. One reason is that it was developed almost 20 years ago. In those 20 years the District has added more coverage areas and the population has grown. A reason why this has not been addressed in the past is due to cost, updating and remodeling the EOC will take time and money. With the recession that began in 2009, the District has minimized its use of money to maintain staffing and service to the citizens.

In July of 2013, CPFR's Board of Commissioners approved Resolution 13-06 to allow the District to go to the voters for a facilities bond. The Bond was set at an amount of \$39,800,000. In the resolution it states that the District will rebuild three stations and do significant remodels to two other stations. All remaining buildings in the District will get improvements (*Facilities resolution*, 2013, p. 1). The ballot went before the voters of CPFR in November of 2013 and passed with a yes vote count of 66.35% (Pierce County, WA, n.d.). With the passage of the District's facilities bond there is now ample money available to design and build an updated EOC for CPFR.

Having a well-designed and effectively operational EOC will benefit both the citizens and CPFR when a large scale incident occurs. The National Fire Academy (NFA) course, Executive Analysis of Fire Service Operations in Emergency Management provides a significant amount of learning in regards to senior officials dealing with large scale emergencies. The course ties directly to this ARP through the importance of an EOC to both the community and fire department. The class discusses the use of an EOC and how it can provide senior officials with real time data to set strategic directions, establish priorities, and allocate resources (*EAFSOEM Student Manual, 2012, p. 5-3*).

The United States Fire Administration (USFA) has written their Strategic Direction for 2010 – 2014. Within the strategic direction are 5 goals. In reviewing these goals, the following ones apply to this ARP. Goal 1: Reduce risk at the local level through prevention and mitigation. Goal 2: Improve local planning and preparedness. Goal 3: Improve the fire and emergency services' capability for response to and recovery from all hazards (*USFA Strategic Plan, 2010, p. 20*). With the completion of this ARP and the proper implementation of the recommendations, these goals will be met and the citizens of Central Pierce Fire and Rescue will be provided with a well prepared and organized fire department, ready to mitigate large scale emergencies.

### **Literature Review**

The literature review for this ARP was mostly conducted at the National Fire Academies Learning Resource Center (LRC). The author was able to collect several magazine articles and books that relate to the topic of this ARP. In addition to information from the LRC, more information was found through internet searches. The literature review focused on

requirements for an EOC, building and equipment features and other uses for the EOC space when it is not activated.

The author first researched the federal and state requirements for an EOC. In this research there are limited requirements at the federal and state level, most literature was centered around recommendations. The National Fire Protection Administration (NFPA) Standard 1561: Emergency Services Incident Management Systems and Command Safety had only a few statements that indicated any EOC standards. NFPA 1561 simply states: “The physical size, staffing, and equipping of an EOC will depend on the size of the jurisdiction, resources available, and anticipated incident management workload.” (*NFPA 1561*, 2014, p. 35).

The Federal Emergency Management Agency (FEMA) has developed an EOC Assessment Checklist which provides recommendations for an EOC, but not requirements. The checklist document begins with a series of questions about the physical features of an EOC, including considerations for an operations area, conference rooms, communications center, secure communications room, and multi-use space (*FEMA EOC Checklist*, n.d., p. 1).

The FEMA document also lists out several considerations for the facility. Below are a few of those items to consider for the EOC facility:

- Is the EOC in a centrally located site allowing rapid response to all parts of the jurisdiction?
- Is the EOC located in a facility that has structural integrity?
- Is the EOC located in an area where it can be quickly secured?
- Is the EOC located in a known high-risk area, e.g., floods, earthquakes, hazardous materials sites, etc.?

- Is the EOC located near an adequate road network for ease of access? (*FEMA EOC Checklist*, n.d., p. 2).

The FEMA checklist also is broken down into categories that address survivability, security, sustainability, interoperability, and flexibility. The survivability section looks at the effects of potential risks and the continuation of operations at the EOC. Security addresses the protection of operations and the unauthorized disclosure of sensitive information. In regards to sustainability, the checklist looks at support for operations that have extended durations, greater than 24 hours. Interoperability looks at the ways that the EOC can share/exchange routine and time sensitive information with local jurisdictions. And lastly the part on flexibility looks at the scale of the operations and adapting the operations to whatever the event is, e.g. sufficient space, equipment, furniture and supplies (*FEMA EOC Checklist*, n.d., p. 5-9).

Another document at the federal level that provides recommendations was created by the Department of Defense. It is titled: *Emergency Operations Center Planning and Design*. The purpose and scope of this document is not intended to be requirements for an EOC but assist staff, architects and other personnel in the planning and designing of an EOC (*DOD EOC Planning and Design*, 2008, p. 1).

The DOD document lines out some general requirements/recommendations for an EOC. They are listed below:

- Constructed and located to provide balanced protection of assets against emergency incidents that can impact the facility
- Sufficient size to accommodate the required staff members that may be present for a given situation as determined by the commander

- Centrally located and away from the activity perimeter so that movement to and from the center is screened from public view
- Constructed so that assigned personnel can operate without being observed
- Protection of self-containment of power supply, water supply, sanitary facilities, heating, ventilation, air-conditioning, food services
- Capable of immediate activation with all equipment, furnishings and supplies immediately at hand
- Complete capability on all communications mediums including telephone, radio and data communications
- Secure with controlled access (*DOD EOC Planning and Design, 2008, p. 10*).

In regards to planning and risk analysis for an EOC the DOD document also recommends that the agency should define the services the EOC will provide based on the mission of the department. It also recommends conducting a risk analysis of the types of threats the EOC may face. The analysis should be a full spectrum of all possible threats/vulnerabilities for the facility (*DOD EOC Planning and Design, 2008, p. 10, 11*).

Another aspect to consider in the design of the EOC is the types of spaces needed. The DOD document recommends several types of rooms/spaces needed for an EOC. An EOC can vary in size from a single conference room to a stand-alone building. Some of the recommended spaces to consider are listed here:

- Reception desk
- Operations suite
- Operations room

- Command rooms
- Conference rooms
- Briefing rooms
- Data and telecommunications equipment room
- Senior management staff room
- Information and planning room
- Communications center
- GIS and mapping area (*DOD EOC Planning and Design*, 2008, p. 20).

The author looked for state and local requirements for an EOC and was unable to find any requirements, only recommendations. The State of Washington built its EOC in 1997 to be ready for disasters and emergencies throughout the state. It is a two story building, 28,000 square feet and accommodates 100 staff personnel. It can accommodate up to 310 personnel during a catastrophic emergency. The building is designed to withstand a major earthquake with its own emergency power and auxiliary communications systems (Washington military department emergency management division, n.d., p. 1 -2).

