PUBLIC EMERGENCY RESPONSE PLAN

Neskowin Regional Water District

Tillamook County, Oregon

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Contents

INTRODUCTION

Neskowin is a small-unincorporated community located on the North Coast of Oregon, in South Tillamook County, about 90 miles Southwest of Portland. Neskowin has a population of approximately 200 permanent residents, which can grow to over 4000 during the summer months. The town hosts a general store, 2 restaurants, an Inn, condominiums, golf course, and numerous single-family homes.

Weather

Neskowin averages around Eighty (80) inches of rain a year with about 150 sunny days. July highs can reach into the 80's, with January lows in the 30s.

History of Emergencies

The Neskowin area can be subject to earthquakes, tsunamis, forest fires, landslides, and communications disruptions. There are many steep canyons and bridges in Neskowin, any of which could be adversely effected by any one of these events. This fact could limit movement for months in Neskowin in the event of a major catastrophe.

Geologists report that between 1854 and 2008 the Oregon coast experienced forty-one tsunamis caused by earthquakes in the Pacific Ocean basin. Their evidence suggests that as a result of four of these tsunamis our region of the coast has, in the past, been hit by waves up to sixteen feet above high tide levels. The latest tsunami to impact the coast was the result of the 1964 "Good Friday" earthquakes that was a result of a large earthquake in Alaska.

As for land-based earthquakes, as opposed to those on the Ocean floors that can generate a tsunami, geologists report that since record keeping began in 1841, the region of Oregon as had over 6,000 earthquakes. The vast majorities of those were less than 3.0 on the Richter scale and went unnoticed by the general population.

One additional example is the forest fires that burnt much of the nearby community of Otis in 2020.

At times of high rainfall levels, especially when accompanied by higher than normal high tides can cause flooding of Neskowin Creek, the golf course and sections of roads throughout the community. In addition to rainfall, coastal storms are often accompanied by high winds, often resulting in a number of trees being uprooted.

Current available evidence suggests that either of the first two events noted above (tsunamis and earthquakes) could occur any time before 2070. As seen in the recent past, the other noted events can happen at almost any time.

Therefore, it is necessary, for all employees of the NRWD, as well as residents of our local community be on alert and prepared to respond as appropriately as possible to these events if/when they do occur.

Neskowin Regional Water District:

In 1976, the Neskowin Regional Water District was formed and various private water systems in the area were purchased, condemned, or abandoned. The various municipal and group domestic water rights became District assets. In 1977, the District prepared a document titled "A Comprehensive Development Plan for Water System Improvements. This helped with organizing the conglomeration of system components, complying with state and federal standards and regulations, and planning for future development.

Today, the NRWD remains a small coastal water district with about 750 service connections. The goal of the NRWD is to continue to provide the community with a safe and dependable supply of drinking water. The NRWD works to continually improve the water treatment process and to protect the community's water resources. We are pleased to report that our drinking water is safe and meets all Federal & State requirements.

NRWD infrastructure:

- Water Rights in the Hawk Creek Watershed
- Water Treatment Facility
- Approximately ***19.2*** miles of pipe,
- 5 booster pump stations
- 6 water reservoirs

PURPOSE

The purpose of this Emergency Response Plan (ERP) is to provide the public with information about the Neskowin Regional Water District (NRWD) and its response and recovery protocols during an emergency. By doing this, we hope to educate the public about the services the NRWD provides during a disaster. By providing this plan, the NRWD hopes to prevent, minimize, and mitigate injury and damage resulting from emergencies or disasters, whether of natural or manmade origin, in the community.

GOALS

- Minimize negative impacts on public health and employee safety.
- Assist the community with equipment and resources.
- Communicate information concerning water availability.
- Let the community know how to obtain drinkable water during an emergency.

- Restore water service as quickly as possible after an emergency.
- Ensure adequate water supply for fire suppression.
- Minimize water system damage.

MUTUAL AID AGREEMENTS

The NRWD has currently established mutual aid agreements with the following Water Districts. District management continues to identify additional regional opportunities to add to this list.

Organization	Nature of Agreement
ORWARN	Mutual Aid Agreement
Cascade Head Ranch Water (541-992-2034)	Mutual Aid Agreement
Beaver Water District	Mutual Aid Agreement

CORE ELEMENTS

ROLES AND RESPONSIBILITIES

The NRWD uses the *Incident Command System (ICS)* for its command structure during an emergency. Because we are a small water utility, in most cases a single person is responsible for many of the positions in the ICS structure. As the NRWD grows and adds staff, these positions and responsibilities will be further distributed to additional staff.

During an incident, the Chain of Command will be based on the order of seniority of the staff, their availability, and their ability to get to the district.

Name and Title	Responsibilities during an Emergency	
Water District General Manager (GM), aka Emergency Response Manager	Responsible for coordinating the Districts response in an emergency	Overall management and decision making for the water system. Lead for managing the emergency and contacting requisite regulatory agencies. Approves all communications with external parties.
Board Members	Assist the GM and staff as needed and as available during an emergency	
Office Administrator	Responsible for administrative functions in the office and communications with Customers and the Public.	Provides and delivers a standard carefully pre-scripted message for customers. Maintains website's Emergency Posts.
Technical Specialist – Water System Operator	Assists the GM with operating the water system.	Performs inspections, maintenance, sampling of the system and relaying critical information to the Emergency Response Manager. Assess facilities and provides recommendations to the GM.

