

EXAMINING OREGON'S INTERGOVERNMENTAL STRUCTURES FOR NATURAL DISASTER
PLANNING: THEIR INFLUENCE ON TSUNAMI RESPONSE AND RECOVERY

by

KATE LENZSER

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Mr. André LeDuc

Natural disaster events have the potential to cause damage to people, property, and resources in communities around the world, and in the State of Oregon. The ways that people and communities can plan for natural disasters can be described by the four-phase disaster cycle as: preparedness, response, recovery, and mitigation. In the United States, most of the resources, such as technical expertise and funding, for natural disaster planning are held by governments. These resources, however, are held by different levels of government including federal, state, county, and city levels of government. State laws and statutes create an intergovernmental structure for how levels of government interact for natural disaster planning. However, overlapping jurisdictional boundaries, responsibilities, and resources for natural disaster planning often create issues of “shared governance” which also influence how governments interact. How the relationships within the intergovernmental structure work affects how natural disaster planning occurs.

This thesis describes the intergovernmental structure within the State of Oregon for natural disaster response and recovery, and describes the roles of local jurisdictions in responding to, and recovering from a large-scale catastrophic event, such as a Cascadia

Subduction Zone earthquake and resulting tsunami. To describe the intergovernmental structure itself, a document review was conducted of applicable state laws and administrative rules, and local plans and policies that shape how the intergovernmental structure is formed and operates. To describe the roles from the perspective of local jurisdictions for large-scale natural disaster response and recovery, interviews were conducted. Telephone interviews were conducted with two counties, and a city within each county, that are representative of the county and city jurisdictions that must plan for tsunami response and recovery along the Oregon coast.

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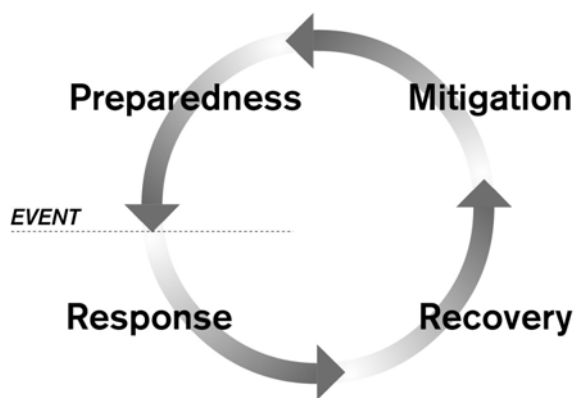
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I. Introduction

Natural disasters occur when natural hazards, such as earthquakes, floods, and hurricanes, interact with humans and human-built systems, such as communities and transportation systems (Tierney, Lindell, and Perry 2001). Natural hazard events have the potential to negatively impact people throughout the State of Oregon: natural hazards can cause damage to buildings and infrastructure; cause injury and loss of human life; cause irreparable damage to natural resources; and impact the local economy when businesses are forced to remain closed as the community recovers. Though communities cannot completely predict when a natural disaster will happen, and to what extent it will affect the community, there are ways that communities can plan for natural hazards. These planning methods range from actions taken before an event occurs, to planning for how a community will respond during an emergency event.

The ways in which humans interact with natural hazards can be described as a four-phase cycle (LeDuc 2006). The four phases of the “Disaster Cycle” are: preparedness, response, recovery, and mitigation. Figure 1 demonstrates the four phases of the disaster cycle:

Figure 1: The Disaster Cycle



Source: André LeDuc, 2006

The first phase of the disaster cycle, natural disaster preparedness, involves identifying ways that jurisdictions can improve the effectiveness and efficiency of their abilities to respond to, and recover from, natural disasters (LeDuc 2006). Natural disaster preparedness can include community outreach to educate citizens about what their responsibilities post-disaster will be, and identifying ways that government agencies can collaborate to increase their capacity to respond to a natural disaster (LeDuc 2006).

Natural disaster response, the second phase, is what begins the moment after a natural disaster event occurs (LeDuc 2006). Though communities know they cannot completely prevent the affects of natural disaster, they can plan for how they will respond after a natural disaster event happens (May and Williams 1986; Milete 2003). Once communities know how they may be affected by different natural hazards, they can identify short-term and long-term methods for responding to the potential damage caused. Examples of response planning can include identifying how different agencies will coordinate after an event, and methods for evacuating citizens and responding to citizens' needs. Having a response plan in place before a natural disaster event occurs can assist communities in more efficiently and effectively recovering from natural disasters.

The third phase, natural disaster recovery, deals with how jurisdictions will restore the basic functions of their community after a natural disaster event, and how they will begin to rebuild their community (LeDuc 2006). Though the distinction between response and recovery is often blurry and overlapping, examples of recovery planning can include how a jurisdiction will repair potential damage to their drinking water system, and begin to restore the normal functions within their jurisdiction (LeDuc 2006).

Natural disaster mitigation, the fourth phase of the disaster cycle, allows communities to reduce their risk to natural disasters and reduce the amount of potential damage that might be caused (LeDuc 2006; Mileti 2003; Tierney, Lindell, and Perry 2001). Examples of mitigation efforts communities can implement include relocating critical facilities, such as hospitals, that are in areas that are vulnerable to natural disasters, such as flood zones. Implementing successful mitigation measures can also lessen the amount of response and recovery efforts needed after a natural disaster occurs.

Collectively, all phases of the disaster cycle allow communities to try to identify how they may be affected by natural disasters and plan for ways to reduce their risk. There are different types of strategies that governments can create to plan for each phase of the disaster cycle. Different levels of government have different resources and responsibilities for natural hazard planning, which affect what types of plans and activities they can develop. Table 1 displays examples of different types of plans and documents that could be produced at each level of government for the four phases of the disaster cycle.

Table 1: Government Plans and Documents That Could be Produced for The Four Phases of the Disaster Cycle

	Federal	State	Local	
			County	City
Preparedness	<ul style="list-style-type: none"> • National Response Plan 	<ul style="list-style-type: none"> • State Administrative Rules • State Revised Statutes 	<ul style="list-style-type: none"> • County Emergency Operations Plans* 	<ul style="list-style-type: none"> • City Emergency Operations Plans*
Response	<ul style="list-style-type: none"> • National Response Plan 	<ul style="list-style-type: none"> • State Emergency Operations Plan • State Administrative Rules • State Revised Statutes 	<ul style="list-style-type: none"> • County Emergency Operations Plans 	<ul style="list-style-type: none"> • City Emergency Operations Plans
Recovery	<ul style="list-style-type: none"> • National Response Plan 	<ul style="list-style-type: none"> • State Revised Statutes** 	<ul style="list-style-type: none"> • County Emergency Operations Plans** 	<ul style="list-style-type: none"> • City Emergency Operations Plans**
Mitigation	<ul style="list-style-type: none"> • Disaster Mitigation Act of 2000 • National Natural Hazard Mitigation Programs 	<ul style="list-style-type: none"> • State Natural Hazard Mitigation Plan • Oregon Statewide Planning Goal 7 	<ul style="list-style-type: none"> • County Natural Hazard Mitigation Plan • County Comprehensive Plans 	<ul style="list-style-type: none"> • City Natural Hazard Mitigation Plans • City Comprehensive Plans

* The primary purpose of these plans is not preparedness, though they do contain some preparedness elements.

** The primary purpose of these plans is not mitigation, though they do contain some mitigation elements.

Successful natural disaster planning requires that activities be developed and implemented for each phase of the disaster cycle. Developing such actions requires a variety of resources and collaboration between the public, private businesses, government agencies, and anyone who may have a stake or interest in how natural disasters affect their community. Different resources are held by these various “stakeholders”, and how these stakeholders interact can affect how natural disaster planning occurs. Communities that have gone through collaborative planning processes are often more prepared to respond and recover in the event that a natural disaster occurs, which can save lives, property, and resources (Burby 2002). Research projects aimed at better understanding the processes and methods of natural disaster planning, and their relation to the human actors (government officials, private business owners, members of the public, etc.) involved at the various stages of planning, can assist our understanding of how to achieve more effective natural disaster planning.

Research Question

Governments often hold the most resources, such as personnel, expertise, and funding, for natural disaster planning. However, these resources are not uniform across the different levels of government. Natural disaster planning that establishes strategies for responding and recovering after a natural disasters requires governments to communicate and share resources across the different jurisdictional levels. How the different levels of government interact to accomplish natural hazard response and recovery are often based on intergovernmental structures established by laws and statues (May and Williams 1986). These relationships are not perfect and have been criticized as inadequate for preventing losses from natural disasters (Birkland 2004; May and Williams 1986; Mileti 2003). Continued rising costs of natural disaster recovery have caused many to question how the intergovernmental structures work, and how well they are working toward natural disaster response and recovery (Burby 1998).

Most of the studies conducted on intergovernmental structures for natural disaster planning have focused on federal and state government relationships (May and Williams 1986). However, local governments such as cities and counties play important roles within the intergovernmental structure for natural disaster planning (May and Williams 1986). It is at the local level of government that natural disaster risk reduction actions are implemented, and at this level of government where public support for natural disaster plans and policies must be generated.

This thesis attempts to describe the research question, “What is the current intergovernmental structure in the State of Oregon for natural disaster response and recovery, and what is the role of local jurisdictions in responding to and recovering from

a large-scale event such as a Cascadia Subduction Zone earthquake and resulting tsunami?” Though an understanding of natural disaster mitigation and preparedness is necessary, this thesis will focus on natural disaster response and recovery.

This thesis also focuses specifically on response and recovery for a large-scale natural disaster event, such as a tsunami. Communities cannot completely predict when a natural disaster will occur and to what extent it will affect their community, and can only do so much to mitigate and reduce their risk to natural disaster. For these reasons, communities will always have to plan for how to respond and recover from natural disaster. A large-scale tsunami event is one of the most devastating natural disasters facing the Oregon coast. A large-scale tsunami is one of the most challenging scenarios for Oregon communities to prepare for, mitigate, respond, and recover from, and so has been selected as a focal point for examining local-level response and recovery.

Literature Review

Examining the intergovernmental structure in the State of Oregon requires an understanding of previous research on relationships between different levels of government and on natural disaster or catastrophic event planning. This literature review covers existing research on the planning for natural disasters, and the history of governments’ roles in natural disaster planning.

Phases of Natural Disaster Planning

Natural hazards, such as earthquakes, floods, wildfires, and windstorms, have the potential to cause losses of life and property and can affect anyone around the world. When natural hazards interact with humans and human built systems (such as homes and roads, etc.), the potential for a natural disasters exists. The ways in which humans interact

with natural hazards can be described as a four-phase cycle (LeDuc 2006). The four phases of the “Disaster Cycle” are: preparedness, response, recovery, and mitigation. The first phase of the disaster cycle, natural disaster preparedness, involves identifying ways that jurisdictions can improve the effectiveness and efficiency of their abilities to respond to, and recover from, natural disasters (LeDuc 2006). Natural disaster response, the second phase, is what begins the moment after a natural disaster event occurs (LeDuc 2006). Though communities know they cannot completely prevent the impacts of natural disasters, they can plan for how they will respond after a natural disaster event happens (May and Williams 1986; Milete 2003). The third phase, natural disaster recovery, deals with how jurisdictions will restore the basic functions of their community after a natural disaster event, and how they will begin to rebuild their community (LeDuc 2006). Natural disaster mitigation, the fourth phase of the disaster cycle allows communities to identify and implement measures to reduce the risk and amount of potential damage that might be caused (LeDuc 2006; Mileti 2003; Tierney, Lindell, and Perry 2001). Planning can occur at each phase of the disaster cycle in attempt to identify a community’s vulnerabilities to natural disasters and develop methods to limit the negative impacts that natural disasters have on people and property.