The International Journal of Emergency Management wrote an article on the design of an EOC. A few upper level recommendations for an EOC were defined that would give a designer a few concepts to consider when designing/building an EOC. The article listed out the role of an EOC as noted below:

- The District EOC will play a key role in District disaster planning, response and recovery.

- It should pull together people and resources to handle emergencies that are outside the ability of a single department to handle
- The EOC will provide a means of centralizing and managing communications and information within the EOC, between the EOC and incident commander and the EOC and the public
- The EOC should have back up power and communications equipment to ensure continued operations of the EOC even in the worst conditions (Gupta, 2010, p.225).

The design of an EOC building should first focus on survivability. An EOC must remain operational during an emergency; therefore the location and how it is built is very important. The EOC should be located in an area away from highways, railroads and other potential hazards in the community, when evaluating potential hazards, consider natural and man-made hazards. All hazards should be evaluated and the building located and constructed to handle the disasters/emergencies that could happen in the community (Holdeman, 2009, p. 137).

Fagel, in his EOC Design book, listed out a way to help in determining the design and location of an EOC. He recommended putting together a team/committee to address the following items: hazard/vulnerability analysis, define the functions performed in the EOC, number of personnel required to operate the EOC, space requirements, funding available, assess and evaluate the functional layout of the EOC, develop a contingency plan for interim operations (Fagel, 2008, p. 245).

Once the location of an EOC is determined, the focus then moves to space(s) within the building. In general, an EOC should have a space for operations, planning, logistics,

finance/administration, and command/management. These groups should be able to work together when needed but also have designated space for their specific functions (Larson, 2003, p. 38).

Flexibility within the EOC space is also another consideration in the design phase. The building/spaces should have the flexibility to scale up or down for operations depending on the emergency that has activated the EOC. Related to flexibility of space is also having room for expansion of technology and communications. Consider a building with raised floors for easy access to wiring and flexibility to expand when needed (Holdeman, 2009, p. 138).

The physical design of the building is an important aspect, included with that is the comfort and functionality of the EOC. The following factors should be considered in the design phase as key components:

- Ergonomics: Console design, visual display design, seating comfort, technology integration, adaptability to a diversity of user body types.
- Environmental Comfort: variable glare-free lighting control, acoustical control, thermal comfort and control
- Space Allocation: operator positions, supporting services, breakout areas, policy room, strategic response planning, quiet rooms, resource management, extended stay accommodation, self-sufficiency
- Circulation and Access Control: hierarchical circulation system, electronics used to augment physical security design, layout supports workflow
- Relationship to Support Spaces: Ease of accessibility, ability to be serviced while in operation



- Sustainable Utility Systems: Redundant services, diverse routing, resupply capability, flexible cable management system

In looking at the ergonomics and workplace environment of the EOC will help to provide operational effectiveness and the quality of work conducted (Fagel, 2011, p. 289).

Another key aspect to the design of an EOC is the necessary equipment for the center. One of the main pieces in regards to equipment is about communication and database equipment. All EOC's should have a radio system and the proper technology for controlling data. Both of these systems should have backup systems and be very reliable (Gupta, 2010, p. 225).

Many of the documents read for the literature review put an emphasis on communications, having a reliable system and redundancy. An emphasis should be on having hard line phones, cellular phones, satellite phones and radio systems. A redundant radio system can include an amateur radio group. These groups have been around for decades and have helped with many disasters. Every EOC should have access to an amateur radio group and equipment during times when other methods of communications fail (Holdeman, 2009, p. 137).

Gupta wrote in the document on EOC designs a list of specific equipment needed for an EOC. That list included the following equipment: desktop computers, multi-function printers, televisions, cameras, emergency generators, landline telephone and cellphones, broadband connectivity, proper lighting, display and white boards (Gupta, 2010, p. 227).

Fagel notes several recommendations for equipment in his book. One item includes adequate communications systems for effective communications with personnel at the incident. The communications system should be fully functional and compatible with other

systems also. The EOC should have a good HVAC system to make the center comfortable at all times (Fagel, 2008, p. 247-248).

Sustainability of an EOC is also very important. All EOC's should have several back up items in place and ready for use. The following is a basic list of equipment needed to support the EOC:

- Spare parts inventory for back up lighting, communications, ventilation, and other necessary maintenance
- Auxiliary lighting such as flashlights, batteries and bulbs
- Office materials including adequate supply of forms, pencils, paper clips, tape, note pads, etc.
- Keep a manual typewriter available in case of power failure (Fagel, 2008, p. 249).

Being in an activated EOC and knowing what is going on in regards to the emergency in the community is very important. Another part to consider in regards to equipment is a Computer Aided Dispatch (CAD) terminal. This would allow the EOC staff to look up calls and put in calls for service directly from the EOC (Larson, 2002, p. 36).

Dallas-Fort Worth Airport (DFW), the third busiest airport in the country, has developed its own EOC. Some of the equipment within this EOC includes 32 desktop computers, printers and copiers, paper shredders, fax machines, a ham radio, standard office supplies, a GIS plotter, projectors and screens, and televisions (Harris, 2007, p. 39). The DFW EOC article also talked about redundancy and making sure backup systems are in place. An EOC should be stocked with office supplies and be ready to convert from technology to more manual processes if necessary (Harris, 2007, p. 39).

Another aspect in regards to equipment that was mentioned in the article about the DFW EOC was the concept of an EOC in a box. This is simply a container that is portable and easily used in any space available to establish an EOC. It is also a good list of basic equipment for an EOC. In general the box includes: batteries, cameras, envelopes, calendars, calculators and clocks, dry erase boards, pens (Harris, 2007, p. 41). A complete inventory list of an EOC in a box can be found in Appendix A.

Having an EOC as a dedicated space is not always practical for an agency in regards to use of the space and cost to develop the site and only use it occasionally as an EOC. In most jurisdictions the EOC space serves multiple functions. The main secondary use for the space is to use it for training classes and/or community meetings (Neal, 2005, p. 31).

Another aspect for consideration in proper use of EOC space is to look at storage rooms located next to the main EOC room. Having these rooms available that can be converted to future office space as the need for more room grows, demonstrates a good additional use of a building. The main EOC room is typically large, like a class room. Having this room configured with flexible/moveable walls also allows an agency options on how to use the space (Holdeman, 2009, p. 138).

How often an EOC will be activated is difficult to predict. Larger agencies may use an EOC several times during a year for emergencies as well as activated for large community events. A community must look at an analysis of its potential disasters/emergencies and how often their EOC would be activated. This will assist them in determining the options for other uses of the building and its rooms (Larson, 2002, p. 39).

