Basic Earthquake Emergency Communications Node (BEECN) Guidelines (first edition)

Published: April 2019

Photo credits:
Ernest Jones and Jeremy Van Keuren

Graphics and layout:
Jeremy Van Keuren

Contents

SECTION 000 - PROGRAM ORGANIZATION.....4

000.05 Section Numbers 4

000.15 City Employees and BEECNs.....5

000.20 Elements of a BEECN 5

000.30 Location of BEECN Sites 6

SECTION 100 - BEECN VOLUNTEERS.....7

100.05 Role of BEECN Volunteers 7

100.10 Persons with Disabilities 7

100.15 Volunteer Qualifications.....7

100.20 Relevant Volunteer Experience 8

100.25 BEECN Training 8

100.30 BEECN Volunteer Cohorts 9

100.35 BEECN Cohort Coordinators.....10

100.40 BEECN Cohort Responsibilities 10

100.45 Fire Station Cohorts.....11

100.50 BEECN Volunteers and NETs 11

100.55 Indemnification.....11

SECTION 200 - EQUIPMENT CACHES.....12

200.05 Equipment Caches - General 12

200.10 Equipment Caches - Placement.....12

200.15 Supplementary Equipment in BEECN Caches .13

200.20 BEECN Cache Inventory 13

Troubleshooting the cache lid.....15

BEECN radio frequencies 21

SECTION 300 - OPERATIONS: BEECN SITES.....30

300.05 Deployment Planning.....30

300.10 BEECN Operational Periods and Shifts 31

300.15 Deployment Protocols.....31

300.20 Responsibilities Prior to Deployment 31

300.25 Self Determination to Deploy 31

300.30 Deployment Guiding Principles 31

300.35 Conduct at the BEECN Cache and Site 32

300.40 Personal Security 32

300.45 BEECN Set Up.....32

300.50 BEECN Channel Guide.....33

300.55 Radio Script for BEECN Check In 34

300.60 Basic BEECN Operations.....35

300.65 Radio Traffic Priorities 36

300.70 Message Posting.....36

300.75 Custody of BEECN Equipment 36

300.80 Media Requests.....37

300.85 BEECN Demobilization and Tear Down.....37

SECTION 400 - OPERATIONS: FIRE STATIONS.....38

400.05 Fire Station Volunteers: General Objectives ...38

400.10 Deployment Planning.....38

400.15 Responsibilities Prior to Deployment 39

400.20 Deployment Protocols 39

400.25 Self Determination to Deploy 39

400.30 Deployment Guiding Principles 40

400.35 Conduct at the Fire Station.....41

400.40 Basic Fire Station Operations 41

400.45 Radio Traffic Priorities 42

400.50 BEECN Station List 43

400.55 Amateur radio script 45

400.60 Fire Station BEECN Activity Demobilization ...45

APPENDIX A: SCRIPTS AND SAMPLE FORMS.....46

APPENDIX B: ACTIVE BEECN SITES 54

APPENDIX C: BEECN CODE OF CONDUCT 56

PHONETIC ALPHABET

Use the Phonetic Alphabet when your message contains difficult words or abbreviations.

	PHONETIC	SPOKEN AS		PHONETIC	SPOKEN AS
A	Alfa	AL FAH	N	November	NO VEM BER
B	Bravo	BRAH VOH	O	Oscar	OSS CAH
C	Charlie	CHAR LEE	P	Papa	PAH PAH
D	Delta	DELL TAH	Q	Quebec	KEH BECK
E	Echo	ECK OH	R	Romeo	ROW ME OH
F	Foxtrot	FOXS TROT	S	Sierra	SEE AIR RAH
G	Golf	GOLF	T	Tango	TANG GO
H	Hotel	HOH TELL	U	Uniform	YOU NEE FORM
I	India	IN DEE AH	V	Victor	VIC TAH
J	Juliet	JEW LEE ETT	W	Whiskey	WISS KEY
K	Kilo	KEY LOH	X	X-ray	ECKS RAY
L	Lima	LEE MAH	Y	Yankee	YANK KEY
M	Mike	MIKE	Z	Zulu	ZOO LOO

Introduction

In the event of a major earthquake in Portland, the communications systems that Portlanders rely on are unlikely to function. Cell phones, land lines, texting, and internet service are not resilient enough to endure the damage anticipated from a Cascadia Subduction Zone earthquake.

Therefore, a major earthquake means that residents in Portland neighborhoods will find it difficult, if not impossible, to receive information and request help from local government in the aftermath. Damaged roads and infrastructure will also cut off many Portland neighborhoods from emergency responders.

A Basic Earthquake Emergency Communications Node (BEECN) is a place to go in Portland neighborhoods after a major earthquake to ask for emergency assistance, or to report severe damage or injury. BEECNs rely on the amateur radio system ("HAM"), a relatively durable communications system, to help neighborhoods and local government reach each other.

In the aftermath of an earthquake, volunteers or city employees will proceed to one of 50 BEECN sites spread throughout the city. Each BEECN has an equipment cache associated with it which the volunteers will deploy. BEECN volunteers use a handheld radio in the cache to talk with an amateur radio operator at the nearest fire station who will relay those messages to the city's Emergency Coordination Center (ECC). Message traffic is intended to be two-way. This means that the ECC can send response and resource information to neighborhoods through BEECNs, while neighborhoods can talk with local government to report damage or injuries and request help.

Portlanders should not think of a BEECN as a place where people will find emergency supplies or resources, nor should they consider it a staging area for medical professionals and emergency medical services. BEECNs are intended as communication points only.

Above all else, the BEECN program relies on the help of volunteers to succeed. Volunteers and community partners keep the BEECN caches secure, periodically test the equipment, offer program feedback to PBEM, and will be the neighbors their communities rely on to help facilitate effective communication following an earthquake.

May 2014 BEECN Drill

SECTION 000 - PROGRAM ORGANIZATION

000.05
Section Numbers

This BEECN Manual is organized into the following sections, divided by general subject area:

000	**Program Organization**
100	**BEECN Volunteers**
200	**Equipment Caches and Equipment**
300	**Concept of Operations: BEECN Sites**
400	**Concept of Operations: Fire Stations**

000.10
BEECN and PBEM

a. The BEECN program is sited in, supervised and managed by PBEM with participation from Portland Fire & Rescue.

b. PBEM has sole authority to determine BEECN volunteer membership and who is responsible for maintaining and deploying a BEECN.

c. When activated, BEECN volunteers defer to the authority of any present emergency response personnel (such as police, fire, or EMS personnel); members of the military; emergency managers associated with a City of Portland bureau (e.g. the Portland Water Bureau); or staff from PBEM.

d. The PBEM Bureau Director may delegate responsibilities for the BEECN program to a designee (in most cases, the BEECN Coordinator).

e. All routine communications regarding BEECN program business between volunteers, city employees, and PBEM will be directed to the BEECN Coordinator.

000.15
City Employees and BEECNs

The City of Portland may assign a City of Portland employee to a BEECN for drills and/or deployment. A city employee is still considered a city employee while undertaking responsibilities to the BEECN program, and the city employee is at no time considered a "BEECN volunteer".

000.20
Elements of a BEECN

A BEECN consists of three essential elements: the site, the equipment cache, and the assigned volunteers.

a. The **BEECN site** is the geographical location where Portlanders are encouraged to go 24 to 48 hours following an earthquake. For example: school grounds, a park, or a parking lot.

b. The **BEECN equipment cache** is associated with the site and located within a five block radius of the BEECN site. It contains all the equipment that volunteers need to deploy the BEECN.

c. **BEECN volunteers** are the personnel associated either with a BEECN or a fire station, and are trained to deploy the BEECN program 24 to 48 hours following an earthquake. It takes at least two volunteers to operate a BEECN, and at least two volunteers to carry out BEECN responsibilities at a fire station.

000.25
Responsibilities of PBEM to the BEECN Program

PBEM has many responsibilities to the BEECN program and they are woven throughout these Guidelines. The following subsection does not include all of PBEM's responsibilities to the BEECN program, but indicates those most general and salient to it. PBEM will:

a. Provide training to designated BEECN volunteers that will instruct them on safe and effective practices and procedures to deploy the BEECN following an earthquake.

b. Provide BEECN exercise and drill opportunities to keep volunteers confident and competent in the skills needed to deploy in the event of a disaster.

c. Provide a point of contact at PBEM (e.g., the BEECN Coordinator) who responds to the needs and inquiries of BEECN volunteers in a reasonably timely, professional, and relevant manner.

d. Ensure that volunteers are appropriately indemnified for their service to the community.

e. Ensure that caches and cache supplies and equipment are replenished and replaced as needed and as resources permit; and, ensure that caches receive maintenance as required.

f. Be responsible for and maintain Memorandums of Understanding (MOUs) with property owners who host BEECN caches.

000.30
Location of BEECN Sites

a. At *minimum*, there will be a total of 48 BEECN sites located throughout the City of Portland.

b. BEECNs will be evenly distributed throughout the city and are generally sited with the goal of placing approximately two BEECNs within each of the Portland Plan's neighborhood hub boundaries (***see Appendix B***).

c. PBEM has complete discretion over the location of each BEECN site. However, PBEM will consider the input of property owners, community partners, city employees, and volunteers when deciding BEECN site locations.

d. Though moving a BEECN site should be avoided, PBEM will consider moving a site if a more appropriate one if found in the immediate neighborhood of the BEECN.

e. The ideal BEECN site is:

   1. An open area large enough to hold a crowd of at least 100 people;

   2. A safe distance from unreinforced masonry structures (such as older brick structures);

   3. Is not on a steep gradient or near landslide hazards, and not easily subject to flooding;

   4. Is not in the vicinity of tall trees, overhead power lines, or other utility hazards;

   5. Is familiar to the community and following a disaster might be intuited by neighbors as a community gathering point, and is geographically central to the immediate community.

