**Princeville Utilities**
Water & Waste Water System
Emergency Response Plan

**PUCI Office**
5-3541 Kuhio Hwy #221
Princeville, 96722

**PUCI WWTP**
4261 Kekuananoa Ln.
Princeville, 96722

## General PUCI Overview:

The following *Emergency Response Plan* outlines proactive strategies and response measures for Princeville Utilities. PUCI is responsible for critical infrastructure: including [redacted] wastewater treatment plant, [redacted] groundwater wells, [redacted] sewer pump stations, and the water supply for a population of 6,900 residents and guests. Due to the island's vulnerability to natural disasters – such as hurricanes, tsunamis, heavy floods, wildfires, earthquakes, and droughts – PUCI's plan aims to safeguard the community's water supply, ensure the integrity of wastewater management, and enable rapid recovery following such events.

Princeville, located on the island of Kaua'i, is susceptible to various natural disasters due to its geographical and climatic conditions. The potential impacts on water and wastewater infrastructure from hurricanes, tsunamis, heavy flooding, and wildfires necessitate a comprehensive and proactive approach to disaster mitigation, preparedness, response, and recovery.

The following sensitive information discloses Princeville Utilities plan of action for emergency response:

## General PUCI Goals for Emergency Response

The following list depicts a general overview of PUCI's Emergency Response goals. To see the *Determine Impact of An Emergency* form, please see pages below.

**Protect Life:**

- ☐ Preserve the health and safety of PUCI personnel and the public.

**Fire Suppression:**

- ☐ Ensure/restore the water mains and transmission system.
- ☐ Ensure/restore proper water distribution for fire hydrants and standpipes.

**Public Health**

- ☐ Facilitate appropriate communication with the public to ensure safety, health, and life.

**Commercial and Business**

- ☐ Facilitate proper communication with commercial and businesses to ensure safety, health, and life.

**Service Area Priorities**

- ☐ Makana North Shore Urgent Care
- ☐ Fire Hydrants

- ☐ Police & Fire Station
- ☐ Princeville Airport
- ☐ PHCA Office

**Water Requirements**

- ☐ Single / Multi Family Residential
- ☐ Urgent Care Clinic
- ☐ Police & Fire Station
- ☐ Commercial BLDG
- ☐ Hotel
- ☐ Transfer Station
- ☐ Airport

## Critical Information for Emergency Response Management

**System Name:** Princeville Utilities
**PWS Number:** 428
**Population**: Approx. 6,900
**Address:**
Princeville Utilities
5-3541 Kuhio Hwy #221
Princeville HI, 96722

Waste Water Plant
4261 Kekuanaoa Ln.
Princeville HI, 96722

**Source of Water:** Groundwater
**Amount of Storage Available for Use:** 1.5 MG & 500,000 gallons
**Types of Treatment:** NaOCL (Sodium Hypochlorite)

### 1st Priority Contact Information

| Name: | Position | Contact |
|---|---|---|
| [redacted] | | |

[redacted]

**Priority Emergency Contact Information**

| Entity: | Agency Service | Contact |
|---|---|---|
| [redacted] | | |

**Primary Emergency Media Spokesperson**

| Name: | Position | Contact |
|---|---|---|
| [redacted] | | |

**Critical Information for Emergency Continued**

*Alternate Sources of Water Supply*

| Source: | Contact Person | Contact |
|---|---|---|
| [redacted] | | |

[redacted]

As of 2021, it is to be noted that PUCI's emergency planning committee contacted Paradise Beverage. The company stated that they would not save pallets of water for the Princeville Community in the case of an emergency.

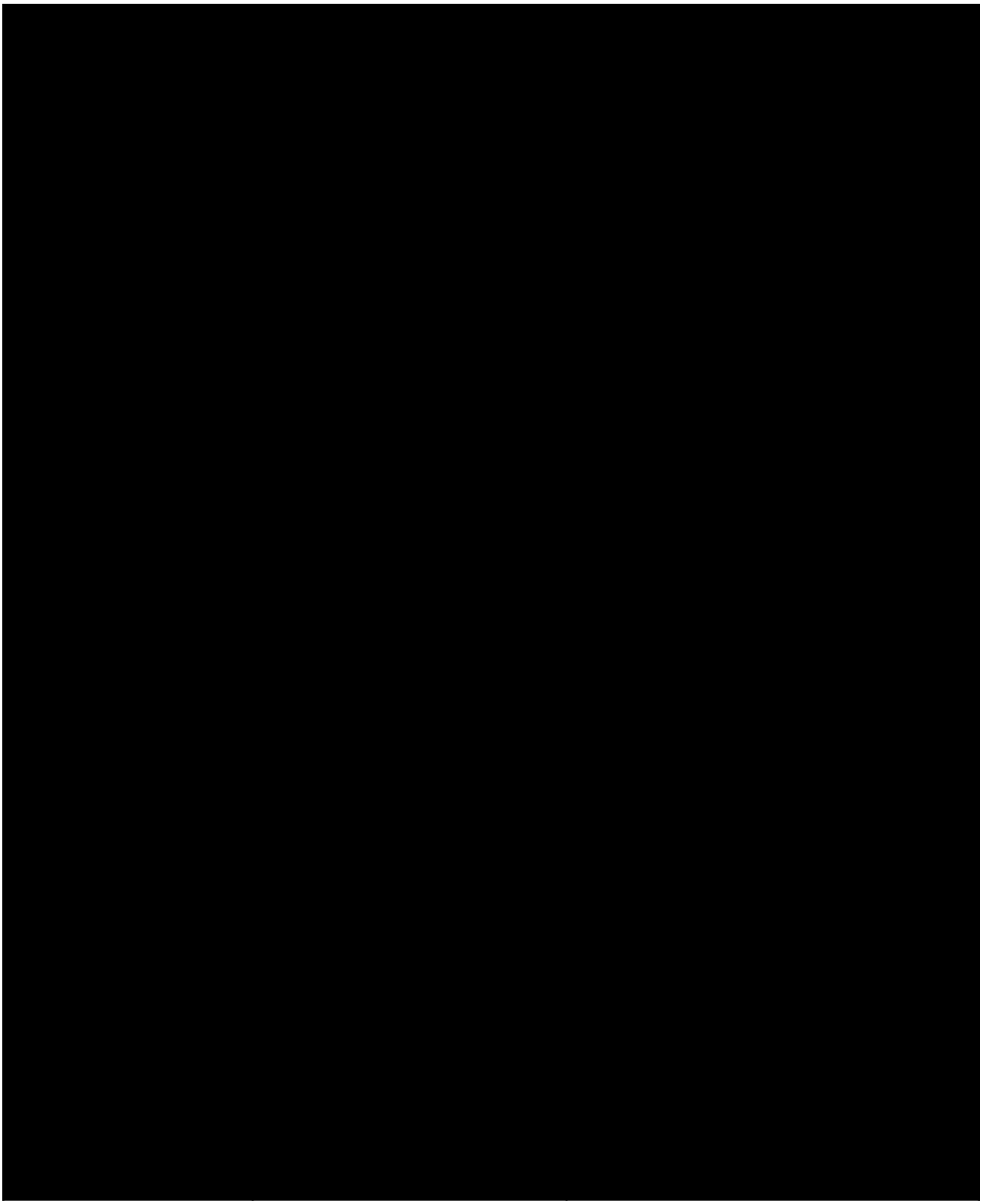
*Mutual Aid Agreements(s)*

| Source: | Contact Person | Contact |
|---|---|---|
| [redacted] | | |

*Further confidential contacts of* ***local, state, and federal agency emergency response and media outreach c****an be found on the last page, attached to the back of this packet.*

*Critical Information for Emergency Continued*

| Source: | Contact Person | Contact |
|---|---|---|
| [redacted] | | |



**General Overview of Immediate Actions of Emergency**

*Immediate Actions & Procedures to Lessen Impact of Identified Emergency*

- ☐ Identify the emergency type and review specialized ERP.
- ☐ Communicate with the PUCI Team:
  - ☐ Report and follow the instructions of the head in command: *Brad Suizu*.
  - ☐ *Example:* Prepare facilities for hurricanes, tsunamis, floods, etc.
  - ☐ *Example:* Contact PUCI customers and issue notices.

- ☐ To ensure smooth operations and effective decision-making, please consult with the team lead before making significant decisions or changes. *Please refer to the **1st Priority Contact Information** to see the chain of command.*

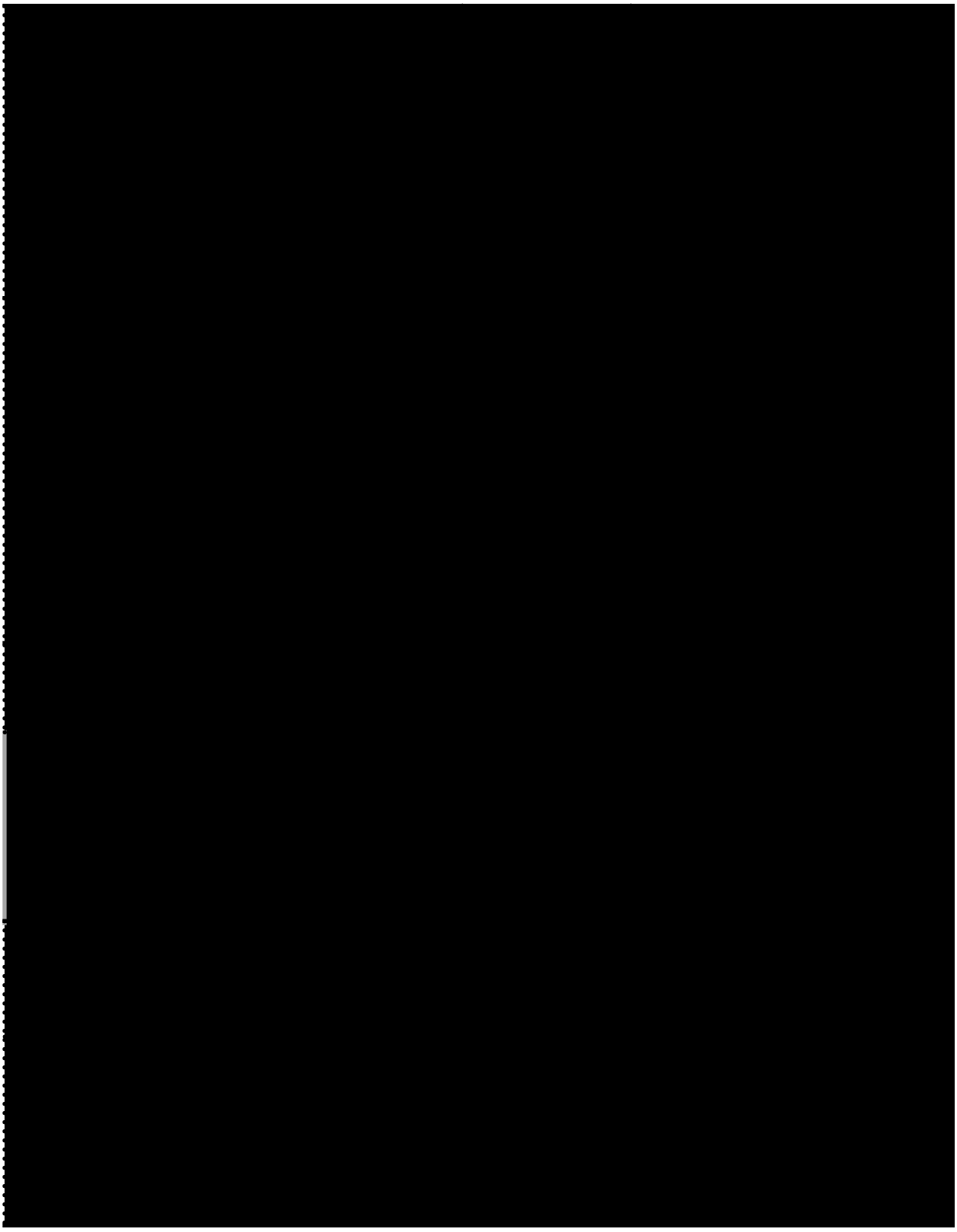
*Immediate Agency Notifications Needed*

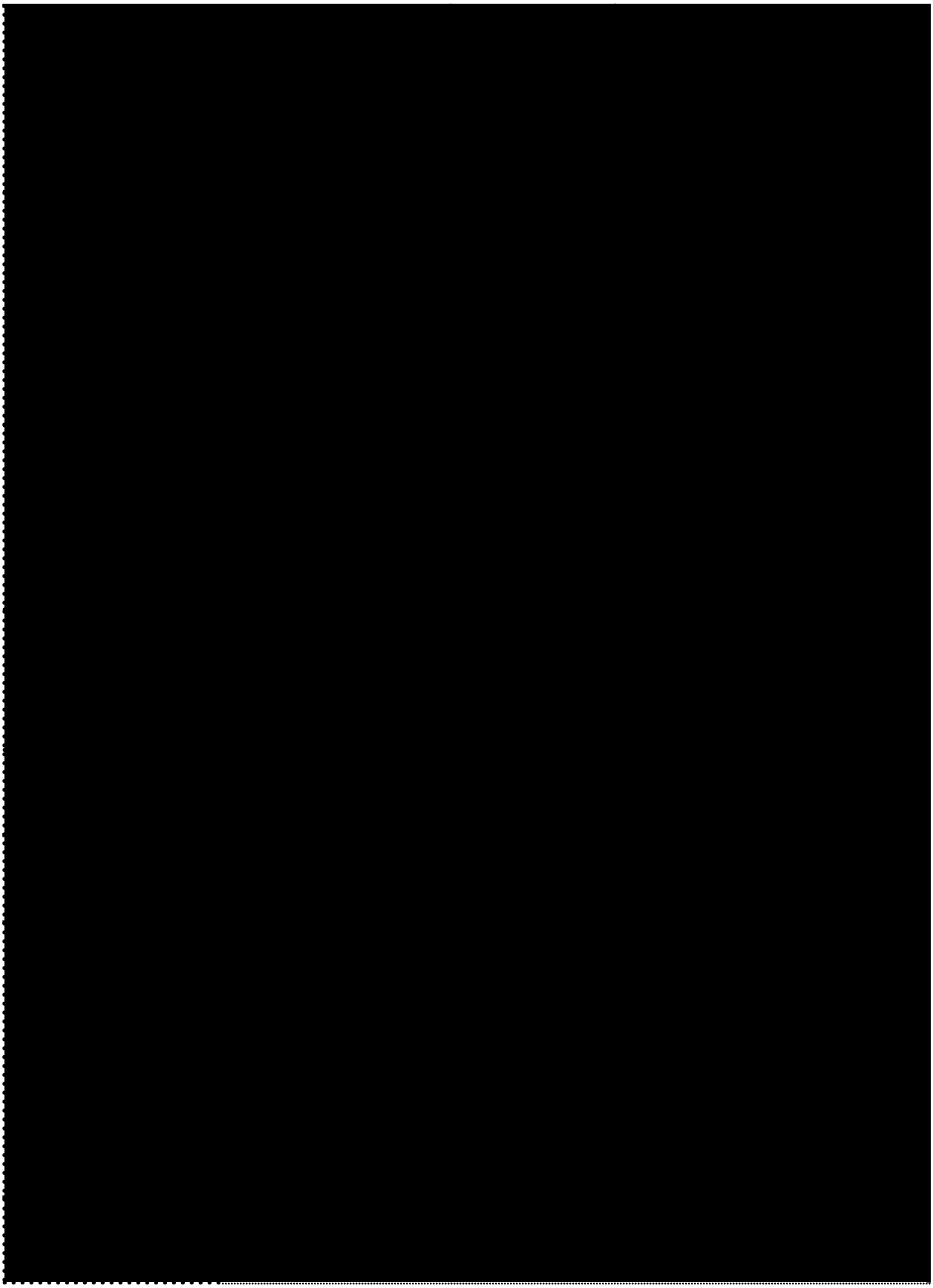
| Entity | Contact |
|---|---|
| Fire / Police Station | 911 |
| Makana North Shore Clinic | (808)320-7300 |
| PHCA | (808)826-6181 |

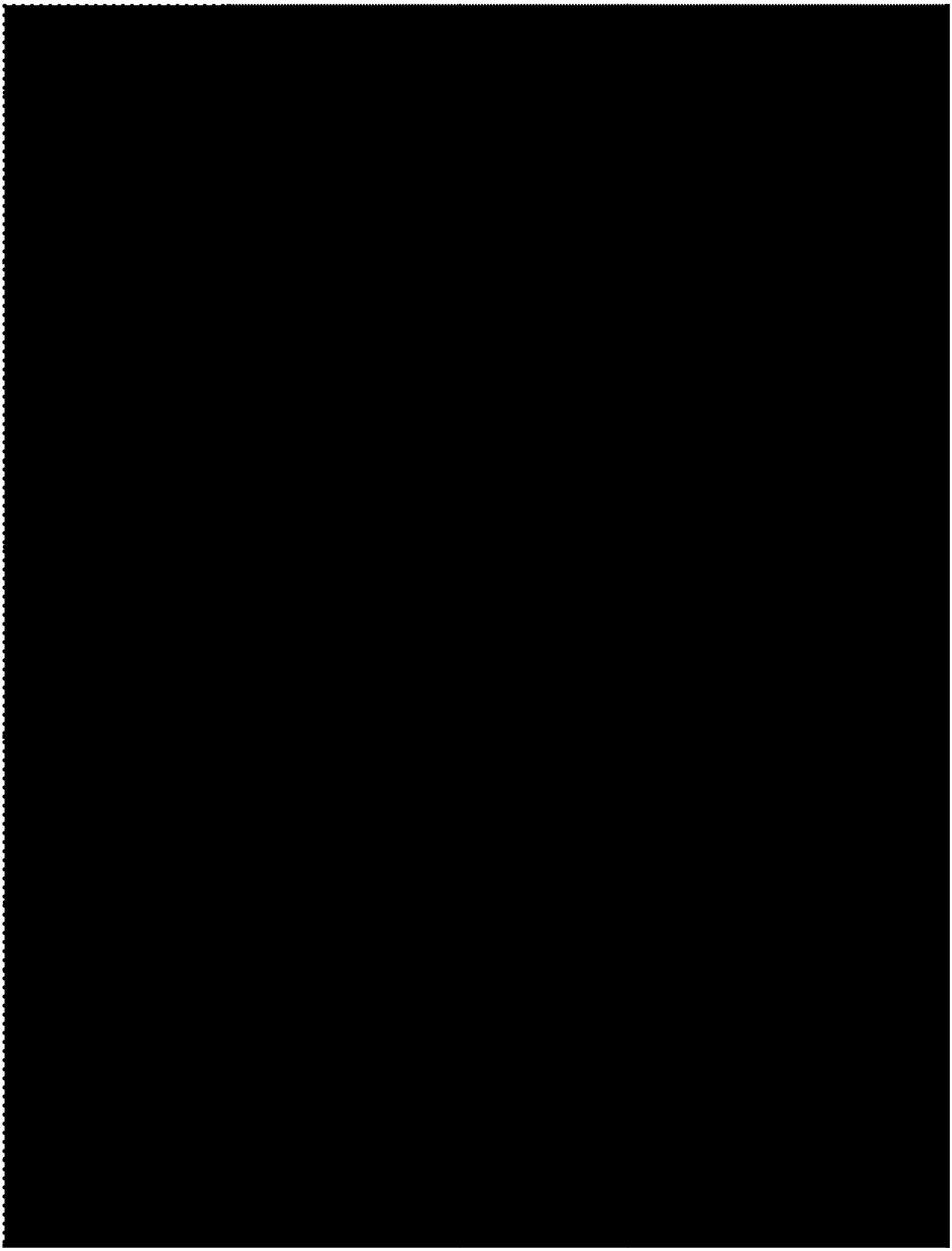
*Important Note:* PUCI does NOT serve any schools, nurseries, retirement homes, major hospitals, and other sensitive areas that may be on the list above.

