

City of Sandy

Agenda

City Council Meeting

Meeting Location: City Hall- Council Chambers, 39250
Pioneer Blvd., Sandy, Oregon 97055

Meeting Date: Monday, December 2, 2019

Meeting Time: 6:00 PM



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- 1. WORK SESSION - 6:00 PM**
 - 1.1. Roll Call
 - 1.2. Homelessness and Policing
 - 1.3. Emergency Operations Plan 3 - 35
Emergency Operations Plan

- 2. REGULAR MEETING - 7:00 PM**

- 3. PLEDGE OF ALLEGIANCE**

- 4. ROLL CALL**

- 5. CHANGES TO THE AGENDA**

- 6. PUBLIC COMMENT**

- 7. CONSENT AGENDA**
 - 7.1. City Council - Community Campus Tour - Minutes 36
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 - 7.2. City Council Work Session and Regular Meeting - 18 Nov 2019 - Minutes 37 - 40
City Council Work Session and Regular Meeting - 18 Nov 2019 - Minutes
 - 7.3. A Resolution Adopting the City of Sandy Representation in the Updates to the
Clackamas County Multi-Jurisdictional Natural Hazards Mitigation Plan 41 - 108
Natural Hazards Mitigation Plan

8. NEW BUSINESS

- 8.1. Community Development Block Grant Project Priorities 2020-2021
Community Development Block Grant Project Priorities 2020-2021

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9. REPORT FROM THE CITY MANAGER

10. COMMITTEE /COUNCIL REPORTS

11. STAFF UPDATES

- 11.1. Monthly Reports

12. ADJOURN



Staff Report

Meeting Date: December 2, 2019
From Ernie Roberts, Police Chief
SUBJECT: Emergency Operations Plan

Background:

The City of Sandy maintains a current emergency operations plan in accordance with the Federal Emergency Management Agency. The plan is reviewed and updated on a five year cycle. Attached is a summary of our current Emergency Operations Plan for review.

Recommendation:

None

Budgetary Impact:

None

A

**SA A – Emergency Operations
Plan Summary**

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SA A. Emergency Operations Plan Summary

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SA A. Emergency Operations Plan Summary

1 Introduction

An Emergency Operations Plan (EOP) establishes guidance for the City of Sandy (City)’s actions during response to, and short-term recovery from, major emergencies or disasters. This EOP summary is designed to provide a summary of key points the City of Sandy feels are important for training purposes. For additional information regarding how the City will organize and respond to emergencies and disasters in the community, see the EOP Basic Plan and supporting annexes.

1.1 City of Sandy Disaster Declaration Process

The Mayor (or designee), as authorized by the City Code, may declare that a state of emergency exists. This declaration remains in effect until the Mayor or other authorized person terminates the state of emergency when the emergency, or threat of emergency, no longer exists.

Oregon Emergency Management has set forth the following criteria necessary in declaring a local emergency:

- Describe the circumstances impacting an identified area.
- Identify the problems for which assistance is needed.
- Clearly state what has been done locally to respond to the impact and needs.

See Appendix A for Sample Declaration of State of Emergency.

1.2 Lines of Succession

Table 1 provides the policy and operational lines of succession during an emergency for the City.

Table 1-8 City Lines of Succession	
Emergency Operations	Emergency Policy and Governance
City Manager	Mayor
Police Chief	Council members (order of succession)
Assistant City Manager or Public Works Director	City Manager

Each City department is responsible for pre-identifying staff patterns showing a line of succession in management’s absence. Lines of succession for each department can be found in the City’s Continuity of Operations (COOP) plan. All employees should be trained on the protocols and contingency plans required to maintain leadership within the department. The City Manager will provide guidance and direction to department heads to maintain continuity of government and operations during an emergency. Individual department heads within the City

SA A. Emergency Operations Plan Summary

are responsible for developing and implementing COOP/Continuity of Government (COG) plans to ensure continued delivery of vital services during an emergency.

1.3 Request, Allocation, and Distribution of Resources

Resource requests and emergency/disaster declarations must be submitted by the City Emergency Manager to County Emergency Management according to provisions outlined under Oregon Revised Statutes (ORS) Chapter 401.

The City Emergency Manager (or designee) is responsible for the direction and control of the City's resources during an emergency and for requesting any additional resources required for emergency operations. Once mutual aid options have been exhausted, assistance requests are to be made through County Emergency Management via the County Emergency Operations Center. County Emergency Management processes subsequent assistance requests to the State.

In the case of fires that threaten life and structures, the Conflagration Act (ORS 476.510) can be invoked by the Governor through the Office of State Fire Marshal. This act allows the State Fire Marshal to mobilize and fund fire resources throughout the State during emergency situations. The Sandy Fire District Fire Chief assesses the status of the incident(s) and, after determining that all criteria have been met for invoking the Conflagration Act, notifies the State Fire Marshal via Oregon Emergency Response System (OERS). The State Fire Marshal reviews the information and notifies the Governor, who authorizes the act.

See Appendix B for summary of Mutual Aid Agreements.

1.4 Financial Management

During an emergency, the City is likely to find it necessary to redirect City funds to effectively respond to the incident. The authority to adjust department budgets and funding priorities rests with the City Council. If an incident in the City requires major redirection of City fiscal resources, the City Council will meet in emergency session to decide how to respond to the emergency funding needs, will declare a State of Emergency, and will request assistance through the County as necessary.

Expenditure reports are submitted to the Finance Department and managed through the Finance Director to identify budgetary shortfalls. The Finance Department will support procurement issues related to personnel, both volunteer and paid. In addition, copies of expense records and all supporting documentation should be submitted for filing Federal Emergency Management Agency (FEMA) Public Assistance reimbursement requests.

SA A. Emergency Operations Plan Summary**1.5 Safety of Employees and Family**

All department heads (or designees) are responsible for the safety of employees. Employees should attempt to contact their supervisors and managers within the first 24 hours following an incident. Emergency 911 should only be utilized if emergency assistance is needed. Agencies and departments with developed COOP plans will establish alternate facilities and staff locations, as applicable. Notification procedures for employee duty assignments will follow the required procedures established by each agency and department.

During biological incidents or public health emergencies such as influenza pandemics, maintaining a resilient workforce is essential to performing the response activities required to protect the City and surrounding community from significant impacts to human lives and the economy. Thus, personnel should be provided with tools to protect themselves and their families while they provide health and medical services during a pandemic or other type of public health emergency.

Safety precautions and personal protective equipment decisions will be specific to the type of incident occurring and will require just-in-time training among the first responder community and other support staff to implement appropriate procedures.

If necessary, the Oregon Occupational Safety and Health Administration may provide assistance and guidance on worker safety and health issues. Information about emergency procedures and critical tasks involved in a biological emergency incident or disease outbreak is presented in Emergency Support Function (ESF) 8 of the County EOP.

While all City agencies and employees are expected to contribute to the emergency response and recovery efforts of the community, employees' first responsibility is to their own and their families' safety. Each employee is encouraged to develop family emergency plans to facilitate family safety and self-sufficiency, which in turn will enable employees to assume their responsibilities to the County and its citizens as rapidly as possible.

Processes that support employees and their families during emergency situations or disasters will be further developed through ongoing COOP and COG planning.

2 Roles and Responsibilities

For more information on Roles and Responsibilities, refer to Chapter 3 of the EOP Basic Plan.

2.1 Responsibilities of All Departments

It is the responsibility of all departments to identify critical functions and develop procedures for maintaining and/or reestablishing services provided to the public and other City departments.

SA A. Emergency Operations Plan Summary**2.2 Responsibilities by Function****2.2.1 Alert and Warning**

City Police Department, Sandy Fire District, City Administration, Oregon Trail School District and Clackamas County Communications (CCOM)

Once an emergency has occurred, the following tasks are necessary to ensure that the proper agencies are notified, helping to facilitate a quick and coordinated response:

- Disseminating emergency public information, as requested.
- Receiving, verifying, and disseminating warning information to the public and key County and City officials.
- Preparing and maintaining supporting Standard Operating Procedures (SOPs) and annexes.

See Functional Annex (FA) 1 – Emergency Services and the County EOP, ESF 2 – Communications for more detail.

2.2.2 Public Works and Engineering

City Public Works Department, City Building Department

City public works agencies are responsible for the following tasks in an emergency:

- Barricading hazardous areas.
- Performing priority restoration of streets and bridges.
- Protecting and restoring waste treatment and disposal systems.
- Augmenting sanitation services.
- Assessing damage to streets, bridges, traffic control devices, wastewater treatment system, and other public works facilities.
- Removing debris.
- Assessing damage to City-owned facilities.
- Condemning unsafe structures.
- Directing temporary repair of essential facilities.
- Preparing and maintaining supporting SOPs and annexes.

See FA 3 – Infrastructure Services and the County EOP, ESF 3 – Public Works and Engineering for more detail.

SA A. Emergency Operations Plan Summary**2.2.3 Firefighting**

Sandy Fire District and Boring Fire District 59

City fire services are responsible for the following tasks during an emergency:

- Providing fire prevention, education, inspection, suppression, and emergency medical aid to prevent loss of life, loss of property, and damage to the environment.
- Inspecting damaged areas for fire and life safety hazards.
- Providing hazardous materials spills containment, clean-up, planning,, and coordination.
- Inspecting shelters for fire and life safety hazards and coordinating with the Mass Care Liaison.
- Preparing and maintaining supporting SOPs and annexes.

See FA 1 – Emergency Services and the County EOP, ESF 4 – Firefighting for more detail.

2.2.4 Emergency Management**Emergency Operations Center**

City Administration and City Police Department, Sandy Fire District, and Oregon Trail School District

The following tasks are necessary for the City to activate and utilize its EOC to support and coordinate response operations during an emergency:

- Directing and controlling local operations resources.
- Maintaining contact with neighboring jurisdictions and the County EOC.
- Maintaining the EOC in an operating mode at all times or ensuring the ability to convert EOC space into an operating condition.
- Assigning representatives (by title) to report to the EOC and developing procedures for crisis training.
- Developing and identifying duties of staff, use of displays and message forms, and procedures for EOC activation.

See Chapter 5 – Command and Control, FA 1 – Emergency Services, and the County EOP Basic Plan and ESF 5 – Emergency Management for more detail.

SA A. Emergency Operations Plan Summary**2.2.5 Mass Care, Emergency Assistance, Housing, and Human Services**

Clackamas County Health, Housing and Human Services, American Red Cross, Community Organizations Active in Disaster (COAD), and Oregon Trail School District

The City relies on the support of the County to provide Shelter and Mass Care Services and has adopted the procedures outlined in the County EOP. County Health, Housing and Human Services (also referred to as H3S Department), with support from the Oregon Trail Chapter of the American Red Cross, is responsible for ensuring that the mass care needs of the affected population are met, such as sheltering, feeding, providing first aid, and reuniting families. Relevant operations are detailed in the County EOP, ESF 6 – Housing and Human Services and ESF 11 – Agriculture and Natural Resources; general responsibilities include:

- Maintaining the Community Shelter Plan and Animal Disaster Response Plan.
- Supervising the Shelter Management program (stocking, marking, and equipping, etc.) for natural disasters.
- Coordinating support with other City and County departments, relief agencies, and volunteer groups.
- Designating a coordinator/liason to participate in all phases of the County emergency management program, when necessary or as requested.

See FA 2 – Human Services and the County EOP, ESF 6 – Mass Care, Emergency Assistance, Housing, and Human Services and ESF 11 – Agriculture and Natural Resources for more detail.

2.2.6 Search and Rescue

Clackamas County Sheriff's Office

The Sheriff's Office is responsible for:

- Coordinating available resources to search for and rescue persons lost outdoors.
- Cooperating with and extending assistance to surrounding jurisdictions, on request and as resources allow.
- Establishing and monitoring training standards for certification of search and rescue personnel.
- Preparing and maintaining supporting SOPs and annexes.

SA A. Emergency Operations Plan Summary

See FA 1 – Emergency Services and the County EOP, ESF 9 – Search and Rescue for more detail.

2.2.7 Oil and Hazardous Materials Response

Sandy Fire District and Office of State Fire Marshal Regional HazMat Team No. 3

Hazardous Materials Response

Oil and Hazardous Materials responsibilities include:

- Conducting oil and hazardous materials (chemical, biological, etc.) response.
- Assessing the health effects of a hazardous materials release.
- Identifying the needs for Hazardous Materials incident support from regional and State agencies.
- Disseminating protective action.
- Conducting environmental short- and long-term cleanup.
- Preparing and maintaining supporting SOPs and annexes.

Radiological Protection

General responsibilities include:

- Establishing and maintaining a radiological monitoring and reporting network.
- Securing initial and refresher training for instructors and monitors.
- Providing input to the Statewide monitoring and reporting system.
- Under fallout conditions, providing City and County officials and department heads with information regarding fallout rates, fallout projections, and allowable doses.
- Coordinating radiological monitoring throughout the County.
- Providing monitoring services and advice at the scene of accidents involving radioactive materials.
- Preparing and maintaining supporting SOPs and annexes.

See FA 1 – Emergency Services and the County EOP, ESF 10 – Oil and Hazardous Materials for more detail.

SA A. Emergency Operations Plan Summary**2.2.8 External Affairs**

City Administration, Sandy Fire District, and Oregon Trail School District

The following tasks are necessary to ensure provision of reliable, timely, and effective information/warnings to the public at the onset of, and throughout, a disaster:

- Conducting ongoing hazard awareness and public education programs.
- Compiling and preparing emergency information for the public in case of emergency.
- Arranging for media representatives to receive regular briefings on the City's status during extended emergency situations.
- Securing printed and photographic documentation of the disaster situation.
- Handling scheduled and unscheduled inquiries from the media and the public.
- Being aware of Spanish-only-speaking and/or bilingual population centers within the City and County and preparing training and news releases accordingly.
- Preparing and maintaining supporting SOPs and annexes.

See FA 1 – Emergency Services and the County EOP, ESF 15 – External Affairs for more detail.

2.2.9 Evacuation and Population Protection

City Police Department

The following tasks are necessary to implement and support protective actions by the public and coordinate an evacuation:

- Defining responsibilities of City departments and private-sector groups.
- Identifying high hazard areas and corresponding number of potential evacuees.
- Coordinating evacuation planning, including:
 - Movement control
 - Health and medical requirements
 - Transportation needs
 - Emergency public information materials

SA A. Emergency Operations Plan Summary

- Shelter and reception location.
- Developing procedures for sheltering in place.
- Preparing and maintaining supporting SOPs and annexes.

See FA 1 – Emergency Services for more details.

2.2.10 Damage Assessment

City Building Department

The Building Department is responsible for:

- Establishing a damage assessment team from among City departments with assessment capabilities and responsibilities.
- Training and providing damage plotting team members to the EOC.
- Assisting in reporting and compiling information regarding deaths, injuries, and dollar damage to tax-supported facilities and to private property.
- Assisting in determining the geographic extent of the damaged area.
- Compiling estimates of damage for use by City officials in requesting disaster assistance.
- Evaluating the effect of damage on the City's economic index, tax base, bond ratings, insurance ratings, etc. for use in long-range recovery planning.
- Preparing and maintaining supporting SOPs and annexes.

See FA 4 – Recovery strategy for more details.

2.2.11 Legal Services

City Counsel (Beery, Elsner & Hammond, LLP)

City Counsel is responsible for the following tasks in the event of an emergency:

- Advising City officials regarding the emergency powers of local government and necessary procedures for invocation of measures to:
 - Implement wage, price, and rent controls
 - Establish rationing of critical resources
 - Establish curfews
 - Restrict or deny access
 - Specify routes of egress

SA A. Emergency Operations Plan Summary

- Limit or restrict use of water or other utilities
- Remove debris from publicly or privately owned property.
- Reviewing and advising City officials regarding possible liabilities arising from disaster operations, including the exercising of any or all of the above powers.
- Preparing and recommending local legislation to implement the emergency powers required during an emergency.
- Advising City officials and department heads regarding record keeping requirements and other documentation necessary for the exercising of emergency powers.
- Thoroughly reviewing and maintaining familiarity with current ORS 401 provisions as they apply to County or City government in disaster events.
- Preparing and maintaining supporting SOPs and annexes.

2.3 Response Matrix

Table 3-1 provides a matrix, by ESF, of the local, State, and Federal primary organizations that the City may rely on in the event of an emergency.

SA A. Emergency Operations Plan Summary

Table 2 Response Partners by Emergency Support Function

Emergency Support Function	Scope (Federal)	Primary Local Agencies	Primary County Agency	Primary State of Oregon Agency	Primary Federal Agency
ESF 1 Transportation	<ul style="list-style-type: none"> ■ Aviation/airspace management and control ■ Transportation safety ■ Restoration and recovery of transportation infrastructure ■ Movement restrictions ■ Damage and impact assessment 	<p>City Public Works Department Sandy Area Metro Oregon Housing & Associated Services (OHAS)-Wheels</p>	<p>Department of Transportation and Development</p>	<p>Department of Transportation</p>	<p>Department of Transportation</p>
ESF 2 Communications	<ul style="list-style-type: none"> ■ Coordination with telecommunications and information technology industries ■ Restoration and repair of telecommunications infrastructure ■ Protection, restoration, and sustainment of national cyber and information technology resources ■ Oversight of communications within the Federal incident management and response structure 	<p>City Police Department City Administration</p>	<p>Emergency Management CCOM Sheriff's Office CARES</p>	<p>Oregon Emergency Management Public Utility Commission</p>	<p>Department of Homeland Security (National Protection and Programs/Cyber security and Communications/National Communications System), Department of Homeland Security (Federal Emergency Management Agency)</p>
ESF 3 Public Works & Engineering	<ul style="list-style-type: none"> ■ Infrastructure protection and emergency repair ■ Infrastructure restoration ■ Engineering services and construction management ■ Emergency contracting support for life-saving and life-sustaining services 	<p>City Public Works Department Curran McLeod, Inc.</p>	<p>Department of Transportation and Development</p>	<p>Department of Transportation</p>	<p>Department of Defense (U.S. Army Corps of Engineers) Department of Homeland Security (FEMA)</p>
ESF 4 Firefighting	<ul style="list-style-type: none"> ■ Coordination of Federal firefighting activities ■ Support to wildland, rural, and urban firefighting operations 	<p>Sandy Fire District Boring Fire District</p>	<p>Emergency Management Fire Defense Board</p>	<p>Department of Forestry Office of the State Fire Marshal</p>	<p>Department of Agriculture (U.S. Forest Service)</p>

SA A. Emergency Operations Plan Summary

Table 2 Response Partners by Emergency Support Function

Emergency Support Function	Scope (Federal)	Primary Local Agencies	Primary County Agency	Primary State of Oregon Agency	Primary Federal Agency
ESF 5 Emergency Management	<ul style="list-style-type: none"> ■ Coordination of incident management and response efforts ■ Issuance of mission assignments ■ Resource and human capital ■ Incident action planning ■ Financial management 	City Administration City Police Department Sandy Fire District	Emergency Management	Oregon Emergency Management	Department of Homeland Security (FEMA)
ESF 6 Mass Care, Emergency Assistance, Housing & Human Services	<ul style="list-style-type: none"> ■ Mass care ■ Emergency assistance ■ Disaster housing ■ Human services 	City Administration American Red Cross	Health, Housing and Human Services	Department of Human Services Oregon Health Authority	Department of Homeland Security (FEMA)
ESF 7 Logistics Management & Resource Support	<ul style="list-style-type: none"> ■ Comprehensive, national incident logistics planning, management, and sustainment capability ■ Resource support (facility space, office equipment and supplies, contracting services, etc.) 	City Administration Sandy Fire District	Emergency Management	Oregon Military Department Department of Administrative Services	General Services Administration Department of Homeland Security (FEMA)
ESF 8 Public Health & Medical Services	<ul style="list-style-type: none"> ■ Public health ■ Medical services ■ Behavioral health services ■ Mass fatality management 	City Administration (coordinate with Health Dept.) Sandy Fire District American Medical Response Local Clinics	Health, Housing and Human Services Local Hospitals Local Emergency Medical Services	Department of Human Services (Public Health Division)	Department of Health and Human Services

SA A. Emergency Operations Plan Summary

Table 2 Response Partners by Emergency Support Function

Emergency Support Function	Scope (Federal)	Primary Local Agencies	Primary County Agency	Primary State of Oregon Agency	Primary Federal Agency
ESF 9 Search & Rescue	<ul style="list-style-type: none"> ■ Life-saving assistance ■ Search and rescue operations 	City Police Department	Sheriff's Office Fire Defense Board	Oregon Emergency Management Office of the State Fire Marshal	Department of Homeland Security (FEMA, U.S. Coast Guard) Department of the Interior (National Park Service) Department of Defense
ESF 10 Oil & Hazardous Materials	<ul style="list-style-type: none"> ■ Oil and hazardous materials (chemical, biological, radiological, etc.) response ■ Environment short- and long-term cleanup 	Sandy Fire District Regional Hazardous Materials Team	Emergency Management Fire Department	Department of Environmental Quality Office of the State Fire Marshal	Environmental Protection Agency Department of Homeland Security (U.S. Coast Guard)
ESF 11 Agriculture & Natural Resources	<ul style="list-style-type: none"> ■ Nutrition assistance ■ Animal and plant disease and pest response ■ Food safety and security ■ Natural and cultural resources and historic properties protection ■ Safety and well-being of household pets 	City Administration	Emergency Management Health, Housing and Human Services Dog Services (DTD) Oregon State University Extension	Department of Agriculture	Department of Agriculture Department of Interior
ESF 12 Energy	<ul style="list-style-type: none"> ■ Energy infrastructure assessment, repair, and restoration ■ Energy industry utilities coordination ■ Energy forecast 	City Administration Local Utilities	Emergency Management	Department of Energy Public Utility Commission	Department of Energy

SA A. Emergency Operations Plan Summary

Table 2 Response Partners by Emergency Support Function

Emergency Support Function	Scope (Federal)	Primary Local Agencies	Primary County Agency	Primary State of Oregon Agency	Primary Federal Agency
ESF 13 Public Safety & Security	<ul style="list-style-type: none"> ■ Facility and resource security ■ Security planning and technical resource assistance ■ Public safety and security support ■ Support to access, traffic, and crowd control 	City Police Department	Sheriff's Office	Department of Justice Oregon State Police Department of Administrative Services	Department of Justice
ESF 14 Long-Term Community Recovery	<ul style="list-style-type: none"> ■ Social and economic community impact assessment ■ Long-term community recovery assistance to States, tribes, local governments, and the private sector ■ Analysis and review of mitigation program implementation 	City Administration COAD	Emergency Management Health, Housing and Human Services	Oregon Business Development Department Oregon Emergency Management Governor's Recovery Planning Cell (Governors Recovery Cabinet)	Department of Agriculture Department of Homeland Security Department of Housing and Urban Development Small Business Administration
ESF 15 External Affairs	<ul style="list-style-type: none"> ■ Emergency public information and protective action guidance ■ Media and community relations ■ Congressional and international affairs ■ Tribal and insular affairs 	City Administration Oregon Trail School District Sandy Fire District	Public and Government Affairs	Governor's Office Oregon Emergency Management	Department of Homeland Security (FEMA)

SA A. Emergency Operations Plan Summary**3 Concept of Operations**

For more information on Concept of Operations, refer to Chapter 4 of the EOP Basic Plan.

3.1 Incident Levels

Incident levels assist response agencies in recognizing the degree of intensity and potential impact of a particular situation. Emergency situations will not always fit neatly into these levels, and any incident has the potential to intensify and expand. Special circumstances or external pressures may warrant outside assistance for relatively minor incidents.

3.1.1 Level 3

Level 3 situations are often referred to as “routine” crisis management or emergency situations that can be handled using resources available at the incident location. For these situations, it may not be necessary to implement an emergency plan. Outside assistance is usually not required.

3.1.2 Level 2

Level 2 situations are characterized by a need for response assistance from outside agencies (specialized equipment or personnel, insufficient or inadequate on-site resources, etc.). Requests for assistance related to Level 2 situations often take the form of a 911 call for police, fire, or medical assistance. Examples include hazardous materials spills and traffic incidents with multiple injuries. The Incident Commander may implement selected portions of the City EOP.

3.1.3 Level 1

Level 1 situations are major incidents that require application of a broad range of community resources to save lives and protect property. Examples of such situations include an airliner crash in populated area, a major earthquake, etc. Emergency plans should be implemented, and the EOC will be activated to coordinate response and recovery activities.

