

The background of the entire page is a photograph. On the left, there are dense green evergreen trees. In the center, a white building with a light-colored metal roof is visible. On the right, a wooden signpost stands in a grassy area. The signpost has two signs: the top one is a square sign with a blue border, a blue water drop icon, and the text 'SunLand Water District'; the bottom one is a rectangular sign with a blue border and the text '5762 WOODCOCK ROAD'.

EMERGENCY RESPONSE PLAN

July 2022

SunLand Water District

5762 Woodcock Road

Scquim, WA 98382

360-683-3905

SWD@sunlandwater.com



Emergency Response Plan

19 July 2022

Preface

The SunLand Water District (SWD) is a municipal corporation set up for the purpose of providing water and sewer services to the SunLand community. It was established in 1977 in accordance with Washington State statutes.

Public water systems in Washington must have an emergency response plan as part of a water system plan or small water system management program (Chapter 246-290-415(2)(b) WAC). This section on the drinking water rule also requires systems to employ reasonable security measures to protect raw water intake facilities, water treatment processes, storage facilities, pump houses, and distribution systems from possible damage or intruders.

This Emergency Response Plan (ERP) for the SWD is an effort to prepare residents in SunLand for emergencies and is written to address the specific concerns and needs of the SunLand community. This ERP is formatted to be generally consistent with the template supplied to all water systems by the Washington State Department of Health, Environmental Public Health, Office of Drinking Water: 331-211 (revised) Emergency Response Planning Guide for Public Drinking Water Systems and EPA document 817-B-21-003, a template for a Wastewater Utility Emergency Response Plan.

The plan stresses the four phases of emergency management: mitigation, preparedness, response and recovery. The SWD is committed to carry out its responsibility to meet the demands of emergency management. We will continue to work with the public and other agencies to ensure that developing, maintaining, and enhancing our emergency management capabilities prepares our community. The ERP moves us one step closer to being able to minimize the impacts of emergencies and disasters on people, property, the economy and the environment of SunLand and our local area.

It is the intention of the SunLand Water District to periodically review and update this document to reflect any changes to the DOH template, personnel changes, vendor changes, etc.

Emergency procedures relating to specific areas are maintained in Appendices of the ERP.

The SWD has designated Emergency Management staff who will prepare for, mitigate against, respond to, and recover from an emergency or disaster event according to this plan. However, when the emergency demands exceed the SWD's available resources, staff will coordinate assistance from other local, state, and federal emergency management agencies.

EMERGENCY PREPAREDNESS GROUPS

Washington State: In order to increase emergency preparedness and coordination, the SunLand Water District is a member of WARN (Washington's Water/Wastewater Agency Response Network). WARN allows water and wastewater systems to receive rapid mutual aid and assistance from other systems in an emergency. Utilities that sign the standard agreement may share resources with any other system in Washington that has also signed the agreement. The WARN member who needs help identifies the resources needed to respond and may either directly contact a fellow WARN member who has the necessary resources or use a State

specific process of requesting aid. There is no cost to participate and it's voluntary. WARN provides a single agreement to access resources throughout the State.

Clallam County: Strength in numbers has been emphasized at County emergency preparedness meetings. Pre-organized groups, disaster planning committees, and a communications method dedicated to the emergency program would greatly mitigate the consequences of a major disaster.

The Clallam County Sheriff's Office Emergency Management Unit's CEMP (Comprehensive Emergency Management Plan) may be found online at www.clallam.net/EmergencyManagement

These programs and personnel can be contacted through Clallam Fire District No. 3. An entire emergency response outline is presented by Clallam Firefighters and available to interested people in the community (Website: <https://ccfd3.org/community-outreach/disaster-preparedness>).



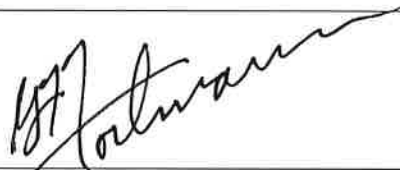

Sequim: CERT (Community Emergency Response Team) is a local emergency preparedness program. The SunLand points of contact for CERT are District Manager Brian Scott, and Scott Garner, lead water system operator. In addition, SunLand CERT members have created a PODS map for all of SunLand for purposes of Map Your Neighborhood (MYN) training.

The City of Sequim has a similar plan called "CEMP" (Comprehensive Emergency Management Plan) – website: <https://www.sequimwa.gov/851/Community-Emergency>

Plan Approval

As a demonstration of support for the emergency response plan, the District Manager and members of the Board of Commissioners have signed the document below. This indicates that they have reviewed and approve of the emergency response plan in its current form. In no way does this approval constitute responsibility in the event of an actual emergency.

Reference: Resolution 140 – SunLand Water District

Name/Title	Signature	Date
Brian Scott District Manager		7-19-22
Jim Larison President of the Board of Commissioners		19 July 2022
Gary Fortmann Sectary, Board of Commissioners		7-19-22
Allan Frank Commissioner		8-20-22

Record of Changes – Approval and Implementation

Change Number YR-XXXX	Date of Change MM/YYYY	Change/Summary/Sections Affected	Position Name/Initials

Record of Distribution

Agency/ Organization/ Department	Position Name	Date of Delivery MM/YYYY	Number of Copies/Format	Receipt, Review, & Acceptance
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Table of Contents

Preface	i
Plan Approval	iii
Record of Changes – Approval and Implementation	iv
Record of Distribution	v
Table of Contents	vi
SECTION 1. Emergency Response Mission and Goals	1
SECTION 2. System Information	2
SECTION 3. Chain of Command and Lines of Authority	3
SECTION 4. Events that Cause Emergencies	5
SECTION 5. Severity of Emergencies	6
SECTION 6. Emergency Notification	8
SECTION 7. Water Quality Sampling	10
SECTION 8. Effective Communication	12
SECTION 9. Vulnerability Assessment	13
SECTION 10. Response Actions for Specific Events	17
SECTION 11. Alternative Water Sources	29
SECTION 12. Curtailing Water Usage	33
SECTION 13. Returning to Normal Operation	34
SECTION 14. Training and Rehearsals	36

Appendices

APPENDIX A	Emergency Operations Procedures
APPENDIX B	One Call Now Emergency Procedures
APPENDIX C	Emergency Power Outage Procedures/Generator Failure
APPENDIX D	Trouble at Lower Reservoir
APPENDIX E	Trouble at Upper Reservoir
APPENDIX F	Trouble at Lift Station No. 1 (Main)
APPENDIX G	Trouble at Lift Station No. 2 (Fawnwood)
APPENDIX H	Trouble at Lift Station No. 3 (Taylor)
APPENDIX I	Trouble at Lift Station No. 4 (Highway)
APPENDIX J	Emergency Generator Planning
APPENDIX K	Maintaining Water Quality
APPENDIX L	Disinfection 1) Chlorination – Emergency Chemical Feed Pumps 2) Disinfection of Water Mains
APPENDIX M	Emergency Water Distribution – SWD Reservoir
APPENDIX N	Toilet Use in An Emergency

Section 1. Emergency Response Mission and Goals

This mission statement and associated goals are intended to help focus the SunLand Water District's emergency planning and response.

Mission statement for emergency response	In an emergency, the mission of the SunLand Water District is to protect the health of our customers by being prepared to respond immediately to a variety of events that may contaminate the water, disrupt our water supply or interrupt sewer service.
Goal 1	Be able to identify an emergency quickly and initiate timely and effective response action.
Goal 2	Be able to notify local, state, and federal agencies quickly so they can assist in the response, if necessary.
Goal 3	Protect public health by quickly being able to determine whether the water is unsafe to drink or use, or if there has been an occurrence affecting the efficient processing of wastewater. Notify customers of the situation immediately and effectively, and advise them of appropriate protective action.
Goal 4	Quickly respond and repair damages to minimize system down time.