BEECN Volunteers set up the communications tent

SECTION 100 - BEECN VOLUNTEERS

100.05
Role of BEECN Volunteers

a. BEECN volunteers are unpaid volunteers with the City of Portland and any responsibilities undertaken as a BEECN volunteer are voluntary. Volunteers are not employees of PBEM or any other city bureau while acting as a BEECN volunteer.

b. Any time a BEECN volunteer engages in authorized BEECN activities, that member is a representative of the City of Portland and will comport him or herself in a manner consistent with these BEECN Guidelines and ***Code of Conduct.***

100.10
Persons with Disabilities

Everyone has a part in emergency preparedness and response, and no volunteer interest in the BEECN program will be discouraged or denied on the basis of any physical or cognitive disability. In order to ensure equal access to volunteer programs, PBEM will reasonably modify policies and procedures and provide auxiliary aids and services to persons with disabilities.

100.15
Volunteer Qualifications

Each BEECN volunteer must:

a. Reside within walking or biking distance of the BEECN or fire station the volunteer is responsible for, and be prepared to transport self to the BEECN or fire station in the event of a BEECN deployment without relying on motorized transportation (such as a car). BEECN volunteers do this within the deployment timeframe of 24 to 48 hours following a disaster.

Page 7 of 58

b. Pass a criminal background check at PBEM's expense.

   1. A volunteer may not be considered for BEECN service if she or he has been convicted of a crime classified as: a Class A Felony; a Class B Felony; any sex crime requiring registration; or stalking.

   2. All rules governing background checks for BEECN volunteers are identical to the rules governing background checks for NET volunteers. See ***NET Guidelines, Sections 200.20 and 300.15.a***.

c. Be willing and capable of fulfilling the BEECN volunteer responsibilities indicated in ***Section 100.40: BEECN Cohort Responsibilities***.

d. Sign the Code of Conduct applicable to BEECN volunteers (***Appendix A***), and follow the procedures indicated in this Guidelines manual.

100.20
Relevant BEECN Volunteer Experience and Prior Training

a. Only volunteers staffing fire station Go-Kits in the BEECN program need to have an Amateur Radio license and experience with amateur radio operations. Volunteers staffing BEECN sites use a push-to-talk radio and **do not require an Amateur Radio license.**

b. BEECN volunteers do not need to be First Aid certified, as they are not expected to provide medical treatment. However, each BEECN cache is stocked with First Aid supplies and PBEM encourages BEECN volunteers to have or receive First Aid certification. PBEM will endeavor to obtain this training for BEECN volunteers.

c. BEECN volunteers can also have a background in CERT/NET training, but this is not required. If a BEECN volunteer would like to receive NET training, Portland NET will expedite that individual's application into the NET program.

d. Other skill competencies relevant to volunteering for the BEECN program include: public speaking, leadership/personnel management, and mental health/crisis counseling.

100.25
BEECN Training

PBEM will provide training to designated BEECN volunteers instructing on the deployment and use of BEECN equipment on an as-needed basis. PBEM encourages members of a BEECN Cohort to teach each other in the use of equipment when possible.

100.30
BEECN Volunteer Cohorts

a. Each BEECN should have a cohort of no fewer than eight volunteers who are trained and familiar with the BEECN cache.

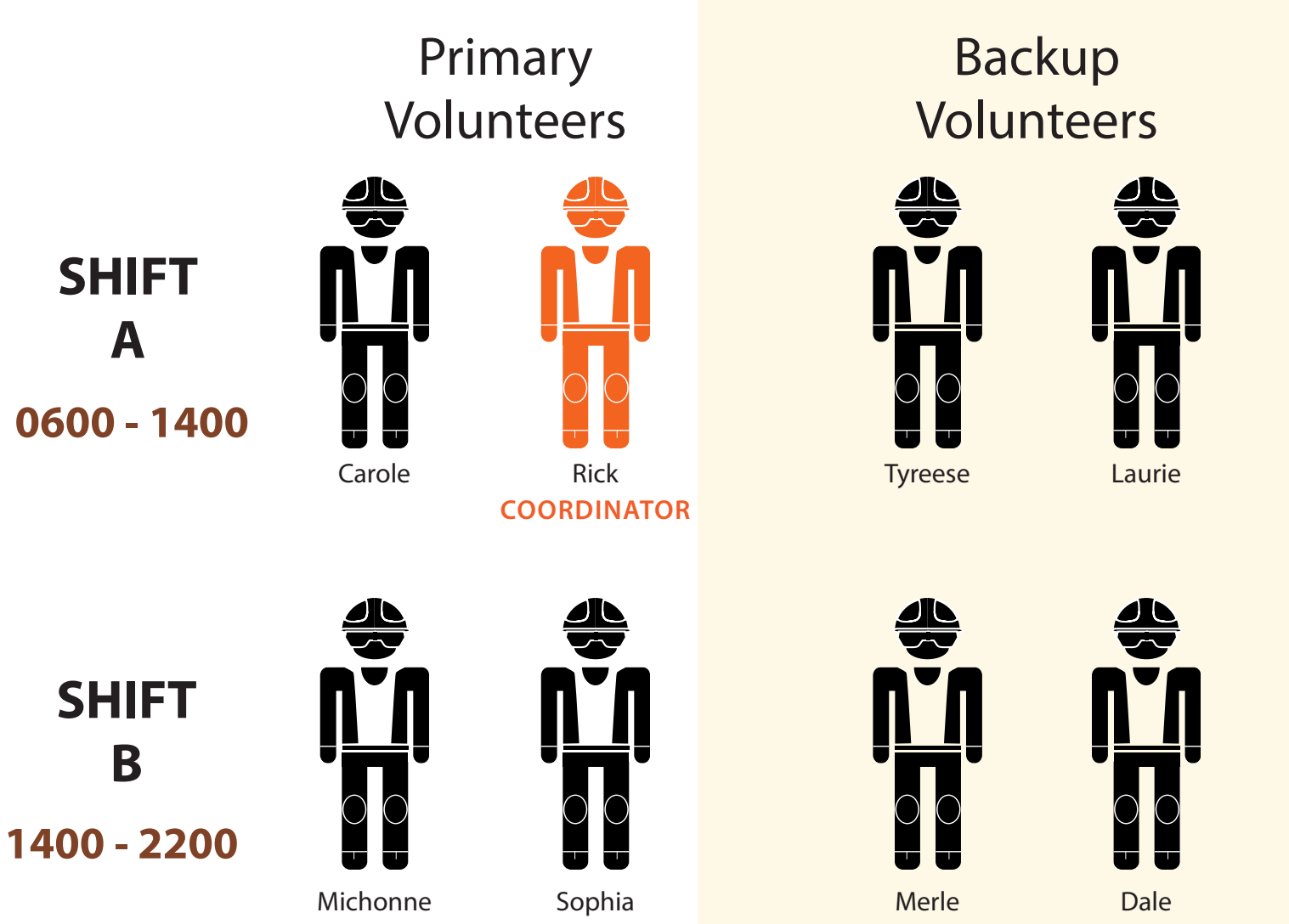
b. One of the eight in a cohort will be the Cohort Coordinator for that BEECN cohort. The responsibilities of the Coordinator are described in ***100.35: BEECN Cohort Coordinators***.

c. A cohort is divided into two shifts (Shift A and Shift B) of four volunteers each. The intention is that in an actual emergency deployment, each shift will work for eight hours maximum and switch to the other shift at the end of eight hours. See ***Section 300.10*** on operational periods and shifts.

d. Shift A and Shift B are further divided between two Primary Volunteers and two Backup Volunteers. If a Primary Volunteer is injured or for some other reason cannot deploy the BEECN, Backup Volunteers are available to fill in or take over deployment responsibilities. See ***Figure 1: Cohort Organization***.

Figure 1

Cohort Organization



100.35
BEECN Cohort Coordinators

Cohort Coordinators have no field authority greater than other BEECN volunteers, but are responsible for organizing their cohort. Responsibilities of the Cohort Coordinator include:

a. Serving as PBEM's point of contact for a BEECN's cohort. PBEM will contact this individual to inform of BEECN drills or exercises, policy changes, or any other information relevant to the BEECN program. The Cohort Coordinator is responsible for relaying this information to cohort members.

b. Serving as the point of contact for the owner/manager of the property hosting the cache. The Coordinator should contact the property owner/manager when BEECN exercises are scheduled.

c. Working with cohort members to plan out shift and primary/backup volunteer designations for operations.

d. Ensuring that cohort volunteers feel comfortable with using the cache equipment, can deploy the BEECN competently, and that all volunteers understand their role and responsibilities in the event of a BEECN deployment.

e. Ensuring that the cohort has no fewer than eight members, and recruiting new members from the immediate neighborhood as needed.

f. Providing PBEM with program feedback, recommendations, and resource requests as appropriate.

g. Ensuring that the cohort responsibilities described in ***100.40: BEECN Cohort Responsibilities*** are carried out, and the results of audits and exercises are relayed to PBEM.

100.40
BEECN Cohort Responsibilities

Each BEECN Cohort has the following responsibilities:

a. No less than **monthly**, do a sight check of the cache to ensure it is secure and has not been damaged or significantly tampered with, and that the tarp over it is still on tight (if the cache is outdoors). There is no need to inform PBEM of this check *unless* there is damage or other issues to report.

b. No less than **quarterly**, inventory the contents of the cache using the inventory forms included inside the cache. The completed inventory form should be logged online at: ***https://www.portlandoregon.gov/pbem/65758.***

c. ***No less than* annually, *participate in a BEECN activation exercise. PBEM will coordinate an exercise in the area of the BEECN once a year, but will coordinate more activation exercises at the request of a cohort as resources allow.***

d. ***In the event of a major earthquake, proceed with BEECN operations as described in Section 300***.

100.45
Fire Station Cohorts

A Fire Station volunteer ("FS volunteer") is a specialized Amateur Radio Operator (ARO), OR a non-licensed volunteer assisting the ARO, who works independently of BEECN cohorts and communicates with the Portland Emergency Coordination Center (ECC).

Fire Station volunteers also form a cohort of eight for each fire station. Each shift requires one primary and one backup ARO.

Fire Station Volunteers are responsible for relaying messages from BEECNs to the ECC during deployments and exercises and are fundamental to BEECN operations. Therefore, a BEECN cohort should know who the Fire Station Volunteer is who will be relaying their messages. The responsibilities of Fire Station Volunteers are described in ***Section 400***.

100.50
BEECN Volunteers and Portland Neighborhood Emergency Teams (NETs)

a. BEECN volunteers and NETs operate independent of each other's authority and are not under each other's chain of command.

