

Threat and Hazard Identification and Risk Assessment

Portland Urban Area (PUA)

November 2012



FEMA

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Introduction

This document contains the 2012 Threat and Hazard Identification and Risk Assessment for the Portland Urban Area (PUA). It aligns with the Comprehensive Preparedness Guide (CPG) 201 and contains the following elements:

- A comprehensive list of known natural, technological and human-caused threats and hazards of concern in the PUA;
- Desired outcome statements for all 31 Core Capabilities (CCs);
- Estimated impacts for key threats and hazards of concern; [In our case the PUA used scenarios for earthquake, multiple improvised explosive devices and pandemic influenza to generate estimated impacts for all CCs]; and
- Capability targets for all 31 CCs, based on greatest impacts.

Three separate disaster scenario documents accompany this THIRA and contain data and other information sources.

To complete this project, the PUA organized a leadership team comprising the Portland Urban Area Security Initiative (UASI) grant program administrator, the Chair of the Regional Disaster Preparedness Organization¹ (RDPO) Steering Committee, the RDPO Administrator and a program coordinator (from one of the RDPO partner agencies). The PUA THIRA leadership team also worked in partnership with the THIRA team from the Oregon Office of Emergency Management, who provided invaluable information, guidance and moral support.

From late August to early November 2012, the RDPO Administrator and partner program coordinator facilitated a participatory product completion process engaging a dozen subject matter experts (SMEs) from several key discipline groups in the PUA, including Law Enforcement, Emergency Management, Public Safety Communications, and Public Health. Completing the THIRA and updating the accompanying scenarios took more than 120 person-hours and 14 work sessions.

The three scenarios upon which the RDPO developed its THIRA originated as work products of the PUA's 2008-2009 Program and Capability Review process. Select SMEs, as well as a local disaster mitigation specialist, reviewed and updated the earthquake, multiple improvised explosive devices and pandemic influenza scenarios, as needed.

During the process of completing the THIRA, the PUA THIRA leadership team and SME group faced several challenges, including:

- Tight timeline to complete the THIRA:** With less than four months to learn the new and complex THIRA system and function effectively in completing its own THIRA, the leadership team had to contain the engagement process to a smaller than ideal group. Given more time

¹ The RDPO is a new collaborative partnership of jurisdictions and organizations around the Portland Urban Area voluntarily working together to develop and coordinate all hazards disaster preparedness efforts. The RDPO co-manages the Portland Urban Area Security Initiative (UASI) grant program together with the Portland Bureau of Emergency Management (PBEM). The PBEM director serves as the UASI Grant Administrator for the PUA.

and technical assistance, the leadership team would have engaged all of its work groups and other levels of the RDPO in the actual development process.

- **Difficulty interpreting and applying the Core Capabilities:** The PUA team had to spend an inordinate amount of time trying to interpret several of the CCs' meaning and determine how to develop appropriate statements--from impact to desired outcomes to targets. The PUA team also found that several of the CCs overlapped and or varied in complexity and depth, which caused additional interpretation and application issues in the process of completing the THIRA steps. Additional technical assistance and samples may have helped reduce this burden.
- **Questions arose about how to set realistic, achievable targets:** The PUA grappled with setting realistic, achievable targets, especially when faced with catastrophic impacts.
- **Technical assistance required to participate effectively:** The technical assistance provided by FEMA to the RDPO Administrator and program coordinator in Washington, D.C. last August was inadequate given the THIRA's complexity. Furthermore, to enable the SMEs to contribute effectively, this same team had to provide hours of technical assistance to the SMEs, which slowed down the completion process.

In the end, the PUA THIRA leadership team is pleased to submit this THIRA and supporting documents--confident that it is a solid effort from our region.

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Portland Urban Area's Comprehensive Threat and Hazards List

Natural	Technological	Human-Caused
Drought	Dam failure	Cyber incident
Dust storm	Levee failure	Enemy attack
Earthquake	Hazardous materials	Multiple victim shooting
Fire (wild-urban interface)	Urban conflagration	Riot
Flood		Sabotage
Landslide/debris flow		Improvised Explosive Device
Tsunami		Bioterrorism
Volcanic hazards		Other terrorist act
Windstorm		
Winter storm		
Disease outbreak: human		
Disease outbreak: animal		

Threat and Hazard Description Statements

Threat/Hazard Group	Threat/Hazard Type
Natural	<i>Earthquake</i>
<p>Description 1: At 8:32 a.m. on a Monday in March, a 7.1 magnitude earthquake strikes along the Portland Hills fault zone in the Portland Urban Area (population: approximately 2.1 million). It is followed a short time later by a 6.0 aftershock.</p>	
Natural	<i>Pandemic Influenza</i>
<p>Description 1: A second cycle of a novel influenza (Pandemic Severity Index Category 3 – i.e., Moderate Pandemic) has begun to circulate in the the Portland Urban Area in mid-November. The Centers for Disease Control and Prevention (CDC) have developed a vaccine, which is available only in limited quantities.</p>	
Human Caused	<i>Multiple Improvised Explosive Device(s)</i>
<p>Description 1: At 10 a.m. on a Monday, there are three simultaneous IED attacks at the Oregon Health and Science University (OHSU) Research Center on Marquam Hill in Portland, the Oregon Primate Center in Hillsboro and a residence located in the Vancouver, WA area.</p>	

