

# LAKE LIMERICK WATER SYSTEM

## EMERGENCY RESPONSE PROCEDURES

### 1.0 INTRODUCTION

Safe and reliable drinking water is vital to every community. Preparing for emergencies is an important step in protecting the water supply and a high priority for the Lake Limerick Country Club (LLCC). LLCC has identified the following goals in emergency preparedness:

- Understand and organize a communication network
- Determine the possible emergencies and likelihood of occurrence
- Establish appropriate levels of security
- Evaluate alternative sources of water and the viability of each.

When LLCC is notified of a water system emergency, , procedures will be implemented to ensure that the situation is handled appropriately and with as little risk to public safety as possible. The purpose of this Emergency Response Plan is to document the procedures LLCC will implement in responding to emergency situations.

The Emergency Response Plan includes the following information:

- 2.0 Personnel Responsible for Emergency Response
- 3.0 Contacting LLCC Regarding an Emergency
- 4.0 LLCC Emergency Assessment
- 5.0 Emergency Response Quick Reference Lists
- 6.0 Notifying Regulators

Appendix – Templates

The Emergency System Procedures should be accessible to all LLCC personnel responsible for emergency management at all times. In the event that the information below should change or become outdated, the below information will be updated as necessary.

### 2.0 PERSONNEL RESPONSIBLE FOR EMERGENCY RESPONSE

Water System staff members responsible for the emergency response plan are:

Water Manager:	Chris McMullen
Water Operator:	Michael Boyd
Community Association Manager:	Roger Milliman

LLCC chain-of-command or lines of authority are:

LLCC Board of Directors President:	John Ingemi
Water Committee Chair:	Kelly Evans
Water System Backup:	Northwest Water Systems (NWS)

NWS personnel can be contacted at the following 24-hour phone number: (360) 876-0958.

### 3.0 CONTACTING LLCC REGARDING AN EMERGENCY

In an emergency situation, often the water system customers will be aware of a problem prior to LLCC staff. All customers served by LLCC are provided with the LLCC Water Department and Office phone numbers. All emergency calls are directed to one of these locations.

During business hours (9:00 AM to 5:00 PM Monday through Friday, except holidays), phones at the LLCC Office will be answered in person. Emergency calls will be routed to the Water Manager and Water

Operator cell phones. If neither the Water Manager nor Water Operator are available, NWS is contacted and informed of the emergency.

After hours, phone calls to the Water Office are directed to an automated message directing phone calls to the Water Manager and Water Operator cell phones. Should neither the Water Manager nor Water Operator be available NWS will be contacted at their emergency service phone number.

#### 4.0 LLCC EMERGENCY ASSESSMENT

After LLCC identifies an emergency, the Water Manager will determine whether an on-site presence by NWS or a contractor is required. If needed, the Water Manager or designee will contact NWS or a contractor and provide instructions for an on-site evaluation.

In assessing an emergency situation, the Water Manager and/or NWS will analyze the type and severity of the emergency.

**Level I: Normal (Routine) Emergency** - Minor failure which can be repaired within 24 hours. Water quality is not affected. Examples may include, but are not limited to: Distribution line breaks, short power outage, minor mechanical failure in pump house.

**Level II: Minor Emergency (Alert Status)** – Minor disruption in supply or indication of possible contamination. Public health may be jeopardized. Minor emergencies can usually be resolved within 72 hours. Examples may include, but are not limited to: Disruption in supply such as a transmission line break, pump failure with a potential for backflow or loss of pressure; an initial unconfirmed positive fecal coliform or E. coli sample; an initial primary chemical contaminant sample.

**Level III: Significant Emergency** – The system experiences significant mechanical or contamination problems where disruption in supply is inevitable and issuance of a health advisory is needed to protect public health. Major emergencies should be reported to DOH as soon as possible. Examples may include, but are not limited to: a verified acute confirmed coliform MCL or E. coli/fecal positive sample 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, loss of a source or reservoir, a major line break or other system failure resulting in a water shortage or requiring system shutdown, surface water contamination, or an immediate threat to public health of the customers requiring a health advisory.

**Level IV: Catastrophic Disaster** – The system experiences major damage or contamination ~~form~~ from a natural disaster, an accident or an act of terrorism. These incidents usually require immediate notification of local law enforcement and local emergency management services. Immediate issuance of health advisories and declaration of water supply emergencies are critical to protect public health.