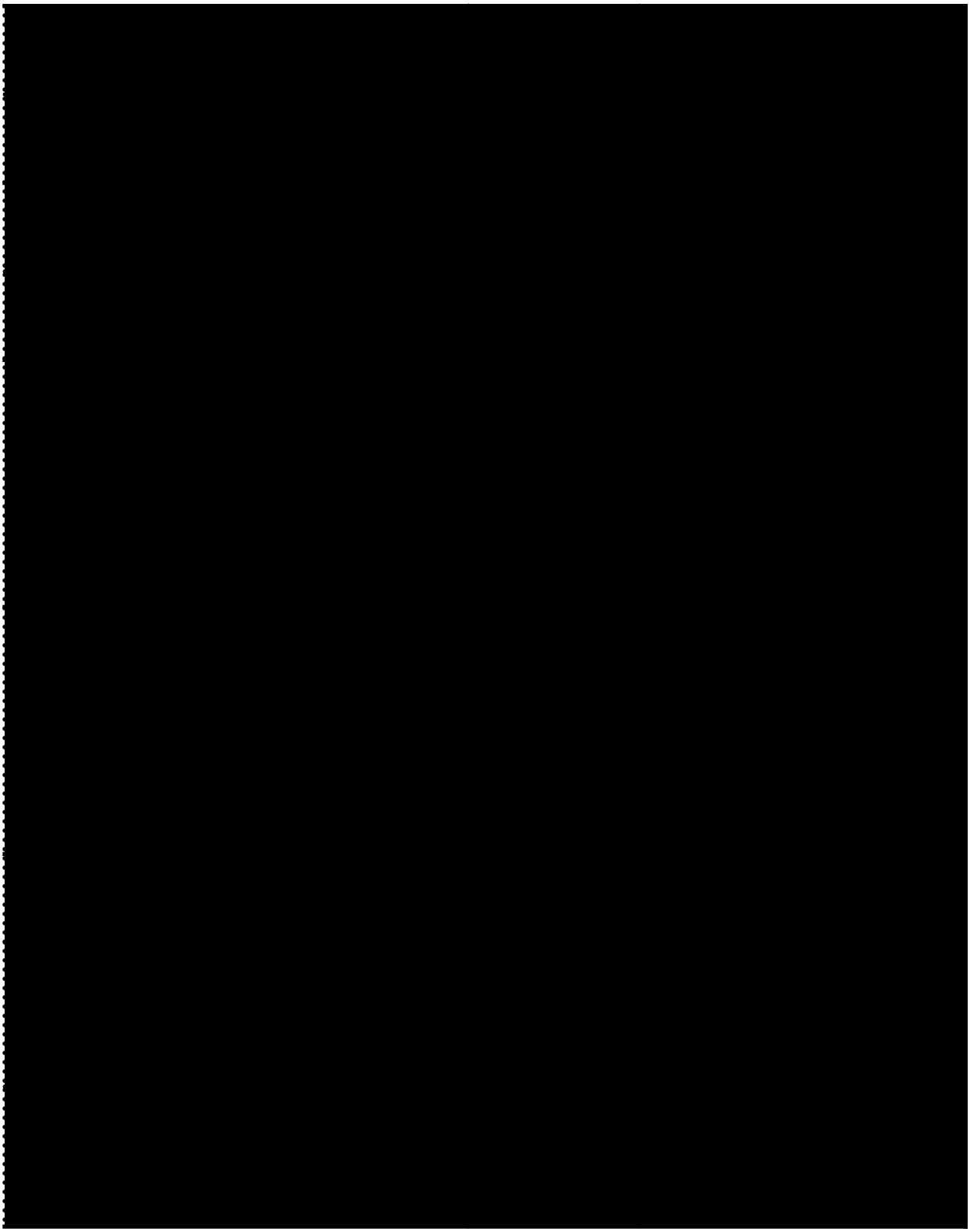
*Critical Business Contacts to Lessen the Impact of Emergency*

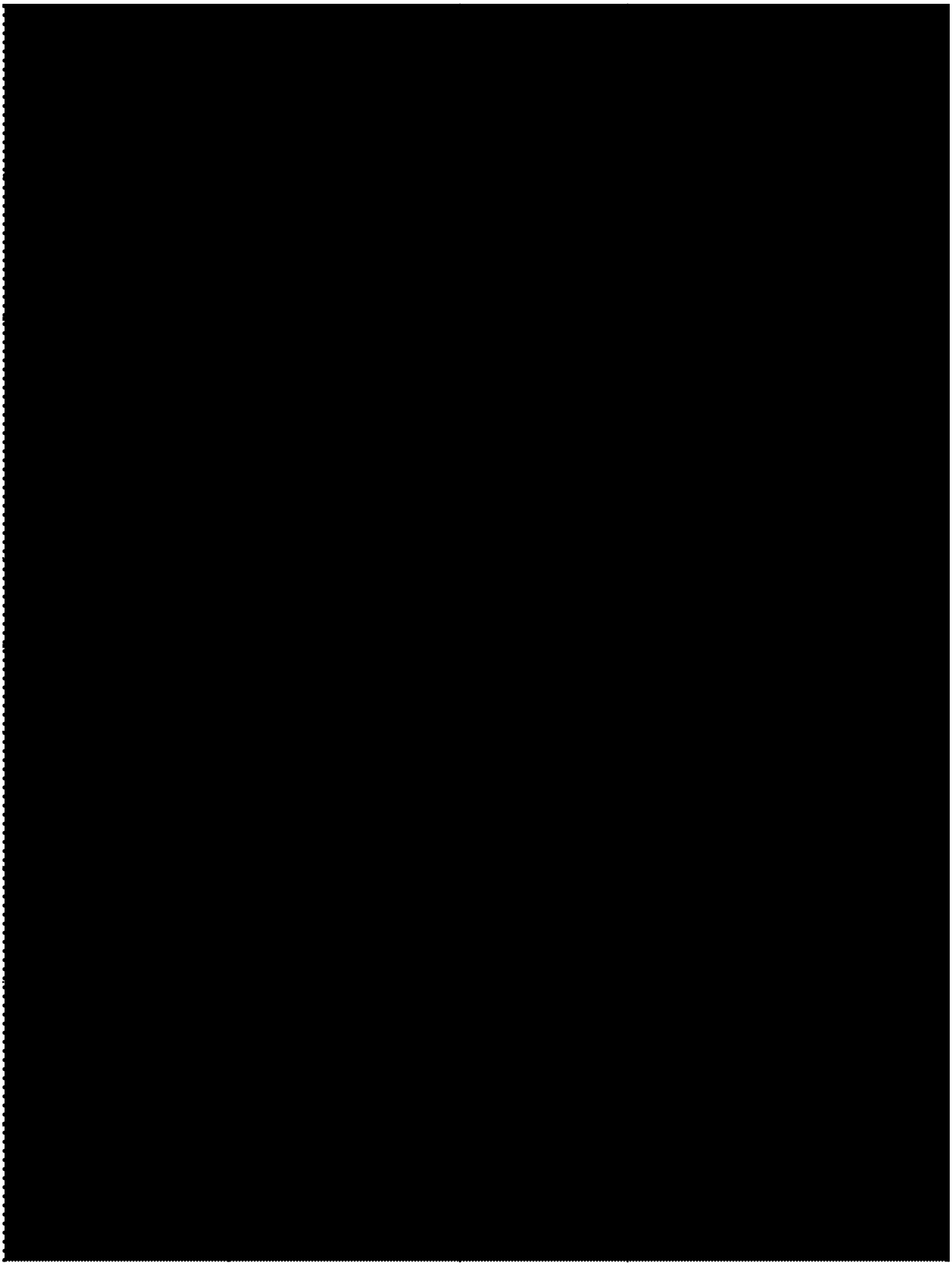
| Company | Contact | Phone Number | Email |
|---|---|---|---|
| [redacted] | | | |

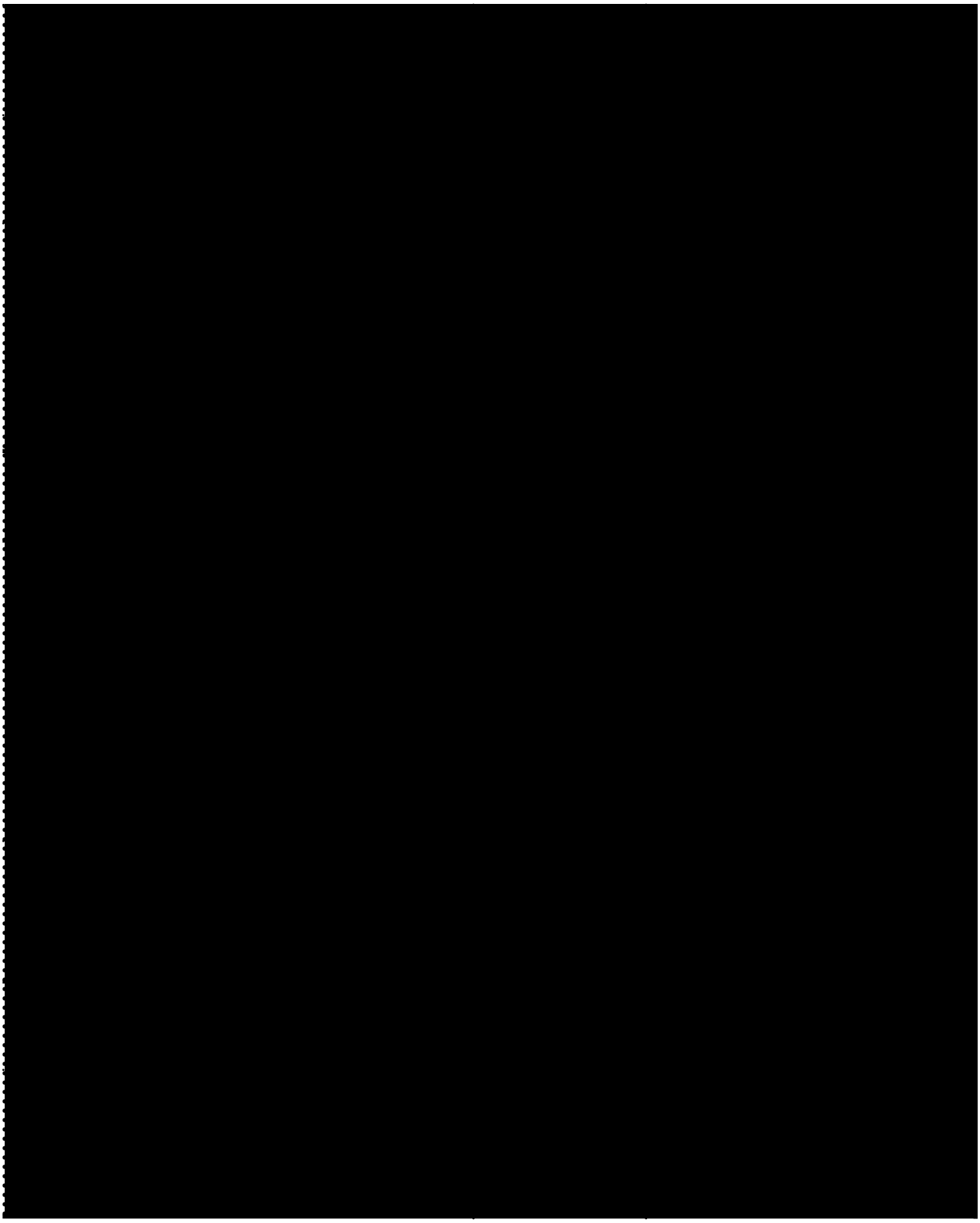


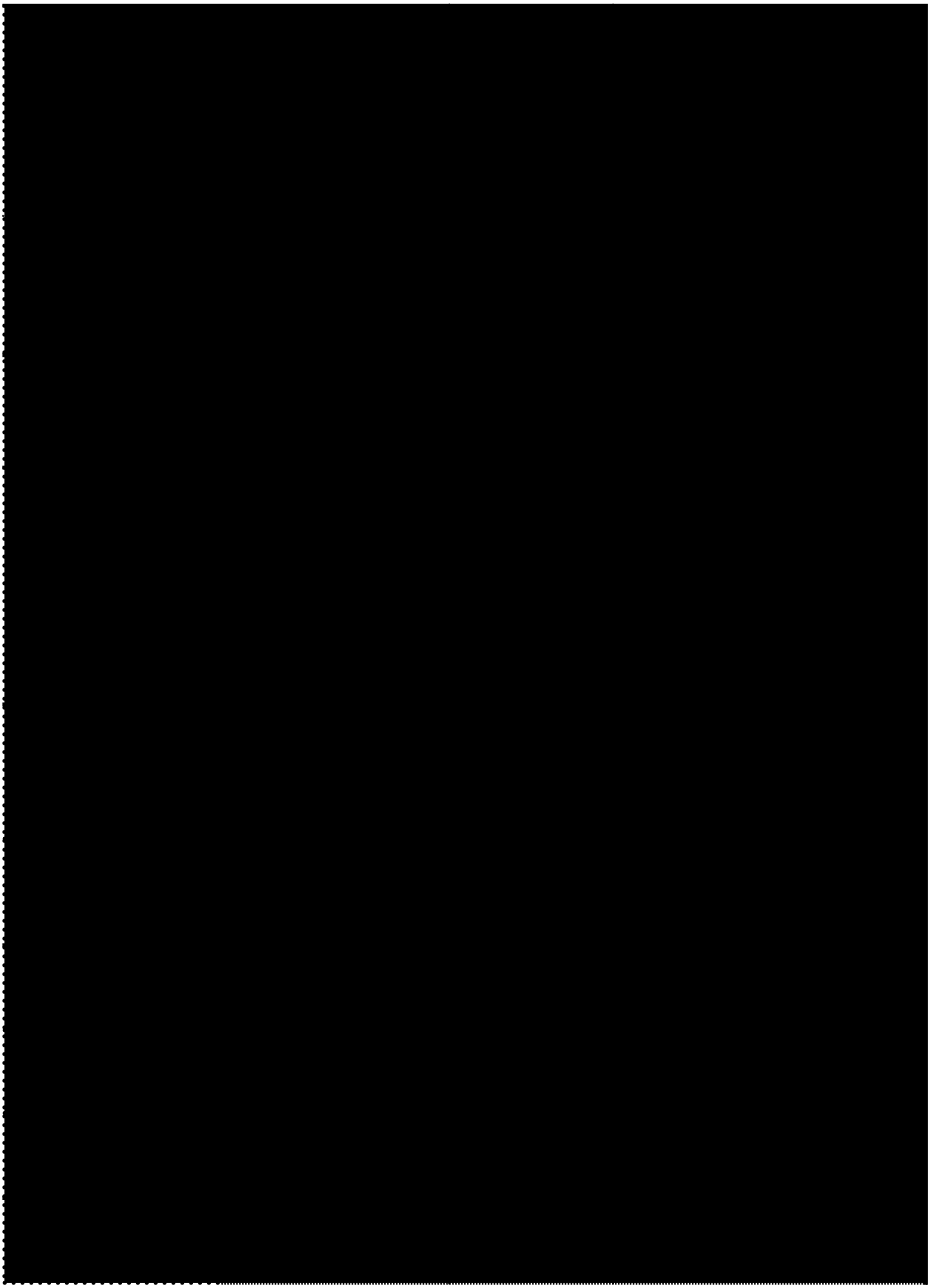


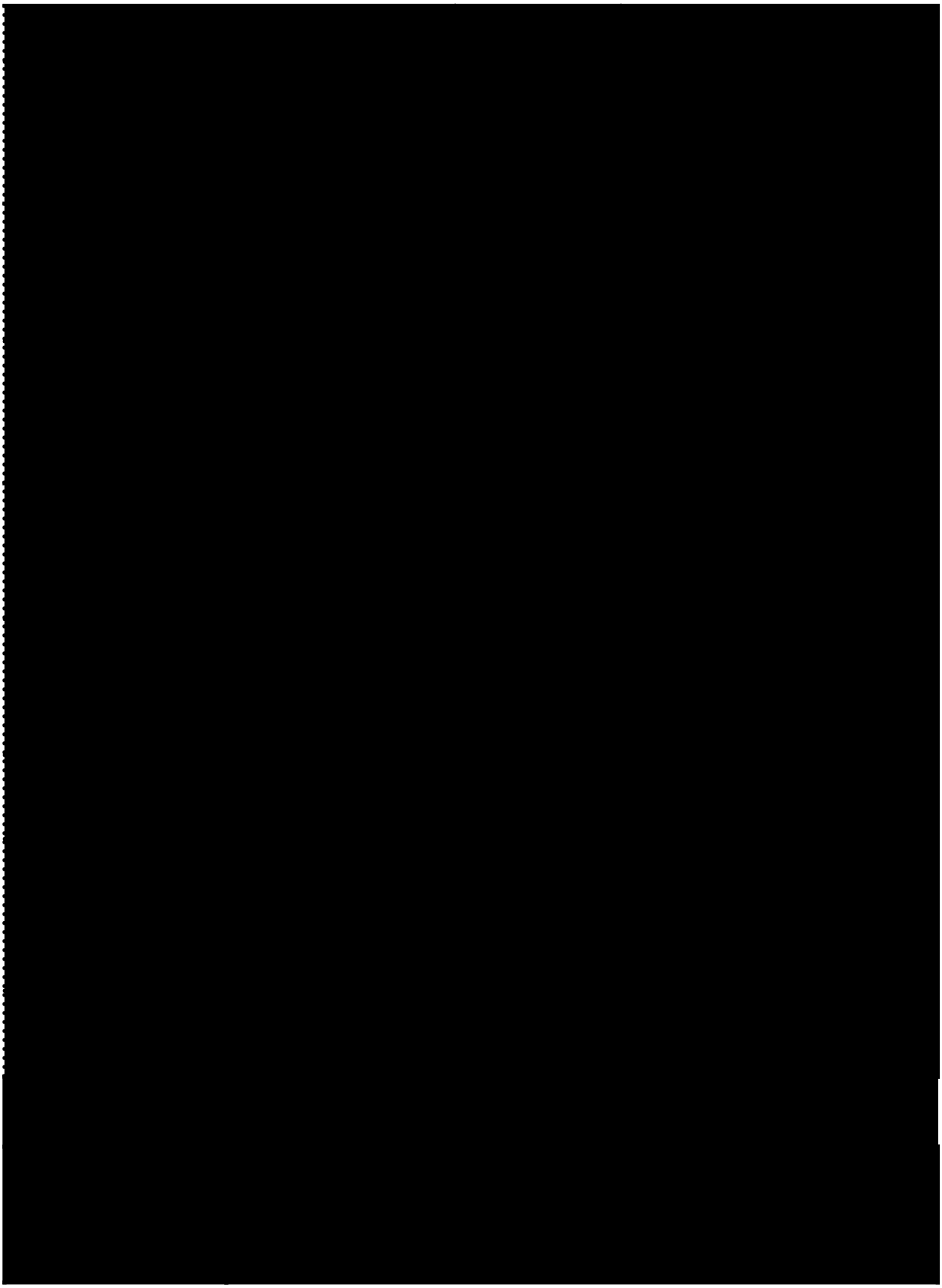












[redacted]

*Critical Equipment Needs and Information to Lessen the Impact of Emergency*

| Equipment | Company | Contact | Location |
|---|---|---|---|
| Generators (7) | [redacted] | | |
| Excavation<br>Water Truck (Nonpotable) | | | |
| Excavation | | | |
| Water Truck (Potable) | | | |

*Critical Information to Lessen the Impact of Emergency*

| Information | Location | Secondary Location |
|---|---|---|
| Distribution System Maps | [redacted] | |
| Operational Records | | |
| Permits | | |
| Technical Manuals | | |
| O&M Plans | | |

An example of the Princeville Utilities *Communication Log* can be seen on pages below.

**System Personnel Contact List**

| Name | Position | Office Phone | Cell Phone |
|---|---|---|---|
| [redacted] | | | |

[redacted]

## Facilities, Equipment, and Assets

*General Review of PUCI Facilities & Assets*

| Water System Facilities & Assets | Wastewater System Facilities & Assets |
|---|---|
| [redacted] | |

## Preliminary Damage Assessment

General Overview:

- ☐ Determine the need to repair, replace, or abandon facilities
- ☐ Estimate cost to repair damage
- ☐ Evacuate buildings in danger of collapse
- ☐ Confirm that the field crew does the following:

Closes and Tags

- ☐ Damaged Facilities
- ☐ Equipment

Wells:

- ☐ Check for physical damage to facilities
- ☐ Test for contamination
- ☐ Contact DOH, DOW, and AECOS.
- ☐ Check for pump or motor failure
- ☐ Check for power source

Treatment Plants:

- ☐ Check on available power (if applicable) and condition of mechanical and electrical equipment.
- ☐ Check for structural damage
- ☐ Check for quality of outflow
- ☐ Check for chemical spills or releases
- ☐ Check for the need for emergency purification

Tanks:

- ☐ Check for evidence of failure of the sub-base.
- ☐ Check for
    - ☐ Leaks
    - ☐ Cracks
    - ☐ Broken inlet/outlet pipes, underdrains
    - ☐ Buckling

Distribution System

- ☐ Check for:
    - ☐ Leaks
    - ☐ Breaks
    - ☐ Pressure loss in lines
    - ☐ Cross-connections between water and sewage
    - ☐ Overflow in streets
- ☐ Check for mechanical coupling

An example of the Princeville Utilities E*mergency Drinking Water Plan*, *Guidelines to Determine Impact of Emergency Form*, *Work Order Log*, *PreCautionary Boil Water Notice, Plan Distribution List, and Records of Change* can be seen on pages below.

**Emergency Hazard Identification/Ranking Form**

| Type of Emergency Hazard | Probability | Magnitude | Ranking | | | |
|---|---|---|---|---|---|---|
| | High | Moderate | Low | Severe | Moderate | Light |
| Construction Accidents | | | X | | | |
| Earthquakes | | X | | | | |
| Densification | | | X | | | |
| Fault Rupture | | | X | | | |
| Ground Shaking | | | X | | | |
| Landslide | | X | | | | |
| Liquefaction | | | X | | | |
| Tsunami and Seiche | | X | | | | |
| Floods | | X | | | | |
| Forest or Brush Fires | | X | | | | |
| Hazardous Material Release | | | X | | | |
| Hurricane | X | | | | X | |
| Flooding | X | | | | | |
| Storm Surge | | X | | | | |
| Wind | X | | | | | |
| Nuclear Bomb | | | X | | | |
| Other Severe Weather | | | | | | |
| Extreme Heat | | X | | | | |
| Lightning | | X | | | | |
| Wind | | X | | | | |
| Other | | | | | | |
| Riots | | | X | | | |
| Structure Fires | | | X | | | |
| Tornados | | | X | | | |
| Transportation Accidents | | | X | | | |
| Air | | | X | | | |
| Road | | | X | | | |
| Water | | | X | | | |
| Vandalism, Terrorism | | | X | | | |
| Treatment Facilities | | | X | | | |
| Storage Facilities | | | X | | | |
| Distribution or Collection | | | X | | | |
| Contamination | | | X | | | |
| Threats | | | X | | | |
| Waterborne Diseases | | | X | | | |

**Risk Assessment**

Due to the nature of Princeville Utilities's locale – being the Hawaiian archipelago – it is most susceptible to diverse types of weather events. The following addresses the most probable threats to the PUCI system. (contemporary and geographical most likely threat)

Hurricanes

- Threat Level: High
- Impact: Structural damage to facilities, power outages, water supply contamination, overflow, and damage to sewer pump stations.
    - Tropical Storm
        - Lightning Events
        - Wind Events

Tsunamis

- Threat Level: Moderate to High
- Impact: Flooding of coastal facilities, contamination of water sources, disruption of services.

Wildfires

- Threat Level: Moderate
- Impact: Damage to above-ground infrastructure, contamination of water sources, and disruption of service.

Heavy Flooding

- Threat Level: High
- Impact: Overwhelming storm and sewer drainage systems, damage to infrastructure, contamination of water sources.

Earthquake

- Threat Level: Moderate
- Impact: Damage to infrastructure, facilities, and roadways.

Drought

- Threat Level: High
- Impact: Limited water source for the community of Princeville.

Other risks include the following:

- Cyber Security Attacks
- Power Outage Incident
- Vandalism
- Road Closures
- Pandemic

Each listed risk poses unique threats to Princeville Utilities personnel and the served community. Therefore, the following plans highlight PUCI's vast understanding of each risk and the appropriate procedures that may follow.