Name and Title	Responsibilities during an Emergency	
Technical Specialist - Field Staff	Delivers water quality notices or door hangers. Provides backup to water system operator.	Conducts site inspections of all facilities.
Community Auxiliary Volunteers	Assist the Water District as directed by the GM	Trained to shut off Neighborhood Reservoir valves

COMMUNICATIONS

The type and extent of an event will dictate which methods of communication will be available. It is reasonable to assume that some methods of communication will either be unavailable or limited during an emergency.

Telephones

The NRWD utilizes standard land-based telephones which may be available for communication with their facilities during an emergency. Cellular telephones are also utilized by the district and key personnel have cellular phones with them at all times.

Business Band VHF Radio Communications

Each Water District Vehicle and Facility is equipped with a Business Band VHF Radio for direct line of sight communications across the Water District.

It is anticipated that radios will be of limited use during an emergency unless there is a loss of power or other event affecting land-based and cell phone services.

GMRS Radio Communications

The NRWD is partnering with the efforts of the Tillamook South County Emergency Volunteer Corps. Purchases of GMRS hand held radios and a 40 watt GMRS transceiver are planned and will allow the Water District to communicate with the community communications network during an emergency.

If all other communications fail, the community communications network will provide a method for the Water District to communicate with the Neskowin community as well as other Tillamook County Agencies such as the Tillamook Emergency Operations Center (EOC) or the Nestucca Rural Fire District.

Website

The NRWD Website is: http://neskowinwater.com/

If the internet is available during an emergency and based upon the direction of the GM, the NRWD will use the Website to update the community about the emergency.

Signage

Depending upon the emergency, the NRWD may place signs at different locations in the district to communicate information.

Emergency Telephone Calling

The NRWD has implemented an emergency telephone calling system. If telephone service is available, this process can be adapted to notify customers about specific emergencies.

Individual or Group Welfare Call or Visit

Based upon the emergency, the NRWD may initiate an onsite visit or individual call to a customer or group of customers. Groups of customers can include; Critical Care customers, large volume Water users and any other groupings of customers that might be impacted.

External Notification

The table below contains external contacts for the local and national agencies that NRWD may need to notify. The GM will make the decision as to which of these agencies needs to be notified, when the agencies need to notified, and what information needs to be communicated.

Local Agencies	Contact Information
Tillamook County Sheriff	(503) 842-2561
Tillamook People's Utility District	(503) 842-2535 and (800) 842-2122
Neskowin Regional Water District Troy Trute, General Manager	(503) 392-3966 (541) 992-1655 cell
Tillamook County Emergency Management Department	(503) 842-3412
Nestucca Rural Fire Protection District	(503) 392-3313
CenturyLink (phone)- Repair Local	(800) 786-6272 (503)-842-4811
Neskowin Regional Sanitary District	Plant (503) 392-3257, cell (503) 801-1104, cell (503) 801-1724; office (503) 392-3404
Suburban Propane	(503) 639-8691
Carson oil Company - diesel	(541) 336-2512 or (503) 842-9115 Tillamook

State Agencies	Contact Information
Oregon Health Authority Drinking Water Program	Oregon State Drinking Water Program Evan Hofeld Office: (971) 673-0410
State 24-hr Emergency Communications Center	Oregon Emergency Response System: (800) 452-0311 (50) 378-2911
State Department of Homeland Security	(971) 302-1489
State HAZMAT	Oregon Emergency Response System: (800) 452-0311
State Police – Tillamook Salem Headquarters	(503) 842-4433 (800) 452-7888

Federal Agencies	Contact Information
Federal Bureau of Investigation (FBI)	Portland, Oregon: (503) 224-4181
Environmental Protection Agency (EPA)	(800) 424-8802 or (202) 272 0167
Department of Homeland Security (DHS)	(202) 282-8000 or (503) 584-3985
Health and Human Services (HHS)	(877) 696-6775
Bureau of alcohol, Tobacco, Firearms and Explosives (ATF)	Seattle (206) 204-3205; D.C.(202) 648-8410
Federal Aviation Administration (FAA)	(866) 835-5322
US Federal Protective Service	Same as DHS.

Media Notification

NRWD personnel have been instructed to direct all media questions or information requests related to an emergency situation to NRWD's General Manager. The GM is the official spokesperson for the NRWD, and is the only NRWD employee who is authorized to speak directly to public media representatives.

The table below provides the various media agencies that NRWD might use to disseminate information to the public.

Media Type	Contact Information
Headlight Herald	(541) 842-7535
KDEP FM 105.5, Garibaldi KSHL FM 97.5, Lincoln City	(541) 842-442
KNPT AM (1310) Newport	(541) 265-2266
KCUP AM 1230; FM 100.7 Newport	(541) 265-5000

Media Type	Contact Information
KCRF FM 96.7 Lincoln City	(541) 765-2183
KTIL FM 95.9 Tillamook	(503) 842-4422
KGW-TV Channel 8 Portland (NBC)	(503) 226-5000
KOIN-TV Channel 6 Portland (CBS)	(503) 484-0600
KATU-TV Channel 2 Portland (ABC)	(800) 777-5288
KOPB-TV Channel 10 Poetland (PBS)	(888) 293-1982
KBCH AM 1400 Lincoln City	(541)-994-2181

NRWD has prepared a series of press releases for use during various emergency situations.

SAFETY

The safety of NRWD staff, emergency responders, and the public is paramount during an emergency. This section provides basic safety information and procedures followed by the NRWD in the event of an emergency. This section covers Sheltering in Place, Evacuation and First Aid procedures.