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Desired Outcomes

	Core Capability	Desired Outcome
Common	Planning	<p>Regional all-hazards plans that address all of the mission areas, with specific annexes as required, are maintained every three years.</p> <p>Cities with populations over 50,000, all counties, and other local governments owning regionally-critical infrastructure have, maintain, and utilize the following plans:</p> <ol style="list-style-type: none"> 1 – Comprehensive, all-hazard Emergency Operations Plan 2 – Continuity of Operations Plan 3 – Natural Hazards Mitigation Plan 4 – Disaster Recovery Framework 5 – Critical Infrastructure Protection Plan
	Public Information and Warning	<p>Public information campaigns to help build community resiliency are delivered on an ongoing basis.</p> <p>Information is provided immediately following the incident, and in a regionally coordinated manner in the subsequent days, to enable the public, businesses, non-governmental organizations, and government agencies to be aware and to take appropriate protective action and access assistance.</p> <p>Coordinated public messaging with regional partners is maintained in the days and weeks following the incident to support recovery efforts.</p>
	Operational Coordination	<p>A regional multi-agency coordination system (MACS) capable of policy development and decision making to support incident response is activated within two hours of an incident.</p> <p>A unified and integrated command, support, and coordination structure and process that appropriately involves critical stakeholders and supports the execution of core capabilities is implemented in impacted areas within two hours of an incident.</p>
Prevention	Forensics and Attribution	<p>Local, state, and federal law enforcement agencies act individually and collectively, consistent with agency authority, to collect evidence and investigate, analyze, and attribute terrorism activities to assist in the prevention of initial or follow-on terrorist acts.</p>

Prevention and Protection	Intelligence and Information Sharing	<p>Relevant, timely, and actionable information and analysis is shared with and between local, state, federal, and private partners to anticipate and identify emerging and/or imminent threats.</p> <p>Qualifying information is declassified and shared with key stakeholders and responders in accordance with established protocols and investigative need.</p>
	Interdiction and Disruption	<p>All persons, materials, and conveyances associated with an imminent threat to the PUA are interdicted.</p> <p>Terrorist acquisition and transfer of chemical, biological, radiological, nuclear and explosive (CBRNE) materials and precursors is prevented.</p> <p>All CBRNE hazards are rendered safe and properly disposed of.</p> <p>Local, state, and federal law enforcement agencies consistently conduct counterterrorism tactical operations in a coordinated manner.</p>
	Screening, Search, and Detection	<p>Local, state, and federal law enforcement and homeland security agencies act individually and collectively, consistent with agency authority, to screen all targeted persons, materials, and conveyances associated with an imminent terrorist threat.</p>
Protection	Access Control and Identity Verification	<p>Verification of identity to authorize, grant, or deny physical and cyber access to regionally critical infrastructure, information and networks is assured. Long term perimeter security is established within 24 hours of incident impact.</p>
	Cybersecurity	<p>Regionally critical electronic communications systems are secured against malicious activity and have in place countermeasures to limit disruption and unauthorized data release.</p>
	Physical Protective Measures	<p>People, structures, materials, products, and systems of key operational processes and critical infrastructure sectors are protected against internal and external threats in order to reduce or mitigate the impacts of incidents.</p>
	Risk Management for Protection Programs and Activities	<p>Risk assessments are completed for all regionally-critical infrastructure assets.</p>
	Supply Chain Integrity and Security	<p>Key supply nodes are identified, strengthened, and secured to minimize supply chain disruptions.</p>

Mitigation	Community Resilience	Risk mitigation plans are implemented with whole community partners to minimize incident-specific and future risks.
	Long-term Vulnerability Reduction	Vulnerability of critical infrastructure, systems and community features at risk to future incident is reduced.
	Risk and Disaster Resilience Assessment	Risk and disaster resilience are assessed so decision makers, responders, and community members can take informed action to reduce risk and increase resilience.
	Threats and Hazard Identification	PUA threats and hazards, including their frequency and impacts, are identified, assessed, prioritized, and incorporated into appropriate planning processes in partnership with whole community partners.
Response	Critical Transportation	Accessible transportation corridors and/or alternate delivery methods are established to facilitate response and recovery operations and address public safety, health, and security needs during the first 72 hours of an incident.
	Environmental Response/Health Safety	<p>During the first 24 hours of an incident, assessments to identify environmental health and safety concerns for response personnel and the affected community are completed.</p> <p>During the first 72 hours of an incident site and incident-specific health and safety plans are developed, distributed, and implemented.</p>
	Fatality Management Services	Fatality management operations are initiated during the first 24 hours of an incident.
	Mass Care Services	Life sustaining services focused on hydration, feeding and sheltering, along with other mass care services, including pet recovery, counseling, and family/pet reunification, are initiated during the first 72 hours of an incident.
	Mass Search and Rescue Operations	Search and rescue operations to locate and rescue persons in distress, including individuals with access and functional needs, are initiated during the first 24 hours of an incident.
	On-Scene Security and Protection	<p>A safe and secure environment for responders is established during the first 24 hours of an incident.</p> <p>A safe and secure environment for the affected community is established during the first 72 hours of an incident.</p>

	Operational Communications	<p>Operable voice communication between emergency responders and emergency response facilities is established during the first 24 hours of an incident.</p> <p>An ability to communicate with affected populations is established during the first 48 hours of an incident.</p> <p>Interoperable voice and data communications between emergency responders and emergency response facilities are established during the first 72 hours of an incident.</p>
	Public and Private Services and Resources	Essential public, private, and nongovernmental services and resources, including fire and other first response services, emergency power for critical facilities, fuel support for emergency response operations, and access to community staples, are provided to the affected communities during the first 72 hours of an incident.
	Public Health and Medical Services	Triage and initial stabilization of casualties are completed and definitive care for those likely to survive their injuries is initiated during the first 72 hours of an incident.
	Situational Assessment	<p>A comprehensive situational assessment is completed and a common operating picture developed during the first 24 hours of an incident.</p> <p>Decision relevant information regarding the nature and extent of the incident, any cascading effects, and the status of the response is delivered to decision makers during the first 24 hours of an incident.</p>
Response and Recovery	Infrastructure Systems	<p>Damaged critical infrastructure is stabilized and essential life sustaining services are at least partially restored during the first 96 hours of an incident.</p> <p>A whole community planning process with a specified timeline for redeveloping community infrastructure to contribute to resiliency, accessibility, and sustainability is commenced within six months of an incident.</p>
Recovery	Economic Recovery	<p>A preliminary assessment of economic impacts is completed and potential inhibitors to fostering stabilization of the affected communities are identified within 60 days of an incident.</p> <p>A community plan to resume economic and business activities and to create new business and employment opportunities is developed and implemented within six months of an incident.</p>

