

Foster Village Neighborhood Disaster Plan DRAFT 0.8

near Ewa — Halawa



1 of 1

Prepare, Survive and Recover

Acknowledgements

This plan is being developed by Foster Village neighborhood residents with input from numerous members of the community. The following folks have provided notable support and leadership for the plan development:

Cathe Guptil	American Red Cross, Hawaii State Chapter
Crystal L.A.C. Van Beelen	Dept. of Emergency Management, City & County of Honolulu
Shelly Kunishige	State of Hawaii, Department of Defense, Civil Defense Division
Jeri Duncan	Oahu Veterans Council, Oahu Veterans Center
Larry Baird	Neighborhood Board #18

Who Maintains This Plan

Bob Cunningham, (Neighborhood Security Watch coordinator), & Larry Baird (Neighborhood Board #18) maintain the current version of this plan. Please address comments, change requests, and requests for copies via e-mail to: bob@eastfostervillage.com.

Plan Revision History

Version Number	Description of Changes	Change Date
0.1	Initial preliminary mockup	5/27/2014
0.2	Various other information added, including pandemic threat	5/30/2014
0.3	Each Annex designated, other minor edits	6/2/2014
0.4	Overall revisions in most sections	6/5/2014
0.5	Some sections near completion	6/14/2014
0.6	Removed pandemic annex (it wasn't all that informative)	6/17/2014
0.7	Updated after 6/20/14 community meeting & annexes became appendices	7/3/2014
0.8	Syntax edits, added family & home preparation appendix	8/12/2014

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Introduction

Background

We have been fortunate for the last 50-60 years — since our houses in Foster Village were built — because we haven't experienced a serious disaster. Hurricanes keep missing us (while devastating Kauai several times). Earthquakes have caused much damage on the Big Island, but little on Oahu. Tsunamis have caused considerable damage — and taken many lives — on the Big Island, but not on Oahu. Pandemics feared for years have not shown up.

However disasters like these aren't really a matter of "if," but "when". We all need know what to expect and how to prepare. On Oahu, organized assistance after a disaster could be 2,500 miles distant and a week away. Perhaps longer for Foster Village which could be isolated from the rest of Honolulu if our streets become blocked.

Contrary to popular belief, the most immediate assistance we are likely to get during and after a disaster is not from the local, state, or federal government. but from our neighbors. Because the government will be overwhelmed simply responding to life threatening emergencies and the repair of critical infrastructure. Our community will be most able cope with a disaster if we're prepared to work together with our neighbors

Purpose

The purpose of this plan is to outline strategies that we, in our own neighborhood, can take to assist each other in a disaster. Although primarily about large-scale disasters, portions of the plan can be applicable to smaller emergencies as well. Our plan focuses on the immediate aftermath of a disaster (the most dangerous and challenging time). Recognizing that, during a disaster, first priority is the safety of yourself and family, and then neighbors, this plan is built on the concept of "neighbor helping neighbor" until outside help can arrive.

How this Plan Was Developed

This plan was initiated from a series of one-to-one meetings between concerned neighbors who have experienced disasters elsewhere, and developed with feedback from a series of neighborhood meetings. Initial plan development leaders were recruited through the Neighborhood Board, Neighborhood Security Watch, and our two Community Associations. Additional leaders were identified at a series Disaster Planning meeting that began in June 2014.

The plan assumes that in the immediate aftermath of a major disaster, most government support may not be available for days, possibly a week or more. In the meantime, our neighborhood will need to sustain itself, rescue those trapped or immobile, provide basic first aid and medical care, and assist residents who need assistance.

How this Plan Is Organized

In three parts:

1. The **Basic Plan** identifies possible threats, neighborhood assets, and provides a community disaster response strategy for almost any disaster.
2. **Functional Appendices** detail how specific tasks, such as Search & Rescue and Firefighting need to be performed.
3. **Hazard Specific Appendices** describe the likelihood, effects, and responses to specific hazards such as a hurricane or earthquake.

How This Plan Will Be Distributed

Paper copies will be available at Foster Village Neighborhood Watch meetings, Neighborhood Board #18 meetings, and from volunteer team Leaders. Online copies will be available at <http://www.honolulu.gov/demvolunteer/communitypreparedness.html>

Our Neighborhood

Foster Village is a mile-long subdivision, running from Salt Lake Boulevard along a bluff overlooking Kahuapaani Street and the intersection of the H1, Moanalua and H3 freeways, backed up against the outer rim of Aliamanu Crater.

Although Foster Village is in the heart of Oahu's Road infrastructure, there are only two ways in or out: Ala Oli Street from Salt Lake Boulevard, and the end of Haloa Drive on Bougainville Drive. Both streets converge at a traffic circle in front of the Oahu Veterans Center.

The arrangement of streets within Foster Village is almost maze-like; it is notoriously difficult to give visitors driving directions to many houses. Visitors and emergency vehicles alike often lose their way in Foster Village.

Foster Village is essentially only houses. There are no commercial properties, not even a church, within Foster Village. The only two exceptions are:

1. Oahu Veterans Center (where the original Foster Village Community Association Center was) three blocks into Foster Village (from either Ala Oli Street or Haloa Drive)
2. East Foster Village Community Association, on Hakupapa Street, three-fourths of a mile inside Foster Village near the easternmost end.

Nearest Emergency Facilities

Police: Foster Village is at the extreme southern edge of Honolulu Police District 3, Sector 3, Beat 384. The nearest Police Station is on Waimano Home Road in Pearl City, approximately 4.5 miles away.

Fire: There are 44 Honolulu Fire Department stations on Oahu but only three near us:

- Aiea Fire Station #10, 98-1239 Ulune St (across from Aiea High School), 2.4 miles away
- Mokulele Fire Station #8, 800 Valkenburgh Street (where the HFD training center is located), 2.5 miles away
- Moanalua Fire Station #30 2835 Ala Ilima St (near Moanalua High School), 2.7 miles away.

Medical: Three medical centers are near us:

- Pali Momi Medical Center in Pearlridge, is 2.6 miles away
- Kaiser Moanalua Medical Center in Halawa, is 3.7 miles away
- Tripler Army Medical Center (TAMC) is 4.1 miles away.

All three medical centers provide a wide variety of non-emergency medical services, and have Emergency Rooms staffed 24/7 by emergency room physicians. But none are "trauma centers". After emergency treatment, patients with traumatic injuries usually need to be transferred to Queen's Medical Center. Queens, in downtown Honolulu 8.4 miles away, is the only Trauma Center in the islands, with 24 hour trauma, surgeons, neurosurgeons, anesthesia and trauma care support services.

Other Nearby Facilities

Shopping : There are no stores in Foster Village. The nearest are:

- Sack 'N Save supermarket, a Kmart, and a gas station within a mile down Salt Lake Boulevard
- A Target store and a gas station within a mile off of Salt Lake Boulevard in the other direction.

[The distances are from the Oahu Veterans Center near the front of Foster Village; add another mile from the back of Foster Village.]

Population

Houses in Foster Village were originally built in a series of phases between the mid 1950s to the early 1960s with three to five bedrooms and two-car carports. Many have since been expanded or converted to larger multi-generation or multi-family houses.

Our population has grown (and more cars parked on the street than in carports nowadays). Over 4,000 people now live in Foster Village now.