Sheltering-in-Place Protocol

Evacuation during emergency incidents is sometimes, but by no means always, necessary. The emergency can escalate so rapidly that there would be no time to evacuate personnel. In hazardous weather conditions, for example, a prudent course of action for the protection of the affected employees/personnel would be to remain inside with doors and windows closed.

In case of an earthquake or potential tsunami, a prudent course of action would be to evacuate to high ground, once the shaking stops.

The GM is responsible for determining whether sheltering-in-place is the most appropriate response to protect the staff. If the decision is to shelter-in-place, then the affected employees will be advised to follow the District's Shelter in Place guidelines to reduce the chance of being injured.

Evacuation Procedures

Evacuation Routes and Assembly Areas are posted in each facility. Except for the Village, there is an evacuation and assembly area at the high point within each of the neighborhoods. The decisions and methods used to accomplish the evacuation will be determined by the GM and will be incident and site specific. Evacuees will be told to report to their designated assembly areas and wait for further instructions.

Site managers/supervisors shall be responsible for head counts, assembly security and safety, and will communicate with the GM to obtain support for various needs, such as food, water, medical aid, or transportation.

PERSONNEL PROTECTIVE AND OTHER EMERGENCY EQUIPMENT

NRWD has established procedures for using and maintaining emergency response equipment. These procedures apply to any emergency equipment relevant to a response involving a toxic chemical, including all detection and monitoring equipment, alarms, communications systems, and personnel protective equipment not used as part of normal operations.

PROPERTY PROTECTION

In the event of a real or potential malevolent event (i.e. earthquake, tsunami, forest fire, etc.), the GM will make the determination as to what water system facilities should be "locked down", including the implementation of specific access control procedures and the establishment of a security perimeter.

WATER SAMPLING AND MONITORING

The GM will delegate to appropriate staff the primary responsibility for all water sampling and monitoring activities during an event.

The NRWD has a basic laboratory capable of allowing measurements of raw and finished water as required by State law (turbidity, pH, chlorine residuals, and temperatures).

If outside laboratory assistance is needed and is available, the NRWD will contact the following laboratory facilities:

Outside Laboratory Name	Contact Number	Capabilities
Analytical Laboratory & Consultants, Inc. 361 West Fifth Ave. Eugene, OR 97401	1-800-262-5973	All practical laboratory needs.
Umpqua Research Company PO Box 609 626 Division St. Myrtle Creek, OR 97457	(541) 863-5201	All practical laboratory needs.

EMERGENCY PLANNING CAPITAL IMPROVEMENT PLAN

The NRWD may not have the funds available at the time of a specific emergency to undertake the recommendations that have been developed as part of the Emergency Management Plan. However, as

funding becomes available, necessary capital improvements will be implemented to reduce the risk and vulnerability to the water system.

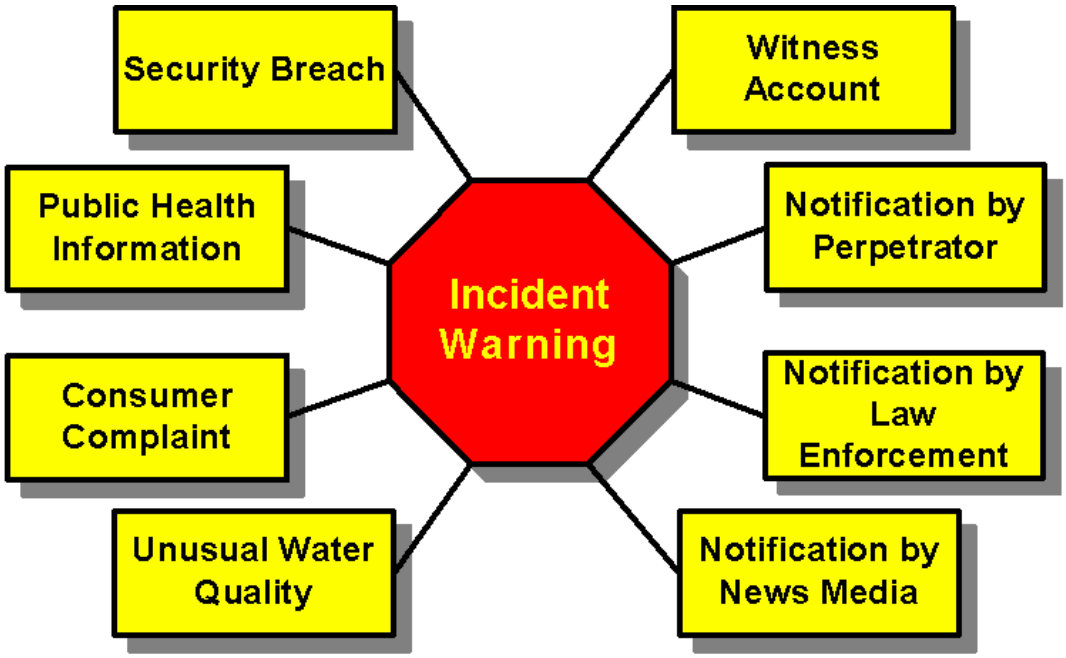
The table below provides a summary of the recommended improvements along with estimated costs for each improvement. The final column is intended to allow the District to prioritize the improvements.