Section 2. System Information

General information regarding the SunLand water system is below.

System ID Number	85260C
System Name and Addresses	<p><u>SunLand Water District – Sequim, WA 98382</u></p> <p><u>Main Office & Reservoir No. 2 (Lower)</u> 5762 Woodcock Road</p> <p><u>Water Reclamation Facility</u> 5733 Woodcock Road</p> <p><u>Reservoir No. 1 (Upper)</u> 185 Sunset Place</p> <p><u>Lift Station No. 1 (Main)</u> SE Corner of Woodcock & Cassalary</p> <p><u>Lift Station No. 2 (Fawnwood)</u> Cul-de-Sac Fawnwood Place</p> <p><u>Lift Station No. 3 (Taylor)</u> Across from 173 Taylor Blvd.</p> <p><u>Lift Station No. 4 (Highway)</u> N of Medsker off of Sequim-Dungeness Way</p>
Directions to the Main Office	<p>From Sequim, intersection of Washington St and Sequim Ave</p> <ul style="list-style-type: none"> • Take Sequim Ave No., becoming Sequim-Dungeness Way at Old Olympic Highway, for 2.5 miles • Turn Right on Woodcock Rd • Drive 0.5 miles on Woodcock Rd • 5762 will be on your Right, adjacent to the SunLand Owners Association (SLOA) RV Lot
Basic Description of System Facilities	<p>The SunLand water system has two 10-inch groundwater wells, two storage reservoirs, and two booster pump systems which supply water to the SunLand subdivision through approximately 11.1 miles of water mains. Well #1 is 250 feet deep and pumps to Reservoir #1 for 104,300 gallons of storage. Well #2 is 129 feet deep and pumps to Reservoir #2 for 130,300 gallons of storage. Maps of the distribution system are located in the Main Office.</p>
Population Served and Number of Service Connections	<ul style="list-style-type: none"> • 2,500 approximate population served • 938 total service connections
Name of System Owner	SunLand Subdivision
Primary Emergency Contact	<p>Brian Scott, Manager (360) 683-3905 Phone (360) 460-7721 Cell brian@SunLandwater.com</p>

Section 3. Chain of Command and Lines of Authority

The first step in an emergency will be notifying the person at the top of this list, as they will be in charge of the emergency response.

Name and Title	Responsibilities during an emergency	Contact Information
Brian Scott District Manager	Responsible for overall water system management and decision-making. <ul style="list-style-type: none"> • Manages the emergency. • Provides information to regulatory agencies, the public, and news media. • Approves all communication to external parties. 	(360) 683-3905 Phone (360) 460-7721 Cell brian@sunLandwater.com
WATER DISTRIBUTION SYSTEM		
Scott Garner Water Distribution System Operator	In charge of operating the water system. <ul style="list-style-type: none"> • Performs inspections, maintenance/repairs and sampling. • Relays critical information. • Assesses facilities. • Provides recommendations to the District Manager. 	(360) 775-5363 Cell scott@sunLandwater.com
Rocky Burbank Water Distribution System Operator	In charge of operating the water system. <ul style="list-style-type: none"> • Performs inspections, maintenance/repairs, and sampling. • Relays critical information. • Assesses facilities. • Provides recommendations to the District Manager. 	(360) 582-6739 Cell rocky@sunLandwater.com
Joe Beeson Utility/Maintenance Worker	Responsible for <ul style="list-style-type: none"> • On-site landscaping and maintenance of the District's office, reservoirs and facilities. • Installs, services and repairs the District's water and sewer facilities as directed. 	(360) 683-6584 Cell joe@sunlandwater.com

WATER RECLAMATION FACILITY		
Willy Burbank Water Reclamation Facility Superintendent	In charge of the SunLand Water Reclamation Facility (WRF). Assists with emergency repairs when absolutely needed.	(360) 683-3880 WRF (360) 477-5021 Cell willy@sunLandwater.com
Rich Sleeper Water Reclamation Facility Lead Operator	Performs day-to-day duties at the SunLand Water Reclamation Facility. Assists with emergency repairs when needed.	(360) 683-3880 WRF (360) 460-3805 Cell rich@sunLandwater.com
Pat Osborne Water Reclamation Facility Weekend Operator	Plant Operator – Weekends	360-683-3880 WRF 360-565-4418 Cell No email
DISTRICT OFFICE		
Judy Gamble Office Administrator	Responsible for office administrative functions in the office; billing and accounts receivable. <ul style="list-style-type: none"> • Receives phone calls and keeps a log of events. • Answers general questions as prescribed by the District. (The manager decides when to release additional information). 	(360) 683-3905 Phone (909) 214-6826 Cell (360) 477-4697 Home judy@sunLandwater.com
Karen Shay Bookkeeper	Responsible for administrative functions in the office; financial duties, accounts payable, etc. <ul style="list-style-type: none"> • Receives phone calls and keeps a log of events. • Answers general questions as prescribed by the District. The water system manager decides when to release additional information). 	(360)683-3905 Phone (206) 369-9731 Cell karen@sunLandwater.com
SunLand Water District Commissioners: Jim Larison President Gary Fortmann Secretary Al Frank Commissioner	<ul style="list-style-type: none"> • Facilitate Board actions that may be required in the emergency. • Provide support to all departments as necessary. 	(360) 681-5249 (Larison) com1@sunlandwater.com (360) 460-6688 (Fortmann) com2@sunlandwater.com (360) 250-8380 (Frank) com3@sunlandwater.com

Section 4. Events that Cause Emergencies

The events below may cause water system emergencies.

Type of event	Probability or risk (High, Medium, or Low)	Comments
Earthquake	Medium	A strong earthquake could cause major damages due to broken water mains, cracked well casing, power outages, and landslides.
Flood	Medium	System is in an area that is vulnerable to flooding.
High Winds	High	Could cause power outages.
Ice Storm	Low	Could cause power outages.
Wildfire	Low	Unlikely to happen in SunLand.
Vandalism	Low	Vandalism has occurred once in the past. Could cause contamination to the drinking water supply.
Terrorism	Low	SunLand is not a prime target for terrorists.
System Neglect	Low	Even though the water system is well maintained, there is always the possibility that something has been overlooked.
Cross Connection	Medium	Cross connection could cause water contamination. The SWD is currently implementing a Cross Connection Control Plan.
Construction Accident	Medium	There is still construction being undertaken in SunLand and the possibility of a construction crew breaking a water main.
Chemical Spill	Low	See Wellhead Protection Program.
Tsunami	Medium	A tsunami event could cause damage to SunLand.
House Fire	Medium	Suddenly opening a fire hydrant has the possibility to overwhelm the booster system and shut it down. Staff are alerted in this scenario by an alarm and will respond immediately.
Landslide	Medium	The northern sides of Hilltop Drive and Fairway Drive are susceptible to landslides. A landslide could be caused by broken water pipes or an earthquake.

Section 5. Severity of Emergencies

System personnel will collaborate when determining the severity of an incident, but the person in charge of the emergency will make the ultimate decision. The information for making the decision will accumulate over time, and may result in changing the severity assessment.