	Health and Social Services	<p>An assessment of community health and social services needs is completed within 96 hours of an incident.</p> <p>Health and social services functions sufficient to meet basic community needs are restored within 60 days of an incident.</p>
	Housing	<p>Housing impacts and needs are assessed and available options for temporary housing are identified within 60 days of an incident.</p> <p>A plan for permanent housing is developed within 6 months of an incident.</p>
	Natural and Cultural Resources	<p>Initial impacts to natural and cultural resources are mitigated and stabilized during the first 72 hours of an incident.</p> <p>A preliminary assessment and plan to mitigate the impacts to natural and cultural resources that identifies protections during debris removal, restoration and recovery is completed within 60 days of an incident.</p>

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Estimated Impacts based on Threat and Hazard Descriptions

	Common			Prevention	Prevention/Protection		
	Planning	Public Information and Warning	Operational Coordination	Forensics and Attribution	Intelligence and Information Sharing	Interdiction and Disruption	Screening, Search and Detection
Earthquake	Activate and execute EOP and COOP. Develop recovery plan for the event.	Provide coordinated safety instructions to people in the affected area.	Need for city/county/regional /state/private sector coordination in the PUA.	N/A	N/A	N/A	N/A
Pandemic Influenza	Translate pandemic annex into regional action plan. Activate mass prophylaxis, vaccine, and personal protective SOPs and plans. Activate regional hospital surge plan. Activate mass fatality plan	Inform people in the PUA on the disease and associated risk, treatment and protective measures.	Need for city/ county/regional/ state/private sector coordination in the PUA (e.g., need to stand up the Public Health and health-Medical MAC-Gs). Need for Coordination with the CDC.	N/A	N/A	N/A	N/A

Multiple IEDs	<p>Translate County Terrorist Annexes into Regional Crisis Action Plan.</p> <p>Activate Comms, Master Mutual Aid/Mobilization Plan (MAA MOB), Mass Casualty, Regional JIS, Conflagration Act and HazMat plans.</p>	<p>Provide direction regarding safety and heightened awareness of suspicious activity to the PUA.</p>	<p>Same as above.</p> <p>Site specific UC, multiple EOCs, FBI JOC.</p>	<p>Identify explosive type</p> <p>Determine source of origin</p>	<p>Need for sharing classified and unclassified information at all levels.</p> <p>Declassify information to share with key stakeholders, responders.</p> <p>JTTF and TITAN Fusion Center.</p>	<p>Activate MEDU, CBRNE, first responders and other specialty teams.</p>	<p>K-9 units, MEDU, air monitoring, criminal investigation and fugitive apprehension teams.</p>
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		Protection				Mitigation				
		Access Control and Identity Verification	Cybersecurity	Physical Protective Measures	Risk Management for Protection Programs and Activities	Supply Chain Integrity and Security	Community Resilience	Long-term Vulnerability Reduction	Risk and Disaster Resilience Assessment	Threats and Hazards Identification
Earthquake		Heavily damaged Critical Infrastructure /Key Resources (CI/KR), businesses, EOCs, residential areas.	Increased vulnerability due to infrastructure damage	Heavily damaged CI/KR and EOCs.	N/A	Damage to ports, railways, highways, pipelines	Widespread damage to education systems, management of spontaneous and affiliated volunteers, management of donated commodities. 40000 homes destroyed. Faith and non-profit community impacted.	Seismic retrofitting of schools, public safety centers, bridges, dams, HazMat sites and residential foundations.	The PUA.	HAZUS modeling
	Pandemic Influenza	N/A	N/A	N/A	N/A	N/A	Education on good hygiene to mitigate contamination.	Education on good hygiene to mitigate contamination	N/A	N/A

Multiple IEDs	Verify credentials and site clearance. Neighbors in the vicinity of residential and Primate Center site. Perimeter security.	Protect OHSU and Primate Center network and research systems. Health Insurance Portability and Accountability Act (HIPPA) information.	Site access and active vehicle screening and closure of public venues. All regional hospital systems. Threat conditions are monitored	Rapid Structural Assessment Local Environmental Safety and Health Assessment (ESH).	Establish alternate secure critical medical delivery locations for impacted sites.	Assess mental and emotional impact to the public and first responders.	Target hardening of critical sites. Crime Prevention Through Environmental Design (CPTED).	Enhanced threat and vulnerability assessments.	Conduct and apply THIRA. Risk and threat information from local EOPs.
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		Response						
		Critical Transportation	Environmental Response/ Health and Safety	Fatality Management Services	Mass Care	Mass Search and Rescue Operations	On-Scene Security and Protection	Operational Communications
Earthquake		100 bridges and overpasses damaged. Several major highways damaged. Light rail, railways, tunnels, river system and airport runways damaged. Transportation vehicles damaged. Evacuation of medically fragile patients.	Fuel tanks damaged and leaking. HazMat issues and Chemical fires, smoke and toxic fumes. 60 wastewater and sewage facilities leaking. Contaminated debris. Degraded food supply and water quality. Contamination to environmentally sensitive areas and waterways.	320 fatalities. Interruption to mortuary services. Increased demand for family reunification, counseling, victim identification services.	50,000 people and their pets seeking shelter; 12% are people with access and functional needs. 100,000 people require feeding and hydration services. Increased demand for family reunification and counseling services. Damage to shelters and hospitals. Congregate care in open spaces.	30,000 buildings destroyed. 200,000 damaged. Significant number of collapsed structures requiring victim extrication.	Heavily damaged areas within the PUA.	Damage to microwave dishes, cellular towers, public switch telephone systems, communication systems and Internet service providers (ISP). Volume of communications exceeds available bandwidth to support multiple operations. Public safety answering points (PSAPs) overwhelmed. Need for alternative communications systems.
	Pandemic Influenza	N/A	First responders require PPE and SOPs	2,137 fatalities (six-week period)	N/A	N/A	N/A	N/A