3.2 Incident Management**3.2.1 Activation**

When an emergency situation arises and it is determined that the normal organization and functions of City government are insufficient to effectively meet response requirements, the City Council or City Manager will activate and implement all or part of this EOP. In addition, the City Manager, Fire Chief, Police Chief, or Emergency Manager, or their designees, may partially or fully activate and staff the City EOC based on an emergency’s type, size, severity, and anticipated duration. An Emergency Declaration is not required to implement the EOP or activate the EOC. The Emergency Manager may implement the EOP as deemed appropriate for the situation or at the request of an Incident Commander.

SA A. Emergency Operations Plan Summary

Concurrently, all involved City emergency services will implement their respective plans, procedures, and processes and will provide the Emergency Manager with the following information:

- Operational status.
- Readiness and availability of essential resources.
- Changing conditions and status of resources (personnel, equipment, facilities, supplies, etc.).
- Significant concerns and issues dealing with potential or actual loss of life or property.

3.2.2 Initial Actions

Upon activation of all or part of this EOP, the Incident Commander (or designee) will immediately take the following actions:

- Alert threatened populations and initiate evacuation as necessary.
See FA 1 – Emergency Services Annex for more detail.
- Initiate emergency sheltering procedures with the American Red Cross and other community partners if evacuation procedures are activated.
See FA 2 – Human Services Annex for more detail.
- Instruct appropriate City emergency service providers to activate necessary resources.
- Assign radio frequencies and communications equipment, implement a communications plan, and confirm interoperability among EOC staff and response agencies.
- Request the Mayor or City Council to prepare and submit a formal Declaration of Emergency through County Emergency Management when it is determined that local resources will not meet the needs of local emergency operations. The official declaration may be preceded by a verbal statement.
- Prepare to staff the City EOC as appropriate for the incident with maximum 12-hour shifts.
- City personnel and support staff will be deployed to restore normal activity and provide essential community services as soon as possible following the emergency. *See FA 4 – Recovery Strategy Annex for additional information regarding community recovery procedures.*

SA A. Emergency Operations Plan Summary**4 Command and Control**

For more information on Command and Control, refer to Chapter 5 of the EOP Basic Plan.

4.1 Emergency Operations Center Activation

During emergency operations and upon activation, the EOC staff will assemble and exercise Direction and Control, as outlined below.

- The EOC will be activated by the City Manager, Police Chief, or Fire Chief (or their designees). The Incident Commander will assume responsibility for all operations and direction and control of response functions.
- The Incident Commander will determine the level of staffing required and will alert the appropriate personnel, agencies, and organizations.
- Emergency operations will be conducted by City departments, augmented as required by trained reserves, volunteer groups, and forces supplied through mutual aid agreements. County, State, and Federal support will be requested if the situation dictates.
- Communications equipment in the EOC will be used to receive information, disseminate instructions, and coordinate emergency operations.
- The Incident Commander may establish an on-scene command post at the scene to maintain close contact and coordination with the EOC.
- Department heads and organization leaders are responsible for emergency functions assigned to their activities, as outlined in their respective annexes.
- The EOC will normally operate on a 24-hour basis, rotating on 12-hour shifts, or as needed.
- The Incident Commander will immediately notify the County Emergency Management office upon activation. Periodic updates will be issued as the situation requires.

4.2 Emergency Operations Center Location

The **primary location** for the City EOC is:

Sandy Police Department
39850 Pleasant Street, Sandy, OR 97055

If necessary, the **alternate location** for the City EOC is:

SA A. Emergency Operations Plan Summary

Fire Annex Building
17460 Bruns Avenue, Sandy, OR 97055

Figure 5-1 Primary EOC Location

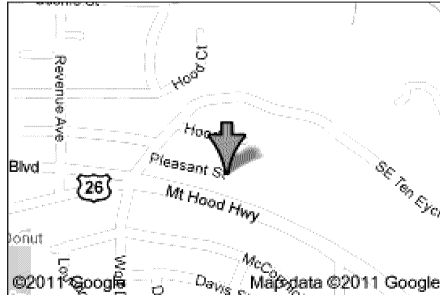
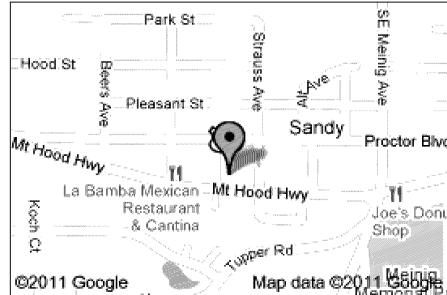


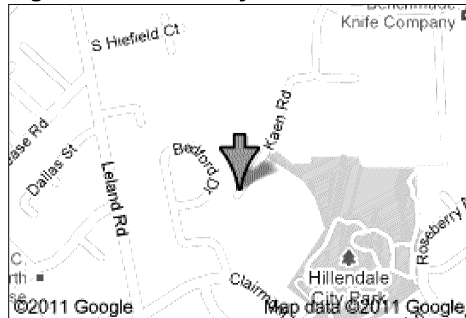
Figure 5-2 Alternate EOC Location



The County EOC is co-located with Clackamas County Emergency Management and CCOM offices at:

2200 Kaen Road
Oregon City, OR 97045

Figure 5-3 County EOC Location

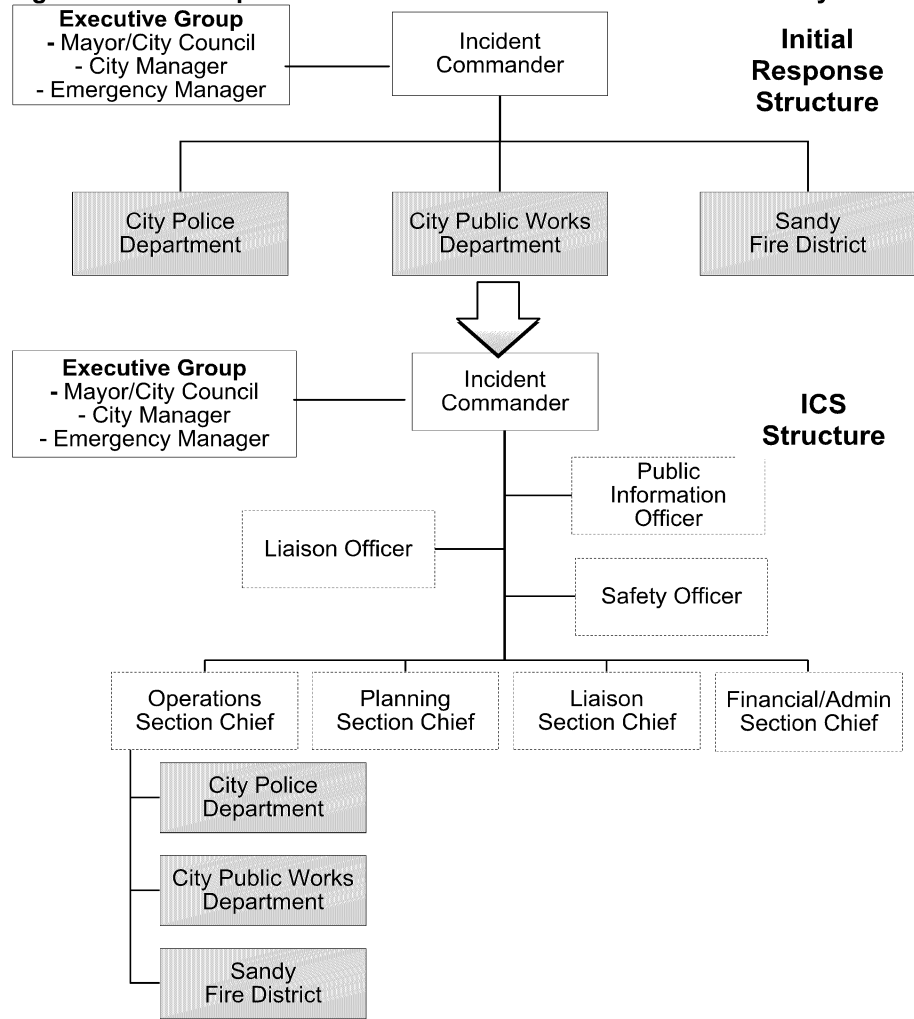


See FA 1 – Emergency Services for more detail.

SA A. Emergency Operations Plan Summary

4.3 Incident Command System

Figure 4 Example of a Scalable Command Structure for the City



4.3.1 Emergency Operations Center Command Staff

4.3.1.1 Incident Commander

The IC is responsible for the operations of the EOC when it is activated and has overall responsibility for accomplishing the EOC mission. In general, the IC is responsible for:

- Approving and supporting implementation of an Incident Action Plan (IAP).
- Coordinating activities supporting the incident or event.

SA A. Emergency Operations Plan Summary

- Approving release of information through the Public Information Officer (PIO).
- Performing the duties of the following command staff if no one is assigned to the position:
 - Safety Officer
 - PIO
 - Liaison Officer
 - General Staff.

4.3.1.2 Safety Officer

The Safety Officer is generally responsible for:

- Identifying initial hazards, determining personal protective equipment requirements, and defining decontamination areas.
- Implementing site control measures.
- Monitoring and assessing the health and safety of response personnel and support staff (including EOC staff).
- Preparing and implementing a site Health and Safety Plan and updating the Incident Commander regarding safety issues or concerns, as necessary.
- Exercising emergency authority to prevent or stop unsafe acts.

4.3.1.3 Public Information Officer

A lead PIO will most likely coordinate and manage a larger public information network representing local, County, regional, and State agencies; tribal entities; political officials; and other emergency management stakeholders. The PIO's duties include:

- Developing and coordinating release of information to incident personnel, media, and the general public.
- Coordinating information sharing among the public information network through the use of a Joint Information System and, if applicable, establishing and staffing a Joint Information Center.
- Implementing information clearance processes with the Incident Commander.
- Conducting and/or managing media briefings and implementing media-monitoring activities.

SA A. Emergency Operations Plan Summary**4.3.1.4 Liaison Officer**

Specific liaison roles may be incorporated into the command structure established at the City and/or County EOC, depending on the type of emergency incident that has occurred. Liaisons represent entities and organizations such as hospitals, school districts, tribes, public works/utility companies, and volunteer services such as the American Red Cross. Responsibilities typically associated with a liaison role include:

- Serving as the contact point for local government officials, agency or tribal representatives, and stakeholders.
- Coordinating information and incident updates among interagency contacts, including the public information network.
- Providing resource status updates and limitations among personnel, capabilities, equipment, and facilities to the Incident Commander, government officials, and stakeholders.

The annexes attached to this plan contain general guidelines for the City governmental entities, organizations, and County officials and departments to carry out responsibilities assigned at the City EOC or other designated facility where response efforts will be coordinated.

4.3.2 Emergency Operations Center General Staff**4.3.2.1 Operations Section Chief**

The Operations Section Chief position is typically filled by the lead agency managing response activities for a specific type of incident. The Operations section is organized into functional units representing agencies involved in tactical operations. The following agencies are typically included in the Operations Section:

- Fire (emergencies dealing with fire, earthquake with rescue, or hazardous materials).
- Law Enforcement (incident(s) involving civil disorder/disturbance, significant security/public safety concerns, transportation-related accidents, and/or criminal investigations).
- Public Health Officials (contamination issues, disease outbreaks, and/or emergency incidents posing threats to human, animal, and environmental health).
- Public Works (incidents resulting in major utility disruptions, damage to critical infrastructure, and building collapse).

Private entities, companies, and Non-Governmental Organizations (NGOs) may also support the Operations section. The Operations Chief is responsible for:

SA A. Emergency Operations Plan Summary

- Providing organizational support and directing implementation of unit operational plans and field response activities.
- Developing and coordinating tactical operations to carry out the IAP.
- Managing and coordinating various liaisons representing community response partners and stakeholders.
- Directing IAP tactical implementation.
- Requesting resources needed to support the IAP.

4.3.2.2 Planning Section Chief

The Planning Section is responsible for forecasting future needs and events of the response effort while ensuring implementation of appropriate procedures and processes. This section is typically supported by four primary units: Resources, Situation, Documentation, and Demobilization. The Planning Chief is responsible for:

- Collecting, evaluating, and distributing information regarding the incident and providing a status summary.
- Preparing and disseminating the IAP.
- Conducting planning meetings and developing alternatives for tactical operations.
- Maintaining resource status.

4.3.2.3 Logistics Section Chief

The Logistics Section is typically supported by the units responsible for Supply, Food, Communications, Medical, Facilities, and Ground Support. Depending on the incident's type and size, these units can be divided into two branches: Service and Support. The Logistics Chief is responsible for:

- Providing and managing resources to meet the needs of incident personnel.
- Managing various coordinators of particular resources, such as transportation-related equipment, EOC staff support services, supplies, facilities, and personnel.
- Estimating future support and resource requirements.
- Assisting with development and preparation of the IAP.

4.3.2.4 Finance/Administration Section Chief

SA A. Emergency Operations Plan Summary

The Finance/Administration Section is specific to the incident type and severity of resulting impacts. In some instances, agencies may not require assistance, or only a specific function of the section may be needed that can be staffed by a technical specialist in the Planning section. Potential units assigned to this section include: Compensation/Claims, Procurement, Cost, and Time. The Finance and Administration Chief is responsible for:

- Monitoring costs related to the incident.
- Maintaining accounting, procurement, and personnel time records.
- Conducting cost analyses.

5 Appendices

- Appendix A – Sample Declaration of State of Emergency
- Appendix B – Summary of Mutual Aid Agreements

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SA A. Emergency Operations Plan Summary

Appendix A – Sample Declaration of State of Emergency

To: _____,
Clackamas County Office of Emergency Management

From: _____,
City of Sandy, Oregon

At _____ (time) on _____ (date),

a/an _____ (description
of emergency incident or event type) occurred in the City of Sandy threatening
life and property.

The current situation and conditions are:

The geographic boundaries of the emergency are:

WE DO HEREBY DECLARE THAT A STATE OF EMERGENCY NOW EXISTS IN THE CITY OF SANDY AND THAT THE CITY HAS EXPENDED OR WILL SHORTLY EXPEND ITS NECESSARY AND AVAILABLE RESOURCES. WE RESPECTFULLY REQUEST THAT THE COUNTY PROVIDE ASSISTANCE, CONSIDER THE CITY AN "EMERGENCY AREA" AS PROVIDED FOR IN ORS 401, AND, AS APPROPRIATE, REQUEST SUPPORT FROM STATE AGENCIES AND/OR THE FEDERAL GOVERNMENT.

Signed: _____

Title: _____ Date & Time: _____

This request may be passed to the County via radio, telephone, or FAX. The original signed document must be sent to the County Emergency Management Office, with a copy placed in the final incident package.

SA A. Emergency Operations Plan Summary

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SA A. Emergency Operations Plan Summary**Appendix B – Mutual Aid Agreements**

The following is a quick reference list of mutual aid agreements entered into by the City. **Copies of these mutual aid agreements can be found in the City EOC.**

- **Bomb Arson Tracking System Program;** Sandy Police Department and the Bureau of Alcohol, Tobacco, Firearms and Explosives, Unknown date. Allows for the use of an information system that will collect, analyze information related to explosives, arson and the suspected criminal misuse of explosives.
- **Clackamas County Dispatch Center member Board Charter;** Sandy Police Department and the Clackamas County Dispatch Center Board Member Charter, July 3, 2009. Establishes an executive Board and Service Committees for the 911 dispatch center that dispatches the Sandy Police Department. This agreement provides an avenue for operational and budgetary development of services.
- **Clackamas County Interagency Amber Alert Agreement;** Sandy Police Department and the Clackamas County Interagency Amber Alert Team, December 16, 2002. Mutual agreement by all law enforcement agencies in Clackamas county providing for the development of internal policy, process, and training as related to missing children. It is also agreed that the Sandy Police Department will follow the Amber Alert criteria and process of the Amber Alert Program.
- **Interagency Investigative Agreement;** Sandy Police Department and the Interagency Major Crimes Team for Clackamas County, November 2, 2006. This agreement provides guidelines and policies for the inter-agency investigation of major crimes committed in the venues of the participating agencies. When activated a team of investigators will respond to a criminal incident in Sandy. The team will assist in the investigation. Our detective is a team member and may be called upon to assist other agencies with their criminal investigations.
- **Intergovernmental Agreement** between City of Sandy and Sandy Fire District, June 11, 1996. The Sandy Fire District will provide fire protection services to both City and adjoining area.
- **Intergovernmental Agreement** between Sandy Police Department and CCOM forming the 800 Radio Group.

SA A. Emergency Operations Plan Summary

- **Intergovernmental Agreement** between Sandy Police Department and CCOM forming the 800 Radio Group. This agreement is pursuant to ORS 190.010 and 190.030.
- **Oregon Public Works Emergency Response Cooperative Assistance Agreement**; Oregon Department of Transportation and City of Sandy, February 28, 2010. Enables public works agencies to support each other during an emergency, provides the mechanism for immediate response to the requesting agency when the responding agency determines it can provide the needed resources and expertise, and sets up the documentation needed to seek maximum reimbursement possible from appropriate federal agencies.
- **Sandy Police Department MOU with Todos Juntos**, October 24, 2010. Todos Juntos provides staff to oversee the Juvenile Diversion Program. Staff from Todos Juntos, have contact with juvenile offenders, do assessments, refer and assist family and youth in accessing community resources, and track all necessary documentation.



MINUTES
City Council Meeting
Tuesday, November 12, 2019 Sandy Community Campus 6:30
PM

COUNCIL PRESENT: Stan Pulliam, Mayor, Jeremy Pietzold, Council President, Laurie Smallwood, Councilor, Jan Lee, Councilor, and Bethany Shultz, Councilor

COUNCIL ABSENT: John Hamblin, Councilor and Carl Exner, Councilor

STAFF PRESENT: Jordan Wheeler, City Manager, Tyler Deems, Finance Director, and Tanya Richardson, Community Services Director

MEDIA PRESENT:

1. Tour Community Campus Buildings and Property

Jordan Wheeler, City Manager, provided the Council and others in attendance with a tour of the Community Campus. The first building to be toured was the pool, followed by the gym, and finally, the annex (also known as the Bunker Building).

After the tour, council members discussed possible uses of the building.

The tour and discussion concluded at 8:15 pm.

Mayor, Stan Pulliam

City Recorder, Karey Milne



MINUTES
City Council Meeting
Monday, November 18, 2019 City Hall- Council Chambers, 39250
Pioneer Blvd., Sandy, Oregon 97055 6:00 PM

COUNCIL PRESENT: Stan Pulliam, Mayor, Jeremy Pietzold, Council President, John Hamblin, Councilor, Laurie Smallwood, Councilor, Jan Lee, Councilor, Carl Exner, Councilor, and Bethany Shultz, Councilor

COUNCIL ABSENT:

STAFF PRESENT: Jordan Wheeler, City Manager, Tyler Deems, Finance Director, Mike Walker, Public Works Director, and Kelly O'Neill, Development Services Director

MEDIA PRESENT:

1. WORK SESSION - 6:00 PM

- 1.1. Roll Call
- 1.2. Utility Bill Assistance Programs

Staff Report - 0203

Jordan Wheeler, City Manager, provided Council with a brief update regarding utility rate assistance programs.

Mike Walker, Public Works Director, detailed various options for utility assistance programs. Director Walker provided comparison information from other cities in the general region.

Council members asked clarifying questions related to utility accounts and past due balances. Staff provided answers and the discussion around utility bill assistance programs continued.

Council provided Staff with direction to do additional research on utility assistance programs, and to research donation options and third party vendors who can manage the program for us.

2. REGULAR MEETING - 7:00 PM

3. Pledge of Allegiance

4. Roll Call

5. Changes to the Agenda

None.

6. Public Comment

None.

7. Presentation

7.1. Swearing In of Lieutenant Lundry and Sergeant Hodges

Mayor Pulliam swore in Sergeant Luke Hodges. Sergeant Hodges delivered a short speech.

Mayor Pulliam swore in Lieutenant Sean Lundry. Lieutenant Lundry delivered a short speech thanking Staff and Council.

7.2. Life-Saving Award - Officer Argubright

Ernie Roberts, Police Chief, provided Officer Argubright with a Life-Saving award. Officer Argubright received the award for responding to a cardiac arrest call in Happy Valley, after he had finished his shift and was driving home.

8. Consent Agenda

8.1. City Council Minutes

Moved by Jeremy Pietzold, seconded by Jan Lee

Motion to approve the consent agenda as written.

CARRIED.

9. New Business

9.1. Sandy Police Association Collective Bargaining Agreement

Staff Report - 0204

Tyler Deems, Finance Director, provided Council with a recap of the ongoing labor negotiations. The City and Association have reached tentative agreement

on all articles except for Article 22 - Insurance. Staff and the Association would like to implement the changes now, and then continue on to interest arbitration in the remaining article.

Moved by John Hamblin, seconded by Laurie Smallwood

Motion to authorize the City Manager to sign the MOA to implement the tentative agreements for the Sandy Police Association Collective Bargaining Agreement.

CARRIED.

10. Report from the City Manager

Jordan Wheeler, City Manager, provided Council with information on a recent discussion regarding the WIFIA loan. Also discussed was the status of the community survey, current recruitments, and future one-on-one meetings with each Councilor.

Councilor Lee asked questions regarding the WIFIA loan criteria.

11. Committee /Council Reports

Councilor Shultz provided an update on the recent Library Board Meeting and taskforce developments. Also discussed was a recent Clackamas County meeting regarding childcare in the Sandy community.

Councilor Exner asked about the status of the Arts Commission openings. Also provided was an update on the recent Officer recruitment. He also thanked various members of the community for their work n drug and alcohol treatment.

Councilor Lee notified Council of a recent email she received from PGE regarding electric school buses. Also discussed was the Clackamas County Water Conservation District board and would like the City to meet with the Board soon.

Councilor Hamblin reminded the Council of the upcoming Sandy Light Show, which begins on November 30th. Also discussed was his recent meeting with Senator Merkley.

Councilor Smallwood thanked Staff for the Community Campus tour. Also discussed was the recent Parks & Trails Advisory Board meeting. Councilor Smallwood recently learned that a local hospital has been sending house-less individuals to our Best Western without any resources.

Councilor Pietzold provided information on the recent walk-through of the Community Campus. The Economic Development ad hoc Committee is coming along nicely.

Mayor Pulliam delivered an update from the recent C-4 meeting. There is potential to receive \$800,000 in funding for shoulder installation and 362nd Ave extension. Also discussed was updating the Council Rules in the near future. Mayor would also like to

see a joint meeting with the Community Center to better understand services offered. Upcoming events include the Thanksgiving Basket with the Sandy Community Action Center, Sandy Tree Lighting Ceremony, Sandy Light Show, Breakfast with Santa, and the Sandy Toy Drive.

12. Staff updates

12.1. Monthly Reports

13. Adjourn

14. EXECUTIVE SESSION



Mayor, Stan Pulliam



City Recorder, Karey Milne

Draft



Staff Report

Meeting Date: December 2, 2019

From David Snider, Economic Development Manager

SUBJECT:

Background:

The Clackamas County Multi-Jurisdictional Natural Hazards Mitigation Plan (NHMP) is a county-wide emergency management plan designed to “promote sound public policy designed to protect citizens, critical facilities, infrastructure, private property and the environment from natural hazards”. It is part of the establishment of a comprehensive community-level disaster mitigation strategy as required under the federal Disaster Mitigation Act of 2000, and regulations within that act require us to maintain a local NHMP approved by FEMA to receive federal funding for mitigation projects in the event of a natural disaster.

The City of Sandy originally adopted a city-specific addendum to this plan in 2009. The last update to this addendum was approved by FEMA after the county plan was updated in April of 2013. The county plan was updated again in 2018, and the adoption of this resolution is part of the process for FEMA approval of this update to the City of Sandy addendum. Once the addendum is approved, the City of Sandy becomes eligible to apply for and receive FEMA Hazard Mitigation Assistance grants in the event that a declared natural disaster strikes the area through April 11, 2024. FEMA has completed a pre-adoption review of the City of Sandy addendum to the Clackamas County NHMP and has approved it pending Council adoption of the attached resolution.

The Clackamas County NHMP and Sandy addendum are the result of a collaborative effort between citizens, public agencies, non-profit organizations, the private sector, and regional organizations. The Sandy Hazard Mitigation Adoption Committee (comprised of former city manager Kim Yamashita, Transit Director Andi Howell and Police Chief Ernie Roberts) guided the process of developing the current Sandy addendum to the Clackamas County NHMP.