Many families have children. Most of our children go to Makalapa Elementary or Radford High School (both on Salt Lake Blvd, just outside of Foster Village), or Aliamanu Intermediate (on Salt Lake Blvd, 3.2 miles away, across from the Salt Lake Shopping Center).

Foster Village has an unusually high number of senior citizens (including many military retirees). And quite a few Adult Residential Care Homes (ARCHs) for senior citizens who need various kinds of assistance.

Vulnerabilities

There are only two ways into or out of Foster Village.

Here is the main entrance to Foster Village where Ala Oli Street intersects Salt Lake Boulevard (Radford High School is right across the street). Imagine what a hurricane or earthquake could do to those trees, power lines, and power poles, and cars (usually more than in this photo).



Here is the back (or side) entrance to Foster Village, where Haloa Drive intersects Bougainville Drive. Imagine what could happen there, too, in a hurricane or earthquake.



Unique to Foster Village is an underground tunnel with fuel lines (and an underground railway) which runs directly under Foster Village from the 252 million gallon capacity Red Hill Underground Fuel Storage to Pearl Harbor. Built during WWII, when only a dairy farm and cane fields stood on the land, the tunnel is now more than 70 years old, but the structural integrity of the tunnel and pipelines still haven't been tested by a major earthquake. There are also some small underground lava tubes which might collapse in a major earthquake.



Hawai'i Gas supplies synthetic natural gas to many of our homes, and those gas lines run throughout Foster Village. Which could greatly increasing the likelihood of fire after a major earthquake. [After the Kobe earthquake of 1995, more people died in fires — often caused by broken gas lines — than died in the earthquake itself.]

Most houses in Foster Village are all-wood, post & beam single-wall construction, which fire codes classify as Type V structures — the most flammable kind of structure. And our homes are

located so close to each other there is always a chance that fires can spread from house to house.

Because most of our houses were designed and built more than 50 years ago, their structures will be less resistant to hurricanes and earthquakes than more recently built houses. [Newer building codes require “continuous load connections” — much more than just “hurricane clips” — to resist both hurricanes and earthquakes.

Assets

Radford High School and Makalapa Elementary are the two Honolulu Department of Emergency Management and Red Cross-designated emergency evacuation shelters nearest Foster Village. Although both will only provide bare-bone shelter space for evacuees (who must bring their own bedding, food, water, and medicines).

Even though the Oahu Veterans Center does not have enough room to be a shelter, we intend using as an emergency neighborhood disaster operations center and helicopter landing site (possibly requiring some trees to be cut down). But anyone seeking shelter at the OVC will be re-directed to Radford and/or Makalapa Elementary.

East Foster Village Community Association is not a suitable shelter for a variety of reasons. Although it may be useful as a gathering place and helicopter landing area (its softball field is the only other open space in Foster Village). The EFVCA 170,000 gallon swimming pool (if intact after a disaster) could also become a source of non-drinkable water for fire fighting... even if EFVCA's buildings are heavily damaged by a hurricane or earthquake.

Threats & Risks

Disaster After-Effects Within Our Neighborhood

Local Effects	Hurricane	Major Earthquake	Tsunami	Other disasters
House windows and roofs damaged	Very likely	Likely	Unlikely	Possible
Houses with structural damage	Likely	Very Likely	Unlikely	Possible
Roads to and within neighborhood blocked by debris	Very likely	Likely	Unlikely	Possible
Casualties within our neighborhood	Likely	Very likely	Unlikely	Possible

Island-wide After-effects In Many Or All Neighborhoods (including ours)

Island-wide Effects	Hurricane	Major Earthquake	Tsunami	Other disasters
First responders (ambulance, fire/rescue, police) overwhelmed	Very likely	Very likely	Likely	Very likely
Medical system overwhelmed	Very likely	Very likely	Likely	Very likely
Roads blocked elsewhere around Oahu	Very likely	Likely	Likely	Possible
Casualties in other island areas	Very likely	Very likely	Likely	Very likely
Long-term electrical outage	Very likely	Very likely	Possible	Likely
ATMs, credit & debit cards unusable	Very likely	Very likely	Possible	Likely
Phones, Internet, and other communications unreliable	Very likely	Very likely	Possible	Likely
Water shortage (or contamination)	Very likely	Very likely	Likely	Likely
Sewage system failure	Likely	Likely	Possible	Possible
Food (& toilet paper) shortage	Likely	Likely	Likely	Possible
Gasoline shortage	Likely	Likely	Possible	Possible
Rubbish not collected	Very likely	Very likely	Likely	Possible
High danger of fires	Very likely	Very likely	Possible	Possible

Foster Village Basic Disaster Plan

Individual & Family Response

Preparing in advance is important for all of us. And checking our preparations least once a year (June, at the beginning of the hurricane season is a good time.)

Make sure your family members know where to meet if they're otherwise out of touch and unable to contact other family members after a disaster.

Consider in advance under what conditions (if any) you and your family might have to evacuate. [Unless your house becomes completely unlivable, it is almost always best to stay there rather than evacuate.] Don't just prepare an evacuation kit; be sure to prepare your house as well.

Make sure that you have water on hand (1 gal/day for each family member for drinking & sanitation for 5-7 days). And food to last 5-7 days. Plan to use what's in your refrigerator first (before it goes bad), then what's in your freezer, and non-perishable food after that. If you have food which needs to be cooked, have some way to cook which does not depend upon electricity or piped-in natural gas. Have a tarp at your house (to cover any roof damages, or in the extreme, to use as a tent).

Keep more than a quarter of a tank of gas in your car. Half a tank is good. (It is almost always very difficult to get fuel in the aftermath of a disaster.)

For a checklist of all of those and more, see the Home Preparation Appendix.

Neighborhood Response

This plan is based on a set of volunteer teams working out of an emergency community operations center where volunteers can meet up and coordinate what they'll be doing. And, how those teams can communicate with each other.

Emergency Community Operations Center

The Oahu Veterans Center will be our designated Emergency Community Center. With an advance warning of a disaster, a communications center, at least, will be set up at there in advance. If a disaster arrives without warning, that's where a communications center will be set up as soon as possible.

After the immediate danger has passed, team leaders and volunteers — after first making sure that neither their family or others in their immediate areas need immediate rescue or medical assistance — should make their way to the Emergency Community Center. If you've already volunteered to be on an assistance team, that's the team you'll join. If you haven't previously volunteered, you can be assigned to a team.

The Emergency Community Center will not have enough space to become an emergency shelter for those who need to evacuate their homes. Anyone seeking shelter will be re-directed to either Radford High School or Makalapa Elementary School (both designated shelters are just across Salt Lake Blvd from Foster Village).

Team Responsibilities

Teams & Leaders

Teams	Team Leader	What The Team Will Do
Communication Team	Larry Baird	Maintain communications with all teams, and with Civil Defense
Fire Control Team	John Drake	Fight fires
Medical Team		Provide First Aid
Road Clearing Team		Clear roads into and within Foster Village
Search Team		Search for anyone who needs to be rescued or needs medical help
Stores Team		Provides equipment & supplies to all the other teams
Escort Teams		Guide first responders and rescuers into Foster Village
Block Captains	Bob Cunningham	Identify damaged homes, debris blocking roads, and who needs medical or other help on a block

Communications Team

Team Leader: Larry Baird Cell: 292-3683 Home: 423-1198

The Communication Team:

- Keeps in touch with every other team and with Civil Defense by phone and radio
- Keeps track of areas which have been cleared or checked, and where each team is working
- Coordinates with the Road Clearing Team to figure out the best path to injured victims.