The severity assessment will be communicated immediately to all those dealing with the emergency, via cell phone or verbally. *(See Appendix A for SWD Emergency Procedures.)*

<p>Level 1 emergency (Routine Emergency)</p>	<p>The SunLand Water District considers the following as Level 1 emergencies:</p> <ul style="list-style-type: none"> • Distribution line breaks. • Short power outages. • Minor mechanical problems in pump houses. • Other minor situations unlikely to jeopardize public health. <p>Level 1 emergencies can usually be resolved within 24 hours.</p>
<p>Level 2 emergency (Minor Emergency)</p>	<p>The SunLand Water District considers the following as Level 2 emergencies:</p> <ul style="list-style-type: none"> • Supply disruption, such as transmission main-line break, pump failure with a potential for backflow, and loss of pressure. • Storage is not adequate to handle disruption in supply. • An initial positive coliform or E. coli sample. • An initial primary chemical contaminant sample. • A minor act of vandalism. <p>Level 2 emergencies can usually be resolved within 72 hours.</p>
<p>Level 3 emergency (Significant Emergency)</p>	<p>The SunLand Water District considers the following as Level 3 emergencies:</p> <ul style="list-style-type: none"> • An E. coli MCL violation occurs, requiring immediate consideration of a health advisory notice to customers. • A confirmed sample of another primary contaminant requiring immediate consideration of a health advisory notice to customers. • A major line break or other system failure that results in a water shortage or requires the system to shut down. • Vandalism or a terrorist threat, such as intrusion or damage to a primary facility. • An immediate threat to public health of the customers and an advisory is required. • Abrupt decline in source capacity. <p>Resolving Level 3 emergencies may take longer than 72 hours.</p>

Level 4 emergency (Catastrophic Disaster / Major Emergency)	The SunLand Water District considers the following as Level 4 emergencies: <ul style="list-style-type: none">• Earthquake shuts the system down or affects sources, lines, and so on.• Act of terrorism possibly contaminating the water system with biological or chemical agents.• Flood that infiltrates system facilities and sources.• Storm that significantly damages the power supply, water system facilities, and/or transportation corridors important to maintaining the system.
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Section 6. Emergency Notification

Notification list

Clallam County Fire District No. 3 Station 34	(360) 683-4242
Clallam County Health Department	(360) 417-2258
Clallam County Sheriff's Office	(360) 417-2459
Clallam County Water Laboratory	(360) 417-2334
KONP Radio Station	info@konp.com (360) 457-1450
KSQM Radio Station	email@ksqmf.com (360) 681-0701 (360) 670-1073
Olympic Ambulance	(360) 681-4882
Sequim Water Department	(360) 683-4139 Main
Sequim Water Utilities Manager, Pete Tjemsland	(360) 912-0256
Spectra Laboratories	(360) 779-5141
WA DOH Office of Drinking Water	(360) 236-3030 Daytime (877) 481-4901 Emergency
WA DOH Regional Engineer, Jocelyne Gray, P.E.	(360) 236-3034
WA DOH Regional Manager, Andy Anderson, P.E.	(360) 236-3024
Sequim Public Works	(360) 683-3908
Sequim Sewer Plant John Christenson	360-912-7060
WARN Local Emergency Management	Call Sheriff's Dispatch (360) 417-2459

Service and repair notification list

Clallam County PUD	(360) 452-9771 Main (360) 477-5730 Troubleshooting 1 (360) 565-3523 Troubleshooting 2
D&K Equipment Rental	(360) 683-1808
Denny Secor (excavating)	(360) 808 2447 Cell
Jamestown Excavating	(360) 460-2837 John Kertis Cell
Oasis Well Drilling	(360) 460 0820 Keith Winter Cell
Olympic Sewer and Drain Cleaning	(360) 683-9820
Olympic Springs Water	(360) 683-1285
Straits Electric	(360) 452-9104 Main (360) 460-0074 JT Cell (Emergency)

Hollabaugh Brothers & Associates PRV Expert Mike Witzel (sales)	Office (503) 238-0313 mwitzel@hbarep.com
RJ Services (water ditch vacuum)	360-457-1420 360-460-9070 cell
Evergreen Rural Water of Washington	360-462-9287 phone 360-560-2782 cell
Yaskawa (technical support for VFD drives)	1-800-927-5292 www.yaskawa.com
Taurus Power & Controls (programming & support for VFD drives) Randy Rumley	1-425-656-4170 1-206-660-7358 cell
Jesse Gordon (top generator mechanic)	360-775-7368 cell
Grundfos Matt Gjerstad	1-206-730-0539
Core & Main James Pullen	1-253-545-1138
Evolution Controls (SCADA System @ WRF) Al Friedli	1-425-359-5322

Section 7. Water Quality Sampling

If the SunLand Water District suspects contamination of the drinking water, we will notify and work with the State and local health officials to identify the testing required. It is our goal to test the water quickly and accurately to prevent illness or death.

Washington State Department of Health Office of Drinking Water Southwest Drinking Water Operations 243 Israel Road S.E. 2nd floor Tumwater, WA 98501 (360) 236-3100 or (800) 521-0323	
WA DOH Regional Manager Andy Anderson, P.E. (360) 236-3024	WA DOH Regional Engineer Jocelyne Gray, P.E. (360) 236-3034
Clallam County Health and Human Services Environmental Health – Drinking Water Courthouse, Room 130 223 East 4 th Street Port Angeles, WA 98362 (360) 417-2258	

Clallam County Water Lab Courthouse, Room 130 223 East 4 th Street Port Angeles, WA 98362 (360) 417-2334	Spectra Laboratories 26276 Twelve Trees Lane Suite C Poulsbo, WA 98370 (360) 779-5141
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Sampling parameter	Are procedures in place?	Basic sampling steps and/or comments
Coliform Bacteria	Yes	Sampling bottles are always kept on hand. The Clallam county laboratory will be used Monday-Wednesday (8:00am-3:30pm) and Thursday (8:00am-Noon.)
Heterotrophic Plate Count (HPC)	No	Spectra Labs in Poulsbo will handle the samples, sampling bottles will need to be picked up from the lab.
Chlorine Residual	No	The water in the SunLand subdivision is not chlorinated.
Chlorine Demand	No	The water in the SunLand subdivision is not chlorinated.

Nitrate or Nitrite	Yes	Spectra Labs in Poulsbo will handle the samples, sampling bottles will need to be picked up from the lab.
Total Organic Carbon (TOC)	No	Spectra Labs in Poulsbo will handle the samples, sampling bottles will need to be picked up from the lab.
Total Halogenated Organic Carbon (TOX)	No	The water in the SunLand subdivision is not chlorinated.
Cyanide	No	Spectra Labs in Poulsbo will handle the samples, sampling bottles will need to be picked up from the lab.
Other sampling as required	No	Spectra Labs in Poulsbo will handle the samples, sampling bottles will need to be picked up from the lab.

Section 8. Effective Communication

Communication with customers, the news media, and the public is a critical part of the SunLand Water District's emergency response. A designated spokesperson will effectively relay messages and information as determined by the person in charge of the emergency. (See Appendix B for the "OneCallNow" emergency message procedure utilized by the SWD.)

Spokesperson	Alternate 1	Alternate 2
Brian Scott, Manager	Judy Gamble, Office Administrator	Karen Shay, Bookkeeper

Key Messages

This is a list of possible messages to be delivered. They will be used at the discretion of the person in charge of the emergency, and updated as the emergency develops:

- We are taking this incident seriously and doing everything we can to resolve it.
- Our primary concern is protecting our customers' health.
- Another important concern is keeping the system operational and preventing damage.
- What we know right now is _____
- The information we have is incomplete. We will keep you informed as soon as we know more.
- We have contacted State and local officials to help us respond effectively.
- If you think you may be ill or need medical advice, contact a physician.
- We are sampling the water and doing tests to determine whether there is contamination.