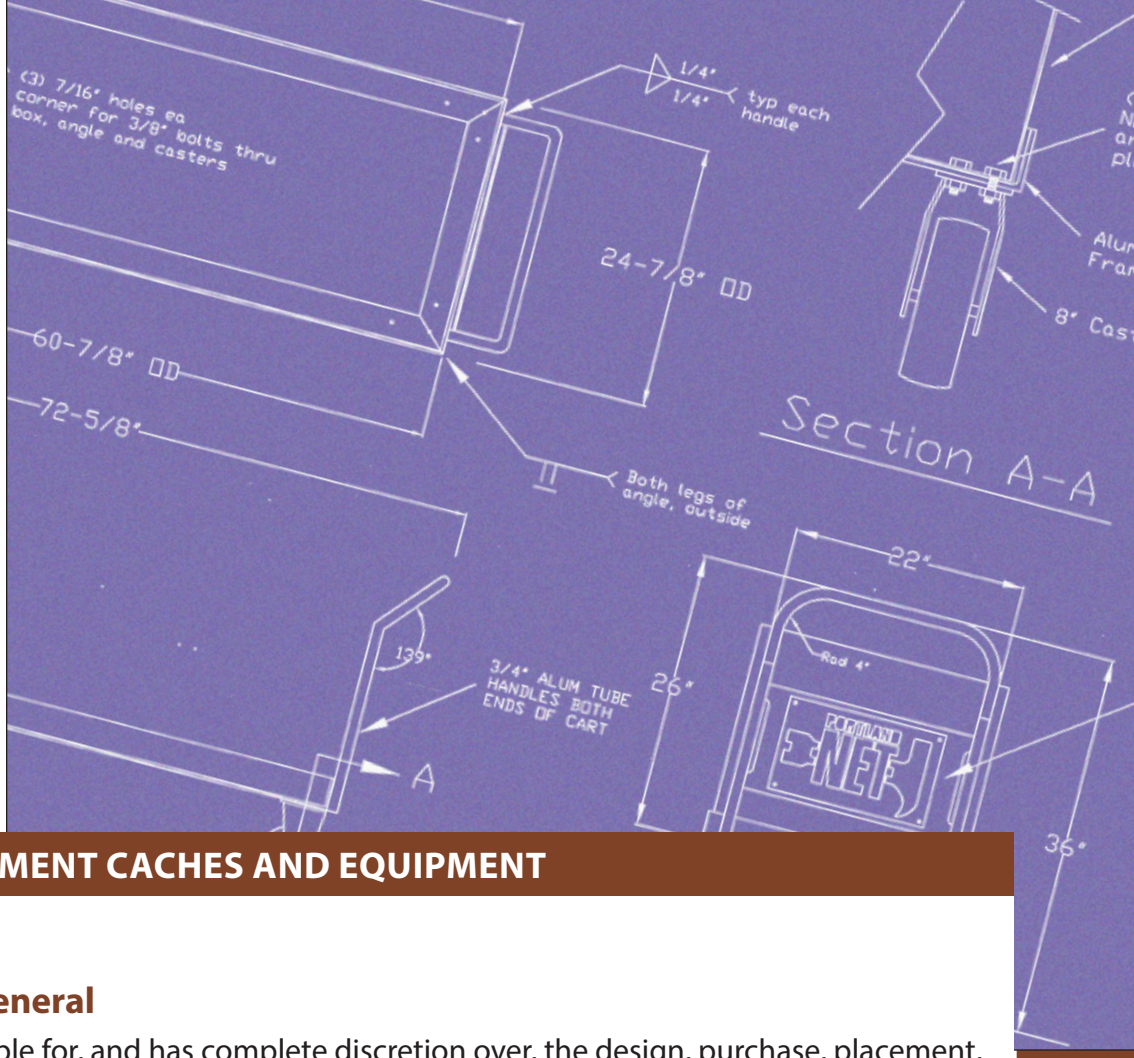
b. PBEM encourages BEECN cohorts to meet with regularly with their local NETs, and to be familiar with their Operations Plans.

c. One person may be both a NET and BEECN volunteer. NETs respond immediately following a major disaster, while BEECN volunteers operate 24 to 48 hours following an earthquake. Therefore, a volunteer can plausibly be part of both programs, and PBEM encourages volunteer participation in both.

100.55
Indemnification

Subject to the conditions and limitations of the Oregon Constitution and Oregon Tort Claims Act, ***ORS 30.260 through 30.300***, the City shall indemnify, defend and hold harmless BEECN or FS volunteers for any tort claim arising out of a BEECN/FS volunteer's act or omission within the course and scope of the volunteer's duties while the volunteer is performing emergency service activities under the direction of PBEM in connection with a state of emergency declared under ***ORS 401.309***, or during a state of public health emergency proclaimed under ***ORS 433.441***, or while the volunteer is engaged in training being conducted or approved by PBEM for the purpose of preparing the volunteer to perform emergency services, or while a volunteer is participating in non-emergency deployment activities with PBEM's prior approval.

Original BEECN cache design



SECTION 200 - EQUIPMENT CACHES AND EQUIPMENT

200.05
Equipment Caches - General

PBEM is ultimately responsible for, and has complete discretion over, the design, purchase, placement, content, and security of BEECN caches.

200.10
Equipment Caches - Placement

a. **The location of a BEECN cache is NOT public information.** It is information that should be known only to, and kept confidential by: PBEM, a hosting property owner, and volunteers responsible for the cache. All persons who know the location of a cache or have possession of a ***BEECN profile*** should treat the information as confidential.

b. Optimally, a BEECN cache is secured in an indoor location that volunteers have access to in the event of a deployment. An indoor location's structure should be reasonably expected to endure a major earthquake sufficiently that volunteers can recover the cache safely.

c. The property on which a BEECN cache is stowed may be a school, a business, a place of worship, or a private residence. In any situation for deployments and exercises, volunteers should act as guests and take care not to damage the premises or (during drills and exercises) interrupt other activities on the site. Volunteers will defer to the authority of a property owner, or the owner's representative.

d. The agreement between a property owner who hosts a cache and PBEM is written into a Memorandum of Understanding (MOU).

200.15
Supplementary Equipment in BEECN Caches

a. If there is space available, members of a BEECN cohort or nearby NET may place their own equipment in the cache to supplement the PBEM provided equipment.

b. PBEM is not responsible for the loss, theft, recovery, or replacement of supplementary equipment placed in a BEECN cache.

200.20
BEECN Cache Inventory

A complete BEECN cache consists of the following:

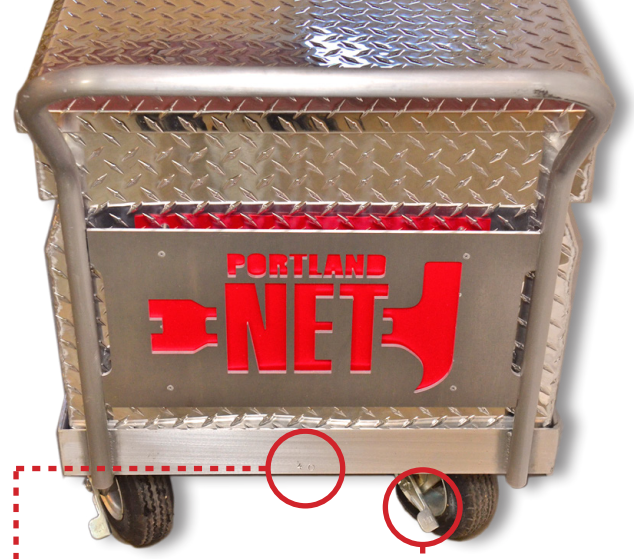
- ☐ Aluminum rolling cart/storage container
- ☐ Pop-up tent/shelter with 4 sidewalls
- ☐ ICOM IC f4001 UHF handheld radio
- ☐ SKED roll-up stretcher
- ☐ AA batteries (qty. 18)
- ☐ BEECN Guidelines (binder)
- ☐ Eton CRC FRX 1 Survival Radio
- ☐ UCO Lumora LED Lantern
- ☐ Roll-up dry erase sign
- ☐ Visual translator
- ☐ MegaMover stretcher
- ☐ Dry erase inventory card
- ☐ Post-earthquake City employee check-in forms
- ☐ Rite in the Rain 5" x 7" ICS notebook
- ☐ Rite in the Rain 8" x 11" notebook
- ☐ Grease pencils/dry erase markers (2 each in binder pencil pouch)
- ☐ Extremity splints, 12" (qty. 6), 18" (qty. 6), 24" (qty. 3), 36" (qty. 3)
- ☐ Small duffel for First Aid Kit 1
- ☐ Large duffel for First Aid Kit 2

Two first aid kits consisting of:

First Aid Kit 1 (small duffel)	QTY
☐ Waterless hand sanitizer (12 oz bottle)	4
☐ Bandage shears	2
☐ Cleaning agent/soap (12 oz bottle)	2
☐ N95 face masks (case of 20)	1
☐ Infectious waste disposal bags	10
☐ Protective eyewear	4
☐ Tweezers	2
☐ CPR mask with one-way valve (adult)	4
☐ CPR mask with one-way valve (child)	2
☐ Duct tape	2

First Aid Kit 2 (large duffel)	QTY
☐ Disinfecting wipes	25
☐ Triple antibiotic ointment	25
☐ Roll surgical tape (.5")	4
☐ Roll surgical tape (1")	4
☐ Roll surgical tape (2")	2
☐ Chemical cold packs	10
☐ Chemical hot packs	12
☐ 4" x 4" nonsterile gauze sponges (100 count package)	1
☐ 4" sterile roller bandages	12
☐ Non-latex exam gloves (small), box	2
☐ Non-latex exam gloves (large), box	2
☐ Sterile adhesive bandages 1" (box of 50)	2
☐ Sterile adhesive bandages 2" (box of 50)	1
☐ Sterile bulk dressings 5x9" (box of 25)	2
☐ Sterile bulk dressings 8x10" (box of 20)	1
☐ 4" emergency compression bandage	4
☐ Triangular bandages	24
☐ Ace bandage, 4"	5
☐ Thermal blanket	100
☐ Feminine pads, pack of 12	2

Length (including handles)	**81”**
Length (box alone)	**61”**
Width	**25”**
Height	**34”**
Weight (fully loaded)	**≈ 250 lbs.**
Volume	**≈ 30 ft^3**



The number of each BEECN is die stamped on the front

Foot brakes make the cache easier to park

The cache box is a diamond-plated aluminum toolbox (the type that mounts to a pickup truck) bolted to a wheeled cart. All wheels are affixed with a castor to enable better maneuverability.