# Hurricane

**Hurricane**

*Actions to Prepare for Hurricane Season*

Planning

- ☐ Review the utility's emergency response plan (ERP) and ensure all emergency contacts are current.
- ☐ Conduct briefings, training, and exercises to ensure the PUCI utility staff is aware of all preparedness, response, and recovery procedures.
- ☐ Identify priority water customers (e.g., Makana North Shore Clinic), obtain their contact information, map their locations, and develop a plan to restore those customers first.
- ☐ Be aware of the PUCI emergency drinking water supply plan and support contacts.
- ☐ Be aware of the PUCI hazard vulnerability analysis

- ☐ Complete pre-disaster activities to help apply for federal disaster funding (e.g., contact state/local officials with connections to funding, set up a system to document damage and costs, and take photographs of the facility for comparison to post-damage photographs).
- ☐ Review the following response activities, roles and responsibilities, and mutual aid procedures:
    - Conducting joint tabletop or full-scale exercises
    - Obtaining resources and assistance, such as equipment, personnel, technical support, or water
    - Establishing interconnections between systems and agreements with necessary approvals to activate this alternate source. Equipment, pumping rates, and demand on the water sources need to be considered and addressed in the design and operation.
    - Establishing communication protocols and equipment to reduce misunderstandings during the incident
- ☐ Coordinate with other key response partners, such as the Fire Department, to discuss:
    - How restoring system operations may have higher priority than establishing an alternative water resource
    - Potential points of distribution for the delivery of emergency water supply (e.g., bottled water) to the public, as well as who is responsible for distributing the water
- ☐ Understand how the local and utility emergency operations center (EOC) will be activated, what PUCI may be called on to do, and how local emergency responders and the local EOC can support PUCI during a response.

<u>Coordination</u>

- ☐ Join HI state's Water/Wastewater Agency Response Network (WARN) or other local mutual aid network.
- ☐ Ensure credentials to allow access will be valid during an incident by checking with local law enforcement.

<u>Communication with Customers</u>

- ☐ Develop outreach materials to provide PUCI customers with the information they will need during a hurricane (e.g., clarification about water advisories, instructions for private well and septic system maintenance, and information about hurricane mitigation).
- ☐ Review public information protocols with local EMA and public health/primacy agencies. These protocols should include water advisory messages (e.g., boil water, warnings that service disruptions are likely) and distributing them to customers using appropriate mechanisms, such as reverse 911 calling. ***Keep in mind that the notice may need to be delivered before the storm to be effective.***

- ☐ Ensure communication equipment works and is fully charged.
- ☐ Review PUCI's GIS map of all system components and each facility.
- ☐ Document pumping requirements and storage capabilities, as well as critical treatment components and parameters.
- ☐ Establish a water-tight or offsite facility to store essential records and equipment.

Personnel

- ☐ Review the list of essential personnel and ensure they are trained to perform critical duties in an emergency (and possibly without communication), including the shutdown and start-up of the system.
- ☐ Establish communication procedures with essential and non-essential personnel. Ensure all personnel are familiar with emergency evacuation and shelter-in-place procedures.
- ☐ Pre-identify emergency operations and cleanup crews. Establish alternative transportation strategies if roads are impassable.
- ☐ Consider evacuations or limited staffing due to transportation issues that will impact PUCI response procedures.
- ☐ Identify possible staging areas for mutual aid crews if needed in the response, and the availability of local facilities to house the crews.
- ☐ Encourage personnel to develop family emergency plans.

Facility and Service Area

- ☐ Inventory and order extra equipment and supplies, as needed:
    - ☐ Motors
    - ☐ Fuses
    - ☐ Chemicals (ensure at least a two-week supply)
    - ☐ Cellular phones or other wireless communications devices
    - ☐ Emergency Supplies
    - ☐ Tarps/tape/rope
    - ☐ Cots/blankets - First aid kits
    - ☐ Foul weather gear • Plywood
    - ☐ Flashlights/flares
    - ☐ Sandbags (often, and must be ordered as well)
    - ☐ Bottled water
    - ☐ Batteries
    - ☐ Non-perishable food

Power, Energy, and Fuel

- ☐ Ask the local power utility to trim tree branches near power lines.

- ☐ Evaluate the condition of electrical panels to accept generators, connections, and switches.
- ☐ Document power requirements of the facility.
- ☐ Confirm and document generator connection type, capacity load, and fuel consumption. Test regularly, exercise under load, and service backup generators.
- ☐ Contact fuel vendors and inform them of estimated fuel volumes needed if the utility is impacted. View a backup fueling plan and a prioritization list of which generators to fuel in case of a fuel shortage.
- ☐ Connect with KIUC to ensure that the PUCI utility is on the critical facilities list for priority electrical power restoration, generators, and emergency fuel.

*Actions to Respond to Hurricane Season*

Planning

- ☐ Actively monitor hurricane activity.

Facility and Service Area

- ☐ Secure equipment; move electronics, equipment, and important data to a water-tight facility or out of flood-prone areas: like vehicles/equipment.
- ☐ Clear storm drains and set up sandbags to protect facilities in flood-prone areas. Place sandbags on the top of tanks so that backwash water is directed away from plant structures.
- ☐ Check that backup equipment and facility systems are in working order, and ensure that the utility has a two-week supply of all chemicals on hand.
- ☐ Protect exposed lines or pipes that may become vulnerable due to streambank erosion.
- ☐ Fill storage tanks to maximize storage and fill empty chemical storage tanks with water if a heavy precipitation event is anticipated, to prevent floating.
- ☐ Empty wastewater holding tanks, ponds, and/or lagoons to prepare for an increase in flow and to minimize the chance of a release during heavy weather incidents.

Power, Energy, and Fuel

- ☐ Fuel vehicles fill fuel tanks and ensure gas can be manually pumped in the event of a power outage.
- ☐ Ensure equipment and other hazardous stored materials are located in a safe zone.

Coordination

- ☐ If needed, request or offer assistance through mutual aid networks.
- ☐ Be aware of the assigned representative of the utility to the incident command center (i.e. Brad Suizu, Manager).

Communication with Customers

- ☐ Notify customers of any water advisories and consider collaborating with local media (television, radio, newspaper, etc.) to distribute the message. If emergency water is being supplied, provide information on the distribution locations.

Facility and Service Area

*Overall*

- ☐ Conduct damage assessments of the utility to prioritize repairs and other actions.
- ☐ Check that backup equipment and facility systems are in working order, and ensure that chemical containers and feeders are intact.

Drinking Water Utilities

- ☐ Inspect the utility and service area for damage due to debris, downed trees, and flood waters. Identify facility components (e.g., valve boxes, fire hydrants) that have been buried or are inaccessible.
- ☐ Ensure pressure is maintained throughout the system and isolate those sections where it is not.
- ☐ Isolate and control leaks in water transmission and distribution piping.
- ☐ Turn off water meters at destroyed homes and buildings.
- ☐ Monitor water quality, review sampling plan, and adjust treatment as necessary.
- ☐ Notify the regulatory/primacy agency of operations and the status of water quality or quantity.
- ☐ Utilize pre-established emergency connections or set up temporary connections to nearby communities, as needed. Alternatively, implement plans to draw emergency water from predetermined tanks or hydrants. Notify employees of the activated sites.

Wastewater Utilities

- ☐ Inspect the utility and service area for damage, downed trees, and power availability.
- ☐ Inspect the sewer system for debris and assess the operational status of the mechanical bar screen. If necessary, run the system in manual operation. Inspect all manholes and pipelines in flood-prone areas for inflow and infiltration after water recedes.
- ☐ Consider suspending solid waste processing during periods of high flow to conserve bacteria and prevent it from washing out of the plant.
- ☐ Notify the regulatory/primacy agency of any changes to the operations or required testing parameters.

Personnel

- ☐ Account for all personnel and provide emergency care, if needed. Caution personnel about known hazards resulting from hurricanes.
- ☐ Deploy emergency operations and clean-up crews. Identify key access points and roads for employees to enter the utility and critical infrastructure; coordinate the need for debris clearance with local emergency management or prioritize it for employee operations.

Power, Energy, and Fuel

- ☐ Use backup generators, as needed, to supply power to system components.
- ☐ Monitor and plan for additional fuel needs in advance; coordinate fuel deliveries to generators.
- ☐ Maintain contact with electric providers for power outage duration estimates.

Documentation and Reporting

- ☐ Document all damage assessments, mutual aid requests, emergency repair work, equipment used, purchases made, staff hours worked and contractors used during the response to assist in requesting reimbursement and applying for federal disaster funds. Take photographs of damage at each work site (with time and date stamp). Proper documentation is critical to requesting reimbursement.
- ☐ Work with the local EMA on the required paperwork for public assistance requests.

*Actions to Recover from a Hurricane*

Coordination

- ☐ Continue work with response partners to obtain funding, equipment, etc.

Communication with Customers

- ☐ Assign a utility representative to continue to communicate with customers concerning a timeline for recovery and other pertinent information (ie. the PUCI office).

Facility and Service Area

- ☐ Complete damage assessments.
- ☐ Complete permanent repairs, replace depleted supplies, and return to normal service.

Documentation and Reporting

- ☐ Compile damage assessment forms and cost documentation into a single report to facilitate the sharing of information and the completion of state and federal funding applications.
- ☐ Fill out PUCI's *Impact of Emergency Form* to keep a record of response activities. Update vulnerability assessment, ERP, and contingency plans.
- ☐ Revise budget and asset management plans to address increased costs from response-related activities.

Mitigation

- ☐ Identify mitigation and long-term adaptation measures that can prevent damage and increase utility resilience. Consider impacts related to the increased frequency of intense hurricanes when planning for system upgrades. PUCI mitigation projects by water and wastewater utilities include:
    - ☐ Protect electrical substations and transformers that would be in danger of failing during floods, storm surges, and high winds

- ☐ Retrofit sanitary sewer lift stations with electrical connections for portable generators to maintain operations during power outages
- ☐ Elevate generators, fuel tanks, critical controls, motors, and blowers to protect against coastal storm surges
- ☐ Replace existing entry doors with heavy-duty, impact-resistant doors and install electric roll-down storm window shutters to protect against flying debris that is associated with hurricane-force winds

**Tropical Storm**

Prepare now for the incoming storm.

1. Fill water tanks and generators;
2. Replenish chemical disinfection supplies to ensure adequate on‑hand supplies
3. Be prepared to shut down well pumps and valve-off areas prone to inundation; Reconfirm communications with local first responders and support contractors/companies (i.e. make them aware of PUCI personnel location, and preparations and provide contact numbers.).
4. Review the communication protocols for staff and service customers. Before the storm arrives, inform customers of where they can obtain more information on damage/repair updates (e.g. main phone numbers, bulletin boards, Facebook, etc.).

After the storm has passed, the Department of Health, Safe Drinking Water Branch recommends the following:

1. Assess the damage to PUCI facilities: Are any water lines ruptured? Tanks drained? Dirty water?
2. INFORM customers: If damage is found and water is contaminated, issue a boil water notice. A sample is attached. Limit the boil water notice to the damaged area(s). Ask customers to conserve water as the PUCI system is re‑filled.
3. NOTIFY SDWB: Call SDWB to inform of any damage and PUCI plan of action.
4. REPAIR: Make repairs to the PUCI system and increase the chlorine residual.
5. TEST the water quality: Test for chlorine residual in the distribution system and take bacteriological samples (Total Coliform and E. coli). Coordinate with SDWB.
6. LIFT the boil water notice: Once the bacteriological samples are negative for E. coli and PUCI consults with SDWB, the notice may be lifted.

As the storm passes, reach out to the emergency contacts. After the storm passes, DOH laboratories will accept emergency samples for testing, if they have the facilities, equipment, and ability to test samples.

Contact the SDWB if emergency samples are needed and test due to storm damage or flooding. 2 SDWB Contact Information 808‑586‑4258 (Oahu office) 808‑342‑4642 (after‑hour disaster emergency only) Text available, please provide:

- **System Name:** Princeville Utilities
- **PWS Number:** 428

# Tsunamis

**Tsunamis**

*Actions to Prepare for Tsunamis*

Planning

- ☐ Review the utility's emergency response plan (ERP) and ensure all emergency contacts are current.
- ☐ Conduct briefings, training, and exercises to ensure the PUCI utility staff is aware of all preparedness, response, and recovery procedures.
- ☐ Identify priority water customers (e.g., Makana North Shore Clinic), obtain their contact information, map their locations, and develop a plan to restore those customers first.
- ☐ Be aware of the PUCI emergency drinking water supply plan and support contacts.
- ☐ Be aware of the PUCI hazard vulnerability analysis
- ☐ Complete pre-disaster activities to help apply for federal disaster funding (e.g., contact state/local officials with connections to funding, set up a system to document damage and costs, and take photographs of the facility for comparison to post-damage photographs).
- ☐ Review the following response activities, roles and responsibilities, and mutual aid procedures:
    - Conducting joint tabletop or full-scale exercises

- Obtaining resources and assistance, such as equipment, personnel, technical support, or water
- Establishing interconnections between systems and agreements with necessary approvals to activate this alternate source. Equipment, pumping rates, and demand on the water sources need to be considered and addressed in the design and operation.
- Establishing communication protocols and equipment to reduce misunderstandings during the incident

☐ Coordinate with other key response partners, such as the Fire Department, to discuss:
- How restoring system operations may have higher priority than establishing an alternative water resource
- Potential points of distribution for the delivery of emergency water supply (e.g., bottled water) to the public, as well as who is responsible for distributing the water

☐ Understand how the local and utility emergency operations center (EOC) will be activated and what PUCI may be called on to do, as well as how local emergency responders and the local EOC can support PUCI during a response.

<u>Coordination</u>

☐ Join HI state's Water/Wastewater Agency Response Network (WARN) or other local mutual aid network.

☐ Coordinate with WARN members and other neighboring utilities to discuss

☐ Ensure credentials to allow access will be valid during an incident by checking with local law enforcement.

☐ Sign up for mobile and/or email alerts from the local EMA, if available.

<u>Communication with Customers</u>

☐ Develop outreach materials to provide customers with the information they will need during a hurricane (e.g., clarification about water advisories, instructions for private well and septic system maintenance, and information about hurricane mitigation).

☐ Review public information protocols with local EMA and public health/primacy agencies. These protocols should include developing water advisory messages (e.g., boil water, warnings that service disruptions are likely) and distributing them to customers using appropriate mechanisms, such as reverse 911 calling. ***Keep in mind that the notice may need to be delivered before the storm to be effective.***

☐ Ensure communication equipment works and is fully charged.

☐ Review PUCI's GIS map of all system components and each facility.

☐ Document pumping requirements and storage capabilities, as well as critical treatment components and parameters.

☐ Establish a water-tight or offsite facility to store essential records and equipment.

<u>Personnel</u>

- ☐ Review the list of essential personnel and ensure they are trained to perform critical duties in an emergency (and possibly without communication), including the shutdown and start-up of the system.
- ☐ Establish communication procedures with essential and non-essential personnel. Ensure all personnel are familiar with emergency evacuation and shelter-in-place procedures.
- ☐ Pre-identify emergency operations and cleanup crews. Establish alternative transportation strategies if roads are impassable.
- ☐ Consider evacuations or limited staffing due to transportation issues that will impact PUCI response procedures.
- ☐ Identify possible staging areas for mutual aid crews if needed in the response, and the availability of local facilities to house the crews.
- ☐ Encourage personnel to develop family emergency plans.

<u>Facility and Service Area</u>

- ☐ Inventory and order extra equipment and supplies, as needed:
    - ☐ Motors
    - ☐ Fuses
    - ☐ Chemicals (ensure at least a two-week supply)
    - ☐ Cellular phones or other wireless communications devices
    - ☐ Emergency Supplies
    - ☐ Tarps/tape/rope
    - ☐ Cots/blankets - First aid kits
    - ☐ Foul weather gear • Plywood
    - ☐ Flashlights/flares
    - ☐ Sandbags (often, and must be ordered as well)
    - ☐ Bottled water
    - ☐ Batteries
    - ☐ Non-perishable food

<u>Power, Energy, and Fuel</u>

- ☐ Ask the local power utility to trim tree branches near power lines.
- ☐ Evaluate the condition of electrical panels to accept generators, connections, and switches.
- ☐ Document power requirements of the facility.
- ☐ Confirm and document generator connection type, capacity load, and fuel consumption. Test regularly, exercise under load, and service backup generators.

- ☐ Contact fuel vendors and inform them of estimated fuel volumes needed if the utility is impacted. View a backup fueling plan and a prioritization list of which generators to fuel in case of a fuel shortage.
- ☐ Connect with KIUC to ensure that the PUCI water utility is on the critical facilities list for priority electrical power restoration, generators, and emergency fuel.

*Actions to Respond to Tsunamis*

Planning

- ☐ Actively monitor hurricane activity.

Facility and Service Area

- ☐ Secure equipment; move electronics, equipment, and important data to a water-tight facility or out of flood-prone areas: like vehicles/equipment.
- ☐ Clear storm drains and set up sandbags to protect facilities in flood-prone areas. Place sandbags on the top of tanks so that backwash water is directed away from plant structures.
- ☐ Check that backup equipment and facility systems are in working order, and ensure that the utility has a two-week supply of all chemicals on hand.
- ☐ Protect exposed lines or pipes that may become vulnerable due to streambank erosion.
- ☐ Fill storage tanks to maximize storage and fill empty chemical storage tanks with water if a heavy precipitation event is anticipated, to prevent floating.
- ☐ Empty wastewater holding tanks, ponds, and/or lagoons to prepare for an increase in flow and to minimize the chance of a release during heavy weather incidents.

Power, Energy, and Fuel

- ☐ Fuel vehicles fill fuel tanks and ensure gas can be manually pumped in the event of a power outage.
- ☐ Ensure equipment and other hazardous stored materials are located in a safe zone.

Coordination

- ☐ Notify local EMA and state regulatory/ primacy agency of system status.
- ☐ If needed, request or offer assistance through mutual aid networks.
- ☐ Be aware of the assigned representative of the utility to the incident command center (i.e. Brad Suizu, Manager).

Communication with Customers

- ☐ Notify customers of any water advisories and consider collaborating with local media (television, radio, newspaper, etc.) to distribute the message. If emergency water is being supplied, provide information on the distribution locations.

Facility and Service Area

*Overall*

- ☐ Conduct damage assessments of the utility to prioritize repairs and other actions.
- ☐ Check that backup equipment and facility systems are in working order, and ensure that chemical containers and feeders are intact.

Drinking Water Utilities

- ☐ Inspect the utility and service area for damage due to debris, downed trees, and flood waters. Identify facility components (e.g., valve boxes, fire hydrants) that have been buried or are inaccessible.
- ☐ Ensure pressure is maintained throughout the system and isolate those sections where it is not.
- ☐ Isolate and control leaks in water transmission and distribution piping.
- ☐ Turn off water meters at destroyed homes and buildings.
- ☐ Monitor water quality, review sampling plan, and adjust treatment as necessary.
- ☐ Notify the regulatory/primacy agency of operations and the status of water quality or quantity.
- ☐ Utilize pre-established emergency connections or set up temporary connections to nearby communities, as needed. Alternatively, implement plans to draw emergency water from predetermined tanks or hydrants. Notify employees of the activated sites.

Wastewater Utilities

- ☐ Inspect the utility and service area for damage, downed trees, and power availability.
- ☐ Inspect the sewer system for debris and assess the operational status of the mechanical bar screen. If necessary, run the system manually. Inspect all manholes and pipelines in flood-prone areas for inflow and infiltration after water recedes.
- ☐ Consider suspending solid waste processing during periods of high flow to conserve bacteria and prevent it from washing out of the plant.
- ☐ Notify the regulatory/primacy agency of any changes to the operations or required testing parameters.

Personnel

- ☐ Account for all personnel and provide emergency care, if needed. Caution personnel about known hazards resulting from hurricanes.
- ☐ Deploy emergency operations and clean-up crews. Identify key access points and roads for employees to enter the utility and critical infrastructure; coordinate the need for debris clearance with local emergency management or prioritize it for employee operations.

Power, Energy, and Fuel

- ☐ Use backup generators, as needed, to supply power to system components.
- ☐ Monitor and plan for additional fuel needs in advance; coordinate fuel deliveries to generators.
- ☐ Maintain contact with electric providers for power outage duration estimates.

Documentation and Reporting

- ☐ Document all damage assessments, mutual aid requests, emergency repair work, equipment used, purchases made, staff hours worked and contractors used during the response to assist in requesting reimbursement and applying for federal disaster funds. Take photographs of damage at each work site (with time and date stamp). Proper documentation is critical to requesting reimbursement.
- ☐ Work with local EMA on the required paperwork for public assistance requests.

*Actions to Recover from Tsunamis*

Coordination

- ☐ Continue work with response partners to obtain funding, equipment, etc.

Communication with Customers

- ☐ Assign a utility representative to continue to communicate with customers concerning a timeline for recovery and other pertinent information (ie. the PUCI office).

Facility and Service Area

- ☐ Complete damage assessments.
- ☐ Complete permanent repairs, replace depleted supplies, and return to normal service.

Documentation and Reporting

- ☐ Compile damage assessment forms and cost documentation into a single report to facilitate the sharing of information and the completion of state and federal funding applications.
- ☐ Fill out PUCI's *Impact of Emergency Form* to keep a record of response activities. Update vulnerability assessment, ERP, and contingency plans.
- ☐ Revise budget and asset management plans to address increased costs from response-related activities.