Recommendation:

Staff recommends adoption of resolution 2019-23, a Resolution Adopting the City of Sandy Representation in the Updates to the Clackamas County Multi-Jurisdictional Natural Hazards Mitigation Plan.

Budgetary Impact:

None.

U.S. Department of Homeland Security
FEMA Region 10
130 – 228th Street, SW
Bothell, Washington 98021



FEMA

July 24, 2019

Mr. Joseph Murray
State Hazard Mitigation Planner
Oregon Military Department
Office of Emergency Management
P.O. Box 14370
Salem, Oregon 97309

Dear Mr. Murray:

The Federal Emergency Management Agency (FEMA) Region 10 completed a pre-adoption review of the draft *City of Sandy addendum to the Clackamas County Hazard Mitigation Plan*. The attached Mitigation Plan Review Tool documents the Region's review and compliance with all required elements of 44 CFR Part 201.6, as well as identifies the jurisdictions participating in the planning process. This letter serves as Region 10's commitment to approve the plan upon receiving documentation of its adoption by participating jurisdictions.

Formal adoption documentation must be submitted to FEMA Region 10 by at least one jurisdiction within one calendar year of the date of this letter, or the entire plan must be updated and resubmitted for review. Once FEMA approves the plan, the jurisdictions are eligible to apply for FEMA Hazard Mitigation Assistance grants.

Please contact Jake Grabowsky, Oregon FIT Hazard Mitigation Community Planner, at (202) 856-1901 or james.grabowsky@fema.dhs.gov with any questions.

Sincerely,

x 

Tamra Biasco
Chief, Risk Analysis Branch
Mitigation Division

JG

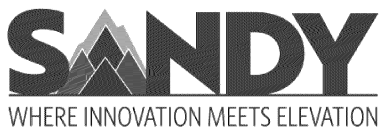
City of Sandy Addendum to the Clackamas County Multi-Jurisdictional Hazard Mitigation Plan



Photo Credit: City of Sandy

March 2019

Volume II: Sandy Addendum



Prepared for:

City of Sandy

Prepared by:

**University of Oregon
Institute for Policy Research and Engagement
Oregon Partnership for Disaster Resilience**

Planning grant funding provided by:



FEMA

Federal Emergency Management Agency (FEMA)

Pre-Disaster Mitigation Program

Grant: EMS-2017-PC-0005

Sub-grant Application Reference: PDMC-PL-10-OR-2016-001, and

Additional Support Provided by:



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Purpose

This is an update of the Sandy addendum to the Clackamas County Multi-Jurisdictional Natural Hazard Mitigation Plan (NHMP). This addendum supplements information contained in Volume I (Basic Plan) which serves as the NHMP foundation and Volume III (Appendices) which provide additional information. This addendum meets the following requirements:

- Multi-Jurisdictional **Plan Adoption** §201.6(c)(5),
- Multi-Jurisdictional **Participation** §201.6(a)(3),
- Multi-Jurisdictional **Mitigation Strategy** §201.6(c)(3)(iv) and
- Multi-Jurisdictional **Risk Assessment** §201.6(c)(2)(iii).

Updates to Sandy's addendum are further discussed throughout the NHMP and within Volume III, Appendix B, which provides an overview of alterations to the document that took place during the update process.

Sandy adopted their addendum to the Clackamas County Multi-jurisdictional NHMP on **[Month] [Day], 2019**. FEMA Region X approved the Clackamas County NHMP on April 12, 2019 and the City's addendum on **[Month] [Day], 2019**. With approval of this NHMP the City is now eligible to apply for the Robert T. Stafford Disaster Relief and Emergency Assistance Act's hazard mitigation project grants through **April 11, 2024**.

Mitigation Plan Mission

The NHMP mission states the purpose and defines the primary functions of the NHMP. It is intended to be adaptable to any future changes made to the NHMP and need not change unless the community's environment or priorities change.

The City concurs with the mission statement developed during the Clackamas County planning process (Volume I, Section 3):

Promote sound public policy designed to protect citizens, critical facilities, infrastructure, private property, and the environment from natural hazards.

This can be achieved by increasing public awareness, documenting the resources for risk reduction and loss-prevention, and identifying activities to guide the county towards building a safer, more sustainable community.

Mitigation Plan Goals

Mitigation plan goals are more specific statements of direction that Clackamas County citizens and public and private partners can take while working to reduce the City's risk from natural hazards. These statements of direction form a bridge between the broad mission statement and action items. The goals listed here serve as checkpoints as agencies and organizations begin implementing mitigation action items.

The City concurs with the goals developed during the Clackamas County planning process (Volume I, Section 3). All NHMP goals are important and are listed below in no order of priority. Establishing community priorities within action items neither negates nor eliminates any goals, but it establishes which action items to consider implementing first, should funding become available.

Below is a list of the NHMP goals:

GOAL #1: PROTECT LIFE AND PROPERTY

- Implement activities that assist in protecting lives by making homes, businesses, infrastructure, critical facilities, and other property more resistant to natural hazards.
- Reduce losses and repetitive damages for chronic hazard events while promoting insurance coverage for catastrophic hazards.
- Improve hazard assessment information to make recommendations for discouraging new development and encouraging preventative measures for existing development in areas vulnerable to natural hazards.

GOAL #2: ENHANCE NATURAL SYSTEMS

- Balance watershed planning, natural resource management, and land use planning with natural hazards mitigation to protect life, property, and the environment.
- Preserve, rehabilitate, and enhance natural systems to serve natural hazard mitigation functions.

GOAL #3: AUGMENT EMERGENCY SERVICES

- Establish policy to ensure mitigation projects for critical facilities, services, and infrastructure.
- Strengthen emergency operations by increasing collaboration and coordination among public agencies, non-profit organizations, and business, and industry.
- Coordinate and integrate natural hazards mitigation activities, where appropriate, with emergency operations plans and procedures.

GOAL #4: ENCOURAGE PARTNERSHIPS FOR IMPLEMENTATION

- Strengthen communication and coordinate participation among and within public agencies, citizens, non-profit organizations, business, and industry to gain a vested interest in implementation.
- Encourage leadership within public and private sector organizations to prioritize and implement local, county, and regional hazard mitigation activities.

GOAL #5: PROMOTE PUBLIC AWARENESS

- Develop and implement education and outreach programs to increase public awareness of the risks associated with natural hazards.
- Provide information on tools, partnership opportunities, and funding resources to assist in implementing mitigation activities.

NHMP Process, Participation and Adoption

This section of the NHMP addendum addresses 44 CFR 201.6(c)(5), *Plan Adoption*, and 44 CFR 201.6(a)(3), *Participation*.

Sandy first developed an addendum to Clackamas County's Natural Hazards Mitigation Plan in 2009. This plan was updated in 2013 and in 2018. The last update of the Sandy addendum to the Clackamas County NHMP was approved by FEMA on April 8, 2013.

In addition to establishing a comprehensive community-level mitigation strategy, the Disaster Mitigation Act of 2000 (DMA2K), and the regulations contained in 44 CFR 201, require that jurisdictions maintain an approved NHMP to receive federal funds for mitigation projects. Local adoption, and federal approval of this NHMP ensures that the city will remain eligible for pre-, and post-disaster mitigation project grants.

The Oregon Partnership for Disaster Resilience (OPDR) at the University of Oregon's Institute for Policy Research, and Engagement (IPRE) collaborated with the Oregon Office of Emergency Management (OEM), Clackamas County, and Sandy to update their NHMP. This project is funded through the Federal Emergency Management Agency's (FEMA) Fiscal-Year 2016 (FY16) Pre-Disaster Mitigation (PDM) Competitive Grant Program EMS-2017-PC-0005 (PDMC-PL-10-OR-2016-001). Members of the Sandy NHMP Hazard Mitigation Advisory Committee (HMAC) also participated in the County NHMP update process (Volume III, Appendix B).

The Clackamas County NHMP, and Sandy addendum, are the result of a collaborative effort between citizens, public agencies, non-profit organizations, the private sector, and regional organizations. The Sandy HMAC guided the process of developing the NHMP.

Convener

The Sandy Police Chief serves as the NHMP addendum convener. The convener of the NHMP will take the lead in implementing, maintaining and updating the addendum to the Clackamas County NHMP in collaboration with the designated convener of the Clackamas County NHMP (Clackamas County Resilience Coordinator).

Representatives from the City of Sandy HMAC met formally and informally, to discuss updates to their addendum (Volume III, Appendix B). The HMAC reviewed and revised the City's addendum, with focus on the NHMP's risk assessment and mitigation strategy (action items).

This addendum reflects decisions made at the designated meetings and during subsequent work and communication with Clackamas County Resilience Coordinator, and the OPDR. The changes are highlighted with more detail throughout this document and within Volume III, Appendix B. Other documented changes include a revision of the City's risk assessment and hazard identification sections, NHMP mission and goals, action items, and community profile.

The Sandy HMAC was comprised of the following representatives:

- Convener, Kim Yamashita, City Manager
- Andi Howell, Transit Director

- Ernie Roberts, Police Chief

Public participation was achieved with the establishment of the HMAc, which was comprised of City officials representing different departments and sectors and members of the public. The HMAc served as the local review body for the NHMP's development. Community members were provided an opportunity for comment via the NHMP review process, and through a survey administered by Clackamas County (Volume III, Appendix G).

NHMP Implementation and Maintenance

The City Council will be responsible for adopting the Sandy addendum to the Clackamas County NHMP. This addendum designates a HMAc and a convener to oversee the development and implementation of action items. Because the City addendum is part of the County's multi-jurisdictional NHMP, the City will look for opportunities to partner with the County. The City's HMAc will convene after re-adoption of the Sandy NHMP addendum on an annual schedule. The County is meeting on a semi-annual basis and will provide opportunities for the cities to report on NHMP implementation and maintenance during their meetings. The City's Police Chief will serve as the convener and will be responsible for assembling the HMAc. The HMAc will be responsible for:

- Reviewing existing action items to determine suitability of funding;
- Reviewing existing and new risk assessment data to identify issues that may not have been identified at NHMP creation;
- Educating and training new HMAc members on the NHMP and mitigation actions in general;
- Assisting in the development of funding proposals for priority action items;
- Discussing methods for continued public involvement; and
- Documenting successes and lessons learned during the year.

The convener will also remain active in the County's implementation and maintenance process (Volume I, Section 4).

The City will utilize the same action item prioritization process as the County (Volume I, Section 4).

Implementation through Existing Programs

This NHMP is strategic and non-regulatory in nature, meaning that it does not necessarily set forth any new policy. It does, however, provide: (1) a foundation for coordination and collaboration among agencies and the public in the city; (2) identification and prioritization of future mitigation activities; and (3) aid in meeting federal planning requirements and qualifying for assistance programs. The mitigation plan works in conjunction with other city plans and programs including the Comprehensive Land Use Plan, Capital Improvements Plan, and Building Codes, as well as the Clackamas County NHMP, and the State of Oregon NHMP.

The mitigation actions described herein (and in Attachment A) are intended to be implemented through existing plans and programs within the city. Plans and policies already in existence have support from residents, businesses and policy makers. Where possible, Sandy will implement the NHMP's recommended actions through existing plans and

policies. Many land-use, comprehensive and strategic plans get updated regularly, allowing them to adapt to changing conditions and needs. Implementing the NHMP's action items through such plans and policies increases their likelihood of being supported and implemented. Implementation opportunities are further defined in action items when applicable.

Sandy's acknowledged comprehensive plan is the City of Sandy Comprehensive Plan (1997, updated 2012). The Oregon Land Conservation and Development Commission first acknowledged the plan in 1982. The City implements the plan through the Development Code.

Sandy currently has the following plans, regulations, and programs that relate to natural hazard mitigation. For a complete list visit the City's [website](#):

- [Comprehensive Plan](#)
 - [Comprehensive Plan Map](#)
- [Municipal Code](#)
 - [Title 8 Health and Safety](#)
 - [Title 10 Vehicles and Traffic](#)
 - [Title 12 Streets Sidewalks and Public Property](#)
 - [Title 13 Water and Sewer](#)
 - [Title 15 Building, Construction, and Signs](#)
 - [Title 17 Development Code](#)
 - [Section 17.56 Hillside Development](#)
 - [Section 17.60 Flood and Slope Hazard Overlay District](#)
 - [Flood and Slope Hazard Map](#)
 - [Slopes and Geologic Hazards Map](#)
 - [Section 17.62 Cultural and Historic Resources](#)
 - [Section 17.64 Planned Development](#)
 - [Section 17.102 Urban Forestry](#)
- [Sandy Transit Master Plan](#)
- [Transportation Systems Plan](#)
- Stormwater Management Plan (*expected to be complete in 2019*)
 - [Stormwater Management Incentive Program](#)
- Water System Master Plan (*expected to be complete in 2019*)

Other plans:

- [Clackamas County Community Wildfire Protection Plan](#)
 - [Sandy Rural Fire Protection District](#)

Government Structure

The governing body for the City of Sandy is the City Council. The Council is composed of the mayor and six City Council members. All Council members are elected at-large. As with most Oregon cities, Sandy uses the "council-manager" form of government. The City Council members are unpaid volunteers who typically hold full time jobs in other areas. They are responsible for all city policies, legislation, and the city budget. The City Council appoints a city manager, who is assigned responsibility of day-to-day operation of the city, consistent with the policy direction set by the Council.

The **Development Services Department** is composed of three divisions: Planning, Building, and Economic Development. The **Planning Division** is responsible for long- and short-term planning, including review and approval of development projects. The division guides the city's land use development process. Planning staff implement the city's comprehensive plan, ensuring that all development projects conform to the municipal code. The **Building Division** provides consultation, plan review, permit and inspection services to the construction industry and the public. The division administers building, mechanical, and plumbing permits and inspections. The **Economic Development Division** provides business licenses, and resources and services to local businesses.

The **Public Works Department** is responsible for public services including water, sanitary sewer, stormwater, streets and traffic, and park maintenance.

The **Police Department** is responsible for public safety in the city of Sandy and as such responds to all types of emergency situations. It also provides Code Enforcement function for the City of Sandy.

The **Department of Community Services** includes the Community/Senior Center, Recreation Department, and Public Libraries.

The **Sandy Transit Department** provides transportation options to residents through an integrated transit system.

Continued Public Participation

An open public involvement process is essential to the development of an effective NHMP. To develop a comprehensive approach to reducing the effects of natural disasters, the planning process shall include opportunity for the public, neighboring communities, local and regional agencies, as well as, private and non-profit entities to comment on the NHMP during review.¹ Keeping the public informed of the City's efforts to reduce its risk to future natural hazard events is important for successful NHMP implementation and maintenance. The City is committed to involving the public in the NHMP review and update process (Volume I, Section 4). The City posted the plan update for public comment before FEMA approval, and after approval will maintain the plan on the City's website: <https://www.ci.sandy.or.us/>

NHMP Maintenance

The Clackamas County NHMP and City addendum will be updated every five years in accordance with the update schedule outlined in the Disaster Mitigation Act of 2000. During the County NHMP update process, the City will also review and update its addendum (Volume I, Section 4). The convener will be responsible for convening the HMAC to address the questions outlined below.

- Are there new partners that should be brought to the table?
- Are there new local, regional, state or federal policies influencing natural hazards that should be addressed?

¹ Code of Federal Regulations, Chapter 44. Section 201.6, subsection (b). 2015

- Has the community successfully implemented any mitigation activities since the NHMP was last updated?
- Have new issues or problems related to hazards been identified in the community?
- Are the actions still appropriate given current resources?
- Have there been any changes in development patterns that could influence the effects of hazards?
- Have there been any significant changes in the community's demographics that could influence the effects of hazards?
- Are there new studies or data available that would enhance the risk assessment?
- Has the community been affected by any disasters? Did the NHMP accurately address the impacts of this event?

These questions will help the HMAC determine what components of the mitigation plan need updating. The HMAC will be responsible for updating any deficiencies found in the NHMP.

Mitigation Strategy

This section of the NHMP addendum addresses 44 CFR 201.6(c)(3)(iv), *Mitigation Strategy*.

The City's mitigation strategy (action items) were first developed during the 2009 NHMP planning process and revised during subsequent NHMP updates. During these processes, the HMAC assessed the City's risk, identified potential issues, and developed a mitigation strategy (action items).

During the 2018 update process the City re-evaluated their mitigation strategy (action items). During this process action items were updated, noting what accomplishments had been made and whether the actions were still relevant; any new action items were identified at this time (see Volume III, Appendix B for more information on changes to action items).

Priority Action Items

Table SA-1 presents a list of mitigation actions. The HMAC decided to modify the prioritization of action items in this update to reflect current conditions (risk assessment), needs, and capacity. High priority actions are shown in **bold** text with grey highlight. The HMAC decided to modify the prioritization of action items in this update to reflect current conditions (risk assessment), needs, and capacity. The City will focus their attention, and resource availability, upon these achievable, high leverage, activities over the next five-years. Although this methodology provides a guide for the HMAC in terms of implementation, the HMAC has the option to implement any of the action items at any time. This option to consider all action items for implementation allows the committee to consider mitigation strategies as new opportunities arise, such as capitalizing on funding sources that could pertain to an action item that is not currently listed as the highest priority. Refer to Attachment A for detailed information for each action. Full text of the plan goals referenced in Table SA-1 is located on page SA-2.

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Table SA-I Sandy Action Items

Natural Hazard Action ID	Action Item	Coordinating Organization (Lead)	Internal Partners	Timing	Plan Goals Addressed				
					Goal 1	Goal 2	Goal 3	Goal 4	Goal 5
MH #1	Maintain public education programs to inform the public about methods for mitigating the impacts of natural hazards.	HMAC	Fire, Public Works	Ongoing	✓	✓	✓	✓	✓
MH #2	Integrate the goals and action items from the Natural Hazards Mitigation Plan into existing regulatory documents and programs, where appropriate.	Planning	Public Works	Ongoing	✓	✓	✓	✓	✓
MH #3	Improve vegetation management throughout the city.	Planning	Public Works, Code Enforcement, HMAC	Ongoing	✓	✓	✓	✓	✓
MH #4	Encourage structural mitigation practices in developments at risk to natural hazards.	Planning	Public Works, Fire, HMAC	Ongoing	✓	✓	✓	✓	✓
EQ #1	Reduce negative impacts of earthquakes by performing seismic evaluations and retrofits (structural and non-structural).	HMAC	Planning, Building, Public Works	Long Term	✓	✓	✓	✓	✓
EQ #2	Seismically retrofit (structural and non-structural) the Sandy Community Center to exceed life safety standards in order to operate as a possible shelter.	Community Services	Planning, Building, Public Works	Long Term	✓	✓	✓	✓	✓
EQ #3	Seismically retrofit (structural and non-structural) City Hall in order to continue operations post-earthquake and to protect city and county IT infrastructure (servers).	SandyNet, City Administration	Planning, Building, Public Works	Long Term	✓	✓	✓	✓	✓
FL #1	Ensure continued compliance in the National Flood Insurance Program (NFIP) through enforcement of local floodplain management ordinances.	Development Services	HMAC	Ongoing	✓	✓	✓	✓	✓

Natural Hazard Action ID	Action Item	Coordinating Organization (Lead)	Internal Partners	Timing	Plan Goals Addressed					
					Goal 1	Goal 2	Goal 3	Goal 4	Goal 5	
FL #2	Explore participation in the NFIP's Community Rating System (CRS).	Planning	Public Works, HMAC	Short Term	✓	✓		✓	✓	✓
FL #3	Promote and protect the use of naturally flood prone open space or wetlands as flood storage areas.	Planning	Public Works, HMAC	Ongoing	✓	✓		✓	✓	✓
LS #1	Maintain and update an inventory of streets and properties threatened by landslides.	Planning	Public Works, GIS	Ongoing				✓	✓	✓
LS #2	Reduce the vulnerability of property owners in landslide-prone areas.	Planning	Public Works, GIS, HMAC	Ongoing	✓	✓		✓	✓	✓
SW #1	Reduce negative effects from severe windstorm and severe winter storm events.	Public Works	Planning, Building, HMAC	Ongoing	✓	✓		✓	✓	✓
WF #1	Coordinate wildfire mitigation action items through the Clackamas County Community Wildfire Protection Plan.	Fire	Public Works, Planning, Building	Ongoing	✓	✓		✓	✓	✓

Source: City of Sandy HMAC, 2018.

Note: Full text of the plan goals referenced in this table is located on page SA-2.

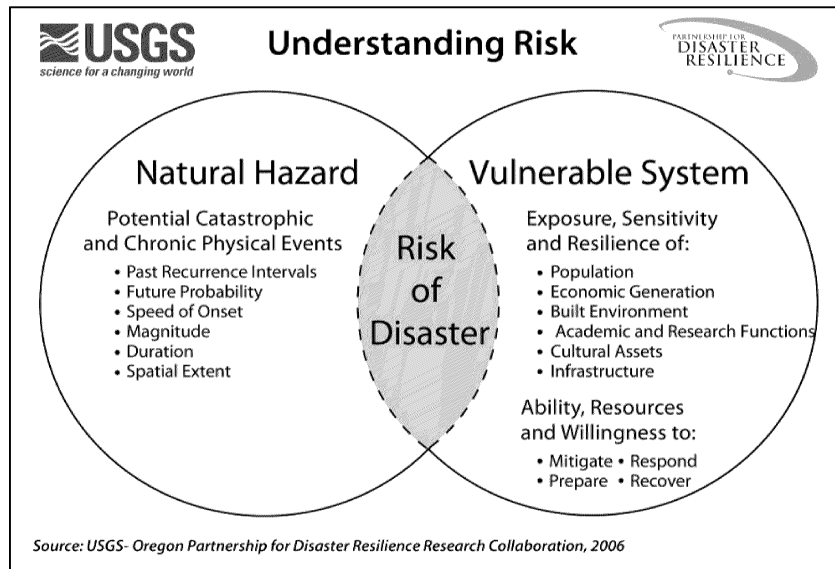
Risk Assessment

This section of the NHMP addendum addresses 44 CFR 201.6(b)(2) - Risk Assessment. In addition, this chapter can serve as the factual basis for addressing Oregon Statewide Planning Goal 7 – Areas Subject to Natural Hazards. Assessing natural hazard risk has three phases:

- **Phase 1:** Identify hazards that can impact the jurisdiction. This includes an evaluation of potential hazard impacts – type, location, extent, etc.
- **Phase 2:** Identify important community assets and system vulnerabilities. Example vulnerabilities include people, businesses, homes, roads, historic places and drinking water sources.
- **Phase 3:** Evaluate the extent to which the identified hazards overlap with or have an impact on, the important assets identified by the community.

The local level rationale for the identified mitigation strategies (action items) is presented herein and within Volume I, Section 3 and Volume III, Appendix C. The risk assessment process is graphically depicted in Figure SA-1. Ultimately, the goal of hazard mitigation is to reduce the area of risk, where hazards overlap vulnerable systems.

Figure SA-1 Understanding Risk



Hazard Analysis

The Sandy HMAC developed their hazard vulnerability assessment (HVA), using their previous HVA and the County’s HVA as a reference. Changes from their previous HVA and the County’s HVA were made where appropriate to reflect distinctions in vulnerability and risk from natural hazards unique to Sandy, which are discussed throughout this addendum.

Table SA-2 shows the HVA matrix for Sandy listing each hazard in order of rank from high to low. For local governments, conducting the hazard analysis is a useful step in planning for

hazard mitigation, response and recovery. The method provides the jurisdiction with sense of hazard priorities but does not predict the occurrence of a hazard.

Two catastrophic hazards (Cascadia Subduction Zone earthquake and Crustal earthquake) and one chronic hazard (winter storm) rank as the top hazard threats to the City (Top Tier). Flood, wildfire, and windstorm comprise the next highest ranked hazards (Middle Tier), while volcanic event, drought, landslide, and extreme heat hazards comprise the lowest ranked hazards (Bottom Tier).

Table SA-2 Hazard Analysis Matrix – Sandy

Hazard	History	Maximum		Total Threat Score	Hazard Rank	Hazard Tiers
		Vulnerability	Threat Probability			
Earthquake - Cascadia	4	45	100	49	198	#1
Earthquake - Crustal	6	50	100	21	177	#2
Winter Storm	10	30	70	63	173	#3
Flood	16	30	60	56	162	#4
Wildfire	6	40	70	42	158	#5
Windstorm	14	30	50	63	157	#6
Volcanic Event	2	40	80	14	136	#7
Drought	10	15	50	56	131	#8
Landslide	14	30	20	63	127	#9
Extreme Heat	2	20	40	14	76	#10

Source: Sandy HMCAC, 2018.