At least two area maps should be maintained. One to show blocked streets and opened roadways. The second to show the locations of fires, where people need assistance, and where swimming pools (as sources of water for firefighting) are.

Who should join this team: amateur radio operators (especially anyone who has ever been involved with RACES), and anyone with experience in emergency communications, 911 dispatching, or two-way radio communications.

Needed equipment: a good battery-operated AM/FM radio (with extra batteries), mobile and hand-held two-way radios (with extra batteries), a generator, and lots of paper and pens.

Uniforms: T-shirts: white for acting incident coordinator, orange for team leader, yellow for volunteers.

Fire Control Team

Team Leader: John Drake

The Fire Control Team will assist neighbors in fighting fires, and — critically — to control the spread of a fire to other houses.

This team may need to identify — in advance — which houses in Foster Village have pools that water could be drawn from if Foster Village loses water pressure.

Who should join this team: anyone with training or experience in fighting either structural fires or wildfires. Volunteers without firefighting experience who are willing to be trained will also be welcomed.

Needed equipment: shovels, axes, saws, chain saws. Also: generators, sump pumps & hoses. At least one truck with a winch, and a two-way radio for keeping in touch with the Communications Team.

Uniforms: T-shirts: orange for team leader, yellow for volunteers.

Pre-disaster preparation: train, and identify in advance which houses in Foster Village have pools with water to fight fires if water pressure is lost (and obtain written permission in advance from the pool owner to use water from their pool in an emergency).

Medical Team

Team Leader: [TBD]

The Medical Team

- Provides first aid for minor injuries at the Emergency Neighborhood Center
- In the absence of first responders, provide first aid elsewhere around Foster Village if possible
- If absolutely necessary, organize a “triage center” at the Emergency Neighborhood Center.

Who should join this team: anyone with a medical background or advanced first-aid training.

Needed equipment: medical supplies, defibrillator, water, blankets.

Uniforms: T-shirts: orange for team leader, yellow for volunteers.

Road Clearing Team

Team Leader: [TBD]

The Road Clearing Team clears roadways of downed trees & branches, and any other debris. In the following order [See the separate Road Clearance Map.]

1. Clear the roadway from the Oahu Veterans Center out to the entrance of Foster Village at Salt Lake Blvd (blue on Road Clearance Map)
2. Clear from Bougainville Drive down Haloa Drive to the Oahu Veterans Center (purple on map)
3. Clear Haloa Drive to Kukila from Kukila Street to Piikea Street, then Piikea Street to Halupa Street, then Halupa Street to Olino Street, then Olino Street to Kukila Street to the Oahu Veterans Center (light green on map)
4. Clear roadway down Halupa St. to Lehia St. and down Lehia St. to the mauka end; then to Mahie St. through Mahie Place; then to the Makai end of Lehia St. (lilac on map)
5. Clear the roadway from Haloa Dr. to Molehu Dr. around to Naulu Place and Wawe Place; then back to Uila St; then to Kukila St; then to Haloa Dr. (pink on map)

6. Clear Haloa Dr. up to Halupa St, then to Piikea St & Piikea Place; then to Haloa Dr. (yellow)

7. Clear Hakupapa St. to Molina St., then to Haloa Dr. (Kelly green on the map)

8. Clear Kukila St. from Olino St. to Ala Oli (orange on map)

9. Continue to work through Foster Village until all roadways are clear.

Roadways should be cleared around downed power lines, which no one — except HECO employees should come any closer than 10 feet to a downed power line.

Who should join this team: anyone able-bodied with a strong back and good endurance.

Needed equipment: trucks, chainsaws, axes, shovels, rope, rolls of plastic barrier tape, and a two-way radio for keeping in touch with the Communications Team.

Uniforms: T-shirts: orange for team leader, yellow for volunteers. And reflective vests, if available.

Search Team

Team Leader: [TBD]

The Search Team

- Searches for people in Foster Village who could be trapped or who may need serious medical assistance
- Coordinates with the Communications Team to find the best path to get an emergency vehicle to victims
- Investigates damaged houses for anyone injured or who may need to be rescued
- Performs rescues where possible, otherwise requests rescue assistance.

Who should join this team: anyone with search or rescue experience or first aid experience or training.

Needed equipment: door knob or window signage (“Help” or “OK”), other marking material (marking pens, spray paint, etc.). Plastic tape barriers rolls. First aid equipment, surgical gloves, chain saws and at least one gas-driven reciprocal saw, and a two-way radio for keeping in touch with the Communications Team.

Uniforms: T-shirts: orange for team leader, yellow for volunteers.

Pre-disaster preparation: First aid & CPR training; CERT training, if possible. Try to locate and ID people in advance who could need assistance such as those in care homes for the elderly and assisted living. [And provide door/window signage to those locations in advance?]

Stores Team

Team Leader: [TBD]

The Stores Team gathers equipment & supplies and issues those to all the other teams from the Emergency Community Center.

In addition to the different equipment that each team will need, volunteers in every team — because they’ll be actively out and about the neighborhood — will need a considerable amount of bottled water (plus emergency energy-packed food if available).

In an extended emergency, with water & food shortages affecting everyone, this team may need to transition to distributing emergency supplies provided by the National Guard or other relief providers. By providing “head counts” and maintaining a local emergency supply distribution point at the Emergency Community Center or elsewhere.

Who should join this team: anyone with quartermaster/stores or military logistics experience, warehousing or wholesale or retail distribution experience.

Needed equipment: paper, pencils & pens.

Uniforms: T-shirts: orange for team leader, yellow for volunteers.

Pre-disaster preparation: meet with the team leader to establish who becomes responsible for what & how after a disaster. Determine potential sources of supplies ahead of time.

Escort Teams

Team Leaders: [TBD]

Two Escort Teams will be needed: one posted at the Salt Lake Blvd. entrance to Foster Village; the second posted at the Bougainville Drive entrance to Foster Village. To

- Show emergency vehicles the safest and quickest way to get to a fire or to anyone needing medical attention.
- Keep track of the progress of the Road Clearing Team to learn which routes into and through Foster Village are open, and which routes are not.

Who should join an Escort Team: anyone with a moped or motorcycle (or perhaps even a bicycle). Young adults are especially encouraged to get involved. All escort vehicles need to have a working headlight and tail light, and drivers must wear long pants & headgear.

Needed equipment: mopeds, motorcycles, or bicycles, and helmets, and — if available — a two-way radio to keep in touch with the Communications Team at the Emergency Community Center.

Uniforms: T-shirts: orange for team leader, yellow for volunteers. And reflective vests, if available.

Block Captains

Team leader: Bob Cunningham

The primary job of block captains is to check their area and report the conditions to the Communications Team. If phones work, we'll use them. If we have radios for block captains, we'll communicate that way. If we do not have radios for the block captains and phones aren't working, block captains will have to report either in person or send a written report by courier.