Government’s Involvement in Natural Disaster Planning

Prior to the 1950’s virtually all types of natural disaster planning were conducted by individual homeowners and by city governments. Several extremely destructive and deadly natural disasters in the 1920’s and 1930’s illuminated the lack of capacity at the local level to respond to and recover from natural disasters. This prompted the federal government to become involved in protecting citizens and property from natural disasters

(Platt 1999; Mileti 2001). With the passage of the Disaster Relief Act of 1950, the U.S. saw the birth of the first law for providing assistance to local governments for disaster response and recovery (Platt 1999, 12). The original intent of the Disaster Relief Act of 1950 was to supplement the existing resources at the state and local levels for disaster response and recovery.

The resources necessary for all types of natural disaster planning include financial and physical capital, as well as personnel and expertise in various areas related to assessing vulnerability to disasters and developing actions for responding to a natural disaster event. The resources necessary for natural disaster planning are seldom held by one jurisdiction, and are spread across different levels of government (May and Williams 1986). For natural disaster planning to be effective, the different levels of government must work together and pool resources. Often times, however, clear distinctions between roles and responsibilities for providing resources and planning for natural disasters do not exist.

Problems With Governmental Planning

Recent case studies from the past twenty years suggest that the methods developed by the government for natural disaster planning are inadequate. Birkland argues that “natural hazards policymakers have not learned important lessons about hazard mitigation, which, if learned, could, in time, reduce human suffering and the economic costs of disaster relief and recovery,” (2004, 6). The failure of these policy makers comes from not implementing improved programs and policies that take into account the lessons learned from past disaster events. Often times, post-disaster efforts are limited to only providing relief to residents and recovering from the event instead of identifying ways to incorporate mitigation into recovery efforts to assist in reduce future

losses (Birkland 2004, 24). This failure to understand the importance of addressing all phases of the disaster cycle has lead state and local officials to prod “Congress to change the current federal disaster program from one that emphasizes relief under almost any circumstance to one that encourages prevention,” (Silverstein 1994, 48).

Other problems have also been identified in the way the federal government approaches natural disaster planning. One of these problems, as identified by Perry and Lindell, is the emphasis that policy makers place on the “presence of a plan as a document rather than an emphasis on the planning process,” (2003, 336). The federal government itself minimizes the importance of the planning process by requiring communities to plan for natural disasters without also creating methods for measuring the effectiveness of all such plans (Platt 1999, 21). The planning process for natural disaster preparedness, response, recovery, and mitigation can help to build understanding, collaboration, and partnerships among the public, private, and government sectors. The simple development of a plan is not enough to promote and sustain effective natural disaster planning efforts. Officials and communities who simply create natural disaster plans to satisfy federal requirements, without going through the process of collaborative planning, miss opportunities for identifying critical issues and building partnerships with other agencies and the public. Not creating these relationships during the planning process reduces the public’s knowledge, understanding, and ownership in the plan. Plans that lack public and agency support often fail to successfully implement measures to reduce their communities’ risks to natural disasters.

Another noted problem is a “a general lack of awareness of the literature on planning for natural and technological disasters on the part of elected officials, policy

actors and law-enforcement officials” who are involved in and responsible for mitigation and response plan development (Perry and Lindell 2003, 336). Officials and other individuals who influence the creation of policies who do not educate themselves on natural disaster planning strategies are unable to effectively assist their communities in developing a planning process and a plan that represent the complex ways that natural disasters affect our communities. The continued financial support that the U.S. Congress has given to natural disaster relief and recovery efforts has not helped alleviate this problem: Despite reports that show the importance of mitigation, Congress continues to support post-disaster relief and to minimize funding for, and the importance of, pre-disaster planning (Birkland 2004).

An example of an article that demonstrates a lack of understanding of the necessary planning process, is a report by Eddie N. Bernard on the National Oceanic and Atmospheric Administration’s (NOAA) development of the national Tsunami Hazard Mitigation Implementation Plan. Bernard’s article insinuates that the plan has achieved “improved coordination and exchange of information to better utilize existing resources” because the program was able to obtain six state or local dollars to match every one dollar funded by the program (2004, 18). The ability of a federal program to obtain matching funds from local jurisdictions is a poor measure of the program’s success. Increased funds do not necessarily equate to improved coordination of information, without additional evidence that the funding aided in enhanced information exchange. Bernard additionally suggests that the U.S. Congress’ decision to make the program a permanent NOAA operation is evidence of “sustain[ing] support at the state and local level for long-term tsunami hazard mitigation,” (2004, 19). No evidence is presented on how this

produces continued state and local support and builds capacity at the local level for tsunami planning. That Bernard's article uses poor measures of successful program evaluation illustrates a lack of understanding of successful natural disaster planning.

Poor understanding and evaluation of the natural disaster planning process has lead other scholars to ask what has caused this lack of understanding and lack of adequate planning. Some of the literature in this field identifies challenges in intergovernmental relationships as directly contributing to problems in planning processes. May and Williams assert that the problems arise from complications in "shared governance," (1986, 2). Since the responsibility of natural disaster planning has been assumed by federal, state, and local governments, all levels are required to share that responsibility as well as funding, information, and resources. This characterizes natural disaster mitigation and response in terms of "shared governance," (May and Williams 1986, 2; Posner 2003, 3).

Several problems arise within the shared governance of natural disaster planning and policy setting. Different levels of government often have problems with wanting to share information (for security reasons); establishing effective methods for communication; establishing common goals and objectives for successful planning; providing resources to achieve those goals; and delineating roles and responsibilities, particularly for post-disaster recovery (May and Williams 1986; Posner 2003). A study conducted by the Management Information Service found that:

Generally, the negative perceptions of state relations stem from the local government's perception of the state's inability to provide technical advice and assistance and, of course, money. Also, the heavy dependence on federal programs for funding leads to a direct local/federal relationship, which is intensified when local officials want quick decisions and ready cash flow for major expensive projects. Under

these circumstances, the state is perceived as another layer, one that does not yield any direct payoff.
(1982, 8)

Recommendations for Governmental Planning

With these conflicts and obstacles in mind, some of the literature in the field has moved toward making recommendations to improve the overall structure of intergovernmental relations. Several of these recommendations cite a need for improved collaboration between such entities as the government, private citizens, and other organizations, in order to improve natural disaster planning. For example, Fothergill and Peek “recommend more widespread inclusion of members of the low-income and working classes in disaster professions and in the research community,” as well as, “agencies such as FEMA and the Red Cross and other groups that work on a large scale need to understand the diversity of each area and plan accordingly,” (2003, 27). Their recommendations span across all levels of government, recognizing that the problem does not lie with one particular agency or level of government. The problem lies in how the governmental agencies and levels relate to one another, work together, and include others in the planning process.

Using case studies and interviews to develop their government-specific recommendations, May and Williams closely analyzed how different levels of government interact within the intergovernmental structure for natural disaster planning (1986). Their case studies focus on the Federal Emergency Management Agency’s (FEMA) interactions with regional and state level staffs. As the main federal agency for natural disaster mitigation and response planning, FEMA has considerable authority to influence state and local planning. Many of May and Williams’ conclusions relate to improving shared governance and collaboration between partners, but that one of the

initial obstacles is “getting the relevant partners to work together” (1986, 106). Other recommendations examine FEMA’s role in the entire process: though FEMA possesses most of the funding and resources for the nation’s mitigation and response planning, improved planning efforts may require FEMA to shift it’s focus from the national level to the regional level (1986, 170).

May and Williams centered their analysis of federal and state relationships around “the lesson of past studies of intergovernmental program implementation that building commitment and capacity at the point at which decisions must be implemented should be the key ingredient of any field effort aimed at disaster losses,” (1986, 49). The “point[s] at which decisions must be implemented” are typically at the local level governments where natural disaster planning and mitigation are actually implemented. It is also the local level governments that will first deal with emergency response in the event of a natural disaster.

If “building commitment and capacity” at the points of implementation (those being the local level governments) is key to successful natural disaster mitigation and response, then it is necessary to examine how capacity is built the local level. Local level governments typically deal more with state governments than federal governments for natural disaster planning. For these reasons, relationships between state and local agencies are important because state governments will significantly impact local government’s abilities to plan for and respond to natural disasters.

Natural Disaster Planning in the State of Oregon

At present, most research regarding intergovernmental structures for natural disaster planning focuses on relationships between federal and state government agencies. For the State of Oregon, a study conducted by LeDuc, Parker, and Lynn

examined “interagency communication in the post-disaster environment” and “state agencies’ understanding of roles and responsibilities during emergency response and recovery phases,” (LeDuc 2002, 3). This study shed light specifically on state-level agencies involved in emergency response and recovery efforts and found that while agencies have a relatively clear understanding of each other’s roles and responsibilities, improved intra-agency strategies for disaster management would improve the effectiveness of state-level response during a disaster event (LeDuc 2002, 6-7).

While this study provides valuable insight into the state’s perspective of natural disaster response and recovery, little research has been done on how state and local governments interact during natural disaster planning. The coastal governments in the State of Oregon had an opportunity to test their tsunami response plans during the summer of 2005. On June 14, 2005, a “Tsunami Warning” was issued for the West Coast based on a magnitude 7.2 earthquake that occurred off the coast of northern California (Murphy 2005). Tsunami Warnings are issued to alert local governments of an impending tsunami. Though this earthquake did not generate a tsunami wave, local governments along the Oregon coast took the warning seriously and began their individual processes of responding (Murphy 2005). This event allowed the State, County, and City governments involved to reflect upon their attempt to implement emergency response operations. The *After Action Report* that was produced by Oregon Emergency Management after the June 14th event found that: there was confusion on the part of local governments in how to interpret the tsunami warning information that they received; there were several examples of “protocol failures” for local evacuations; residents failed or refused to evacuate in several local communities; and technical and equipment failures

prohibited the transfer of information between different communities' governments (Murphy 2005).

The lack of literature on the role of local jurisdictions for natural disaster response and recovery, and the problems encountered during Oregon's June 14, 2005 Tsunami Warning provides grounds for and invites future research. Research that examines the relationships between state and local governments, and how those relationships affect local capacity building for natural disaster planning, can help complete the picture of the larger, nation-wide intergovernmental structure for natural disaster planning. Having a more complete picture of the entire planning process and intergovernmental structure can assist researchers in identifying where problems within the planning process exist and in developing methods for improvement.

Methodology

Answering the research question, "What is the current intergovernmental structure in the State of Oregon for natural disasters response and recovery, and what is the role of local jurisdictions in responding to and recovering from a large-scale tsunami event?" required a two-method approach. Describing the workings of the current intergovernmental structure for Oregon's natural disaster planning required a document review of state-, county-, and city-level plans and policies. Describing the role of local jurisdictions in responding to and recovering from a large-scale tsunami event required interviews with planning and emergency management staff at the county and city-levels.

Tsunami response and recovery was selected because it is a natural disaster that has the potential to be the most devastating natural disaster to affect the jurisdictions along the Oregon coast. The entire coastline of the State of Oregon is situated on the

Cascadia subduction zone, a 800 mile fault line created where the North American plate and the Juan de Fuca plate meet (CREW 2005, 2). Every 500 years on average, enough pressure builds along this fault line to produce a magnitude 9 earthquake. An earthquake of this size can cause four or more minutes of groundshaking, landslides, fires, powerful aftershocks, and a tsunami wave (CREW 2005, 2-4). The initial tsunami wave caused by a Cascadia Subduction Zone earthquake will come in matter of minutes, may be up to 30 feet high, and will create a series of other high-powered waves that can last for ten to twelve hours (CREW 2005, 5). Focusing research to one natural disaster allowed for more specific examination of how the different levels of government interact by eliminating protocols and procedures for other natural disasters.