Table SA-3 categorizes the probability and vulnerability scores from the hazard analysis for the City and compares the results to the assessment completed by the Clackamas County HMCAC. Variations between the City and County are noted in **bold** text within the city ratings.

Table SA-3 Probability and Vulnerability Comparison

Hazard	Sandy		Clackamas County	
	Probability	Vulnerability	Probability	Vulnerability
Drought	High	Low	High	Low
Earthquake - Cascadia	Moderate	High	Moderate	High
Earthquake - Crustal	Low	High	Low	High
Extreme Heat	Low	Moderate	Low	High
Flood	High	Moderate	High	Moderate
Landslide	High	Moderate	High	Low
Volcanic Event	Low	High	Low	Moderate
Wildfire	Moderate	High	High	Moderate
Windstorm	High	Moderate	Moderate	Low
Winter Storm	High	Moderate	Moderate	Moderate

Source: Sandy and Clackamas County HMCAC, 2018.

Community Characteristics

Table SA-4 and the following section provides information on City specific demographics and assets. Many of these community characteristics can affect how natural hazards impact communities and how communities choose to plan for natural hazard mitigation. Considering the City specific assets during the planning process can assist in identifying appropriate measures for natural hazard mitigation. Between 2010 and 2016 the City grew by 1,000 people (10%; as of 2018 the population was 10,990) and median household income increased by about 8%.² Between 2018 and 2040 the population is forecast to grow by 90% to 20,911.³ To accommodate expected population growth the city expanded its Urban Growth Boundary in 2017 and included an Urban Reserve Boundary to accommodate future needs. New development has complied with the standards of the Oregon Building Code and the city's development code.

Transportation/Infrastructure

Downtown Sandy is an asset to the community and the city has undertaken several urban renewal projects to increase the community's prosperity by enabling an economically viable and vibrant city. The 3/4 mile stretch between Bluff Road and Ten Eyck Road is the heart of the city and offers shopping, dining and entertainment. Sandy's downtown is also home to a variety of city services including City Hall, Sandy Fire and Police, the City Library and Community Center.

Sandy's commercial sector is centered along Highway 26. Industry is primarily located in the western portion of the city. Most residential properties are in the southern part of town, although the northern part of town is also zoned for residential use.

Transportation is an important consideration when planning for emergency service provisions. Growth within the city will put pressure on both major and minor roads, especially if the main mode of travel is by single occupancy vehicles.

Motor vehicles represent the dominant mode of travel through and within Sandy. The City's public transit is provided by Sandy Area Metro system and Mt. Hood Express.

Economy

Sandy is dominated by small businesses, with more than 80% of businesses employing fewer than five employees. The city's residents work in a variety of industries, with "professional and related occupations" (25% of workforce), "management, business, and financial operations occupations" (13%), "sales and related occupations" (12%), and "office and administrative support occupations" (12%) accounting for the top occupations.⁴

The five largest employers in Sandy are Oregon Trail School District, US Forest Service, Safeway, US Metal Works (truck bins, air pneumatic systems, conveyers), and AEC Incorporated (computer and software).

² Portland State University, Population Research Center, "Annual Population Estimates", 2016 & 2018 and Social Explorer, Table T57, U.S. Census Bureau, 2012-2016 and 2006-2010 American Community Survey Estimates.

³, Portland State University, Population Research Center, "Population Forecast Tables", 2017.

⁴ Social Explorer, Table 50, U.S. Census Bureau, 2012-2016 American Community Survey Estimates

Table SA-4 Community Characteristics

Population Characteristics		
2010 Population	9,655	
2016 Population [2018 Population]	10,655 [10,990]	
2040 Forecasted Population*	20,911	
Race (non-Hispanic) and Ethnicity (Hispanic)		
White		87%
Black/ African American		0%
American Indian and Alaska Native		< 1%
Asian		1%
Native Hawaiian and Other Pacific Islander		0%
Some Other Race		0%
Two or More Races		3%
Hispanic or Latino		8%
Limited or No English Spoken		3%
Vulnerable Age Groups		
Less than 15 Years	2,566	25%
65 Years and Over	1,275	12%
Disability Status		
Total Population	1,249	12%
Children	62	2%
Seniors	442	35%
Income Characteristics		
Households by Income Category		
Less than \$15,000	186	5%
\$15,000-\$29,999	613	16%
\$30,000-\$44,999	496	13%
\$45,000-\$59,999	580	15%
\$60,000-\$74,999	614	16%
\$75,000-\$99,999	588	15%
\$100,000-\$199,999	671	17%
\$200,000 or more	114	3%
Median Household Income	\$61,687	
Poverty Rates		
Total Population	880	9%
Children	293	10%
Seniors	86	7%
Housing Cost Burden		
Owners with Mortgage	804	31%
Renters	700	56%

Source: U.S. Census Bureau, 2012-2016 American Community Survey; Portland State University, Population Research Center, "Annual Population Estimates", 2016 & 2018; Portland State University, Population Research Center, "Population Forecast Tables", 2017.

Housing Characteristics		
Housing Units		
Single-Family	3,248	78%
Multi-Family	644	16%
Mobile Homes	268	6%
Year Structure Built		
Pre-1970	485	12%
1970-1989	1,052	25%
1990 or later	2,623	63%
Housing Tenure and Vacancy		
Owner-occupied	2,601	63%
Renter-occupied	1,261	30%
Seasonal	0	0%
Vacant	298	7%

Located on Highway 26, Sandy is a scenic community with beautiful views and vast outdoor recreational opportunities and serves as a gateway for tourists visiting Mount Hood and the Mount Hood National Forest. Sandy's residents enjoy a rural lifestyle while still having the urban amenities of Portland, located just 25 miles to the northwest. Sandy incorporated in 1911 and has doubled its population since 2000 and is expected to double its population again by 2040.

Sandy's largest body of water is the Sandy River. Smaller tributaries include Tickle Creek, Cedar Creek, and Badger Creek. The topography in Sandy is quite diverse, ranging from the steep Sandy River canyon to relatively flat farmland. The areas to the east and south of the city are mostly forested land, and areas to the north and west of the city are primarily farmland.

The City is within the Sandy River watershed at 967 feet above sea level. Because of its location Sandy's climate is consistent with the Marine west coast climate zone, with warm summers and cool, wet winters. Sandy receives most of its precipitation between October and May, averaging 79 inches of rain, and about one (1) inch of snow, per year.⁵

⁵ "Monthly Average for Sandy, OR" The Weather Channel Interactive, Inc. Retrieved November 1, 2018.

Community Assets

This section outlines the resources, facilities, and infrastructure that, if damaged, could significantly impact the public safety, economic conditions, and environmental integrity of Sandy. It is important to note that the facilities identified as “critical” and “essential” are characterized differently than the structural code that identifies buildings as “essential” and “non-essential.” The structural code uses different language and criteria and therefore have completely different meanings than the buildings identified in this addendum.

Critical Facilities

Facilities that are critical to government response, and recovery activities (i.e. life, safety, property, and environmental protection). These facilities include: 911 Centers, Emergency Operations Centers, Police, and Fire Stations, Public Works facilities, sewer, and water facilities, hospitals, bridges, roads, shelters, and more.

Table SA-5 Critical Facilities in Sandy

Facility	Drought	Earthquake	Extreme Heat	Flood	Landslide	Volcanic Event	Wildfire	Windstorm	Winter Storm
Critical Facilities									
City Hall		X				X	X	X	X
Sandy Fire District - Main Station						X	X	X	X
Sandy Police Department						X	X	X	X
City Maintenance Shops, Equipment, Operations Center						X		X	X

Hazardous Materials:

Facilities that, if damaged, could cause serious secondary impacts may also be considered “critical.” Hazardous materials sites are particularly vulnerable to earthquake, landslide, volcanic event, wildfire, and winter storm hazards. A hazardous material facility is one example of this type of critical facility. Those sites that store, manufacture, or use potentially hazardous materials include:

Fuel Storage

Chevron
Leathers Oil Co.
Mt. Hood Arco
(East and West)
Pacific Pride Fuel
Sandy Market and Shell

Other:

Advanced Plastics, Inc
Bi-Mart
Champion Collision
Fred Meyer
Hearth Classics
Independent Diesel
Jiffy Lube
Les Schwab Tire Center
Mt. Hood Cleaners and Laundry
NAPA Auto Parts

Olin Aquatic Center
O'Reilly Auto Parts
Performance Auto Body
Sandy Auto Body
Sandy Funeral Home
Suburban Chevrolet
Suburban Ford
US Metal Works Inc./US
Meat & Restaurant
Supply
Web Steel

Essential Facilities

Facilities that are essential to the continued delivery of key government services, and/or that may significantly impact the public's ability to recover from the emergency. These facilities may include: City buildings such as the Public Services Building, the City Hall, and other public facilities such as schools.

Table SA-6 Essential Facilities in Sandy

Facility	Drought	Earthquake	Extreme Heat	Flood	Landslide	Volcanic Event	Wildfire	Windstorm	Winter Storm
Essential Facilities									
Schools									
Cedar Ridge Middle School						X	X	X	X
Firwood Grade School		X				X	X	X	X
Oregon Trail Primary Academy		X				X	X	X	X
Oregon Trail School District Offices		X				X		X	X
Sandy Grade School		X				X	X	X	X
Sandy Head Start		X				X		X	X
Sandy High School		X				X		X	X
Food Providers									
Fred Meyer's (+ pharmacy)									
Safeway (+ pharmacy)									
Hospitals and Pharmacies									
Adventist Health Clinic and Urgent Care									
Clackamas County Public Health		X							
Bi-Mart (pharmacy)									
Other Essential Facilities									
Churches*									
Mt. Hood National Forest Headquarters									
Olin Bignall Aquatic Center									
U.S. Post Office		X							

Note: * Churches include: Aims Community, Assembly of God, Church of Christ, Church of Latter Day Saints, Community Presbyterian, Dover Community, Immanuel Lutheran, Jehovah's Witness, Living Way Fellowship, Orient Drive Baptist, Sandy Baptist, Church of Nazarene, Seventh Day Adventist, and St Michael's Catholic

Critical Infrastructure:

Infrastructure that provides necessary services for emergency response include:

Table SA-7 Critical Infrastructure in Sandy

Facility	Drought	Earthquake	Extreme Heat	Flood	Landslide	Volcanic Event	Wildfire	Windstorm	Winter Storm
Critical Infrastructure									
AT&T Cellular									
PGE Substation - Hwy 26 and Bluff Rd.									
Sprint/Nextel Cellular Tower									
State Highway 211		X							
US Highway 26		X							
Water Reservoirs									
Water Treatment Plant		X							
Watershed		X		X	X	X	X		X

Vulnerable Populations:

Vulnerable populations, including seniors, disabled citizens, women, and children, as well as those people living in poverty, often experience the impacts of natural hazards and disasters more acutely. Populations that have special needs or require special consideration include:

Senior Living Centers and Disabled Housing

- | | |
|------------------------------|--------------------------------|
| Avamere Assisted Living | Evans Street Senior Apartments |
| Cascadia Village | Firwood Village Apartments |
| Cedar Park Garden Apartments | Harlon Garden Apartments |
| Country Garden Apartments | Hummingbird Apartments |

Other

- | | |
|---|--|
| Best Western Sandy Inn | Mt. Hood Hospice |
| Fresenius Kidney Care (Dialysis Clinic) | Sandy Vista Apartments (large Spanish speaking pop.) |
| Hood Chalet Mobile Estates | Schools |
| Medical Clinics | |

Cultural and Historic Assets

The cultural and historic heritage of a community is more than just tourist charm. For families that have lived in the city for generations and new resident alike, it is the unique places, stories, and annual events that make Sandy an appealing place to live. The cultural and historic assets are both intangible benefits and obvious quality-of-life- enhancing amenities. Because of their role in defining and supporting the community, protecting these resources from the impact of disasters is important.

Table SA-8 Cultural or Historic Assets in Sandy

Facility	Drought	Earthquake	Extreme Heat	Flood	Landslide	Volcanic Event	Wildfire	Windstorm	Winter Storm
Cultural or Historic Assets									
Barlow Ridge Park					X		X	X	
Bell Street Fields					X		X	X	
Cascadia Park					X		X	X	
Hamilton Ridge Park					X		X	X	
Jonsrud Viewpoint					X		X		
Junker Business Building	X	X	X	X	X	X	X	X	X
Meining Memorial Park									
R.S. Smith Building					X		X	X	
Sandy Bluff Park							X		
Sandy Civic Plaza and Museum		X							
Sandy Historical Museum		X			X		X	X	
Sandy River Park				X	X		X		
Sandy River Trail									
Sandy Skate Park				X	X		X	X	
The Meining Park					X		X	X	
Tickle Creek Park/Trail				X	X		X		
Tupper Park				X	X		X		
Veterans Memorial Square				X	X		X		

Hazard Characteristics

Drought

The HMAC determined that the City's probability for drought is **high** and that their vulnerability to drought is **low**. *The probability rating increased, and the vulnerability rating did not change, since the previous version of this NHMP addendum.*

Volume I, Section 2 describes the characteristics of drought hazards, history, as well as the location, extent and probability of a potential event. Due to the climate of Clackamas County, past and present weather conditions have shown an increasing potential for drought.

The City of Sandy has three water sources: Alder Creek (small tributary of the Sandy River), Brownell Springs (city-owned natural spring on Lenhart Butte), and Portland Water Bureau. During the spring, fall, and winter approximately 50% of the supply comes from the Portland Water Bureau, while during the summer each source provides about one-third of the total supply. The Alder Creek site, located within the Alder Creek watershed (3,915 acres), provides about 2.6 MGD (million gallons per day, equal to water rights the city has on Alder Creek). The site includes a treatment plant, reservoirs, piping, and pump stations built in 1977 and last updated in 2001. Brownell Springs provides about 60,000 to 500,000 gallons per day and is located on 22 acres of City-owned land on the north face of Lenhart Butte. The Portland Water Bureau source has been providing about 500,000 gallons per day (up to a maximum of 3 MGD) since 2008. In addition, the city holds water rights to withdraw up to 25 CFS (cubic feet per second – roughly 16 MGD) from the Salmon River near the Mount Hood National Forest Boundary (current agreements limit future withdrawal to 16.3 CFS – roughly 1-.5 MGD). The existing water rights and system is considered adequate to supply the City's expected growth through at least 2040.

Vulnerability Assessment

Due to insufficient data and resources, Sandy is currently unable to perform a quantitative risk assessment, or exposure analysis, for this hazard. For a list of facilities and infrastructure vulnerable to this hazard see the Community Assets section and Tables SA-5 through SA-8.

Mitigation Activities

The existing drought hazard mitigation activities are conducted at the county, regional, state, and federal levels and are described in the Clackamas County NHMP.

Please review Volume I, Section 2 for additional information on this hazard.

Earthquake (Cascadia Subduction Zone)

The HMAC determined that the City's probability for a Cascadia Subduction Zone (CSZ) earthquake is **moderate** and that their vulnerability to a CSZ earthquake is **high**. *These ratings did not change since the previous version of this NHMP addendum. Previously, the earthquake hazard profile was a single risk assessment, which is now divided into two separate earthquake hazards: Cascadia Subduction Zone (CSZ) earthquake and Crustal earthquake.*

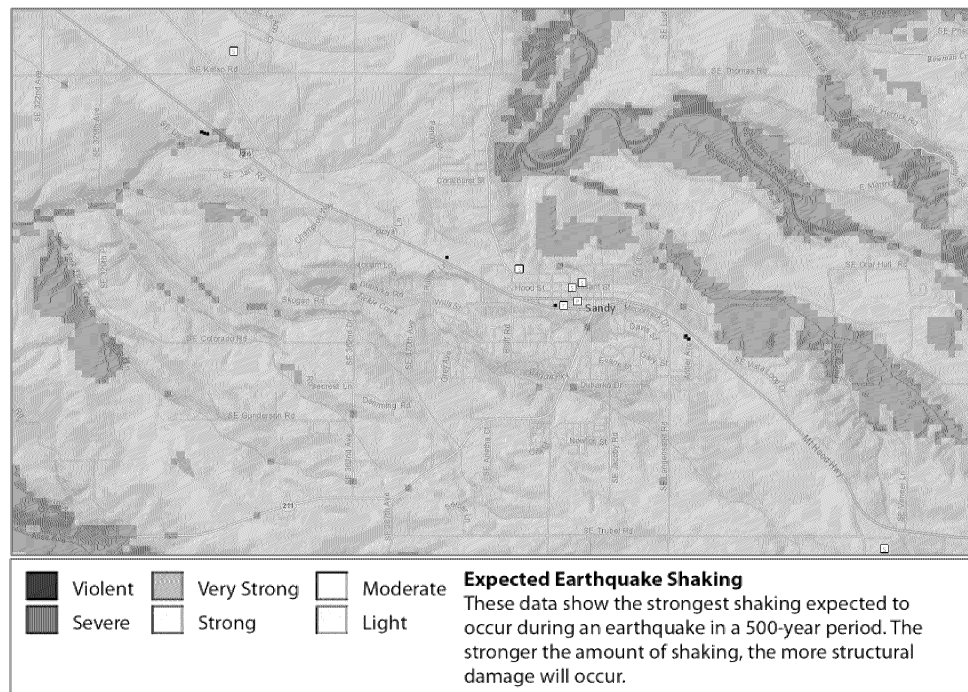
Volume I, Section 2 describes the characteristics of earthquake hazards, history, as well as the location, extent and probability of a potential event. Generally, an event that affects the

County is likely to affect Sandy as well. The causes and characteristics of an earthquake event are appropriately described within the Volume I, Section 2 as well as the location and extent of potential hazards. Previous occurrences are well documented within Volume I, Section 2 and the community impacts described by the County would generally be the same for Sandy as well.

Within the Northern Willamette Valley/Portland Metro Region, three potential faults and/or zones can generate high-magnitude earthquakes. These include the Cascadia Subduction Zone, Portland Hills Fault Zone, Gales Creek-Newberg-Mt. Angel Structural Zone, and Mount Hood Fault (discussed in the crustal earthquake section).

Figure SA-2 displays relative shaking hazards from a Cascadia Subduction Zone earthquake event. As shown in the figure, most of the city is expected to experience very strong shaking (orange), while areas near rivers and streams will experience severe (light red) to violent (dark red) shaking in a CSZ event.

Figure SA-2 Cascadia Subduction Zone Expected Shaking



Source: [Oregon HazVu: Statewide Geohazards Viewer \(DOGAMI\)](#)

Note: To view detail click the link above to access Oregon HazVu.

Cascadia Subduction Zone

The Cascadia Subduction Zone is a 680-mile-long zone of active tectonic convergence where oceanic crust of the Juan de Fuca Plate is subducting beneath the North American continent at a rate of 4 cm per year. Scientists have found evidence that 11 large, tsunami-producing earthquakes have occurred off the Pacific Northwest coast in the past 6,000 years. These earthquakes took place roughly between 300 and 5,400 years ago with an average

occurrence interval of about 510 years. The most recent of these large earthquakes took place in approximately 1700 A.D.⁶

The city's proximity to the Cascadia Subduction Zone, potential slope instability and the prevalence of certain soils subject to liquefaction and amplification combine to give the city a high-risk profile. Due to the expected pattern of damage resulting from a CSZ event, the Oregon Resilience Plan divides the State into four distinct zones and places the city predominately within the "Valley Zone" (Valley Zone, from the summit of the Coast Range to the summit of the Cascades). Within the Northwest Oregon region, damage and shaking is expected to be strong and widespread - an event will be disruptive to daily life and commerce and the main priority is expected to be restoring services to business and residents.

Earthquake (Crustal)

The HMAC determined that the City's probability for a crustal earthquake is **low** and that their vulnerability to crustal earthquake is **high**. *The probability rating decreased, and the vulnerability rating did not change, since the previous version of this NHMP addendum. Previously, the earthquake hazard profile was a single risk assessment, which is now divided into two separate earthquake hazards: Crustal earthquake, and Cascadia Subduction Zone (CSZ) earthquake.*

Volume I, Section 2 describes the causes and characteristics of earthquake hazards, history, as well as the location, extent, and probability of a potential event. Generally, an event that affects the County is likely to affect Sandy as well. Figure SA-3 shows a generalized geologic map of the Sandy area that includes the areas for potential regional active faults, earthquake history (1971-2008), and soft soils (liquefaction) hazard. The figure shows that the City is mostly outside of the areas of greatest liquefaction concern.

There are three potential crustal faults and/or zones near the City that can generate high-magnitude earthquakes. These include the Gales Creek-Mt. Angel Structural Zone, Portland Hills Fault Zone, and Mt Hood Fault (discussed in greater detail below). Historical records count over 56 earthquakes in the Portland-metro area. The more severe ones occurred in 1877, 1880, 1953 and 1962. The most recent severe earthquake was the March 25, 1993 Scotts Mills quake. It was a 5.6 magnitude quake with aftershocks continuing at least through April 8.

Earthquake-induced damages are difficult to predict, and depend on the size, type, and location of the earthquake, as well as site-specific building, and soil characteristics. Presently, it is not possible to accurately forecast the location or size of earthquakes, but it is possible to predict the behavior of soil at any site. In many major earthquakes, damages have primarily been caused by the behavior of the soil.

Portland Hills Fault Zone

The Portland Hills Fault Zone is a series of NW-trending faults that vertically displace the Columbia River Basalt by 1,130 feet and appear to control thickness changes in late

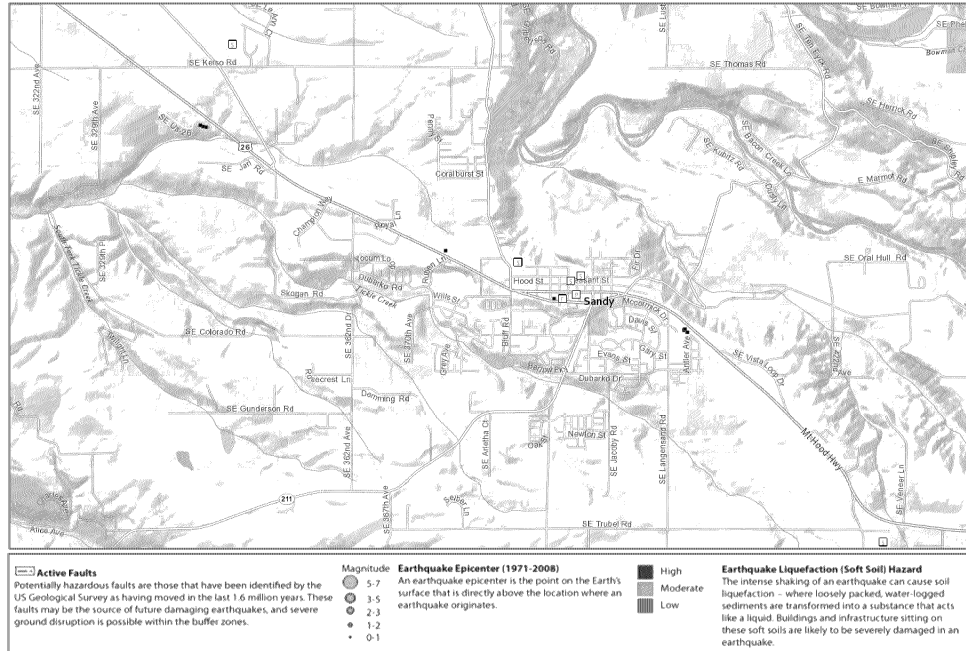
⁶ The Cascadia Region Earthquake Workgroup, 2005. Cascadia Subduction Zone Earthquakes: A magnitude 9.0 earthquake scenario. <http://www.crew.org/PDFs/CREWSubductionZoneSmall.pdf>

Pleistocene (approx. 780,000 years ago) sediment. The fault zone extends along the eastern margin of the Portland Hills for 25 miles and lies about 11 miles northeast of Sandy.