Specifically, block captains will need survey their street and each house on the block to determine:

1. Which houses have structural damage (and if someone could be trapped inside)
2. Locate anyone needing immediate medical attention
3. Help whoever you can, getting other neighbors to assist if possible
4. Determine who may need other kinds of special assistance (elderly residents, children without parents, etc.)
5. See if any part of your street is blocked by debris, downed power lines or anything else which could make access by fire truck, ambulance, or other rescue vehicle difficult or impossible.
6. Report the condition of your block to the Communications Team at the Emergency Community Center. (By phone if that works; by radio if you have one; otherwise send someone to report.)
7. Be ready to guide rescue teams or other responders to where they're needed on your block.

Who should be a block captain: any adult willing & able to help coordinate rescue & recovery efforts on your block.

Needed equipment: first aid supplies, paper, pencils & pens, and door tags (red with “Help” on one side, green with “Okay” on the other) for every house on your block (plus a few spares).

Pre-disaster preparation: meet with other block captains for a briefing and find out in advance who the block captains adjacent are, and get a supply of door tags. And learn about any Neighborhood Survey results for your block.

Functional Appendices

Neighborhood Survey Appendix

We will conduct a neighborhood survey online, announcing it in the Foster Village Flyer (the Foster Village newsletter which goes out to all households). Asking:

1. Will anyone in your household be likely to need medical or other assistance in a disaster?
2. In case of an emergency, could any member of your household with special skills who could provide help or equipment to others. For example: medical skills (including CPR & first aid), tow truck, heavy construction or demolition experience (and equipment), plumbing or electrical skills, public safety (police or equivalent military experience). Also, does anyone have EMRC, RACES, or CERT training?
3. Would you — or someone else in your household — be willing to volunteer as a block captain to help coordinate emergency assistance to your neighbors on your block?

Here is the preliminary paper versions of the two survey sheets (the online version may look different):

DISASTER INFORMATION PLAN

This information is for the disaster team only.

Any information will not be released to anyone or company outside of the disaster team.

Home owners name: _____
Home address: _____ Honolulu, Hawaii 9681
Emergency contact number: Home: _____ Cell: _____ Work: _____
How many people live in this home? ____
Does anyone in the home need assistance getting around? YES NO
Is anyone in the home bed ridden? YES NO
Is anyone in the home blind? YES NO
Is anyone in the home deaf? YES NO
Does anyone in the home depend on a wheel chair to get around? YES NO
Is this a care home or a care giving live in home? YES NO
Do you have a dog? YES NO If yes is it friendly YES NO
Does this house have gas coming in? YES NO
Does this house have a swimming pool? YES NO
If the answer is YES can we use the water during a disaster? YES NO

DISASTER PREPARATION, SURVIVE AND RECOVERY MEETING FOR FOSTER VILLAGE

DISASTER PLAN VOLUNTEER

Yes! I want to volunteer to be part of the Foster Village Disaster, Survive and Recovery team.

Name: Mr. Mrs. Ms. _____
First Last

I live at _____ Honolulu, Hawaii 9681

My E-Mail address is _____

Cell # _____ Home # _____ Work # _____

My field of expertise is in:

Circle as many as apply:

Medical Tree trimming Communications Transportation Electrical
Fire fighting Other _____

These tools I can bring with me to help with:

Circle as many as apply:

Truck Chain saw Axe Shovel

Items we need donated:

Good battery operated radio, generator, sump pumps, hoses, chain saw, blankets, water, canned food, hand held radios, Walkie-Talkies

Block captains will be informed of the responses from their block. Otherwise, all responses will be held confidentially by team leaders.

A summary of responses from the neighborhood survey will be included in an upcoming revision of this plan.

Notification Appendix

If and when Civil Defense notifies us of an impending disaster which could strike within 24 hours or less, here is the contact “phone tree” for notifications to our volunteers:

The Communications Team Leader calls all members of his team and all other Team Leaders.

Team Leaders call all volunteer members of their team

The Block Captain Team Leader calls (or email, with acknowledgement) all block captains.

If there is no advance notice, Team Leaders should report in person to the Emergency Community Center as soon as they can after a disaster strikes. All other volunteers — except block captains — should report to their Team Leaders at the Emergency Community Center as soon as reasonably possible. Block captains should either call in with a report of the conditions on their block; or send someone with report to the Emergency Community Center.

Home Preparation Appendix

Here is a checklist to prepared for a hurricane — or almost any other possible disaster. And most likely after-effects: loss of electrical power, loss of water pressure, and limited phone service.

Your essential checklist:

- A 7-day supply of food for your family. Count perishables (refrigerated & frozen food) only for the first two days. The remainder should be non-perishable. Do not count on having power for your refrigerator & freezer. Do not count on being able to get ice. Have a week of food for your pets as well.
- For food which will need to be cooked, have a way to cook without electricity (and natural gas): a hibachi, butane, or propane stove — with 7 days of fuel, plus matches or a lighter. And a manual can opener and bottle opener.
- A 7-day supply of drinkable water for your family. One gallon/day for each person (for both drinking & cooking). If you have other liquids drinkable at room temperature you can count those other drinkables in the gallon/day per person.
- Additional water (does not need to be drinkable) for flushing toilets after water pressure fails. One and a half gallon to refill the toilet tank after each flush, for as many flushes and as many days as necessary. If you don't ordinarily store extra water for that, fill up a few buckets — or even your bathtub — when there's a hurricane warning.
- A portable battery-powered (or cranked) radio. And flashlights. With extra batteries.
- At least a 7-day supply of prescription drugs for each member of your family. And personal hygiene items, sanitary supplies, and diapers. And a first aid kit.
- At least a week's worth of extra cash (credit/debit cards and ATMs do not work during power outages).
- Keep at least 1/2 a tank of gas in your car(s) (gas station pumps won't work).
- A tarp or tent material of some kind (to cover roof or window damage).

Know if, where, and how to evacuate

Unless your house is or would be damaged to the point of being uninhabitable by a strong hurricane, it is usually best to shelter at home than to evacuate to an emergency shelter. Which is almost every public school; nearest are: Radford and Makalapa Elementary. But emergency shelters only provide floor space under a roof and rudimentary toilet facilities. And are easily overcrowded. If you must evacuate, take as many of the things listed above as possible (except the tarp). Plus these things that emergency shelters cannot provide:

- Sleeping bags or two blankets & a pillow for each family member.
- Eating utensils. Disposable paper plates & cups, chopsticks and plastic knives & forks are best; non-disposables may be difficult to clean.
- One complete change of clothing, including shoes, for each family member
- If you need to bring your pet, bring them in a cage or carrier (which they may have to stay in at the shelter).

Have a family communication plan

Make sure that each member of your family knows in advance how to contact each other in case of an emergency. Even if phones don't work. Consider having two places to meet up: at or near your house (if you don't evacuate), and another at or near where you would evacuate, to if you have to.