Recommendation	Description	Estimated Cost (in 2020 dollars)	Priority Rating (High, Medium, Low)
Backup key documents	Copies of plans, as-built drawings, specs, contracts, SOPs, ERP, other key documents placed in secure, off-site, but accessible location or locations in case originals are destroyed by fire, explosion, etc.	Very small amounts of money mostly just time	High Ongoing project
Distribution of alternative drinking water	Ability to quickly distribute potable water, point-of-use devices, have bulk water trucked in, or provide other emergency sources of drinking water upon detection of contamination of finished water supplies.	$8,000	Medium
Backup power generation on-site	One of the critical interdependencies nearly all water utilities have is with the electrical power supply system. Disruption of power supply could have significant impacts on source, treatment and distribution systems.	$50,000	High
Secure Water in each neighborhood Reservoir	Train volunteers in each neighborhood to shut off the valves to contain as much water as possible in the reservoir.	Very small amounts of money mostly just time	High
Develop Water Distribution Stations	The District is currently in the design phase of this task	$5,000	Medium
Install Earthquake valves into all key reservoirs	District has currently one earthquake valve installed at our main 500,000-gallon reservoir.	$200,000	Medium
GMRS Handhelds and 40 watt base station, antenna and wiring	To facilitate communication between NRWD staff and available emergency agencies	$1,200	High

ERP ACTIVATION

An "Incident Warning" is the initial occurrence that triggers an evaluation of whether or not to activate the NRWD Emergency Response Plan. A description of the possible warnings that may be encountered is provided below. If any of the conditions are met a warning will be issued by the GM.

Figure 1. Summary of Potential Warnings



ERP ACTIVATION

Once a warning is issued by the GM or his designee, the decision process begins. The GM will evaluate and determine if the ERP should be activated. If yes, the GM will activate the Plan.

EMERGENCY OPERATIONS CENTER

NRWD's Emergency Operations Center (EOC) is located at the district's Water Plant. This is a pre-designated facility that can be used to coordinate the overall response and support for an emergency.

PLAN APPROVALS AND TRAINING

NRWD APPROVAL AUTHORITY

This plan is intended to be a living document that is reviewed and updated yearly to ensure that the information it contains is correct. The ERP is approved yearly by the **NRWD** GM and Board.

TRAINING, EXERCISES, AND DRILLS

Exercises, drills and training sessions are conducted annually. These may occur more frequently if the GM deems it necessary. The GM is responsible for the organization and management of the training program.

All NRWD personnel receive initial and refresher training on this ERP. The training will be conducted annually and when any of the following occurs:

- New employees are hired.
- Special emergency assignments are designated to operations staff.
- New equipment or materials are introduced.
- Procedures are updated or revised.

Types of Training

Orientation Sessions: Orientation Sessions will include basic instruction and explanation of the ERP and Action Plan Procedures. Written tests may be used to ensure some level of comprehension by the attendees.

Table Top Workshops: Table Top Workshops involve developing scenarios that describe potential problems and providing certain information necessary to address the problems. Employees will be presented with a fabricated major event. Next, they will verbally respond to a series of questions and then evaluate whether their responses match what is written in the ERP.

Functional Exercises: A Functional Exercise is designed to simulate a real major event. A team of simulators is trained to develop a realistic situation. By using a series of pre-scripted messages, the simulation team sends information to personnel assigned to carry out the ERP procedures. The purpose of simulators and personnel responding to the simulation are focused on carrying out the procedures to test the validity of the ERP.

Full Scale Drills: Emergency Response Personnel and equipment are actually mobilized and moved to a scene. A problem is presented to the response personnel, and they respond as directed by the ERP and the GM at the scene.

OBTAINING WATER IN AN EMERGENCY

A supply of clean water is a top priority in an emergency. A normally active person needs to drink at least two quarts of water each day. Hot weather doubles the amount of water required. Children, nursing mothers and ill people need even more water.

Water Plant

The NRWD's Water Plant is expected to be above tsunami flooding. The Hawk Creek Hills water shed is also expected to remain intact as the NRWD's primary source of water during an emergency. If the Water Plant is damaged, the Water District is evaluating alternative ways that fresh water can be created in bulk.

Interconnects and Agreements with Other Utilities

The NRWD has Mutual Aid agreements with the Cascade Head and Beaver Water Districts. Depending upon the emergency, these Water Districts may provide treated water. The NRWD also has a signed Mutual Aid Agreement with the Oregon Water Agency Response Network (ORWARN).

Primary Reservoir Water Distribution Station:

Depending upon the event, the GM may choose to setup a Water Distribution Station.

The NRWD has installed an Earthquake valve on the District's half-million gallon Main Reservoir. If the reservoir continues to hold water after an event, once the access road is cleared, and Route 101 is passable, temporary piping will be run down to Route 101, and a Water Distribution station setup. This station will be located just north of the entrance to the village.

Residents will need to bring water containers to the water stations. The water stations will be operational 24 hours a day until the event is over and water is available through the system.

Neighborhood Reservoirs:

The NRWD plans to install earthquake valves into all strategic reservoirs. Until that time, the NRWD is working with the community to try and secure the water in each Reservoir. When successful, and water remains in a reservoir after an event, a water distribution station will then be setup for the neighborhood.

Residents will need to bring water containers to the reservoirs. The water stations will be operational 24 hours a day until the event is over and water is available through the system.

NRWD Water Transport:

The NRWD is developing a process where a mobile water tank could be used to fill our reservoirs. This would allow the district to refill reservoirs and take water to the points of our community that may need it. Depending upon the event, the GM may choose to mobilize this tank in order to fill our reservoirs.

NRWD Temporary Reservoirs:

The NRWD is developing a process where the District can use 275 gallon Intermediate Bulk Cargo (IBC) containers to move water into the different neighborhoods. Depending upon the event, the GM may choose to distribute these small reservoirs.