Mitigation

- ☐ Identify mitigation and long-term adaptation measures that can prevent damage and increase utility resilience. Consider impacts related to the increased frequency of intense hurricanes when planning for system upgrades. PUCI mitigation projects by water and wastewater utilities include:
  - ☐ Protect electrical substations and transformers that would be in danger of failing during floods, storm surges, and high winds
  - ☐ Retrofit sanitary sewer lift stations with electrical connections for portable generators to maintain operations during power outages
  - ☐ Elevate generators, fuel tanks, critical controls, motors, and blowers to protect against coastal storm surges

- ☐ Replace existing entry doors with heavy-duty, impact-resistant doors and install electric roll-down storm window shutters to protect against flying debris that is associated with hurricane-force winds

# Wildfire

**Wildfires**

*Actions to Prepare for a Wildfire*

<u>Planning</u>

- ☐ Identify critical infrastructure and develop contingency plans for loss of access and operations.
- ☐ Make sure hydrants are properly maintained.
  - ☐ Painted
  - ☐ Flow & pressure tested
  - ☐ Landscaped
  - ☐ Fully operational

- ☐ Review the PUCI emergency response plan (ERP) and ensure all emergency contacts are current.
    - ☐ Updated emergency contacts.
    - ☐ Current GIS map(s) of all system components, facilities, and distribution lines, including coordinates for each facility.
    - ☐ Steps for shut down and start-up of the system.
    - ☐ Steps for manual operation of all facilities.
    - ☐ Treatment adjustments to make based on raw water quality changes during and after the fire, if necessary.
    - ☐ A fire-specific sampling plan that can be adjusted during the incident based on the location and extent of the fire relative to the PUCI system (includes groundwater wells as new MCL violations for nitrates and arsenic have been observed at groundwater systems following water systems).
- ☐ Conduct briefings, training, and exercises to ensure the PUCI utility staff is aware of all preparedness, response, and recovery procedures.
- ☐ Identify priority water customers (e.g., Makana North Shore Clinic), obtain their contact information, map their locations, and develop a plan to restore those customers first.
- ☐ Be aware of the PUCI emergency drinking water supply plan and support contacts.
- ☐ Be aware of the PUCI hazard vulnerability analysis
- ☐ Complete pre-disaster activities to help apply for federal disaster funding (e.g., contact state/local officials with connections to funding, set up a system to document damage and costs, and take photographs of the facility for comparison to post-damage photographs).
- ☐ Ensure adequate personal protective equipment (PPE) is available for field employees.
- ☐ Conduct briefings, training, and exercises to ensure utility staff is aware of all preparedness, response, and recovery procedures.
- ☐ Develop emergency evacuation and shelter-in-place procedures as pertinent to wildfires.

<u>Coordination</u>

- ☐ Coordinate with local emergency responders and EMA to:
    - ☐ Understand how the local emergency operations center (EOC) and utility EOC will be activated and what the utility may be called on to do (e.g., keeping hydrants pressurized for firefighting), as well as how local emergency responders and the local EOC can support the utility during a fire response (e.g. assisting with defending a critical asset).
    - ☐ Provide locations of critical facilities with local emergency responders.

- ☐ Identify an appropriate contact such as a Liaison Officer (LO) Public Information Officer (PIO) or other position determined by the EMA that can provide the utility with situational awareness during an incident.
- ☐ Establish a prioritization matrix to balance system restoration versus the establishment of alternative sources of water.
- ☐ Establish potential points of distribution for the delivery of emergency water supply (e.g., bottled water) to the public, as well as who is responsible for distributing the water.

☐ Meet with the fire agency that has authority in the Princeville area. This could include a local fire department, state conservation and forestry offices, and/or the US Forest Service.

- ☐ Review plans (hydrant and reservoir locations, flow rates, allowable drawdowns).
- ☐ Discuss response activities, (e.g., fire suppression chemical use within watersheds or near well fields, how to defend and maintain accessibility to critical infrastructure).
- ☐ Identify hazards (e.g., oxidizers) and vulnerabilities.
- ☐ Ensure the fire agency's fire management plans are updated accordingly with the PUCI water system's critical infrastructure and contingency plans.

☐ Coordinate with WARN members and other neighboring utilities to:

- ☐ Outline response activities, roles and responsibilities, and mutual aid procedures (e.g., how to request and offer assistance such as equipment, personnel, or technical support).
- ☐ Establish interconnections between systems and agreements with the necessary approvals. Equipment, pumping rates, and demand on the water sources need to be considered and addressed.
- ☐ Establish communication protocols and equipment to reduce misunderstandings during an incident.

☐ Coordinate with local laboratories to ensure they have the capability and capacity to continue regular compliance sample analyses, as well as a potential surge of post-fire sample analyses (e.g., bacteriological, nitrate, nitrite, inorganic, and volatile organic compounds).

☐ Coordinate with identified priority water customers (e.g., police station, fire station, and urgent care) to obtain their contact information, map their locations, and develop a plan to restore those customers first or provide point-of-entry treatment options, in case of water service disruptions.

☐ Coordinate with local law enforcement to ensure utility credentials (or a local/state credential program) to allow access to utility assets in the incident area will be valid.

Communication with Customers

- ☐ Determine a spokesperson and backup for communications with the public and media.
- ☐ Develop public notice and other outreach materials in coordination with the state drinking water and wastewater regulatory agencies to provide PUCI customers with information on the safety of their water supply (e.g., boil water or do not use advisories, guidance for residents on what to expect) or operational status of their wastewater system including potential special considerations for wastewater resulting from clean-up and recovery efforts (e.g., what not to put down the drain).
- ☐ Review emergency public information protocols with local EMA and public health/primacy agencies. These protocols should include delivering water advisory messages (e.g., boil water) to customers using appropriate mechanisms, such as reverse 911, in conditions where normal communications may not be available.

Facility and Service Area

- ☐ Inventory equipment and supplies and consider storing them in an accessible and fire-hardened area. Make a list and order extra supplies, such as:
  - ☐ Pumps
  - ☐ Fuses
  - ☐ Chemicals (ensure at least a two-week supply)
  - ☐ Cellular phones or other wireless communications devices with backup battery
  - ☐ Fuel for generators
  - ☐ Sampling bottles, reagents, and equipment
  - ☐ Emergency Supplies;
    - ☐ Tarps/tape/rope
    - ☐ Wrench or pliers
    - ☐ Matches and lighter
    - ☐ Cots/blankets
    - ☐ First aid kits
    - ☐ Sanitizer
    - ☐ Foul weather gear
    - ☐ Plywood
    - ☐ Flashlights/flares
    - ☐ Sandbags (sand must often be ordered as well) • Bottled water • Batteries
    - ☐ Non-perishable food with a manual can opener
    - ☐ Battery-powered or hand crank radio
- ☐ Ensure communication equipment (e.g., radios, satellite phones) works and is fully charged.

- ☐ Fire-harden critical facilities and areas:
  - ☐ Practice mechanical thinning, weed control, selective harvesting, controlled burns, and creation of fire breaks on the utility-managed property, and encourage these practices on property that may directly impact the utility, its water supply, and/or water quality.
  - ☐ Prioritize upgrades to wood structures and flammable materials: wooden water tanks, tank roofs made of wood, wooden building siding, asphalt shingles, etc. Consider replacement with non-combustible material and/or retrofit existing buildings to meet the current building code.
  - ☐ Address and, if possible, remove vegetation from around facilities located in medium to high fire danger zones. Consider paving directly around water tanks and other critical buildings or infrastructure to discourage vegetation under building eaves and replacing flammable vegetation with fire-resistant landscaping.
  - ☐ Create a zone of defensible space of approximately 100 feet or more to protect utility equipment and facilities (e.g., wellheads, structures, supports to wires, and transformers). Consult with the local fire department for specific recommendations or requirements.
  - ☐ Install manual or automatic irrigation systems to provide wetting of components and ground cover for vulnerable areas (e.g., chlorine storage, control equipment buildings).
  - ☐ Assess the possibility of and procedures for using raw or reclaimed water for fire suppression (prepare public notice and talking points).
  - ☐ Document pumping requirements and storage capabilities, as well as critical treatment components and parameters.
  - ☐ Back up essential records and data, and store them in a fireproof safe or offsite facility. Cloud-based storage could allow for accessibility anywhere.

<u>Personnel</u>

- ☐ Identify essential personnel and ensure they are credentialed with local authorities to allow access to facilities during an incident.
- ☐ Ensure all essential personnel are trained to perform critical duties in an emergency (and possibly without communication).
- ☐ Establish communication procedures with essential and non-essential personnel. Ensure all personnel are familiar with emergency evacuation and shelter-in-place procedures.
- ☐ Pre-identify emergency operations and cleanup crews. Establish alternative transportation strategies if roads are impassable.

- ☐ Consider how evacuations or limited staffing due to transportation issues (potentially all utility personnel) will impact the PUCI response procedures.
- ☐ Identify possible staging areas for mutual aid crews if needed in the response, and the availability of local facilities to house the crews.
- ☐ Encourage personnel, especially those who may be on duty for extended periods, to develop family emergency plans.
- ☐ Ensure field personnel have adequate PPE.

<u>Power, Energy, and Fuel</u>

- ☐ Evaluate the condition of electrical panels to accept generators; inspect connections and switches.
    - ☐ Identify options for sourcing generators if needed.
- ☐ Document power requirements of the facility. Local technical assistance providers may be able to help.
- ☐ Confirm and document generator connection type, capacity load, and fuel consumption. Test regularly, exercise under load, and service backup generators.
    - ☐ Load test generators under peak demand conditions that mimic what may occur during a wildfire.
    - ☐ Identify options for sourcing additional generators if the PUCI generators are only designed to operate portions of the PUCI infrastructure during an emergency.
    - ☐ Ensure any generator location has proper ventilation and staff have training on generator safety.
    - ☐ The Public Safety Power Shutoff SOP Template, while developed for shutoffs, can help utilities plan for and recover from any power outage.
- ☐ For systems with generators, consider setting up all generators with automatic transfer switches so generators can start automatically if grid power is lost.
- ☐ Fill fuel tanks and ensure that you can manually pump gas in the event of a power outage. Ensure this equipment and other hazardous materials are located in a safe zone.
- ☐ Contact fuel vendors and inform them of estimated fuel volumes needed if the utility is impacted. Determine the PUCI's ability to establish emergency contract provisions with vendors and the PUCI's ability to transport fuel if re-fueling contractors are not available. Develop a backup fueling plan and a prioritization list of which generators to fuel in case of a fuel shortage.
- ☐ Collaborate with the PUCI local power provider and EOC to ensure that the PUCI water utility is on the critical facilities list for priority electrical power restoration, generators, and emergency fuel.

*Actions to Respond to a Wildfire*

Safety

- ☐ Constantly assess the scene, know the PUCI surroundings, and move to safe spots.
- ☐ Pay attention to all emergency alerts, and instructions, and evacuate immediately if told by authorities. Turn off air conditioning or air circulation systems.
- ☐ Detach any electrical garage doors.
- ☐ Watch for flames, falling debris, sinkholes, uneven ground, large objects, septic systems, explosive materials (propane tanks, etc.), items that puncture, downed power lines, loss of guardrails, safety signals, traffic lights and other typical safety features that are no longer in place, etc.
- ☐ Have an N-95 or other type of respirator available, if possible, to limit exposure to smoke and other toxic fumes.
- ☐ Wet debris to minimize the risk of inhaling dust particles.
- ☐ If returning from evacuation, remember that dangers could still exist for personnel such as hot spots, charred and fallen trees, downed power lines, smoldering and falling debris, sinkholes, mud and landslides, etc.
- ☐ Fatigue during extended periods of emergency work is common and quite dangerous. Be sure to get plenty of rest and stay alert, even outside of the disaster zone.
- ☐ Pay attention to driving conditions.
- ☐ Obey all traffic and construction signs.
- ☐ Carry a first aid kit and avoid unnecessary risk.

Planning

- ☐ Execute the PUCI ERP, communications, and emergency drinking water supply plan, as needed.
- ☐ Work with the PUCI state regulatory agency to develop a fire incident-specific sampling plan that monitors raw water and finished water quality (both surface water and groundwater sources).
    - ☐ Identify target contaminants, a sample collection protocol, sampling locations (including raw water, point of entry, and distribution), and a data quality and management system.
    - ☐ Raw water sampling should include basic water quality parameters such as turbidity, total organic carbon (TOC), pH, alkalinity, iron, and manganese
    - ☐ For any water systems with potentially impacted distribution systems, see EPA's Addressing Contamination of Drinking Water Distribution Systems from Volatile Organic Compounds (VOCs) After Wildfires.

Coordination

- ☐ Notify the local EMA and state regulatory/ primacy agency of system status.
- ☐ If needed, request or offer assistance through mutual aid networks.

- ☐ Be aware of the assigned representative of the utility to the incident command center (i.e. Brad Suizu, Manager).
- ☐ Establish a connection, if possible, with the fire cooperator's meeting location for coordination with responding state and local fire agencies

Communication with Customers

- ☐ Notify customers of any water restrictions or advisories (e.g., boil water, do not use, do not flush) and consider having the PUCI designated spokesperson collaborate with local media (television, radio, newspaper, etc.) and the local EMA (reverse 911, text alerts, etc.) to distribute the message.
- ☐ If conditions are unknown, consider issuing a precautionary water advisory. If emergency water is being supplied, provide information on any distribution locations and logistics.

Facility and Service Area

*Overall*

- ☐ Conduct damage assessments of the utility to prioritize repairs and other actions.
- ☐ Check that backup equipment and facility systems are in working order, and ensure that chemical containers and feeders are intact.
- ☐ Work with the local EMA to identify passable access roads and to ensure that utility facilities in forest areas are identified.
- ☐ Notify the PUCI state regulatory agency of any damage, changes to operations or required testing parameters, and/or impacts to water quality or quantity.

Drinking Water Utilities

- ☐ If possible, refill storage tanks each day to ensure maximum storage for demand, including fire suppression.
- ☐ Keep intakes and access hatches clear of debris.
- ☐ Surface water systems should evaluate the amount of burn area in the watershed contributing to the surface water intakes. The potential increased sediment loadings and estimated travel time from the burn area to the intake should be considered in preparing for future weather events until slope stabilization methods are applied.
- ☐ Surface water systems should conduct on-site jar testing to respond to changes in turbidity, TOC, non-organic matter, and other water quality parameters that could affect treatment efficacy.
    - ☐ Maximize removal of non-organic material pre-disinfection to help reduce disinfection byproduct formation.
- ☐ Determine if any points in the distribution system lost pressure.
- ☐ Turn off services to burned homes.
- ☐ Repair leaks, starting with the most severe ones. Shut off areas where leaking affects the ability to keep water in the system until repairs can be made.

- ☐ Execute the PUCI fire incident sampling plan to monitor raw water and finished water quality.
- ☐ Utilize pre-established emergency connections or set up temporary connections to nearby communities, as needed. Alternatively, implement plans to draw emergency water from predetermined tanks or hydrants. Notify employees and emergency personnel of the activated sites.

<u>Drinking Water Utilities with Contamination</u>

- ☐ Work with the PUCI state regulatory agency to:
    - ☐ Assess the PUCI system for possible contaminants.
    - ☐ Create a sampling plan that identifies target contaminants, sample collection protocols, sampling locations, and data quality and management.
    - ☐ Issue appropriate drinking water advisories (boil water, do not drink, do not drink - do not boil, do not use), and update advisories as needed.
    - ☐ Unidirectionally flush as soon as possible to expel any foreign material/substances and back-siphoned water, and minimize permeation of any VOCs into infrastructure.
        - ☐ Flushing should begin at the water source and proceed downstream through the distribution system.
        - ☐ Multiple flush cycles may be necessary.
        - ☐ Obtain any necessary permits for proper disposal of contaminated waters.
        - ☐ Once the system mains are flushed, customers should be instructed to flush their building plumbing from the tap closest to the service connection to the furthest tap.
        - ☐ Consider isolating areas of distribution to potentially prevent contamination from flowing into unimpacted areas, but also evaluate negative impacts.
        - ☐ Consider alternative water options immediately as returning to normal operations may take time.
        - ☐ Continue to flush and sample until service connections can be cleared.
        - ☐ Determine the next steps, such as pipe or valve replacement, if flushing does not resolve the contamination.
        - ☐ Provide customers with water sampling information and recommended actions as soon as possible.
        - ☐ Determine if a long-term monitoring program for VOCs is appropriate and develop if needed.

<u>Wastewater Utilities</u>

- ☐ Inspect the utility and service area, including lift stations, for damage and power availability.
- ☐ Inspect the sewer system for debris and assess the operational status of the mechanical bar screen. If necessary, run the system in manual operation.

Personnel

- ☐ Remind personnel that their safety is paramount.
- ☐ Account for all personnel and provide emergency care, if needed.
- ☐ If personnel are in the field, communicate with the National Weather Service (NWS) on local wind conditions in the fire area so staff are aware of how quickly winds are shifting and if evacuation from facilities is required.
- ☐ Deploy emergency operations and clean-up crews.
    - ☐ Identify key access points and roads for employees to enter the utility and critical infrastructure
    - ☐ Coordinate the need for debris clearing with local emergency management or prioritize it for employee operations.

Power, Energy, and Fuel

- ☐ Use backup generators, as needed, to supply power to system components. Prioritize critical facilities first.
    - ☐ Backup generators are designed for normal service. Consider requesting additional generators through WARN, technical assistance providers, or emergency management.
- ☐ Monitor and plan for additional fuel needs in advance; coordinate fuel deliveries to generators.
- ☐ Maintain contact with electric providers for power outage duration estimates.
- ☐ Coordinate priority power restoration for critical water production facilities.

Documentation and Reporting

- ☐ Proper documentation is critical for public and private non-profit utilities in requesting reimbursement. Document all damage assessments, mutual aid requests, emergency repair work, equipment used, purchases made, staff hours worked, and contractors used during the response to assist in requesting reimbursement and applying for federal disaster funds. When possible, take photographs (with time and date stamps).
- ☐ Work with the EMA on the required paperwork for public assistance requests.
- ☐ Privately owned systems should prepare similar documentation for actions from any regulating agencies (i.e., Public Utilities Commission). Insurance companies may request specific documentation. Work with the provider to determine appropriate documentation and reporting.

*Actions to Recover from a Wildfire*

Coordination

- ☐ Coordinate through the EMA with debris management teams. Availability of water may be scarce post-wildfire.
- ☐ Water will be necessary for clean-up and dust suppression. • Water may also be needed for water system flushing. • Wastewater may be created from clean-up activities that will require proper disposal.
- ☐ Coordinate with local, state, or federal remediation teams (depending on the size and location of the fire) that will work to implement any necessary emergency stabilization of the landscape (e.g., soil and vegetation) post-fire. This stabilization is critical for surface water systems whose source water quality can be impacted by increased sediment load and debris flows.
- ☐ Continue work with response partners to obtain funding, equipment, etc.
    - ☐ If a Presidential Disaster Declaration is declared for the incident, funding may be available from the Federal Emergency Management Agency for public and private non-profit water and wastewater systems for repairs and sample and analysis.
    - ☐ the PUCI state WARN program does not require a Presidential Declaration and WARN members could be available to assist such as cutting burned service connections, sampling, etc.
- ☐ Coordinate with landowners and other partners to restore and treat burned areas.
- ☐ Coordinate with the PUCI backup water sources to ensure water remains available if needed.

Communication with Customers

- ☐ Assign a utility representative to continue to communicate with customers concerning a timeline for recovery and other pertinent information (ie. the PUCI office).
- ☐ Plan for multiple types of communication with customers (e.g. website, local news, social media, direct).
- ☐ Continue communication and updates on any water use advisories issued as well as information on flushing for residents who stayed or are returning.
- ☐ Make wildfire-related water system sample results available to the public via a website, if possible. This is critical if VOCs are detected in the distribution system.
    - ☐ Ask the city or county to assist with posting the data on their website if a water utility website is unavailable.
    - ☐ Continue posting sample data until the utility returns to normal operations.

Facility and Service Area

- ☐ Complete damage assessments and additional documentation for potential reimbursement.

- ☐ If contamination is present in distribution lines, continue to repeatedly flush and sample by the PUCI post-fire and/or VOC-specific sampling plan and re-assess after each flush and sample cycle. Note: The absence of visual fire damage does not mean damage to piping or appurtenances has not occurred.
- ☐ Conduct sediment removal activities such as installing permanent or temporary debris basins.
- ☐ Consider specialized assessments and material testing. For example, consider taking destructive (representative) samples of sections of the water main or consider rebuilding fire hydrants to determine the extent to which heat may have damaged components.
- ☐ Complete permanent repairs, replace depleted supplies, and return to service.
- ☐ Establish fill stations for clean-up and construction crews.

<u>Watershed/Source</u>

- ☐ Identify mitigation and long-term adaptation measures that can prevent damage and increase utility resilience. Consider impacts related to future climate conditions and the increased frequency of wildfires (e.g., installing buffer strips, removing hazardous fuels, laying steel or ductile iron raw water lines, and building concrete buildings for pumping stations).
- ☐ Consider implementing the following mitigation measures to prepare for possible flash flooding or mudslide events following a wildfire: • Monitor the watershed, as conditions may be different post-fire. Identify potential failure points within the PUCI service area: ensure culverts can handle the increased flow and determine runoff points and areas where water will now collect. • Install a rain gauge upstream of raw water intakes for early warning of heavy precipitation that could lead to high turbidity water and sensors to monitor the amount of debris and sediment coming downstream. • Consider instituting erosion control measures to protect against runoff and sediment concerns that occur during suppression and precipitation.

<u>Treatment and Distribution</u>

- ☐ Consider incorporating resilience and mitigation when designing and reconstructing infrastructure. Consider impacts related to future climate conditions and the increased frequency of wildfires. Some mitigation measures include:
- ☐ Remove any above-ground and shallow buried plastic components and replace them with more fire-resistant materials, like metals.
    - ☐ Installing concrete meter boxes.
    - ☐ Installing metal meters.
    - ☐ Constructing steel tanks.
    - ☐ Burying service lines deeper.

- ☐ Building concrete structures, rather than wood frames, especially for critical facilities.
- ☐ Purchasing additional generators that can be used to handle the extreme load caused by wildfires.

Documentation and Reporting

- ☐ Compile damage assessment forms and cost documentation into a single report to facilitate the sharing of information and the completion of state and federal funding applications.
- ☐ Fill out PUCI's *Impact of Emergency Form* to keep a record of the PUCI response activities. Update the PUCI vulnerability assessment, ERP, and contingency plans.
- ☐ Revise budget and asset management plans to address increased costs from response-related activities.