More

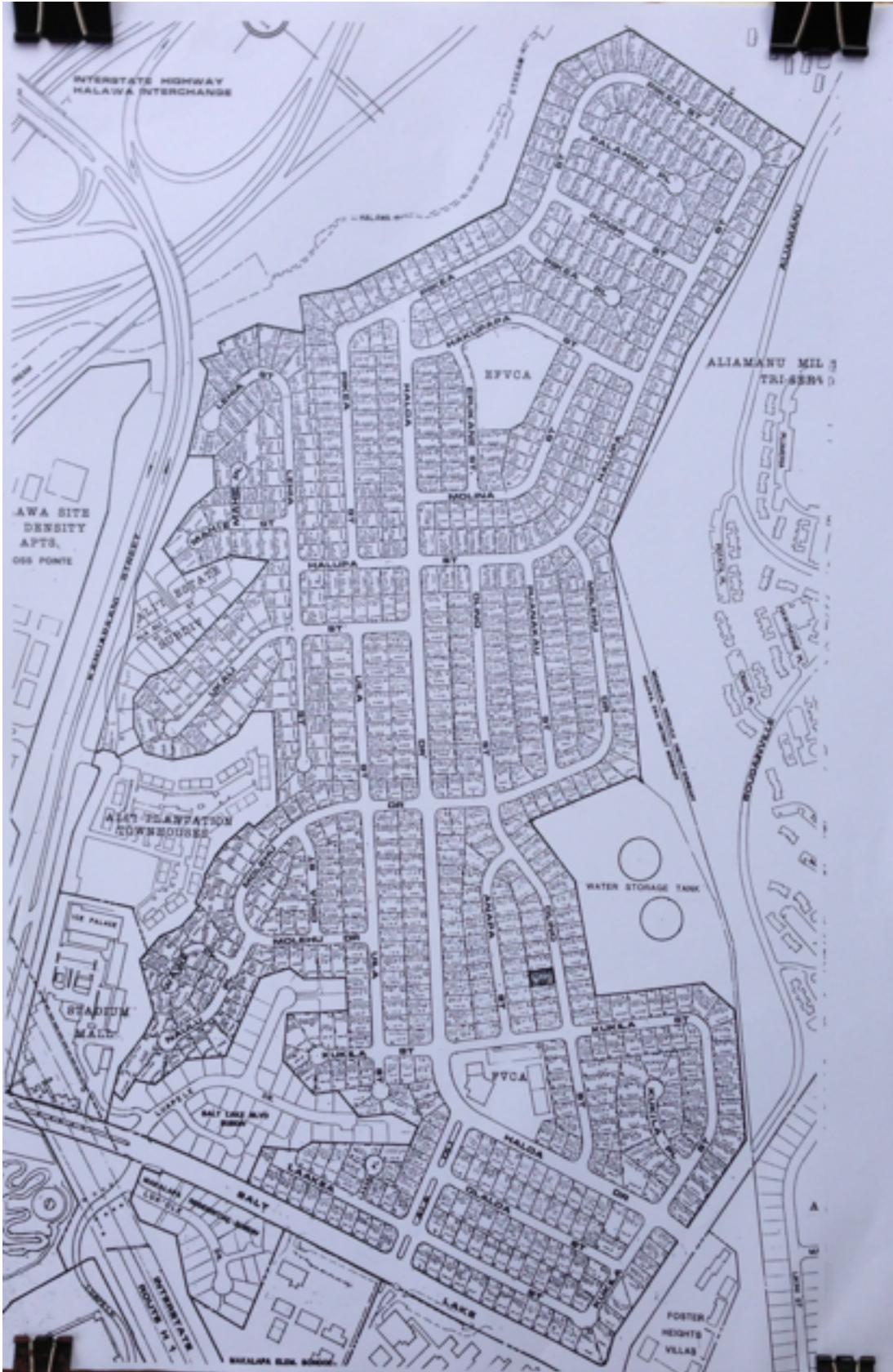
There is even more you can do to prepare your home. The University of Hawaii's Seagrant program has published an excellent (free) guide at:

http://seagrant.soest.hawaii.edu/sites/seagrant.soest.hawaii.edu/files/publications/homeowners_handbook_to_prepare_for_natural_hazards.pdf

Consider whether you need a generator. Or not: there are both pros & cons to having one. Consider how will you'll get fuel, and how to store it (and — because stored fuel doesn't last indefinitely, how often to replace it). Do not depend upon a generator to run when you need it unless you test it regularly (at least once every few months). If you do decide to get a generator, do not get one larger than really necessary (the larger the generator, the more fuel it needs).

Neighborhood Map Appendix

Larry Baird has some, larger, paper copies of this.



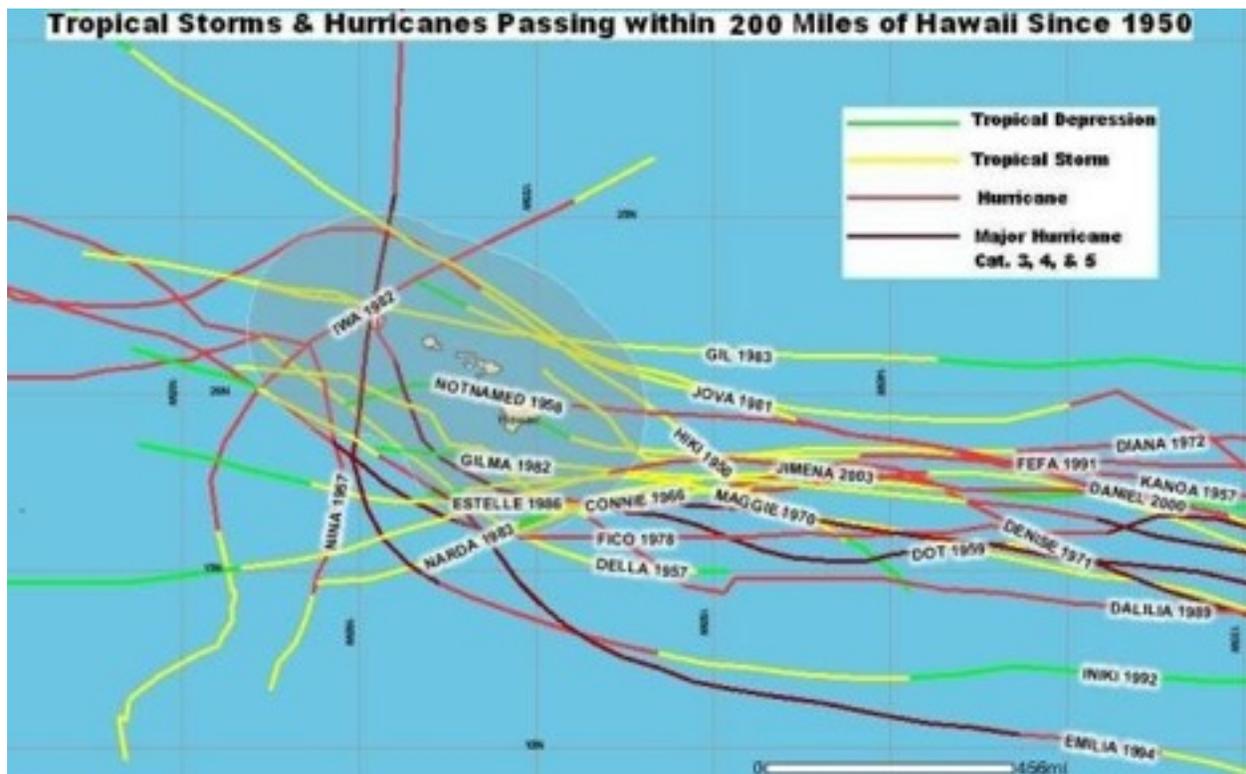
Hazard & Incident Appendices

Hurricane Appendix

Hurricane Risks

Hurricanes which head our way usually start near the equator in the eastern or central Pacific as tropical depressions. They gain energy from warm water as they head westward and become tropical storms (with sustained wind speeds between 39 to 73 miles/hour), then hurricanes (sustained winds more than 74 mph). At some point, a hurricane degrades back to a tropical storm (some go back and forth between being a tropical storm and a hurricane), and eventually becoming just a depression before dispersing entirely.