Though tsunami response and recovery planning was selected as a focal point of the research, understanding tsunami response and recovery planning requires an understanding of the state of Oregon's larger natural disaster planning structure. This required an examination of the relationships between the different governmental jurisdictions that exist within the structure of Oregon's natural disasters planning: the state, the counties, and the cities. This structure is created by laws developed at the state level that create rules and requirements for the lower levels of government, affecting county and city actions as well. In addition to receiving mandates from the state regarding natural disaster planning, the counties can also create mandates for how natural disaster planning will take place within their jurisdiction. Such requirements at the county level affect the cities within the counties.

Community Case Studies

State's laws and mandates affect all of the sub-jurisdictions within Oregon, and so state-level laws, statutes, and plans will be used as the base for evaluating the interactions between the different levels of government. To examine the relationships created by the intergovernmental structure, specific county and city jurisdictions were selected for evaluation. To provide for comparison, two counties, and a city within each county, were selected for evaluation: Clatsop County and the City of Cannon Beach; and Douglas County and the City of Reedsport.

These counties and cities have also been selected because their differences in geography and economic situations can serve as further comparison: Clatsop County is located on Oregon's north coast, and the City of Cannon Beach has an economy based on tourism and recreation industries; Douglas County is located on Oregon's south coast, and the City of Reedsport primarily relies on a resource-based economy.

Different community characteristics may influence a community's role in tsunami response and recovery. Information like a community's median household income can influence the amount of financial resources available in that community for disaster response and recovery. In addition, community disaster planning activities can be shaped by social characteristics such as how many residents will need assistance during response and recovery due to their age and whether or not they have a disability. Describing the roles of communities with differing characteristics allows for a more thorough description of local jurisdictions' roles in tsunami response and recovery. Table 2 displays an overview of some of the profiled information for all four communities. A discussion of the characteristics of the case study communities is presented below the

table. These differences in community characteristics can help provide background and context for the document review, the stakeholder interviews, their individual conclusions, and the final recommendations.

Table 2: Overview of the Four Case Study Communities

Community	Size (Square Miles)	Population				Median Household Income	Largest Industry Employers
		Total	Median Age	Percent Over 65	Percent Below Poverty		
Clatsop County	843	36,300	40	15.6%	13.2%	\$36,301	<ul style="list-style-type: none"> • Education, health and social services • Recreation and accommodation • Retail trade
Douglas County	5,071	101,800	41.2	17.8%	13.1%	\$33,223	<ul style="list-style-type: none"> • Education, health and social services • Manufacturing • Retail trade
Cannon Beach	—	1,640	43.7	16.7%	12.0%	\$39,271	<ul style="list-style-type: none"> • Recreation and accommodation • Retail trade • Education, health and social services
Reedsport	—	4,230	47.1	26.2%	16.0%	\$26,054	<ul style="list-style-type: none"> • Education, health and social services • Recreation and accommodation • Retail trade

Sources: US Census, 2000; Oregon Blue Book

Clatsop County

Established in June, 1844, Clatsop County covers 843 square miles and was home to 36,300 people in 2003 (“Clatsop County”). The median age of Clatsop County’s residents in 2000 was 40, roughly five years older than the US Average (“Clatsop County, Oregon). Table 3 shows the age distribution of the county’s population.

Table 3: Population by Age Distribution, Clatsop County, Oregon 2000

Age Group	Percent of Population
Under 5	5.6%
5 to 19 Years	21.3%
20 to 44 Years	30.8%
45 to 64 Years	26.7%
Over 65	15.6%

Source: US Census, 2000

As displayed in Table 3, 26.9% of the county's population is under the age of 20. In contrast, 42.3% of Clatsop County's population is over the age of 45, and 15.6% is over the age of 65-years-old. Of those residents who are over 65 years of age, 41.4% have a disability ("Clatsop County, Oregon").

Regarding economic demographics, 13.2% of the county's residents were living below the federal poverty line in 2000, more than the national average of 12.4% ("Clatsop County, Oregon"). In addition, the 2000 median household income for Clatsop County was \$36,301, nearly six thousand dollars behind the national median income of \$41,994 ("Clatsop County, Oregon").

Though the county's economy was historically based on fishing and forest products, in recent decades the county has been transitioning to an economy based more on tourism and recreation ("Clatsop County"). In 2000, the three largest employers in Clatsop County were education, health and social services, recreation and accommodation, and retail trade industries ("Clatsop County").

The City of Cannon Beach

Developed on the Oregon coast, the City of Cannon Beach is located in the southern half of Clatsop County's coast line. Though making up only 4.5% of Clatsop County's population, the City of Cannon Beach's age demographics are similar to the

county as a whole. The median age of the city’s residents was 43.7, almost four years older than Clatsop County’s median age, and nearly nine years older than the national average (“Cannon Beach city, Oregon”). Table 4 displays the age distribution of the City of Cannon Beach’s residents in 2000.

Table 4: Population by Age Distribution, Cannon Beach, Oregon, 2000

Age Group	Percent of Population
Under 5	5.0%
5 to 19 Years	18.3%
20 to 44 Years	27.9%
45 to 64 Years	32.1%
Over 65	16.7%

Source: US Census, 2000

As shown in Table 4, only 23.3% of residents in Cannon Beach are under the age of 20, compared to the 48.8% that are 45-years-old or older. Of the 16.7% of Cannon Beach residents that are over the age of 65, 35.3% have a disability (“Cannon Beach city, Oregon”).

Regarding median income and the amount of residents living below the federal poverty line, the City of Cannon Beach is doing slightly better than Clatsop County as a whole. Only 12% of the city’s residents were living below the federal poverty line in 2000, compared to the county’s 13.2% and the national average of 12.4% (“Cannon Beach city, Oregon”). In addition, the city’s 2000 median household income of \$39,271 was almost three thousand dollars below the national average, it was almost three thousand dollars more than the county’s 2000 median household income (“Cannon Beach city, Oregon”).

The City of Cannon Beach’s top three employers are the same sectors as Clatsop County, though not in the same ranked order. In the City of Cannon Beach, the arts,

recreation, and accommodation industry is employing the largest percentage of the city's residents, with retail trade second and education, health and social services third ("Cannon Beach city, Oregon").

Douglas County

Established in January 1852, Douglas County is nearly six times larger than Clatsop County, covering 5,071 square miles ("Douglas County"). Spanning from the Cascade Mountains to the southern Oregon coast, Douglas County also has nearly three times as many residents as Clatsop County. In 2003 101,800 residents called Douglas County home ("Douglas County"). The median age of Douglas County residents is 41.2 years, just slightly higher than in Clatsop County (Douglas County, Oregon"). Table 5 displays the age distribution of Douglas County residents.

Table 5: Population by Age Distribution, Douglas County, Oregon, 2000

<u>Age Group</u>	<u>Percent of Population</u>
Under 5	5.6%
5 to 19 Years	21.0%
20 to 44 Years	29.2%
45 to 64 Years	26.5%
Over 65	17.8%

Source: US Census, 2000

As shown in Table 5, 26.6% of the county's population is under the age of 20. This is in contrast to the 44.3% of the county's population that is 45-years-old or older, and the 17.8% that is over 65. Of this percent of the population that is over 65, 42.9% have a disability ("Douglas County, Oregon).

Regarding poverty in the county, 13.1% of Douglas County's residents live below the federal poverty line, nearly the same percent as in Clatsop County ("Douglas

County”). Douglas County’s median household income, however, is not equal to Clatsop County’s and at \$33,223 is more than \$3,000 less than Clatsop County’s median income and nearly \$6,000 less than the national median (“Douglas County”).

Douglas County’s economy, like Clatsop County’s, is based on the production of forest products, mining, agriculture, fishing, and recreation (“Douglas County”).

However, the three largest employers in Douglas County in 2000 were education, health and social services, manufacturing, and retail trade industries (“Douglas County, Oregon”). This differs from Clatsop County, where the local economy is based more in recreation and accommodation than in Douglas County, and less in manufacturing.

The City of Reedsport

Though the City of Reedsport is located roughly four miles inland, its close proximity to the coast and its location on the Umpqua River mean that tsunamis are indeed a threat. Similar to the City of Cannon Beach, the City of Reedsport makes up only 4.3% of its county’s total population (“Reedsport city, Oregon”). The median age of the city’s residents is 47.1, six years older than Douglas County’s median age and nearly three years older than the City of Cannon Beach’s median age (“Reedsport city, Oregon”). Table 6 displays the age distribution of the City of Reedsport’s residents.

Table 6: Population by Age Distribution, the City of Reedsport, Oregon, 2000

Age Group	Percent of Population
Under 5	4.8%
5 to 19 Years	18.2%
20 to 44 Years	23.8%
45 to 64 Years	26.9%
Over 65	26.2%

Source: US Census, 2000

As with the other communities, Table 6 shows that only 23% of the City of Reedsport's population is under the age of 20. However, of all four case study communities, the City of Reedsport has the largest percentages of older age groups: 53.1% of the city's population is over the age of 45, and 26.2% are over the age of 65 ("Reedsport city, Oregon"). Of those residents 65-years-old and older, 40.5% have a disability.

Unlike the City of Cannon Beach, the City of Reedsport's local economy does not match Douglas County's economy as closely. In terms of which industries employ the largest percentages of the City of Reedsport's employed residents, the City of Reedsport's economy is a better match to Clatsop County than it's own Douglas County. The top three industries in the City of Reedsport (education, health, and social services, arts and accommodation, and retail trade) are the same as Clatsop County's top three ("Reedsport city, Oregon"). Manufacturing, Douglas County's second largest employment industry, is the City of Reedsport's sixth ("Reedsport city, Oregon").

Regarding individuals living in poverty, 16% of the City of Reedsport residents live below the federal poverty level ("Reedsport city, Oregon"). This is three percent more than in Douglas County and three and a half percent more than the national average. At \$26,054, the City of Reedsport's median household income is more than \$7,000 less than Douglas County's, \$13,000 less than Cannon Beach's, and almost \$16,000 less than the national average ("Reedsport city, Oregon").

Document Review

A document review analyzes all documents that are relevant to a specific topic for common characteristics or elements. For the purpose of this thesis, the document review analyzes the natural disaster plans and policies created by the state, counties, and cities for what roles and responsibilities they establish for the state, county, and city levels of

government. For more detailed information about the document review see the *Document Review* section, found on page 27 of this document.

Methodology

The purposes of this document review are to 1) identify the intergovernmental structure within the State of Oregon that is used for natural disaster planning, and to 2) identify and explain the intergovernmental structure within the State of Oregon specifically for natural disaster response and recovery planning. To examine the intergovernmental structure, state, county, and city natural disaster plans and policies were analyzed for what roles and responsibilities they establish for the state, county, and city levels of government. The subsections of the plans and policies that identify responsibilities for the different levels of government were then grouped under the four categories of the disaster cycle: preparedness, response, recovery, and mitigation. Plan and policy subsections that identified governmental responsibilities specifically for natural disaster response and recovery were then examined in greater detail to determine the intergovernmental structure for natural disaster response and recovery.

Interviews

Interviews can be conducted to gain technical information from individuals who have expert and professional knowledge in specific areas. Other studies that have examined intergovernmental structures for natural disaster and emergency operations planning have used stakeholder interviews to conduct their research (May and Williams 1986). For the purposes of this thesis, interviews were conducted with public officials at the local level. For more information about the interviews see the *Interviews* section, found on page 34 of this document.