Multiple IEDs	Road closures. No fly zone, OHSU aerial tram, public transportation.	Local ESH for OHSU sites. Activate clean up as required. Fire suppression. Continued structural evaluation. Decontamination for exposed and responders.	44 fatalities	5,000 people are displaced. Provide information, reunification, treatment and services.	Search and Rescue of damaged facilities in coordination with evidence collection and crime scene processing.	Long term sustainable perimeter with designated and documented ingress and egress.	Volume of communications exceeds available bandwidth to support multiple operations. PSAPs overwhelmed.
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	Response			Response/Recovery	Recovery			
	Public and Private Services and Resources	Public Health and Medical Services	Situational Assessment	Infrastructure Systems	Economic Recovery	Health and Social Services	Housing	Natural and Cultural Resources
Earthquake	Damage to 20 first responders facilities. Public works capabilities interrupted. Damage to fuel facilities. Service interruption to community staples (banking, grocery, pharmacy).	3,600 hospitalizations 20,000 casualties. Services to medically fragile patients disrupted. Evacuation of medically fragile patients. 25% reduction in workforce due to employee absenteeism.	2 ECC/EOCs damaged. Portland Bureau of Emergency Management (PBEM) and Multnomah County Emergency Management (MCEM). Efficacy of full situational assessment diminished.	14 hospitals, 20 fire stations, 50% power supply, 50% communications systems, 20% water supply impacted. Significant impacts to waste water facilities. Interruption of fuel and natural gas delivery systems. Significant impacts to education systems.	\$31.8 billion direct loss due to structural damage, non-structural damage, loss of contents, inventory damage, relocation, capital related loss, wages and rental income loss. (from Oregon Department of Geology and Mineral Industries (DOGAMI) special paper 29, 1999, 500 year model corrected for inflation)	Decreased capacity to deliver health and social services (i.e. food/feeding, mental health, housing, transportation programs, etc.)	42,000 homes not habitable. Decreased capacity to provide temporary and long-term housing.	Significant damage to historic and residential districts. Zoo heavily impacted. 23.3 million tons of debris, including brick, wood, glass, building contents, steel members or reinforced concrete and other materials (DOGAMI special paper 29, 1999, 500 year model corrected for inflation)

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Pandemic Influenza</p>	<p>Drop in services due to employee absenteeism and social distancing measures.</p>	<p>213,765 ill. 106,883 outpatients. 2,138 hospitalizations 320 ICU care. 160 mechanical ventilation. Hospitals must activate surge plans. Maintain epidemiological (EPI) surveillance. Need for social distancing measures. Altered Standards of Care and Alternative Health Care Sites. Mass prophylaxis prioritized for those most at risk. Shortage of personal protective equipment (PPE).</p>	<p>N/A</p>	<p>N/A</p>	<p>Estimated total economic loss \$290 million, based on national estimates.</p>	<p>Increased demand for health and social services (i.e. food/feeding, mental health, housing, transportation programs, etc.)</p>	<p>N/A</p>	<p>N/A</p>
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Multiple IEDs	Overwhelm private ambulance providers, first responders and support systems.	450 hospitalizations 200 injuries to triage. Medical care point (MCP), hospital surge capacity, transport for the injured.	One EOC is damaged (on site at Marquam Hill) Common Operating Picture (COP).	State and private hospital system (alternate hospitals during rebuilding). Alternate detour routes. Utilities impacts (ngas, sewer, water, etc.)	Direct economic loss (OHSU closure one week, limited operations for six to eight months. Primate center closure three weeks, limited operations for four months. Residences lost). Indirect economic impact (tourism).	All hospital systems, veterans' affairs, vulnerable populations.	Student neighborhood housing at OHSU.	Cultural venues closed pending results of investigation.
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Capability Targets

		Core Capability	Desired Outcome
Common	Planning		<p>Regional all-hazards plans that address all of the mission areas, with specific annexes as required, are maintained every three (3) years.</p> <p>Cities with populations of over 50,000, all counties, and other local governments owning regionally-critical infrastructure have, maintain, and utilize the following plans:</p> <ul style="list-style-type: none"> 1 – Comprehensive, all-hazard Emergency Operations Plan 2 – Continuity of Operations Plan 3 – Natural Hazards Mitigation Plan 4 – Disaster Recovery Framework 5 – Critical Infrastructure Protection Plan
	Greatest Estimated Impacts: Activate EOP and COOP plans; develop recovery plan.		
	<p>Capability Target:</p> <p>Prevention: Develop and implement incident-specific infrastructure protection plans/ measures.</p> <p>Mitigation: Utilize hazard mitigation plan to develop incident-related hazard mitigation strategies and projects.</p> <p>Response: Activate EOP and relevant annexes and COOP Plans.</p> <p>Recovery: Commence recovery planning within 60 days of impact and develop incident-specific recovery plan.</p>		
	Public Warning and Information		<p>Public Information campaigns to build community resiliency are delivered on an ongoing basis.</p> <p>Information is provided immediately following the incident, and in a regionally coordinated manner in the subsequent days, to enable the public, businesses, non-governmental organizations, and government agencies to be aware and to take appropriate protective action and access assistance.</p> <p>Coordinated public messaging with regional partners is maintained in the days and weeks following the incident to support recovery efforts.</p>
Greatest Estimated Impacts: Provide coordinated safety instructions to the PUA.			