### Procedures

The purpose of this ARP is to identify the necessary requirements for the design of an EOC for Central Pierce Fire and Rescue. The author chose to use the action research method to complete this ARP. The first focus was on the research questions. Each of these was looked at by reviewing other author's literature on the specific topics. The literature research was done through reading books, trade journals, and on-line articles. To answer each research question the author used the information from the literature review as well as several interviews with personnel who manage/operate an EOC and/or fire departments that have their own EOC. The literature review provided the author with a good understanding of others use and design of an EOC. This information helped the author to better develop specific questions for interviews with subject matter experts (SME) in regards to the research questions.

A limitation for this ARP relates to the literature review. Many of the articles and books are dated back to the post 9/11 attacks. It would appear that after this significant event, many people recognized the need to have and or improve their EOC's, thus many articles and books were written. That did provide a good amount of information to review, some of which now is dated in its content. A second limitation is the small number of fire department EOC's within the author's area. It was determined in the procedures that several neighboring departments don't have an EOC; therefore the opportunity to interview several agencies was limited. This is a limitation; however the interview with the SME's with EOC's did provide good information for this ARP.

The next step in the Procedures, after the literature review, was to conduct SME interviews. The author interviewed personnel at four local EOC's to gather information to assist

in answering the research questions. The interviews were conducted at the following agencies: West Pierce Fire and Rescue (WPFR), City of Puyallup, Washington State Department of Emergency Management, and Gig Harbor Fire Department. Prior to conducting the interviews the questions were reviewed by one of the author's work colleagues. He is a graduate of the EFO program and was able to review and ensure that the questions were adequate to address the topic for this ARP.

The first interview was with Christine Badger. She is the coordinator of emergency management for WPFR. WPFR borders Central Pierce Fire and Rescue and has the opportunity for similar emergency center activations. The interview with Badger focused on their EOC and how it was developed and set up during activations. The interview also looked at other uses of the space beyond an EOC. Interviewing a department with similar hazards provided a good amount of information in regards to the research questions. The interview questions, Badger's answers, photos of their EOC, and her curriculum vitae are located in Appendix B.

The second interview was conducted with Bob Bartro, who is the City of Puyallup's Emergency Management Director. The City of Puyallup resides within the borders of CPFR; therefore this interview provided valuable information about a center that would be activated during an emergency within CPFR's response area. The interview questions, Bartro's answers, photos of their EOC, and his curriculum vitae are located in Appendix C.

The third interview was conducted at the Washington State Department of Emergency Management. This interview was with Chris Utzinger, the Mitigation, Response and Recovery Manager for the state. The State's EOC is located about 20 minutes from CPFR and is activated for small, local emergencies as well as large scale, state wide, emergencies. This interview

provided a look at a very large EOC that is funded and developed to support both small and large scale emergencies throughout the state. The interview questions, Utzinger's answers, photos of their EOC, and his curriculum vitae are located in Appendix D. The author of this ARP requested Utzinger's curriculum vitae in an email and received no response from him.

The final interview was with Eric Watson, an Assistant Chief with Gig Harbor Fire Department. This department is located in Pierce County, near to CPFR. This interview gave another perspective of a fire department's EOC and how it is operated and the use of the space beyond just EOC activations. The interview questions, Watson's answers, photos of their EOC, and his curriculum vitae are located in Appendix E.

### **Results**

For this Applied Research Project, four research questions were developed based on the problem statement and purpose of the ARP. To address the research questions, a literature review was conducted to look at other author's work in regards to this topic. In addition to the literature review, SME interviews were conducted to get current and specific information for the research questions. Along with the interviews, the author also toured the EOC's and has included photographs of the centers in the interview appendixes. The action research method was used for this ARP to answer the following research questions: (1) What are the Federal, State, and local requirements for an EOC? (2) What equipment do other EOC's use inside their buildings? (3) What building design features are used for EOC's? (4) How have other fire departments used their EOC for other department operations?

*What are the Federal, State, and local requirements for an EOC?*

The author reviewed all of the SME interviews in regards to the first research question. The interview questions #3 and #4 provided the most information to answer this question. It became apparent that the EOC's that the author visited did not discover or follow any specific requirement on how to develop an EOC when they put their center together.

Reviewing all four interviews found that primarily they all used basic research to identify the needs for their EOC's. None of the SME's mentioned any requirements that they had to follow. This research included reading trade journals and books to identify the space and equipment needs. Badger's interview referenced FEMA's documents on what is recommended in an EOC in regards to equipment and items to design a center (C. Badger, personal communication, October 3, 2014). Utzinger's interview followed a similar process of reviewing literature/documents to establish what is needed for an EOC. This EOC is connected with the states Military Department. Having that connection allowed the design personnel to review what they had discovered and compare to how the military develops an EOC (C. Utzinger, personal communication, October 9, 2014).

Another part of the SME's research included visiting or discussing with other agencies what they did to develop their EOC in regards to requirements and needs. Both Utzinger and Watson's departments visited and/or spoke to other agencies that have EOC's to gain insight on design and location.

While it is not a requirement, Barto is in the process of updating the City of Puyallup's EOC to be NIMS/ICS compliant. It is not a requirement to do this but it does allow for a good layout and design of the EOC space. The benefit of following NIMS/ICS matches how other

EOC's are operating which will help with sharing of information and resources (B. Bartro, personal communication, October 6, 2014).

*What equipment do other EOC's use inside their buildings?*

All of the SME interviews in regards to this question provided almost the exact same answer. All four of the agencies referenced the "basic" equipment used in their EOC. The basic equipment included, but is not limited to: computers, printers, dry erase boards, televisions, Smart Boards, fax machines.

Utzingler has discovered some issues in regards to equipment at the State's EOC. This EOC was built in 1997. At that time all of the equipment was hardwired in place which today makes it difficult to move equipment if needed. Also, they have a significant amount of equipment that takes up most of the space at the workstations and leaves little to no room for writing and other functions. They are looking at going wireless and storing more information in the "cloud". This would provide them the ability to move around easier and more working space (C. Utzinger, personal communication, October 9, 2014).

At Gig Harbor Fire Department, an additional aspect in regards to equipment that Watson mentioned was support items for personnel that may work 24 hour shifts. They have a separate area that has food, sleeping bags and items for personnel that will be in the building for a long period of time (E. Watson, personal communication, October 16, 2014).

Each of the interview questions and answers are in appendixes in this ARP. Included in the appendixes are several photos of the EOC's that the author toured. These photos also provide a look at the equipment in the EOC's.