Methodology

The purposes of the interviews were to gain more information about how the intergovernmental structure for natural disaster response and recovery planning works in reality, and examine the capacity of local governments to respond to and recover from a large-scale, catastrophic event such as a tsunami. Interview participants were identified because of their role as a public official, within one of the case study communities, who is involved in their jurisdiction's natural disaster planning. For both response and recovery efforts, interview questions were created to address the following topics:

1. The efforts of the jurisdiction to plan for responding to or recovering from a large-scale catastrophic event;
2. The intergovernmental framework in the State of Oregon for natural disaster response or recovery planning; and
3. Local capacities for responding to or recovering from a large-scale catastrophic event such as a tsunami.

Interview participants' responses were compiled and then analyzed for common themes.

Limitations

One of the limitations of this study is the small number of jurisdictions selected for interviews. As with any study, when trying to describe a group, you pick a smaller subset of the group to study that is representative of the larger whole. In this situation, two counties and two cities on the Oregon coast were selected for interviews. These four jurisdictions are to represent all of the jurisdictions along the Oregon coast that need to plan for responding to and recovering from a potential tsunami event. One of the limitations of this study is that the subset selected to represent the larger group, could in fact be unrepresentative of the larger group. Various factors and characteristics could

mean that the jurisdictions selected for interviews are not similar enough to all of the other jurisdictions in the larger group to be comparable. This would mean that the study's findings are true for only the small number actually studied, and cannot be applied to the larger group as a whole.

Another limitation of this study is looking specifically at tsunami response and recovery planning. Though limiting the evaluation of the intergovernmental structure's affect on local jurisdictions' abilities for tsunami response planning allows for a more detailed look into the planning for tsunami events, it excludes the planning that goes into preparing for other natural disasters: Limiting the analysis to tsunami response and recovery planning provides a look only at tsunamis. This may mean that there are valid characteristics (that help or hinder local jurisdictions' response planning efforts) of the intergovernmental structure that are only evident during intergovernmental relationships for response and recovery planning for other natural disasters. This limited scope of analysis does not guarantee that the final description is accurate for the whole intergovernmental structure.

II. Document Review

A document review analyzes all documents that are relevant to a specific topic for common characteristics or elements. Though tsunami response and recovery planning has been selected as a focal point of this research, understanding tsunami response and recovery planning requires an understanding of the State of Oregon's larger natural disaster planning structure. For the purpose of this thesis, the document review analyzes all natural disaster plans and policies created by the state, and the selected counties and cities for what roles and responsibilities they establish for the state, county, and city levels of government.

Purpose

The first purpose of this document review is to identify the intergovernmental structure within the State of Oregon that is used for natural disaster planning. The second purpose of this document review is to identify and explain the intergovernmental structure within the State of Oregon between the State, County, and City governments, specifically for natural disaster response and recovery planning. Identifying the intergovernmental structure within the state for natural disaster response and recovery frames what *should* be happening at the different levels of government. In doing so, the document review provides a basis for examining the planning process within the intergovernmental structure, an important component of natural disaster planning (Perry and Lindell 2003). The findings of the document review can then be compared to the responses from the stakeholder interviews of what is *actually* happening at the different levels of government for natural disaster response and recovery planning.

Methodology

To examine the relationships created by the intergovernmental structure, specific county and city jurisdictions were picked for evaluation. To provide for comparison, two counties, and a city within each county, were selected for evaluation: Clatsop County and the City of Cannon Beach; and Douglas County and the City of Reedsport. These counties and cities have also been selected because their differences in geography and economic situations can serve as further comparison: Clatsop County is located on Oregon's north coast, and the City of Cannon Beach has an economy based on tourism and recreation industries; Douglas County is located on Oregon's south coast, and the City of Reedsport primarily relies on a resource-based economy. Different community characteristics may influence a community's role in tsunami response and recovery. Describing the roles of communities with differing characteristics allows for a more thorough description of local jurisdictions' roles in tsunami response and recovery.

To address the first purpose of this document review (to identify the intergovernmental structure within the State of Oregon that is used for natural disaster planning), all state, and selected county and city natural disaster plans and policies were analyzed for what roles and responsibilities they establish for the state, county, and city levels of government. Table 7 displays the plans and policies developed to address the different phases of the Disaster Cycle that were created at the State, County, and City levels of government for the communities selected for this thesis.

The plans and policies at the state level provide the foundation of the document review because their legal authority establishes the roles and responsibilities that the highest level of government within Oregon (the State government) mandates for the local

governmental levels for natural disaster planning. The state-level documents examined in the document review include Oregon Administrative Rules: Chapter 104, Oregon Revised Statutes: Chapter 401, the Oregon Emergency Management Plan, and Oregon's State Natural Hazard Mitigation Plan.

At the local level, the document review examined the natural disaster plans and policies that the case study counties and cities have created in response to the laws and mandates from the governments above them. Examining these documents further rounds out the roles and responsibilities expected at the county and city levels for natural hazard planning. The county- and city-level documents examined in the document review include comprehensive plans, mitigation plans, codes and policies, and emergency response or operations plans. The state, county, and city documents were then grouped under the four categories of the disaster cycle: preparedness, response, recovery, and mitigation. Table 7 presents an overview of the documents examined in the document review and the phases of the disaster cycle that they address.

Table 7: Natural Disaster Plans and Policies Overview

Document	Preparedness	Response	Recovery	Mitigation	Notes
Oregon Administrative Rules: Chapter 104	✓	✓			The primary intent of this chapter is to address the State's responsibilities for disaster response.
Oregon Revised Statutes: Chapter 401	✓	✓	✓		The primary intent of this chapter is to address the State's responsibilities for disaster response though it does identify some State recovery responsibilities, and response and recovery responsibilities for the Counties and Cities.
Oregon Emergency Management Plan Volume II		✓			The primary intent of the plan is to address the State's responsibilities for disaster recovery, though it does address recovery responsibilities for the Counties and Cities.
Clatsop County Emergency Operations Plan		✓			The primary intent of the plan is to address the County's responsibilities for disaster response, though a few preparedness and short-term recovery activities are embedded within the plan, and the responsibilities of the Cities within the County are identified.
Douglas County Emergency Operations Plan		✓			The primary intent of the plan is to address the County's responsibilities for disaster response, though a few preparedness and short-term recovery activities are embedded within the plan, and the responsibilities of the Cities within the County are identified.
City of Cannon Beach Emergency Management Plan		✓			The primary intent of the plan is to addresses the City's responsibilities for disaster response though a few preparedness and short-term recovery activities are embedded within the plan.
City of Reedsport Emergency Operations Plan		✓	✓		The primary intent of the plan is to addresses the City's responsibilities for disaster response However, one Emergency Support Function document addresses short-term recovery activities.

To address the second purpose of this document review, a closer examination was made of the governmental documents that were identified as influencing governmental roles and responsibilities for natural disaster response and recovery. The documents were analyzed for what specific roles and responsibilities they create for each level of government for disaster response and recovery. The identified roles and responsibilities

assist in more specifically explaining the state's intergovernmental structure for natural disaster response and recovery.

Summary of Key Findings

This document review produces several key findings. The key findings are listed below and have been organized into findings that present strengths for the state's intergovernmental structure, and finds that present challenges. A more detailed analysis of the governmental roles and responsibilities for natural disaster response and recovery can be found in *Appendix 2: Document Review Analysis*, on page 55 of this document.

Strengths

- The framework for how State agencies will interact and coordinate during a natural disaster is comprehensive and well developed. There is adequate direction to the directors of state agencies, but enough flexibility to adapt to each situation.
- The majority of the state-mandated roles and responsibilities (particularly in the OEMP) describe the state's actions in providing assistance to local governments during or after a natural disaster, once assistance has been requested.
- The Clatsop County EOP, the Douglas County EOP, and the City of Cannon Beach EMP all recognize the State-mandated responsibility of the local governments to be the first responders in the event of an emergency or disaster.
- The State requires Counties, and allows Cities, to have emergency management agencies and emergency operations plans.
- The State OEMP, the Clatsop County EOP, the Douglas County EOP, and the City of Cannon Beach EMP all recognize the necessity and responsibility of working with other levels of government, created by issues of shared governance

(May and Williams 1986). As an example, the City of Cannon Beach recognizes that it must request State assistance through Clatsop County's Emergency Management Agency. Similarly, Clatsop County and Douglas County both recognize their responsibility to request State assistance for the incorporated cities within their jurisdictions.

- Natural disaster recovery planning is well established at the State, County, and City levels of government.
- The State OEMP, the Clatsop County EOP, the Douglas County EOP, and the City of Cannon Beach EMP all reference the use of the Incident Command System to coordinate and direct emergency activities during a state of emergency.

Challenges

- The Oregon Revised Statutes mandates the responsibility of first response during a natural disaster to the local governments, and requires county governments to establish emergency management agencies and response plans. However, the document review and interview participants' responses indicate that there is very little at the State level that outlines or suggests *how* local governments can create effective emergency management agencies and response plans.
- There is no state-determined criteria for evaluation response and recovery plans developed by local jurisdictions. This makes it difficult for County and City governments to know how to develop their local plans.
- There is very little direction and instruction for how State agencies will assume responsibilities from local governments and how local governments will then work with State agencies. In the documents at the State, County, and City levels

there is mention of using the local incident command system, but no direction to the local governments for how to implement such a system and how to plan to integrate state agencies once the State has assumed control during a disaster situation.

- There is no requirement that local governments have disaster recovery plans.
- “Recovery” roles and responsibilities described by County and City plans lack thorough development: a very small number of activities within the Counties’ and Cities’ plans describe recovery roles and responsibilities. If present, these activities are typically embedded within response and emergency operations plans.
- Most “recovery” roles and responsibilities identified in the Counties’ and Cities’ plans are short-term, and do not address issues related to long-term recovery.
- Though the State OEMP, the Clatsop County EOP, the Douglas County EOP, and the City of Cannon Beach EMP all reference the use of the Incident Command System during a state of emergency, not all of the plans clearly identify how the Incident Command System will be used within their jurisdiction.

III. Interviews

Interviews can be conducted to gain technical information from individuals who have expert and professional knowledge in specific areas. Other studies that have examined intergovernmental structures for natural hazard and emergency operations planning have used interviews to conduct their research (May and Williams 1986). However, most of the previously conducted studies examined the relationships between federal and regional agencies involved in the intergovernmental structure. The interviews for these situations have attempted to determine and evaluate the outcomes of the federal-state relationships. Often times these outcomes are federally created and funded programs, or are how the intergovernmental structure reacts to a natural disaster event. The individuals selected for the interviews were staff members at the federal and state level who were associated with the programs, policies, or agencies within the intergovernmental structure that implement the programs and policies.

To examine the local governments' perspectives of the relationships between state and local jurisdictions, the interviews for this thesis will have to examine different outcomes of the intergovernmental structure. The State of Oregon does not have the funding to be able to create programs on the same level as the federal government, and a tsunami event has not happened on the Oregon coast. For these reasons, the same outcomes evaluated for federal-state relationships cannot be evaluated for the state-local relationships. Though the format of the interviews for this thesis differed from other studies, the individuals who were selected for the interviews was more similar.

Purpose

The outcomes that are produced by the state-local intergovernmental structure are the plans and policies at the local level that are aimed at natural disaster event response and recovery planning, and what the role is of local jurisdictions for tsunami response and recovery planning. Therefore, the purpose of the interviews was to gather information about how the intergovernmental structure between state and local governments is organized, and what the role is at the local level for tsunami response and recovery. While the document review sheds light on how the intergovernmental structure is supposed to work, it cannot examine the process used to create the documents, which is critical to the success of the document (Perry and Lindell 2003, 336). The stakeholder interviews can provide insight into how the structure actually works, and examine the process used to plan for natural disasters.