The Water Manager will contact the Community Association Manager (CAM), Water Committee and Board of Directors and communicate the recommended action. In the event of a public health emergency, if the CAM or Water Committee cannot be contacted, the Water Manager will take action as necessary to protect the health of residents on the water system experiencing the emergency.

#### 5.0 NOTIFYING RESIDENTS OR CUSTOMERS

Notify any residents or customers that may be affected as a result of the emergency situation. Depending on the type of emergency and the area affected, phone calls, email, text messages, sandwich board signs at HOA entrances or door-to-door notification may be used to provide information quickly and effectively to the public.

The Mason County Division of Emergency Management (DEM) has implemented an emergency notification system. Lake Limerick is one of the notification areas and Lake Limerick members can add their contact information to the list of those automatically notified of emergency situations. The Lake Limerick Office and the Water System Manager can post voice messages to be sent to all Lake Limerick

members that have registered contact information with the service in the event of a water system emergency.

Once the problem is resolved, the same notification procedures will be used to inform the public that the situation has passed and they can resume normal water use.

The following are templates for notifications that may be needed in an emergency situation:

- E-coli MCL Violation Public Notice

- E-coli MCL Violation Public Notice Certification

- Boil Water Advisory Door Hanger (English and Spanish)

- Precautionary Boil Water Advisory (example) including recommended procedures

- Rescinding of Boil Water Advisory

Copies of these templates are included in an appendix to the Emergency Response Plan.

## 6.0 NOTIFYING REGULATORS

In the event of a Level I or Level II emergency during which a drinking water system exceeds the Maximum Contaminant Level (MCL) for coliform and in all Level III and Level IV emergencies, LLCC will notify the Washington State Department of Health Office of Drinking Water (ODW). The local health jurisdiction will also be notified; however, many of the local health jurisdictions do not have after hours emergency response numbers. ODW can assist in determining the proper notification process.

<b>Emergency contact</b>	<b>Phone number</b>	<b>Emergency contact</b>	<b>Phone number</b>
Mason County Fire/Police/Medical	911	Electrician: Arcadia Drilling	800-426-3395
Mason County emergency services	911	DOH regional engineer	360- 236-3035
County environmental health contact	360-427-9670 extension 293	DOH emergency After hours #	877-481-4901
Department of Ecology Spill Response SW Regional Office	360-407-6300	Water Committee Chairperson: Kelly Evans)	<del>253-307-07737</del> 0737(cell) 360 868 2514 (home)
Engineering consultant Northwest Water	360-876-0958	Water Manager: Chris McMullen	360-507-6258
Electric utility: Mason Co. PUD 3	360-426-8255	Water Management Backup: NWS	360-876-0958
Pump service: Arcadia Drilling	800-426-3395	LLCC Water Office	360-426-4563
DOH Coliform Water Quality Monitoring: Charese Gainor	360-236-3045	LLCC Office	360-426-3581
DOH Chemical Water Quality Monitoring: Sophia Petro	360-236-3046		

## **POWER OUTAGE**

1. Contact the power company (Mason PUD No. 3) and get an estimate when power will be restored.
2. Inspect system generators for proper operation and fuel level. Monitor system pressures and reservoir levels.
3. If the time estimate for power restoration is such that it exceeds the fuel available for the emergency generators, then do the following:
  - a. Contact any critical water users on the system
  - b. Contact emergency personnel and notify them of the situation
  - c. Secure a source of fuel and a means of delivering it to the generators
  - d. Notify the public to minimize water usage
  - e. If depressurization is expected to occur, follow the depressurization policy

There is backup power at Well #3 fueled by natural gas and at Well #6 fueled by propane. Unless there was a major disaster such as an earthquake, there should continue to be emergency power and water available from that well site.

With four reservoirs in the system containing up to 400,000 gallons of storage, there is ample emergency water supply for an extended period of time. Emergency filling stations could be set up at each of the four well sites to provide water for essential needs to community members. At two of the well sites (Well #1 and Well #4) there are hydrants connected directly to the reservoir that could provide higher water volumes.