*What building design features are used for EOC's?*



The interviews answered several different components to this question, including location, type of building, and how the EOC is set up for each work area. Badger's interview referenced the location chosen based on the size of the room. It is located in the largest training room within their department, providing adequate space to function (C. Badger, personal communication, October 3, 2014). The City of Puyallup's EOC had a few options. They chose the current location because it is remote from the major highway and other potential threats. It is also located out of the valley where flooding from the Puyallup River would be an issue. Bartro did mention that the building is not structurally sound for an earthquake and he believes they will have significant issues should an earthquake happen (B. Bartro, personal communication, October 6, 2014).

The State's EOC is located in Camp Murray, a military facility in Western Washington. It was chosen due to no cost in property. Also being on the West side of the state is close to all supporting agencies that would be utilized during activation. Utzinger has a concern with the current location. While access to the EOC is very secure due to being on a military institution, it is close to Interstate 5. I-5 is a major North/South freeway and a significant hazardous materials incident or terrorist activity could impact the EOC (C. Utzinger, personal communication, October 9, 2014).

The EOC's each have similar interior setups for each work station. WPFR has their EOC set up in a training room. The layout of their EOC (see drawing in Appendix B) is designed around some of the technology in the room that is also used for training purposes. This department also has several rooms/offices located adjacent to the training room/EOC that are

utilized in activations for other needs such as policy team, PIO, etc. (C. Badger, personal communication, October 3, 2014).

Barto has Puyallup's EOC set up in work stations that relate to the different functions of the EOC such as Logistics, Plans, Operations, and Finance. They also have a few side rooms set up for PIO, Ham radio and private meetings (B. Bartro, personal communication, October 6, 2014). Utzinger also has the State's EOC designed in a pod set up similar to Puyallup with the standard work stations and side rooms for additional meetings and personnel (C. Utzinger, personal communication, October 9, 2014).

Another aspect in regards to design of the building is structural stability and electrical power supply. The State's EOC was built to withstand a major earthquake, see photo in Appendix D. Their entire building has uninterruptable power supply with several backup generators (C. Utzinger, personal communication, October 9, 2014). Gig Harbor Fire Department developed their EOC when they also rebuilt their headquarters fire station. The station/EOC was built to an earthquake hardened level (E. Watson, personal communication, October 16, 2014).

*How have other fire departments used their EOC for other department operations?*

Two of the four interviews were with fire departments which provided answers to the fourth research question. WPCR has their EOC located in a training room. The main purpose for the room is departmental training and is utilized for that on a daily basis. When their EOC is activated, the room is converted to the EOC functions (C. Badger, personal communication, October 3, 2014). Gig Harbor Fire Department has their EOC located at the headquarters station. The main room for the EOC is also utilized for conference calls and small

meetings/work groups. All of the remaining rooms utilized during activation are used for daily office staff needs (E. Watson, personal communication, October 16, 2014).

The other two interviews were with non-fire department agencies. They have EOC's that are permanently set up but still do allow other activities outside of activations to occur. Bartro in Puyallup allows other agencies to utilize the EOC space for drills and practicing activations (B. Bartro, personal communication, October 6, 2014). At the State's EOC they conduct training and exercises within the EOC and also use the space for meetings. They have their monthly staff meeting in the main EOC room and allow other agencies to use the space for meetings (C. Utzinger, personal communication, October 9, 2014).

This ARP is written based on the process of using action research, which is established to solve a problem. To support CPFR in solving the problem statement of this ARP there is a final drawing in Appendix F that shows the EOC design recommendations for Central Pierce.

### **Discussion**

In this section the author will compare the relationship between the study results and literature review to include any implications for CPFR.

#### *What are the Federal, State, and local requirements for an EOC?*

In the literature review the author reviewed several articles and books looking for EOC requirements at all levels. The literature review did not discover any requirements that would apply to a fire department in establishing an EOC. The majority of the information centered on recommendations for use of space and equipment. A few documents from the literature review provided good recommendations in regards to designing an EOC, but no actual requirements were found. NFPA 1561 gave a few high level recommendations that indicated

that the EOC size, staffing and equipment is really dependent on the size of the jurisdiction and the anticipated incidents that may happen (*NFPA 1561*, 2014, p. 35). FEMA's checklist identified several recommendations for an EOC, to include the design, location, size and room layout (*FEMA EOC Checklist*, n.d., p. 5-9). The Department of Defense provided a very good document that also covered a significant amount of detail in regards to design and location of an EOC. This information was developed to assist staff, architects and other personnel in planning and designing an EOC (*DOD EOC Planning and Design*, 2008, p. 1).

The following is a list of recommendations from DOD for an EOC:

- Constructed and located to provide balanced protection of assets against emergency incidents that can impact the facility
- Sufficient size to accommodate the required staff members that may be present for a given situation as determined by the commander
- Centrally located and away from the activity perimeter so that movement to and from the center is screened from public view
- Constructed so that assigned personnel can operate without being observed
- Protection of self-containment of power supply, water supply, sanitary facilities, heating, ventilation, air-conditioning, food services
- Capable of immediate activation with all equipment, furnishings and supplies immediately at hand
- Complete capability on all communications mediums including telephone, radio and data communications
- Secure with controlled access (*DOD EOC Planning and Design*, 2008, p. 10).

The SME interviews asked the specific question about the process they used to design their EOC's. Each of the interviews mentioned the concept of research conducted to see how other EOC's were designed. Another aspect that proved valuable beyond just researching documents when they designed their EOC's was to visit other EOC's to see what they had done to build and design their center. Utzinger, from the State Emergency Management, mentioned that the staff visited several EOC's in the state in addition to doing literature review (C. Utzinger, personal communication, October 9, 2014). Gig Harbor Fire Department followed a similar process and did have conversations with other area EOC's to get an understanding of the necessary needs (E. Watson, personal communication, October 16, 2014).

In regards to the first research question, the topic of determining the location of the EOC is also a consideration that was addressed in the literature review, and a few examples were provided in this section of the ARP. While none of the literature review uncovered requirements on the location they did indicate several things to consider when selecting the location.

The SME interview with Bartro from the City of Puyallup noted that they had several options for the location of the EOC. They selected their site in an area that was out of the valley, away from the Puyallup River, and not near the local highway (B. Bartro, personal communication, October 6, 2014). WPFR determined their location simply on the largest training room available within the District (C. Badger, personal communication, October 3, 2014).

The study results clearly indicated that any requirements in regards to an EOC design and location is difficult to find. There are several good documents that assist in answering the

first research question (recommendations, not requirements) in addition to the information gained from the SME interviews. The author believes that this information gathered and the conversations with the SME's will provide a good starting point for the design and location of the departments EOC.

*What equipment do other regional EOC's use inside their buildings*

The author asked this specific question in each of the interviews conducted. All four of the SME's basically stated the same information. Bartro noted that they use the standard EOC equipment that includes: computers, printers, T.V.'s, fax machines, dry erase boards, and a Smart Board (B. Bartro, personal communication, October 6, 2014). WPFR basically gave the same answer and also noted that they used the FEMA checklist for equipment needed in an EOC (C. Badger, personal communication, October 3, 2014).