Residents will need to bring water containers to the temporary reservoirs. The water stations will be operational 24 hours a day until the event is over and water is available through the system.

Water Sources in Your Home:

Do you know the location of your incoming water valve?

Residents should know the location of incoming water valve to be able to shut the valve and stop contaminated water from entering their home during a Water emergency. This will ensure that the water in your home's pipes and hot water tank remains usable.

To use the water in your pipes, let air into the plumbing by turning on the faucet in your house at its highest level. A small amount of water will trickle out. Obtain water from the lowest faucet in the house.

To use the water in your hot water tank, be sure the electricity or gas is off, let air into the plumbing by turning on a faucet in your house and open the drain at the bottom of the tank. Start the water flowing by turning off the water intake valve and turning on a hot water faucet. Do not turn on the gas or electricity when the tank is empty.

Emergency Outdoor Water Sources:

Water outside your home can be obtained from these sources.

- Rainwater
- Streams, rivers and other moving bodies of water
- Ponds and lakes
- Natural springs

Avoid water with floating material, an odor or dark color. Saltwater can be used only if the water can be distilled. You should not drink floodwater. It is usually necessary to go above a flooded area to obtain a non-contaminated water source.

Contaminated water can have bad taste and odor and contain microorganisms that cause diseases such as dysentery, typhoid and hepatitis. All water of uncertain quality should be purified before it is used for drinking, food preparation or hygiene.

Ways to Purify Water

There are many ways to purify water. None is perfect. Often the best solution is a combination of methods. Two easy purification methods are outlined below. These measures kill most microbes but will not remove other contaminants such as heavy metals, salts and most other chemicals. Before purifying, let any suspended particles settle to the bottom, or strain them through layers of paper towel, coffee filter or clean cloth.

Boiling

Boiling is the safest method of purifying water. Bring water to a rolling boil for 1 minute, keeping in mind that some water will evaporate. Let the water cool before drinking. Boiled water will taste better if you put oxygen back into it by pouring the water back and forth between two clean containers. This will also improve the taste of stored water.

Boiled Water will clean the water and render it safe if these procedures are followed:

If the water from your tap is clear:

Boil it for three minutes to disinfect. This kills disease-causing bacteria and parasites, or

Add 1/8 teaspoon household bleach per gallon of water. Let it sit for a half hour.

If the water is cloudy:

Filter it by pouring it through a coffee filter and then boil it for three minutes.

If you can't boil the water, filter it through a coffee filter and add 1/4 teaspoon of household bleach per gallon of water. Let it sit for one hour.

Disinfection

You can use household liquid bleach to kill microorganisms. Use only regular household liquid bleach that contains 5.25 percent sodium hypochlorite. Do not use scented bleaches, color-safe bleaches or bleaches with added cleaners. Add 16 drops of bleach per gallon of water, stir, and let stand for 30 minutes. If the water does not have a light bleach odor, repeat the dosage and let stand another 15 minutes.

The only agent used to purify water should be household liquid bleach. Other chemicals such as iodine or water treatment products sold in camping or surplus stores that do not contain 5.25 percent sodium hypochlorite as the only active ingredient are not recommended and should not be used. While the two methods described above will kill most microbes in water, distillation will remove microbes that resist these methods and heavy metals, salts and most other chemicals.

The District has advised and will continue to advise any agency installing caches near evacuation areas to purchase adequate supplies of sodium hypochlorite to store for disinfecting raw water.

Distillation

Distillation involves boiling water and then collecting the vapor that condenses back to water. The condensed vapor will not include salt and other impurities. To distill, fill a pot halfway with water. Tie a cup to the handle on the pot's lid so that the cup will hang right-side-up when the lid is upside-down (make sure the cup is not dangling into the water) and boil the water for 20 minutes. The water that drips from the lid into the cup is distilled.

Water Purification Device

Water filtration devices can take problem water and turn it into cleaner water that's free of odor, tastes, sediment, and contaminants. This is accomplished by physical filtration, where water is strained, often through a gauze-like membrane, to remove larger particles. Water Filters come in sizes that can support an individual, family or neighborhood. Units can filter contaminants down to .01 Microns. There are many units on the market.

Storage of Water

Water should be stored in a thoroughly washed plastic, glass, fiberglass or enamel-lined metal containers. Never use a container that has previously held toxic substances.

Plastic containers, such as soft drink bottles, are best. Food-grade plastic buckets or drums can be purchased. Seal water containers tightly, label them and keep them stored in a cool, dark place.

PUBLIC ACTION PLANS

NRWD has developed specific Action Plans to respond to 'Man Made' threats. Due to security concerns, these action plans are not available to the public.

NRWD has also considered emergencies posed by natural events and weather related phenomena. These include Fire, Flood, Winter Storms, Earthquake, Tsunamis and a general Water Supply Interruption. Parts of these plans are included below.

AP 1 – Power Outage

AP Summary:	This Action Plan applies to events that result in power outages. This Action Plan may need to be implemented in conjunction with other Action Plans (for example, severe weather) as necessary.
Initiation and Notification:	Initiate this AP upon a loss of offsite power As required, make notifications
I. Assess the Problem	1. Contact TPUD for information on the estimated down time. 2. Estimate water requirements and determine if the utility can still meet requirements. 3. Check all generators. 4. Estimate how long until the generators need fuel. 5. Assess the ability to supply fuel for extended periods. 6. Assess the need to run the generators 24hrs a day or on a schedule.