The key to unlock the latch is generally found in a key safe (*Master Lock #5400D*). It is affixed to the cache box, or a chain that secures the box in place.

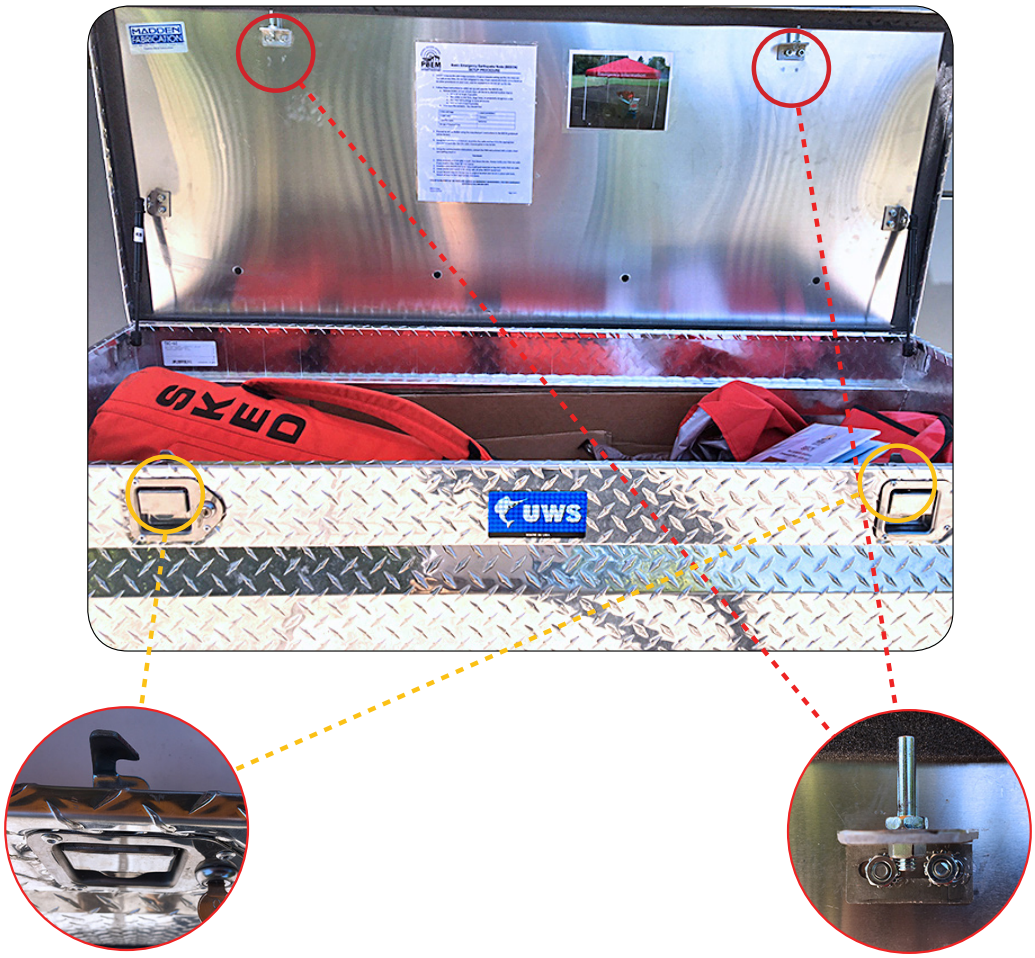
Each box has a locking latch near the left-hand handle. When the lock is turned horizontally, it is in the locked position.

When the combination is entered, you can flip open the key safe to retrieve the key. You can also open the lock by sliding the latch inside to the left.

Slide tab to open

Troubleshooting the cache lid

Most of the BEECN caches are in shiny metal boxes on wheels. That variety of cache occasionally has problems with the latching mechanism – in other words, sometimes the lid won't lock shut.



Most of the time the remedy involves adjusting one or both of the bolts on the lid. Each bolt is held on by two hexagonal nuts. **A six inch (or larger) adjustable wrench** works well to loosen these nuts and move the bolt to the left or right, whichever is needed in order for the bolt to snap into place when it connects with the locking mechanism on the main portion of the box. Some trial and error may be needed to get it right.

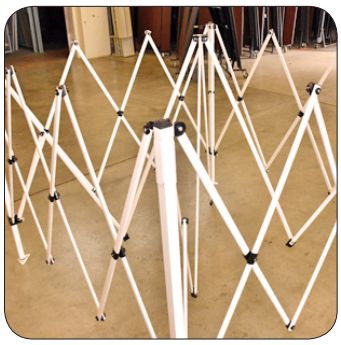
Graphite, Lockease or similar products made for lock mechanisms are the only products that should be used on the lock. Do not use WD-40 or other general purpose "lubricants". Many of these contain solvents that, in the end, will make the lock more difficult to operate.

You know you've got it working when you snap the lid shut then turn the box key from the vertical to the horizontal position (don't force it!) and the two handles don't allow you to open the lid.

Pop-up Shelter

The shelter is a 10′ x 10′ pop-up canopy that will keep volunteers protected from the elements while conducting operations. They are easily and quickly deployed. Pictures illustrate the most common canopy model used.

Step 1
Unzip the case and pull it down. Pull the frame out by the legs. The canopy may still be affixed.



Step 2
Expand the frame outward about half way.

Step 3
Drape the canopy over the frame. At each corner, secure the canopy using the velcro tabs.

Step 4
Now with the canopy affixed, pull out the frame the rest of the way.

The tent frame and canopy are stored in a long bag with wheels

The legs lock when fully extended and can be unlocked by pulling on the rings

Continued next page

Step 5
Push upward on the canopy so that the legs extend out, clicking and locking into place.

Step 6
If you can safely reach them, close the velcro loops along the top of the frame to help keep the canopy secure.

Stakes

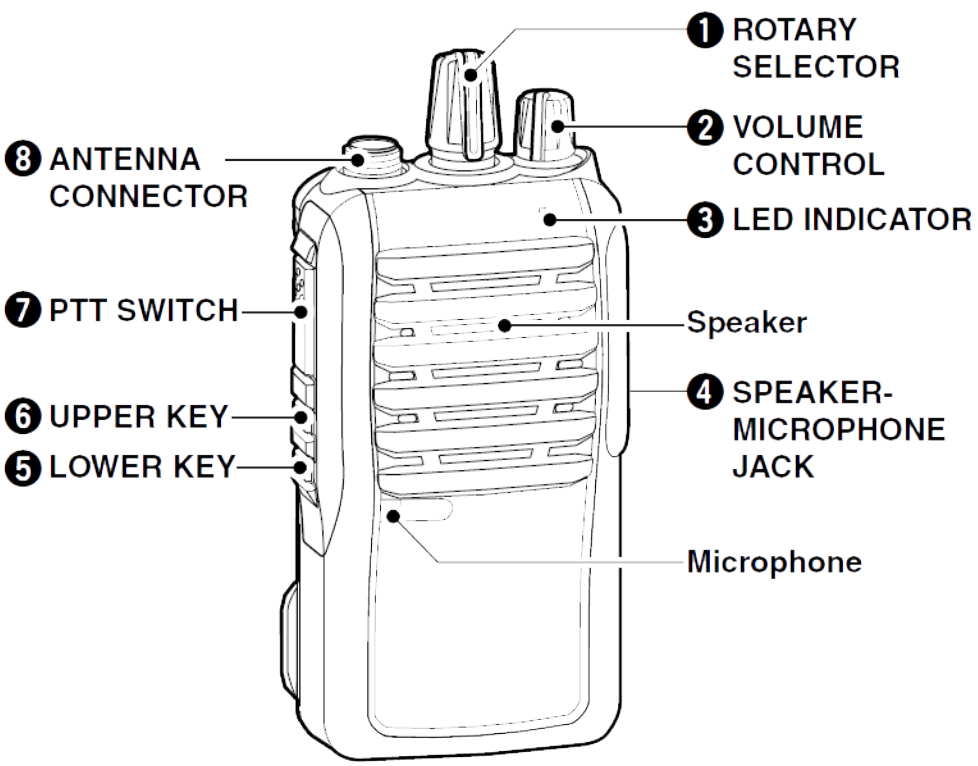
You will find tent stakes in a pocket on the side of the shelter bag in case they are needed to stabilize the tent in high winds.

The shelter is now ready for BEECN operations.

Optional
Each cache also has a set of white sidewalls you can attach if needed.

They are fastened to the frame with ties and velcro tabs.

Each cache includes an ***Icom F4001 series UHF transceiver***. The operations section of this guidebook will cover which BEECNs use which channels. This section will cover basic operation of the radio.



1. **Rotary Selector**
   Rotate to select the pre-programmed memory channels.
2. **Volume Control**
   Rotate to turn the power ON/OFF, and adjust the audio level.
3. **LED Indicator**
   See sidebar.
4. **Speaker-Microphone Jack**
   Connect the optional speaker-microphone or VOX adapter cable.
5. **Lower Key**
   Not for BEECN use.
6. **Upper Key**
   Not for BEECN use.
7. **PTT Switch**
   Push and hold to transmit; release to receive.
8. **Antenna Connector**
   Connect the antenna. **NEVER** operate radio without the antenna attached.