The literature review identified many of the same items used in an EOC that were also mentioned in the interviews. The Dallas-Fort Worth Airport EOC listed out the following equipment: desktop computers, printers and copiers, fax machines, office supplies, projectors and televisions (Harris, 2007, p. 39). In addition to the basic equipment that has been identified there is also a need for adequate communications systems. A communication system should be fully functional and compatible with other systems (Fagel, 2008, p. 247-248). This relates to the City of Puyallup's EOC as they have developed a Ham Radio system to be utilized as a backup communications system (B. Bartro, personal communication, October 6, 2014).

*What building design features are used for EOC's?*

The first steps to identifying the design features for an EOC were detailed by Fagel in his book, *Emergency Operations, EOC Design*. He recommended putting together a

team/committee to address the following items: hazard/vulnerability analysis, define the functions of the EOC, number of personnel required to operate the EOC, space requirements, funding available, assess and evaluate the functional layout of the EOC, and develop a contingency plan for interim operations (Fagel, 2008, p. 245). Several of the SME interviews followed this type of recommendation by forming a group that looks at the design needs for their EOC's.

The literature review found that the standard EOC should have a space for operations, planning, logistics, finance/administration, and command/management. They should have the ability to work together and also the necessary space for their specific functions (Larson, 2003, p. 38). Another aspect to consider in regards to the design space is allowing flexibility to scale up or down for operations depending on the emergency that has activated the EOC (Holdeman, 2009, p. 138).

Gig Harbor Fire Department has their EOC set up as described with dedicated spaces for operations, logistics, finance, plans, and a public information officer. They also have several offices available that can be converted to necessary uses depending on the scale of the emergency (E. Watson, personal communication, October 16, 2014).

Badger, at WPFR, has their EOC designed around the space that is primarily used as a training room for the department. They have similar recommended stations designated for each of the functions necessary for activation of their EOC and they are located throughout the training room in specific spaces. Some of the functions, such as operations and incident commander, are more closely placed near the projector screens and Smart Board for the ease of use of this technology (C. Badger, personal communication, October 3, 2014).

Another aspect to consider in design features is the comfort and functionality of the EOC. The EOC design team should look at ergonomics, environmental comfort, proper space allocation, and sustainable utility systems. Considering these things will help to provide operational effectiveness and quality of work (Fagel, 2011, p. 289).

Utzinger, at the Washington State Emergency Management, is addressing this concept of comfort and functionality at their EOC. Having used the EOC for activations and training they have realized some changes that are needed. One part they are looking at is having less equipment at workstations to allow for more desktop space and to have their technology be more wire-less. This would allow them the ability to move equipment and personnel around the EOC more efficiently and provide a more useable work space (C. Utzinger, personal communication, October 9, 2014).

*How have other Fire Departments used their EOC for other department operations?*

The first thing to consider when looking at how to utilize the EOC space outside just an EOC should be an analysis of potential disasters/emergencies and how often they may occur, knowing this will assist an agency in determining the options for other use of the space (Larson, 2002, p. 39). Larson also noted that smaller communities generally keep their EOC space configured for meetings and classes that can be easily converted into an EOC when activated (Larson, 2002, p. 39).

WPFR has followed this same concept and have their EOC established in the largest training room within the department. The room is set up primarily for training, something that happens in that space on a very consistent basis. To quickly convert the training room to an EOC they have stored all of their equipment in closets in the training room (see pictures in



Appendix B) (C. Badger, personal communication, October 3, 2014). Gig Harbor Fire Department has a main room for EOC staff to use for operations/incident command during activation. During non-activation times this space is utilized as a small conference room for meetings (E. Watson, personal communication, October 16, 2014).

Both WPFR and Gig Harbor Fire Department's identified office spaces near the EOC main room that are available during a deployment for different functions. Badger noted that they have several offices adjacent to the training room/EOC and they are used for policy team, PIO's, etc. (C. Badger, personal communication, October 3, 2014). Watson commented that they have several offices that are used daily for department operations but do become available in an emergency (E. Watson, personal communication, October 16, 2014).

The organizational implications of the study results indicate that if the EOC is properly designed and built the way that CPFR needs it to function; it will be a positive outcome. An EOC that can be used for training and emergencies will help to build better professional development for the members of the department as they will be able to prepare for disasters. As the citizens/tax payers of the District become aware of the fact that CPFR is ready for disasters and large scale emergencies it will generate continued support of the fire department.

### **Recommendations**

The purpose of this ARP is to identify the necessary requirements for an EOC that can be utilized for large scale disasters/emergencies and be a usable space for other department needs at CPFR. The department is currently in the process of re-building stations and building some brand new stations within the District, because of this happening, now is a very good time to

update the departments EOC. Action research was used to develop this ARP. The final recommendation of a drawing of the departments EOC is located in Appendix F.

The first recommendation is to form a committee to identify the needs of the EOC, potential activations and frequency of activations. This working group will be able to use the research of this ARP and design recommendations to confirm the needs and design of the EOC. Another task that the committee should do is to visit other local EOC's and identify any additional needs of the EOC. They would also be able to discuss location, activation process (how to set up the EOC), training sessions and other ideas in regards to their EOC's. Included in the committee work should be identifying all of the necessary equipment needed for a functioning EOC. CPFR will have some of this equipment but will most likely have to purchase some additional items. At a minimum CPFR's EOC will have the following equipment: computers for each work station, printers and fax machines, paper, forms (ICS), pencils, etc., televisions, Smart Boards, dry erase boards, mobile radio, desks/work stations, backup generator power, adequate power outlets, phones.

The second recommendation is to identify the other uses of the space beyond just an EOC. The author recommends that the space be primarily used as a training/meeting room for the department. With the primary use being a training room, the committee will need to look at storage of EOC equipment, having it close to the room. Also, how quickly and easily can the room be converted into an EOC? To be successful in this recommendation, a well written document must be created that outlines the steps necessary to activate the EOC, what gets set up first, etc. Knowing that the main EOC space is recommended to be a training room, there

must also be additional spaces identified near the EOC/training room that can be utilized for side meetings, etc.

Once the design, location and needs of the EOC are identified and confirmed the committee must discuss these concepts with the department's architect. Because there are several construction projects happening in the district, supported by the facilities bond, the department has an architect selected for CPFR. All of this information about the EOC needs to be shared with the architect so that costs and the ability to do everything that the committee needs can be accomplished.