AP 1 – Power Outage	
II. Isolate and Fix the Problem	1. Turn off unnecessary electrical equipment. 2. Manually start backup generators as necessary. 3. Increase disinfectant residual as a precaution to potential contamination. 4. If not able to meet community requirements for water then arrange for water to be supplied by another source. 5. Notify priority customers. 6. Notify users of interruption of service if not capable of maintaining supply. 7. Issue “Boil Water”, “Do not drink”, or “Do not Use” orders and Press Releases as appropriate. 8. Consider initiating back-up portable pumping and generating capability to serve specific areas. 9. Facilities with freezing temperatures should turn off and drain the following lines in the event of a long term power loss: 9.1. Fire sprinkler system 9.2. Standpipes 9.3. Potable Water Lines 9.4. Toilets
III. Monitoring	1. Check on temperature of the generators and power output to make sure they are all within tolerances. 2. Monitor the status of the backup power supply and regularly test whether battery levels are adequate and the backup generators are functioning properly.
IV. Recovery and Return to Safety	1. Check to see all electronics and mechanical devices affected by the outage are working properly. 2. Fix anything damaged by the power outage.
V. Report of Findings	Assemble relevant personnel to review effectiveness of action plan and reinforce lessons learned.
VI. AP-1 Revision Dates	December 2020

AP 2 – Flood	
AP Summary:	This Action Plan applies to flooding events. In general, these events occur with reasonable lead times, and it is possible to take proactive measures, as outlined below. Response and recovery can be time consuming during flood events, as they can involve loss of electrical power supply, damage of structures and equipment, disruptions of service, and injuries to utility personnel.
Initiation and Notification:	This AP will be initiated upon official notification of either a flood "watch" (a flood is possible in your area), or a flood "warning" (flooding is already occurring or will occur soon in your area). The GM will make the decision to contact local response authorities to request possible assistance,
I. Assess the Problem	1. Obtain additional information on exact location and probable extent of flooding. 2. Assess location of all facilities in respect to the expected flooding 3. Determine if EOC should be activated 4. Prioritize pre-flooding activities 5. If flooding has already occurred conduct site assessment from nearest safe location 6. List equipment needed to restore water service when floodwaters recede.
II. Isolate and Fix the Problem	1. Notify neighboring utilities or other sources of emergency response support if manpower or equipment will be needed. 2. As needed, notify customers, media, and state and local authorities that service may be disrupted and/or that usage may be necessary. 3. Consider shutdown if flooding appears imminent.
III. Monitoring	1. Take pictures of the damage 2. Instruct staff to avoid floodwaters whenever possible. 3. Communicate current conditions to GM
IV. Recovery And Return to Safety	1. Inspect foundations for cracks or other damage. 2. Check power lines for damages 3. Arrange for alternate source of electrical power or fuel for diesel generators, sufficient for period of outage following the flood. 4. Inspect, clean, rebuild, replace all affected equipment as necessary
V. Report of Findings	Assemble relevant personnel to review effectiveness of action plan and reinforce lessons learned.
VI. AP-2 Revision Dates	December 2020

AP 3 – Winter Storm/Hard Freeze	
AP Summary:	This Action Plan applies to winter storm and hard freeze events. In general, these events occur with reasonable lead times, and it is possible to take proactive measures, as outlined below. Response and recovery can be time consuming during such events, and they can involve loss of power, damage of structures and equipment, disruptions of service, and injuries to staff.
Initiation and Notification:	When hazardous winter weather conditions are expected to affect the region, the National Weather Service (NWS) issues public advisories. This AP should be initiated upon official notification of a "winter storm watch" or temperatures lower than freezing for an extended period.
I. Assess the Problem	1. Estimate the severity of the Winter Storm or freeze event. 2. Check the function of all heaters and freeze protection in the system. 3. Pre-salt driveways at reservoirs and pump stations. 4. Drain water from all nonessential equipment
II. Isolate and Fix the Problem	1. Release nonessential personnel, as warranted. 2. Designate emergency duties. 3. Monitor track of storm or duration and severity of freeze. 4. Notify customers, media, and state and local authorities if service is disrupted or if significant demand management is necessary. 5. Monitor reservoirs. 6. Monitor changes in water quality. If a water quality emergency should develop, follow the appropriate procedure. 7. Provide backup power to facilities utilizing mobile generators, as appropriate.
III. Monitoring	1. Personnel should avoid traveling by vehicle, but if necessary, it is important that they communicate destinations, routes, and expected arrival times. 2. If vehicles get stuck along the way, help can be sent along the predetermined route. 3. Estimate when the storm or freeze will subside and strategize for needed repairs.
IV. Recovery And Return to Safety	1. In the event of a freeze or large winter storm, leaks caused by freezing often will not appear until pipes thaw. 2. Personnel will need to travel thru the District looking for leaks. 3. Large sections of the District may need to be shutoff due to leaks.
V. Report of Findings	Assemble relevant personnel to review effectiveness of action plan and reinforce lessons learned.
VI. AP-3 Revision Dates	December 2020