Mount Hood Fault Zone

The Mount Hood Fault Zone is a series of four north-trending faults that extend approximately 34 miles north from Clear Lake to the Columbia River, its major segments include the Blue Ridge and the Twin Lakes faults.⁷

Figure SA-3 Active Crustal Faults, Epicenters (1971-2008), and Soft Soils



Source: [Oregon HazVu: Statewide Geohazards Viewer \(DOGAMI\)](#)

Note: To view detail click the link above to access Oregon HazVu

Vulnerability Assessment

The Department of Geology and Mineral Industries (DOGAMI) conducted a multi-hazard risk assessment (Risk Report) for the Lower Columbia-Sandy Watershed including the City of Sandy. The Risk Report provides a quantitative risk assessment for the earthquake, hazard. Additionally, DOGAMI completed a regional impact analysis for earthquakes originating from the Cascadia Subduction Zone and Portland Hills faults.

⁷ Madin, I. P., Streig, A. R., Burns, W. J., and Ma, L., 2017, The Mount Hood Fault Zone – Late Quaternary and Holocene fault features newly mapped with high-resolution lidar Imagery, in Scott, W. E., and Gardner, C. A. (eds.), Field-trip guide to Mount Hood, Oregon, highlighting eruptive history and hazards: U.S. Geological Survey Scientific Investigations Report 2017-5022-G, p. 100-109. <https://pubs.usgs.gov/sir/2017/5022/g/sir20175022g.pdf>

Earthquake Regional Impact Analysis

In 2018 DOGAMI completed a regional impact analysis for earthquakes originating from the Cascadia Subduction Zone and Portland Hills faults (O-18-02). Their study focused on damage to buildings, and the people that occupy them, and to two key infrastructure sectors: electric power transmission and emergency transportation routes. Each earthquake was studied with wet and dry soil conditions and for events that occur during the daytime (2 PM) and night time (2 AM). Impacts to buildings and people were tabulated at the county, jurisdictional (city), and neighborhood unit level. Estimated damaged varied widely across the study area depending on local geology, soil moisture conditions, type of building, and distance from the studied faults. In general, damage from the Cascadia Subduction Zone scenario was greater in the western portion of the study area, however, damage could still be significant in some areas east of the Willamette River. The report found that damage to high-value commercial and industrial buildings was high since many of these facilities are in areas of high to very high liquefaction hazard. Casualties were higher during the daytime scenario (generally double) since more people would be at work and occupying non-wood structures that fare worse in an earthquake. The Portland Hills fault scenario created greater damages than the Cascade Subduction Zone scenario due primarily to its placement relative to population centers and regional assets; however, at distances 15 or more miles from the Portland Hills fault the damages from the Cascadia Subduction Zone scenario generally were higher. In both the Cascadia Subduction Zone and Portland Hills Fault scenarios it is forecasted that emergency transportation routes will be fragmented, affecting the distribution of goods and services, conditions are worse under the Portland Hills Fault scenario. Portions of the electric distribution system are also expected to be impacted under both scenarios, however, the impact is considerably less than it is to the transportation routes. Additional, capacity or redundancy within the electric distribution network may be beneficial in select areas that are likely to have greater impacts.

Table SA-9 shows the permanent resident population that are vulnerable to injury or death (casualty) and the buildings in the City that are susceptible to liquefaction and landslides, it does not predict that damage will occur in specific areas due to either liquefaction or landslide. More population and property are exposed to higher degrees of expected damage or casualty under the Portland Hills Fault “wet” scenario than in any other scenario.

Table SA-9 Expected damages and casualties for the CSZ fault and Portland Hills fault: earthquake, soil moisture, and event time scenarios

	Cascadia Subduction Zone (M9.0)		Portland Hills Fault (M6.8)	
	"Dry" Soil	"Wet" Saturated Soil	"Dry" Soil	"Wet" Saturated Soil
Number of Buildings	3,734	3,734	3,734	3,734
Building Value (\$ Million)	1,077	1,077	1,077	1,077
Building Repair Cost (\$ Million)	11	12	20	21
Building Loss Ratio	1%	1%	2%	2%
Debris (Thousands of Tons)	5	5	8	8
Long-Term Displaced Population	4	6	4	16
Total Casualties (Daytime)	5	5	8	9
Level 4 (Killed)	0	0	0	0
Total Casualties (Nighttime)	2	2	3	4
Level 4 (Killed)	0	0	0	0

Source: DOGAMI, Earthquake regional impact analysis for Clackamas, Multnomah, and Washington Counties, Oregon (2018, O-18-02), Tables 12-8, 12-9, 12-10, and 12-11.

Cascadia Subduction Zone Scenario

The City of Sandy is expected to have a 1% building loss ratio with a repair cost of \$11 million under the CSZ “dry” scenario, and an 1% building loss ratio with a repair cost of \$12 million under the CSZ “wet” scenario.⁸ The city is expected to have around 5 daytime or 2 nighttime casualties during the CSZ “dry” scenario and 5 daytime or 2 nighttime casualties during the CSZ “wet” scenario. It is expected that there will be a long-term displaced population of around 4 for the CSZ “dry” scenario and 6 for the CSZ “wet” scenario.⁹

Portland Hills Fault Scenario

The City of Sandy is expected to have a 2% building loss ratio with a repair cost of \$20 million under the CSZ “dry” scenario, and a 2% building loss ratio with a repair cost of \$21 million under the CSZ “wet” scenario.¹⁰ The long-term displaced population and casualties are slightly increased for all the Portland Hills Fault scenarios. The city is expected to have around 8 daytime or 3 nighttime casualties during the Portland Hills Fault “dry” scenario and 9 daytime or 4 nighttime casualties during the Portland Hills Fault “wet” scenario. It is expected that there will be a long-term displaced population of around 4 for the Portland Hills Fault “dry” scenario and 16 for the Portland Hills Fault “wet” scenario.¹¹

Recommendations from the report included topics within Planning, Recovery, Resiliency: Buildings, Resiliency: Infrastructure Improvements, Resiliency: Essential and Critical Facilities, Enhanced Emergency Management Tools, Database Improvements, Public Awareness, and Future Reports. The recommendations of this study are largely incorporated within this NHMPs mitigation strategies (Table SA-1 and Volume I, Section 3). For more detailed information on the report, the damage estimates, and the recommendations see: *Earthquake regional impact analysis for Clackamas, Multnomah, and Washington Counties, Oregon* (2018, O-18-02).

Lower Columbia-Sandy Watershed Natural Hazard Risk Report

The **Risk Report** (DOGAMI, IMS-59) provides hazard analysis summary tables that identify populations and property within the Lower Columbia-Sandy River Watershed Study Area that are vulnerable to the Cascadia subduction zone earthquake and a local crustal earthquake event associated with the Mount Hood fault. The Risk Report provides a distinct profile for the City of Sandy. According to the Risk Report the following populations and property are vulnerable to the studied earthquake hazards:

City of Sandy¹²

Cascadia Subduction Zone event (M9.0 Deterministic): 1 building is expected to be damaged for a total potential loss of \$1,817,000 (a loss ratio of < 1%). No residents are expected to be displaced.

Crustal event (Mt Hood M6.9 Probabilistic): 1 building is expected to be damaged for a total potential loss of \$1,402,000 (a loss ratio of < 1%). No residents are expected to be displaced.

⁸ DOGAMI, *Earthquake regional impact analysis for Clackamas, Multnomah, and Washington Counties, Oregon* (2018, O-18-02), Tables 12-8 and 12-9.

⁹ Ibid, Tables 12-8 and 12-9.

¹⁰ Ibid, Tables 12-10 and 12-11

¹¹ Ibid, Tables 12-10 and 12-11.

¹² DOGAMI, *Lower Columbia-Sandy Watershed Natural Hazard Risk Report* (March 2018 Draft), Table 9-11.

DOGAMI Rapid Visual Survey (2007)

Seismic building codes were implemented in Oregon in the 1970s, however, stricter standards did not take effect until 1991 and early 2000s. As noted in the community profile, approximately 36% of residential buildings were built prior to 1990, which increases the City’s vulnerability to the earthquake hazard. Information on specific public buildings’ (schools and public safety) estimated seismic resistance, determined by DOGAMI in 2007, is shown in Table SA-10; each “X” represents one building within that ranking category. Of the facilities evaluated by DOGAMI using their Rapid Visual Survey (RVS), one (1) has a very high (100% chance) collapse potential. In addition, Sandy’s water treatment building is constructed of cinder blocks and could be damaged or collapse during an earthquake. Park Street is built entirely on fill, and areas built on fill are subject to liquefaction in an earthquake event. Bluff Road is another area where homes could be impacted. *Note: the main fire station has been seismically retrofitted.*

For a list of facilities and infrastructure vulnerable to this hazard see the Community Assets section and Tables SA-5 through SA-8. In addition to building damages, utility (electric power, water, wastewater, natural gas) and transportation systems (bridges, pipelines) are also likely to experience significant damage. There is a low probability that a major earthquake will result in failure of upstream dams.

Table SA-10 Rapid Visual Survey Scores

Facility	Site ID*	Level of Collapse Potential			
		Low (<1%)	Moderate (>1%)	High (>10%)	Very High (100%)
Schools					
Cedar Ridge Middle^^ (17225 Smith Ave)	Clac_sch38	X	Property sold to City of Sandy for aquatic and community center.		
Sandy Grade (38955 Pleasant St)	Clac_sch36	X			
Sandy High – Frazier^ (17100 Bluff Rd)	Clac_sch6 7	X	Facility renovated, older buildings demolished and rebuilt via 2008 bond. Now houses Cedar Ridge Middle. New High located at 37400 Bell.		
Public Safety					
Police Department (38970 Proctor Blvd)	Clac_pol07	X			
Sandy Fire 72 – Main Station (17460 Bruns Ave)	Clac_fir37		Seismic retrofit via 2013-14 SRGP.		

Source: DOGAMI 2007. Open File Report 0-07-02. Statewide Seismic Needs Assessment Using Rapid Visual Assessment. “*” – Site ID is referenced on the RVS Clackamas County Map

Note 1: Bold indicates facilities that have been seismically retrofitted or rebuilt.

Note 2: ^ High school was rebuilt in 2012, as of 2017 the school is to be renovated and used as Cedar Ridge Middle school.

Utility systems will be significantly damaged, including damaged buildings and damage to utility infrastructure, including water treatment plants and equipment at high voltage

substations (especially 230 kV or higher which are more vulnerable than lower voltage substations). Buried pipe systems will suffer extensive damage with approximately one break per mile in soft soil areas. There would be a much lower rate of pipe breaks in other areas. Restoration of utility services will require substantial mutual aid from utilities outside of the affected area.

Mitigation Activities

Sandy has taken mitigation steps to reduce the city's vulnerability in earthquake events. Seismic retrofit grant awards per the Seismic Rehabilitation Grant Program¹³ have been used to retrofit the Main Fire Station (2013-2014 grant award, \$1,186,393). In 2008 voters approved a \$115 million education bond, \$75 million was used to build a new high school. In 2012 the high school opened at its new location at 37400 Bell Street. In 2017, the Cedar Ridge Middle school was relocated to the former Sandy High property which has been renovated and retrofitted for its new use. The former Cedar Ridge Middle school has been purchased by the City of Sandy and houses the city's aquatic and community center.

Please review Volume I, Section 2 for additional information on this hazard.

Flood

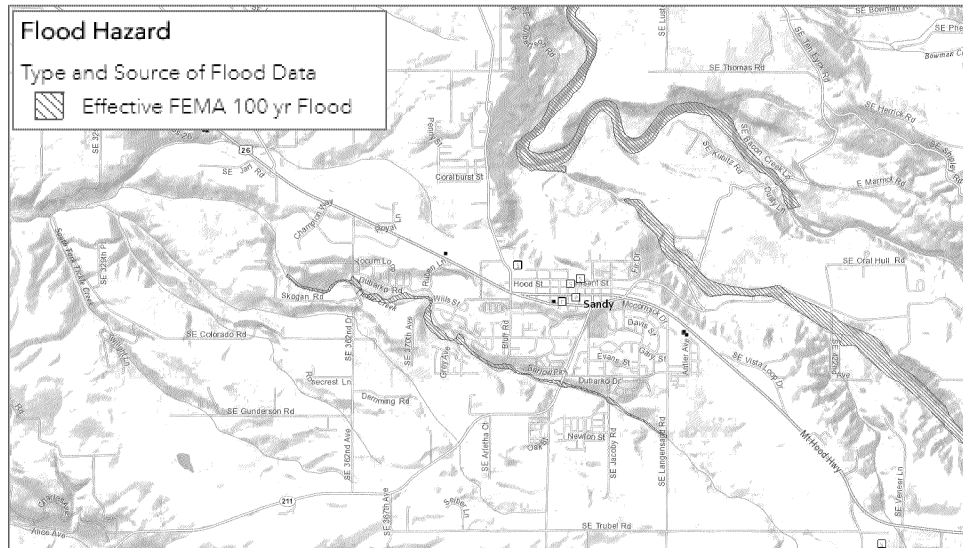
The HMAC determined that the City's probability for flood is **high** and that their vulnerability to flood is **moderate**. *These ratings did not change since the previous version of this NHMP addendum.*

Volume I, Section 2 describes the characteristics of flood hazards, history, as well as the location, extent, and probability of a potential event. Figure SA-4 illustrates the flood hazard area for Sandy, which covers five percent (5%) of the city.

The main sources of flooding in Sandy are Tickle Creek, Cedar Creek, Badger Creek, and numerous drainage ways. Regionally, the Sandy River is a flooding source as well. The largest flooding event to affect Sandy was in January 2009. From January 1-2, 2009 a winter storm event led to flooding throughout many of the smaller tributaries and drainage ways. Some homeowners rerouted the culverts and drainage ways near their homes to protect their property, but this resulted in more damage and flooding to neighbors downstream and to other parts of the city. Some Sandy residents depend on small bridges over culverts to access their homes. A few of these culverts were washed out, damaging the bridges and essentially cutting citizens off from their homes. Two trailers were lost, and many homes had crawlspace flooding. The City of Sandy believes the January 2009 flooding event was worse than the 1996 flooding events.

¹³ The Seismic Rehabilitation Grant Program (SRGP) is a state of Oregon competitive grant program that provides funding for the seismic rehabilitation of critical public buildings, particularly public schools and emergency services facilities.

Figure SA-4 Special Flood Hazard Area



Source: [Oregon HazVu: Statewide Geohazards Viewer \(DOGAMI\)](#)

Note: To view detail click the link above to access Oregon HazVu

Vulnerability Assessment

The Oregon Department of Geology and Mineral Industries (DOGAMI) conducted a multi-hazard risk assessment (Risk Report) for the Lower Columbia-Sandy Watershed including the City of Sandy. The Risk Report provides a quantitative risk assessment for the flood (including channel migration) hazard along the Sandy River. Due to insufficient data and resources, Sandy is currently unable to perform a quantitative risk assessment for the Tickle Creek flood hazard area.

Floods can have a devastating impact on almost every aspect of the community, including private property damage, public infrastructure damage, and economic loss from business interruption. It is important for the City to be aware of flooding impacts and assess its level of risk.

The economic losses due to business closures often total more than the initial property losses that result from flood events. Business owners, and their employees are significantly impacted by flood events. Direct damages from flooding are the most common impacts, but indirect damages, such as diminished clientele, can be just as debilitating to a business.

The only mapped floodplain hazard within city limits is the area surrounding Tickle Creek, which runs along the southern end of the city. A few homes are located within this mapped floodplain (Figure SA-4). A steep bluff protects the northern areas of the city from the Sandy River, but Revenue Bridge (northeast of the city) is in the Sandy River floodplain. The Sandy Fish Hatchery is very near the Cedar Creek floodplain as well. For mitigation planning purposes, it is important to recognize that flood risk for a community is not limited only to areas of mapped floodplains. Other portions of Sandy outside of the mapped floodplains may also be at relatively high risk from over bank flooding from streams too small to be mapped by FEMA or from local storm water drainage.

The HMAC identified Sandy's sewage treatment plant as a potential vulnerability in severe flooding situations. Portions of the road that lead to the sewage plant are in the floodplain; as such, access to the sewage treatment plant could be isolated in a flooding event. Additionally, any transportation closures within the region will be difficult for Sandy's residents. The city is largely a bedroom community, and residents rely upon transportation routes for work.

Lower Columbia-Sandy Watershed Natural Hazard Risk Report

The **Risk Report** (DOGAMI, IMS-59) provides hazard analysis summary tables that identify populations and property within the Lower Columbia-Sandy River Watershed Study Area that are vulnerable to the flood hazards including channel migration. The Risk Report provides a distinct profile for the City of Sandy. According to the Risk Report there is minimal risk to buildings and population within the city from the channel migration or flooding of the Sandy River (note: The Risk Report did not assess flood risk from the Tickle Creek).¹⁴

National Flood Insurance Program (NFIP)

FEMA's Flood Insurance Study (FIS), and Flood Insurance Rate Maps (FIRMs) are effective as of June 17, 2008. Preliminary maps for portions of the County within the Lower Columbia-Sandy River Watershed were released March 28, 2016 (expected to be effective January 18, 2019). Table SA-11 shows that as of July 2018, Sandy has 15 National Flood Insurance Program (NFIP) policies in force. Of those, two (2) are for properties that were constructed before the initial FIRMs. The last Community Assistance Visit (CAV) for Sandy was on April 28, 1994. Sandy does not participate in the Community Rating System (CRS). The table shows that most flood insurance policies are for residential structures, primarily single-family homes. There has been one (1) paid claims for \$574. The City complies with the NFIP through enforcement of their flood damage prevention ordinance and their floodplain management program. The Community Repetitive Loss record for Sandy identifies no Repetitive Loss Properties¹⁵ or Severe Repetitive Loss Properties¹⁶.

Mitigation Activities

To mitigate the city's flooding issues, the city has installed storm water detention basins that store water for limited periods of time. The basins slowly release water into streams to avoid flooding. The stormwater utility recently completed a detention facility in Meining Park. This detention facility will prevent flooding during seasons of heavy flow. The city is also developing a "disaster series" for the residents of east Clackamas County which will include a class focusing on flood mitigation practices.

¹⁴ DOGAMI, *Lower Columbia-Sandy Watershed Natural Hazard Risk Report* (March 2018 Draft), Table 9-11.

¹⁵ A Repetitive Loss (RL) property is any insurable building for which two or more claims of more than \$1,000 were paid by the National Flood Insurance Program (NFIP) within any rolling ten-year period, since 1978. A RL property may or may not be currently insured by the NFIP.

¹⁶ A Severe Repetitive Loss (SRL) property is a single family property (consisting of 1 to 4 residences) that is covered under flood insurance by the NFIP, and has incurred flood-related damage for which 4 or more separate claims payments have been paid under flood insurance coverage, with the amount of each claim payment exceeding \$5,000, and with cumulative amount of such claims payments exceeding \$20,000; or for which at least 2 separate claims payments have been made with the cumulative amount of such claims exceeding the reported value of the property.

Table SA-II Flood Insurance Detail

	Clackamas County	Sandy
Effective FIRM and FIS	6/17/2008	6/17/2008*
Initial FIRM Date	-	12/11/1979
Total Policies	1,957	15
Pre-FIRM Policies	1,086	2
Policies by Building Type		
Single Family	1,761	13
2 to 4 Family	30	1
Other Residential	58	1
Non-Residential	9	0
Minus Rated A Zone	123	1
Insurance in Force	\$541,833,400	\$2,856,800
Total Paid Claims	590	1
Pre-FIRM Claims Paid	450	0
Substantial Damage Claims	83	0
Total Paid Amount	\$20,830,662	\$574
Repetitive Loss Structures	51	0
Severe Repetitive Loss Properties	4	0
CRS Class Rating	-	NP
Last Community Assistance Visit	-	4/28/1994

Source: Information compiled by Department of Land Conservation, and Development, July 2018.

Note 1: * New flood maps are expected for the Sandy River January 18, 2019. NP = Not Participating

Note 2: The portion of the cities of Portland and Tualatin that are within Clackamas County are not included in this table.

For a list of facilities and infrastructure vulnerable to this hazard see the Community Assets section and Tables SA-5 through SA-8.

Please review Volume I, Section 2 for additional information on this hazard.

Landslide

The HMAP determined that the City's probability for landslide is **high** and that their vulnerability to landslide is **moderate**. *These ratings did not change since the previous version of this NHMP addendum.*

Volume I, Section 2 describes the characteristics of landslide hazards, history, as well as the location, extent, and probability of a potential event within the region. Areas within Sandy that have experienced landslides in the past include Ten Eyck Road, Highway 26, Bluff Road, Barlow Trail, Laughing Water Road, Coalman Road, and Salmon River Road. In 1980, a landslide on Ten Eyck Road closed Highway 26 for 3-4 months. This was one of the biggest impacts that Sandy has experienced because of sliding activity. More recently landslides occurred on January 1 and 2, 2009. On the night of January 1st, a large mudslide to the east of Sandy closed Highway 26 at milepost 35. At about 1:00am on January 2nd, a bank above Bill's Automotive on the south side of Highway 26 gave way and destroyed the building. The slide also damaged a fiber optic cable and took out 9-1-1 service for part of the early morning.

Vulnerability Assessment

DOGAMI conducted a multi-hazard risk assessment (Risk Report) for the Lower Columbia-Sandy Watershed including the City of Sandy. The Risk Report provides a quantitative risk assessment for the landslide hazard. Additionally, DOGAMI completed a statewide landslide susceptibility assessment in 2016, general findings from that report are provided above and within Figure SA-5.

Potential landslide-related impacts are adequately described within Volume I, Section 2, and include infrastructure damages, economic impacts (due to isolation, and/or arterial road closures), property damages, and obstruction to evacuation routes. Rain-induced landslides, and debris flows can potentially occur during any winter, and thoroughfares beyond City limits are susceptible to obstruction as well. For a list of facilities and infrastructure vulnerable to this hazard see the Community Assets section and Tables SA-5 through SA-8.

The most common type of landslides are slides caused by erosion. Slides move in contact with the underlying surface, are generally slow moving, and can be deep. Rainfall-initiated landslides tend to be smaller; while earthquake induced landslides may be quite large. All soil types can be affected by natural landslide triggering conditions.

Landslide susceptibility exposure for Sandy is shown in Figure SA-5. Most of Sandy demonstrates a low to moderate landslide susceptibility exposure. Approximately 18% of Sandy has very high or high, and approximately 30% moderate, landslide susceptibility exposure.¹⁷ *Note that even if a jurisdiction has a high percentage of area in a high or very high landslide exposure susceptibility zone, this does not mean there is a high risk, because risk is the intersection of hazard, and assets.*

Hood Hospice, Sandy High School, Verizon Wireless Cell Tower, Thrifty Auto Supply, and Pacific Pride Fuel are located near steep slopes. The local slump and earthflow hazards are located at the hill on Tupper Road between Sandy Heights Road and Strawbridge Parkway, and another hazard is on the Bluff Road hill between Nettie Connett Drive and the entrance to Hood Chalet Mobile Estates. The Hood Chalet Mobile Villa is located at the base of the hill and a slide in this area could devastate a large portion of the mobile home park. The mudflow and debris flow hazard is located on the hill covering Dubarko Road, Melissa Ave, and Solso Drive.

Past landslide-incurred damages are proof that landslides can cause adverse effects upon residents, transportation systems, and local businesses. In the future, the HMAAC expects that a slide could pollute the city water supply if sediment enters streams and rivers. Sandy's citizens are very dependent on Highway 26 for transporting to and from work, and Sandy's stores are similarly dependent on Highway 26 for inventory. If a large slide impacted this arterial Sandy could be cut off from neighboring communities.