Methodology

To gather information about how the intergovernmental structure between state and local governments is organized, and what the role is at the local level for tsunami response and recovery, questions were created to address local governments' tsunami response efforts, and their tsunami recovery efforts. For both response and recovery efforts, interview questions were created to address the following topics:

1. The efforts of the jurisdiction to plan for responding to or recovering from a large-scale catastrophic event;
2. The intergovernmental framework in the State of Oregon for natural hazard response or recovery planning; and

3. Local capacities for responding to or recovering from a large-scale catastrophic event such as a tsunami.

Once the interview questions (that can be found below) were created, participants were identified from each of the four case study communities (Clatsop County, the City of Cannon Beach, Douglas County, and the City of Reedsport). Interview participants were identified based on their role as a public official who is involved with their jurisdiction's natural disaster planning efforts. Approval from Human Subjects was then sought and received.

Potential interview participants were initially contacted by with a preliminary e-mail to explain the purpose of the interview, to ask if the potential interviewee would be able to set up an interview for a later date, and to inform them that their confidentiality will be maintained. Phone interviews were then conducted with questions that were modified for their relevance to each participant and the jurisdiction in which the participants work. A follow up thank you e-mail or letter was sent to thank the interviewee for their time and participation.

Participants

One interview participants was selected from each case study community. Individuals selected for the interviews were staff members from agencies within the intergovernmental structure, and were individuals who are involved in their jurisdiction's tsunami response and recovery planning. The following is the list of interview participants:

- The Emergency Management Coordinator for Clatsop County;
- A City Councilor from The City of Cannon Beach;
- The Emergency Management Director for Douglas County; and

- The City Manager of The City of Reedsport.

Interview Questions

As mentioned above, the interview questions were created to address tsunami response and tsunami recovery independently. Though the questions address these two different themes, the questions for each of the response and recovery themes are virtually the same and address the following topics:

1. The efforts of the jurisdiction to plan for responding to or recovering from a large-scale catastrophic event;
2. The intergovernmental framework in the State of Oregon for natural disaster response or recovery planning; and
3. Local capacities for responding to or recovering from a large-scale catastrophic event such as a tsunami.

The list of questions crafted for the interviews is provided below:

Tsunami Response

- 1 Does your jurisdiction have a natural hazards/emergency response plan and/or policies?
 - 1.1 (If yes) How were your jurisdiction's response plan and/or policies created?
 - 1.1.1 What was the process that was used?
 - 1.1.2 Who was involved in the planning or development process?
 - 1.1.3 What technical and financial resources did your jurisdiction receive to develop the plan and/or policies? (*prompts: such as state or federal grants, technical assistance from professional associations, etc.*)

1.2 (If no) What are the challenges that have prevented your jurisdiction from creating natural hazard response plans and/or policies?

1.2.1 What would assist your jurisdiction in overcoming these challenges?

- 2 What is your jurisdiction's role in tsunami response?
- 3 What is your perception of the state's role in tsunami response?
- 4 What strengths exist in the current intergovernmental structure for natural hazard response?
- 5 What weaknesses exist in the current intergovernmental structure for natural hazard response?
- 6 Are there areas in which you would like to see your jurisdiction's ability to plan for catastrophic disaster response changed?
- 7 If a large-scale catastrophic event, such as a tsunami, was to occur tomorrow, what is your jurisdiction's capacity to handle the response efforts?
 - 7.1 What are the challenges that exist regarding your jurisdiction's capacity to respond to such an event?
 - 7.2 What are the opportunities that exist regarding your jurisdiction's capacity to respond to such an event?

Tsunami Recovery

- 8 Does your jurisdiction have a natural hazards/emergency recovery plan and/or policies?
 - 8.1 (If yes) How were your jurisdiction's recovery plan and/or policies created?
 - 8.1.1 What was the process that was used?

8.1.2 Who was involved in the planning or development process?

8.1.3 What technical and financial resources did your jurisdiction receive to develop the plan and/or policies? (*prompts: such as state or federal grants, technical assistance from professional associations, etc.*)

8.2 (If no) What are the challenges that have prevented your jurisdiction from creating natural hazard recovery plans and/or policies?

8.2.1 What would assist your jurisdiction in overcoming these challenges?

9 What is your jurisdiction's role in tsunami recovery?

10 What is your perception of the state's role in tsunami recovery?

11 What strengths exist in the current intergovernmental structure for natural hazard recovery?

12 What weaknesses exist in the current intergovernmental structure for natural hazard recovery?

13 Are there areas in which you would like to see your jurisdiction's ability to plan for catastrophic disaster recovery changed?

14 If a large-scale catastrophic event, such as a tsunami, was to occur tomorrow, what is your jurisdiction's capacity to handle the recovery efforts?

14.1 What are the challenges that exist regarding your jurisdiction's capacity to respond to such an event?

14.2 What are the opportunities that exist regarding your jurisdiction's capacity to recover from such an event?

15 That is the end of the questions that I have prepared. Is there anything else you think I should know?

Summary of Key Findings

The following is a summary of the key findings from the interviews. Key findings have been organized as strengths or challenges under the three question topics. A compilation of interview participants' responses to all of the questions can be found in *Appendix 3: Interview Transcripts*, found on page 78 of this document.

1. The efforts of the jurisdiction to plan for responding to or recovering from a large-scale catastrophic event.

Strengths:

- Both County jurisdictions indicated that they have plans that address both natural disaster response and recovery.
- Both City jurisdictions have plans that address natural disaster response.
- Both of the Counties and Cities included a variety of stakeholders in their planning processes, and used existing plans as guides to developing their own plans.
- Both of the Counties and Cities were able to use in-house resources to develop their natural disaster response and recovery plans.
- One of the interview participants (from a county jurisdiction) did reference a helpful tool, an all-hazards crosswalk “checklist,” that had been received from FEMA. The crosswalk was helpful in checking to make sure that their community’s plan was aligned with federal requirements.

Challenges:

- The City jurisdictions do not have plans that address natural disaster recovery.
- All of the interview participants indicated that their communities are in the beginning process of redoing their existing plans because they feel they are inadequate.
- Except for one instance, none of the communities received outside technical or financial assistance explicitly for developing their most recent response or recovery plans. In the one instance where a community had outside assistance, their plan was developed for them in the form of a regional plan, in which they had no input.

2. The intergovernmental framework in the State of Oregon for natural hazard response or recovery planning.**Strengths:**

- All communities recognize the responsibility of City governments to be first responders in the event of an emergency.
- All communities view state agencies as being responsible for providing coordination and resources to assist overwhelmed county and city jurisdictions.
- Communities recognize that Cities must request assistance from their County governments before the Counties can get involved.
- Both County governments recognize that, once the County government gets involved in emergency response and/or recovery, they will need to

provide coordinating and management assistance to the communities within their jurisdiction.

- The Clatsop County and the City of Cannon Beach both cited their good working relationships with state agencies as a strength that exists within the intergovernmental structure. Douglas County and the City of Reedsport each cited their work with the other as a strength within the intergovernmental structure.

Challenges:

- Incorporated cities face the challenge of having to plan to accommodate the populations of nearby unincorporated communities who have fewer resources.
- Some communities expressed concern that they did not feel that they had received adequate and consistent data and information from state agencies that would assist them in planning for large-scale event response and recovery.
- There is an expectation by some communities that the state have pre-established plans for *how* to provide coordination and resource assistance to local jurisdictions after a large-scale emergency event.
- Most communities indicated that they have been given too many requirements than they have local resources and expertise to adequately meet. In addition, enough assistance and resources from the state to help them meet state and federal requirements have not been provided.

3. Local capacities for responding to or recovering from a large-scale catastrophic event such as a tsunami.

Strengths:

- County jurisdictions seemed more confident in their abilities to handle response efforts.
- Some communities identified that using “lessons learned” from other emergency and disaster events, and conducting more mitigation and preparedness efforts could assist their ability to respond and recover from a large-scale event.

Challenges:

- All communities indicated that a large scale event such as a Cascadia Subduction Zone earthquake and resulting tsunami would overwhelm their resources.
- Three communities indicated that local resources for emergency response would not likely last past the initial 24-hour period.
- All communities indicated concern for a loss of transportation routes because of the heavy damage a Cascadia Subduction Zone earthquake would cause to roads and bridges. The loss of transportation routes also causes a problem of accessing necessary resources, accessing citizens, and having resources brought into the communities.

IV. Conclusion and Recommendations

The research question that this thesis attempts to describe has two components: 1) What is the current intergovernmental structure in the State of Oregon for natural disaster response and recovery; and 2) what is the role of local jurisdictions in responding to and recovering from a large-scale event, such as a tsunami. Using the key findings from both the Document Review section (found on page 27 of this document) and the Interviews section (found on page 34 of this document) this section discusses conclusions and recommendations that address the research question. The conclusions, which have been organized by the two components of the research question, are presented first and serve as a basis for the recommendations that follow.

Conclusions

Intergovernmental Structure for Natural Disaster Planning

There is an intergovernmental structure in place in the State of Oregon for natural disaster planning. In addition, some aspects of the intergovernmental structure are well understood by the four case study communities. For example, the document review and the interviews indicate that all levels of government in this study recognize the structure for requesting a State declaration of an emergency, and for requesting resources: All four case study communities understand that Cities must make such requests through their County's emergency management agency, which must make the requests to the State's Office of Emergency Management.

Another important conclusion is that the State, County, and City governments recognize that there are issues of "shared governance" that occur for natural disaster planning. Based on interview participants' responses and the State's OEMP, the Clatsop

County EOP, the Douglas County EOP, the City of Cannon Beach EMP, and the City of Reedsport EOP, all jurisdictions in the case study recognize the necessity of working with other levels of government for disaster response and recovery. This collaboration is necessitated because of overlapping jurisdictions and the need to share resources.

However, despite the recognition that different levels of government will have to work together for disaster response and recovery, there is very little description at the State, County, and City levels of government of procedural activities that establish *how* the different levels of government will work together when responding to and recovering from a disaster.

In addition to this limited planning for the implementation of intergovernmental response and recovery efforts, there are other weaknesses in the intergovernmental structure. One weakness is that there could be discrepancies in the type or amount of assistance that the State can provide to different communities that face similar response and recovery planning circumstances. For example, all four case study communities face the challenge of tsunami response and recovery planning. However, when asked about opportunities for tsunami response and recovery, Clatsop County referenced its strong working relationship with State agencies, while Douglas County and the City of Reedsport referenced their strong working relationships with each other. Strong relationships between local governments, and strong relationships between local governments and the State government are both important. However, successful natural disaster planning requires that strong relationships exist between all community governments, and at all levels of government.

Another potential weakness in the intergovernmental structure for natural disaster planning is that all four interview participants commented that the amount of State and Federal mandates for disaster and emergency planning pose challenges for their jurisdictions. In addition, two of the interview participants commented on their desire for more direction from the State to meet these mandates.

Local Governments' Role in Tsunami response and Recovery

The document review and interview participants' responses show that both the Cities and both the Counties studied understand the State's mandate that local governments are responsible for being the first responders in the event of an emergency or disaster. However, though they are tasked with the important responsibility of being first responders, interview participants indicated that the Cities do not have the resources to plan to execute a large-scale disaster response and recovery. In addition, all interview participants (both Cities and Counties) indicated that their communities would be overwhelmed in trying to respond to and recover from a large-scale event, such as a Cascadia Subduction Zone earthquake and resulting tsunami.