The following diagram shows notable hurricanes that have passed within 200 miles of us since 1950 (before the 2014 hurricane season).



COURTESY OF THE NATIONAL WEATHER SERVICE CENTRAL PACIFIC HURRICANE CENTER

There is no way to predict a hurricane's path nor how powerful it can become, nor how big. Oahu has obviously been lucky for decades (while Kauai has been very unlucky indeed).

What to Expect From A Hurricane

Strong winds and lots of rain. Wind which blows down trees, and at least parts of roofs off of buildings. And blows a lot of debris around at high speed, breaking windows and damaging cars (and anything else in the open). Hurricanes are also famous for dropping lots of rain (including

into building after roofs are blown off). Hurricanes can produce almost tsunami-like storm surges along coastal areas. Expect to see a much debris (including trees and power lines and lots of other stuff) on roads after a hurricane. Plus at least some, possibly all, the aftereffects listed in the Expected Aftermaths Appendix.

The effect of a hurricane depends not only on how strong it is (Category 1, 2, 3, 4, or 5) and how close it comes, but its size (the radius of its strong winds). A big Category 1 storm can do a great deal damage from far away.

Here are the most significant hurricane near misses since our homes were built, and their strengths (at least up until the 2014 hurricane season):

Year	Hurricane	Closest Approach	Damage & casualties
1957	Hurricane Nina	120 miles at nearest approach of the islands as a Category 1	Hundreds of homes damaged (mostly on Kauai), Four deaths (one on Oahu). Highest wind gust (86 mph) ever recorded on Oahu before or since.
1959	Hurricane Dot	Hit Kauai as a Category 1	On Kauai: roofs of many houses blown off, trees uprooted; cars badly damaged by flying objects. Power & phone lines blown down. No recorded deaths or injuries.
1982	Hurricane Iwa	24 miles north of Kauai as a widespread Category 1	On Kauai: 1,907 homes destroyed and 2,982 damaged (one out of every eight homes) Other buildings damaged on Niihau; 418 buildings destroyed on Oahu Damaged both Kauai & Oahu's electrical grids. (It was a month before power was completely restored on Kauai; up to two weeks for some areas of Oahu.) One person died during the storm, three in the aftermath. Over 120 injured.
1983	Hurricane Gil	North of Kauai as a tropical storm	Extensive damage along the northern shore of Kauai. One death, at least three injured.
1992	Hurricane Iniki	Hit Kauai as a compact Category 4	1,400 houses destroyed and more than 5,000 damaged on Kauai (41% of Kauai's homes). 20% of Kauai's power restored in four weeks; 50% within six weeks; three months before power was restored to the entire island. Fuel shortage until Kauai's port facilities were repaired and roads were opened. No tourists allowed on island for a year. Four people died on Kauai, one on Oahu. More than 100 injured (most during the aftermath).

For other not-so-near "misses", see: http://en.wikipedia.org/wiki/List_of_Hawaii_hurricanes

The stronger the wind gusts, more trees will be blown down, more branches it will break off, and more power lines it will be brought down. Even strong tropical storm force winds will try to strip shingles from roofs (especially from the edges).



HURRICANE INIKI ON KAUAI AT ITS WORST, COURTESY OF THE HONOLULU ADVERTISER (YES, THAT'S A PALLET FLYING THROUGH THE AIR)

Hurricane force winds will try to strip both shingles and tiles. And send those (along with tree branches and anything loose) flying around to damage other roofs, house sidings, and break windows. Gusts of wind which penetrate inside a house — usually through open or broken windows — greatly increase the wind pressure on roof and walls, and can strip off large amounts of roofing. And the rain that comes along with hurricane winds will go into the house.

As stressful as it was while their houses and buildings were being damaged, Kauai residents have told us that the weeks after Iniki hit were more stressful, After all communication was lost and everyone was restricted to their immediate neighborhood by downed poles and trees; they didn't know if or when they were going to get any help because they did not know whether Oahu or the other islands had been as badly hit by the storm.

Neighborhood Response to a Hurricane

The first step in every mainland hurricane plan is mandatory evacuation from the area. Even in places where hurricanes hadn't directly hit in recent mandatory, evacuations worked: ahead of Hurricane Andrew in 1992, 1.2 million people evacuated successfully. Nearly as many (90% of the population) managed to evacuate New Orleans in advance of Hurricane Katrina in 2005. Surely reduced the death toll in both cases.

But, we — almost a million of us — who live on Oahu cannot evacuate. Like those who didn't or couldn't evacuate ahead of Hurricanes Andrew, Katrina or — in 2013, Typhoon Haiyan (also known as Typhoon Yolanda) in the Philippines, we will have to deal with a disaster and its aftermath first-hand until belated national relief efforts can arrive.

[Hurricane Andrew also had another effect: Iniki hit Kauai only a week after Hurricane Andrew hit the mainland. Most federal relief efforts remained focused on Florida and the Gulf Coast of the mainland. So essentially all relief for Kauai had to come from Honolulu.]

If a severe hurricane hits us here on Oahu, All elements of our Basic Plan, with all Teams activated, will be necessary.