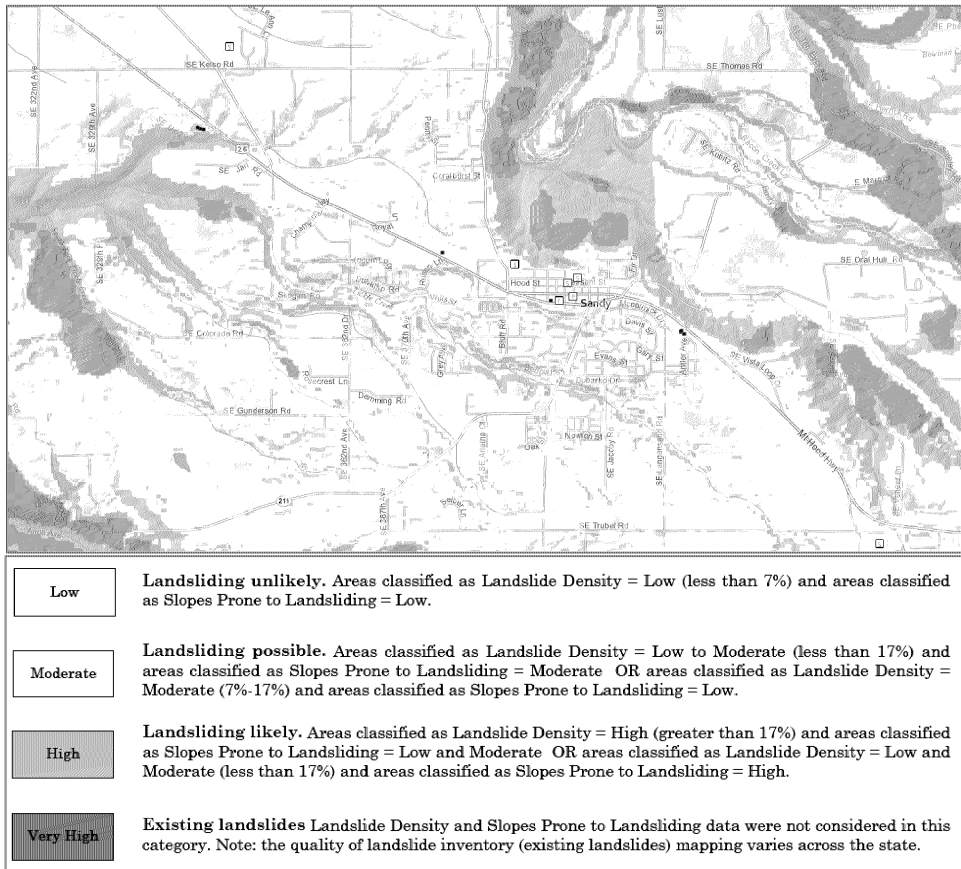
Likewise, Park Street is built entirely on fill. While this area has not been impacted in the past, it could be the location of a future landslide, especially because areas built on fill are subject to liquefaction in an earthquake event. A water diversion dam located on Alder Creek is accessible only by helicopter or driving through Alder Creek. A slide could bring trees down into the dam and plug the diversion intake. It would be difficult to bring equipment to the area within a reasonable amount of time because the dam is so remote.

¹⁷ DOGAMI. [Open-File Report, O-16-02, Landslide Susceptibility Overview Map of Oregon](#) (2016)

Bluff Road has a few homes built on it and a slide could take out the water line to those homes. However, few customers live on Bluff Road so the impact would not be widely felt.

Lastly, tourism surrounding Mount Hood has a great impact on Sandy's economy. If roads leading to Mt. Hood are altered by a landslide, tourism would be severely impaired. In addition to skiing, Sandy is home to a large mountain biking and hiking community. A landslide could block access to these activities or create an unsightly environment and reduce tourism in the area.

Figure SA-5 Landslide Susceptibility Exposure



Source: [Oregon HazVu: Statewide Geohazards Viewer \(DOGAMI\)](#)

Note: To view detail click the link above to access Oregon HazVu

Lower Columbia-Sandy Watershed Natural Hazard Risk Report

The **Risk Report** (DOGAMI, IMS-59) provides hazard analysis summary tables that identify populations and property within the Lower Columbia-Sandy River Watershed Study Area that are vulnerable to the landslide hazard. The Risk Report provides a distinct profile for the City of Sandy. According to the Risk Report the following populations and property are exposed to the landslide hazard:

City of Sandy¹⁸

Landslide event (High and Very High Susceptibility): 18 buildings are exposed (0 critical facilities) for a total potential loss of \$4,488,000 (an exposure ratio of 2%). In addition, 53 residents may be displaced (about 5% of the population).

Mitigation Activities

Sandy works to mitigate future landslide hazards. The city development code includes several policies and regulations to protect development on steep slopes including hillside development code (Section 17.56) and the flood and slope hazard overlay district (Section 17.60). Maps are provided for flood and slope hazards and slopes and geologic hazards.

Please review Volume I, Section 2 for additional information on this hazard.

Severe Weather

Severe weather can account for a variety of intense, and potentially damaging hazard events. These events include extreme heat, windstorms, and winter storms. The following section describes the unique probability, and vulnerability of each identified weather hazard.

Extreme Heat

The HMAC determined that the City's probability for extreme heat events is **low** and that their vulnerability is **moderate**. *These ratings did not change since the previous version of this NHMP addendum.*

Volume I, Section 2 describes the characteristics of extreme heat, history, as well as the location, extent, and probability of a potential event within the region. Generally, an event that affects the County is likely to affect the City as well.

A severe heat episode or "heat wave" occurs about every two to three years, and typically lasting two to three days but can last as many as five days. A severe heat episode can be defined as consecutive days of upper 90s to around 100. Severe heat hazard in the Portland metro region can be described as the average number of days with temperatures greater than or equal to 90-degrees, or 100-degrees, Fahrenheit. On average the region experiences 13.6 days with temperatures above 90-degrees Fahrenheit, and 1.4 days above 100-degrees Fahrenheit, based on new 30-year climate averages (1981-2010) from the National Weather Service – Portland Weather Forecast Office.

The City of Sandy has not experienced any life-threatening consequences from the few historical extreme heat events, although changes in climate indicate that the area should expect to see more extreme heat events.

Please review Volume I, Section 2 for additional information on this hazard.

¹⁸ DOGAMI, *Lower Columbia-Sandy Watershed Natural Hazard Risk Report* (March 2018 Draft), Table 9-11.

Windstorm

The HMAC determined that the City's probability for windstorm is **high** and that their vulnerability to windstorm is **moderate**. *These ratings did not change since the previous version of this NHMP addendum.*

Volume I, Section 2 describes the characteristics of windstorm hazards, history, as well as the location, extent, and probability of a potential event within the region. Because windstorms typically occur during winter months, they are sometimes accompanied by flooding and winter storms (ice, freezing rain, and very rarely, snow). Other severe weather events that may accompany windstorms, including thunderstorms, hail, lightning strikes, and tornadoes are generally negligible for Sandy.

Volume I, Section 2 describes the impacts caused by windstorms, including power outages, downed trees, heavy precipitation, building damages, and storm-related debris. Additionally, transportation, and economic disruptions result as well.

Damage from high winds generally has resulted in downed utility lines, and trees usually limited to several localized areas. Electrical power can be out anywhere from a few hours to several days. Outdoor signs have also suffered damage. If the high winds are accompanied by rain (which they often are), blowing leaves, and debris clog drainage-ways, which in turn may cause localized urban flooding. The city's utilities are still above ground and vulnerable to falling tree branches and debris. The city, for example, frequently loses power to the water plant due to fallen trees. The water plant now has a back-up generator to reduce the impact of power outages.

Please review Volume I, Section 2 for additional information on this hazard.

Winter Storm (Snow/Ice)

The HMAC determined that the City's probability for winter storm is **high** and that their vulnerability to winter storm is **moderate**. *These ratings did not change since the previous version of this NHMP addendum.*

Volume I, Section 2 describes the characteristics of winter storm hazards, history, as well as the location, extent, and probability of a potential event within the region. Severe winter storms can consist of rain, freezing rain, ice, snow, cold temperatures, and wind. They originate from troughs of low pressure offshore that ride along the jet stream during fall, winter, and early spring months. Severe winter storms affecting the City typically originate in the Gulf of Alaska or in the central Pacific Ocean. These storms are most common from November through March.

The biggest impact of winter storms is congestion on roadways. Highway 26 bisects Sandy and is used as the main route to the Mount Hood region for residents of the Portland metro area. When highway 26 backs up many of Sandy's transportation networks become congested. This is especially true if snow on the highway is not plowed.

Most winter storms typically do not cause significant damage, they are frequent, and have the potential to impact economic activity. Road, and rail closures due to winter weather are an uncommon occurrence but can interrupt commuter, and commercial traffic as noted above.

Vulnerability Assessment

Due to insufficient data and resources, Sandy is currently unable to perform a quantitative risk assessment, or exposure analysis, for the extreme heat, windstorm, and winter storm hazards. For a list of facilities and infrastructure vulnerable to these hazards see the Community Assets section and Tables SA-5 through SA-8.

Mitigation Activities

Because severe weather can affect all areas of a city, mitigation can be difficult. Sandy has made progress, however, in building the city's resilience to severe weather events. Sandy has begun work on undergrounding the overhead utility lines along Pioneer and Proctor Boulevards in the city's downtown area, and all new construction is required to have utilities placed underground. The power company has a regular schedule for trimming trees around power lines, and the city has taken steps to improve response efforts during and after storm events. The Fire Department has two 4-wheel drive fire engines which maneuver well in ice and snow. The Transit Department also has a 4-wheel drive vehicle which was used to help transport citizens in the recent winter storm event. The city has a CERT team which could be utilized for response and public outreach efforts. Finally, Sandy has a database where citizens can register to volunteer and list resources they own and are willing to use in emergency events, such as snowmobiles.

Please review Volume I, Section 2 for additional information on this hazard.

Volcanic Event

The HMAC determined that the City' probability for a volcanic event is **low** and that their vulnerability to a volcanic event is **high**. *These ratings did not change since the previous version of this NHMP addendum.*

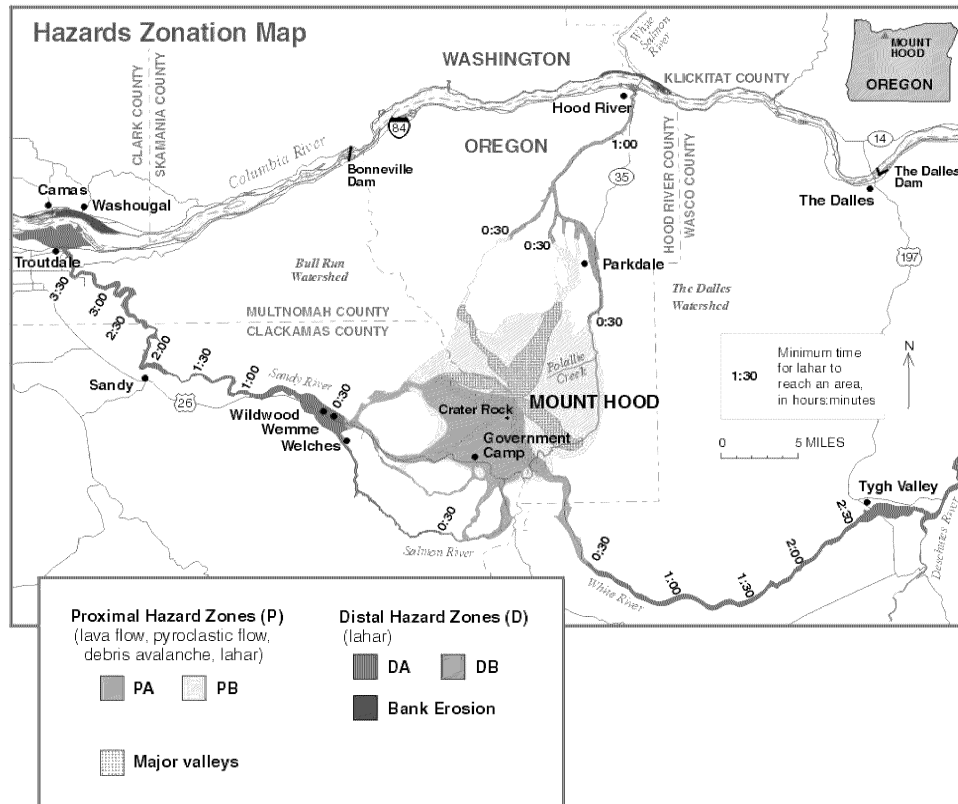
Volume I, Section 2 describes the characteristics of volcanic hazards, history, as well as the location, extent, and probability of a potential event within the region. Generally, an event that affects the western portion of the County is likely to affect Sandy as well. Several volcanoes are located near Sandy, the closest of which are Mount Hood, Mount Adams, Mount Saint Helens, Mount Rainier, and the Three Sisters.

Vulnerability Assessment

DOGAMI conducted a multi-hazard risk assessment (Risk Report) for the Lower Columbia-Sandy Watershed including the City of Sandy. The Risk Report provides a quantitative risk assessment for the lahar (volcanic event) hazard.

Due to Sandy's location on the Sandy River and proximity to Mount Hood, the city is likely to experience some of the immediate effects that eruptions have on surrounding areas. It is estimated that Sandy will have two hours before a lahar reaches the city (Figure SA-6 and Figure SA-7), allowing time for individuals to evacuate if needed.

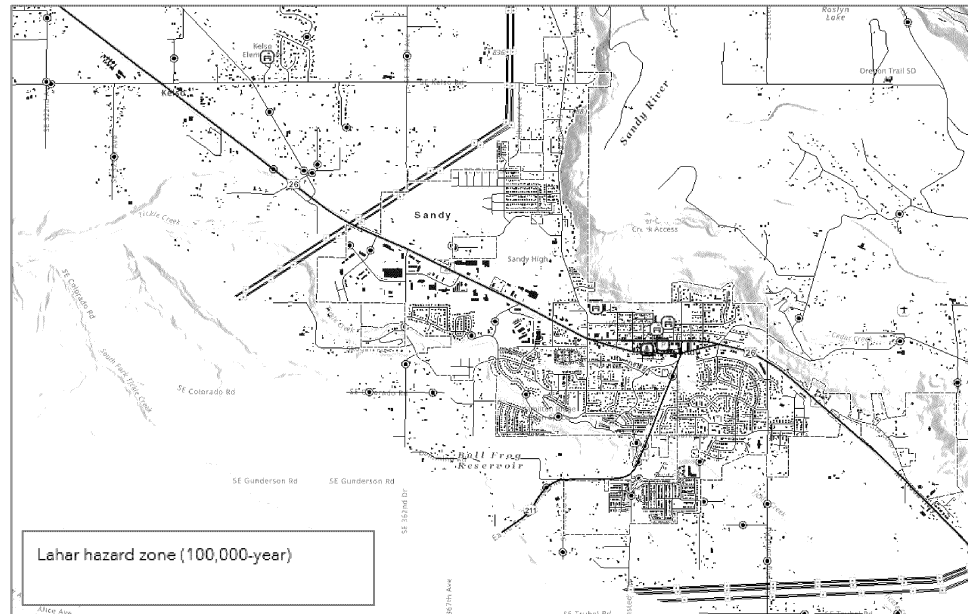
Figure SA-6 Mount Hood Hazards Map



Source: USGS Mount Hood – History and Hazards of Oregon’s Most Recently Active Volcano.

A steep bluff shields the city from the Sandy River so a lahar should not affect assets within city limits. Additionally, depending on wind patterns and which volcano erupts, the city may experience ashfall (tephra). The eruption of Mount St. Helens in 1980, for example, coated the Willamette Valley with a fine layer of ash. If Mount Hood erupts, however, the city could experience a heavier coating of ash.

Figure SA-7 Lahar Hazard Zone and Critical Facilities



Source: Mount Hood Hazards and Assets Viewer (DOGAMI)

Note: To view detail click the link above to access Oregon HazVu

Lower Columbia-Sandy Watershed Natural Hazard Risk Report

The **Risk Report** (DOGAMI, IMS-59) provides hazard analysis summary tables that identify populations and property within the Lower Columbia-Sandy River Watershed Study Area that are vulnerable to the profiled natural hazards. The Risk Report provides a distinct profile for the City of Sandy. According to the Risk Report there is minimal risk to buildings and population within the city from the medium (1% annual chance) lahar volcanic event.¹⁹

For a list of facilities and infrastructure vulnerable to this hazard see the Community Assets section and Tables SA-5 through SA-8.

Mitigation Activities

The existing volcano hazard mitigation activities are conducted at the county, regional, state, and federal levels and are described in the Clackamas County NHMP.

Please review Volume 1, Section 2 for additional information on this hazard.

¹⁹ DOGAMI, *Lower Columbia-Sandy Watershed Natural Hazard Risk Report* (March 2018 Draft), Table 9-11.

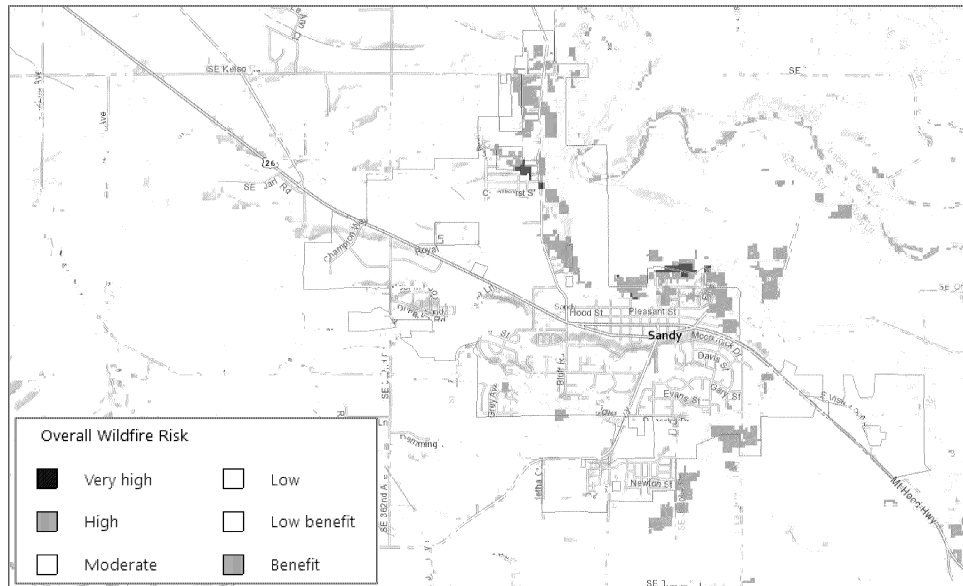
Wildfire

The HMAC determined that the City's probability for wildfire is **moderate**, and that their vulnerability to wildfire is **high**. *The probability rating did not change, and the vulnerability rating increased, since the previous version of this NHMP addendum.*

The 2017 Clackamas County Community Wildfire Protection Plan (CWPP) was completed in May 2018. The CWPP is hereby incorporated into this NHMP addendum by reference, and it will serve as the wildfire section for this addendum. The following presents a summary of key information; refer to the full CWPP for a complete description, and evaluation of the wildfire hazard: <https://www.clackamas.us/dm/CWPP.html>. Information specific to Sandy is found in the following chapter: Chapter 10.11: Sandy Rural Fire Protection District #72.

Volume I, Section 2 describes the characteristics of wildland fire hazards, history, as well as the location, extent, and probability of a potential event within the region. The location, and extent of a wildland fire vary depending on fuel, topography, and weather conditions. Weather, and urbanization conditions are primarily at cause for the hazard level. Sandy has not experienced a wildfire within City limits, but the city has wooded areas that are a concern in the case of a wildfire event. Figure SA-8 shows overall wildfire risk in Sandy.

Figure SA-8 Overall Wildfire Risk



Source: Oregon Wildfire Risk Explorer, date accessed November 9, 2018.

Clackamas County has two major physiographic regions: the Willamette River Valley in western Clackamas County and the Cascade Range Mountains in eastern and southern Clackamas County. The Willamette River Valley, which includes Sandy, is the most heavily populated portion of the county and is characterized by flat or gently hilly topography. The Cascade Range has a relatively small population and is characterized by heavily forested slopes. Eastern Clackamas County is at higher risk to wildfire than western portions of the county due to its dense forest land. Human caused fires are responsible for most fires in

Clackamas County. In eastern Clackamas County the most common human induced wildfire source is debris burn escape. Homeless camps are another source of wildfires.

While the history of wildfires in Clackamas County is minimal, it does not provide a proper indication of the level of risk. According to the Clackamas County Community Wildfire Protection Plan (CWPP), the forests have accumulated an unnatural buildup of fuel because of decades of timber harvest and aggressive fire suppression. Additionally, residential development near the wildland urban interface has increased the community's overall exposure to wildfire hazards. Many of the developments within the city have only one road in and one road out, and some areas of Sandy do not have evacuations plans. The potential for loss of life is great because of this accessibility issue. Communities at Risk (CARs) within the City include: Bluff Road (northeast) and Cedar Creek (southeast).²⁰

Most of the city has less severe (moderate or less) wildfire burn probability that includes expected flame lengths less than four-feet under normal weather conditions.²¹ However, conditions vary widely and with local topography, fuels, and local weather (including wind) conditions. Under warm, dry, windy, and drought conditions expect higher likelihood of fire starts, higher intensity, more ember activity, and a more difficult to control wildfire that will include more fire effects and impacts.

Vulnerability Assessment

DOGAMI conducted a multi-hazard risk assessment (Risk Report) for the Lower Columbia-Sandy Watershed including the City of Sandy. The Risk Report provides a quantitative risk assessment for the wildfire hazard. For a list of facilities and infrastructure vulnerable to this hazard see the Community Assets section and Tables SA-5 through SA-8.

The potential community impacts, and vulnerabilities described in Volume I, Section 2 are generally accurate for the City as well. Sandy's fire response is addressed within the CWPP which assesses wildfire risk, maps wildland urban interface areas, and includes actions to mitigate wildfire risk. The City will update the City's wildfire risk assessment if the fire plan presents better data during future updates (an action item is included to participate in future updates to the CWPP).

Property can be damaged or destroyed with one fire as structures, vegetation, and other flammables easily merge to become unpredictable, and hard to manage. Other factors that affect ability to effectively respond to a wildfire include access to the location, and to water, response time from the fire station, availability of personnel, and equipment, and weather (e.g., heat, low humidity, high winds, and drought).

Lower Columbia-Sandy Watershed Natural Hazard Risk Report

The **Risk Report** (DOGAMI, IMS-59) provides hazard analysis summary tables that identify populations and property within the Lower Columbia-Sandy River Watershed Study Area that are vulnerable to the wildfire hazard. The Risk Report provides a distinct profile for the City of Sandy. According to the Risk Report the following populations and property are exposed to the wildfire hazard:

²⁰ Clackamas County Community Wildfire Protection Plan, *Sandy Rural Fire Protection District* (2018), Table 10.11-1.

²¹ [Oregon Wildfire Risk Explorer](#), date accessed November 9, 2018.

City of Sandy²²

Wildfire event (High Risk): 2 buildings are exposed (0 critical facilities) for a total potential loss of \$535,000 (an exposure ratio of < 1%). In addition, 4 residents may be displaced (< 1% of the population).

Mitigation Activities

Sandy uses several mitigation tools to reduce the city's risk to wildfires. Nuisance ordinances prohibit the growth of tall grasses within city limits. Sandy Fire District #72 identifies homes with branch overhangs that create access issues for fire equipment and increase wildfire vulnerability to the structures. Homes with overhanging branches do not have defensible space, increasing their exposure to fuel sources. The district stays current on issues by participating in the Clackamas County Fire Prevention Cooperative, a group consisting of the fire districts within the county. The district also contributed in creating the CWPP and created a Sandy Rural Fire District #72 annex to the CWPP. The fire district also purchased handheld GPS units that can be used for a fire risk assessment in the future.

Public outreach is a primary mitigation tool used by Sandy Fire District #72. A regular "Ask Alice" column appears in the local newspaper which provides citizens the opportunity to ask questions about fire and other hazards. The Sandy Fire District website includes ample information about fire safety and prevention. The district teaches fire safety in grade schools and hosts community safety fairs. Additionally, the Sandy Fire District offers classes on defensible land space, creates a media awareness campaign during fireworks season, and posts signs at nurseries to inform citizens of fire-resistant plants and proper pruning techniques. The Sandy and Boring Fire Districts share a "fire safety house" trailer that serves as an education and outreach tool for fire-safe practices. The district brings the fire safety house to public events to educate children on safe evacuations. Children enter the safety house to watch a movie about fire safety and then practice climbing out windows and down ladders. This provides kids with a safe and supervised environment to practice evacuation procedures.

Please review the 2017 Clackamas County Community Wildfire Protection Plan (CWPP) and Volume 1, Section 2 for additional information on this hazard.

²² DOGAMI, *Lower Columbia-Sandy Watershed Natural Hazard Risk Report* (March 2018 Draft), Table 9-11.

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ATTACHMENT A: ACTION ITEM FORMS

ACTION ITEM FORMS

Multi-Hazard #1*	45
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Landslide #1	55
Landslide #2	56
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Wildfire #1*	58

* - Priority Action Item

Note: The HMAC decided to modify the prioritization of action items in this update to reflect current conditions (risk assessment), needs, and capacity.

Summary of Action Changes

Below is a list of changes to the action items since the previous plan.