Section 9. Vulnerability Assessment

❖ Water System Components – Wells/Reservoirs

➤ Well #1 – Upper

▪ Description and condition

- Well #1 has a 10-inch casing and is 250 feet deep, with the well pump set at 210 feet. The well and appurtenances are located in an enclosure adjacent to Reservoir #1. The controls for Well #1 are located in the building just behind the enclosure. Both the enclosure and adjacent building are locked with padlocks. The buildings are in good condition. A generator near to the front of Reservoir #1 supplies power to the well in the case of a power interruption.

▪ Vulnerability

- Well #1 is drilled to a depth of 137 feet below sea level and is less than 1.5 miles from the Strait of Juan de Fuca. There is the possibility for saltwater intrusion in the case of over-pumping Wells #1 or #2 or from nearby wells not operated by the SunLand Water District.

▪ Improvements or mitigating actions

- Continue to follow the wellhead protection program. Continue to monitor well water levels and avoid over-pumping the well.

▪ Security improvements

- The upper reservoir does not currently have cameras or a break-in alarm, but is completely surrounded by neighboring households and in a high visibility area. An internet connection to this site would enable security cams, and some degree of SCADA communications. It is well lit at night with LED lighting.

➤ Well #2 – Lower

▪ Description and condition

- Well #2 has a 10-inch casing and is 129 feet deep, with the well pump set at 80 feet. The well and appurtenances are located inside the building for Reservoir #2. The building is accessed via an exterior steel door with a bolt-lock. There is also a roll-up garage door that is locked from the inside. The building is in good condition. A generator in an adjacent building supplies power to the well in the case of a power interruption.

▪ Vulnerability

- Well #2 is drilled to a depth of 93 feet below sea level and is less than 1 mile from the Strait of Juan de Fuca. There is the possibility for saltwater intrusion in the case of over-pumping Wells #1 or #2 or from nearby wells not operated by the SunLand Water District. The building is fairly secure and there are lights shining on the entrances at night.

- Cameras are present at the Lower Reservoir and Motion Detection Security is in place at the main office and in the barn area. The barn motion detector will soon be replaced with a pet smart detector to avoid false alarms.
 - **Improvements or mitigating actions**
 - Continue to follow the wellhead protection program. Continue to monitor well water levels and avoid over-pumping the well.
- **Reservoir #1 – Upper**
- **Description and condition**
 - Reservoir #1 holds 104,300 gallons of water split among 4 different cells and a center holding tank. Access to the reservoir is through a keyed door with a deadbolt. There is also a roll-up garage door that is locked from the inside. The building is in good condition. 3 booster pumps and controls are located in the pump room within the reservoir. A generator near to the front of Reservoir #1 supplies power in the case of a power interruption.
 - **Improvements or mitigating actions**
 - N/A
- **Reservoir #2 – Lower**
- **Description and condition**
 - Reservoir #2 holds 130,300 gallons of water split among 4 different cells and a center holding tank. Access to the reservoir is through a keyed door with a deadbolt. There is also a roll-up garage door that is locked from the inside. The building is in good condition. 4 booster pumps and controls are located in the pump room within the reservoir. A generator in an adjacent building supplies power in the case of a power interruption.
 - **Vulnerability**
 - The building is fairly secure and there are lights shining on the entrances at night.
 - **Improvements or mitigating actions**
 - N/A
 - **Security improvements**
 - A security camera is in place. The office, reservoir, and barn are well lit with LED lighting.

❖ Water Reclamation Facility – Sewer System

➤ Collection System

▪ Description and condition

- PVC gravity sewer with manholes and PVC pressure sewer pipe.

▪ Vulnerability

- Line breaks due to construction activities; plugging, root intrusion; excessive infiltration and inflow.

▪ Improvements or Mitigating Actions

- Accurate records for locates; regular video inspection and cleaning; regularly exercise valves.

▪ Security Improvements

- None

➤ Sewage Pumping

▪ Description and condition

- Four (4) sewer lift stations and a transfer pump station. Alarm lights. Auto dialer and standby power??

▪ Vulnerability

- Power failure; pump failure; electrical/control system failure. Extended outages or problems could result in overflows.

▪ Improvements or Mitigating Actions

- Regularly monitor pump performance and run times; portable generator rental if needed.

▪ Security Improvements

- Keep electrical/control panels and wet well hatches locked.

➤ Treatment

▪ Description and condition

- Pre-equalization aerated basin (300,000 gallons) 2 SBRs, 2 sludge digesters, 2 Aqua Disk filters, 2 final effluent lagoons (900,000 gallons); 1 bio-solid lagoon (100,000 gallons); hypochloride disinfection system.

- **Vulnerability**
 - Lagoon overflow; liner damage; aeration equipment failure; disinfection equipment failure.
- **Improvements or Mitigating Actions**
 - Manage irrigation to maintain adequate lagoon capacity through the winter seepage testing; monitor aeration performance.
- **Security Improvements**
 - Maintain chain link fencing around the lagoons; keep gates locked
- **Effluent Disposal**
 - **Description and condition**
 - Irrigation pump station and ten acres of spray field irrigation area.
 - **Vulnerability**
 - Power failure; pump failure; electrical/control system failure; irrigation pipe or sprinkler damage
 - **Improvements or Mitigating Actions**
 - Winterize irrigation system; regularly monitor pump performance; regularly inspect irrigation system
 - **Security Improvements**
 - Maintain fencing around the irrigation site. Keep irrigation building locked.
- **Supervisory Control & Data Acquisition (SCADA) System**
 - **Description and condition**
 - The SCADA system located at the Water Reclamation Facility (WRF) is used to monitor the 4 lift stations and 2 reservoirs in SunLand. The system is mainly used to send out alarms to water and sewer personnel and cannot be used to control the lift stations or reservoirs.
 - **Vulnerability**
 - Power and/or WIFI interruption.
 - **Improvements or mitigating actions**
 - N/A
 - **Security improvements**
 - Upgraded SCADA system has been installed and is operational.

Section 10. Response Actions for Specific Events

WATER DISTRIBUTION SYSTEM

Event: Power Outage

Assessment	The SunLand water system is vulnerable to power outages, experiencing an average of three outages per year that last several hours. There are backup generators at both Reservoir #1 and Reservoir #2 (as well as at Lift Station #1 and Lift Station #3). <i>See Appendix C for Emergency Power Outage Procedures for the Water Distribution System and the Water Reclamation Facility.</i>
Immediate actions	<ul style="list-style-type: none"> • Verify that the generators at Reservoir #1 and Reservoir #2 are running and the power is on in the buildings. • Verify proper operation of the reservoirs. • Check the fuel level in the generators. • Add fuel as necessary.
Notifications	<ul style="list-style-type: none"> • Notify customers to conserve water until power is restored.
Follow-up actions	<ul style="list-style-type: none"> • Verify that power is restored. • Verify that generators have stopped running. The Upper Reservoir has a cool down time for the generator. • Verify proper operation of the reservoirs. • Check the fuel level in the generators. • Add fuel to generators as necessary.

Event: Water Main Line Break

Assessment	The SunLand water system is vulnerable to line breaks. Most of the water mains are asbestos cement and nearing their end-of-life date. Many events may cause line breaks, including earthquakes and construction activity. In the event of a main break, the main will be repaired as quickly and safely as possible.
Immediate actions	<ul style="list-style-type: none"> • Determine location of line break. • Isolate line break with street valves to affect the smallest area possible. • Verify proper operation of the reservoirs. • Excavate area around line break to completely expose affected area and allow room for repair. • Repair line break. • Test repaired section for leaks. • Flush main at nearest hydrant.