Part of the reason that the case study communities indicated that they would be overwhelmed by a large-scale natural disaster event could be due to their lack of recovery planning. Both the document review and the interviews show that for the four case study communities, response efforts are generally well developed, while recovery efforts are either lacking or nonexistent. For example, neither of the Cities in this study have emergency recovery plans, and while the Counties indicated that they have recovery plans, their "plans" are recovery actions that are embedded within their response plans.

The majority of the two Counties' recovery actions tend not to address long-term recovery efforts and focus only on short-term activities.

Though all four case study communities would be overwhelmed by a large-scale disaster event, they are aware of the unique planning challenges that face their communities. Two interview participants specifically noted increased numbers of citizens in their jurisdictions due to tourism as a challenge to planning for tsunami response and recovery. The large portions of elderly residents within the communities' populations (indicated in the descriptions of the case study communities) also pose a challenge for tsunami response and recovery planning.

While the case study communities have important responsibilities and challenges for natural disaster response and recovery planning, there is little guidance from the State level on how to accomplish such efforts. Based on the information from the document review, the majority of the State-mandated roles and responsibilities, particularly in the OEMP, describe the State's actions in providing assistance to local governments during or after a natural disaster. What the State does not provide the local governments is assistance or direction to increase local capacity to be effective first responders in the event of a large scale natural disaster. In addition, the State does not even require that City and County governments have recovery plans, nor does the State provide local governments with methods for evaluating the response and recovery plans that they have created.

Recommendations

Based on the above conclusions, the next portion of this section presents a series of recommendations for the City, County, and State levels of government. Though

recommendations are made for the Cities and Counties in this study, the majority of the recommendations are directed toward the State level of government.

Local Governments Need to Develop Recovery Plans

As indicated by the document review and the interviews, neither of the Cities in this study have recovery plans, and while the Counties indicated that they have recovery plans, their “plans” are recovery actions that are embedded within their response plans. The majority of the two Counties’ recovery actions tend not to address long-term recovery efforts and focus only on short-term activities.

The Cities and Counties along the Oregon coast that are at risk to a tsunami event need to develop recovery plans. Successful natural disaster planning requires that activities be developed and implemented for each phase of the disaster cycle, including the recovery phase. Local governments’ recovery plans should develop action items that address both short- and long-term recovery activities. Since local governments are State-mandated first responders, they are the level of government that has the first opportunity to minimize loss from natural disasters (May and Williams 1986). For this reason, it is important that local levels of government develop and implement activities to assist their communities in planning for effective and efficient natural disaster recovery.

The State Needs to Help Increase Local Response and Recovery Capacity

As previously mentioned, local governments are lacking in recovery planning efforts and a process to conduct those planning efforts. In addition, interview participants’ responses indicate that not only do they feel that they would be overwhelmed in trying to respond to and recover from a large-scale disaster event, but

that they would also like increased guidance from the State on how to conduct planning efforts.

To help reduce the risk from tsunamis that coastal communities face, the State government needs to take a more active role in increasing local governments' capacities to respond and recover from such a large-scale event. Examples of ways that the State government could assist local governments in increasing their capacity include the following.

Develop collaborative partnerships to create a holistic response and recovery planning process:

The State government should develop collaborative partnerships with local governments and other stakeholders in order to create a collaborative planning process for Cascadia Subduction Zone earthquake and tsunami response and recovery planning. This study has indicated that recovery efforts within the State of Oregon are lacking at all levels of government. Trying to improve current recovery efforts by simply requiring that local communities create recovery plans will only frustrate local officials who are already feeling overwhelmed by existing requirements and mandates. Instead, creating a collaborative response and recovery planning process can leverage the support and resources from different levels of government and from various stakeholders. Such a process can also increase the capacity of local governments by providing them with technical assistance to help with the development of plans and to maximize the use of local resources.

In addition, a holistic approach to planning can include plan standards and trainings within the planning process. Standards can assist Cities and Counties in evaluating the effectiveness of the plans that they create, and can help emphasize the

importance of the planning process, rather than just having a plan document (Perry and Lindell 2003, 336). Trainings can also be used within the holistic response and recovery planning process to help foster relationships between the individuals and agencies involved in disaster recovery efforts and to test out proposed actions (Perry and Lindell 2003).

In the State of Oregon, response training events do exist, such as the *Pacific Peril* exercise conducted in May, 2006, which brought different government agencies and officials from the Federal, State, County, and City levels together to practice procedures for disaster response. While the State should continue to support and hold such trainings, it is also important that recovery trainings are also provided to help encourage and support local recovery planning efforts. Recovery trainings can increase the understanding at all levels of how the different governments will actually work together for disaster recovery. State-sponsored recovery trainings can also assist City and County governments in identifying the types of recovery issues and challenges that they might be faced with after a tsunami event, and provide a means for collaboratively developing potential solutions.

This type of holistic approach to natural disaster planning already exists in Oregon for natural disaster mitigation planning. The Partners for Disaster Resistance and Resilience takes a holistic approach to mitigation planning by providing a “comprehensive framework for government and the private sector” (“About Oregon” 2005). This approach that the Partners for Disaster Resistance and Resilience to mitigation can be applied to achieve comprehensive response and recovery planning.

Encourage Preparedness and Mitigation:

As previously mentioned, successful natural disaster planning requires that activities be developed and implemented for each phase of the disaster cycle, which includes the preparedness and mitigation phases. Though not covered in the scope of this study, preparedness and mitigation efforts can help to reduce communities' vulnerabilities to tsunami events, reducing the need for response and recovery planning.

Implications

The document review indicates that there is a strong foundation for natural disaster response at the State level. However this amount or level of disaster response planning has not manifested at all local levels of government. In addition, disaster recovery planning is lacking at all levels of government. Effective natural disaster planning requires policies and actions to be developed for every phase of the disaster cycle.

It is important that the governments within the State of Oregon act to improve the state's natural disaster planning efforts. In recent decades within the United States, the responsibility of undertaking natural disaster planning has been assumed by federal, state, and local governments (Platt 1999; Mileti 2001). Though individual citizens bare some responsibility for knowing what to do in the event of an emergency and in protecting themselves and their property, citizens have come to expect governments to do the majority of natural disaster planning (Mileti 2001). In addition, governments are the stakeholders who typically hold the most resources to be able to conduct natural disaster planning (May and Williams 1986).

Within the State of Oregon, local governments have been tasked with the responsibility of being the first responders when an emergency or disaster occurs. The

findings from this study show that some City governments do not feel they have the capabilities to respond to and recover from large scale disaster event, such as a Cascadia Subduction Zone earthquake and resulting tsunami. Because City governments are recognizing and acknowledging their limitations for natural disaster response and recovery, the State should assist them in improving such capacities.

The State can act now to: strengthen the intergovernmental structure for how different levels of government will work together in the event of a disaster; build a holistic planning process that builds collaborative relationships between the different levels of government and other stakeholders; strengthen long-term recovery efforts at all levels of government; and strengthen disaster mitigation and preparedness efforts, which will reduce the need for disaster response and recovery efforts.

Doing so will increase the capacity of local governments in effectively responding to and recovering from large-scale disaster events such as a Cascadia Subduction Zone earthquake and tsunami, reducing the need for State assistance. Not taking actions to improve the intergovernmental structure and the capacity of local governments will perpetuate the problems that exist within the intergovernmental structure and endanger the lives of citizens when a large-scale disaster occurs.

Appendix 1: Glossary and Frequently Used Acronyms

ARC: American Red Cross

City: The governing body or executive authority of the city.

city: The geographic location or geographic extent of the city.

County: the governing body or executive authority of the county.

county: The geographic location or geographic extent of the county.

EAS: Emergency Alert System

ECC: Emergency Coordination Center

EOC: Emergency Operations Center

EMPG: Emergency Management Performance Grant

FEMA: Federal Emergency Management Agency

Incident Command System: The system used by governments to establish procedures for organization and communication during a state of emergency (Oregon Emergency Management 2001).

Mitigation: Actions taken to eliminate or reduce the degree of long-term risk to human life, property, and the environment from natural and technological hazards (Oregon Emergency Management 2001).

NAWAS: National Warning System

NWS: National Weather Service

OAR: Oregon Administrative Rules

OEM: Office of Emergency Management

OEMP: Oregon Emergency Management Plan

OERS: Oregon Emergency Response System

ORS: Oregon Revised Statutes

OSP: Oregon State Police

Preparedness: Actions taken in advance of an emergency to develop operational capabilities and facilitate an effective response in the event an emergency occurs (Oregon Emergency Management 2001).

Recovery: Activities to return vital life support systems to minimum operating standards and long-term activities designed to return life to normal or improved levels, including some form of economic viability (Oregon Emergency Management 2001).

Response: Actions taken immediately before, during, or directly after an emergency occurs, to save lives, minimize damage to property and the environment, and enhance the effectiveness of recovery (Oregon Emergency Management 2001).

Stakeholder: In the context of natural hazard planning, a stakeholder is any individual, business, organization, etc., who can contribute information or resources to the planning process or who has an interest in the outcomes of the planning process.

State: The governing body or executive authority of the state.

state: The geographic location or geographic extent of the state.

Appendix 2: Document Review Analysis

A document review analyzes all documents that are relevant to a specific topic for common characteristics or elements. Though tsunami response and recovery planning has been selected as a focal point of this research, understanding tsunami response and recovery planning requires an understanding of the State of Oregon's larger natural disaster planning structure. For the purpose of this thesis, the document review analyses all natural disaster plans and policies created by the State, and the selected Counties and Cities for what roles and responsibilities they establish for the State, County, and City levels of government.

This appendix contains descriptions of the examined plans and policies, which are provided below and are organized by level of state government. Following the document descriptions, descriptions of some of the roles and responsibilities that the documents identify for each level of government are provided. Role and responsibility descriptions are organized first by level of government and then by whether or not they relate to natural disaster response or recovery efforts. For more information on the document review and its methodology see section two, *Document Review*, on page 27 of this document.

Document Descriptions

State

The following descriptions are of documents related to natural disaster response and recovery that are created at the state level.

Oregon Administrative Rules

Chapter 104 of the Oregon Administrative Rules (OAR) has 33 rules and establishes how the Oregon State Police (OSP) and the Office of Emergency Management (OEM) will establish an Oregon Emergency Response System (OERS) Council. OAR Chapter 104 additionally establishes how the OERS Council will work with local jurisdictions to coordinate state agency activity in the event of a disaster.

Oregon Revised Statutes

Chapter 401 of the Oregon Revised Statutes (ORS) has 137 statutes and provides for emergency management and services within the State of Oregon to reduce the state's vulnerability to loss of life, property and injuries due to emergencies and disasters. ORS Chapter 401 additionally establishes how Oregon's emergency management services will assist in recovery and relief efforts for emergency and disaster events.

State of Oregon Emergency Management Plan Volume II:

The State of Oregon Emergency Management Plan (OEMP) Volume II describes the framework of the roles and responsibilities of state agencies and local jurisdictions for responding to a major emergency or disaster. The OEMP additionally describes the circumstances that would prompt state response assistance to local jurisdictions. The OEMP Volume II has eight annexes. Of those annexes, *Annex A: Emergency Management Organization* serves as the "basic plan." The other annexes describe governmental roles and responsibilities for topics that range from providing alerts and warnings, to providing food and shelter, to how the state will provide support services to local governments and individuals.

County

The following descriptions are of documents related to natural disaster response and recovery that are created at the county level of the communities in the case study.