Mitigation

- ☐ Identify mitigation and long-term adaptation measures that can prevent damage and increase utility resilience. Consider impacts related to the increased frequency of intense hurricanes when planning for system upgrades. PUCI mitigation projects by water and wastewater utilities include:
  - ☐ Protect electrical substations and transformers that would be in danger of failing during floods, storm surges, and high winds
  - ☐ Retrofit sanitary sewer lift stations with electrical connections for portable generators to maintain operations during power outages
  - ☐ Elevate generators, fuel tanks, critical controls, motors, and blowers to protect against coastal storm surges
  - ☐ Replace existing entry doors with heavy-duty, impact-resistant doors and install electric roll-down storm window shutters to protect against flying debris that is associated with hurricane-force winds

# Heavy Flooding

**Heavy Flooding**

*Actions to Prepare for a Flood*

Planning

- ☐ Monitor weather and stream/river flow conditions to anticipate potential flooding conditions. Sign up for the US Geological Survey's (USGS) WaterAlert service to receive an email or text message alert when the river gauges that you have identified surpass specified parameters.
- ☐ Review the utility's emergency response plan (ERP) and ensure all emergency contacts are current.
- ☐ Conduct briefings, training, and exercises to ensure the PUCI utility staff is aware of all preparedness, response, and recovery procedures.
- ☐ Identify priority water customers (e.g., Makana North Shore Clinic), obtain their contact information, map their locations, and develop a plan to restore those customers first.
- ☐ Be aware of the PUCI emergency drinking water supply plan and support contacts.
- ☐ Be aware of the PUCI hazard vulnerability analysis
- ☐ Consult Federal Emergency Management Agency (FEMA) flood maps (link provided in the Resources section of this document) to determine which locations in the PUCI service area are most vulnerable to flooding.

- ☐ Complete pre-disaster activities to help apply for federal disaster funding (e.g., contact state/ local officials with connections to funding, set up a system to document damage and costs, and take photographs of the facility for comparison to post-damage photographs).
- ☐ Understand how the local and utility emergency operations center (EOC) will be activated and what PUCI may be called on to do, as well as how local emergency responders and the local EOC can support PUCI during a response.

Coordination

- ☐ Join HI state's Water/Wastewater Agency Response Network (WARN) or other local mutual aid network.
- ☐ Coordinate with WARN members and other neighboring utilities to discuss:
    - ☐ Outlining response activities, roles and responsibilities, and mutual aid procedures (e.g., how to request and offer assistance)
    - ☐ Conducting joint tabletop or full-scale exercises
    - ☐ Obtaining resources and assistance, such as equipment, personnel, technical support, or water.
    - ☐ Establishing interconnections between systems and agreements with necessary approvals to activate this alternate source. Equipment, pumping rates, and demand on the water sources need to be considered and addressed in the design and operations
    - ☐ Establishing communication protocols and equipment to reduce misunderstandings during the incident
- ☐ Coordinate with other key response partners, such as the local EMA, to discuss:
    - ☐ How restoring system operations may have higher priority than establishing an alternative water source
    - ☐ Potential points of distribution for the delivery of emergency water supply (e.g., bottled water) to the public, as well as who is responsible for distributing the water
- ☐ Ensure credentials to allow access will be valid during an incident by checking with local law enforcement.
- ☐ Sign up for mobile and/or email alerts from the local EMA, if available.

Communication with Customers

- ☐ Develop outreach materials to provide the PUCI customers with the information they will need during a hurricane (e.g., clarification about water advisories, instructions for private well and septic system maintenance, and information about hurricane mitigation).
- ☐ Review public information protocols with local EMA and public health/primacy agencies. These protocols should include developing water advisory messages (e.g.,

boil water, warnings that service disruptions are likely) and distributing them to customers using appropriate mechanisms, such as reverse 911 calling. ***Keep in mind that the notice may need to be delivered before the storm to be effective.***

Personnel

- ☐ Review the list of essential personnel and ensure they are trained to perform critical duties in an emergency (and possibly without communication), including the shutdown and start-up of the system.
- ☐ Establish communication procedures with essential and non-essential personnel. Ensure all personnel are familiar with emergency evacuation and shelter-in-place procedures.
- ☐ Pre-identify emergency operations and cleanup crews. Establish alternative transportation strategies if roads are impassable.
- ☐ Consider evacuations or limited staffing due to transportation issues that will impact the PUCI response procedures.
- ☐ Identify possible staging areas for mutual aid crews if needed in the response, and the availability of local facilities to house the crews.
- ☐ Encourage personnel to develop family emergency plans.

Facility and Service Area

- ☐ Inventory and order extra equipment and supplies, as needed:
    - ☐ Motors
    - ☐ Fuses
    - ☐ Chemicals (ensure at least a two-week supply)
    - ☐ Cellular phones or other wireless communications devices
    - ☐ Emergency Supplies
    - ☐ Tarps/tape/rope
    - ☐ Cots/blankets - First aid kits
    - ☐ Foul weather gear
    - ☐ Plywood
    - ☐ Flashlights/flares
    - ☐ Sandbags (often, and must be ordered as well)
    - ☐ Bottled water
    - ☐ Batteries
    - ☐ Non-perishable food
- ☐ Ensure communication equipment works and is fully charged.
- ☐ Review PUCI's GIS map of all system components and each facility.
- ☐ Document pumping requirements and storage capabilities, as well as critical treatment components and parameters.

- ☐ Establish a water-tight or offsite facility to store essential records and equipment.

Power, Energy, and Fuel

- ☐ Evaluate the condition of electrical panels to accept generators, connections, and switches.
- ☐ Document power requirements of the facility.
- ☐ Confirm and document generator connection type, capacity load, and fuel consumption. Test regularly, exercise under load, and service backup generators.
- ☐ Contact fuel vendors and inform them of estimated fuel volumes needed if the utility is impacted. View a backup fueling plan and a prioritization list of which generators to fuel in case of a fuel shortage.
- ☐ Connect with KIUC to ensure that the PUCI water utility is on the critical facilities list for priority electrical power restoration, generators, and emergency fuel.

*Actions to Respond to a Flood*

Facility and Service Area

- ☐ Secure equipment; move electronics, equipment, and important data to a water-tight facility or out of flood-prone areas. Determine areas outside of the floodplain where vehicles/equipment can be moved.
- ☐ Clear storm drains and set up sandbags to protect facilities in flood-prone areas. Place sandbags on the top of tanks so that backwash water is directed away from plant structures.
- ☐ Check that backup equipment and facility systems, such as controls and pumps, are in working order, and ensure that the utility has a two-week supply of all chemicals on hand.
- ☐ Protect exposed lines or pipes that may become vulnerable due to streambank erosion.
- ☐ Fill storage tanks to maximize storage and fill empty chemical storage tanks with water if a heavy precipitation event is anticipated, to prevent floating.
- ☐ Wastewater utilities should empty holding tanks, ponds, and/or lagoons to prepare for an increase in flow and to minimize the chance of a release during heavy weather incidents.

Power, Energy, and Fuel

- ☐ Fuel vehicles and fill fuel tanks and ensure that you can manually pump gas in the event of a power outage. Ensure this equipment and other hazardous materials are located in a safe zone.

Coordination

- ☐ Notify the local EMA and state regulatory/ primacy agency of system status.
- ☐ If needed, request or offer assistance through mutual aid networks.

- ☐ Be aware of the assigned representative of the utility to the incident command center (i.e. Brad Suizu, Manager).

Communication with Customers

- ☐ Notify customers of any water advisories and consider collaborating with local media (television, radio, newspaper, etc.) to distribute the message. If emergency water is being supplied, provide information on the distribution locations.

Facility and Service Area

*Overall*

- ☐ Conduct damage assessments of the utility to prioritize repairs and other actions.
- ☐ Check that backup equipment and facility systems are in working order, and ensure that chemical containers and feeders are intact.

Drinking Water Utilities

- ☐ Inspect the utility and service area for damage due to debris, downed trees, and flood waters. Identify facility components (e.g., valve boxes, fire hydrants) that have been buried or are inaccessible.
- ☐ Ensure pressure is maintained throughout the system and isolate those sections where it is not.
- ☐ Isolate and control leaks in water transmission and distribution piping.
- ☐ Turn off water meters at destroyed homes and buildings.
- ☐ Monitor water quality, review sampling plan, and adjust treatment as necessary.
- ☐ Notify the regulatory/primacy agency of operations and the status of water quality or quantity.
- ☐ Utilize pre-established emergency connections or set up temporary connections to nearby communities, as needed. Alternatively, implement plans to draw emergency water from predetermined tanks or hydrants. Notify employees of the activated sites.

Wastewater Utilities

- ☐ Inspect the utility and service area for damage, downed trees, and power availability.
- ☐ Inspect the sewer system for debris and assess the operational status of the mechanical bar screen. If necessary, run the system manually. Inspect all manholes and pipelines in flood-prone areas for inflow and infiltration after water recedes.
- ☐ Consider suspending solid waste processing during periods of high flow to conserve bacteria and prevent it from washing out of the plant.
- ☐ Notify the regulatory/primacy agency of any changes to the operations or required testing parameters.

Personnel

- ☐ Account for all personnel and provide emergency care, if needed. Caution personnel about known hazards resulting from hurricanes.

- ☐ Deploy emergency operations and clean-up crews. Identify key access points and roads for employees to enter the utility and critical infrastructure; coordinate the need for debris clearance with local emergency management or prioritize it for employee operations.

Power, Energy, and Fuel

- ☐ Use backup generators, as needed, to supply power to system components.
- ☐ Monitor and plan for additional fuel needs in advance; coordinate fuel deliveries to generators.
- ☐ Maintain contact with electric providers for power outage duration estimates.

Documentation and Reporting

- ☐ Document all damage assessments, mutual aid requests, emergency repair work, equipment used, purchases made, staff hours worked and contractors used during the response to assist in requesting reimbursement and applying for federal disaster funds. Take photographs of damage at each work site (with time and date stamp). Proper documentation is critical to requesting reimbursement.
- ☐ Work with the local EMA on the required paperwork for public assistance requests

*Actions to Recover from a Flood*

Coordination

- ☐ Continue work with response partners to obtain funding, equipment, etc.

Communication with Customers

- ☐ Assign a utility representative to continue to communicate with customers concerning a timeline for recovery and other pertinent information (ie. the PUCI office).

Facility and Service Area

- ☐ Complete damage assessments.
- ☐ Complete permanent repairs, replace depleted supplies, and return to normal service.

Documentation and Reporting

- ☐ Compile damage assessment forms and cost documentation into a single report to facilitate the sharing of information and the completion of state and federal funding applications.
- ☐ Fill out PUCI's *Impact of Emergency Form* to keep a record of the PUCI response activities. Update the PUCI vulnerability assessment, ERP, and contingency plans.
- ☐ Revise budget and asset management plans to address increased costs from response-related activities.

Mitigation

- ☐ Identify mitigation and long-term adaptation measures that can prevent damage and increase utility resilience. Consider impacts related to the increased frequency of

intense flooding when planning for system upgrades. PUCI mitigation projects by water and wastewater utilities include:

- ☐ Protect electrical substations and transformers that would be in danger of failing during floods, storm surges, and high winds.
- ☐ Retrofit sanitary sewer lift stations with electrical connections for portable generators to maintain operations during power outages.
- ☐ Elevate generators, fuel tanks, critical controls, motors, and blowers to protect against coastal storm surges.
- ☐ Replace existing entry doors with heavy-duty, impact-resistant doors and install electric roll-down storm window shutters to protect against water damage.

# Earthquake

**Earthquake**

*Actions to Prepare for an Earthquake*

<u>Planning</u>

- ☐ Monitor weather and stream/river flow conditions to anticipate potential flooding conditions. Sign up for the US Geological Survey's (USGS) WaterAlert service to

receive an email or text message alert when the river gauges that you have identified surpass specified parameters.

- ☐ Review the utility's emergency response plan (ERP) and ensure all emergency contacts are current.
- ☐ Conducted briefings, training, and exercises to ensure the PUCI utility staff was aware of all preparedness, response, and recovery procedures.
- ☐ Identify priority water customers (e.g., Makana North Shore Clinic), obtain their contact information, map their locations, and develop a plan to restore those customers first.
- ☐ Be aware of the PUCI emergency drinking water supply plan and support contacts.
- ☐ Be aware of the PUCI hazard vulnerability analysis.
- ☐ Consult Federal Emergency Management Agency (FEMA) flood maps (link provided in the Resources section of this document) to determine which locations in the PUCI service area are most vulnerable to flooding.
- ☐ Complete pre-disaster activities to help apply for federal disaster funding (e.g., contact state/ local officials with connections to funding, set up a system to document damage and costs, and take photographs of the facility for comparison to post-damage photographs).

<u>Coordination</u>

- ☐ Join the PUCI state's Water/Wastewater Agency Response Network (WARN) or other local mutual aid network.
- ☐ Coordinate with WARN members and other neighboring utilities to discuss:
    - ☐ Outlining response activities, roles and responsibilities, and mutual aid procedures (e.g., how to request and offer assistance)
    - ☐ Conducting joint tabletop or full-scale exercises
    - ☐ Obtaining resources and assistance, such as equipment, personnel, technical support, or water.
    - ☐ Establishing interconnections between systems and agreements with necessary approvals to activate this alternate source. Equipment, pumping rates, and demand on the water sources need to be considered and addressed in the design and operations
    - ☐ Establishing communication protocols and equipment to reduce misunderstandings during the incident
- ☐ Coordinate with other key response partners, such as the local EMA, to discuss:
    - ☐ How restoring system operations may have higher priority than establishing an alternative water source

- ☐ Potential points of distribution for the delivery of emergency water supply (e.g., bottled water) to the public, as well as who is responsible for distributing the water
- ☐ Ensure that the credentials required to allow access are valid during an incident by checking with local law enforcement.
- ☐ Sign up for mobile and/or email alerts from the local EMA, if available.

Communication with Customers

- ☐ Develop outreach materials to provide PUCI customers with the information they will need during a hurricane (e.g., clarification about water advisories, instructions for private well and septic system maintenance, and information about hurricane mitigation).
- ☐ Review public information protocols with local EMA and public health/primacy agencies. These protocols should include developing water advisory messages (e.g., boil water, warnings that service disruptions are likely) and distributing them to customers using appropriate mechanisms, such as reverse 911 calling. ***Keep in mind that the notice may need to be delivered before the storm to be effective.***

Personnel

- ☐ Review the list of essential personnel and ensure they are trained to perform critical duties in an emergency (and possibly without communication), including the shutdown and start-up of the system.
- ☐ Establish communication procedures with essential and non-essential personnel. Ensure all personnel are familiar with emergency evacuation and shelter-in-place procedures.
- ☐ Pre-identify emergency operations and cleanup crews. Establish alternative transportation strategies if roads are impassable.
- ☐ Consider evacuations or limited staffing due to transportation issues that will impact PUCI response procedures.
- ☐ Identify possible staging areas for mutual aid crews if needed in the response, and the availability of local facilities to house the crews.
- ☐ Encourage personnel to develop family emergency plans.

Facility and Service Area

- ☐ Inventory and order extra equipment and supplies, as needed:
  - ☐ Motors
  - ☐ Fuses
  - ☐ Chemicals (ensure at least a two-week supply)
  - ☐ Cellular phones or other wireless communications devices
  - ☐ Emergency Supplies
  - ☐ Tarps/tape/rope

- ☐ Cots/blankets
- ☐ First aid kits
- ☐ Foul weather gear
- ☐ Plywood
- ☐ Flashlights/flares
- ☐ Sandbags (often, and must be ordered as well)
- ☐ Bottled water
- ☐ Batteries
- ☐ Non-perishable food

- ☐ Ensure communication equipment works and is fully charged.
- ☐ Review PUCI's GIS map of all system components and each facility.
- ☐ Document pumping requirements and storage capabilities, as well as critical treatment components and parameters.
- ☐ Establish a water-tight or offsite facility to store essential records and equipment.

<u>Power, Energy, and Fuel</u>

- ☐ Evaluate the condition of electrical panels to accept generators, connections, and switches.
- ☐ Document power requirements of the facility.
- ☐ Confirm and document generator connection type, capacity load, and fuel consumption. Test regularly, exercise under load, and service backup generators.
- ☐ Contact fuel vendors and inform them of estimated fuel volumes needed if the utility is impacted. View a backup fueling plan and a prioritization list of which generators to fuel in case of a fuel shortage.
- ☐ Connect with KIUC to ensure the PUCI water utility is on the critical facilities list for priority electrical power restoration, generators, and emergency fuel.

*Actions to Respond to an Earthquake*

<u>Facility and Service Area</u>

- ☐ Secure equipment; move electronics, equipment, and important data to a water-tight facility or out of flood-prone areas. Determine areas outside of the floodplain where vehicles/equipment can be moved.
- ☐ Clear storm drains and set up sandbags to protect facilities in flood-prone areas. Place sandbags on the top of tanks so that backwash water is directed away from plant structures.
- ☐ Check that backup equipment and facility systems, such as controls and pumps, are in working order, and ensure that the utility has a two-week supply of all chemicals on hand.

- ☐ Protect exposed lines or pipes that may become vulnerable due to streambank erosion.
- ☐ Fill storage tanks to maximize storage and fill empty chemical storage tanks with water if a heavy precipitation event is anticipated, to prevent floating.
- ☐ Wastewater utilities should empty holding tanks, ponds, and/or lagoons to prepare for an increase in flow and to minimize the chance of a release during heavy weather incidents.

Power, Energy, and Fuel

- ☐ Fuel vehicles and fill fuel tanks and ensure that you can manually pump gas in the event of a power outage. Ensure this equipment and other hazardous materials are located in a safe zone.

Coordination

- ☐ Notify the local EMA and state regulatory/ primacy agency of system status.
- ☐ If needed, request or offer assistance through mutual aid networks.
- ☐ Be aware of the assigned representative of the utility to the incident command center (i.e. Brad Suizu, Manager).

Communication with Customers

- ☐ Notify customers of any water advisories and consider collaborating with local media (television, radio, newspaper, etc.) to distribute the message. If emergency water is being supplied, provide information on the distribution locations.

Facility and Service Area

*Overall*

- ☐ Conduct damage assessments of the utility to prioritize repairs and other actions.
- ☐ Check that backup equipment and facility systems are in working order, and ensure that chemical containers and feeders are intact.

Drinking Water Utilities

- ☐ Inspect the utility and service area for damage due to debris, downed trees, and flood waters. Identify facility components (e.g., valve boxes, fire hydrants) that have been buried or are inaccessible.
- ☐ Ensure pressure is maintained throughout the system and isolate those sections where it is not.
- ☐ Isolate and control leaks in water transmission and distribution piping.
- ☐ Turn off water meters at destroyed homes and buildings.
- ☐ Monitor water quality, review sampling plan, and adjust treatment as necessary.
- ☐ Notify the regulatory/primacy agency of operations and the status of water quality or quantity.
- ☐ Utilize pre-established emergency connections or set up temporary connections to nearby communities, as needed. Alternatively, implement plans to draw emergency water from predetermined tanks or hydrants. Notify employees of the activated sites.

Wastewater Utilities

- ☐ Inspect the utility and service area for damage, downed trees, and power availability.
- ☐ Inspect the sewer system for debris and assess the operational status of the mechanical bar screen. If necessary, run the system in manual operation. Inspect all manholes and pipelines in flood-prone areas for inflow and infiltration after water recedes.
- ☐ Consider suspending solid waste processing during periods of high flow to conserve bacteria and prevent it from washing out of the plant.
- ☐ Notify the regulatory/primacy agency of any changes to the operations or required testing parameters.

Personnel

- ☐ Account for all personnel and provide emergency care, if needed. Caution personnel about known hazards resulting from hurricanes.
- ☐ Deploy emergency operations and clean-up crews. Identify key access points and roads for employees to enter the utility and critical infrastructure; coordinate the need for debris clearance with local emergency management or prioritize it for employee operations.

Power, Energy, and Fuel

- ☐ Use backup generators, as needed, to supply power to system components.
- ☐ Monitor and plan for additional fuel needs in advance; coordinate fuel deliveries to generators.
- ☐ Maintain contact with electric providers for power outage duration estimates.

Documentation and Reporting

- ☐ Document all damage assessments, mutual aid requests, emergency repair work, equipment used, purchases made, staff hours worked and contractors used during the response to assist in requesting reimbursement and applying for federal disaster funds. Take photographs of damage at each work site (with time and date stamp). Proper documentation is critical to requesting reimbursement.
- ☐ Work with the local EMA on the required paperwork for public assistance requests

*Actions to Recover from a Power Outage*

Coordination

- ☐ Continue work with response partners to obtain funding, equipment, etc.

Communication with Customers

- ☐ Assign a utility representative to continue to communicate with customers concerning a timeline for recovery and other pertinent information (i.e. the PUCI office).

Facility and Service Area

- ☐ Complete damage assessments.
- ☐ Complete permanent repairs, replace depleted supplies, and return to normal service.

Documentation and Reporting

- ☐ Compile damage assessment forms and cost documentation into a single report to facilitate the sharing of information and the completion of state and federal funding applications.
- ☐ Fill out PUCI's Lessons-Learned Document and/or an After-Action Report (AAR) to keep a record of response activities. Update PUCI vulnerability assessment, ERP, and contingency plans.
- ☐ Revise budget and asset management plans to address increased costs from response-related activities.

Mitigation

- ☐ Identify mitigation and long-term adaptation measures that can prevent damage and increase utility resilience. Consider impacts related to the increased frequency of intense flooding when planning for system upgrades. PUCI mitigation projects by water and wastewater utilities include:
  - ☐ Protect electrical substations and transformers that would be in danger of failing during floods, storm surges, and high winds.
  - ☐ Retrofit sanitary sewer lift stations with electrical connections for portable generators to maintain operations during power outages.
  - ☐ Elevate generators, fuel tanks, critical controls, motors, and blowers to protect against coastal storm surges.
  - ☐ Replace existing entry doors with heavy-duty, impact-resistant doors and install electric roll-down storm window shutters to protect against water damage.

# Drought

**Drought**

*Actions to Prepare for a Drought*

Planning

- ☐ Monitor weather and stream/river flow conditions.
- ☐ Review the utility's emergency response plan (ERP) and ensure all emergency contacts are current.
- ☐ Conduct briefings, training, and exercises to ensure the PUCI utility staff is aware of all preparedness, response, and recovery procedures.
- ☐ Identify priority water customers (e.g., Makana North Shore Clinic), obtain their contact information, map their locations, and develop a plan to restore those customers first.
- ☐ Be aware of the PUCI emergency drinking water supply plan and support contacts.
- ☐ Be aware of the PUCI hazard vulnerability analysis
- ☐ Consult Federal Emergency Management Agency (FEMA) maps to determine which locations in the PUCI service area are most vulnerable.
- ☐ Complete pre-disaster activities to help apply for federal disaster funding (e.g., contact state/ local officials with connections to funding, set up a system to document damage and costs, and take photographs of the facility for comparison to post-damage photographs).