AP 4 – Earthquake

AP Summary:	This Action Plan applies to earthquake events. In general, these events occur without any lead times, making it impossible to take proactive measures. Staff should immediately: 1. Seek shelter under a deck, table, doorway, or inside wall. 2. Once the shaking has stopped, gather valuables and quickly make your way outside and to an evacuation area. 3. Once outside avoid electric wires, poles and equipment. Response and recovery can be time consuming during such events, and they can involve loss of electrical power supply, damage of structures and equipment, disruptions of service, and injuries to utility personnel.
Initiation and Notification:	An earthquake usually occurs without any type of warning. Due to the suddenness, all personnel should attempt to find immediate shelter and drop and cover. Because of the chance of a Tsunami AP-5, once the shaking stops, all staff should evacuate to the nearest evacuation point until the GM provides the all clear to return or the potential for a Tsunami passes.
I. Assess the Problem	Review details in Power Outage Action Plan. Review specific details in Tsunami Action Plan. In general, the GM will organize an assessment team to undertake the following activities: • Check on the safety of staff. • Assess all structures including pipes and valves for obvious cracks and damage • Assess condition of all electrical power feeds and switchgear • If SCADA is working, immediately review system for all types of malfunctions, including telemetry, pressure in the distribution system, and operation of pumps and other equipment. • If buildings have any sign of damage, such as cracked walls, broken windows, downed power lines, do not enter. • If buildings appear safe, cautiously inspect condition of interiors for damaged equipment, leaks, chemical spills, etc. • Communicate all findings via radio to EOC Earthquakes can cause significant power outages AP-1 because of the impact on outside generation and transmission lines. After a major earthquake, power might be interrupted for an extended period of time over the entire operations area. In this instance, power restoration will most probably be slow and, depending upon the infrastructure damage, localized.
II. Isolate and Fix the Problem	Since Earthquakes can cause large amounts of infrastructure damage the GM will need to use AP-1 Power Outage as well as AP-6.

AP 4 – Earthquake	
III. Monitoring	At all times, personnel should observe the following general steps: • Stay calm and await instructions from the designated official. • Keep away from overturned fixtures, windows, filing cabinets, and electrical power. • Provide assistance and/or call for medical help for injured employees as needed. • Monitor the radio for instructions. • Expect aftershocks. Use the telephone only to report life-threatening emergencies.
IV. Recovery And Return to Safety	General earthquake procedures after an earthquake are as follows: 1. Activate Emergency Operations Center (EOC). 2. Respond to injuries of staff. 3. Contact Water District Auxiliary to shut off Reservoir valves or to ascertain whether or not they have already been shutoff . 4. Notify customers, media, and state and local authorities if service is disrupted or if significant demand management is necessary. 5. Inspect facilities for structural damage including buildings, storage tanks, pipelines, and process equipment. Consider the use of an outside engineering consultant. 6. Analyze and if determined by GM, setup water distribution stations to support the community. 7. Prioritize and repair water main leaks. 8. As appropriate initiate mutual aid agreements. Respond to side effects (loss of power, fire chemical spills, etc.)
V. Report of Findings	Assemble relevant personnel to review effectiveness of action plan and reinforce lessons learned.
VI. AP-4 Revision Dates	December 2020

AP 5 – Tsunami	
AP Summary:	This Action Plan applies to tsunami events, either local or distant. Local events occur with minimal lead times of 5- 10 minutes after a local earthquake. Distant earthquakes may cause tsunamis for which hours of warning are possible. Response should initially focus on employee safety. Recovery may involve response to injuries to utility personnel as well as the loss of electrical power supply, damage of structures and equipment, and disruptions of service.
Initiation and Notification:	A local tsunami may follow a local earthquake, so the earthquake is the warning. If a tsunami warning is received because of a distant earthquake, personnel should stay away from any district properties that are predicted to be in a distant tsunami zone. They may take steps prior to the tsunami's predicted arrival to fortify or remove any district properties, buildings, or equipment likely to be impacted.
I. Assess the Problem	1. After the ground stops shaking in the event of an earthquake all personnel, should immediately take a go-bag and evacuate to high ground as designated on local tsunami escape route maps posted in each of the district's facilities. 2. After tsunami waves have ceased and receded (this may take 24 hours or more), personnel should attempt to gather at the District's treatment plant, which is estimated to be out of the tsunami zone.
II. Isolate and Fix the Problem	Once staff is confirmed safe, continue to follow the Action Plans for an Earthquake AP-4, Power Outage AP-1 and Water Supply Interruption AP-6.
III. Monitoring	1. Staff should monitor for aftershocks that may cause more tsunamis and allow enough time to remove themselves from harm's way. 2. Staff should monitor infrastructure that remains in working order.
IV. Recovery And Return to Safety	1. In the event of a tsunami, large portions of Neskowin may be destroyed. Returning to normal may be Months or Years away and require engineering and funding. 2. Assessment of what can be repaired and what cannot, will be an ongoing process.
V. Report of Findings	Assemble relevant personnel to review effectiveness of action plan and reinforce lessons learned.
VI. AP-5 Revision Dates	December 2020

AP 6 – Water Supply Interruption	
AP Summary:	This action plan applies to water supply interruptions. These events will vary in scale from compromised incremental supply volumes to complete, catastrophic loss of water supply.
Initiation and Notification:	Catastrophic water supply interruptions will generally be identified by other events, such as a Winter Storm, Earthquake or Tsunami. The GM will determine if the outage is a small interruption which would be managed as part of normal business or a major event which requires the activation the this Action Plan
I. Assess the Problem	There are a number of potential levels of severity involved in a water supply interruption that will determine the direction that the District's GM takes.
II. Isolate and Fix the Problem	Each stage has specific customized definitions, in terms of percent of Water Supply reduction, with appropriate actions or restrictions at each stage. These stages are: **Normal Conditions** – Normal conditions apply. Water is available. **Water Alert** -- A 5% or greater reduction in water usage will be needed to meet the immediate needs of customers. Voluntary conservation will be strongly encouraged. The water shortage situation will be explained to the public and voluntary water conservation will be requested. The NRWD will maintain an ongoing public information campaign consisting of distribution of literature, speaking engagements, bill inserts, and messages printed in local newspapers and on the District's webpage. **Water Warning** -- A 15% or greater reduction in water usage will be required to meet the immediate needs of customers. The NRWD will aggressively continue its public information and education programs. Consumers will be asked for a 15 percent or greater water use reduction. Additional landscape irrigation restrictions may be implemented. Businesses may be asked not to serve water unless requested. **Water Crisis** – A 30% or greater reduction in water usage will be required to meet the immediate needs of customers. Additional requirements may include: dramatic landscape irrigation restrictions, restrictions on washing of automobiles and equipment, restriction of flushing of sewers or fire hydrants to cases of emergency and essential operations. **Water Emergency** -- A 50% or greater reduction in water usage will be needed to meet the immediate needs of customers.
III. Monitoring	Communication of water supply interruption stages should be handled according to the notification procedures determined by the GM.