Clatsop County Emergency Operations Plan

The Clatsop County Emergency Operations Plan (EOP) provides Clatsop County government agencies and emergency service personnel with a framework of responsibilities to guide emergency mitigation, preparedness, response, and recovery activities. The plan includes a basic plan, fourteen appendices, and ten annexes. The appendices provide specific direction for the County's emergency support functions, covering topics such as communication, mass care and social services, and food and potable water. The annexes provide specific direction for the different disasters that can affect the county such as tsunamis, bomb threats, and floods.

Douglas County Emergency Operations Plan

The Douglas County Emergency Operations Plan (EOP) establishes the authority of the government of Douglas County to provide for mitigation, preparedness, response, and recovery activities within the county. The plan includes a Basic Plan and ten annexes that describe governmental roles and responsibilities for topics that range from providing alerts and warnings, evacuation, shelter and mass care, and resource management. In addition, there are eleven appendices that supplement the annexes.

City

The following descriptions are of documents related to natural disaster response and recovery that are created at the city level of the communities in the case study.

City of Cannon Beach Emergency Management Plan

The City of Cannon Beach's Emergency Management Plan (EMP) establishes the activities that various City of Cannon Beach agencies will execute in the event of a state of emergency. The City of Cannon Beach EMP consists of individualized emergency response plans for the City Hall, the Police Department, the Public Works Department, the Cannon Beach Rural Fire Protection District, and other agencies.

City of Reedsport Emergency Operations Plan

The City of Reedsport's Emergency Operations Plan provides for how the City will utilize its resources to "administer a comprehensive emergency management program." The City of Reedsport's EOP has a basic plan, eight appendices, and fourteen emergency support function documents. These sections provide specific instruction for such tasks as evacuation, how the City will conduct trainings and exercises, as well as has an emergency operations plan for natural disaster response.

State Role and Responsibility Descriptions

Below are descriptions of the government of the State of Oregon's roles and responsibilities for 1) natural disaster response and 2) natural disaster recovery that are established by the documents listed above.

Response

Oregon Administrative Rules

Of the 33 rules in OAR Chapter 104, one relates to the state's roles and responsibilities for disaster response. This rule establishes the responsibilities of the OERS Council, and the establishment of the council as the main point of contact during a natural disaster to either alert the state of a disaster, or to request state or federal resources.

Oregon Revised Statutes

Of the 137 statutes in ORS Chapter 401, 19 relate to the state's roles and responsibilities for disaster response. Some of the main roles and responsibilities established by these statutes include the following:

- Identifies the Governor of the State of Oregon as the individual responsible for the emergency services system within the state. This includes the authority to declare a state of emergency within the state by proclamation.
- Provides the Governor of the State of Oregon with the authority to control all state executive agencies, exercise police powers, suspend any agency rule or order during a state of emergency, and seek federal assistance.
- Identifies the chain of command for handling emergency services before and during a state of emergency if the Governor cannot be reached.
- Protects any state agent from being held liable for damage or injury caused when acting in compliance with the ORS during a state of emergency, but does not protect state agents who are found to have acted with willful misconduct, gross negligence, or bad faith.
- Authorizes the expenditure of state money and resources used to respond to an emergency be deemed an administrative expense of the agency.

State of Oregon Emergency Management Plan Volume II:

Some of the main roles and responsibilities that the OEMP Volume II establishes for the government of the State of Oregon for disaster response include the following:

- *Annex A: Emergency Management Organization* authorizes the transformation of the office of Oregon Emergency Management (OEM) into the Emergency

Coordination Center (ECC) when an emergency occurs. In addition, once activated by state officials, the OEMP establishes the ECC as the single point of contact for an integrated state response to allow for a centralized location for the coordination of state activities for emergency response.

- *Annex A: Emergency Management Organization* authorizes the ECC to integrate with the local incident command system when activated and assisting local governments.
- *Annex B: Alert and Warning* describes the system to be used to communicate alert and warning messages between different levels of government and to the public. It additionally identifies the Oregon Emergency Response System (OERS) as the body responsible for coordinating alert and warning activities in the state.
- *Annex D: Public Information* establishes the Public Information Team in the event of an emergency or disaster to communicate information to the public. This annex additionally describes the responsibilities of the Public Information Team and establishes guidelines for communicating emergency information to the public.
- *Annex E: Evacuation* identifies that the ECC only provides assistance with evacuations in the event of an emergency or disaster requiring large scale or multi-county evacuation. This appendix further describes how state-lead evacuations will occur. *Annex G: Housing, Shelter, and Feeding* identifies the responsibility of the State to remain the primary provider of welfare of its citizens during an emergency. This annex additionally establishes guidelines

that the state should follow when providing assistance to local jurisdictions for housing, shelter, and feeding efforts.

- *Annex H: State Support Functions* describes how the state agencies will work with federal government agencies to provide assistance to local governments and individuals.

Clatsop County Emergency Operations Plan

The Clatsop County EOP relates to the roles and responsibilities of the government of the State of Oregon for disaster response by:

- Recognizing the Governor of the State of Oregon’s authority and responsibility for emergency activities during a State declared emergency.
- Recognizing the ability of the State to provide Clatsop County with additional assistance for emergency response when requested from OEM.

Douglas County Emergency Operations Plan

The Douglas County EOP relates to the roles and responsibilities of the government of the State of Oregon for disaster response by:

- Recognizing the Governor and the State’s authority and responsibility for emergency activities during a State declared emergency.
- Assuming that OEM will pass alert and warning information to Douglas County Communications, the local warning point in Douglas County.

City of Cannon Beach Emergency Management Plan

The City of Cannon Beach EMP relates to the roles and responsibilities of the government of the State of Oregon for disaster response by recognizing the ability of the state government to help provide the city with assistance and resources for disaster response upon request.

City of Reedsport Emergency Operations Plan

The City of Reedsport EOP relates to the roles and responsibilities of the government of the State of Oregon for disaster response by recognizing the ability of the state government to help provide the city with assistance and resources for disaster response upon request.

Recovery

Oregon Administrative Rules

There are no rules of OAR Chapter 104 that define roles or responsibilities for government of the State of Oregon for disaster recovery.

Oregon Revised Statutes

Of the 137 statutes in ORS Chapter 401, one relates to the state's roles and responsibilities for disaster recovery. The roles and responsibilities established by this statute include the following:

- *ORS 401.505* authorizes the Governor of the State of Oregon to accept offers of assistance or resources for the provision of emergency services (including emergency recovery) from any organization, agency, person, firm, corporation, or officer.

State of Oregon Emergency Management Plan Volume II

Some of the main roles and responsibilities that the OEMP Volume II establishes for the government of the State of Oregon for disaster recovery include the following:

- *Annex A: Emergency Management Organization* identifies the Plans and Operations Manager as the individual with the authority to release ECC staff from their duties as the emergency or disaster situation transitions from response to recovery. In addition, the Plans and Operations Manager is

responsible for scheduling and conducting debriefings after the transition into disaster recovery occurs. This section also provides for the logs and records of the event to be submitted to the documentation unit to be incorporated into the official record of the event.

Clatsop County Emergency Operations Plan

The Clatsop County EOP relates to the roles and responsibilities of the government of the State of Oregon for disaster recovery by recognizing the ability of the state government to help provide the county with assistance and resources upon request.

Douglas County Emergency Operations Plan

The Douglas County EOP relates to the roles and responsibilities of the government of the State of Oregon for disaster recovery by recognizing the ability of the state government to help provide the county with assistance and resources upon request.

City of Cannon Beach Emergency Management Plan

The City of Cannon Beach EMP relates to the roles and responsibilities of the State of Oregon for disaster recovery by recognizing the ability of the state government to help provide the city with assistance and resources for disaster recovery upon request.

City of Reedsport Emergency Operations Plan

The City of Reedsport EOP relates to the roles and responsibilities of the State of Oregon for disaster recovery by recognizing the ability of the state government to help provide the city with assistance and resources for disaster recovery upon request.

County Role and Responsibility Descriptions

Below are descriptions of the county governments' roles and responsibilities for 1) natural disaster response and 2) natural disaster recovery that are established by the documents listed above.

Response

Oregon Administrative Rules

There are no rules of OAR Chapter 104 that define roles or responsibilities of county governments for disaster response.

Oregon Revised Statutes

Of the 137 statutes in ORS Chapter 401, 11 relate to the counties' roles and responsibilities for disaster response. Some of the main roles and responsibilities established by these statutes include the following:

- Declares that the governmental responsibility for emergency preparedness and emergency response be placed on local governments. Additionally identifies the executive officer or governing body of each county as the individual(s) responsible for the emergency services within their jurisdiction
- Requires county governments to create emergency management agencies, and to create policies for communicating and collaborating with any emergency management programs of cities within their jurisdictions.
- Requires county governments to develop emergency operations plans to direct county officials during disaster response activities, and requires counties to establish a local incident command system to organize and manage disaster response activities.
- Establishes the protocol for counties for submitting requests for declarations of states of emergency. In addition, counties are responsible for submitting request for the cities within their jurisdictions.

State of Oregon Emergency Management Plan Volume II

Some of the main roles and responsibilities established by the OEMP Volume II for the county governments for disaster recovery include the following:

- *Annex A: Emergency Management Organization* identifies the Executive Officer(s) of a county as the individual with the authority to request state of emergency declarations from the governor for their county or for the cities within their county. Additional request for assistance must be processed through the county's emergency management office. In addition, State assistance will only be provided when resources at the city and county levels have been depleted or are nearing depletion.
- *Annex B: Alert and Warning* identifies the systems to be used to communicate alert and warning information from the state government to county governments. In addition, this annex identifies county procedures as the ones to be used for responding to an occurring or imminent emergency or disaster. However, local county governments yield power to the state if the ECC is activated.
- *Annex D: Public Information* establishes that county news broadcasts of emergency information be monitored by the State's Public Information Team to ensure accuracy.
- *Annex E: Evacuation* establishes that the responsibility for ordering and coordinating evacuations be placed on local governments. However, this annex also establishes that local governments will yield control of evacuation efforts to the OSP when the ECC is activated.

- *Annex G: Housing, Shelter, and Feeding* suggests that local county emergency operations plans include guidance for extra supervision during an emergency for special populations.
- *Annex H: State Support Functions* establishes the responsibilities for requesting necessary assistance from the state be placed on local county governments. Additionally, county Emergency Managers are the individuals responsible for coordinating all requests to OERS for state assistance through the county's Emergency Operations Center.

Clatsop County Emergency Operations Plan

Some of the main roles and responsibilities established by the Clatsop County EOP that relate directly to the government of Clatsop County for disaster response include the following:

- The basic plan establishes that the County Emergency Operations Center (EOC) will be the point of direction for emergency activities during a disaster. In addition, the plan establishes that the Incident Command System (ICS) will be used to coordinate the County's different agencies and activities.
- The basic plan identifies the Clatsop County Sheriff as the individual who will act as the emergency management director during a state of emergency and be responsible for overseeing emergency service activities.
- The basic plan requires County departments and the Clatsop County Fire Defense Board to designate personnel to serve as representatives at the EOC during a state of emergency, and to receive training on the ICS.

- The basic plan recognizes the County's responsibility to request state assistance for the cities within its jurisdiction.
- *Annex B: Clatsop County Tsunami Response Plan* establishes the procedures and activities that will guide County government agencies and personnel during a distant or local tsunami event.