	<ul style="list-style-type: none"> • Refer to Disinfection Section of this Emergency Manual for Line disinfections. • Return system to normal operation (verify all valves are now open.)
Notifications	<p>See Section 6. Emergency Notification</p> <ul style="list-style-type: none"> • Notify customers during emergency to let them know that the water district is aware of the issue and working to correct the problem. • In the event that a boil-water notice is required, notify customers and local and state health officials.
Follow-up actions	<ul style="list-style-type: none"> • Backfill hole and restore area around line break.

Event: Vandalism or Terrorist Attack

Assessment	<p>The SunLand water system is vulnerable to acts of vandalism. There is one recorded break-in of the barn, workshop area, and lower reservoir. In the event of a break-in, the reservoir will be immediately taken offline and all water stored will be dumped. Following this, the reservoir will be cleaned and returned to service.</p>
Immediate actions	<ul style="list-style-type: none"> • Assess the situation, determine the severity of the damage. • Did anyone gain access to the interior of the reservoir? If so, shut down reservoir and place offline; discard all of the water in storage.
Notifications	<ul style="list-style-type: none"> • Notify customers to conserve water until reservoir is back online. • Notify local and state health officials of possible water contamination and steps taken to rectify situation.
Follow-up actions	<ul style="list-style-type: none"> • Clean reservoir cells properly. • Refill reservoir. • Sample finished water and test accordingly. • Place reservoir back online.

Event: Earthquake

Assessment	<p>SunLand is vulnerable to earthquakes. A strong earthquake could shatter water mains, crack well casings, and cause major power outages. The water system could be shut down for days or weeks while repairs are being made. In the event of an earthquake: the damage will be assessed, repairs will be prioritized and completed, and the system will be returned to normal operation as quickly and safely as possible.</p>
Immediate actions	<ul style="list-style-type: none"> • Assess the situation and any damage to the water system

	<ul style="list-style-type: none"> • Prioritize repairs in the order of impact to customers • Follow Power outage guidelines • Follow Water main line break guidelines • Sample system as necessary (well casings may be cracked and allowing groundwater infiltration.)
Notifications	<ul style="list-style-type: none"> • Notify customers and local and state health officials of situation and emergency response plan. • Notify WARN of needs and availabilities (county sheriff's dispatch.)
Follow-up actions	<ul style="list-style-type: none"> • Notify customers and local and state health officials once all repair work is complete.

Event : Well Pump Failure

Assessment	The SunLand water system has two separate wells that are tied into two separate reservoirs. This redundancy will be helpful in the event of a well pump failure. If one well needs to be taken offline, the other is fully capable of providing enough water for the system.
Immediate actions	<ul style="list-style-type: none"> • Shut down affected well and reservoir. • Verify that unaffected well and reservoir are operating properly. • Drain affected reservoir so that water does not stagnate. • Look up well pump specifications.
Notifications	<ul style="list-style-type: none"> • Contact well drilling company to replace pump. • Notify electrician if necessary. • Notify customers to save water during emergency.
Follow-up actions	<ul style="list-style-type: none"> • Clean affected reservoir and place back online.

Event: Microbial (coliform, E. coli) Contamination

Assessment	The SunLand water system is not disinfected and is therefore vulnerable to microbial contamination. Following an initial positive result from the County water lab, five more samples (the initial sample site, upstream, downstream, and both sources) have to be taken and submitted within 24 hours. If any of these five samples test positive for coliform contamination, then the water system as a whole is considered contaminated.
Immediate actions	<ul style="list-style-type: none"> • Determine the source of contamination: thoroughly inspect each reservoir; sample different points in the water system to narrow down affected area and possible source. • Remove/repair source of contamination.
Notifications	<ul style="list-style-type: none"> • Notify customers to boil their water.

	<ul style="list-style-type: none"> • Notify state and local health officials of the water emergency.
Follow-up actions	<ul style="list-style-type: none"> • Take necessary steps to ensure emergency does not happen again.

Event: Chemical Contamination

Assessment	The testing schedule for chemicals is determined by the WA DOH and our own vigilance.
Immediate actions	<ul style="list-style-type: none"> • Determine the source of contamination: thoroughly inspect each reservoir; sample different points in the water system to narrow down affected area and possible source. • Remove/repair source of contamination.
Notifications	<ul style="list-style-type: none"> • Notify customers of emergency, inform them to stop drinking the water immediately. • Notify state and local health officials of emergency.
Follow-up actions	<ul style="list-style-type: none"> • Take necessary steps to ensure emergency does not happen again.

Event: Reduction or Loss of Water in Well(s)

Assessment	The well water levels in SunLand are monitored on a daily basis. In the event of a reduction of the water in a well, the level will need to be monitored to ensure that it does not drop any further. Salinity levels will also need to be monitored to ensure that sea water is not intruding. In the event of a total loss of water in a well, take that well offline and begin planning for a new well to be drilled. The SunLand water system has two groundwater wells. They are both currently stable and able to individually support the entire community. If one well needs to be taken offline, the other is fully capable of providing enough water for the system.
Immediate actions	Determine if the well water level is too low to pump anymore, if so: <ul style="list-style-type: none"> • Take the well offline and drain the reservoir. • Contact an engineering firm and/or well driller to improve the existing well or find a new well. • Notify City of Sequim because they are upstream and have junior water rights.
Notifications	<ul style="list-style-type: none"> • Notify customers to conserve water during the emergency. • Notify state and local health officials of emergency and steps being taken to work through it.
Follow-up actions	<ul style="list-style-type: none"> • Monitor improved or replaced well.

Event: Drought

Assessment	In the case of a drought, steps must be taken to conserve water and maintain an adequate supply for our customers. All irrigation activities should cease and customers should ration as much as possible.
Immediate actions	<ul style="list-style-type: none"> • Monitor water levels in wells.
Notifications	<ul style="list-style-type: none"> • Notify customers to conserve water and stop irrigating.
Follow-up actions	<ul style="list-style-type: none"> • Communicate with regional water users.

Event: Flood

Assessment	In the event of a flood, the water system as a whole should be inspected for damage. Water mains may have shifted and broken and the wells may have been infiltrated with groundwater.
Immediate actions	<ul style="list-style-type: none"> • Locate and repair any water main breaks as outlined in Event: Water main line break. • Monitor well #2 for saltwater intrusion. <p>If the water level has surpassed the height of the well casing:</p> <ul style="list-style-type: none"> • Take the well offline. • Sample the well for bacterial contamination.
Notifications	<ul style="list-style-type: none"> • Send customers a boil water notice if the water level exceeded the casing height. • Notify state and local health officials if the water level exceeded the casing height. • Notify customers of any repairs that need to be made.
Follow-up actions	<ul style="list-style-type: none"> • N/A

Event: Hazardous materials spill in vicinity of sources or system lines

Assessment	In the event of a hazardous material spill, shut down affected source immediately and notify customers to not drink the water. Perform testing on the water to verify contamination. Do not place source back online or allow customers to drink water until all tests come back negative for contamination
Immediate actions	<ul style="list-style-type: none"> • Shut down affected source. • Drain affected reservoir. • Flush affected source. • Test the water for contamination --various places in the system.
Notifications	<ul style="list-style-type: none"> • Notify customers to not drink the water. • Notify state and local health officials of emergency and steps being taken to rectify situation.
Follow-up actions	<ul style="list-style-type: none"> • Take steps to ensure emergency does not happen again.

Event: Electronic Equipment Failure

Assessment	In the event of electronic equipment failure, contact the local electrician and/or equipment suppliers representative to repair said equipment. The SunLand water system has two groundwater wells and reservoirs. They are both currently stable and able to individually support the entire community. If one well/reservoir needs to be taken offline, the other is fully capable of providing enough water for the system.
Immediate actions	<ul style="list-style-type: none">• Shut down affected well/reservoir.• If shutdown will last longer than 48 hours, drain reservoir cells.• Verify that unaffected reservoir is operational.
Notifications	<ul style="list-style-type: none">• Contact local electrician and/or equipment suppliers representative.• Notify customers to conserve water during emergency.
Follow-up actions	<ul style="list-style-type: none">• Clean reservoir and place back online.