Coordination

- ☐ Join the state's Water/Wastewater Agency Response Network (WARN) or other local mutual aid network.
- ☐ Coordinate with WARN members and other neighboring utilities to discuss:
  - ☐ Outlining response activities, roles and responsibilities, and mutual aid procedures (e.g., how to request and offer assistance)
  - ☐ Conducting joint tabletop or full-scale exercises
  - ☐ Obtaining resources and assistance, such as equipment, personnel, technical support, or water.
  - ☐ Establishing interconnections between systems and agreements with necessary approvals to activate this alternate source. Equipment, pumping rates, and demand on the water sources need to be considered and addressed in the design and operations
  - ☐ Establishing communication protocols and equipment to reduce misunderstandings during the incident
- ☐ Coordinate with other key response partners to discuss:
  - ☐ Establishing an alternative water source.
  - ☐ Potential points of distribution for the delivery of emergency water supply (e.g., bottled water) to the public, as well as who is responsible for distributing the water.
- ☐ Understand how the local and utility emergency operations center (EOC) will be activated and what PUCI may be called on to do, as well as how local emergency responders and the local EOC can support PUCI during a response.

Coordination

- ☐ Join HI state's Water/Wastewater Agency Response Network (WARN) or other local mutual aid network.
- ☐ Coordinate with WARN members and other neighboring utilities to discuss
- ☐ Ensure credentials to allow access will be valid during an incident by checking with local law enforcement.
- ☐ Sign up for mobile and/or email alerts from the local EMA, if available.

Communication with Customers

- ☐ Develop outreach materials to provide PUCI customers with the information they will need during a hurricane (e.g., clarification about water advisories, instructions for private well and septic system maintenance, and information about hurricane mitigation).
- ☐ Review public information protocols with local EMA and public health/primacy agencies. These protocols should include developing water advisory messages (e.g., boil water, warnings that service disruptions are likely) and distributing them to

customers using appropriate mechanisms, such as reverse 911 calling. ***Keep in mind that the notice may need to be delivered before the storm to be effective.***

Personnel

- ☐ Review the list of essential personnel and ensure they are trained to perform critical duties in an emergency (and possibly without communication), including the shutdown and start-up of the system.
- ☐ Establish communication procedures with essential and non-essential personnel. Ensure all personnel are familiar with emergency evacuation and shelter-in-place procedures.
- ☐ Pre-identify emergency operations and cleanup crews. Establish alternative transportation strategies if roads are impassable.
- ☐ Consider evacuations or limited staffing due to transportation issues that will impact the PUCI response procedures.
- ☐ Identify possible staging areas for mutual aid crews if needed in the response, and the availability of local facilities to house the crews.
- ☐ Encourage personnel to develop family emergency plans.

Facility and Service Area

- ☐ Conduct a water audit to detect and repair leaks throughout the distribution system.
- ☐ Identify opportunities for groundwater recharge using stormwater and reclaimed water.
- ☐ Document pumping requirements and storage capabilities, as well as critical treatment components and parameters.
- ☐ Maintain a full storage tank to assist with demand should there be a source loss, power failure or fire suppression needs.
- ☐ In the case of a power loss, ensure personnel are trained to shut down and start up the system manually.

Power, Energy, and Fuel

- ☐ Evaluate the condition of electrical panels to accept generators, connections, and switches.
- ☐ Document power requirements of the facility.
- ☐ Confirm and document generator connection type, capacity load, and fuel consumption. Test regularly, exercise under load, and service backup generators.
- ☐ Contact fuel vendors and inform them of estimated fuel volumes needed if the utility is impacted. View a backup fueling plan and a prioritization list of which generators to fuel in case of a fuel shortage.
- ☐ Connect with KIUC to ensure that the PUCI water utility is on the critical facilities list for priority electrical power restoration, generators, and emergency fuel.

*Actions to Respond to a Drought*

Planning

- ☐ Work with the PUCI regulatory agency to assist in identifying and approving alternate water supplies and operational or design changes.

Coordination

- ☐ Notify the local EMA and state regulatory/ primacy agency of system status.
  - ☐ Discuss issues related to heat index emergencies, fires, and public health activities.
  - ☐ Evaluate conditions and water use requirements related to HVAC systems required by hospitals and identify alternative means to supply water if the utility is unable to meet demand.
- ☐ If needed, request or offer assistance through mutual aid networks.

Communication with Customers

- ☐ **Implement mandatory or voluntary water conservation efforts,** and conduct regular outreach to customers.
- ☐ If water shortages or outages occur, notify customers of water advisories; consider collaborating with local media (television, radio, newspaper, etc.) to distribute the message. If emergency water is being supplied, provide information on the distribution locations.

Facility and Service Area

- ☐ Implement plans to draw emergency water from pre-determined tanks or hydrants. Notify employees of the activated sites.
- ☐ Monitor source water quantity (e.g., reservoir levels, stream flows, well levels, groundwater levels).
- ☐ Monitor water quality and adjust treatment, if necessary, as reduced water quantity and increased temperatures could change water chemistry.
- ☐ Notify the regulatory/primacy agency if water quality or quantity are affected.

Power, Energy, and Fuel

- ☐ Use backup generators, as needed, to supply power to system components.
- ☐ Monitor and plan for additional fuel needs in advance; coordinate fuel deliveries to the generator.

Facility and Service Area

*Overall*

- ☐ Conduct damage assessments of the utility to prioritize repairs and other actions.
- ☐ Check that backup equipment and facility systems are in working order, and ensure that chemical containers and feeders are intact.

Drinking Water Utilities

- ☐ Inspect the utility and service area for damage.

- ☐ Ensure pressure is maintained throughout the system and isolate those sections where it is not.
- ☐ Isolate and control leaks in water transmission and distribution piping.
- ☐ Turn off water meters at destroyed homes and buildings.
- ☐ Monitor water quality, review sampling plan, and adjust treatment as necessary.
- ☐ Notify the regulatory/primacy agency of operations and the status of water quality or quantity.
- ☐ Utilize pre-established emergency connections or set up temporary connections to nearby communities, as needed. Alternatively, implement plans to draw emergency water from predetermined tanks or hydrants. Notify employees of the activated sites.

Wastewater Utilities

- ☐ Inspect the utility and service area for damage.
- ☐ Inspect the sewer system for debris and assess the operational status of the mechanical bar screen. If necessary, run the system in manual operation. Inspect all manholes and pipelines.
- ☐ Consider suspending solid waste processing during periods of high flow to conserve bacteria and prevent it from washing out of the plant.
- ☐ Notify the regulatory/primacy agency of any changes to the operations or required testing parameters.

Personnel

- ☐ Account for all personnel and provide emergency care, if needed. Caution personnel about known hazards resulting from hurricanes.
- ☐ Deploy emergency operations and clean-up crews. Identify key access points and roads for employees to enter the utility and critical infrastructure; coordinate the need for debris clearance with local emergency management or prioritize it for employee operations.

Power, Energy, and Fuel

- ☐ Use backup generators, as needed, to supply power to system components.
- ☐ Monitor and plan for additional fuel needs in advance; coordinate fuel deliveries to generators. XMX
- ☐ Maintain contact with electric providers for power outage duration estimates.

Documentation and Reporting

- ☐ Document all damage assessments, mutual aid requests, emergency repair work, equipment used, purchases made, staff hours worked and contractors used during the response to assist in requesting reimbursement and applying for federal disaster funds. Take photographs of damage at each work site (with time and date stamp). Proper documentation is critical to requesting reimbursement.

*Actions to Recover from a Drought*

Coordination

- ☐ Continue work with response partners to obtain funding, equipment, etc.

Communication with Customers

- ☐ Continue to communicate with customers concerning sustained water conservation measures and practices.

Facility and Service Area

- ☐ Complete damage assessments.
- ☐ Complete permanent repairs, replace depleted supplies, and return to normal service.
- ☐ Be prepared for a spike in water demand. Once normal service has been restored after some time with no water or highly restricted usage, customers will address those domestic and agricultural water needs that were postponed.

Documentation and Reporting

- ☐ Compile damage assessment forms and cost documentation into a single report to facilitate the sharing of information and the completion of state and federal funding applications.
- ☐ Fill out PUCI's *Impact of Emergency Form* to keep a record of the PUCI response activities. Update the PUCI vulnerability assessment, ERP, and contingency plans.
- ☐ Revise budget and asset management plans to address increased costs from response-related activities.

Mitigation

- ☐ Identify mitigation and long-term adaptation measures that can prevent damage and increase utility resilience. Consider impacts related to the increased frequency of intense droughts when planning for system upgrades. PUCI mitigation projects by water and wastewater utilities include:
  - ☐ Monitor conditions.

# Power Outage

**Power Outage**

*Actions to Prepare for a Power Outage*

Planning

- ☐ Review plans regularly for critical system components.
- ☐ Plan for both short-duration and long-duration outages. Know the PUCI system: plan for stationary and portable generators.
- ☐ Pre-staged generators at locations where an event can be expected.
- ☐ Develop appropriate communication protocols.

Coordination

- ☐ Keep close contact with KIUC and learn if circuits (e.g., power transmission lines or electric service area zone) serving the PUCI utility are in high-risk fire areas, such as in the western states.
- ☐ Be aware of emergency contact information
- ☐ For a Public Safety Power Shutoff, confirm with the electric provider and local emergency management agency the communication method and timing (e.g., 72 hours before the shutoff) by which you will be notified of a planned outage.
- ☐ Determine where the PUCI treatment facility and key pumping stations rank on the prioritization list for power restoration. Try to get as high on the list as possible by making sure the list manager understands the reliance of the community (e.g., fire protection, hospitals, shelters, and sensitive populations) on drinking water and wastewater services.

- ☐ Make sure the electric utility has street addresses and locations of the PUCI treatment facilities and pumping stations. In case street signs are damaged or lost, also include latitude and longitude positions.
- ☐ Learn what alternative communication methods (e.g., 2-way radios, ham radio)
- ☐ Develop an approved notification procedure for communicating boil water advisories, water use restrictions, and other information to customers.
- ☐ Develop standard written notification templates to quickly send alerts.
- ☐ Participate in local, state, and federal emergency preparedness exercises.

<u>Generators and Bypass Pumps</u>

- ☐ Conduct a power assessment to determine the PUCI utility's critical facility backup power requirements: kilowatt, voltage, and phase(s) of any required generators.
- ☐ Document materials needed (e.g., number and length of cables to connect the generator, number, and size of lugs to connect cable runs).
- ☐ Ensure generators are always accessible to qualified personnel.
- ☐ Determine lift station bypass capabilities and needed pump sizes, hoses, and connections.
- ☐ Install transfer switches (automatic or manual depending on the mode of operation) and quick-connect plugs to connect the facility's electrical equipment to generators.
- ☐ Purchase generators and bypass pumps. Consider renting generators in advance of hurricane or fire season.
- ☐ Maintain the PUCI generator(s) according to the manufacturer's recommendations and annually exercise generators under full load. Identify maintenance requirements and arrange for specialized support as necessary.
- ☐ Keep basic maintenance supplies on hand (e.g., Diesel Emissions Fluid (DEF), coolant, belts, oil, and fuel filters).
- ☐ Keep small generators and variable frequency drives (VFDs) on trailers for easy transport during emergencies and maintain the trailers, especially the tires.
- ☐ Develop transportation routes and a rotation plan for facilities if there are not enough generators or bypass pumps available for each facility.

<u>Fuel</u>

- ☐ Know the pros and cons of the various fuel types.
- ☐ Calculate how much fuel is needed to operate each generator and bypass pump for one day and determine the PUCI total on-site fuel storage. Be sure to include DEF requirements, as applicable. The U.S. Army Corps of Engineers uses the following formula to determine the approximate generator fuel consumption for 24 hours: Generator kW size x 0.07 gallons/hour/kW x 24 hours.
- ☐ Develop a fuel management plan that includes fuel polishing and fuel additives (e.g., algaecides). Because of potential fuel quality issues, consider stocking extra fuel filters. Have contracts with multiple fuel vendors and check their ability to pump and move fuel during a power outage. Be sure these contracts include wording that you are a priority customer.
- ☐ Have multiple options to move fuel during an emergency, possibly including tanks mounted on utility-owned vehicles.
- ☐ Monitor fuel tank levels and refill when they fall below a defined level so that tanks are

as full as possible for a no-notice power outage.

- ☐ If a storm or other emergency is predicted, fill vehicles, equipment, and fuel storage tanks. Have an alternate plan for pumping from fuel storage tanks if their pumps operate on grid power only.
- ☐ Develop an area-wide emergency operations fuel acquisition and distribution plan.
- ☐ If applicable, establish contacts at the PUCI natural gas utility and learn about their response and recovery plans.

*Actions to Respond to a Power Outage*

Notifications

- ☐ Immediately notify the PUCI electric utility and local emergency management agency of power outages impacting the PUCI facilities. Inform them of:
- ☐ how long you can sustain operations without grid power
- ☐ the consequences to the community of the loss or reduction of water and wastewater services (e.g., a possible reduction in fire protection) Know water storage and wet well capacities for determining when storage will be exhausted.
- ☐ Maintain contact with the PUCI electric utility provider to obtain power outage duration estimates.
- ☐ Notify the regulatory or primacy agency if operations and/or water quality or quantity are affected by a power outage, if the PUCI utility is running on generator power, and what the fuel status is.
- ☐ Notify the public of any boil water notices or water use restrictions.
- ☐ As needed, request generators and fuel through WARN, other mutual aid networks, and/or the local emergency operations center (EOC). Once the PUCI need is met, be sure to cancel any outstanding requests.
- ☐ Implement pre-developed emergency response and communications plans.

Generators

- ☐ Monitor power quality and proactively switch to generators if there is poor power quality, which can damage equipment.
- ☐ Ensure that generators are connected by qualified personnel.
- ☐ Use backup generators, as needed, to supply power to critical facilities. Transport small generators on trailers and address operations, security, and logistics (e.g., maintenance, fuel, parts) for mobile generators.
- ☐ Establish a schedule for maintenance, fuel checks, and refueling for each generator, and ensure scheduled maintenance is regularly completed. The standard service interval is 240 operational hours or after every 10 days of continuous operations. Be sure to plan for redundancy as in most events there is over 10% failure of backup equipment.
- ☐ Consult with air quality agencies as necessary for emergency waivers for prolonged use of certain kinds of generators.
- ☐ Ensure sufficient personnel are available and cross-trained to serve as generator operators. Smaller utilities may need pre-arranged emergency service contracts with qualified electricians or to work with their WARN.

Fuel

- ☐ Constantly monitor fuel quality and needs and coordinate fuel deliveries to generators. If possible, shut down the generator during refueling. Shut down generators based on operational conditions to conserve fuel. Consider canceling any non-essential trips in utility administrative vehicles to prolong the PUCI fuel reserves. Adjust climate control systems and any other large electrical uses at critical facilities to prolong generator run times. Implement staff carpooling to and from work where possible.

Operations

- ☐ Plan for and be prepared to reduce levels of service across the system or in pressure zones incrementally; plans should include actions taken to restore operations to normal levels.
- ☐ Be prepared to operate components of the PUCI utility manually without the aid of computerized systems.
- ☐ Implement plans, procedures, or agreements to provide alternate drinking water as necessary.
- ☐ If possible, switch to source water with less power-intensive requirements. Consider the use of interties and emergency connections with neighboring utilities unaffected by the power disruption.

Documentation

- ☐ Document all damage assessments, mutual aid requests, emergency repair work, fuel and equipment used, purchases made, staff hours worked and contractors used during the response to assist in requesting reimbursement and applying for federal disaster funds. When possible, take photographs of damage at each work site (with time and date stamp). Proper documentation is critical to requesting reimbursement.

*Actions to Recover from Power Outage*

Coordination

- ☐ Check with the electric utility to make sure that all three phases of power are available before switching back to grid power. When power is restored, not all three phases may be initially available, which can damage three-phase equipment.
- ☐ Follow set procedures for taking the PUCI facilities off generator power and back onto grid power.
- ☐ Conduct an after-action discussion with utility staff to identify portions of the response that went well and areas for improvement.
- ☐ Share key after-action items and lessons learned with the PUCI electric utility provider, emergency management agency, and other response partners (e.g., fuel vendors).

Notification

- ☐ Revise or lift (as applicable) any water use advisories that were put in place during the outage.
- ☐ Update the PUCI status with the PUCI regulatory or primacy agency and the PUCI local emergency management agency.

- ☐ Notify utility staff that any energy consumption restrictions that may have been put into place are now lifted.

Generators

- ☐ Perform any necessary maintenance or repairs on generators.
- ☐ Consider testing the PUCI generator oil for signs of metal, which could indicate engine wear and the need for repairs.
- ☐ If a generator is serviced or repaired, be sure to test it under load after work is complete.

Fuel

- ☐ Clean tanks as necessary and polish on-hand fuel supply as time allows.
- ☐ Refill tanks as necessary. Stabilize fuel.
- ☐ Establish new fuel vendor contracts as applicable.
- ☐ Assess the PUCI on-site fuel storage and adjust as necessary.

Documentation and Reporting

- ☐ Compile damage assessment forms and cost documentation into a single report to facilitate the sharing of information and the completion of state and federal funding applications.
- ☐ Fill out PUCI's *Impact of Emergency Form* to keep a record of the PUCI response activities. Update the PUCI vulnerability assessment, ERP, and contingency plans.
- ☐ Revise budget and asset management plans to address increased costs from response-related activities.

# Cybersecurity


**Cybersecurity Incident**

*Actions to Prepare for a Cybersecurity Incident*

Utility

- ☐ Identify all mission-critical information technology (IT) systems, considering business enterprise, process control, and communications. Document the key functions of the mission-critical objectives, and identify the personnel or entity responsible for operating and maintaining each IT system.
  - ☐ SCADA
  - ☐ SAGE
  - ☐ CASELLE
  - ☐ PUCI Shared Drive
- ☐ Contact the PUCI IT department. (Nimble Solutions, LLC)
- ☐ Identify an overall IT security lead to coordinate with each IT system manager and oversee all cyber-related duties.
- ☐ Ensure that IT system managers enforce cybersecurity practices on all business enterprises, process control, and communications systems. Verify adherence to user authentication, current anti-virus software, and installation of security patches.

- ☐ Identify priority points of contact for reporting a cyber incident and requesting assistance with response and recovery. Include any state resources that may be available such as State Police, National Guard Cyber Division, or mutual aid programs, as well as the Department of Homeland Security Cybersecurity and Infrastructure Security Agency (CISA).
- ☐ Prevent unauthorized physical access to IT systems through security measures such as locks, sensors, and alarms. Include workstations and process control systems (e.g., programmable logic controllers or PLCs).
- ☐ Train all essential personnel to perform mission-critical functions during a cyber incident that disables business enterprise, process control, and communications systems. Include the manual operation of water collection, storage, treatment, and conveyance systems.
- ☐ Conduct drills and exercises for responding to a cyber incident that disables critical business enterprise, process control, and communications systems.

<u>IT Staff or Vendor</u>

- ☐ Establish a program for maintaining updated anti-virus software on all critical IT systems, along with rapid installation of all security patches.
- ☐ Set up an automatic backup on critical systems and ensure the process is producing a readable, uncorrupted restore file on a routine basis.
- ☐ Implement rigorous user authentication, including multi-factor authentication where possible. Use individual accounts and unique passwords for each employee, and restrict IT system access privileges to the level needed for a user's duties.
- ☐ Restrict internet access to process control systems unless necessary.
- ☐ Where possible, separate process control system traffic from business traffic through the use of a firewall. If this is not possible, logically filter traffic through the use of a firewall.
- ☐ Identify all routes of remote access to IT systems. Eliminate remote access where possible, and restrict remaining access (e.g., do not allow persistent remote access to control networks).
- ☐ Assess the use of additional strategies to protect IT systems, such as application whitelisting, network segmentation with restricted communication paths, and active monitoring for adversarial system penetration.
- ☐ Conduct a detailed assessment of vulnerabilities in all mission-critical IT systems. Consider the use of the tools and subject matter experts provided by the DHS Cybersecurity and Infrastructure Security Agency (https://www.cisa.gov/cybersecurity). Develop an action plan to mitigate all significant vulnerabilities identified in the assessment.

*Actions to Respond to a Cybersecurity*

<u>Utility</u>

- ☐ Notify IT (Nimble Soulutions, LLC) of the incident and the need for emergency response assistance.
- ☐ Become aware of what data was made unsecure. If public data, the PUCI office should notify the public of their information breach.
- ☐ Disconnect compromised computers from the network to isolate breached components and prevent further damage, such as the spreading of malware. Do not turn off or reboot systems – this preserves evidence and allows for an assessment to be performed.
- ☐ Assess any damage to utility systems and equipment, along with disruptions to utility operations.
- ☐ Execute the utility ERP as needed, including notification of utility personnel, actions to restore operations of mission-critical processes (e.g., switch to manual operation if necessary), and public notification (if required).
- ☐ Report the cyber incident as required to law enforcement and regulatory agencies. In addition, DHS CISA can assist with IT system response and recovery.
- ☐ Notify any external entities (e.g., vendors, other government offices) that may have remote connections to the affected network(s).
- ☐ Document key information on the incident, including any suspicious calls, emails, or messages before or during the incident, damage to utility systems, and steps taken in response to the incident (including dates and times).

<u>IT Staff or Vendor</u>

- ☐ Review system and network logs, and use virus and malware scans to identify affected equipment, systems, accounts, and networks.
- ☐ Document which user accounts were or are logged on, which programs and processes were or are running, any remote connections to the affected IT systems or network(s), and all open ports and their associated applications.
- ☐ If possible, take a "forensic image" of the affected IT systems to preserve evidence. Tools to take forensic images include Forensic Tool Kit (FTK) and EnCase.
- ☐ If possible, identify any malware used in the incident, any remote servers to which data may have been sent during the incident, and the origin of the incident. DHS CISA can assist with the forensic analysis.
- ☐ Research and identify if any employee or customer personally identifiable information (PII) was compromised.
- ☐ Check the system backup time stamp to determine if the backup was compromised during the incident.
- ☐ Document all findings, and avoid modifying or deleting any data that might be attributable to the incident.