Douglas County Emergency Operations Plan

Some of the main roles and responsibilities established by the Douglas County EOP that relate directly to the government of Douglas County for disaster response include the following:

- The *Basic Plan* identifies the local government as being responsible for emergency management activities. This section additionally identifies the individuals and agencies responsible for emergency activities and outlines the tasks that should be completed before, during, and after a state of emergency.
- *Annex A: Alert, Warning, and Notification* identifies the Emergency Services Coordinator as the person who will receive warning information from OEM and decide how to proceed in issuing a warning for the county. This annex additionally describes the systems to be used before and during a state of emergency to communicate alert and warning information between County agencies and to the public.
- *Annex C: Emergency Public Information* establishes the procedures, including the use of the Emergency Broadcast System, to be used by County agencies for releasing emergency information to the public.

- *Annex E: Health and Medical* recognizes the need for the County Health Administrator to coordinate closely with the private medical care providers within the county.
- *Annex F: Evacuation* establishes how the County will notify citizens when an evacuation is needed, and establishes the roles and responsibilities of various County government agencies during an evacuation event.
- *Annex G: Shelter and Mass Care* establishes the procedures for providing mass shelter and care for citizens after an emergency event. This annex additionally recognizes the importance of working with organizations like the American Red Cross to provide mass care.

City of Cannon Beach Emergency Management Plan

The City of Cannon Beach EMP relates to the roles and responsibilities of the government of Clatsop County for disaster response by recognizing the ability of the county government to help provide the city with assistance and resources for disaster response upon request.

City of Reedsport Emergency Operations Plan

The City of Reedsport EOP relates to the roles and responsibilities of the government of Douglas County for disaster response by recognizing the ability of the county government to help provide the city with assistance and resources for disaster response upon request.

Recovery

Oregon Administrative Rules

There are no rules of OAR Chapter 104 that define the roles or responsibilities of county governments for disaster recovery.

Oregon Revised Statutes

Of the 137 statutes in ORS Chapter 401, five relate to the counties' roles and responsibilities for disaster recovery. Some of the main roles and responsibilities established by these statutes include the following:

- Authorizes each county to develop and implement procedures for emergency recovery, authorizes counties to take certain measures to provide recovery assistance to citizens.
- Requires each 9-1-1 jurisdiction (which can be a county) to create a disaster recovery plan for its 9-1-1 emergency reporting system that includes recovery procedures for interrupted service, backup plan in the event the primary system becomes inoperable, and 24-hour emergency numbers for service providers.

State of Oregon Emergency Management Plan Volume II

The OEMP Volume II does not define roles or responsibilities of county governments for disaster recovery.

Clatsop County Emergency Operations Plan

Some of the main roles and responsibilities established by the Clatsop County EOP that relate directly to the government of Clatsop County for disaster recovery include the following:

- Authorizes the County to undertake recovery efforts.
- Establishes recovery activities that all County government agencies should take, such as conducting a damage analysis and analyzing recovery activity options.

Douglas County Emergency Operations Plan

Some of the main roles and responsibilities established by the Douglas County EOP that relate directly to the government of Douglas County for disaster recovery include the following:

- Authorizes the County to undertake recovery efforts.
- Directs emergency agencies to consider and analyze different recovery options for the County.
- Directs emergency agencies to generate and maintain reports about their response and recovery activities.

City of Cannon Beach Emergency Management Plan

The City of Cannon Beach EMP relates to the roles and responsibilities of the government of Clatsop County for disaster recovery by recognizing the ability of the county government to help provide the city with assistance and resources for disaster recovery upon request.

City of Reedsport Emergency Operations Plan

The City of Reedsport EOP relates to the roles and responsibilities of the government of Douglas County for disaster recovery by recognizing the ability of the county government to help provide the city with assistance and resources for disaster recovery upon request.

City Role and Responsibility Descriptions

Below are descriptions of the city governments' roles and responsibilities for 1) natural disaster response and 2) natural disaster recovery that are established by the documents listed above.

Response

Oregon Administrative Rules

There are no rules of OAR Chapter 104 that define the roles or responsibilities of city governments for disaster response.

Oregon Revised Statutes

Of the 137 statutes in ORS Chapter 401, nine relate to the cities' roles and responsibilities regarding disaster response. Some of the main roles and responsibilities established by ORS Chapter 401 that relate directly to the city governments for disaster response include the following:

- Declares that the governmental responsibility for emergency preparedness and emergency response be placed on local governments.
- Identifies the officer of governing body of each county as the individual(s) responsible for the emergency services within their jurisdiction.
- Requires cities to submit requests for emergency declarations through the governing body of the county in which the city is located.
- Allows, but does not require, cities to create emergency management programs. In addition, cities with emergency management programs will create policies to communicate and coordinate with the emergency management agency of the county in which the city is located.
- Requires cities with emergency management programs to develop emergency operations plans to direct city officials during emergency response activities, and requires city emergency management programs to establish a local incident command system to organize and manage disaster response activities.

State of Oregon Emergency Management Plan Volume II

Some of the main roles and responsibilities established by the OEMP Volume II that relate directly to the city governments for disaster response include the following:

- *Annex A: Emergency Management Organization* identifies the Executive Officer(s) of a county as the individual with the authority to request state of emergency declarations from the governor for the cities within their county. State assistance will only be provided when resources at the city and county levels have been depleted or are nearing depletion.
- *Annex B: Alert and Warning* identifies the systems to be used to communicate alert and warning information from the state government to the city governments. In addition, this annex identifies city procedures as the ones to be used for responding to an occurring or imminent emergency or disaster. However, local city governments yield power to the state if the ECC is activated.
- *Annex D: Public Information* establishes that the city news broadcasts of emergency information be monitored by the State's Public Information Team to ensure accuracy.
- *Annex E: Evacuation* establishes that the responsibility for ordering and coordinating evacuations be placed on local city governments, However, this annex also establishes that local governments will yield control of evacuation efforts to the OSP when the ECC is activated.

- *Annex G: Housing, Shelter, and Feeding* suggests that local county emergency operations plans include guidance for extra supervision during an emergency for special populations.
- *Annex H: State Support Functions* establishes the responsibilities for requesting necessary assistance from the state be placed on local city governments. Additionally, city Emergency Managers are the individuals responsible for coordinating all request to OERS for state assistance through the county's Emergency Operations Center.

Clatsop County Emergency Operations Plan

Some of the main roles and responsibilities established by the Clatsop County EOP that relate directly to the incorporated city governments within Clatsop County for disaster response include the following:

- Recognizes cities' authority (as granted by the state) to establish their own emergency management offices, but recommends that the cities emergency management offices establish contacts with the County's emergency management agency.
- Identifies the Chief Executives of incorporated cities within Clatsop County as the individuals responsible for directing and managing local resources during an emergency or disaster event, and as the individual responsible for requesting additional assistance from Clatsop County Emergency Services.

Douglas County Emergency Operations Plan

Some of the main roles and responsibilities established by the Douglas County EOP that relate directly to the city governments within Douglas County for disaster response include the following:

- Recognizes cities' authority (as granted by the state) to establish their own emergency management offices, but recommends that the cities emergency management offices establish contacts with the County's emergency management agency.
- Identifies the Chief Executives of incorporated cities within Douglas County as the individuals responsible for directing and managing local resources during an emergency or disaster event, and as the individual responsible for requesting additional assistance from Douglas County Emergency Services.

City of Cannon Beach Emergency Management Plan

Some of the main roles and responsibilities established by the City of Cannon Beach EMP that relate directly to the government of the City of Cannon Beach for disaster response include the following:

- Establishes that the Incident Command System (ICS) will be used to control and direct government response activities during an emergency event. The plan further identifies the highest ranking police officer and fire fighter as being the individuals responsible for co-commanding the ICS.
- Recognizes the County's authority when the County must become involved in responding to an emergency event. Various subsections of the plan additionally recognize the importance of the County in providing assistance and resources to the City of Cannon Beach.
- Establishes specific actions that government agencies and individuals will take to respond to an emergency event.

- Provides lists of resources within each city government agency that can be used to respond to an emergency event.

City of Reedsport Emergency Operations Plan

Some of the main roles and responsibilities established by the City of Reedsport EOP that relate directly to the government of the City of Reedsport for disaster response include the following:

- Establishes that the Incident Command System (ICS) will be used to control and direct government response activities during an emergency event. The plan further identifies either the police chief, fire chief, or public works directors as the individuals who will assume responsibility for commanding the ICS based on the type of emergency or disaster.
- Recognizes the County's authority when the County must become involved in responding to an emergency event. Various subsections of the plan additionally recognize the importance of the County in providing assistance and resources to the City of Reedsport.
- Establishes specific actions that government agencies and individuals will take to respond to an emergency event.
- Establishes that an Emergency Operations Center will be activated by the city in the event that a disaster occurs.

Recovery

Oregon Administrative Rules

There are no rules of OAR Chapter 104 that define the roles or responsibilities of city governments for disaster recovery.

Oregon Revised Statutes

Of the 137 statutes in ORS Chapter 401, five relate to the cities' roles and responsibilities for disaster recovery. Some of the main roles and responsibilities established by these statutes include the following:

- Authorizes each city to develop and implement procedures for emergency preparedness, response, recovery, and mitigation. Such procedures shall include descriptions for what conditions would require a local declaration of a state of emergency.
- Requires each 9-1-1 jurisdiction (which can be a city) to create a disaster recovery plan for its 9-1-1 emergency reporting system that includes recovery procedures for interrupted service, backup plan in the event the primary system becomes inoperable, and 24-hour emergency numbers for service providers.

State of Oregon Emergency Management Plan Volume II

The OEMP Volume II does not define the roles or responsibilities of city governments for disaster recovery.

Clatsop County Emergency Operations Plan

The Clatsop County EOP does not define roles or responsibilities for the city governments within Clatsop County for disaster recovery.

Douglas County Emergency Operations Plan

The Douglas County EOP does not define roles or responsibilities for the city governments within Douglas County for disaster recovery.

City of Cannon Beach Emergency Management Plan

Some of the main roles and responsibilities established by the City of Cannon Beach EMP that relate directly to the government of the City of Cannon Beach for disaster recovery include the following:

- Requires city government agencies to document and maintain reports of activities and incurred costs for emergency event response and recovery.
- Requires city government agencies to prepare to assist citizens and higher levels of government with recovery efforts.

City of Reedsport Emergency Operations Plan

Some of the main roles and responsibilities established by the City of Reedsport EOP that relate directly to the government of the City of Reedsport for disaster recovery include the following:

- *Emergency Support Function 11: Recovery Planning Section* outlines how the Recovery Planning Section Chief will develop a recovery plan that will be implemented at the start of the disaster.
- Establishes that response efforts take precedent over recovery efforts.

Appendix 3: Interview Transcripts

Interviews can be conducted to gain technical information from individuals who have expert and professional knowledge in specific areas. Other studies that have examined intergovernmental structures for natural hazard and emergency operations planning have used interviews to conduct their research (May and Williams 1986). For the purposes of this thesis, interview participants were identified because of their role as a public official, within one of the case study communities, who is involved in their jurisdiction's natural hazard planning. The following is the list of interview participants:

- The Emergency Management Coordinator for Clatsop County;
- The Fire Chief of the Cannon Beach Fire District;
- The Emergency Management Director for Douglas County; and
- The City Manager of The City of Reedsport.

For both response and recovery efforts, interview questions were created to address the following topics:

1. The efforts of the jurisdiction to plan for responding to or recovering from a large-scale catastrophic event;
2. The intergovernmental framework in the State of Oregon for natural hazard response or recovery planning; and
3. Local capacities for responding to or recovering from a large-scale catastrophic event such as a tsunami.

This appendix contains the compiled interview transcripts of participants' responses. For more information on the interviews and their methodology see section three, *Interviews*, on page 34 of this document.

Responses by Question

The transcripts of interview participants' responses are on file with Oregon Natural Hazards Workgroup at the University of Oregon's Community Service Center.

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