## **WATER MAIN BREAK**

1. Evaluate the break and can it be repaired under pressure? If not and depressurization will (or has) occurred, do the following:
  - a. Contact critical water users on the system.
  - b. Contact emergency personnel and notify them of the situation.
  - c. Notify the public in the affected area.
2. Contact the appropriate personnel needed to repair the break. For small breaks this may be system employees. For larger breaks, a contractor may be required.
3. Reference the Water System map located in the Water trucks, the Water Office and LLCC Office to locate the nearest system valves to isolate the break.
4. Evaluate break and determine whether immediate isolation is necessary.
5. Make an inventory of the parts necessary to repair the break and order parts.
6. Contact the DOH Regional Engineer and reference the AWWA Manual to determine necessary precautions to take during repairs.
7. Swab the interior of the pipe and fittings used to make repairs with a 1% hypochlorite solution before they are installed.
8. Make repairs to the water main.
9. Apply liberal quantities of hypochlorite tablets to the open trench area to lessen the danger from pollution.
10. Flush the water main after repairs are made to remove contamination introduced during repairs. If hydrant locations permit, flush toward the work location from both directions. Continue flushing for 5 minutes after all discoloration has cleared.
11. Where practical, the section of water main shall be isolated, all service connections shut off, and the section flushed and chlorinated to 300 ppm and left for a minimum of 15

minutes. After the waiting period, the main shall be flushed until no noticeable chlorine smell is noted.

12. Bacteria samples shall be taken after repairs are completed on either side of the break. If positive samples are recorded, then the situation shall be evaluated for corrective action. Daily sampling shall be continued until two consecutive negative samples are recorded.

## CHEMICAL CONTAMINATION

1. Attempt to determine the specific chemical which has caused the contamination and its hazard classification. There are four broad classifications of contamination as follows:

Hazard Type	Description
Pollution Hazard	A condition through which an aesthetically objectionable or degrading material NOT dangerous to health may enter the public water system or a consumer's potable water system.
System Hazard	A condition, device, or practice posing an actual or potential threat of damage to the physical properties of the public water system or a consumer's potable water system but will not cause an adverse health effect.
Health Hazard	Any condition, device, or practice in a water supply system or its operation that creates or may create a danger to the health and well-being of others.
Severe Hazard	Any health hazard that could reasonably be expected to result in significant morbidity or death

2. Determine the following information:
  - Who made the first observation?
  - What is their phone number and location?
  - When did it happen?
  - What is it?
  - What are the qualities-color/taste/smell?
  - Is an MSDS (material safety data sheet) available?
  - How much of it entered the water system?
  - Where did it enter the water system?
  - Where is it now?
  - Is it isolated to one area or is it widespread?
  - What area and population are affected?
  - Can it be isolated?
  - Can depressurization and or flushing of the affected area be done quickly and without serious consequences?
3. If the contamination is classified as either a health hazard or a severe hazard, do the following:
  - a. Issue a no-use water advisory immediately. A boil advisory will not be adequate for most chemical contamination-boiling the water may only serve to concentrate the contaminant.
  - b. If the contaminant could cause serious illness or death, can you isolate the water supply from users?
4. If a water advisory will be issued, contact the critical water users to notify them of the situation
5. Immediately contact emergency personnel and agencies to notify them of the situation.
6. If possible, determine the cause and source of contamination and eliminate the source. Consider the possibility that the cause may be due to a cross-connection, backflow, or back siphonage.
7. Begin flushing the distribution system to eliminate the contaminant from the public water supply.

## **BACTERIOLOGICAL CONTAMINATION**

1. Should any routine bacteriological sample be unsatisfactory a total of three repeat samples are required within 24 hours from the following locations:
  - a. The same tap as the original sample
  - b. An active service within five active connections upstream of the original sample
  - c. An active service within five active connections downstream of the original sample
2. Should any repeat sample be unsatisfactory or any sample indicates the presence of fecal or E. coli; the Department of Health shall be notified.
3. Take the actions under the direction of DOH which will include, but are not limited to, and investigation of possible sources of contamination and shock chlorinating the system. System users must be notified within 24 hours of detection.
4. The month after a positive coliform sample, the water system will take five routine samples. This will include the two sites scheduled for that month, the site that tested positive the previous month, and one or more of the repeat sample sites associated with a positive result.

## **DISTRIBUTION SYSTEM STORAGE FAILURE**

1. Isolate the reservoir from the system.
2. After the reservoir is removed from the system:
  - a. Open the reservoir by-pass valve and operate the submersible well pump(s) to discharge directly to the distribution system.
  - b. Drain the reservoir and determine cause of failure.
  - c. Make repairs, clean reservoir as needed and return to normal operation.