The final recommendation is to conduct activation exercises. This will happen when the EOC is built, equipment is purchased and placed within the EOC space and an activation/set-up manual is developed. These exercises must look at all parts of the EOC. It should evaluate at a minimum the following items: how quickly and efficiently can the space be converted into an EOC, is there adequate back-up power if the main power source fails, are the identified spaces adequate for the needs of each working group, does the space developed provide the necessary needs of each group, including technology, equipment and a good working environment. Lastly, after the activation drills, the department should do an after action review with all participants to gain a full understanding of any issues or concerns.

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## Appendix A

## “EOC in a Box” Inventory

<b>Item</b>	<b>Quantity</b>
AM-FM-TV band radio	1
Badges, hanging name	50
Battery, AA cell	1
Battery, D cell	20
Blades for utility knife, spare	1
Calculator, battery operated	1
Calendar pad, 11” x 17” monthly planner	1
Cameras – disposable	5
CD-ROM of all EOC forms in a kit	1
CD-ROM’s blank	3
Clips, assorted small binder	1
Clock, wall, battery operated	1
Dry erase board cleaner, 8oz. spray bottle	1
Dry erase cleaner sheets, pack 50	1
Envelope moistener	1
Envelopes, #10	30
Envelopes, 9” x 12”	100
Envelopes, CD-ROM	100
EOC section signs table top bases	6
EOC section signs “T-bar” ceiling hangers	6
EOC section guides (package)	1
EOC section signs	7
EOC vests	5
FEMA public assistance guide	1
FEMA public assistance policy digest	1
Filing rack, wire	1

## Appendix B

## Structured Interview Questions

Chris Badger, Emergency Management Coordinator, West Pierce Fire and Rescue

Interviewed on October 3, 2014

1. What are your current job/duties in relation to this EOC?
  - a. *I am the coordinator of Emergency Management for WPFR, in addition to working for WPFR, part of my time is contracted with the City of Lakewood to do emergency management work. My work with WPFR is to ensure that the EOC is ready and operational. We conduct one annual exercise each year to ensure readiness.*
2. When was this EOC developed?
  - a. *WPFR merged two fire departments together about two and a half years ago and at that time the EOC was relocated and developed. It was implemented and ready for use in 2011.*
3. What process did your organization use to identify the space, equipment and needs?
  - a. *We used basic research to identify the core needs of the EOC to include equipment, forms, computers, phones, etc. FEMA has a very good list of items and equipment to build an EOC. Shortly after this EOC was developed we did an exercise and then completed and after action review. The review provided insight on additional needs for the EOC.*
4. How did you determine the location? Now that it has been operational, is it a good location?
  - a. *This is the largest training room in the department and therefore provides a good space for all the needs of the EOC. That is basically how the location was determined, based on size needed and this room's configuration. It was activated in 2012 for the ice storm and proved to be a good location.*
5. In general, how is your EOC set up (designated spaces/work areas)?
  - a. *See attached diagram of the EOC. The layout of the EOC is basically built around the room set up in relation to where the wall mounted TV's are located, the smart boards, etc. Located near the EOC room are several offices and other spaces that are used for policy team members, PIO's, meetings during activation and other needs as identified during the emergency.*
6. What types of equipment do you have in the EOC for use when activated?
  - a. *Nothing outside the standard list of items identified on the FEMA list – computers, dry erase boards, TV's, printers, Smart Boards, fax machines.*
7. Is the space(s) used for other purposes when the EOC is not in operation? Examples?
  - a. *The main purpose of the space is for department training. It is one of the main training rooms for WPFR, used almost daily for the training needs of the department.*
8. Having used the EOC for deployments, what changes/improvements would you or have you made since it was established?

- a. Having activated it a few times and also doing our annual drills, we have made a majority of our needed improvements. One piece to work on is the connection to the City's EOC so that we can easily share information.*
9. Curriculum vitae
    - a. Christine Badger is credentialed in Emergency Management. Currently the Emergency Management Coordinator for West Pierce Fire and Rescue and the City of Lakewood, WA. Chris has over 16 years of emergency management experience including National Disasters. She has served as an Emergency Operations Center manager for local disasters and as a Public Information Officer for over 10 years. Since 2007, Chris has assisted municipalities and agencies as a consultant to develop comprehensive emergency plans, training programs, and exercises to prepare for, and effectively respond to and recover from crisis and disaster incidents. Additionally, she has instructed neighborhoods, communities, hospitals and schools in disaster preparedness and she enjoys teaching an emergency response course for Everett Community College.