Earthquake Appendix

The Risk Of A Severe Earthquake

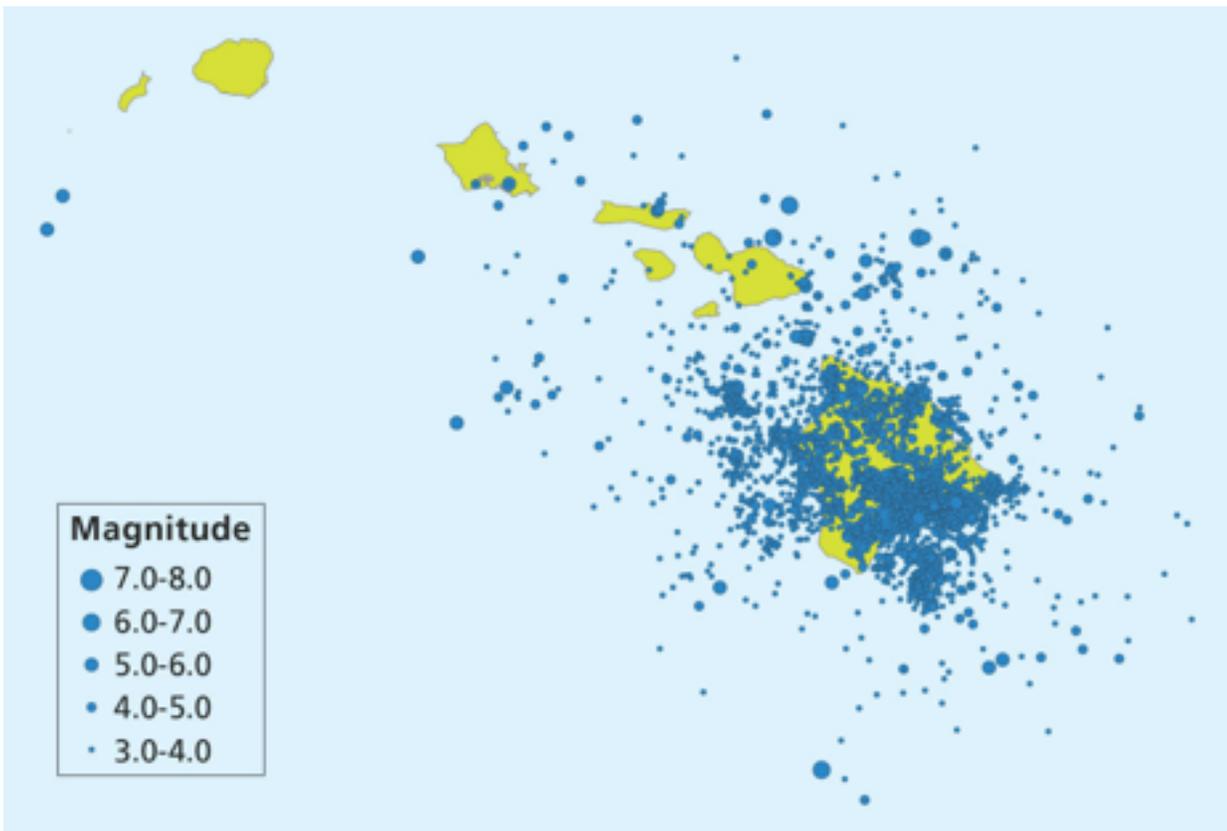
The effect of an earthquake depends on its magnitude, its depth (shallow quakes have localized, deep quakes are felt at a greater distances), and its location (how far away the “epicenter” is).

Only two other states (Alaska and California) have more earthquakes than Hawaii.

Most — but definitely not all — “local” earthquakes occur on or near the Big Island, and only the strongest of those affect Oahu. Less often, earthquakes do occur nearer Oahu, which do not need to be nearly as strong to be felt on Oahu. Just recently, a 4.1 magnitude earthquake centered near Molokai on June 7, 2014, was felt in Waimanalo and Hawaii Kai (with essentially no damage, although there surely would have been damage if that earthquake had been, say magnitude 6).

Considering only “serious” earthquakes (greater than magnitude 6.0) since 1868, 20 were on or close to the Big Island, and six were northwest of the Big Island nearer to Oahu. The most recent quake near the Big Island was a 6.8 magnitude quake just off the western side of the Big Island, which knocked Oahu’s power off for 14+ hours in 2006

The following diagram shows local earthquakes over the last 50 years where their epicenters could be determined. Although this figure misleadingly omits many small earthquakes away from the Big Island (which has the only widespread seismic detection system)



GRAPHIC COURTESY OF THE INSURANCE JOURNAL

All the islands (except Kauai and Niihau) have had their classifications for earthquake risks upgraded since 1997 based on data like that. Most of the Big Island has been upgraded from UBC Zone 3 (the same as some of the more dangerous places in California) to Zone 4 (the maximum, and the same as areas immediately adjacent major faults in California). Oahu was upgraded from Zone 1 (the minimum) to Zone 2A (3rd most dangerous, and the same as most of California). (Maui, Lanai, and Molokai are rated slightly higher: Zone 2B; Kauai and Niihau stayed Zone 1, the least dangerous.)

That earthquake threat earthquake in 1997 also means that buildings designed & built previously were probably not designed to be as strong as they should have been.

What To Expect From a Severe Earthquake

Ground shaking will damage buildings (structural damage mostly, with less roof damage than a Hurricane). Some trees and power lines will fall. Some water, natural gas, oil, and sewage lines will break. Also expect at least some, possibly all the after effects outlined in the Common Aftereffects Appendix.

A major quake (with a magnitude of, say, over 6.5) in any of the “fault zones” nearest Oahu, or a stronger quake (magnitude greater than 7.0) from a Big Island “rift zone” will damage many buildings on Oahu. Although that hasn’t happened recently, in 1871 a 6.8 magnitude earthquake with an epicenter near Lanai damaged most buildings on Oahu (every building on the Punahou campus had to be repaired). And that was before we had high-rise buildings and freeway overpasses. If that earthquake re-occurred today, it would cause widespread damage on Oahu indeed. At least some freeway overpasses would likely collapse since (most freeway overpasses on Oahu were designed to seismic criteria since proved inadequate in three California earthquakes where similarly designed overpasses collapsed: San Fernando in 1971, Loma Prieta in 1989, and Northridge in 1994).

Exactly what to expect within Foster Village itself, we don’t really know; we haven’t experienced a major quake since our homes were built.

Neighborhood Response to an Earthquake

All Teams should be activated. If there is not enough work for some teams, there certainly will be for others (so volunteers may end up being re-assigned to other teams). The Communications Team and Search Team work (and likely the Road Clearing Team) work will be essential.

Tsunami Appendix

The Risk of a Tsunami

Hawai'i has a long recorded history of tsunamis coming both from earthquakes around the Pacific rim (the "Ring of Fire") and from earthquakes and landslides near Hawai'i ("local tsunamis"). The Pacific Disaster Center reports that more lives have been lost in the islands from tsunamis than the total of all other local disasters (epidemics), see <http://www.pdc.org>. In the twentieth century, 221 people in the islands were killed by tsunamis (in 1946 and 1960) on the island of Hawaii. The magnitude 9.2 earthquake in the Aleutians (near Alaska) in 1946 caused a tsunami with run-up heights at Hilo of 33 to 55 feet, killing 159 people. The 1960 M=9.5 earthquake in southern Chile generated a 35 foot wave and caused 61 deaths in Hawaii.

Other significant tsunamis (which *only* caused millions of dollars in damage, no deaths): from the 1964 M=9.2 earthquake in the Gulf of Alaska, the 1952 (M=9.0) Kamchatka, USSR earthquake (\$1 million damage), 1957 (M=9.1) Aleutian Islands earthquake (\$5 million damage).

Most local tsunamis which killed were back in history, and hit the Big Island hardest; most were from earthquakes and large-scale subsidence along the southern flank of Kilauea. The largest, in 1868, killed 81 people. Over the long term, approximately 32 tsunamis with run-ups greater than 1 meter have hit the islands since 1811.

What To Expect From A Tsunami

Although unlikely to directly damage anything within Foster Village (we're high enough and far enough inland), the overall effect on Oahu as a whole could be devastating, and we, too, would suffer from the aftereffects...

An earthquake anywhere around the rim of the Pacific (the so-called "Ring of Fire") should give hours of advance warning. But there will only be minutes of warning, possibly no warning at all of a tsunami from a "local" earthquake within or near the Hawaiian Islands.

If there is a warning, expect traffic jams with the mass evacuation from the tsunami inundation zones on the coasts. To higher ground in general, to homes of family & friends on higher ground. And in large numbers to emergency shelters, including the shelters nearest us (Radford High School and Makalapa Elementary). If there is no warning, expect to see evacuations away from damaged coastal areas immediately after the tsunami.