	<p>Capability Target:</p> <p>Prevention: “See something, say something” messages are delivered to the community to assist in preventing future incidents.</p> <p>Mitigation:</p> <p>Public information campaigns to build community resiliency are delivered to the PUA population on an ongoing basis.</p> <p>Incident-related hazard mitigation messages are delivered to the affected population.</p> <p>Response: Information is provided immediately following the incident, and in a regionally coordinated manner in the subsequent days, to enable the public, businesses, non-governmental organizations, and government agencies in the affected area to be aware and to take appropriate protective action and access assistance.</p> <p>Recovery: Coordinated public messaging with regional partners is maintained in the weeks following the incident for the affected population in the PUA to support recovery efforts.</p>	
	Operational Coordination	<p>A regional multi-agency coordination system (MACS) capable of policy development and decision making to support incident response is activated within two hours of an incident.</p> <p>A unified and integrated command, support, and coordination structure and process that appropriately involves critical stakeholders and supports the execution of core capabilities is implemented in impacted areas within two hours of an incident</p>
	<p>Greatest Estimated Impacts: Need for city/county/regional/ state/private sector coordination in the PUA.</p>	
	<p>Capability Target: Local, county, and regional MACS entities (DOCs, EOCs/ECCs, MAC Groups, etc.) are activated as appropriate to support and coordinate incident response efforts, prioritize incidents, allocate scarce resources, and develop consistent public messages and agency policies.</p> <p>Unified and integrated command operations are established and work effectively with MACS support and coordination entities to manage incident activity.</p> <p>Key governmental, non-governmental, and private sector stakeholders are engaged in command, support, and coordination activities.</p>	
Prevention	Forensics and Attribution	<p>Local, state, and federal law enforcement agencies act individually and collectively, consistent with agency authority, to collect evidence and investigate, analyze, and attribute terrorism activities to assist in the prevention of initial or follow-on terrorist acts.</p>
	<p>Greatest Estimated Impacts: Identify explosive type. Determine source of origin.</p>	

	<p>Capability Target: Local, state, and federal law enforcement agencies act individually and collectively, consistent with agency authority, to collect evidence and investigate, analyze, and attribute terrorism activities to assist in the prevention of initial or follow-on terrorist acts, by identifying explosive types and determining sources of origin.</p> <p>Standardized and regionally-coordinated law enforcement records management systems and Intel data systems are utilized to assist in the prevention of initial or follow-on terrorist acts.</p>	
<p>Prevention and Protection</p>	<p>Intelligence and Information Sharing</p>	<p>Relevant, timely, and actionable information and analysis is shared with and between local, state, federal, and private partners to anticipate and identify emerging and/or imminent threats.</p> <p>Qualifying information is declassified and shared with key stakeholders and responders in accordance with established protocols and investigative need.</p>
	<p>Greatest Estimated Impacts: Need for sharing classified and unclassified information at all levels. Declassify information to share with key stakeholders, responders, JTTF, and TITAN Fusion Center.</p>	
	<p>Capability Target: Relevant, timely, actionable classified and unclassified information and analysis is shared with and between local, state, federal, and private partners to anticipate and identify emerging and/or imminent threats.</p> <p>Qualifying information is declassified to share with key stakeholders and responders through the JTTF and TITAN Fusion Center in accordance with established protocols and investigative need.</p>	
	<p>Interdiction and Disruption</p>	<p>All persons, materials, and conveyances associated with an imminent threat to the PUA are interdicted.</p> <p>Terrorist acquisition and transfer of CBRNE materials and precursors is prevented.</p> <p>All CBRNE hazards are rendered safe and properly disposed of.</p> <p>Local, state, and federal law enforcement agencies consistently conduct counterterrorism tactical operations in a coordinated manner.</p>

	<p>Greatest Estimated Impacts: Activate MEDU, CBRNE, first responders and other specialty teams.</p>	
	<p>Capability Target: Local, state, and federal law enforcement agencies identify imminent threats to the PUA through effective and coordinated investigative activities and interdict persons, materials, and conveyances associated with those threats.</p> <p>Local, state, and federal law enforcement and other investigative agencies work individually and collectively to prevent terrorist acquisition and transfer of CBRNE materials and precursors.</p> <p>Local, regional, and state specialty teams properly identify, isolate, render safe, and dispose of CBRNE hazards.</p> <p>Local, state, and federal law enforcement specialty teams consistently conduct counterterrorism tactical operations in a coordinated manner.</p>	
	<p>Screening, Search, and Detection</p>	<p>Local, state, and federal law enforcement and homeland security agencies act individually and collectively, consistent with agency authority, to screen all targeted persons, materials, and conveyances associated with an imminent terrorist threat.</p>
	<p>Greatest Estimated Impacts: K-9 units, MEDU, air monitoring, criminal investigation and fugitive apprehension teams.</p>	
	<p>Capability Target: Local, state, and federal law enforcement and other public safety and homeland security agencies act individually and collectively to screen and search all targeted persons, materials, and conveyances associated with an imminent terrorist threat.</p> <p>Local, state, and federal law enforcement and other public safety and homeland security agencies detect immediate threats to the Portland Urban Area through the effective and coordinated use of special teams and units (e.g. K-9 units, MEDU, air monitoring, criminal investigation and fugitive apprehension teams), equipment, and investigative techniques.</p>	
Protection	<p>Access Control and Identity Verification</p>	<p>Verification of identity to authorize, grant, or deny physical and cyber access to regionally critical infrastructure, information and networks is assured. Long term perimeter security is established within 24 hours of incident impact.</p>
	<p>Greatest Estimated Impacts: Verify credentials, site clearance. Neighbors in the vicinity of residential and Primate Center site. Perimeter security.</p>	
	<p>Capability Target: Owners/operators of regionally-critical infrastructure, information, and networks can verify identity and authorize, grant or deny physical access.</p> <p>Law enforcement and other security agencies establish perimeter security in the vicinity of the impacted areas within 24 hours of incident impact.</p>	