Radio Specifications

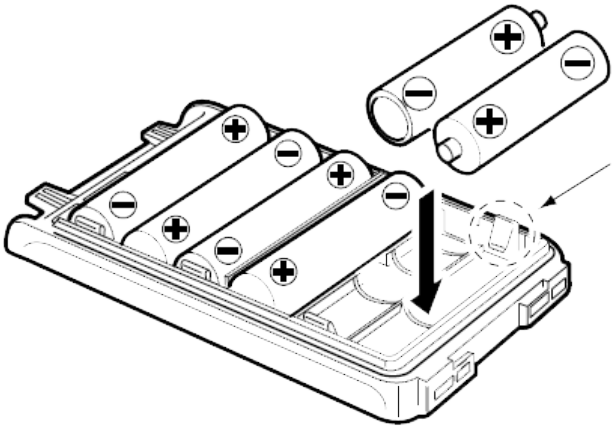
- **Powered on 6 AA batteries**
- **Operates on 400 - 470 MHz UHF frequencies**
- **4 Watts transmit power**

See how the radio works here: ***https://vimeo.com/304838555/ddd88d65e1***

Preparing the radio

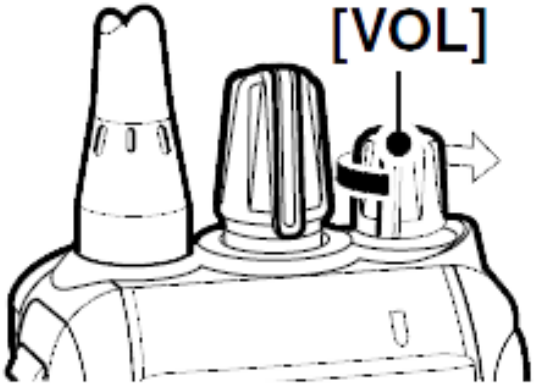
The radio should be in a cardboard box marked "Icom". When you open the box, you will find the radio disassembled in three pieces: radio, battery pack, and antenna.

You will also find AA batteries in the box with the radio. Load batteries into the battery pack and affix the pack to the back of the radio. Screw the antenna on. Power the radio on to test the batteries.



Turning power ON

Rotate [VOL} to turn power ON.



Channel selection

Rotate [ROTARY SELECTOR] to desired operating channel.

Receiving

1. Rotate [VOL] to turn power ON.
2. Rotate [ROTARY SELECTOR] to operating channel.
3. When receiving a call, adjust audio output to a comfortable listening level.

Transmitting

1. Wait for the channel to clear to avoid interference.
2. Hold the radio 2 to 4 inches from your mouth.
3. Push and hold [PTT] and wait two seconds, then speak into the microphone at a normal voice level.

IMPORTANT!
After using the radio, remove batteries and disassemble.

Radio Voice Procedure

BASICS

1. Think before you speak. Then, be brief.
2. Use no one's personal information (name, health status, address, etc.).
3. To make a call, say the tactical call sign of the receiving station, followed by THIS IS and then your tactical call sign, and then OVER.
   EXAMPLE: "Command Post, this is Rover One, Over"

ACCURACY

Use the RSVP system to ensure accuracy.

R	**RHYTHM**	Make adequate pauses
S	**SPEED**	Speak more slowly than usual. Use "air writing" when spelling phonetically
V	**VOLUME**	Speak directly into the microphone
P	**PITCH**	Pitch your voice higher than for normal conversation

PROWORDS

These words have specific meanings that replace sentences or phrases

Word or Phrase	Meaning
Affirmative	Normally used when a question is asked and the reply is YES
Break, Break,	Interruption to a transmission
Disregard	This transmission has been made in error – ignore
EMERGENCY EMERGENCY	Use only when there is 'grave or imminent danger to life'. Immediate assistance is required
Figures	Numbers to follow
Go ahead	I am ready to copy your message
I spell	Next word will be spelt out using the phonetic alphabet
I say again	I am repeating my transmission or portion requested
Negative	Normally used when a question is asked and the reply is NO
Out	End of transmission, no answer is required or expected
Over	Invitation to transmit
Roger	Message was received and understood. Can be used with the words over or out
Say again	Repeat all of your last transmission
Say all after	Repeat all after a certain word or key phrase
Say all before	Repeat all before a certain word or key phrase
Standby	Wait for a short period and I will get back to you.
Sitrep	Means a situation report at your location

INITIATING A CALL

Whenever you are using a radio for the first time, or there is doubt about the performance of your radio, the simplest check that can be done is what is known as a "RADIO CHECK". The call should consist of the following:

- **The call sign of the station being called.**
- **The words "THIS IS."**
- **The call sign of the station calling.**
- **The words "RADIO CHECK."**
- **The proword "OVER"**

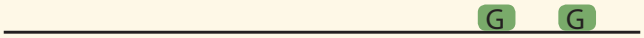
The LED indicator indicates the status of various parameters of the radio as follows:

◊ TX: Lights red while transmitting signal

◊ RX: Lights green while receiving a signal

◊ Fast/Slow scan: Blinks when the Fast/Slow scan is activated

◊ Low Battery 1: batteries should be changed (blinks slowly)



◊ Low Battery 2: batteries must be changed (blinks fast)

◊ TX Low Battery 1: Low battery detected during TX mode

◊ TX Low Battery 2: Very low battery detected during TX mode

◊ Channel Error: A non-programmed channel is selected

LED Indicator

Generally, the LED indicator will be lit red (transmitting), green (receiving signal), or orange (receiving a matched 2/5 tone). Use the guide below to interpret LED color and activity.

BEECN Radio Frequencies

Channel	RX Freqeuncy	TX Frequency	Rx/Tx PL Tone	Power	Comments
1	464.3250	<-	162.2	H (4 Watt)	PBEM 1 (Simplex)
2	452.2375	<-	162.2	H (4 Watt)	PBEM 2 (Simplex)
3	461.4750	<-	162.2	H (4 Watt)	PBEM 3 (Simplex)
4	461.5750	<-	162.2	H (4 Watt)	PBEM 4 (Simplex)
5	461.9750	<-	162.2	H (4 Watt)	PBEM 5 (Simplex)
6	464.5250	<-	100.0	H (4 Watt)	PBEM 6 (Simplex)
7	464.5250	469.5250	100.0	H (4 Watt)	PBEM 7 RPT (Repeater)

What is a SKED?

A rescue system that performs the functions of a stretcher, yet is much more compact, lightweight, and versatile.

Size (laid out flat)	**3' x 8'**
Size (rolled up)	**9"d x 36"l**
Weight	**17 lbs. (w/ accessories)**
Material	**Medium density polyethylene plastic** **** Nylon webbing** **** Solid brass grommets** **** Steel buckles**
Temperature Range	**Usability to 120˚F without becoming brittle**
Horizontal Lift Slings	**Webbing tensile strength 9,000 lbs.**
Vertical Lift Slings	**Rope tensile strength 6,000 lbs.**

Repacking the SKED

Step 1
Lay stretcher out and place retainer strap, buckle side down under foot end of SKED.

Step 2
Starting at the head end, roll the SKED up as tight as possible.

Step 3
Continue to roll the SKED up using knee to keep stretcher from unrolling.

Step 4
Fasten pre-placed retainer strap to buckle and place SKED stretcher in backpack.

Set of four removable webbing handles enables up to eight rescuers to carry the SKED. Insert through unused grommets on the side of the SKED.

Tow strap is attached to carry handles enabling three or four rescuers to drag the SKED.

Eton CRC FRX 1 Survival Radio
All-purpose rechargeable weather radio with hand turbine power generator. Receives AM/FM/NOAA weather bands (one minute of cranking will power the radio for 15 to 20 minutes). Includes LED flashlight.

UCO Lumora LED Lantern
Compact and collapsible LED lantern/flashlight that provides 110 lumens. Hold down the on/off switch to adjust brightness. Includes a hook for hanging. It takes AA batteries. 15 hours of light on highest setting, 200 hours of light on lowest setting.

Cardboard Extremity Splints
Splinting material in four sizes: 12", 18", 24", and 36".

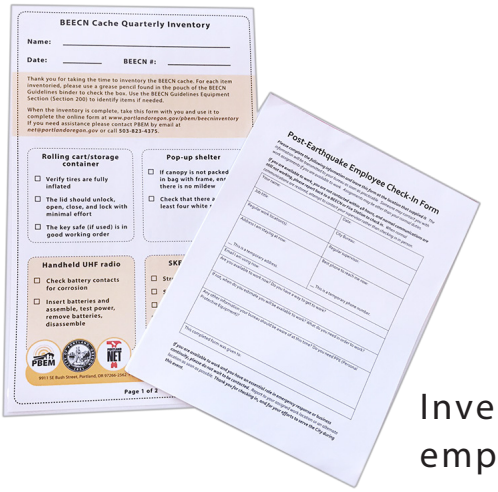
First Aid Kits (2)
Each cache includes two first aid kits - a small one and a large one. The following pages inventory their contents.

Items not to scale

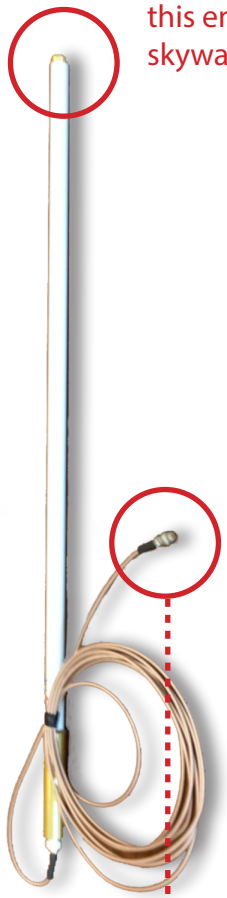
Visual translator

Roll-up dry erase sign

Pencil pouch with visual translator and ICS notebook



Inventory card, City employee check-in forms



Point this end skyward.

Pole Antenna

Most of the handheld radios include a standard "rubber ducky" antenna. BEECN caches sited in topography that inhibits radio signals (particularly SW Portland) may include a fiberglass pole antenna. To boost the radio signal, simply screw the cable onto the radio's antenna connector.

First Aid Kit (small)

Small First Aid Kit

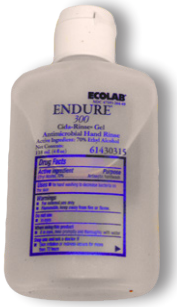
The smaller kit primarily contains durable medical supplies and items intended to keep volunteers safe from infection.

Bandage shears (2)

In some kits, the shears and forceps have been replaced with a single EMT holster.

Forceps (2)

Protective eyewear (4)



Waterless hand sanitizer - 12 oz bottle (4)

Cleaning agent/ soap - 12 oz bottle (2)

Duct tape (2)

N95 masks - carton of 20 (1)

CPR masks (4)

Pediatric CPR masks (2)

Infectious waste disposal bags (10)

Items not to scale

Large First Aid Kit

The large kit contains mostly bandages and other disposables.