Previous NHMP Actions: Completed

No actions were completed.

See 2018 status identified in each action for activities that have been completed since the previous plan.

Previous NHMP Actions: Removed

Multi-Hazard Action #3 (2012): "Identify and pursue funding opportunities to develop and implement hazard mitigation activities" was removed from the list since it was determined by the steering committee that this is a function of their Implementation and Maintenance Plan and did not need to be included as an action.

Multi-Hazard Action #4 (2012): "Continue to update and improve hazard assessments in the Natural Hazards Mitigation Plan as new information becomes available" was removed from the list since it was determined by the steering committee that this is a function of their Implementation and Maintenance Plan and did not need to be included as an action.

Flood Action #1 (2012): “Continue to implement and enhance the flood public education program designed to inform local residents about :..” was combined with the education programs included within MH #1. As such the activities of this action will continue as a component of MH #1.

Wildfire Action #1 (2012): “Promote fire-resistant strategies for existing and new developments” was combined with WF #2. As such, the activities of this action will continue as a component of WF #1 (2019).

Wildfire Action #2 (2012): “Mitigate life loss due to wildfires” was combined with WF #1. As such, the activities of this action will continue as a component of WF #1 (2019).

Note: 2012 Actions MH #5, MH #6, and FL #2, FL #3, and FL #4 were renumbered to 2019 Actions MH # 3, MH #4, FL #1, FL #2, and FL #3 respectively.

New NHMP Actions (2019):

- Earthquake Action #2
- Earthquake Action #3
- Wildfire Action #1

See action item forms below for detail.

Action Item Forms

Each action item has a corresponding action item worksheet describing the activity, identifying the rationale for the project, identifying potential ideas for implementation, and assigning coordinating and partner organizations. The action item worksheets can assist the community in pre-packaging potential projects for grant funding. The worksheet components are described below.

ALIGNMENT WITH EXISTING PLANS/POLICIES

The Clackamas County NHMP includes a range of action items that, when implemented, will reduce loss from hazard events in the County, participating cities, and special districts. Within the plan, FEMA requires the identification of existing programs that might be used to implement these action items. The City addresses statewide planning goals and legislative requirements through its comprehensive land use plan, capital improvements plan, mandated standards and building codes. To the extent possible, the City will work to incorporate the recommended mitigation action items into existing programs and procedures. Each action item identifies related existing plans and policies.

STATUS/RATIONALE FOR PROPOSED ACTION ITEM

Action items should be fact-based and tied directly to issues or needs identified throughout the planning process. Action items can be developed at any time during the planning process and can come from several sources, including participants in the planning process, noted deficiencies in local capability, or issues identified through the risk assessment. The rationale for proposed action items is based on the information documented in Section 2. The worksheet provides information on the activities that have occurred since the previous plan for each action item.

IDEAS FOR IMPLEMENTATION

The ideas for implementation offer a transition from theory to practice and serve as a starting point for this plan. This component of the action item is dynamic, since some ideas may prove to not be feasible, and new ideas may be added during the plan maintenance process. Ideas for implementation include such things as collaboration with relevant organizations, grant programs, tax incentives, human resources, education and outreach, research, and physical manipulation of buildings and infrastructure.

COORDINATING (LEAD) ORGANIZATION:

The coordinating organization is the public agency with the regulatory responsibility to address natural hazards, or that is willing and able to organize resources, find appropriate funding, or oversee activity implementation, monitoring and evaluation.

INTERNAL AND EXTERNAL PARTNERS:

The internal and external partner organizations listed in the Action Item Worksheets are potential partners recommended by the project HMAP but not necessarily contacted during the development of the plan. The coordinating organization should contact the identified partner organizations to see if they are capable of and interested in participation. This initial contact is also to gain a commitment of time and/or resources toward completion of the action items.

Internal partner organizations are departments within the City or other participating jurisdiction that may be able to assist in the implementation of action items by providing relevant resources to the coordinating organization.

External partner organizations can assist the coordinating organization in implementing the action items in various functions and may include local, regional, state, or federal agencies, as well as local and regional public and private sector organizations.

PLAN GOALS ADDRESSED:

The plan goals addressed by each action item are identified as a means for monitoring and evaluating how well the mitigation plan is achieving its goals, following implementation.

TIMELINE:

All broad scale action items have been determined to be ongoing, as opposed to short-term (0 to 2 years) or long-term (3 or more years). This is because the action items are broad ideas, and although actions may be implemented to address the broad ideas, the efforts should be ongoing.

POTENTIAL FUNDING SOURCE

Where possible potential funding sources have been identified. Example funding sources may include: Federal Hazard Mitigation Assistance programs, state funding sources such as the Oregon Seismic Rehabilitation Grant Program, or local funding sources such as capital improvement or general funds. An action item may include several potential funding sources.

ESTIMATED COST

A rough estimate of the cost for implementing each action item is included. Costs are shown in general categories showing low, medium, or high cost. The estimated cost for each category is outlined below:

- Low - Less than \$50,000
- Medium - \$50,000 – \$100,000
- High - More than \$100,000

Multi-Hazard #1 *

Proposed Action Item		Alignment with Plan Goals:	
Maintain public education programs to inform the public about methods for mitigating the impacts of natural hazards.		Protect Life and Property; Augment Emergency Services; Encourage Partnerships for Implementation; Promote Public Awareness	
Alignment with Existing Plans/Policies:			
2018 Status/Rationale for Proposed Action Item:			
<ul style="list-style-type: none"> • Conducting public outreach campaigns raises awareness about natural hazards and helps illustrate what residents and businesses can do to reduce the impact of a natural disaster on their properties, thereby reducing the impact of natural hazards on the City of Sandy. • The Disaster Mitigation Act of 2000 requires that communities continue to involve the public beyond the original planning process [201.6(c)(4)(ii)]. Developing public education programs for hazard risk mitigation would be a way to keep the public informed of, and involved in, the county’s actions to mitigate hazards. • <u>2018 Status:</u> The City utilizes the city’s website to provide information on natural hazards: https://www.ci.sandy.or.us/disaster-preparedness 			
Ideas for Implementation:			
<ul style="list-style-type: none"> • Maintain hazard related information and public information materials. Disseminate through existing resources: city website, newsletter, Sandy Post, Sandy Time, brochures, etc.; • Partner with Clackamas County/other jurisdictions to develop education outreach materials; • Conduct education as hazard seasons approach: earthquake awareness month in April, wildfire prevention in summer, and flood and severe storm information in winter; • Identify property owners in flood and landslide hazard zones, and conduct a target mailing; • Prepare and distribute an informational brochure on unstable slopes, historical landslide areas, and mitigation strategies. • Encourage individual homeowners to implement mitigation practices; • Promote purchase of appropriate insurance coverage through outreach and education; • Educate the public about the resources available for hazard mitigation, response, and preparedness; • Use faith based, civic and humanitarian, and business groups to affiliate volunteers; and • Create an unmet needs committee and long-term recovery committee to create a pool of volunteers that can take in needs requests during a small event. 			
Coordinating Organization:		HMAC	
Internal Partners:		External Partners:	
Public Works		Clackamas County, Community Organizations Active in Disaster (COAD), Sandy Fire District #72	
Potential Funding Sources:		Estimated cost:	Timeline:
General Fund		Low	<input type="checkbox"/> Short Term (0-2 years) <input type="checkbox"/> Long Term (2-4+ years) <input checked="" type="checkbox"/> Ongoing
Form Submitted by:	Existing action item		
Priority:	High		

* - High Priority Action Item

Multi-Hazard #2

Proposed Action Item:		Alignment with Plan Goals:	
Integrate the goals and action items from the Natural Hazards Mitigation Plan into existing regulatory documents and programs, where appropriate.		Protect Life and Property; Enhance Natural Systems; Augment Emergency Services; Encourage Partnerships for Implementation; Promote Public Awareness	
Alignment with Existing Plans/Policies:			
Comprehensive Plan, Zoning Ordinance			
2018 Status/Rationale for Proposed Action Item:			
<ul style="list-style-type: none"> The Disaster Mitigation Act of 2000 requires communities to identify actions and projects that reduce the effects of hazards on the community [201.6(c)(3)(ii)]. Incorporating natural hazards plans into comprehensive plans, local ordinances, and land-use regulations will ensure that communities implement the proper mitigation measures for their community. <u>2018 Status</u>: The City of Sandy continues to adhere to all state and national building codes. The NHMP was integrated into the city's EOP that was updated in 2012. The City last amended their development code in 2017. The floodplain ordinance was last updated in 2002 (new FIRMs are preliminary and effective maps are expected March 2019). The City updated their comprehensive plan in April 2012. 			
Ideas for Implementation:			
<ul style="list-style-type: none"> Use the mitigation plan to help the City's Comprehensive Land Use Plan meet State Land Use Planning Goal 7, designed to protect life and property from natural disasters and hazards through planning strategies that restrict development in areas of known hazards; Use zoning codes to regulate development in hazard-prone areas; Integrate the city's mitigation actions into the current emergency operations plan and capital improvement plans (where appropriate); Partner with other organizations and agencies with similar goals to promote building codes that are more disaster resistant at the state level; Use citizen input for the creation of appropriate ordinances; and Use the natural hazard mitigation planning resources provided by the Oregon Partnership for Disaster Resilience to learn how to better integrate the NHMP into existing documents and programs. 			
Coordinating Organization:		Planning	
Internal Partners:		External Partners:	
Public Works		Department of Land Conservation and Development, Department of Geology and Mineral Industries, Oregon Department of Transportation, Department of Environmental Quality	
Potential Funding Sources:		Estimated cost:	Timeline:
General Fund, DLCD Technical Assistance Grant		Low to Moderate	<input type="checkbox"/> Short Term (0-2 years) <input type="checkbox"/> Long Term (2-4+ years) <input checked="" type="checkbox"/> Ongoing
Form Submitted by:	Existing action item		
Priority:	Medium		

Multi-Hazard #3

Proposed Action Item:		Alignment with Plan Goals:	
Improve vegetation management throughout the city.		Augment Emergency Services; Promote Public Awareness	
Alignment with Existing Plans/Policies:			
Parks Master Plan			
2018 Status/Rationale for Proposed Action Item:			
<ul style="list-style-type: none"> Landscaping and vegetation make a difference in mitigating the impacts of natural hazards. Trees break the force of the wind and stabilize the soil. Wetlands absorb much of the overflow from stream channels. Fire-resistant vegetation can retard the spread of wildfires toward vulnerable buildings. Limiting or regulating the amount of vegetation cleared off a hillside lot reduces the risk of increasing the number of landslide-prone areas in a community. Planting vegetation or maintaining slope terraces can also reduce slope-runoff. Planners can use landscaping requirements to preserve or enhance the protection such natural features afford. These requirements may be part of site plan reviews or a separate set of zoning regulations and environmental performance standards. <u>2018 Status</u>: Sandy improves vegetation management via code enforcement, brush clearing (annual SOLV program), defensible space, and fuels reduction via public outreach. 			
Ideas for Implementation:			
<ul style="list-style-type: none"> Partner with Clackamas County, Oregon Department of Forestry, US Forestry Service, ODOT, and citizens to control vegetation along transportation corridors; Identify appropriate practices for eliminating invasive species; Maintain healthy urban canopy; Maintain vegetation coverage for slope stability; Identify hazardous trees for remediation or removal; Coordinate with watershed councils and others; Review and update existing ordinances to incorporate and improve vegetation management on private property; Develop mechanism to review vegetation on a case by case basis; Provide education to the public about justifications for, and benefits of vegetation mitigation practices; and Encourage fuels reduction on private property by providing education for pruning and remove trees and using native vegetation. 			
Coordinating Organization:		Planning	
Internal Partners:		External Partners:	
Public Works, HMAC, Code Enforcement		Clackamas Soil and Water Conservation District, Fire Co-op, Oregon Department of Forestry, US Forestry Service, Clackamas County, Clackamas River Basin Council	
Potential Funding Sources:		Estimated cost:	Timeline:
General Fund, Parks SDC		Low to Moderate	<input type="checkbox"/> Short Term (0-2 years) <input type="checkbox"/> Long Term (2-4+ years) <input checked="" type="checkbox"/> Ongoing
Form Submitted by:	Existing action item		
Priority:	Medium		

Multi-Hazard #4

Proposed Action Item:		Alignment with Plan Goals:	
Encourage structural mitigation practices in developments at risk to natural hazards.		Protect Life and Property; Enhance Natural Systems; Encourage Partnerships for Implementation; Promote Public Awareness	
Alignment with Existing Plans/Policies:			
Parks Master Plan			
2018 Status/Rationale for Proposed Action Item:			
<ul style="list-style-type: none"> Strengthening facilities will improve recovery capacity and reduce risk and loss of life. A hazard event may negatively impact a local economy, especially if a community's businesses are located in the floodplain, near steep slopes, in the wildland-urban interface, or in unreinforced masonry buildings. Promoting structural mitigation can assist property owners in identifying their vulnerability to hazards and identifying mitigation activities. Encouraging property owners with this may increase the likelihood that property owners would share responsibility for mitigation on their properties and implement mitigation activities. Incentive programs include a variety of benefits to building owners or developers that help to offset the cost of mitigation. Examples of possible incentive programs include: density bonuses, tax credits, property tax incentives or deferrals, real estate disclosures, property acquisition or purchase of development rights, increased funding of public infrastructure programs, and phasing retrofitting programs over a longer period of time. <u>2018 Status:</u> In August 2011, a new Sandy Police Station was built to seismic standards. In March 2012, the Sandy Library was seismically upgraded. See EQ #1 for status for earthquake affected infrastructure. 			
Ideas for Implementation:			
<ul style="list-style-type: none"> Earthquake – retrofit buildings to meet seismic standards Flood – construct retention ponds, swales, and dikes/ditches/culverts; elevated buildings Landslide – construct retention ponds and retaining walls; enforce proper drainage; contract for geological studies Severe Storms – encourage construction of sloped roofs; improve chimney bracing; store deicing agents Volcano – encourage construction of sloped roofs Wildfire – create defensible space; reduce fuels; construct streets wide enough to allow for easy emergency vehicle maneuverability 			
Coordinating Organization:		Planning	
Internal Partners:		External Partners:	
Public Works, HMAC		Clackamas County, Clackamas Fire District #72	
Potential Funding Sources:		Estimated cost:	Timeline:
General Fund		Low to High	<input type="checkbox"/> Short Term (0-2 years) <input type="checkbox"/> Long Term (2-4+ years) <input checked="" type="checkbox"/> Ongoing
Form Submitted by:	Existing action item		
Priority:	Medium		

Earthquake #1

Proposed Action Item:		Alignment with Plan Goals:	
Reduce negative impacts of earthquakes by performing seismic evaluations and retrofits (structural and non-structural).		Protect Life and Property; Augment Emergency Services; Encourage Partnerships for Implementation	
Alignment with Existing Plans/Policies:			
2018 Status/Rationale for Proposed Action Item:			
<ul style="list-style-type: none"> The Disaster Mitigation Act of 2000 requires communities to identify mitigation actions that are being considered by the community to reduce the effect that natural hazards will have on the community [201.6(c)(3)(ii)]. Developing and implementing programs to reduce the potential for earthquakes to cause damage can assist a community in mitigating its overall risk to earthquakes. Pre-disaster mitigation strategies will reduce post-disaster response needs by lessening life loss, injury, damage, and disruption. Refer to risk assessment, and DOGAMI's rapid visual assessment scores <u>2018 Status:</u> In August 2011, a new Sandy Police Station was built to seismic standards. In March 2012, the Sandy Library was seismically upgraded. Sandy Fire District #72 was retrofitted in 2013-2014 with a SRGP grant; Sandy High was retrofitted in 2017 and is now Cedar Ridge Middle School; Sandy High has a new facility built at 37400 Bell Street per 2008 voter approved bond. 			
Ideas for Implementation:			
<ul style="list-style-type: none"> Obtain funding to perform seismic evaluations; Conduct seismic evaluations on identified community assets (including shelters) for implementing appropriate structural and non-structural mitigation strategies; Prioritize seismic upgrades based on criticality of need and population served; Seismically retrofit critical government facilities to guarantee continuous operation during and after a natural disaster; Partner with appropriate organizations to implement seismic upgrades; Update COOP plans; and Create damage assessment procedures. 			
Coordinating Organization:	HMAC		
Internal Partners:	External Partners:		
Planning, Building, Public Works	DOGAMI, Sandy Fire District #72, Clackamas County		
Potential Funding Sources:	Estimated cost:	Timeline:	
General Fund, Seismic Rehabilitation Grant Program, Hazard Mitigation Assistance Grants	Moderate to High	<input type="checkbox"/> Short Term (0-2 years) <input checked="" type="checkbox"/> Long Term (2-4+ years) <input type="checkbox"/> Ongoing	
Form Submitted by:	Existing action item		
Priority:	Medium		

Earthquake #2*

Proposed Action Item		Alignment with Plan Goals:	
Seismically retrofit (structural and non-structural) the Sandy Community Center to exceed life safety standards in order to operate as a possible shelter.		Protect Life and Property; Augment Emergency Services; Encourage Partnerships for Implementation	
Alignment with Existing Plans/Policies:			
2018 Status/Rationale for Proposed Action Item:			
<ul style="list-style-type: none"> The City of Sandy Community Center (also referred to as the Senior Center) is home base for the City's Community Services Department. The Community Center offers a variety of services for Sandy's seniors, including meal, health, transportation and social programs, and also provides a venue for social service and other community events The Sandy Community Center is located at the site of the former Cedar Ridge Middle School (17225 Smith Ave). The site includes the city's aquatic center and community center. The Community Center was built in 1955, and is not built to current seismic standards; Seismic design criteria have changed since this facility was constructed. Given the changes in the USGS data, projected ground accelerations in the region have increased, significantly adding to the structural design requirements; The facility has both structural and non-structural vulnerabilities that may affect the facilities performance in a regional catastrophic seismic event. Seismic retrofits (structural and non-structural) are needed to ensure performance after a catastrophic event; and Pre-disaster mitigation strategies will reduce post-disaster response needs by lessening life loss, injury, damage, and disruption. <u>2018 Status</u>: New action. 			
Ideas for Implementation:			
<ul style="list-style-type: none"> Gain funding to retrofit/replace this facility; and Partner with appropriate organizations to implement seismic upgrades; and Seismically retrofit this facility to guarantee continuous operation during and after a natural disaster. 			
Coordinating Organization:		Community Services	
Internal Partners:		External Partners:	
Planning, Building, Public Works		Infrastructure Finance Authority, DOGAMI	
Potential Funding Sources:		Estimated cost:	Timeline:
SRGP, HMA (PDM, HMGP), General Fund		High	<input type="checkbox"/> Short Term (0-2 years) <input checked="" type="checkbox"/> Long Term (2-4+ years) <input type="checkbox"/> Ongoing
Form Submitted by:	New Action Item (2018)		
Priority:	High		

* - High Priority Action Item

Earthquake #3*

Proposed Action Item		Alignment with Plan Goals:	
Seismically retrofit (structural and non-structural) City Hall in order to continue operations post-earthquake and to protect city and county IT infrastructure (servers).		Protect Life and Property; Augment Emergency Services; Encourage Partnerships for Implementation	
Alignment with Existing Plans/Policies:			
2018 Status/Rationale for Proposed Action Item:			
<ul style="list-style-type: none"> The City of Sandy City Hall is home base for City Administration. The building also houses SandyNet and backup Clackamas County IT infrastructure (servers, etc.). SandyNet staff is based out of City Hall. SandyNet is a municipal internet service provider owned and operated by the residents of Sandy. The staff of SandyNet is responsible for the day to day operation and maintenance of SandyNet's network, as well as providing all information technology services for the City. The City Hall building is not built to current seismic standards; Seismic design criteria have changed since this facility was constructed. Given the changes in the USGS data, projected ground accelerations in the region have increased, significantly adding to the structural design requirements; The facility has both structural and non-structural vulnerabilities that may affect the facilities performance in a regional catastrophic seismic event. Seismic retrofits (structural and non-structural) are needed to ensure performance after a catastrophic event; and Pre-disaster mitigation strategies will reduce post-disaster response needs by lessening life loss, injury, damage, and disruption. <u>2018 Status</u>: New action. 			
Ideas for Implementation:			
<ul style="list-style-type: none"> Gain funding to retrofit/replace this facility; and Partner with appropriate organizations to implement seismic upgrades; and Seismically retrofit this facility to guarantee continuous operation during and after a natural disaster. 			
Coordinating Organization:	City Administration, SandyNet		
Internal Partners:	External Partners:		
Planning, Building, Public Works	Infrastructure Finance Authority, DOGAMI, Clackamas County		
Potential Funding Sources:	Estimated cost:	Timeline:	
HMA (PDM, HMGP), General Fund	High	<input type="checkbox"/> Short Term (0-2 years) <input checked="" type="checkbox"/> Long Term (2-4+ years) <input type="checkbox"/> Ongoing	
Form Submitted by:	New Action Item (2018)		
Priority:	High		

* - High Priority Action Item

Flood #1

Proposed Action Item:		Alignment with Plan Goals:	
Ensure continued compliance in the National Flood Insurance Program (NFIP) through enforcement of local floodplain management ordinances.		Protect Life and Property; Enhance Natural Systems; Encourage Partnerships for Implementation; Promote Public Awareness	
Alignment with Existing Plans/Policies:			
Flood Ordinance; Zoning Code, FEMA FIRMs, Comprehensive Plan			
2018 Status/Rationale for Proposed Action Item:			
<ul style="list-style-type: none"> The National Flood Insurance Program provides communities with federally backed flood insurance to homeowners, renters, and business owners, provided that communities develop and enforce adequate floodplain management ordinances. The benefits of adopting NFIP standards for communities are a reduced level of flood damage in the community and stronger buildings that can withstand floods. The Disaster Mitigation Act of 2000 requires communities to identify mitigation actions that address new and existing buildings and infrastructure [201.6(c)(3)(ii)]. Continued participation in the NFIP will help reduce the level of flood damage to new and existing buildings in communities while providing homeowners, renters and business owners additional flood insurance protection. <u>2018 Status</u>: The city continues to comply with the NFIP. New Flood Insurance Rate Maps (FIRMs) for the Sandy River become effective January 18, 2019. The City will update their flood ordinance as appropriate to comply with requirement of the NFIP and new FIRMs. 			
Ideas for Implementation:			
<ul style="list-style-type: none"> Community Assistance Visits (CAV) are scheduled visits to communities participating in the NFIP for the purpose of: 1) conducting a comprehensive assessment of the community's floodplain management program; 2) assisting the community and its staff in understanding the NFIP and its requirements; and 3) assisting the community in implementing effective flood loss reduction measures when program deficiencies or violations are discovered. Actively participate with DLCDC and FEMA during Community Assistance Visits. Conduct an assessment of the floodplain ordinances to ensure they reflect current flood hazards and situations and meet NFIP requirements. Coordinate with the county to ensure that floodplain ordinances and NFIP regulations are maintained and enforced. Mitigate areas that are prone to flooding and/or have the potential to flood. These areas include properties along Tickle Creek. 			
Coordinating Organization:		Development Services	
Internal Partners:		External Partners:	
HMAC		Department of Land Conservation and Development; Association of State Floodplain Managers	
Potential Funding Sources:		Estimated cost:	Timeline:
General Fund		Low	<input type="checkbox"/> Short Term (0-2 years) <input type="checkbox"/> Long Term (2-4+ years) <input checked="" type="checkbox"/> Ongoing
Form Submitted by:	Existing Action Item		
Priority:	Medium		