Cybersecurity	Regionally-critical electronic communications systems are secured against malicious activity and have in place countermeasures to limit disruption and unauthorized data release.
Greatest Estimated Impacts: Protect OHSU and Primate Center network and research systems (including protecting HIPPA information).	
Capability Target: Regionally-critical electronic communications systems are secured against malicious activity and limit disruption and unauthorized data release, including HIPPA information.	
Physical Protective Measures	People, structures, materials, products, and systems of key operational processes and critical infrastructure sectors are protected against internal and external threats in order to reduce or mitigate the impacts of incidents.
Greatest Estimated Impacts: Site access and active vehicle screening and closure of public venues. All regional hospital systems. Threat conditions are monitored.	
<p>Capability Target: People, structures, materials, products and systems of key operational activities and critical infrastructure sectors are protected against internal and external threats in order to reduce or mitigate the impacts of incidents via access control, vehicle screening, site hardening, internal and external monitoring systems, and closure of public venues.</p> <p>Threat conditions are monitored and threat levels are escalated and de-escalated in a regionally consistent manner.</p>	
Risk Management for Protection Programs and Activities	Risk assessments are completed for all regionally-critical infrastructure assets.
Greatest Estimated Impacts: Rapid Structural Assessment. Local ESH (environmental safety and health assessment)	
<p>Capability Target: Comprehensive risk and vulnerability assessments are completed for all regionally-critical infrastructure assets.</p> <p>Post-incident assessments of regionally-critical infrastructure assets are completed within 24 hours of incident impact.</p>	
Supply Chain Integrity and Security	Key supply nodes are identified, strengthened, and secured to minimize supply chain disruptions.
Greatest Estimated Impacts: Damage to ports, railways, highways and pipelines.	

Mitigation	<p>Capability Target: Key supply nodes, such as ports, railways, highways and pipelines, are identified, strengthened, and secured to minimize supply chain disruptions.</p> <p>Key supply nodes impacted by the incident are assessed with 24 hours of the incident and repairs initiated or workarounds identified and implemented within 72 hours of the incident.</p>	
	Community Resilience	Risk mitigation plans are implemented with whole community partners to minimize incident-specific and future risks.
	<p>Greatest Estimated Impacts: Widespread damage to education systems, management of spontaneous and affiliated volunteers, management of donated commodities. 40000 homes destroyed. Faith and non-profit community impacted.</p>	
	<p>Capability Target: Risk mitigation plans with a focus on public and private infrastructure and resources (e.g. health and education systems, volunteer management, faith and non-profit community organizations) are implemented in cooperation with whole community partners to minimize incident-specific and future risks.</p>	
	Long-term Vulnerability Reduction	Reduced vulnerability of critical infrastructure, systems and community features at risk to future incident.
	<p>Greatest Estimated Impacts: Seismic retrofitting of schools, public safety centers, bridges, dams, HazMat sites and residential foundations.</p>	
	<p>Capability Target: The vulnerability of critical infrastructure and key resources (e.g. schools, public safety centers, bridges, dams, HazMat sites and residential foundations) at risk to future incidents is reduced by identifying project opportunities and options, selecting and prioritizing projects, and implementing projects in cooperation with community stakeholders</p>	
	Risk and Disaster Resilience Assessment	Risk and disaster resilience are assessed so decision makers, responders, and community members can take informed action to reduce risk and increase resilience.
	<p>Greatest Estimated Impacts: Portland Urban Area</p>	
	<p>Capability Target: Risk and disaster resilience are assessed on an ongoing basis so decision makers, responders, and community members can take informed action to reduce risk and increase resilience in the Portland Urban Area.</p>	
	Threats and Hazard Identification	PUA threats and hazards, including their frequency and impacts, are identified, assessed, prioritized, and incorporated into appropriate planning processes in partnership with whole community partners.
	<p>Greatest Estimated Impacts: HAZUS modeling.</p>	