Event: Cyber Attack

Assessment	The SunLand water system is not vulnerable to a cyber attack. This is because the SCADA system does not allow for control of the water system, it is simply used for alarms and status. The only worrying information that can be gleaned from the mission control SCADA is well/reservoir locations. In the event of a cyber attack, follow protocol for Vandalism or Terrorist Attack as well as the steps outlined below.
Immediate actions	<ul style="list-style-type: none">• Follow protocol for Vandalism or Terrorist Attack.• Login to mission control SCADA and change the password.
Notifications	<ul style="list-style-type: none">• Notify mission control of security breach.
Follow-up actions	<ul style="list-style-type: none">• N/A

WASTE WATER MANAGEMENT

Event: Power Outage

Assessment	Treatment and pumping components are susceptible to outages due to thunder storms, high winds and winter weather. Lift Stations are most critical with limited storage available during outages. Lift Stations #1 and #3 and the Water Reclamation Facility have backup generators. <i>(See Appendix C for Emergency Power Outage Procedures for the Water Distribution System and Waste Water Management.)</i>
Immediate actions	<ul style="list-style-type: none"> • Assess potential outage duration. • Monitor lift station wet wells; • Verify that backup generators are running at the WRF and Lift Stations #1 and #3 and power is on in all the buildings. • Inform customers to cut back on water usage until power is restored.
Notifications	<ul style="list-style-type: none"> • Power Company (PUD); SunLand Owners Association; customers. (See Section 6 for Emergency Notifications.)
Follow-up actions	<ul style="list-style-type: none"> • Verify that power is restored. • Verify that generators have stopped running at the WRF and the Lift Stations. (Note: Lift Stations #1 and #3 have a cool down time for their generators.) • Turn off and disconnect backup generator(s); return all systems to general power supply; inspect pumping facilities for normal operation. • Verify proper operation of the Lift Stations. • Check the fuel level in the generators and add fuel as necessary.

Event: Collection System Blockage or Line Break

Assessment	Collection line breaks will most likely occur due to construction activities. Blockages mostly occur from root intrusion or solids buildup.
Immediate actions	<ul style="list-style-type: none"> • Identify the location; on pressure mains isolate a break using the nearest available isolation valves. • Contact contractor(s) for repairs and/or clearing a blockage. • Isolate from public areas any release of untreated wastewater.
Notifications	<ul style="list-style-type: none"> • If a discharge of untreated wastewater has occurred, notify DOE within 24 hours. • Post caution signs on any impacted waterways. • Notify any customers impacted by the break or blockage. • Notify any potentially impacted customers.

Follow-up actions	<ul style="list-style-type: none"> • Work with DOE and the local health department to monitor the situation. • Coordinate with public health officials for sampling, testing and monitoring of impacted surface waters until safe for public contact.
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Event: Collection System Pumping Facilities Failure

Assessment	Determine the cause of the failure. There are two (2) pumps at each lift station, so failure of both is unlikely. The most like cause for failure of both pumps would be due to a power outage or electrical/control failure.
Immediate actions	<ul style="list-style-type: none"> • If one pump fails, isolate for repair or replacement, relying on the 2nd pump. • If both pumps fail, shut down, relying on wet well and line storage for short term repairs and/or pumper trucks for longer term repairs.
Notifications	<ul style="list-style-type: none"> • Notify customers if pumps are down for more than 24 hours to cut back on water usage until repairs are completed. • Follow Item B procedures above if there was a release of untreated wastewater.
Follow-up actions	<ul style="list-style-type: none"> • Notify customers when repairs are completed and service is back to normal. • Follow Collection System or Line Break procedures above if there was a release of untreated wastewater.

Event: Water Reclamation Facility Treatment System Failure

Assessment	Determine the cause of the failure. Most likely failures to the treatment system would involve transfer pump failure; aeration system failure; chemical feed pump failures; or control system failure.
Immediate actions	<ul style="list-style-type: none"> • Available lagoon storage and system redundancies should allow time for adequate repairs without interruption of service of discharge of untreated wastewater.
Notifications	<ul style="list-style-type: none"> • Notify DOE within 24 hours of becoming aware of any Permit non-compliance or unauthorized discharge which may endanger public health or the environment. • Follow DOE reporting requirements.
Follow-up actions	<ul style="list-style-type: none"> • Provide a written follow-up to the DOE as specified in reporting requirements

Event: Effluent Disposal Failure

Assessment	Determine the cause of the failure. Most likely failures to the treatment system would involve irrigation pump failure; irrigation or sprinkler piping beak; or weather conditions that would prohibit irrigation.
Immediate actions	<ul style="list-style-type: none"> • Available lagoon storage and system redundancies should allow time for adequate repairs without interruption of service or unpermitted discharge of effluent.
Notifications	<ul style="list-style-type: none"> • Notify DOE within 24 hours of becoming aware of any Permit non-compliance or unauthorized discharge which may endanger public health or the environment. • Follow DOE reporting requirements.
Follow-up actions	<ul style="list-style-type: none"> • Provide a written follow-up to the DOE as specified in reporting requirements

Event: Chemical Contamination

Assessment	Chemical contamination would most likely occur due to illegal dumping of chemicals into the sewer system. A sodium hypochlorite spill or malfunction of the disinfection chemical feed system could also be a cause.
Immediate actions	<ul style="list-style-type: none"> • Identify the source of the contamination and eliminate or isolate if possible; for hazardous spills call 911 and seek guidance and take action as directed by emergency services.
Notifications	<ul style="list-style-type: none"> • Notify DOE within 24 hours if the incident is a danger to public health or the environment. • Notify customers and the public in coordination with the DOE and emergency services.
Follow-up actions	<ul style="list-style-type: none"> • Once informed that conditions are safe, assess the damage and make any needed repairs. • Update the Emergency Response Plan, if needed.

Event: Vandalism or Terrorist Threat

Assessment	Operator should immediately assess the severity, extent and potential risk to public health due to the incident.
Immediate actions	<ul style="list-style-type: none"> • Call the County Sheriff to report the incident. • Notify the DOE and other agencies as appropriate. • Assess the damage and make necessary repairs. • Provide additional protection; mobilize staff and volunteers to watch for future actions.

Notifications	<ul style="list-style-type: none"> • See above. Also follow DOE public notification requirements if the incident causes contamination or violation of permit requirements.
Follow-up actions	<ul style="list-style-type: none"> • Complete repairs and sampling and testing as appropriate. • Implement additional security procedures and update the Emergency Response Plan as needed.

Event: Flood

Assessment	FEMA mapping does not show the SunLand area but Sequim-Dungeness area is historical in danger of flooding from the Dungeness River.
Immediate actions	<ul style="list-style-type: none"> • After flood waters have receded, assess the damage and make any needed repairs.
Notifications	<ul style="list-style-type: none"> • Notify customers and the DOE of any water quality or contamination concerns as a result of flooding using DOE's Public Notification Procedures.
Follow-up actions	<ul style="list-style-type: none"> • Notify customers when sewer service is back to normal.