*Actions to Recover from Cybersecurity*

<u>Utility</u>

- ☐ Continue to work with IT staff, vendors and integrators, government partners, and others to obtain needed resources and assistance for recovery.
- ☐ Notify affected employees and customers if any PII was compromised.
- ☐ Submit an incident report through WaterISAC (866-H2O-ISAC). Membership is not

required to submit a report.

- ☐ Document utility response activities, successes, and areas for improvement in PUCI's *Impact of Emergency Form.* Register for cybersecurity alerts and advisories from the water sector and government partners to be aware of new vulnerabilities and threats. Two sources of cybersecurity alerts are WaterISAC and ICS-CERT.

IT Staff or Vendor

- ☐ Remove any malware, corrupted files, and other changes made to IT systems by the incident.
- ☐ Restore IT systems as required (e.g., re-image hard drives, reload software). DHS CISA can assist with the IT system recovery.
- ☐ Restore compromised files from a system backup that has not been compromised.
- ☐ Install patches and updates, disable unused services, and perform other countermeasures to harden the system against known vulnerabilities that may have been exploited.

# Cross-Connection and Backflow Prevention

*Actions to Prepare for Cross-Connections and Backflow Prevention*

- ☐ Be aware of cross-connections, and eliminate or isolate them.
- ☐ Schedule proper maintenance, testing, and practices of backflow prevention devices for the Princeville Community.
    - ☐ Maintain air gaps on sinks and when using hoses.
    - ☐ Do not submerge hoses or place them where they could become submerged.
    - ☐ Use hose bib vacuum breakers on fixtures (hose connections in the basement, laundry room, and outside faucets/spigots).
- ☐ Install approved backflow prevention devices on lawn irrigation systems and fire sprinkler system services. Types of preventative required devices are determined based on the potential type of pollutants or contaminants high, low, or moderate.
- ☐ Issue rule (ex.”Failure to comply can result in water service disconnection after repeated requests from our Cross Connection Department.”

*Actions to Respond to Cross-Connections and Backflow Emergency*

- ☐ Be aware of contamination points. (ex. Location, time, and date)
- ☐ Turn off the PUCI water system.
- ☐ Notify Princeville Community
    - ☐ Issue boil water notice immediately
- ☐ Begin flushing the entire system.

- ☐ Notify DOH Safe Drinking Water Branch
  - ☐ Schedule emergency testing

*Actions to Recover from Cross-Connections and Backflow Events*

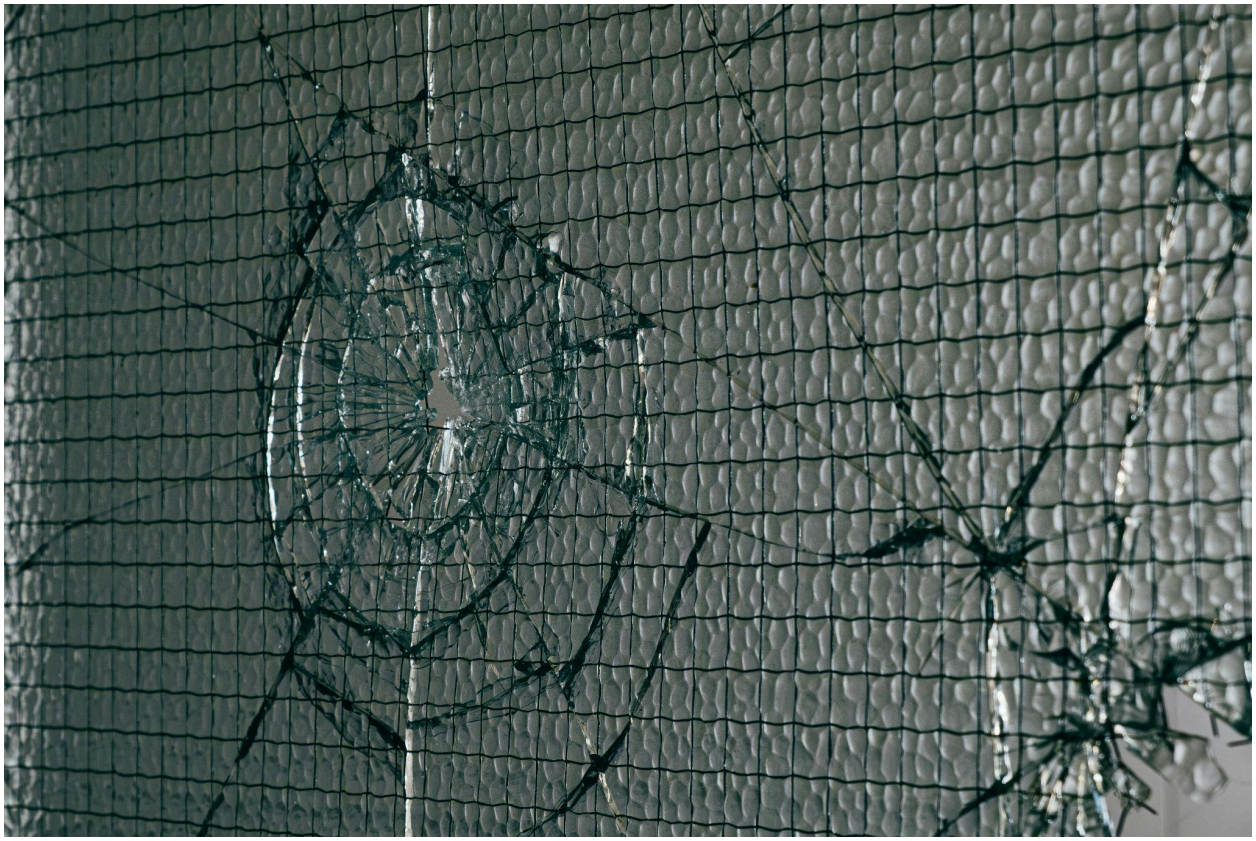
Public Communication:

- ☐ Increase backflow prevention awareness to customers.
  - ☐ Encourage productive habits: not leaving hoses in pools, buckets, etc.
  - ☐ Installing backflow prevention devices in their home.

*PUCI Cross Connection Inventory:*

*Type:*
*RP:*
*Double Check:*
*Location: (TMK&Adress)*
*Owner"*
***Add form***

# Vandalism



*Actions to Prepare for Vandalism*

- ☐ Conduct a thorough risk assessment to identify vulnerable points within the water and wastewater system.
- ☐ Evaluate historical data on vandalism incidents and identify trends or patterns.

Security Measures:

- ☐ Implement physical security measures such as fences, surveillance cameras, and secure locks.
- ☐ Use motion sensors and alarm systems at critical infrastructure points.
- ☐ Control access to facilities with key cards or biometric systems.

Training and Awareness:

- ☐ Train employees on recognizing and reporting suspicious activities.
- ☐ Conduct regular security drills and exercises.
- ☐ Educate the public about the importance of protecting water and wastewater infrastructure.

Emergency Supplies and Equipment:

- ☐ Ensure that emergency repair supplies and equipment are readily available.
- ☐ Maintain an updated inventory of spare parts and repair kits.

*Actions to Respond to Vandalism*

Monitoring Systems:

- ☐ Utilize SCADA (Supervisory Control and Data Acquisition) systems to monitor real-time data and detect anomalies.
- ☐ Implement regular inspections and patrols of critical infrastructure.
- ☐ Incident Reporting:
- ☐ Establish clear protocols for employees and the public to report suspicious activities or incidents of vandalism.
- ☐ Use hotlines, mobile apps, or online reporting systems to facilitate timely reporting.
- ☐ Immediate Actions:
- ☐ Upon detection of vandalism, immediately alert the response team and local law enforcement.
- ☐ Secure the affected area to prevent further damage and ensure the safety of personnel and the public.

Damage Assessment:

- ☐ Conduct a rapid assessment to determine the extent of damage and potential impact on water and wastewater services.
- ☐ Prioritize repair efforts based on the severity of the damage and the criticality of the affected infrastructure.
- ☐ Repair and Restoration:
- ☐ Deploy repair teams to fix damaged infrastructure as quickly as possible.
- ☐ Use pre-arranged contracts with external contractors if additional support is needed.

Internal Communication:

- ☐ Establish a communication protocol for coordinating response efforts among employees, management, and response teams.
- ☐ Use radios, mobile phones, and other communication devices to maintain constant contact.

Public Communication:

- ☐ Inform the public about the incident, potential service disruptions, and expected repair timelines.
- ☐ Use multiple channels such as social media, local news, and direct notifications (e.g., SMS alerts).

Regulatory Communication:

- ☐ Notify relevant regulatory bodies and government agencies about the incident and response actions.
- ☐ Provide regular updates on the progress of repairs and restoration.

*Actions to Recover from Vandalism*

Post-Incident Review:

- ☐ Conduct a thorough review of the incident to understand the causes and effectiveness of the response.
- ☐ Identify lessons learned and areas for improvement.

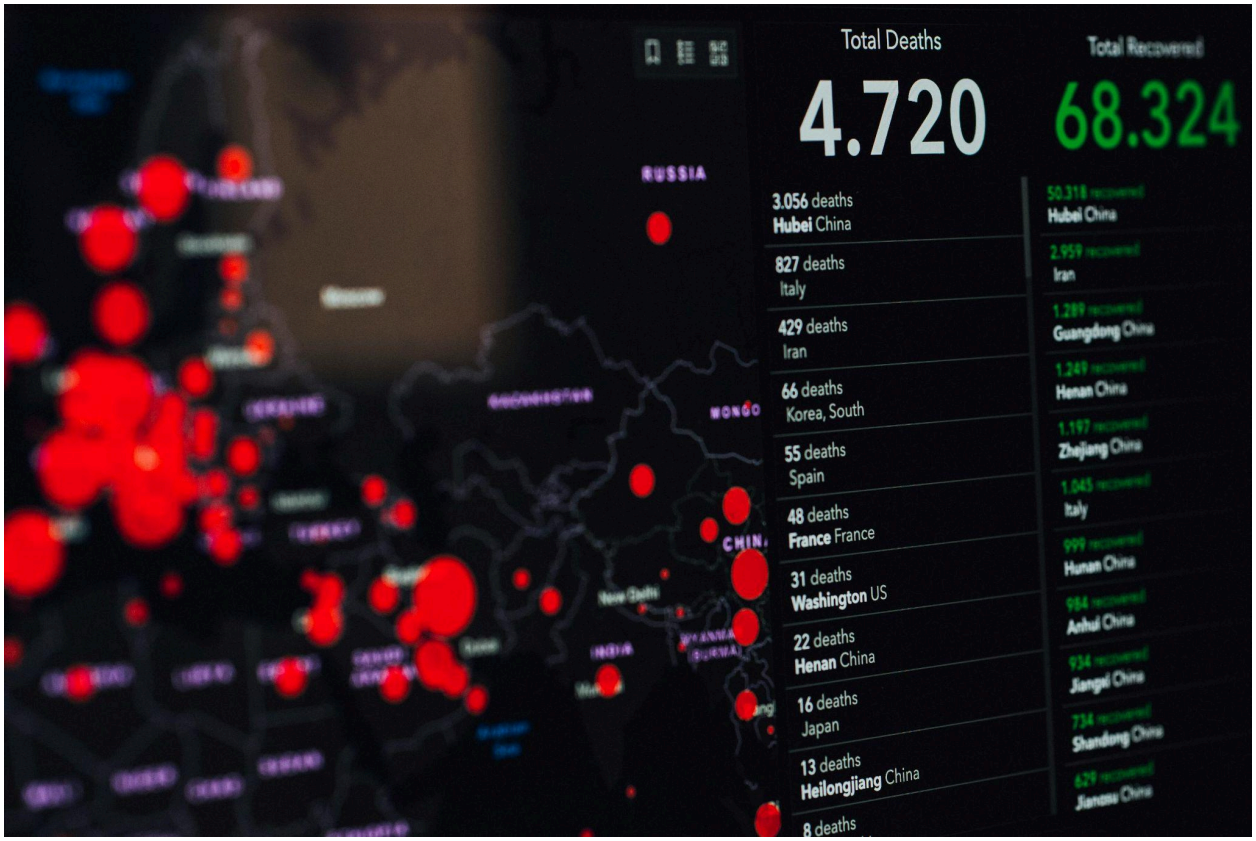
Infrastructure Upgrades:

- ☐ Consider implementing additional security measures or infrastructure upgrades based on the incident review.
- ☐ Enhance monitoring and detection systems to prevent future incidents.
- ☐ Staff Support:
- ☐ Provide support and counseling for staff affected by the incident.
- ☐ Recognize and reward employees for their efforts during the response and recovery phases.

Documentation and Continuous Improvement & Record Keeping:

- ☐ Document all actions taken during the incident response and recovery.
- ☐ Maintain detailed records of damages, repairs, and costs associated with the incident.
- ☐ Plan Updates:
- ☐ Regularly update the emergency response plan based on new risks, technologies, and lessons learned from incidents.
- ☐ Conduct annual reviews and updates of the plan.
- ☐ Training and Drills:
- ☐ Schedule regular training sessions and drills to keep staff prepared for future incidents.
- ☐ Incorporate scenarios based on recent incidents and emerging threats.

# Pandemic




*Actions to Prepare for Pandemic*

- ☐ Develop policies for infection control, social distancing, remote work, and employee health monitoring.
- ☐ Establish guidelines for personal protective equipment (PPE) usage and sanitation protocols.

<u>Training and Awareness:</u>

- ☐ Train employees on pandemic response procedures, hygiene practices, and the use of PPE.
- ☐ Conduct informational sessions on the nature of the pandemic and preventive measures.

<u>Supplies and Equipment:</u>

- ☐ Ensure adequate stocks of PPE, cleaning supplies, and essential repair materials.
- ☐ Set up contingency contracts with suppliers for critical materials and services.

<u>Detection and Prevention & Health Monitoring:</u>

- ☐ Implement employee health screening procedures, such as temperature checks and health questionnaires.
- ☐ Establish protocols for reporting illness and exposure to infectious diseases.

<u>Workplace Modifications:</u>

- ☐ Modify workspaces to support social distancing (e.g., staggered shifts, remote work options).
- ☐ Enhance cleaning and disinfection practices, especially for high-touch surfaces.

*Actions to Respond to the Pandemic*

Operational Adjustments:

- ☐ Activate a pandemic response team to oversee operations and ensure compliance with health guidelines.
- ☐ Prioritize critical operations and consider a temporary suspension of non-essential activities.

Staffing Contingency Plans:

- ☐ Cross-train employees to cover critical roles in case of absenteeism.
- ☐ Develop plans for utilizing temporary workers or partnering with neighboring utilities for mutual aid.
- ☐ Isolation and Quarantine:
- ☐ Implement isolation protocols for employees who exhibit symptoms or test positive for the disease.
- ☐ Establish clear guidelines for quarantine periods and return-to-work criteria.

Internal Communication:

- ☐ Set up regular briefings to keep employees informed about the situation and response efforts.
- ☐ Use multiple communication channels (e.g., email, text, intranet) to disseminate information quickly.

Public Communication:

- ☐ Keep the public informed about any service changes, water safety, and health precautions.
- ☐ Use social media, website updates, and local news outlets to reach the community.
- ☐ Regulatory Communication:
- ☐ Notify regulatory bodies about operational changes, service disruptions, and compliance with public health directives.
- ☐ Provide regular updates on the status of water and wastewater services.

*Actions to Recover to Pandemic*

Post-Pandemic Review:

- ☐ Conduct a thorough review of the response to identify strengths, weaknesses, and areas for improvement.
- ☐ Document lessons learned in PUCI's *Impact of Emergency Form.*
- ☐ Reintegration and Support:
- ☐ Gradually return to normal operations while maintaining flexibility to re-impose restrictions if necessary.

- ☐ Provide support for employees affected by the pandemic, including mental health resources and counseling.

Documentation and Continuous Improvement & Record Keeping:

- ☐ Maintain detailed records of all actions taken during the pandemic response, including health screenings, staff absences, and communication efforts.
- ☐ Document expenses related to the pandemic response for potential reimbursement or future budgeting.

Plan Updates:

- ☐ Regularly review and update the pandemic response plan based on new information, guidance from health authorities, and lessons learned from the current pandemic.
- ☐ Conduct annual reviews and updates to ensure preparedness for future pandemics.

Training and Drills:

- ☐ Schedule regular training sessions and drills to keep staff prepared for pandemic scenarios.
- ☐ Incorporate feedback from exercises to improve response strategies.

# Emergency Drinking Water Plan

*Emergency Drinking Water Plan*

- ☐ Risk Assessment and Identification
  - ☐ Natural Disasters: Hurricanes, tsunamis, earthquakes, and other natural disasters specific to Hawaii (as explained above).

- ☐ Infrastructure Failures: Assess risks related to infrastructure (pipe bursts, pump failures, and main breaks).
- ☐ Contamination Risks: Evaluate risks of contamination.

☐ Emergency Response Team
- ☐ The PUCI Team called in to repair if infrastructure is impacted.
- ☐ Contacts: The PUCI Office contains the "Primary Contact List" and/or location impacted. PUCI follows the applicable communication plan with public notification (ie, boil water notice).

☐ Emergency Water Sources
- ☐ Alternative Supplies: Menehune Water, Paradise Beverage, and other contacts listed under "Alternative Water Supplies."
- ☐ On-site Storage: None
- ☐ Portable Treatment Units: RT Inc., Kaiwa Constructions, and other contacts listed under "Alternative Water Supplies" for water truck units.

☐ Infrastructure Resilience
- ☐ System Redundancies: Backup pumps, generators, and other power sources.
- ☐ Regular Maintenance: Implement a rigorous maintenance schedule to ensure all equipment is in good working order.
- ☐ Ensure infrastructure is retrofitted/supported to withstand earthquakes and other natural disasters common in Hawaii.

☐ Water Quality Monitoring
- ☐ Regular Testing: Conduct regular water quality tests to ensure compliance with health standards.
- ☐ Emergency Testing Kits: Have emergency water testing kits readily available to quickly assess water safety during a crisis.

# Water Supply Well Disinfection

*Well Disinfection & Quick Chlorine Reference*

WATER SUPPLY WELL DISINFECTION

1. USE CAUTION WHEN WORKING ON THE WELL TO AVOID ELECTRICAL SHOCK FROM THE PUMP.
2. Pump well until the water is clear.
3. If the well is undamaged, introduce and mix disinfectant, such as chlorine, through the entire water column. In most cases, disinfectants that are poured from the top of the well will not reach the entire water column. For best results, the pump should be pulled, contaminated water should be removed from the well, proper quantities of disinfectant should be thoroughly mixed and surged within the well, and the mixture pumped to waste. Proper contact time must be allowed between the contamination and

the disinfectants. If contaminated water has flowed into the well and entered the aquifer, a single application of disinfectants may not be enough. In these cases, water may be pumped from the well to waste for one to three days to evacuate the well and adjacent aquifer sediments before introducing disinfectants.

4. Introduce a prepared chlorine solution into the well in sufficient quantity to produce a minimum chlorine residual of fifty (50) parts per million in six (6) hours after such an application.
5. Disinfect the well pump and pumping equipment with a strong chlorine solution before being placed into service.
6. Let the chlorinated water stand in the well and the pipes for 24 hours.
7. Pump the well to waste until no trace of chlorine (chlorine smell) is detectable.
8. Collect water samples at the wellhead and have them tested for coliform bacteria by a division-approved laboratory. If water fails the bacteria test, re-disinfect the well. EPD will assist in testing.
9. Before placing the well into service as a drinking water source, acceptable microbiological water quality results must be obtained.

OPERATORS OF PUBLIC WATER SYSTEMS

QUICK REFERENCE (to prepare Chlorine Solution)

1. Use the following number of ounces of chlorine compounds of a given available chlorine content (generally marked on the outside of the can or package) required to provide a concentration of 50 parts per million in 1000 gallons of water:

| | |
|---|---|
| 100% liquid chlorine | 6.7 oz. |
| 15% chlorine compound | 44.7 oz. |
| 25% chlorine compound | 26.7 oz. |
| 30% chlorine compound | 22.3 oz. |
| 70% chlorine compound | 9.6 oz. |

*Use the following amounts of chlorine compounds required to dose 100 foot water-filled well at 50 mg/l*

| Amount of Chemical Compound | | | | |
|---|---|---|---|---|
| Well Casing Diameter | Volume/100 ft of Water Depth 100% | Calcium Hypochlorite 65% | Sodium Hypochlorite | Liquid |
| | | | | |

| | | | | |
|---|---|---|---|---|
| 4 | 65.28 | 0.7 oz. | 3.5 fl. oz. | 0.03 lb. |
| 6 | 146.9 | 1.5 oz. | 7.8 fl. oz. | 0.06 lb. |
| 8 | 261.1 | 2.7 oz. | 13.9 fl oz. | 0.11 lb. |
| 10 | 408.0 | 4.2 oz. | 1.4 pt. | 0.17 lb. |

This information material is provided as background knowledge and information. Systems should ensure compliance with proper state regulations by contacting appropriate authorities.

# Disinfection of Unsafe Water

*Water Disinfection: Boil & Chemical*

**DISINFECTION OF UNSAFE WATER PROCESSES**

The following procedures will destroy the usual bacteria and other microorganisms that may be present in water obtained from a contaminated public water supply system or alternate emergency sources. IF YOUR WATER SYSTEM IS UNDER A "BOIL WATER NOTICE", YOU SHOULD CONTINUE TO BOIL YOUR WATER UNTIL YOU ARE NOTIFIED BY YOUR WATER UTILITY THAT THE WATER SYSTEM HAS BEEN RESTORED TO FULL OPERATION AND THAT THE MICROBIOLOGICAL QUALITY OF THE WATER IS SAFE FOR HUMAN CONSUMPTION.

**HEAT DISINFECTION (boiling)**

Boil the water for at least one minute after reaching a rolling boil.