10. Photos of WPFR EOC



Closet storage for EOC items when not in use



Training room which is converted into the EOC

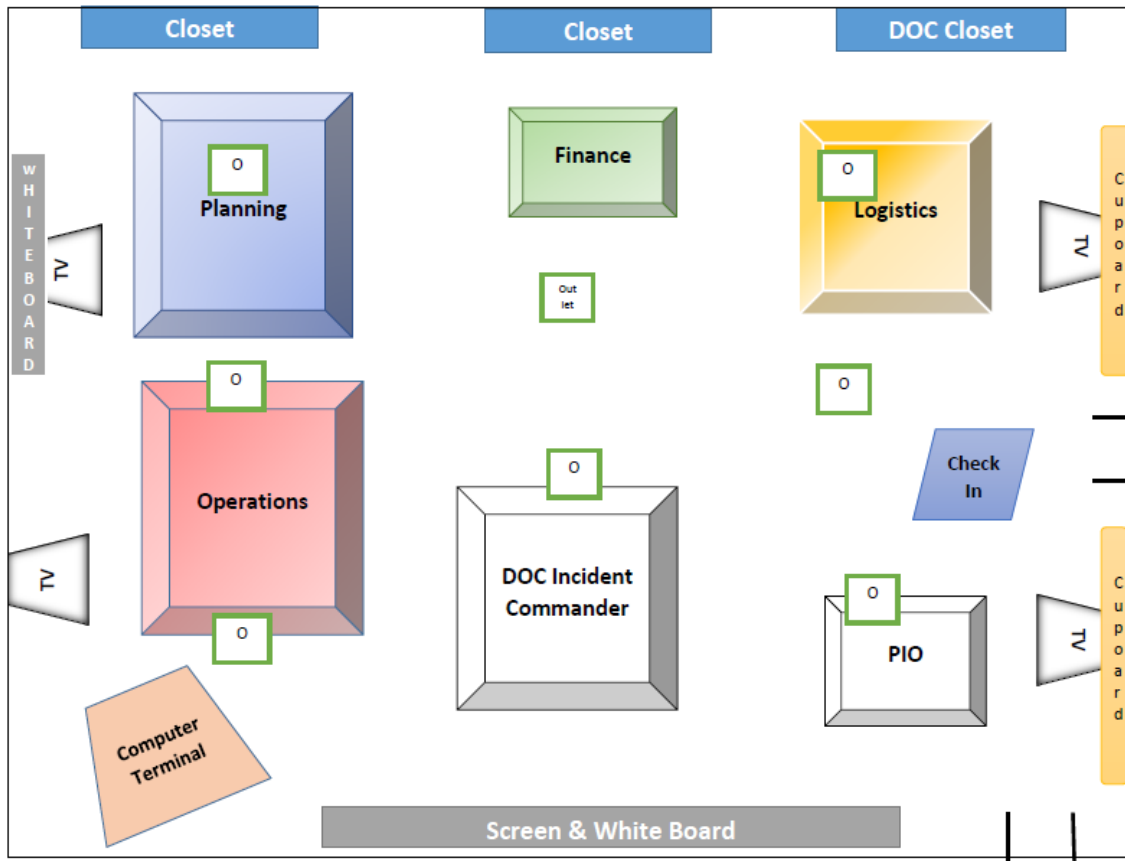


Diagram of WPFR training room converted into EOC

## Appendix C

## Structured Interview Questions

Bob Bartro, City of Puyallup Department of Emergency Management

Interviewed on October 6, 2014

1. What are your current job/duties in relation to this EOC?
  - a. *I am the Director of Emergency Management for the city and have been in this position for one year.*
2. When was this EOC developed?
  - a. *The cities EOC was developed around 2005.*
3. What process did your organization use to identify the space, equipment and needs?
  - a. *Previous organization of the EOC wasn't NIMS/ICS compliant. I have been working on making that happen here over the past year and we are now more in-line with NIMS/ICS. Following this new process allows for a good layout of all the sections and design of the EOC space. It also addresses the equipment needs which are typical for most EOC's. The benefit of following NIMS/ICS matches how other EOC's are operating which helps when we share resources and information.*
4. How did you determine the location? Now that it has been operational, is it a good location?
  - a. *The city looked at several options. This current location is out of the valley, away from the river. It is also remote in location from highways and other potential threats. Also, the available building is a good size for what the city needs in the EOC. One issue that hasn't been addressed is the structural stability of the building. It is not earthquake proof and most likely will have significant issues if/when an earthquake happens.*
5. In general, how is your EOC set up (designated spaces/work areas)?
  - a. *Our EOC has the basic stations of Logistics, Ops, Plans and Finance. It has a few side rooms available for the PIO, a Ham radio set up for back up communications, and 3 small rooms for private meetings.*
6. What types of equipment do you have in the EOC for use when activated?
  - a. *We have all the standard EOC equipment to include, but not limited to: computers, printers, T.V.'s fax machines, dry erase boards, Smart Board. In addition we have the ability to use the reverse 911 system to notify the public of issues and incidents. Puyallup also uses web EOC functions which help to make moves if necessary.*
7. Is the space(s) used for other purposes when the EOC is not in operation? Examples?

- a. The EOC is basically set up all the time, a committed space. We do partner with the county and other regional groups to use the EOC for drills and practice activations.*
8. Having used the EOC for deployments, what changes/improvements would you or have you made since it was established?
  - a. We haven't activated the center for an actual emergency in the past year but have operated it for drills and training sessions. Based on training and drills we are focused on making the EOC NIMS/ICS compliant. The facility is set up well, but we need to do more training/exercises to ensure we are proficient. We always work to identify our strengths and weaknesses on an on-going basis to continually improve the EOC.*
9. Curriculum vitae
  - a. Bartro is currently the Emergency Management Director for the City of Puyallup. He has been in this position for the past year. His duties include operating the emergency response center, training and readiness, and he is a member of the Counties Type III incident response team. Previously he spent 7 years working at Pierce County Emergency Management. His functions there included: program coordinator, duty officer, operations center section chief, grant management and purchasing.

10. Photo of the City of Puyallup's EOC



## Appendix D

## Structured Interview Questions

Chris Utzinger, Mitigation, Response and Recovery Manager

Washington State Emergency Management

Interviewed on October 9, 2014

1. What are your current job/duties in relation to this EOC?
  - a. *I have been working for the State for the past six years. The last two years have been serving as the Response Section Manager in charge of Operational readiness and management of the State EOC.*
2. When was this EOC developed?
  - a. *The EOC was built in 1997 and opened/operational in 1998.*
3. What process did your organization use to identify the space, equipment and needs?
  - a. *The internal staff in 1997 designed the space and identified the equipment needs. They came up with these ideas based on research and documents they read. Once they had ideas, they discussed with the Military personnel and determined any changes needed based on how the military has operated EOC's. A lot of their research was also centered on visiting other EOC's to see how they designed and what equipment they used.*
4. How did you determine the location? Now that it has been operational, is it a good location?
  - a. *The EOC is located at Camp Murray which is a military facility. At the time of development, the State offered this sight and because it was little to no cost, it was built here. The EOC is located on the West side of the state which is close to all supporting agencies should there be a full state activation. Our support would be quick to get on sight. We are currently working on a backup facility in Eastern Washington. Western Washington is likely to experience an earthquake but knowing this, the facility was built to withstand an earthquake. One concern I have with the location is it is rather close to Interstate 5 and a significant hazmat call or terrorist activity could impact the EOC.*
5. In general, how is your EOC set up (designated spaces/work areas)?
  - a. *We have developed this EOC in a pod set up with the standard EOC workstations. Some of the workstations are specific for things like GIS and live down links from aircraft. They all have the ability to project information to the big screens in the front of the EOC.*
6. What types of equipment do you have in the EOC for use when activated?
  - a. *We have all the typical items that you would find in most EOC's. The entire building is on uninterruptable power with 3 5000 kilowatt backup generators.*

7. Is the space(s) used for other purposes when the EOC is not in operation? Examples?
  - a. *We do training and exercises at the State level and have briefings on state issues. The space is also used as a meeting room; we have our monthly staff meetings in the room. We also allow outside agencies to use the space for meetings.*
8. Having used the EOC for deployments, what changes/improvements would you or have you made since it was established?
  - a. *One of the issues is the amount of equipment on each workstation that causes little to no room for papers and other functions. Also, all of our equipment is hard wired which makes any movement difficult. We are looking at going more wireless and store info in the "cloud". This would give us easy access and the ability to move around. I am also looking at improving all technology; new technology is out there and needs to be utilized to provide better efficiencies and a flexible EOC. We also need to look at our surge capacity. We can support a smaller/local emergency but if we get a state wide issue we will be overcrowded. A large activation will bring in more people than we have space to accommodate. I am looking at utilizing some of our neighboring buildings for these situations. Another issue to address is our power, it was developed many years ago and now there is a lot more power used with all the equipment and if we have enough power is a concern. The state focused on the initial cost of the EOC but don't focus as much on the on-going costs to keep it functional and the maintenance costs.*
9. Curriculum vitae – requested via email and did not receive a response