Response	<p>Capability Target: PUA threats and hazards, including their frequency and impacts, are identified, modeled and assessed, prioritized, and incorporated into appropriate planning processes in cooperation with whole community partners.</p> <p>The PUA hazard assessment is reevaluated and updated based on post-incident findings.</p>	
	Critical Transportation	<p>Accessible transportation corridors and/or alternate delivery methods are established to facilitate response and recovery operations and address public safety, health, and security needs during the first 72 hours of an incident.</p>
	<p>Greatest Estimated Impacts: 100 bridges and overpasses damaged. Several major highways damaged. Light rail, railways, tunnels, river system and airport runways damaged.</p>	
	<p>Capability Target: Accessible transportation corridors and/or alternate delivery methods are established to facilitate response and recovery operations and address public safety, health, and security needs, by bypassing damaged bridges, overpasses, major highway, light rail, railways, tunnels, river systems, and airport runways to provide vital resources in an effort to save lives and to meet the needs of 100,000 people in the impacted area during the first 72 hours of an incident.</p> <p>Transportation services, including ground, air, and water, necessary to move responders and the public are provided during the first 72 hours of an incident.</p>	
	Environmental Response/Health and Safety	<p>During the first 24 hours of an incident, assessments to identify environmental health and safety concerns for response personnel and the affected community are completed.</p> <p>During the first 72 hours of an incident, site and incident-specific health and safety plans are developed, distributed, and implemented.</p>
	<p>Greatest Estimated Impacts: Fuel tanks damaged and leaking. HazMat issues and Chemical fires, smoke and toxic fumes. 60 wastewater and sewage facilities leaking. Contaminated debris. Degraded food supply and water quality. Contamination to environmentally sensitive areas and waterways.</p>	
	<p>Capability Target: During the first 24 hours of an incident, assessments are completed to identify environmental health and safety concerns for response personnel and affected communities including damaged and leaking fuel tanks, hazmat releases, chemical fires, smoke and toxic fumes, wastewater and sewage facility leaks, contaminated debris, degraded food and water supplies, and contaminated environmentally sensitive areas and waterways.</p> <p>During the first 72 hours of an incident, site and incident-specific health and safety plans are developed, distributed, and implemented to protect responders and the public from damaged and leaking fuel tanks, hazmat releases, chemical fires, smoke and toxic fumes, wastewater and sewage facility leaks, contaminated debris, degraded food and water supplies, and contaminated environmentally sensitive areas and waterways.</p>	

<p>Fatality Management Services</p>	<p>Fatality management operations have been initiated during the first 24 hours of an incident.</p>
<p>Greatest Estimated Impacts: 320 fatalities. Interruption to mortuary services. Increased demand for family reunification, counseling, victim identification services.</p>	
<p>Capability Target: Fatality management operations have been initiated to recover 320 fatalities and to provide family reunification, counseling, and victim identification services during the first 24 hours of an incident.</p>	
<p>Mass Care Services</p>	<p>Life sustaining services focused on hydration, feeding and sheltering, along with other mass care services, including pet recovery, counseling, and family/pet reunification, are initiated during the first 72 hours of an incident.</p>
<p>Greatest Estimated Impacts: 50,000 people and their pets seeking shelter; 12% are people with access and functional needs. 100,000 people require feeding and hydration services. Increased demand for family reunification and counseling services.</p>	
<p>Capability Target: Life sustaining services focused on hydration and feeding for 100,000 people are initiated during the first 72 hours of an incident.</p> <p>Shelter operations and counseling for 50,000 displaced people, including 12% who have access and functional needs, are initiated during the first 72 hours of an incident.</p> <p>Pet recovery and family/pet reunification services are initiated during the first 72 hours of an incident.</p>	
<p>Mass Search and Rescue Operations</p>	<p>Search and rescue operations to locate and rescue persons in distress, including individuals with access and functional needs are initiated during the first 24 hours of an incident.</p>
<p>Greatest Estimated Impacts: 30,000 buildings destroyed. 200,000 damaged. Significant number of collapsed structures requiring victim extrication.</p>	
<p>Capability Target: Search and rescue operations to locate, rescue, and extricate persons in distress at 200,000 damaged and 30,000 destroyed buildings, including individuals with access and functional needs, are initiated during the first 24 hours of an incident.</p>	
<p>On-Scene Security and Protection</p>	<p>A safe and secure environment for responders is established during the first 24 hours of an incident.</p> <p>A safe and secure environment for the affected community is established during the first 72 hours of an incident</p>
<p>Greatest Estimated Impacts: Heavily damaged areas within the PUA.</p>	

<p>Capability Target: A safe and secure environment for responders is established in the PUA during the first 24 hours of an incident.</p> <p>A safe and secure environment for the affected community in heavily damaged areas within the PUA is established during the first 72 hours of an incident.</p>	
Operational Communications	<p>Operable voice communication between emergency responders and emergency response facilities is established during the first 24 hours of an incident.</p> <p>An ability to communicate with affected populations is established during the first 48 hours of an incident.</p> <p>Interoperable voice and data communications between emergency responders and emergency response facilities are established during the first 72 hours of an incident.</p>
<p>Greatest Estimated Impacts: Damage to microwave dishes, cellular towers, public switch telephone systems, communication systems and ISP providers.</p> <p>Volume of communications exceeds available bandwidth to support multiple operations. PSAPs overwhelmed. Need for alternative communications systems.</p>	
<p>Capability Target: Operable voice communication between emergency responders and between responders and their supporting emergency response facilities are established during the first 24 hours of an incident through the use of back-up or redundant systems and/or through the repair or restoration of cellular towers, public switch telephone systems, and public safety communications systems.</p> <p>An ability to communicate with affected populations is established during the first 48 hours of an incident by establishing alternative communications systems or through repair or restoration of primary systems.</p> <p>Interoperable voice and data communications between emergency responders and between responders and their supporting emergency response facilities are established during the first 72 hours of an incident through the use of back-up or alternative systems and services and/or through repair or restoration of primary systems.</p>	
Public and Private Services and Resources	<p>Essential public, private, and nongovernmental services and resources, including fire and other first response services, emergency power for critical facilities, fuel support for emergency response operations, and access to community staples, are provided to the affected communities during the first 72 hours of an incident.</p>
<p>Greatest Estimated Impacts: Damage to 20 first responders facilities. Damage to fuel facilities. Service interruption to community staples (banking, grocery, pharmacy).</p>	