Event: Earthquake

Assessment	Operator should assess the treatment system, land application system and collection system to determine severity of damage from the incident.
Immediate actions	<ul style="list-style-type: none"> • Inspect all infrastructure for damage or evidence of release of wastewater. • Check for power and ensure proper function of all equipment.
Notifications	<ul style="list-style-type: none"> • Notify customers and the DOE of any water quality or contamination concerns as a result of the incident. • Follow above procedures for Collection System Blockage or Line Break if there was a release of untreated wastewater.
Follow-up actions	<ul style="list-style-type: none"> • Complete any repairs and follow Line Break procedures above if there was a release of untreated wastewater.

Event: Hazardous Materials Spill Into Collection System

Assessment	Assessment should be completed by emergency services personnel, including the Clallam County Sheriff and Clallam County Fire Department.
Immediate actions	<ul style="list-style-type: none"> • See guidance from and take action as directed by emergency services.

Notifications	<ul style="list-style-type: none"> • Call 911 to report a hazardous spill. Notify customers and the DOE of any water quality or contamination concerns as a result of the incident.
Follow-up actions	<ul style="list-style-type: none"> • Once informed that conditions are safe, assess the damage and make any needed repairs • Assess potential impact to the treatment system and coordinate with DOE for implementation of procedures to maintain Permit Compliance.

Event: Electronic Equipment Failure

Assessment	Operator should determine the cause of the failure first by checking the monitoring and alarm system for faults.
Immediate actions	<ul style="list-style-type: none"> • Contact an electrician or other contractor to fix the electrical and control system. • Operate the system manually during repairs.
Notifications	<ul style="list-style-type: none"> • Contact customers if control failures will extend over a lengthy time and/or could impact sewer service. • Follow procedures above for Collection System or Line Breaks if the equipment failure resulted in a release of untreated wastewater.
Follow-up actions	<ul style="list-style-type: none"> • Complete any repairs. • If customers were notified, let them know that service is back to normal.

Event: Cyber Attack

Assessment	Operator should determine the cause and severity of the attack. Attack is unlikely since control system is not web-based.
Immediate actions	<ul style="list-style-type: none"> • Direct any computer system repairs as needed; repair hardware components if necessary; replace software as necessary; install improved electronic security as necessary.
Notifications	<ul style="list-style-type: none"> • Contact customers and the DOE as necessary, depending on the extent of disruption to service. • Notify customers if their personal information was compromised.
Follow-up actions	<ul style="list-style-type: none"> • Complete any repairs. • If customers were notified, let them know that service is back to normal.

Event: Fire

Assessment	Forest land surrounds the treatment system, so wildfire could pose a treat to system infrastructure and operation. The irrigation pump station, storage building and District office are also susceptible to potential structure fire.
Immediate actions	<ul style="list-style-type: none">• Call 911 to report a structure or wildfire.• Seek guidance from and take action as directed by emergency services.
Notifications	<ul style="list-style-type: none">• Notify customers and the DOE of any water quality, contamination or interruption of service concerns as a result of the incident.• Follow Line Break procedures above if there was a release of untreated wastewater.
Follow-up actions	<ul style="list-style-type: none">• Once informed that conditions are safe, assess the damage and make any needed repairs.• Assess potential impact to the treatment system and coordinate with the DOE for implementation of procedures to maintain Permit Compliance.

Section 11. Alternative Water Sources

PREPAREDNESS

The CDC (*Centers for Disease Control and Prevention*) recommends that each person should have at least one gallon of water per day in storage. You should store a minimum of three days' worth of water with a goal of two weeks' worth, if possible. This recommended amount of water is only for survival. Pregnant women and those with certain medical conditions should store more than the single gallon a day recommendation. The CDC suggests that half a gallon is for drinking and the other half is for hygiene.

Back-up Water Supply: Ideally, a back-up water supply would provide 25 gallons of water per day for each person in order to maintain essential functions such as food preparation, hand washing, bathing, cleaning, dishwashing, laundry and disposal of bodily waste (see below) whenever the primary water source is disrupted for more than one day.

ALTERNATIVE WATER SOURCES

All public water systems should have a plan to provide a safe alternative water supply during an emergency if it becomes necessary. In the event of a major catastrophe, the water supply for the SunLand water system could be compromised by such as saltwater intrusion, casing ruptures, contamination, pump failure, and others. Back-up water sources could include an intertie to an adjacent system, a backup well or, as a last resort, a water distributor.

- The nearest water systems to SunLand are the City of Sequim, Iliad, Inc. (formerly Sunland Shores,) and possibly the PUD. At the present time, there has been no meetings between these entities to determine the feasibility of tying into their water systems.
- There is no back-up well currently available to the SunLand water system. The SunLand Golf and Country Club (SGCC) golf course operates a non-potable well on Hurricane Ridge Drive. It is possible that this well could be converted to potable water and tied in as a back-up to the existing Reservoir No. 2, but this option has not been explored as yet with the SGCC.
- Olympic Springs is a local water distributor and could supply bottled water to be handed out to our customers should the water in SunLand become undrinkable. Alternatively, if necessary, the SWD could distribute water procured from its wells using clean and empty bottles which could be stored in the spare room in Reservoir No. 1 until needed.

BOIL WATER NOTICE

A boil water notice must accompany any water distributed outside of normal water delivery methods and SWD operating procedures. This protects the consumer's health and protects the District from any liability due to illness associated with water distributed on an emergency basis. If there is flooding or an earthquake, water obtained from any source should be boiled before drinking until otherwise notified by authorities. This applies to all emergency water sources, whether from a stream, a purifier, or pumped from SWD wells.

(Tip: Consumers are encouraged to have relatively inexpensive stainless camp stove kits available for boiling water.)

WATER PURIFICATION

SunLand's water consumers might consider ownership of their own water purification devices. The Pacific Northwest is gifted with streams and rivers for a water source. Purification systems, with water purification tanks, can hold 3.5 gallons of water and can produce as much each day and are relatively inexpensive. In addition, the filters for these products have many uses and are washable.

SWD EMERGENCY SOURCE FOR DRINKING WATER

Water can be pumped from the wellhead at the Upper Reservoir (185 Sunset Place). At the lowest "fill level", approximately 60-70 thousand gallons of water will be present in the reservoir cells. If the reservoir generator is functioning, the electric pump can be used to pump water from the reservoir. The generator at the upper reservoir uses approximately 3 gallons per hour to run and usually holds around 200 gallons at any given time.

In the event there is no power or fuel and the generator is not operational, a hand pump, with some modification, could be used to pump water from the wellhead.

The SWD has purchased two (2) 275-gallon "Tote" water containers that are designed for storage of potable water. These Totes would be filled with the water pumped from the Upper Reservoir, installed on a trailer and plumbed to eight water spigots. For gravity feed purposes, the trailer will be placed at the Upper Reservoir by the wellhead. The elevation from the Totes to the spigots will serve to gravity-feed the water from the Totes to the spigots. Potable water hoses will be used to achieve the gravity drop needed. SunLand residents would bring their own containers to the Reservoir to be filled. *(See Appendix M for Emergency Water Distribution SWD Reservoir.)*

Note: Distributing water outside of normal water delivery practice is strictly a "survival procedure" meant to provide sufficient water to keep the local population minimally hydrated in case of a catastrophic event where preferred alternative water sources are not an option.

WATER SUPPLY FOR WASTEWATER USE

Water used for flushing toilets does not need to be suitable for drinking and can be obtained from any available water source. Some possible sources are boilers, water heaters, public pools, fountains or ponds. Buckets or carts will need to be available to transport water. Toilets can be flushed by dumping one to two gallons of water from a bucket into the toilet bowl. Water should not be placed in toilet tanks because they are connected to the potable water supply. *(See Toilet Use in an Emergency given in Appendix N.)*

MITIGATION CONSIDERATIONS

Wellhead Modification

Modify the wellheads so that a 1-inch suction line can be inserted down the wellhead. This allows a hand pump to be inserted in case there is no power and there is no fuel. Modification of the wellhead and the procurement of one or two hand pumps with a foot valve should be considered for procurement.