10. Photos of State EOC



Exterior photo showing building foundation built for stability during an earthquake



Appendix E  
Structured Interview Questions  
Eric Watson, Assistant Chief of Safety and Support Services  
Gig Harbor Fire and Medic One  
Interviewed on October 16, 2014

1. What are your current job/duties in relation to this EOC?
  - a. *He currently runs/coordinates the MAC – multi agency center at their station. It is set up as an EOC and other agencies also come to the site and conduct emergency operations. The MAC also ties to their command center to manage fire operations at larger events and emergencies.*
2. When was this EOC developed?
  - a. *In 1996 this station was built and that is when it was developed.*
3. What process did your organization use to identify the space, equipment and needs?
  - a. *The main process to identify those things was done by research and speaking with other EOC's. Knowing we are in an earthquake area, we had this building built to an earthquake hardened level.*
4. How did you determine the location? Now that it has been operational, is it a good location?
  - a. *Because the department had money to build a new headquarters station we also wanted our EOC/MAC to be located in the building. The site was picked for headquarters and the EOC followed. We have activated it several times in its current location. It has good access, central location for most participants to get to it in a timely fashion and the building is very stable. We are located in a central location in our district.*
5. In general, how is your EOC set up (designated spaces/work areas)?
  - a. *We are like most other EOC's. There is a main operational room, logistics, finance, plans, PIO, etc. Most of these groups will use current office space that is used daily for department operations but becomes available in an emergency.*
6. What types of equipment do you have in the EOC for use when activated?
  - a. *We have all of the standard EOC items that most places have: TV's, Smart board, dry erase boards, computers, printers, paper copies of items, office supplies. We also have a storage area that has food, sleeping bags and things to help our personnel work long shifts/multiple days.*
7. Is the space(s) used for other purposes when the EOC is not in operation? Examples?
  - a. *As I stated earlier, much of the space is used by our staff on a daily basis to run the department. The main room is also available for conference calls, small meetings and things like that.*

8. Having used the EOC for deployments, what changes/improvements would you or have you made since it was established?
  - a. *We have updated our operational manual, usually take a look at it after each evaluation to add or change what is needed when we review the activation. Over the years we have updated all the TV's, computers and printers. It really works rather well for our needs during an emergency.*
9. Curriculum vitae
  - a. AC Watson began his Fire Service career in 1984 with Gig Harbor Fire and Medic One as a firefighter. Over the years he has worked up through the ranks within the department. He currently serves as the AC of Safety and Support Services and has been an assistant chief for 15 years.
10. Photos of EOC

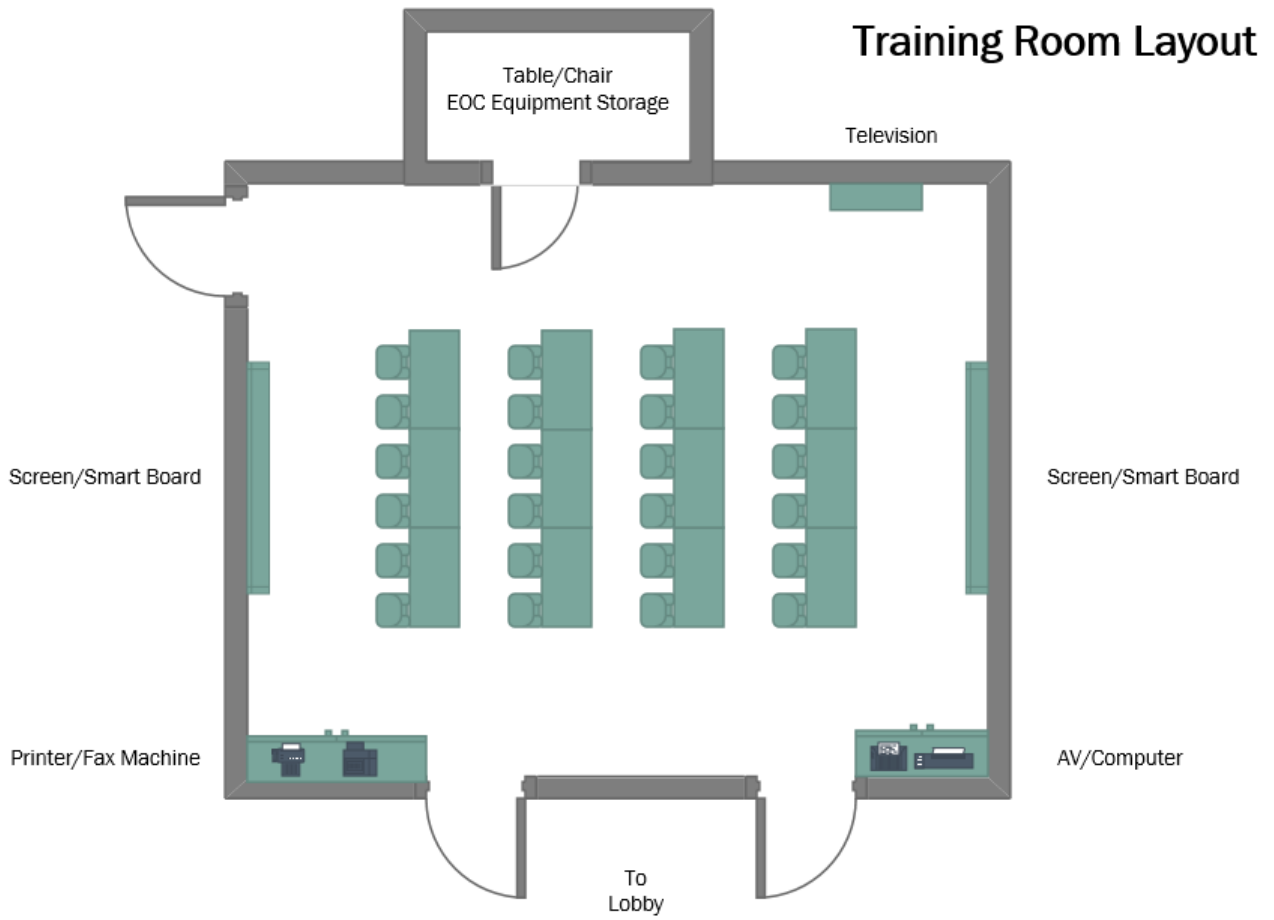


EOC/MAC main conference room



Storage room showing supplies for staff when activations go longer than 12 hours

Appendix F  
Central Pierce Fire & Rescue  
Training Room Layout



Appendix F  
Central Pierce Fire & Rescue  
EOC Layout