Disinfecting wipes (25)

Feminine pads, pack of 12 (2)

Triple antibiotic ointment (25)

Triangular bandages (24)

Items not to scale

Chemical cold packs (10)

4″ compression bandage (4)

4″ Ace bandage (5)

Chemical hot packs (12)

Box 1″ adhesive bandages (2)

Box 2″ adhesive bandages (1)

First Aid Kit (large)

Surgical tape - .5″ (4)
Surgical tape - 1″ (4)
Surgical tape - 2″ (2)

4″ sterile roller bandages (12)

Box non-latex exam gloves - small (2)

Box non-latex exam gloves - large (2)

Thermal blankets (100)

Sterile bulk dressings - 5″x9″, 25 count (2)

Sterile bulk dressings - 8″x10″, 20 count (1)

Large First Aid Kit (continued)

The large kit contains mostly bandages and other disposables.

Gauze sponges - 4″x4″ 100 count (1)

Every fire station in Portland is equipped with a VHF amateur radio called an "orange go-kit" and an external antenna. This is the radio that an operator at a fire station uses to communicate with Portland's ECC.

Each kit includes a notebook with setup and operations instructions, so that information will not be covered here. Portland Fire & Rescue has also posted a film covering kit setup and operation at: ***http://bit.ly/1nuikxP***.

Each go-kit kit includes:

VHF radio (Icom IC-2100H/IC-2200H	J-pole roll-up VHF antenna
Microphone	AC ground adapter plug
AC power supply (Astron SS-25M)	Extension cord, 50' (qty 2)
Coax cable, 25'	Pencils
Coax cable, 100'	Pencil sharpeners
BNC to SO-239 adapter (for J-pole roll-up antenna)	Zippered pouch (container for small items)
SO-239 female-to-female barrel adapter (for combining coax cables)	Small screwdrivers (1 flat, 1 Phillips)
AC power cable (black)	Radio operation manual
DC power cable (links power supply to radio)	20 amp fuse (for radio power cables)
Car battery power cable (w/clips for powering radio from a car battery	Notebook with inventory, operations instructions, frequency list, city map
Cigarette lighter adapter (to install the radio in a car)	Magnetic mount whip antenna

PF&R Lt. Shon Christensen demonstrates the SKED

SECTION 300 - CONCEPT OF OPERATIONS: BEECN SITES

This section steps volunteers through what to do when deployed to a BEECN in an emergency or during an exercise. Operations for volunteers who deploy to fire stations to support BEECNs are covered in ***Section 400***.

300.05
Deployment Planning

Have a plan. Cohorts must consider that an earthquake knocking out communications systems means volunteers will be unable to check in with each other. Therefore, cohorts must plan ahead on who deploys for Shift A, and who for Shift B.

Furthermore, all four volunteers (Primary and Backup) assigned to a shift should deploy for that shift if they can. If one or both Primary volunteers cannot deploy, the Backup volunteers are still present to carry out BEECN responsibilities and/or assist the Primary Volunteers if needed. Backup volunteers can also rotate Primary Volunteers out of their shift for breaks to eat, use the bathroom, etc.

PBEM recommends that the Cohort Coordinator inform the closest Fire Station and local NETs of the Cohort's deployment plan.

300.10
BEECN Operational Periods and Shifts

a. The operational period for a BEECN is from 0600 to 2200, and BEECNs will not operate from 2200 to 0600 (with the next operational period starting at 0600); unless otherwise specified by PBEM.

b. Each operational period is divided into two shifts: Shift A and Shift B. Shift A runs from 0600 to 1400, and Shift B runs from 1400 to 2200.

300.15
Deployment Protocols

The radio network for BEECNs is activated 24 to 48 hours following a catastrophic earthquake that has shut down communications systems such as cell phones and landlines. Therefore, BEECN volunteers must expect to **self deploy** without a direct request from PBEM or other government authority. Volunteers should self-deploy to the BEECN cache and set up at the BEECN site if, and only if, the following conditions are met:

a. A major earthquake has occurred in the Portland area.

b. The volunteer and his or her family are not in any immediate danger, and are not injured.

c. Communication systems (such as land lines) are inoperative.

d. Volunteers have received no direct instructions from PBEM or other government authority.

300.20
Responsibilities Prior to Deployment

Immediately following an earthquake, BEECN volunteers:

a. Check themselves for injuries and ensure personal safety.

b. Check in with household members, ensure their safety, and treat any injuries.

c. Deploy to BEECN cache if it is safe to do so, and set it up at the BEECN site.

300.25
Self Determination to Deploy

Individual volunteers maintain personal discretion to deploy when the self- deployment protocols are met as described in ***300.15***. The decision to deploy following a disaster is a volunteer's own, and a volunteer may never be coerced into deploying. A volunteer who chooses not to deploy will not be subject to any consequences related to his or her standing in the BEECN program.

300.30
Deployment Guiding Principles

During the course of any deployment or exercise, BEECN volunteers must ensure that all chosen actions conform to the following guiding principles:

a. Safety is always the top priority.

b. Always use the buddy system and always work in pairs. It takes at least two volunteers to operate a BEECN.

c. If you see something unsafe, say so. Everyone has permission to say, "That does not seem safe" or "I do not feel safe."

d. If someone points out an unsafe condition, stop and correct it right away.

e. The loaded cache carts weigh approximately 250 pounds. Always use two people to move them.

300.35
Conduct at the BEECN Cache and Site

When moving the BEECN cache and setting up at the site, volunteers should act as guests on the property. Please be respectful and avoid damaging the grounds or any property at the location. If a property owner is present, or a representative of the property owner, volunteers should follow instructions given by that person. Please represent Portland professionally and respectfully.

300.40
Personal Security

a. Volunteers must never carry firearms or other weapons when volunteering at a BEECN. A folding knife or knife with less than a twelve-inch blade is acceptable as a tool.

b. If confronted by a person at any time who intends to take the equipment and/or harm the volunteers, volunteers must not engage physically or verbally. Leave the equipment and walk away, and call out for help. Do not attempt to confront any threatening person.

300.45
BEECN Set Up

a. Push the cache to a set up location at the BEECN site that is:

   1. At least 12' x 12' in area

   2. Level

   3. Not under trees or power lines

   4. Away from tall buildings and any brick or block structures

b. Unlock/open cache and do a brief inventory of the contents (except for inside the First Aid bags).

c. Set up the tent using the Tent Instructions on ***page 17***.

d. Load batteries into the radio and turn the radio on. See ***page 19*** for instructions.

e. Turn the radio to your assigned radio channel according to ***300.50: Channel Guide***.

f. Use the script in ***Section 300.55*** to check in with your station and begin passing radio traffic.

g. Record the messages you receive in the RADIO LOG included in the binder.

BEECN	BEECN Site	Primary Fire Station	Primary UHF Channel	Secondary Fire Station	Secondary UHF Channel
NW-1	Linnton Plywood Mill (behind)	22	2	26	2
NW-2	Forest Park Elementary School	27	2	16	1
NW-3	Chapman Elementary School	3	2	6	2
NW-4	The Fields Neighborhood Park	3	2	6	2
N-5	St. Johns Park and Community Center	22	2	26	2
N-6	University of Portland Public Safety Building Parking Lot	26	2	22	2
N-7	Jantzen Beach Mall at Sleep Country Parking Lot	17	2	8	2
N-8	Arbor Lodge Park	8	2	24	2
N-9	Jefferson High School	24	2	8	2
NE-10	Columbia Site Field	17	2	8	2
NE-11	Woodlawn Park	14	3	8	2
NE-12	Alberta Park	14	3	8	2
NE-13	Irvington Elementary School	13	3	14	3
NE-14	All Saints School	28	3	14	3
NE-15	Rigler Elementary School	28	3	14	3
NE-16	Roseway Heights School	28	3	12	3
NE-17	Montavilla Park and Community Center	19	3	28	3
NE-18	Knott City Park	30	4	2	4
NE-19	Parkrose High School	2	4	30	4
NE-20	Wilkes Park	2	4	30	4
NE-21	Glenfair Park	7	2	30	2
SW-22	Lincoln High School	1	5	4	5
SW-23	Portland State University	4	5	1	5
SW-24	Ainsworth Elementary School	15	5	4	5
SW-25	Lair Hill Park	4	5	21	5
SW-26	Hamilton Park	16	1	15	5
SW-27	Gabriel Park	5	1	SW-28	1
SW-28	Wilson High School	5	1	10	4

BEECN	BEECN Site	Primary Fire Station	Primary UHF Channel	Secondary Fire Station	Secondary UHF Channel
SW-29	Sunstone Montessori School	5	1	20	1
SW-30	West Portland United Methodist Church	18	4	10	4
SW-31	Holly Farm Park	18	4	10	4
SW-32	Stephenson Elementary School	18	4	10	4
SW-33	Riverdale High School	10	4	18	4
SE-34	Colonel Summers Park	21	5	9	5
SE-35	Brooklyn Park	4	5	21	5
SE-36	Sellwood Middle School	20	1	SE-37	1
SE-37	Duniway Elementary School	20	1	SE-36	1
SE-38	Woodstock Park	25	3	20	1
SE-39	Clinton City Park	25	3	19	3
SE-40	Harrison Park	19	3	SE-39	3
SE-41	Lents Park	11	2	25	3
SE-42	Flavel Park	11	2	SE-38	3
SE-43	Lincoln Memorial Cemetery	29	2	11	2
SE-44	Ventura Park	7	2	30	4
SE-45	Mill Park	7	2	7	2
SE-46	Gilbert Heights Elementary School	7	2	29	2
SE-47	Clatsop Butte Park	29	2	SE-46	2
SE-48	Parklane Church	7	2	31	2
SW-49	Elizabeth Caruthers Park	4	5	21	5
SW-50	Harbor Way Median	4	5	21	5