AP 6 – Water Supply Interruption	
IV. Recovery and Return to Safety	1. Staff will need to prioritize if there are multiple water disruptions. Once this is done, an analysis of the Interruption needs to be determined, and a plan to fix the water service documented. 2. If the disruption is determined to be long term, alternative water supply options have been identified in this ERP. In the event of a catastrophic, immediate need, it is likely these will be utilized. 3. If there have been lines with no water or negative pressures, a precautionary boil order will be issued by the District until Bacteriological testing shows the lines in question to be safe. 4. Chlorine residuals system wide should be increased temporarily. 5. The District may have to valve off portions of the distribution system until above ground storage tanks are refilled. Shut off areas have the potential for external contamination to enter the system through leaking joints or cracked pipe. The GM will determine the steps necessary to ensure the drinking water is safe. 6. Reservoir valves may need to be opened before filling. The system should be pressurized slowly to avoid water hammer and the potential for damage to the lines. 7. Air should be bled from lines as they refill since entrapped air can impede flows and may cause line damage.
V. Report of Findings	Assemble relevant personnel to review effectiveness of action plan and reinforce lessons learned.
VI. AP-6 Revision Dates	December 2020

AP 7 – Forest Fire	
AP Summary:	This Action Plan applies to Forest Fire events. In general, these events occur with reasonable lead times, and it is possible to take proactive measures, as outlined below. Response and recovery can be time consuming during fire events, as they can involve loss of electrical power supply, damage of structures and equipment, disruptions of service and mandatory evacuations.
Initiation and Notification:	This AP will be initiated upon official notification of a fire occurring or will occur soon in the District or within the District watershed. The GM will make the decision to contact local response authorities to request possible assistance and take preventative actions.
I. Assess the Problem	1. Obtain additional information on exact location and probable extent of the forest fire. 2. Assess location of all facilities in respect to the expected forest fire 3. Determine if EOC should be activated 4. Prioritize pre-fire activities 5. If forest fire has already occurred conduct site assessment from nearest safe location. 6. List equipment needed to restore water service when safe to return to affected area.
II. Isolate and Fix the Problem	1. Notify neighboring utilities and/or other sources of emergency response support if manpower or equipment will be needed. 2. As needed, notify customers, media, and state and local authorities that service may be disrupted and/or that demand reductions may be necessary. 3. Plan safe escape routes if fire appears imminent.
III. Monitoring	1. Communication of water supply interruption stages should be handled according to the notification procedures determined by the GM. 2. Document the extent of the damage to the District. 3. Instruct staff to avoid smoke inhalation whenever possible using appropriate PPE. 4. Communicate current conditions to local authorities whenever possible.
IV. Recovery and Return to Safety	1. Inspect District infrastructure for damage. 2. Check for damages to other utilities used by the District 3. Follow the Power Outage Action Plan in this document. 4. Inspect, clean, rebuild, and replace all affected equipment and infrastructure as necessary.
V. Report of Findings	Assemble relevant personnel to review effectiveness of action plan and reinforce lessons learned.
VI. AP-7 Revision Dates	December 2020

AP 8 – Epidemic/Pandemic	
AP Summary:	This Action Plan applies to Epidemics, defined as "a widespread occurrence of an infectious disease in a community at a particular time". An epidemic involves the loss of staff to operate and do maintenance on District equipment.
Initiation and Notification:	This AP will be initiated upon official notification of an epidemic or pandemic, within the District by the Oregon Health Authority (OHA). The GM will inform all employees of the District of the notification from OHA.
I. Assess the Problem	1. Obtain additional information from OHA on exact pathogen and probable extent of the epidemic/pandemic. 2. Disseminate information to all employees and Board members about the epidemic/pandemic.
II. Isolate and Fix the Problem	1. Notify neighboring utilities and/or other sources of emergency response support that manpower may be needed if staff becomes too ill to work. 2. Quarantine sick staff from all District facilities and other staff. 3. If necessary schedule staff to work on alternating schedules or at home if possible. 4. Distribute Personal Protective Equipment (PPE) to all employees. 5. Instruct all staff on best known methods to stay safe from disease 6. Prioritize existing workloads. 7. Restrict public interactions with staff. 8. Require increased cleanliness at all District facilities.
III. Monitoring	1. Track the progress of the disease in the South Tillamook County and North Lincoln County areas.
IV. Recovery and Return to Safety	Oregon Health Authority will dictate when District business can be conducted as per normal
V. Report of Findings	Assemble relevant personnel to review effectiveness of action plan and reinforce lessons learned.
VI. AP-8 Revision Dates	December 2020