Long-Term Power Outage – Solar Alternative

Further Investigation of solar efficacy and pricing needs to be done in order to consider installation of solar panels and possibly an AC or DC pump that would be able to drop down a modified wellhead in the event here is no power and no fuel.

In the event of a long-term power outage, SunLand is not currently prepared to continue to pump from wells beyond 1.5 days. This could occur in a major event such as earthquake or tsunami. In the event of a tsunami, it is likely well #2 could become contaminated. Well #1 which is at a higher elevation (above sea level), is less likely to be contaminated. It is financially feasible, and achievable, to install a port in the wellheads for pumping water out of the well casings. A smaller portable drop pump with a ¾ or 1-inch drop pipe could be inserted to withdraw water from the wells. Power could be supplied via a smaller solar array with battery. These pump setups are available online and estimates are supplied after consultation with the providers. Maintenance would be required of this back up solar system and occasional replacement of the storage battery. It is unknown at this time how many watt hours are available to run the pump without a battery system. These specifications would be included at the time of consultation with emergency solar pump supplier. Hand-operated pumps could also be used instead of a solar array.

RESOURCES/EMERGENCY PREPAREDNESS GROUPS

Washington State: In order to increase emergency preparedness and coordination, the SunLand Water District is a member of WARN (Washington's Water/Wastewater Agency Response Network). WARN allows water and wastewater systems to receive rapid mutual aid and assistance from other systems in an emergency. Utilities that sign the standard agreement may share resources with any other system in Washington that has also signed the agreement. The WARN member who needs help identifies the resources needed to respond and may either directly contact a fellow WARN member who has the necessary resources or use a State-specific process of requesting aid. There is no cost to participate and it's voluntary. WARN provides a single agreement to access resources throughout the State.

Clallam County: Strength in numbers has been emphasized at County emergency preparedness meetings. Pre-organized groups, disaster planning committees, and a communications method dedicated to the emergency program would greatly mitigate the consequences of a major disaster.

The Clallam County Sheriff's Office Emergency Management Unit's CEMP (Comprehensive Emergency Management Plan) may be found online at www.clallam.net/EmergencyManagement

These programs and personnel can be contacted through Clallam Fire District No. 3. An entire emergency response outline is presented by Clallam Firefighters and available to interested people in the community (Website: <https://ccfd3.org/community-outreach/disaster-preparedness>).

Sequim: CERT (Community Emergency Response Team) is a local emergency preparedness program. The SunLand points of contact for CERT are District Manager Brian Scott, and Scott Garner, lead water system operator.

The City of Sequim has a similar plan called "CEMP" (Comprehensive Emergency Management Plan) – website: <https://www.sequimwa.gov/851/Community-Emergency>

Section 12. Curtailing Water Usage

An emergency may reduce the amount of water available to the system, necessitating reduced usage. Customers will need to be notified of the specific restrictions in a timely manner. (Refer to Section 6. Emergency Notification.)

According to the Washington State Department of Health the Stages of a Water Shortage requiring reduction options should relate to the degree of water shortage that exists, as follows:

Stages of a water shortage and corresponding demand reduction measures include:

Stage 1: Minor Shortage - Voluntary Measures This is the first step in reducing water consumption during a potential or actual water shortage. Based on experience in other states, a 5 to 10 percent reduction in consumption can be achieved with a voluntary program. An appropriate response at this stage is to initiate a public information program. The public should be notified whenever a disruption in water service occurs; however, it is recognized that in the case of a short disruption, such as temporary equipment failure, there may be no time to inform the public.

Stage 2: Moderate Shortage – Mandatory Measures Based on the experience of utilities in other states, a 10 to 20 percent reduction in consumption can be achieved with a mandatory program. An appropriate response at this stage is to institute mandatory demand reduction measures. The public will be notified and restrictions may prohibit car washing, filling swimming pools, hot tubs, cleaning driveways and sidewalks and any other non-essential outdoor water use.)

Stage 3: Severe – Rationing Program Upwards of 30 percent savings can be achieved with a water-rationing program. An appropriate response at this stage is to institute rationing programs through fixed allotments or percentage cutbacks. This response should be initiated only in rare circumstances. It allows the maximum amount of water savings possible in a community without severe hardship. Curtailment in Stage 3 starts with the steps in Stages 1 and 2 and adds another level of; i.e., more conservation of water such as limiting showering more than once a day, doing excess laundry, washing dishes by hand instead of using the dishwasher, and limiting toilet flushes. Stage 3 would limit all water usage to drinking only. Such restrictions would be implemented in a long-term disaster such as tsunami or earthquake.

In Stages 2 and 3, CERT, or “The Community Emergency Response Team”, could be notified for assistance with communications.

Section 13. Returning to Normal Operation

When the emergency is over and control of the system is regained: the system must be returned to normal operating condition, customers must be notified, and (if required) the local and state health officials must be notified as well.

Prior to returning to normal operation, some questions need to be answered:

- Was the system repaired so that it can meet demand?
- Has the system operator made a safety and operational inspection of all components?
- Was the system flushed, disinfected, and pressure tested properly?
- Was the water tested adequately, following sampling regulations?
- Does the water meet all standards?
- Is there adequate staff to operate and manage the system?
- Have all federal, state, and local agency requirements been satisfied?
- Is there a proper message planned for notifying customers and/or the local and state health officials?

Returning to normal operations actions – Water System

Action	Description and actions
Inspect, flush, and disinfect the system	Water system operator and support staff will inspect all system facilities and ensure that all water quality tests, system flushing, and disinfection are complete. Afterwards, the water system operator will report to the water system manager.
Verify water quality	District Manager verifies water quality sampling results and decides whether the system is ready to resume normal operations.
Coordinate with the local and state health officials	District Manager coordinates with the local and state health officials on system condition and water quality results.
Notify customers	District Manager meets with water system operators and communications lead to write notice to customers. District Manager directs communications lead to distribute the public notice.

Returning to normal operations actions – Water Reclamation Facility

Action	Description and actions
Inspect any affected system infrastructure and components	The wastewater system Supervisor and support staff perform an inspection of impacted system components, confirm that appropriate repairs have been made and verify that facilities are adequate to return to normal operation. The Supervisor makes a

	report to the District Manager, who makes the decision to return to normal operation
Follow start-up procedures for each unit operation.	The appropriate start-up procedures in the O & M Manual should be followed to bring the system back on line.
Coordinate with regulatory agencies	Keep DOE and/or other regulatory agencies notified of progress.
Notify customers	The WRF Supervisor meets with the District Manager to prepare a notice to customers that the system has been returned to normal operation and any precautions they should take moving forward. The District manager and support staff then distribute the public notice.

Section 14. Training and Rehearsals

Emergency response training is a crucial part of this emergency response plan. Training educates system personnel about emergencies and the ways they affect water systems. It also gives staff an opportunity to practice responses. Any training should have a purpose, appropriately selected personnel, and qualified instruction and supporting materials.

Training

Position	Training needs and expectations
District Manager	Emergency response communications, emergency response planning, issuing of health advisories
Water System Operator WRF Operators	Emergency response communications, emergency response planning, suspicious activity training
Field Support	Emergency response communications, suspicious activity training
Administrative Support	Emergency response communications, emergency response planning

Emergency Rehearsals

Event	Description	People and organizations involved	Date
Rehearsal	Conduct actual emergency drill	Water System/WRF staff	Unannounced
On-site training drills	Conduct specific drills, such as communications, water line breaks, and sampling	Water System/WRF staff	Unannounced