Any coastal area — either directly facing the direction the tsunami comes from, or where there is a "wrap around" effect — could be devastated. Our airport, ports, power stations, roads near the coast, etc., could all be damaged.

Even if not directly affected, expect at least some effects described in the Common Aftereffects Appendix.

Neighborhood Response To A Tsunami

Not all teams described in the Basic Plan will be needed to be activated (probably not the Road Clearing, Escort or Search Teams). But, activating the Communications, Firefighting — and possibly other — Teams will likely be necessary..

Expected Aftermaths Appendix

Every disaster is different, but conditions in the aftermath of a hurricanes, earthquake, tsunami and almost any other disaster are often surprisingly similar. If you haven't been through a similar experience, here are other things to expect in the aftermath of almost any disaster.

Extended Electrical Outage

For days at least, possibly up to several weeks or even longer. The longer an electrical outage is, the more it becomes a disaster of its own, leading to...

It'll be dark inside & outside (no street lights).

It could become difficult to cook anything. If you need electricity for cooking, you won't be able to cook anything unless you have a hibachi or other portable stove (with fuel).

Food can spoil. The contents of your refrigerator and freezer will warm up; you'll either have to eat what's in there quickly or throw that food away.

Your TV and Internet connection won't work, (and your laptop computer will only run until its battery needs to be recharged).

Cell phones die. Your cell phones will only be useful until they need recharging. Perhaps not even that long: although many cell phone towers have backup batteries, those often don't last for more than 24 hours.

Other phones may stop working as well. Even if connected to a "landline" your phone won't work if the phone lines are down. Other phones & answering machines which regular electricity won't work. Even if the phone lines are still working, and your "landline" is getting the power Hawaiian Telcom supplies through regular phone lines, that will only last for about a week until Hawaiian Telcom's battery banks run down (and their generators start to run out of fuel).

Basically, you can **lose all the ways to communicate that you're used to**, and may not have any way to learn about anything happening outside of your neighborhood (unless you have a battery or crank-powered radio). You probably will not be able to communicate with family & friends elsewhere (because your phone & Internet connection will be down). You probably won't even be able to call 911 in an emergency (and then, the response will probably be slow — emergency responders and medical facilities will be having their own problems).

It will be **difficult to travel** beyond where you can walk to...

Roads become dangerous when traffic lights don't work (many motorists may not treat intersections as they should: as a 4-way stop). At night, roads are even more dangerous without streetlights. Of course, if your car is damaged or you don't have gasoline for it (which you may become very difficult to get), road conditions may not be all that important.

Gasoline may be difficult or impossible to get. Most gas stations — even if they do have gasoline in their underground tanks — won't be able to pump it into cars (because gasoline pumps are electrically driven). Don't expect buses to run on a full schedule (they, too, many have difficulty getting fuel), and if any are running, expect them to be very, very crowded.

Water pressure will fail, probably within two days. Because: our water system depends upon electricity-driven pumps to pump water from wells (and a few other sources) up to tanks above where we live — it's from there that gravity provides the pressure and flow of water to our houses. Without electricity, those tanks run dry. After a few days without electricity, your greatest need may simply be getting water (from water trucks — which may be stationed miles away).

The **sewer system stops working** when there's no electrical power. Sewage from Foster Village flows through pipes downhill to a pumping station near Aloha Stadium. The first in a series of pumps which push our sewage — along with as sewage from Aiea, Pearl City, and Mililani — around Pearl Harbot to the Honouliuli Wastewater Treatment Plant in Ewa Beach

(which also handles sewage from Ewa & Kapolei). In the early stage of an electrical outage you may still be able to flush your toilet before it backs up here in Foster Village. But only if you have extra water set aside for flushing (1.5 gal per flush; the water doesn't have to be drinkable).

It will be difficult to buy anything. Many stores won't be open, and those which are will be dark inside. Expect to stand in line just to get in, and expect long lines at the cash registers where with clerks using battery-powered calculators at best, or just pencil & paper. Grocery stores won't be able to provide refrigerated or frozen food. So other groceries will fly off the shelves quickly as people buy whatever they can. So, expect food (and toilet paper) shortages.

Credit & debit cards won't work. Nor will most places accept a check. You will cash to buy anything.

Cash could be hard to get. You'll have to get it from whichever of your bank's branches are open (because ATM machines won't be working). If your nearest bank branch is closed, it could be because they simply ran out of cash (this actually happened on Kauai, after hurricanes Iwa & Iniki).

There is a very real danger of fire. Our homes are all "Type V" wooden structures, the kind most likely to combust. Any fire can spread from a room to engulf your whole house surprisingly quickly. And then to nearby houses. Fires are much more likely to get started with lots of people are using hibachis, propane barbecues, and camp stoves (when they can't cook with electricity). If rubbish is not being collected, that, too, raises the risk of fire (and possibly disease).

What else to expect

Casualties all over the island, which leads to these next two things...

First responders overwhelmed. Even if you can still call 911, and fire, rescue, police and ambulances can get to you, they may not come soon; being extremely busy elsewhere.

Medical systems overwhelmed with Hospitals and medical centers will all have more than they can handle.

Roadways blocked elsewhere around the island. A hurricane, earthquake, or even a tsunami will damage and/or drop debris on roads all around the island.

Water contamination. When the water system fails, water pressure is lost. And is likely be contaminated once it starts to flow again. Although usable for, say, flushing toilets, do not drink or wash with possibly contaminated water. Civil Defense will need to tell us when and how to decontaminate water. Depending upon how contaminated it could be, boiling and/or treating it with a little chlorine bleach (which a neighbor is likely to have if you don't) may be necessary.

Food (and toilet paper) shortage. Remember either the 117-day dock strike in 1949 or the 100-day West Coast Dock strike in 1971? Or the brief shortage when there was panic buying in anticipation of the short-lived West Coast dockworker lockout of 2002? Since 80% of just about everything in Hawaii comes via ship from the mainland, any disruption of shipping from the West Coast (including almost any disaster) creates a food shortage. Even just an extended power outage will keep many grocery stores closed, effectively creating a shortage.

Uncollected rubbish. We haven't seen anything like this since rubbish collection and disposal operators (UPW Unit One) went on strike for more than a month in late 1979. Neighbors in some areas had to band together to haul their rubbish to landfills. Some accumulated rubbish caught fire. What we didn't see — because the strike didn't last all that long — was how easily accumulated rubbish attacks rats & disease.

Emergency shelters overcrowded. On Oahu, essentially all Civil Defense & Red Cross-designed emergency evacuation shelters are public schools (with earthquake-resistant reinforced concrete buildings built since about 1960). These shelters will only provide sheltered floor space (approximately 10 square feet — 5 feet by 2 feet — for each person), and

rudimentary sanitary facilities. Evacuees must bring their own water, food, medicine & bedding. On paper, 300,000 people (almost 1/3 of Oahu's population) could be accommodated in these shelter. But that assumes every shelter is filled to capacity but no more. As the evacuations with Iniki and tsunamis demonstrated, with only 30,000 people seeking shelter, a number of shelters quickly became overcrowded (with associated traffic & parking problems), while hardly anyone showed up at other shelters. [In contrast, after the Kobe earthquake & fires in 1995, all shelters were overcrowded; some people even died of pneumonia after catching the flu which swept through the overcrowded shelters.]