	<p>Capability Target: Essential public safety capabilities and the services upon which they depend, including fuel and power, are provided within 72 hours of an incident.</p> <p>Public access to essential community staples and services, including food, pharmacy, and banking, is provided within 72 hours of an incident through restoration of those services or through alternate delivery methods including community points of distribution.</p>	
	Public Health and Medical Services	<p>Triage and initial stabilization of casualties are completed and definitive care for those likely to survive their injuries is initiated during the first 72 hours of an incident.</p>
	<p>Greatest Estimated Impacts: 3,600 hospitalizations 20,000 casualties. Services to medically fragile patients disrupted. Evacuation of medically fragile patients.</p>	
	<p>Capability Target: Triage and initial stabilization of the 3,600 patients requiring hospitalization and an additional 20,000 casualties are completed, medically fragile patients are evacuated, and definitive care for those likely to survive their injuries is initiated during the first 72 hours of an incident.</p>	
	Situational Assessment	<p>A comprehensive situational assessment is completed and a common operating picture developed during the first 24 hours of an incident.</p> <p>Decision relevant information regarding the nature and extent of the incident, any cascading effects, and the status of the response is delivered to decision makers during the first 24 hours of an incident.</p>
	<p>Greatest Estimated Impacts: 2 ECC/EOCs damaged. (PBEM and MCEM). Efficacy of full situational assessment and decision making model diminished.</p>	
Response and Recovery	<p>Capability Target: Primary, alternate, or temporary EOCs/ECCs and DOCs are activated, complete and share comprehensive situational assessments, and develop a common operating picture within the first 24 hours of an incident.</p> <p>Primary, alternate, or temporary EOCs/ECCs and DOCs deliver decision relevant information regarding the nature and extent of the incident, any cascading effects, and the status of the response to local, county, and regional decision makers within the first 24 hours of an incident.</p>	
	Infrastructure Systems	<p>Damaged critical infrastructure is stabilized and essential life sustaining services are at least partially restored during the first 96 hours of an incident.</p> <p>A whole community planning process with a specified timeline for redeveloping community infrastructure to contribute to resiliency, accessibility, and sustainability is commenced within 6 months of an incident.</p>

Estimated Impacts: 14 hospitals, 20 fire stations, 50% power supply, 50% communications systems, 20% water supply impacted. Significant impacts to waste water facilities. Interruption of fuel and natural gas delivery systems. Significant impacts to education systems.

Capability Target: Damaged critical infrastructure, including 14 hospitals, 20 fire stations and apparatus, utilities, fuel and natural gas delivery systems, communications systems, water supply systems, and wastewater facilities, is stabilized and essential life sustaining services are at least partially restored to the impacted area during the first 96 hours of an incident.

A whole community planning process with a specified timeline for redeveloping community infrastructure to contribute to resiliency, accessibility, and sustainability is commenced within 6 months of an incident.

Recovery	Economic Recovery	<p>A preliminary assessment of economic impacts is completed and potential inhibitors to fostering stabilization of the affected communities are identified within 60 days of an incident.</p> <p>A community plan to resume economic and business activities and to create new business and employment opportunities is developed and implemented within 6 months of an incident.</p>
	<p>Greatest Estimated Impacts: \$31.8 billion direct loss due to structural damage, non-structural damage, loss of contents, inventory damage, relocation, capital related loss, wages and rental income loss. (from DOGAMI special paper 29, 1999, 500 year model corrected for inflation)</p>	
	<p>Capability Target: A preliminary assessment of an anticipated \$30+ billion of economic impacts involving structural and non-structural damages, loss of contents, inventory damage, relocation, capital related loss, wages, and rental income loss is completed and potential inhibitors to fostering stabilization of the affected communities are identified within 60 days of an incident.</p> <p>A community plan to resume economic and business activities and to create new business and employment opportunities is developed and implemented within 6 months of an incident.</p>	
	Health and Social Services	<p>An assessment of community health and social services needs is completed within 96 hours of an incident.</p> <p>Health and social services functions sufficient to meet basic community needs are restored within 60 days of an incident.</p>
	<p>Greatest Estimated Impacts: Decreased capacity to deliver health and social services (i.e. food/feeding, mental health, housing, transportation programs, etc.)</p>	
	<p>Capability Target: An assessment of community health and social services impacts and needs is completed within 96 hours of an incident.</p> <p>Health and social services (i.e. food/feeding, mental health, housing, transportation programs, etc.) functions sufficient to meet basic community needs are restored within 60 days of an incident.</p>	

<p>Housing</p>	<p>Housing impacts and needs are assessed and available options for temporary housing are identified within 60 days of an incident.</p> <p>A plan for permanent housing is developed within 6 months of an incident.</p>
<p>Greatest Estimated Impacts: 42,000 homes not habitable. Decreased capacity to provide temporary and long-term housing.</p>	
<p>Capability Target: Housing impacts and needs are assessed and available options for temporary housing related to the loss of an estimated 42,000 homes are identified within 60 days of an incident.</p> <p>A plan for permanent housing to replace an estimated 42,000 uninhabitable homes is developed within 6 months of an incident.</p>	
<p>Natural and Cultural Resources</p>	<p>Initial impacts to natural and cultural resources are mitigated and stabilized during the first 72 hours of an incident.</p> <p>A preliminary assessment and plan to mitigate the impacts to natural and cultural resources that identifies protections during debris removal, restoration and recovery is completed within 60 days of an incident.</p>
<p>Greatest Estimated Impacts: Significant damage to historic and residential districts. Zoo heavily impacted. 23.3 million tons of debris, including brick, wood, glass, building contents, steel members or reinforced concrete and other materials.(from DOGAMI special paper 29, 1999, 500 year model corrected for inflation)</p>	
<p>Capability Target: Initial impacts to natural and cultural resources, including historic and residential districts and the zoo are mitigated and stabilized during the first 72 hours of an incident.</p> <p>A preliminary assessment and plan to mitigate the impacts to natural and cultural resources that identifies protections during removal of 23.3 million tons of debris (i.e. brick, wood, glass, building contents, steel members or reinforced concrete and other materials), restoration and recovery is completed within 60 days of an incident.</p>	

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