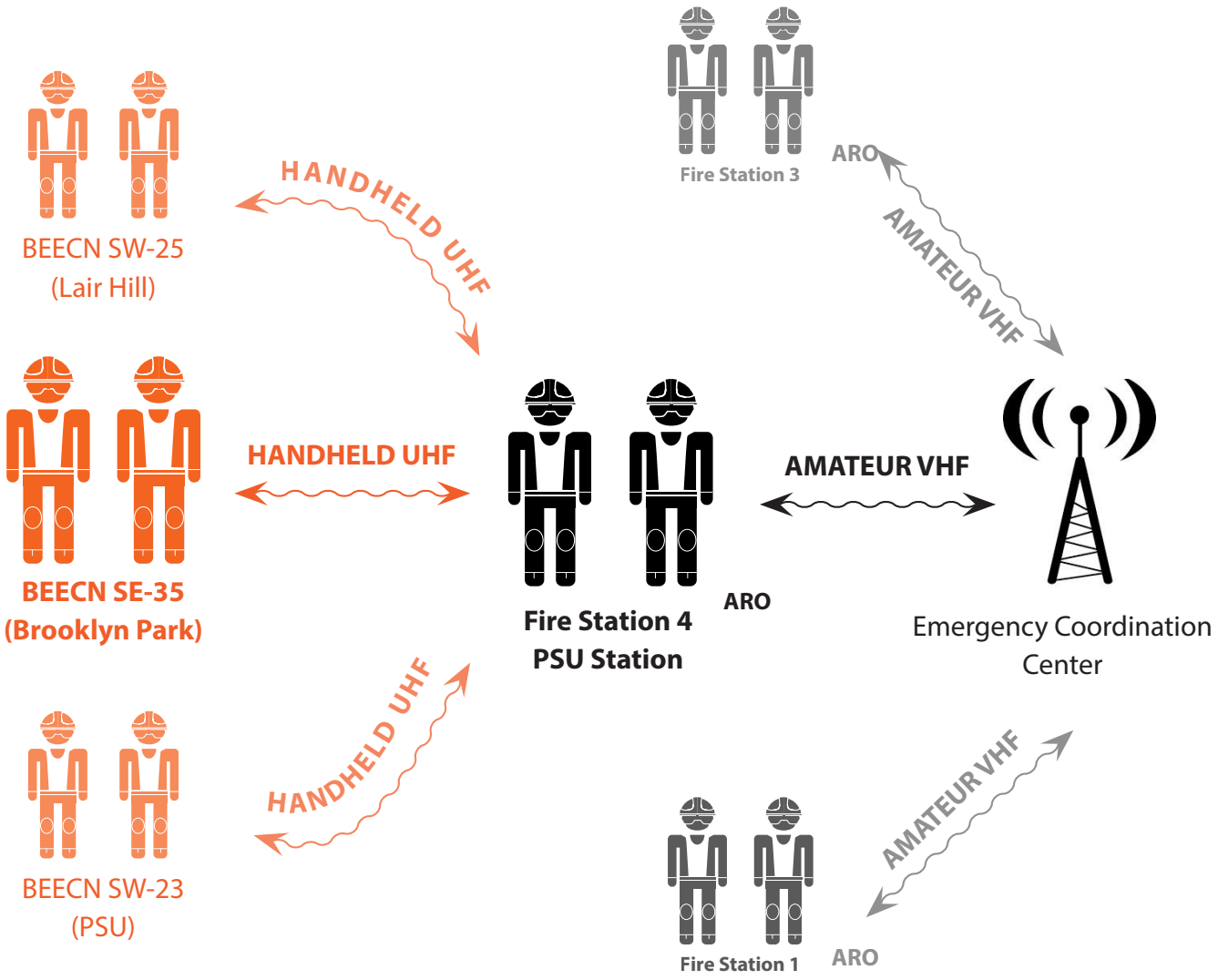
300.55
Radio Script for BEECN Check In

Script legend:

Variable text in {*bracketed italics*}, and spoken words in plain text. Radio scripts for BEECN to fire station:

Follow this script to notify your nearby Fire Station that you are set up and ready to communicate.

- ☐ **BEECN VOLUNTEER:** *{FIRE STATION NUMBER}* this is *{BEECN NUMBER and BEECN NAME}* checking in.
- ☐ **FIRE STATION:** Roger *{BEECN NUMBER and BEECN NAME}*. Are you at BEECN and ready to operate?



- ☐ **BEECN VOLUNTEER:** I am on station at *{BEECN NAME}* near *{give visual landmark]}* and ready to operate. I have *{#}* operators at this location: *{List all participants at that location by name}*.
- ☐ **FIRE STATION:** Roger, *{#}* operators at your BEECN. Please continue to monitor this channel and inform me of staffing changes.

300.60
Basic BEECN Operations

a. If there is no response from the Primary Fire Station, wait five minutes, then repeat the check in message. Continue transmitting every five minutes until the Primary Fire Station responds.

b. BEECN volunteers should also attempt to reach their Secondary Fire Station if they cannot immediately reach the Primary Fire Station. There is no need to contact the Secondary Fire Station if the BEECN volunteer reaches the Primary Fire Station.

c. If transmission quality is poor, volunteers should look at the map inside the cache and consider what objects (hills, buildings) are between them and the fire station. If possible, volunteers will move away from/out from behind those obstructions. Additionally, volunteers may have to look for higher ground to get a clear signal.

   Some BEECNs that are far from their fire station have a white external antenna in their kit. Volunteers can attach this antenna to the UHF handheld radio if they experience trouble

communicating. The external antenna is attached by unscrewing the small flexible antenna from the radio and attaching the external antenna cable in its place.

d. Volunteers will record the time of the first transmission and the time when Fire Sation is reached in the **radio log**. A radio log is included in the BEECN cache.

e. After checking in, volunteers request permission to pass radio traffic if there are messages to relay. Otherwise, volunteers wait and listen on channel for further instructions/messages.

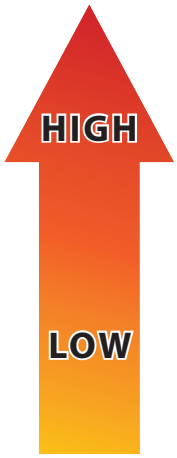
f. As much as possible, volunteers should keep radio traffic minimal, avoiding transmitting non-essential radio traffic. Volunteers may hear other BEECN sites talking on the same channel as well.

g. Best operating practices suggest that one volunteer is in charge of the radio and actively talking with the fire station. The other volunteer is interacting with the public and gathering radio messages to relay.

h. Volunteers shall record all radio traffic from the fire station and the time received in the radio log.

300.65
Radio Traffic Priorities

Members of the public will have many different purposes for relaying messages through the BEECN network. If messages compete for priority, volunteers should use this guide to decide which messages get relayed soonest:



1. **Fire/Life Safety**: these are, essentially, 9-1-1 calls. If a BEECN receives one of these messages it takes priority over and interrupts all other radio traffic.
2. **Damage Assessments and Casualty Reports**: members of the public reporting significant damage to property and infrastructure, or reports of injuries and casualties. Portland Fire & Rescue will be the lead resource responsible for these.
3. **Government employee check-in:** Government and TriMet employees have systems in place to contact their employers. If necessary there are "Post Earthquake Employee Check In" forms included in the loose leaf notebook in each BEECN cache.
4. **Person Location**: this is a request from someone to help find a missing loved one. BEECN volunteers can direct people to resources but will not facilitate reunification of families, house mates or loved ones.
5. **Other**: Any traffic that does not fall into the above categories (e.g. media requests).

300.70
Message Posting

BEECNs act not only as a way for local government to receive information from the public in the wake of an earthquake, but also a means to get information to the public. BEECN volunteers may receive direction from the fire station to use the roll-up whiteboard and post a general message.

300.75
Custody of BEECN Equipment

a. The BEECN volunteers operating a BEECN are custodians of its associated equipment.

b. BEECN equipment (such as First Aid supplies) may only be taken from the BEECN site with the permission of the BEECN volunteers or professional emergency response personnel. No volunteer group or private citizen can "commandeer" or legally take BEECN supplies without the approval of BEECN volunteers on site. BEECN equipment taken without permission from present BEECN volunteers is considered stolen and should be reported as such to PBEM.

c. City of Portland or Multnomah County employees may use BEECN equipment if needed.

300.80
Media Requests

It is ***critical*** that public messaging be kept consistent and only government representatives should talk with the press during an emergency.

All requests from the media to speak on the record about an emergency must be relayed to PBEM for approval. Unless authorized by PBEM, BEECN volunteers may not interview with media representatives or answer media questions about the emergency.

300.85
BEECN Demobilization and Tear Down

a. Volunteers should not cease BEECN operations until authorized by PBEM **unless**:

   1. The personal safety of the volunteers is threatened (in which case, volunteers should immediately leave the area and not follow other demobilization protocols).

   2. An urgent life/safety issue emerges for a volunteer's loved one.

   3. It is the end of a shift, and there are no volunteers available to take over the next shift.

   4. A Public Safety official in the field (such as PBEM staff, a police officer, or firefighter) orders the BEECN to demobilize.

b. Once the decision or order to demobilize is made, BEECN volunteers will sign off from the radio with the fire station:

   - ☐ **BEECN VOLUNTEER:** *[FIRE STATION NUMBER]* this is *[BEECN NUMBER and BEECN NAME]*. We are demobilizing and tearing down. *[give reason for demobilization]*
   - ☐ **FIRE STATION:** Roger *[BEECN NUMBER and BEECN NAME]*. You are now marked as inactive. Please turn off your radio, remove the batteries and proceed with BEECN tear down.

c. Volunteers shall take down the tent according to the tent instructions. If there was precipitation and the canopy is wet, *please do not fold it up*. Instead, volunteers should leave it loosely on top of the rest of the equipment inside the cache. This will help guard against mold.

d. Volunteers must remove the batteries from the radio, since they may leak after time and render the radio inoperable. Batteries can be left inside the box with the radio.

e. Re-pack all equipment inside the box. If any equipment is missing, volunteers should indicate that at the end of the log along with any explanation as to why the equipment is missing. Volunteers may then leave the log inside the BEECN cache, for PBEM to pick up later.

f. Volunteers should next push the box back to its secure location. Once there, the volunteers should position it and lock it up the way it was found, and double-check the lock to make sure everything is secured.

The first BEECNs in 2012, ready to deploy

SECTION 400 - CONCEPT OF OPERATIONS: FIRE STATIONS

This section steps volunteers through what to do when deployed to a fire station to support BEECNs in an emergency or during an exercise. Operations for volunteers who deploy to BEECN sites are covered in ***Section 300***.