## **SUSPECTED CROSS-CONNECTION**

1. Isolate suspected source of backflow.
2. Sample to determine if the system has become contaminated.
3. Contact DOH for guidance.
4. Attempt to determine the degree of health hazard based on classifications found in the contamination procedure.
5. Refer to appropriate procedure(s) based on the results of the sample analysis.
6. Complete a "Backflow Incident Response Form" to document the occurrence.

## **SOURCE FAILURE**

The storage and well capacity of the Lake Limerick Water system allows for the loss of several sources without adversely affecting the system's ability to serve the community. Should a source be determined to not be usable it shall be disconnected from the distribution system. The source shall be evaluated by an experienced well driller or other qualified professional to determine if reconditioning or replacement is the best option.



## SUSPECTED TAMPERING AT SYSTEM FACILITIES

Tampering may range from simple defacement of property to the introduction of biological or chemical agents into the water supply. These actions can be divided into several categories:

Action	Description
Vandalism	Actions that cause physical damage to property and structures, such as cutting fences to gain access to secure areas, breaking windows, and damaging or removing locks from doors or wells.
Malicious Action	Actions that, intentional or not, introduce or threaten to introduce foreign substances into a portion of the distribution system or cause damage to a portion of the public water system's infrastructure. These acts range from pranks that "go too far" to actions intended to cause a disruption to the public water supply or the introduction of toxic substances into the distribution system
Terrorism	Intentional actions introduce or threaten to introduce foreign substances into a portion of the treatment or distribution system or cause damage to a portion of the public water system's infrastructure. These acts are meant to cause harm to individuals and cause unease or panic in the general public.

1. Immediately
  - a. Treat the area as a crime scene. Minimize disturbance of area to preserve evidence. Document the observed conditions with photographs or video if possible.
  - b. Contact law enforcement agencies and work with them to determine the extent of the damage.
  - c. Notify system users.
  - d. Isolate the affected portion of the system.
  - e. Contact DOH and local health district.
2. Soon After
  - a. If there is evidence of contamination, perform a physical check of the system and inspect structural integrity.
  - b. Contact laboratories to determine if they can analyze for unknown substances.
  - c. If tampering resulted in probable introduction of chemical or biological contaminants into the system, proper precautions must be taken during sampling to prevent exposure to the contaminant.
  - d. With the consent of law enforcement, begin to repair all points of entry to facilities.

## EARTHQUAKE OR REGIONAL DISASTER

1. Coordinate with authorities and emergency response entities as necessary. Support emergency response as primary goal.
2. Evaluate the system to determine the extent of damage.
3. Conserve resources as necessary commensurate with the disaster.
4. Plan out interim operation and a path to return to normal operations.
5. Follow the guidance for the above emergency categories as appropriate (Water Main Break, Power Outage, Source Failure, Contamination, etc.)

## PUBLIC HEALTH CRISIS / PANDEMIC

The best sources of information during a public health crisis or pandemic are local, state, and national health agencies as the specific nature of the crisis will dictate the appropriate actions to take. Refer to the following agencies for guidance:

- Mason County Public Health - <https://www.co.mason.wa.us/health/index.php>
- Washington State Department of Health - <https://www.doh.wa.gov/>
- Centers for Disease Control and Prevention - <https://www.cdc.gov/>
- World Health Organization - <https://www.who.int/>

In general, the following procedures should be followed unless guidance from a health agency states otherwise:

1. Minimize personal interaction and maintain social distancing by performing administrative work from home offices. Utilize drive-by meter reading technology and remote SCADA control of the system.
2. For spaces that must be shared, schedule times for individuals to work in order to reduce or eliminate multiple people in the same space at the same time. When working in proximity of others is necessary, wear N-95, KN95, or medical grade.
3. Disinfect all shared surfaces after use (desktops, chair arms, printers, keyboards, door handles, vehicles, etc.)

### **PERSONAL SAFETY**

1. Educate water system personnel on safety concerns and mitigation measures. Keep first aid kits at the main office and in service / repair vehicles.
2. Leave protective guards and covers on pumps, pump controllers, electrical panels, generators, etc. in place at all times.
3. Physically disconnect power supply from any equipment before servicing. Follow manufacturer's safety procedures.
4. Maintain fencing and gates around facilities. Ensure reservoir climbing cages are locked and in good repair.
5. Reservoirs and vaults are considered ~~and~~ confined spaces and should only be entered by persons who have received confined spaces training. Refer to guidance at osha.gov.