**CHEMICAL DISINFECTION**

If boiling your water is not possible, consider chemically disinfecting your water. Follow the steps outlined below:

1. Strain water through a clean, tightly woven cloth into a clean container to remove any

sediment or floating matter.

2. Purify the water with one of the following chemicals (choice of chemical is based on availability).
3. Hypochlorite solutions (PUREX, CLOROX, or other household bleach).

Read the label to find the percent of available chlorine in the solution and determine the number of drops needed to disinfect each quart of water from the table below.

| Available Chlorine | Drops of Bleach To add to each quart of clear water | Drops of Bleach To add to each quart of cloudy water |
|---|---|---|
| 1% | 10 | 20 |
| 4 to 6% | 2 | 4 |
| 7 to 10% | 1 | 2 |
| If not known | 10 | 20 |
| Mix thoroughly by stirring or shaking water in a container. | | |
| Let stand for 30 minutes. A slight chlorine odor should be detectable in the water. | | |
| If not, repeat the dosage and let stand an additional 15 minutes before using. | | |

Iodine: Use USP tincture of iodine; iodine from the medicine cabinet should be suitable. Add two to three drops to each quart of clear water (or eight to ten drops to each quart of cloudy water). Mix and let water stand for 30 minutes before using.

# Water Storage & Underground Storage

*Aboveground and underground storage*

**WATER STORAGE**

Water purified by boiling should be stored in clean, non-corrosive, tightly covered containers. Containers suitable for water storage include empty vinegar bottles, soft drink jugs, and plastic milk containers that have been thoroughly washed and rinsed with purified water. Freezing does not disinfect water; ice cubes must be made from water that is properly disinfected.

FLUSHING HOME WATER LINES

1. The best and easiest way to begin flushing your water lines is to use a garden hose and wash off your patio or driveway for half an hour.
2. Water pipes in homes that have been submerged in water may be extremely dirty. Clean the exterior of pipes and faucets with a regular household cleaner. Briefly run hot and cold water at all faucets to remove dirt that may have settled just inside the faucets. Next, squirt a 50 percent water, and 50 percent household bleach solution into the faucets. Then flush ALL water pipes as described in Step C below.
3. Sequentially flush out all water pipes inside the house. Begin at the faucet nearest the point where the water line enters the house. This is usually the sink nearest the water meter. Turn on both hot and cold faucets at full blast for three to five minutes. IF AFTER THIS AMOUNT OF TIME YOUR WATER DOES NOT BECOME CLEAR, DO NOT USE IT FOR CONSUMPTION. (You may wish to catch water in buckets if you are concerned about overloading your septic tank.)

<u>UNDERGROUND WATER STORAGE TANK:</u>

1. A UST Contact Center should be established for handling calls concerning UST problems in flood-impacted areas.
2. Because of the potential for releases of gasoline or diesel fuel from damages sustained from flooding, the following steps should be taken to return impacted UST Systems to operation. These steps will help to avoid future liabilities.
3. Visual Observation: Check for obvious indications of released gasoline or diesel or damage to the UST System.
4. Document all findings and maintain records of visual observations and any gasoline or diesel loss indicated through inventory records. For example, if the UST previously contained 6,000 gallons of gasoline and subsequent visual observations indicate the UST is now filled with water, detailed information should be maintained. This information will be critical for submitting a request for assistance.
5. Utilize an approved precision tightness test employing overfill or vacuum test methods for evaluating the integrity of the tanks and piping before returning them to service. This is recommended because of future liabilities that may occur if problems are not corrected at this point.
6. Financial assistance for the required system testing in flood-impacted areas may be available through your state regulatory agency.

# Sample Precautionary Boil Water Notice

Date:
To: Consumers of the System Name water system

EFFECTIVE IMMEDIATELY
and until further notice
DO NOT DRINK WATER FROM YOUR TAP

Due to [describe reason], the Princeville Utilities customers in [delineate affected area(s)] are advised to boil all water used for drinking and cooking purposes until further notice.

DO NOT DRINK THE WATER WITHOUT BOILING IT FIRST.

Bring the water to a rolling boil for a minimum of 1 minute, cool down, and store in a sterilized/disinfected container. Alternatively, customers may add between 1-8 drops of new, unscented liquid bleach with a strength of 5-6% (like Clorox) to each gallon of water for disinfection. Fill a clean container with water, add the chlorine, and let the water stand for at least 30 minutes before using. The water will have a slight chlorine odor.
Boiled, disinfected or bottled water should be used for drinking, making ice, brushing teeth, washing dishes, and food preparation until further notice. Boiling and disinfection kill bacteria and other organisms in the water.

Call the water system office or water system contact person at the phone number if you have any questions.

[insert water system manager's name]

# Dealing with Media Tips

*Addressing the Media during Emergency*

**PLAN AHEAD**

Media relations start before a disaster occurs. Take steps to familiarize yourself with your local media representative on an ongoing basis. The best way to do this is for your water or wastewater systems to be active in various public relations programs. Regular press releases and articles on routine operations not only keep the public informed on your system but serve to open a dialogue between you and the various local news organizations. Before a disaster strikes, you should know them and they should know you.

**WHEN DISASTER STRIKES**

If a disaster occurs, the press will be on the scene relatively quickly. Make preparations before meeting the media. Check your facts and organize the information you plan to release before your interview.

**AVAILABILITY**

Don't hide from the media. The public has a right to know the situation. Take a proactive approach and establish your association as the spokesperson for your member systems, helping keep the pressure off the system where possible. Schedule a meeting with the media at the first reasonable time and at a location you choose. Familiar surroundings can ease the situation for you. After your initial report, schedule regular updates. Adapt these to your schedule, not the reporter's.

**ACCURACY**

This is extremely important. Be sure of your facts and give only the facts. Don't be drawn into expounding on your present story or speculating on situations where you have no confirmed information. Avoid ad-libbing. Be brief and to the point. If injuries are involved, numbers are okay but avoid specifically naming the injured parties.

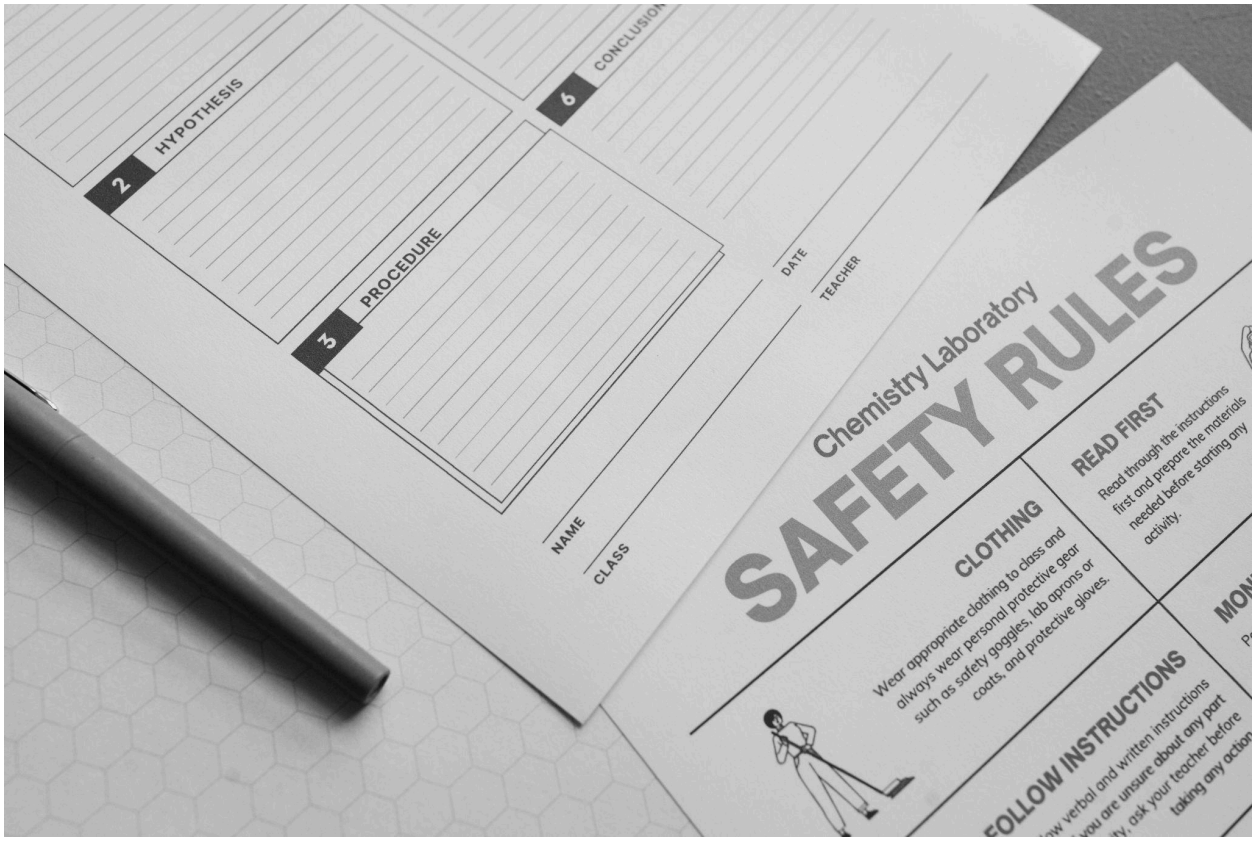
**RESPONSIBILITY**

If the crisis is your responsibility, say so. If not, the same rule applies.

**MONITOR**

If practical, monitor the finished news report whether electronic or in print. Make sure the facts are presented as reported and immediately take steps to correct the record if inaccuracies are noted. Misinformation can be more damaging than no information.

# Determine the Impact of Emergency Form




*Damage Assessment & Lesson Learned Form:*

Princeville Utilities Impact of Emergency Form

**Section 1: General Information**

- ☐ **Date and Time of Report:**
- ☐ **Name of Reporter:**
- ☐ **Position:**
- ☐ **Contact Information:**

**Section 2: Emergency Description**

1. **Type of Emergency (check all that apply):**
    - Natural Disaster (e.g., hurricane, earthquake, tsunami)
    - System Failure (e.g., pump failure, pipe burst)
    - Contamination (e.g., chemical spill, microbial contamination)
    - Security Incident (e.g., vandalism, terrorism)
    - Other (please specify): _____
2. **Location of Incident:**
3. **Description of Incident:**

4. **Lessons Learned:**

**Section 3: Impact Assessment**

1. **Severity of Impact:**
    - Low (Minimal impact, routine procedures suffice)
    - Medium (Significant impact, requires non-routine procedures)
    - High (Severe impact, emergency response required)
2. **Duration of Impact:**
    - Short-term (less than 24 hours)
    - Medium-term (24 hours to 1 week)
    - Long-term (more than 1 week)
3. **Affected Services (check all that apply):**
    - Water Supply Interruption
    - Water Quality Degradation
    - Pressure Loss
    - Infrastructure Damage
    - Customer Service Interruption
    - Other (please specify): _____

**Section 4: Classification Criteria**

| Impact Level | Criteria |
|---|---|
| Low | - No significant damage to infrastructure - No risk to public health - Limited area affected |
| Medium | - Moderate damage to infrastructure - Potential risk to public health - Several areas affected |
| High | - Severe damage to infrastructure - High risk to public health - Wide area affected |

**Section 5: Response Actions**

- ☐ **Immediate Actions Taken:**
- ☐ **Additional Actions Required:**
- ☐ **Resources Needed:**
- ☐ **Communication Plan:**
    - ☐ Internal Contacts Notified:
    - ☐ External Agencies Notified:
    - ☐ Public Notification Required: Yes / No (If yes, specify method)

**Section 6: Follow-Up**

1. **Assessment of Incident Resolution:**
2. **Steps to Prevent Recurrence:**
3. **Training or Drills Required:**

**Section 7: Approval**

1. **Reviewed By:**
2. **Position:**
3. **Signature:**
4. **Date:**

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### Notes for Utility Personnel

- **Low Impact:** Routine maintenance and monitoring.
- **Medium Impact:** Prepare for extended work hours, possible customer notifications, and coordination with local authorities.
- **High Impact:** Activate emergency response plan, coordinate with state and federal agencies, and implement public communication strategies immediately.

### Important Contacts

- **Local Emergency Management Office:**
- **State Department of Health:**
- **EPA Emergency Response:**
- **Utility Emergency Operations Center:**

This form should be reviewed regularly and updated as necessary to ensure it reflects current best practices and regulatory requirements. Additionally, training should be provided to ensure all personnel are familiar with the form and understand how to use it effectively during an emergency.

# PUCI Communication Log

*Sample:*

Employee Name:_____

| Date & Time: | Contact Name: | Communication Type: | Details of Call: | Follow-Up: |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

# PUCI Plan Distribution List

*Sample:*

| Plan Number | Distributed By: | Received By | Date: | Follow-Up: |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

| | | | | |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |

# PUCI Record of Change

*Sample:*

Employee Name:_____

| **Date & Time:** | **Contact Name:** | **Communication Type:** | **Details of Call:** | **Follow-Up:** |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |

# Utility Mutual Aid Agreement

*Sample:*

**Purpose**

Emergencies could arise in a community's water and/or wastewater system that would require assistance from an adjoining community to restore normal operation. The purpose of this Mutual Aid Agreement is to formalize and define the extent of this assistance between the two communities identified herein.

If an emergency arises in one of the participating communities, the authorized officials in each community identified below, agree to support each other during the emergency, to the extent possible, upon request as initiated by authorized personnel from the affected community. Each community will provide the name(s) and emergency telephone numbers(s) of personnel authorized to initiate a request for aid.

**Agreement to Render Aid**

WHEREAS the governmental units of and in the State of Hawai'i, have rendered mutual aid to one another in the past, and anticipate a continuing demand for such mutual aid and cooperation in the use of their personnel and equipment in the future, for the safety, health, and welfare of the people of their governmental units during a time of emergency, hereby agree to become part of the _____.

PUCI EMERGENCY RESPONSE SYSTEM, in conjunction with _____.

THEREFORE, the parties hereby agree that their water/wastewater department and/or department of public works will render mutual aid to each other under the following conditions:

1. In the event of a serious man-made or natural emergency, the parties of this agreement shall cooperate in any effort to provide service, subject to the terms and conditions prescribed in this agreement, and to the extent possible.
2. The city manager/mayor, the water/wastewater superintendent, the director of public works, or other such individual serving as a governing or managing party of the participating governmental unit, shall have the authority, in the event of a serious emergency, to determine whether manpower and/or equipment shall be sent beyond the jurisdictional limits of its governmental unit.
3. It is the intention of this agreement to vest in each party the sole right to determine when its needs will permit it to respond to a request by another governmental unit, and it is further agreed by the parties hereto, that if the water/wastewater department refrains from sending any manpower and/or equipment beyond its jurisdiction, that such unit thus failing to respond, shall not be liable for any damages to the requesting party or any third party.
4. The superintendent of the water/wastewater utility, director of public works, or such person acting in that capacity, SHALL BE IN TOTAL COMMAND of the responding party. All personnel and/or equipment of the respondents shall be under the immediate command of the person(s) attached to the responding community. All commands or orders for the use of such personnel and/or equipment shall be made by the superintendent of the water/wastewater utility, or such person acting in that

capacity, of the requesting community, through the person(s) in charge of the responding community's personnel and/or equipment, whenever it is practical. However, the person(s) acting in authority for the responding community shall, at all times, have the authority to recall the responding water/wastewater personnel and/or equipment from an emergency assistance mission upon direct notice to the person(s) in authority for the requesting community or governmental unit.

5. It is understood that personnel and equipment of the responding governmental unit shall be utilized in the capacity for which they are intended, and further, SHALL NOT be held in "stand by" capacity for a period exceeding hours. If the requesting party does not need the said personnel and/or equipment in the emergency area, it will be returned to the responding community.

6. Each governmental unit entering into this agreement shall continue to provide the same salaries, compensation for death or disability, and retirement and furlough payments, to their respective employees or volunteers who are assigned to render aid or other assistance to the requesting governmental unit, as that employee or volunteer would receive if on duty within the jurisdictional limits of the governmental unit by which he or she is employed.

7. Cost of repairs and employees or volunteers of the responding governmental unit operate maintenance of equipment used or expended while rendering assistance under this agreement will be borne by the governmental unit owning the equipment if said equipment is operated by employees or volunteers of the responding governmental unit for a period not exceeding 24 hours. If said equipment is operated by personnel from the requesting community, or is requested for a period longer than 24 hours, then the requesting governmental unit or community will assume the expense of any repairs and/or maintenance required by the said equipment. It is further agreed that if said equipment is required by the requesting community or governmental unit for a period exceeding 24 hours, the requesting community or governmental unit will be responsible for returning the requested equipment, in good condition, to the responding governmental unit.

8. It shall be the responsibility of the requesting community or governmental unit to notify the appropriate state or other agencies of governmental authority, by all applicable laws and/or policies, the nature and extent of the emergency.

9. To prevent haphazard and/or unauthorized response to a request by a community or governmental unit's water/wastewater department to emergencies outside of the jurisdiction of the responding party, NO PERSONNEL OR EQUIPMENT WILL BE DISPATCHED, except by the direct request of authorized person(s), identified in this agreement, from the responding governmental unit or community, an authorized

representative from the State Department of Emergency Management, or an authorized representative of the____Rural Water Association.

10. Cost of meals, lodging, and/or fuel, expended or consumed by personnel or equipment of the responding government unit, shall be borne by the requesting party to this agreement, unless otherwise expressly stated in a separate, attached mutual aid agreement between the parties to this agreement.

11. There will be no costs incurred by the requesting community for any meals, lodging, fuels, or other needs for any staff person(s) or members of the Board of Directors of any participating Rural Water Association, or the State Department of Emergency Management.

12. No participating Rural Water Association to this agreement shall be held liable for any injury or damages incurred by or caused by personnel working, or equipment operated, under the authority of either governmental unit to this agreement.

13. Any party to this agreement may, upon thirty days' written notice to all parties to this agreement, withdraw from further participation.

**Execution of Agreement**

IN WITNESS WHEREOF, the parties do sign and execute this Mutual Aid.

Appropriate Assignees

# APPENDIX A

Basis of Confidentiality – Narrative

**Frustration Exception**

The redacted portions of the maps meet the frustration exception of the Uniform Information Practices Act ("UIPA") pursuant to HRS Chapter 92F-13(1).

Specifically, the redacted portions of the maps contain sensitive infrastructure security details, including specific locations of critical infrastructure installations. The redacted portions of the maps are held and maintained in strict confidence by Company, and are only being provided for the limited purpose of this proceeding. See OIP Ltr. No. 17-02, 2016 WL 9184584 (Dec. 8, 2016), available at https://oip.hawaii.gov/f17-02/ (finding that local-level scaled maps showing locations of network infrastructure may be withheld under UIPA's frustration exception to prevent compromising the security of critical telecommunication infrastructure); OIP Ltr. No. 07-05, 2007 WL 1267787 (Apr. 13, 2007), available at https://oip.hawaii.gov/07-05/ (finding that the Department of Business, Economic Development & Tourism may withhold information about the physical security of critical energy infrastructure to mitigate the exposure risk to security hazards, such as vandalism, copper or equipment theft, or criminal activity). Based on the foregoing opinions, Company believes that the redacted portions of the maps showing detailed locations of critical infrastructure security information meet the frustration exception under UIPA.

**Privacy Exception**

The redacted portions of the above-referenced responses and/or attachments meet the privacy exception of the UIPA pursuant to HRS Chapter 92F-13(1).

Specifically, the redacted portions of the responses and confidential attachments contain personal identities and contact information of Company employees and other individuals. Here, the identities and contact information are being held in strict confidence by Company, and are only being provided for the limited purpose of this proceeding. See OIP Ltr. No. 92-08, 1992 WL 437701 (July 8, 1992), available at https://oip.hawaii.gov/92-08/ (finding that State agencies may not disclose to the U.S. Department of Veterans Affairs the name, ethnicity, and home address of each veteran who resides in the State because disclosure would constitute a clearly unwarranted invasion of personal privacy); OIP Ltr. No. 90-09, 1990 WL 482357 (Feb. 26, 1990), available at https://oip.hawaii.gov/90-09/ (finding that the Board of Water Supply may not disclose the telephone numbers of its individual customers because disclosure would constitute a clearly unwarranted invasion of personal privacy).

Based on the foregoing opinions, Company believes that the redacted portions of the responses and confidential attachments regarding the identities and contact information of Company employees and other individuals meet the privacy exception under UIPA. 4 2018155.1

**Cognizable Harm** – Narrative
Frustration Exception

Public disclosure of the redacted portions of the maps showing detailed locations of critical infrastructure security information may cause substantial harm to Company and its customers by providing the public with confidential and sensitive information that exposes Company's utility infrastructure to security threats and/or criminal activity. The confidential information: (1) has not been previously publicly disclosed or otherwise disseminated; (2) is not of the kind of information that Company would customarily disclose to the public or competitors; and (3) is of the nature that its disclosure could (a) impair the Commission's ability to obtain necessary information from similarly situated parties in the future, and (b) cause substantial harm to Company, its customers, and/or their affiliates as described above. See OIP Ltr. No. F17-02, at 14-15.

**Privacy Exception**

Public disclosure of the identities and contact information of Company employees and other individuals may cause substantial harm to Company, its vendors/customers, and/or their affiliates by providing the public with confidential and sensitive information that would warrant an unreasonable invasion of personal privacy, as described in further detail above.

Public disclosure of private information could expose Company to potential liability from its employees, customers, and/or their affiliates. Such misuse or unpermitted disclosure could (1) discourage other businesses or customers from making confidential disclosures to Company; (2) discourage businesses or customers from doing business with Company; (3) harm Company's relationships with existing and/or prospective businesses/customers; and (4) result in Company paying increased expenditures in the future, which would increase costs for utility operations and customers.

The confidential information: (1) has not been previously publicly disclosed or otherwise disseminated; (2) is not of the kind of information that Company would customarily disclose to the public or competitors; and (3) is of the nature that its disclosure could (a) impair the Commission's ability to obtain necessary information from similarly situated parties in the future, and (b) cause substantial harm to Company, its customers/vendors, and/or their affiliates as described above. See OIP Ltr. No. F17-02 (December 8, 2016) at 14-15.