Flood #2

Proposed Action Item:		Alignment with Plan Goals:	
Explore participation in the NFIP's Community Rating System (CRS).		Protect Life and Property; Enhance Natural Systems; Encourage Partnerships for Implementation; Promote Public Awareness	
Alignment with Existing Plans/Policies:			
Flood Ordinance; Zoning Code, FEMA FIRMs, Comprehensive Plan			
2018 Status/Rationale for Proposed Action Item:			
<ul style="list-style-type: none"> The Community Rating System (CRS) is operated under the National Flood Insurance Program (NFIP). The NFIP provides flood insurance to homes and businesses located in floodplains at a reasonable cost and encourages the movement of development away from the floodplain. The program is based upon mapping areas of flood risk, and requiring local implementation to reduce that risk, primarily through restrictions on new development in floodplains. CRS recognizes community efforts that go beyond the minimum standards of the NFIP. This recognition is in the form of reduced flood insurance premiums for communities that adopt such standards. CRS encourages community activities that reduce flood losses, facilitate accurate insurance rating, and promote flood insurance awareness. 2018 Status: The city does not currently participate in the CRS. Properties along Tickle Creek remain the city's top priority for flood protection. 			
Ideas for Implementation:			
<ul style="list-style-type: none"> Identify staff or community members to lead participation efforts; and Review CRS participation requirements and take steps towards reaching the first ranking. 			
Coordinating Organization:		Planning	
Internal Partners:		External Partners:	
Public Works, HMAC		FEMA, DLCD, OEM, Clackamas County Planning Department	
Potential Funding Sources:		Estimated cost:	Timeline:
General Fund		Low	<input checked="" type="checkbox"/> Short Term (0-2 years) <input type="checkbox"/> Long Term (2-4+ years) <input type="checkbox"/> Ongoing
Form Submitted by:	Existing Action Item		
Priority:	Medium		

Flood #3

Proposed Action Item:		Alignment with Plan Goals:	
Promote and protect the use of naturally flood prone open space or wetlands as flood storage areas.		Protect Life and Property; Enhance Natural Systems; Encourage Partnerships for Implementation; Promote Public Awareness	
Alignment with Existing Plans/Policies:			
Flood Ordinance; Zoning Code, FEMA FIRMs, Comprehensive Plan			
2018 Status/Rationale for Proposed Action Item:			
<ul style="list-style-type: none"> One of the goals of the National Flood Insurance Program is to protect the natural and beneficial functions of floodplains. Natural and beneficial floodplain functions include both the natural infiltration capacities of floodplains, as well as minimizing the pollutants that can enter waters from floodplain development activities. A number of options local governments can choose from are: 1) Prohibit all activities in the floodplain that may be hazardous to public health or water quality (e.g. septic systems, storage of hazardous materials) 2) Require new floodplain developments to avoid or minimize disruption to stream channels and stream banks 3) Adopt regulations pursuant to a Habitat Conservation Plan approved by the US Fish and Wildlife Service or the National Marine Fisheries Service. <u>2018 Status</u>: Tickle Creek Trail was just completed. Meinig Park added a stormwater project that included the development of chambers beneath the parking lot to prevent flooding. Meinig Memorial Park is used as flood storage. 			
Ideas for Implementation:			
<ul style="list-style-type: none"> Develop and implement flood protection alternatives for properties within and adjacent to the 100-year floodplain by taking into account city codes related to the floodplain. Gain support for protecting naturally flood prone open space by educating the public of its importance 			
Coordinating Organization:		Planning	
Internal Partners:		External Partners:	
Public Works, HMAC		Clackamas Soil and Water Conservation District, Division of State Lands, Johnson Creek Watershed Council, Clackamas River Basin Council	
Potential Funding Sources:		Estimated cost:	Timeline:
General Fund		Low to Moderate	<input type="checkbox"/> Short Term (0-2 years) <input type="checkbox"/> Long Term (2-4+ years) <input checked="" type="checkbox"/> Ongoing
Form Submitted by:	Existing Action Item		
Priority:	Medium		

Landslide #1

Proposed Action Item:		Alignment with Plan Goals:	
Maintain and update an inventory of streets and properties threatened by landslides.		Encourage Partnerships for Implementation; Promote Public Awareness	
Alignment with Existing Plans/Policies:			
Hillside Development (Section 17.56), Flood and Slope Hazard Overlay District (Section 17.60), Comprehensive Plan			
2018 Status/Rationale for Proposed Action Item:			
<ul style="list-style-type: none"> The Disaster Mitigation Act of 2000 requires communities to identify actions and projects that reduce the effects of hazards on the community [201.6(c)(3)(ii)]. Developing an inventory of landslide areas can help a community identify which streets might be more vulnerable to damage. Such information can help a community in better identifying and prioritizing projects that can assist a community in mitigating its overall risk to landslides. Areas that have experienced landslides in the past include: Ten Eyck Road, Highway 26, Bluff Road, Barlow Trail, Laughing Water Road, Coalman Road, and Salmon River Road. <u>2018 Status</u>: Ongoing. DOGAMI completed a landslide susceptibility report in 2016 using LiDAR (O-16-02); the data from the report is available to the City of Sandy. 			
Ideas for Implementation:			
<ul style="list-style-type: none"> Utilize technology, geologic resources, and other available data to identify areas of slope risk; Identify areas where strategic planting could assist in soil stabilization; and Coordinate with DOGAMI to receive LiDAR data. 			
Coordinating Organization:		Planning	
Internal Partners:		External Partners:	
Public Works, GIS		DOGAMI, Clackamas County GIS, Oregon Department of Transportation	
Potential Funding Sources:		Estimated cost:	Timeline:
Capital Funds		Low	<input type="checkbox"/> Short Term (0-2 years) <input type="checkbox"/> Long Term (2-4+ years) <input checked="" type="checkbox"/> Ongoing
Form Submitted by:	Existing Action Item		
Priority:	Medium		

Landslide #2

Proposed Action Item:		Alignment with Plan Goals:	
Reduce the vulnerability of property owners in landslide-prone areas.		Protect Life and Property; Enhance Natural Systems; Encourage Partnerships for Implementation; Promote Public Awareness	
Alignment with Existing Plans/Policies:			
Hillside Development (Section 17.56), Flood and Slope Hazard Overlay District (Section 17.60), Comprehensive Plan			
2018 Status/Rationale for Proposed Action Item:			
<ul style="list-style-type: none"> The Disaster Mitigation Act of 2000 requires communities to identify actions and projects that reduce the effects of hazards on new and existing buildings and infrastructure [201.6(c)(3)(ii)]. Developing and implementing programs to reduce the potential for landslides to cause damage can assist a community in mitigating its overall risk to landslide events. Areas that have experienced landslides in the past include: Ten Eyck Road, Highway 26, Bluff Road, Barlow Trail, Laughing Water Road, Coalman Road, and Salmon River Road. <u>2018 Status</u>: Ongoing. Accomplished through the city's hillside development and flood and slope hazard overlay district ordinances. LiDAR data provided to city from DOGAMI as part of their report on landslide susceptibility (O-16-02). 			
Ideas for Implementation:			
<ul style="list-style-type: none"> Conduct a study to identify appropriate mitigation strategies for problem areas including buildings and infrastructure in the problem areas; Develop public information to emphasize economic risk when building on potential or historical landslide areas; Update the landslide hazard map when LIDAR data becomes available; and Review the planning and building codes and make updates or changes, if necessary. 			
Coordinating Organization:		Planning	
Internal Partners:		External Partners:	
Public Works, GIS, HMAC		DOGAMI, Clackamas County GIS, Oregon Department of Transportation	
Potential Funding Sources:		Estimated cost:	Timeline:
Capital Funds		Low to High	<input type="checkbox"/> Short Term (0-2 years) <input type="checkbox"/> Long Term (2-4+ years) <input checked="" type="checkbox"/> Ongoing
Form Submitted by:	Existing Action Item		
Priority:	Medium		

Severe Weather #1

Proposed Action Item:		Alignment with Plan Goals:	
Reduce negative effects from severe windstorm and severe winter storm events.		Protect Life and Property; Enhance Natural Systems; Augment Emergency Services; Encourage Partnerships & Implementation; Promote Public Awareness	
Alignment with Existing Plans/Policies:			
2018 Status/Rationale for Proposed Action Item:			
<ul style="list-style-type: none"> The Disaster Mitigation Act of 2000 requires communities to identify and analyze a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with emphasis on new and existing buildings and infrastructure[201.6(c)(3)(ii)]. Developing and implementing programs to reduce the potential for wind and winter storms to cause power outages can assist a community in mitigating its overall risk to wind and winter storms. <u>2018 Status</u>: New developments and all of the downtown area have underground utility and power lines. The city provides a chipper checkout for free. The city provides storm debris removal services. 			
Ideas for Implementation:			
<ul style="list-style-type: none"> Reduce power outages by partnering with PGE to obtain funding to bury power lines subject to frequent failures; Encourage burial of power lines for existing development; Ensure that there are back up underground lines to major businesses & employers; Develop partnerships to implement programs to keep trees from threatening lives, property, and public infrastructure; Continue regular tree trimming practices; Partner with PGE to continue hazardous tree inventory and mitigation programs; Create sheltering programs; and Promote safe installation and use of generators. 			
Coordinating Organization:	Public Works		
Internal Partners:		External Partners:	
Planning, Building, HMAC		PGE, Bonneville Power Administration, private landowners	
Potential Funding Sources:		Estimated cost:	Timeline:
Capital Funds		Low to High	<input type="checkbox"/> Short Term (0-2 years) <input type="checkbox"/> Long Term (2-4+ years) <input checked="" type="checkbox"/> Ongoing
Form Submitted by:	Existing Action Item		
Priority:	Medium		

Wildfire #1*

Proposed Action Item:		Alignment with Plan Goals:	
Coordinate wildfire mitigation action items through the <u>Clackamas Community Wildfire Protection Plan</u> .		Protect Life and Property; Enhance Natural Systems; Augment Emergency Services; Encourage Partnerships & Implementation; Promote Public Awareness	
Alignment with Existing Plans/Policies:			
Clackamas Community Wildfire Protection Plan (2018)			
2018 Status/Rationale for Proposed Action Item:			
The wildfire mitigation action items provide direction on specific activities that organizations and residents in <u>Sandy</u> can take to reduce wildfire hazards.			
Ideas for Implementation: CWPP Identified Focus Areas and Priority Actions			
<u>Wildfire Risk Assessment (Ch. 4):</u>			
<ol style="list-style-type: none"> Maintain and update the Fuels Reduction (FR) and Communities at Risk (CAR) maps and databases. Continue to track structure vulnerability data throughout the County through structural triage assessments. Update the Overall Wildfire Risk Assessment as new data becomes available. 			
<u>Hazardous Fuels Reduction and Biomass Utilization (Ch. 5):</u>			
<ol style="list-style-type: none"> Develop and maintain an inventory of potential and successful FR projects by meeting with parks and natural lands managers quarterly. Continue securing funding to implement projects/hire seasonal ODF staff. 			
<u>Emergency Operations (Ch. 6):</u>			
<ol style="list-style-type: none"> Develop and FDB Communications Works Group. Conduct a Conflagration Exercise. 			
<u>Education and Community Outreach (Ch. 7):</u>			
<ol style="list-style-type: none"> Develop Firewise toolkit for CAR's. Create incentives for fuels reduction. Update and distribute the Burn Permitting and Fire Restrictions Brochure. Continue to improve address signage throughout the County. 			
<u>Structural Ignitability Policies and Programs (Ch. 8):</u>			
<ol style="list-style-type: none"> Identify a DTD representative for the WFEP. Improve coordination with Rural Fire Agencies. Integrate WU into Plan Map and include a public outreach strategy. 			
Coordinating Organization:	Sandy Fire District #72		
Internal Partners:	External Partners:		
Public Works, Planning	Clackamas Fire Defense Board, Oregon Department of Forestry, U.S. Forest Service, U.S. Bureau of Land Management, public land management agencies		
Potential Funding Sources:	Estimated cost:	Timeline:	
ODF, operating budgets	Low to High	<input type="checkbox"/> Short Term (0-2 years) <input type="checkbox"/> Long Term (2-4+ years) <input checked="" type="checkbox"/> Ongoing	
Form Submitted by:	New Action Item		
Priority:	High (CWPP identified priority actions listed above)		

ATTACHMENT B: PUBLIC INVOLVEMENT SUMMARY

Members of the HMAC provided edits and updates to the NHMP prior to the public review period as reflected in the final document.

To provide the public information regarding the draft NHMP addendum, and provide an opportunity for comment, an announcement (see text below) was provided on the city's [website](#) and social media ([Facebook](#)). The opportunity to review the draft plan and to comment was left open from April 25, 2019 through June 10, 2019.

During the public review period there were no formal comments provided.

Press Release

Press Release - Sandy seeks public input for addendum to Natural Hazard Mitigation Plan
Published on Apr 25, 2019 at 11:28a.m.

**Clackamas County
Pre-Disaster Mitigation Planning
PRESS RELEASE**

DATE: April 25, 2019
TO: Sandy Post
FROM: City of Sandy
SUBJECT: Press Release for Sandy addendum to the Clackamas County Multi-Jurisdictional Natural Hazard Mitigation Plan Update – Notice and Opportunity for Public Comment

For Immediate Release

Sandy seeks additional public input on update to Natural Hazard Mitigation Plan

(Sandy, OR) – Sandy is in the process of updating their existing Natural Hazard Mitigation Plan (NHMP). This work is being performed in cooperation with the University of Oregon's Institute for Policy Research and Engagement - Oregon Partnership for Disaster Resilience and the Oregon Military Department's Office of Emergency Management utilizing funds obtained from the Federal Emergency Management Agency's (FEMA) Pre-Disaster Mitigation Grant Program. With re-adoption of the plan, Sandy will maintain its eligibility to apply for federal funding towards natural hazard mitigation projects. This local planning process includes a wide range of representatives from city and county government, emergency management personnel, and outreach to members of the public in the form of an electronic survey.

A natural hazard mitigation plan provides communities with a set of goals, action items, and resources designed to reduce risk from future natural disaster events. Engaging in mitigation activities provides jurisdictions with a number of benefits, including reduced loss of life, property, essential services, critical facilities, and economic hardship, reduced short-term and long-term recovery and reconstruction costs, increased cooperation and communication within the community through the planning process, and increased potential for state and federal funding for recovery and reconstruction projects.

An electronic version of the updated draft Sandy NHMP addendum will be available for formal public comment beginning April 25, 2019. To view the draft, please click on the document below.

If you have any questions regarding the Sandy NHMP addendum or the update process in general, please contact: Ernie Roberts, Police Chief at (503) 489-2189 or eroberts@ci.sandy.or.us; or Michael Howard, Assistant Program Director for the Oregon Partnership for Disaster Resilience at (541) 346-8413 or mrhoward@uoregon.edu

More: City News

NHMP Update

Sandy seeks additional public input on update to Natural Hazard Mitigation Plan

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Sandy Addendum - ClackCo Multi-Jurisdictional NHMP Update - DRAFT.pdf

Social Media



City of Sandy, Oregon – City Government

...

May 3 at 9:55 AM · 🌐

NHMP AVAILABLE FOR PUBLIC INPUT

Public Input Requested -- Natural Hazard Mitigation Plan

(Sandy, OR) – Sandy is in the process of updating their existing Natural Hazard Mitigation Plan (NHMP). This work is being performed in cooperation with the University of Oregon's Institute for Policy Research and Engagement - Oregon Partnership for Disaster Resilience and the Oregon Military Department's Office of Emergency Management utilizing funds obtained from the Federal Emergency Management Agency's (FEMA) Pre-Disaster Mitigation Grant Program. With re-adoption of the plan, Sandy will maintain its eligibility to apply for federal funding towards natural hazard mitigation projects. This local planning process includes a wide range of representatives from city and county government, emergency management personnel, and outreach to members of the public in the form of an electronic survey.

A natural hazard mitigation plan provides communities with a set of goals, action items, and resources designed to reduce risk from future natural disaster events. Engaging in mitigation activities provides jurisdictions with a number of benefits, including reduced loss of life, property, essential services, critical facilities, and economic hardship; reduced short-term and long-term recovery and reconstruction costs; increased cooperation and communication within the community through the planning process; and increased potential for state and federal funding for recovery and reconstruction projects.

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If you have any questions regarding the Sandy NHMP addendum or the update process in general, please contact: Ernie Roberts, Police Chief at (503) 489-2189 or eroberts@ci.sandy.or.us; or Michael Howard, Assistant Program Director for the Oregon Partnership for Disaster Resilience at (541) 346-8413 or mrhoward@uoregon.edu





NO. 2019-23

A Resolution Adopting the City of Sandy Representation in the Updates to the Clackamas County Multi-Jurisdictional Natural Hazards Mitigation Plan

Whereas, the City of Sandy recognizes the threat that natural hazards pose to people, property and infrastructure within our community; and

Whereas, undertaking hazard mitigation actions will reduce the potential for harm to people, property and infrastructure from future hazard occurrences; and

Whereas, an adopted Natural Hazards Mitigation Plan is required as a condition of future funding for mitigation projects under multiple FEMA pre- and post-disaster mitigation grant programs; and

Whereas, the City of Sandy has fully participated in the FEMA prescribed mitigation planning process to prepare the Clackamas County, Multi-Jurisdictional Natural Hazard Mitigation Plan, which has established a comprehensive, coordinated planning process to eliminate or minimize these vulnerabilities; and

Whereas, the City of Sandy has identified natural hazard risks and prioritized a number of proposed actions and programs needed to mitigate the vulnerabilities of the City of Sandy to the impacts of future disasters within the Clackamas County, Multi-Jurisdictional Natural Hazard Mitigation Plan; and

Whereas, these proposed projects and programs have been incorporated into the Clackamas County, Multi-Jurisdictional Natural Hazard Mitigation Plan that has been prepared and promulgated for consideration and implementation by the cities of Clackamas County; and

Whereas, the Oregon Office of Emergency Management and Federal Emergency Management Agency, Region X officials have reviewed the City of Sandy addendum to the Clackamas County Multi-Jurisdictional Natural Hazard Mitigation Plan and pre-approved it (dated, July 24, 2019) contingent upon this official adoption of the participating governments and entities;

Whereas, the NHMP is comprised of comprised of three volumes: Volume I: Basic Plan, Volume II: Jurisdictional Addenda, and Volume III: Appendices, collectively referred to herein as the NHMP; and

Whereas, the NHMP is in an on-going cycle of development and revision to improve its effectiveness; and

#2019-23

Whereas, City of Sandy adopts the NHMP and directs the City Manager to develop, approve, and implement the mitigation strategies and any administrative changes to the NHMP.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Sandy that the City of Sandy adopts the Clackamas County Multi-Jurisdictional Natural Hazards Mitigation Plan as an official plan; and

Be it further resolved, that the City of Sandy will submit this Adoption Resolution to the Oregon Office of Emergency Management and Federal Emergency Management Agency, Region X officials to enable final approval of the Clackamas County Multi-Jurisdictional Natural Hazards Mitigation Plan.

Adopted this _____ day of _____, 2019

This resolution is adopted by the Common Council of the City of Sandy and approved by the Mayor this day of



Stan Pulliam, Mayor

ATTEST:



Karey Milne, City Recorder

#2019-23



Staff Report

Meeting Date: December 2, 2019

From Mike Walker, Public Works Director

SUBJECT: Community Development Block Grant Project Priorities 2020-2021

Background:

Clackamas County has announced availability of Community Development Block Grant (CDBG) funds for 2020-2021. Block Grant funds have been used in Sandy in the past for accessibility improvements to public buildings (Community Center), street sidewalk and utility improvements and ADA improvements. Funds are primarily intended for residential areas and must align with the National Objectives for the program. A good overview of grant eligibility can be found here:

<https://www.clackamas.us/communitydevelopment/improvement.html>. Public improvement projects (utilities, streets and sidewalks) must benefit residents in an area recognized by the program as including more than 51% low or moderate income residents (see attached map). Projects that eliminate architectural barriers in public buildings can also be funded.

We have a current CDBG project to replace non-compliant ADA ramps in the southeast area of the City.

Applications are due by December 19th. Staff has compiled a list of projects that meet eligibility criteria, including a brief description and estimated costs below:

- ADA ramp replacement Phase II. This project would replace approximately 30 ramps in an area bounded by Hwy 211 on the west, Gary St. on the south, Langensand Road. on the east and Hwy 26 on the north. Estimated project cost \$120,000.
- ADA compliant doors at City Hall. This project would install push button operated doors at the upper and lower level doors to City Hall. Estimated project cost \$36,000.
- Sidewalk on the west side of Meinig Avenue across from Barker Court (identified in Figure 2 of the TSP). This project would construct approximately 200 lineal feet of sidewalk and eliminate an existing gap for pedestrians. Estimated project cost \$23,000.

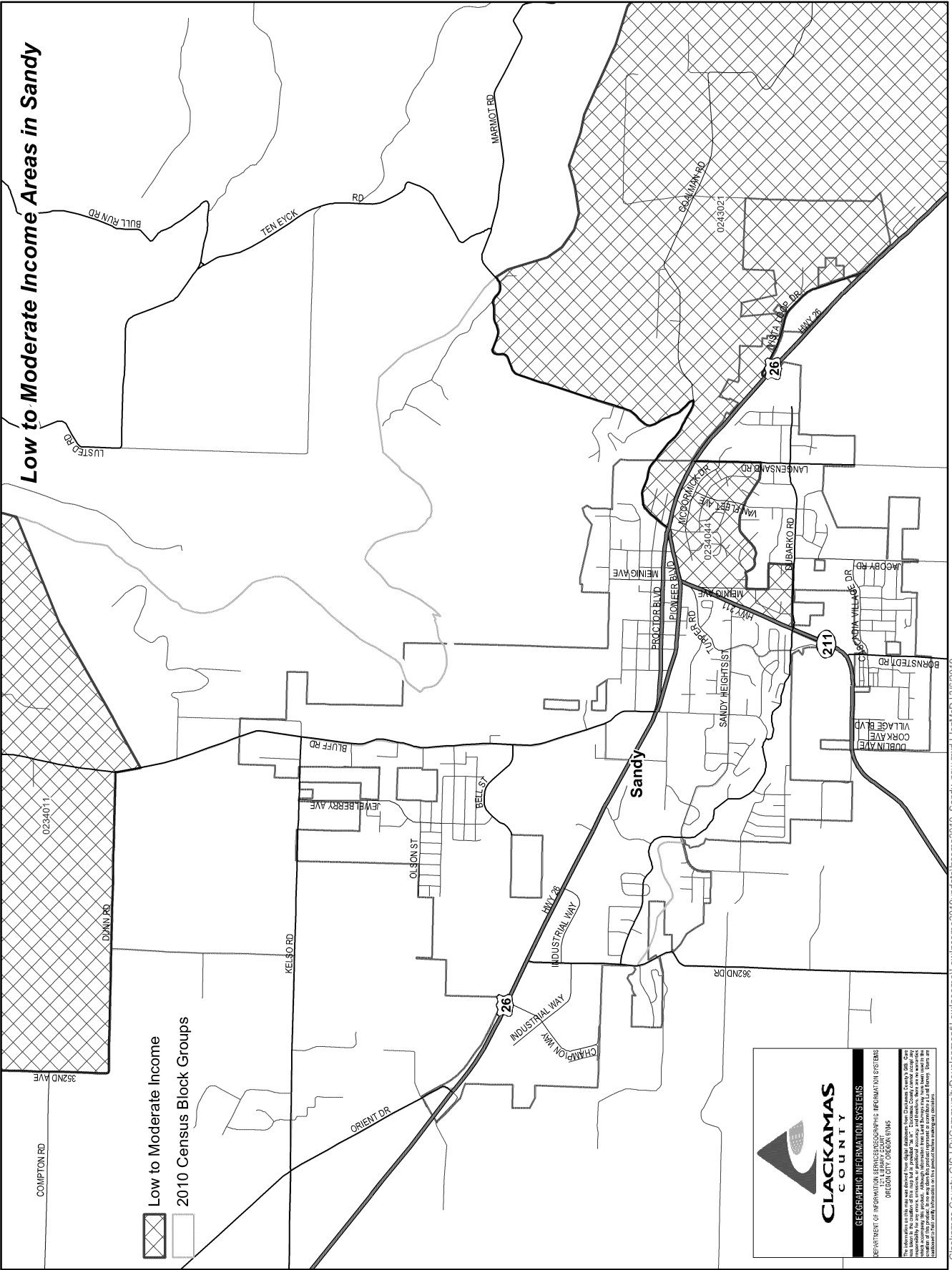
Recommendation:

Prioritize these three projects compiled by staff.


Budgetary Impact:

Projects require a minimum 20% match from the applicant. There are sufficient funds in the current budget to cover the match.

Low to Moderate Income Areas in Sandy



 Low to Moderate Income
 2010 Census Block Groups



CLACKAMAS COUNTY

GEOGRAPHIC INFORMATION SYSTEMS

DEPARTMENT OF INFORMATION TECHNOLOGICAL SERVICES
 CLACKAMAS COUNTY
 GREGSON CITY, OREGON 97130

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Clackamas County GIS | P:\CommunityDevelopment\LowIncome\LowIncome2019\update\income2019_Sandy_new.mxd | JoinMap | 9/6/2019