400.05
Fire Station Volunteers: General Objectives

In the event of a deployment, Fire Station cohorts:

a. Stay safe, and will abort their deployment if they feel unsafe.

b. Deploy to their assigned fire station to access the orange VHF Go-Kit (see ***Section 200, page 28*** for equipment details).

c. Set up the Go-Kit at the fire station, as well as the handheld UHF radio.

d. Pass radio traffic between nearby BEECNs and net control at the city's ECC.

400.10
Deployment Planning

Have a plan. Cohorts must consider that an earthquake knocking out communications systems means volunteers will be unable to check in with each other. Therefore, cohorts must plan ahead on who deploys for the first 8-hour shift, and who for the second.

Furthermore, **all** four volunteers (Primary and Backup) assigned to a shift should deploy for that shift if they can. If one or both Primary volunteers cannot deploy, the Backup volunteers are still present to carry out fire station responsibilities and/or assist the Primary Volunteers if needed. Backup volunteers can also rotate Primary Volunteers out of their shift for breaks to eat, use the bathroom, etc.

PBEM recommends that the Cohort Coordinator inform local NETs of the cohort's deployment plan. The Team ARO for a local NET may need to access the orange Go-Kit in the event of a disaster.

400.15
Responsibilities Prior to Deployment

Immediately following an earthquake, FS volunteers:

a. Check themselves for injuries and ensure personal safety.

b. Check in with household members, ensure their safety, and treat any injuries.

c. Deploy to fire station if it is safe to do so and commence operations.

400.20
Deployment Protocols

BEECNs are deployed 24 to 48 hours following a catastrophic earthquake that has shut down communications systems such as cell phones and land lines. Therefore, FS volunteers must expect to **self deploy** without a direct request from PBEM or other government authority. FS volunteers deploy to their assigned fire station and set up the Go-Kit if, and only if, the following conditions are met:

a. No less than 24 hours have passed since a catastrophic earthquake.

b. The volunteer and his or her family are not in any immediate danger, and are not injured.

c. Communication systems (such as land lines) are inoperative.

d. Volunteers have received no direct instructions from PBEM or other government authority.

400.25
Self Determination to Deploy

Individual volunteers maintain personal discretion to deploy when the self- deployment protocols are met as described in ***400.20***. The decision to deploy following a disaster is a volunteer's own, and a volunteer may never be coerced into deploying. A volunteer who chooses not to deploy will not be subject to any consequences related to his or her standing in the BEECN program.

400.30
Deployment Guiding Principles

During the course of any deployment or exercise, FS volunteers must ensure that all chosen actions conform to the following guiding principles:

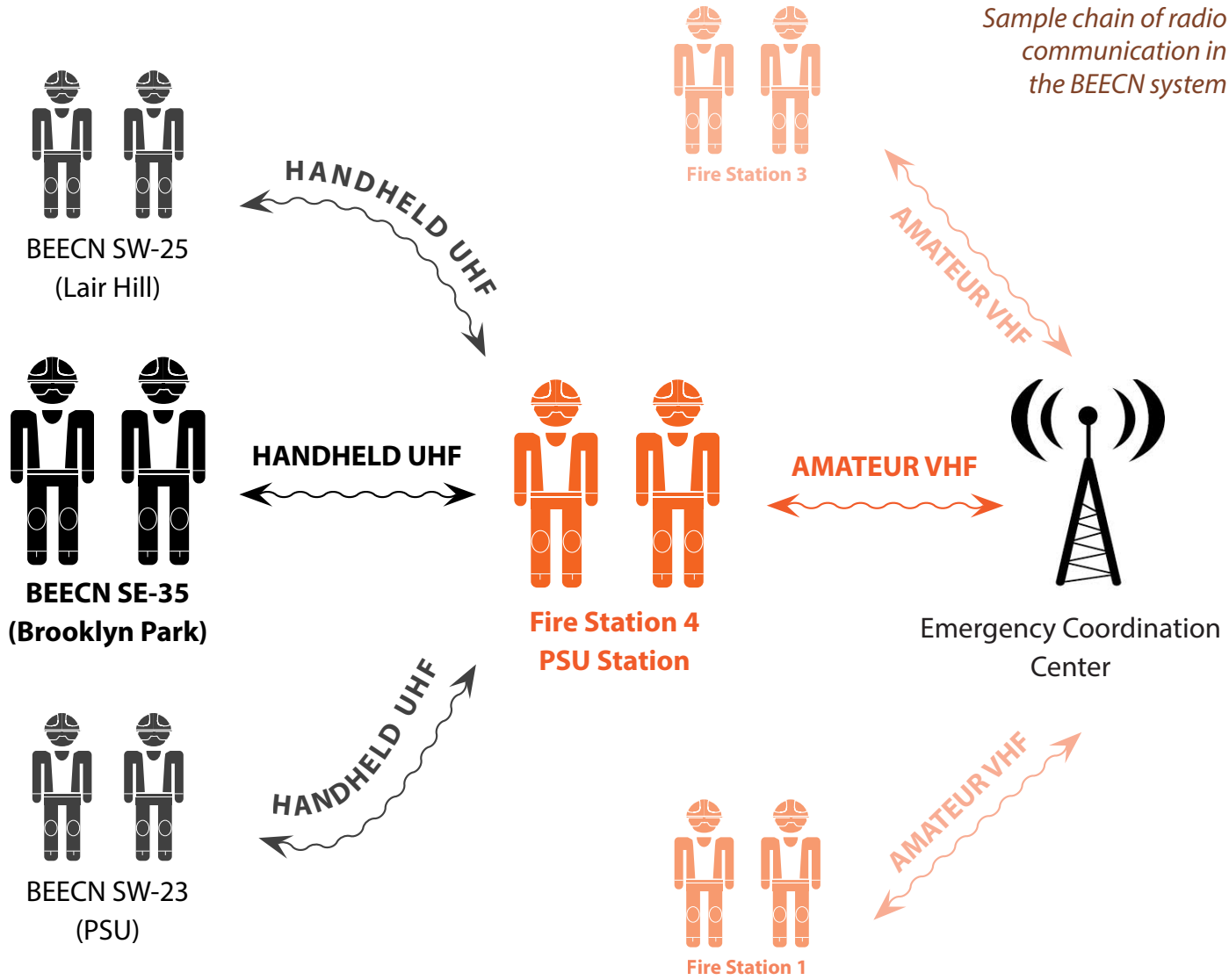
a. Safety is always the top priority.

b. Use the buddy system and always work in pairs. It takes at least two volunteers to relay radio traffic from the fire station.

c. If you see something unsafe, say so. Everyone has permission to say, "That does not seem safe" or "I do not feel safe."

d. If someone points out an unsafe condition, stop and correct it right away.

Sample chain of radio communication in the BEECN system



400.35
Conduct at the Fire Station

a. When arriving at the fire station, volunteers should act as guests on the property. Please be respectful and avoid damaging equipment or property at the station.

b. Credentials are required in order to access to the VHF kit. Fire station staff are instructed NOT to give volunteers access unless they possess an official PBEM volunteer badge.

c. Except in highly unusual circumstances (i.e. potential life safety situation at the fire station), the Go-Kit should never leave the premises of the fire station.

400.40
Basic Fire Station Operations

a. Community residents go to their nearest BEECN to send information to the Portland ECC. To accomplish this, BEECN operators send messages via a UHF handheld radio to the volunteer team at the nearest fire station, and the fire station re-broadcasts BEECN messages via amateur radio to the Portland ECC. There are at least two team members at the fire station:

   1. Amateur Radio Operator (FCC licensed): responsible for setup and operation of the amateur radio and communicating with the ECC. All amateur radio use and transmission must be in compliance with Federal Communications Commission (FCC) rules and regulations.

   2. UHF Radio Operator (no license necessary): Responsible for setup and operation of the UHF handheld radio and communicating with nearby BEECN sites.

b. FS volunteers should maintain a written log of communications to and from their station using the BEECN radio form, which is included as ***part of Appendix B***.

c. The ARO next checks in with the ECC. The procedure for checking in with the ECC via amateur radio is as follows:

   1. The ARO checks in with the Multnomah County Amateur Radio Emergency Service (ARES) Resource Net Controller on the Multnomah County Secondary Repeater MC-2 (***see Table 1***).

      Checking in with MC-2, the ARO gives his or her FCC call sign and waits for acknowledgement from the net control operator. Once recognized, the ARO then provides the following information:

   - **Name**
   - **Location**
   - **Available equipment, including communications and transportation resources**
   - **BEECN affiliation**
   - **Any other information deemed necessary by the ARO or requested by net control**

d. If no contact is possible on the Multnomah County ARES Resource Net via the Multnomah County

Secondary Repeater (MC-2), AROs should attempt to make contact with a Multnomah County ARES Net Controller via the following channels in the order listed on the following frequencies table:

Multnomah County Frequencies					
Channel	**Alias**	**Freq**	**Offset**	**Tone**	**Description**
64	MC 2	147.28000	+ 0.600	167.9	Resource Net
68	MC 6	147.04000	+ 0.600	100.0	Life Safety
70	MC 8	147.58000	+ 0.600	147.58	PBEM Tactical Net (NET-TAC 1)

e. After checking in with the Resource Net Controller (or attempting to check in) the ARO switches over to **PBEM Tactical 1 at MC 6, frequency 147.04000**. If no contact is possible on that channel, AROs should attempt contact on PBEM Tactical 2 at MC 9, frequency 147.540 (simplex).

   The ARO will check in with the PBEM Tactical Net Controller, sited at the ECC, and repeat the same information given for the Multnomah County Resource Net check in.

f. Regular radio traffic and monitoring commences. BEECNs will request permission from the fire station to begin passing traffic. The PBEM Tactical Net Controller will contact each fire station periodically for status reports.

   AROs will handle life threat radio traffic on MC 6 (MC 14 on simplex), unless directed differently by the Net Controller.

g. The operator of the UHF handheld is responsible for regularly checking in with the BEECNs on his or her channel. This includes BEECNs on the channel not normally associated with the fire station (e.g. a BEECN whose operators cannot reach their normally assigned fire station may reach and need assistance from another).

400.45
Radio Traffic Priorities

Members of the public will have many different purposes for relaying messages through the BEECN network. If messages compete for priority, volunteers should use this guide to decide which messages get relayed soonest:

1. **Fire/Life Safety**: these are, essentially, 9-1-1 calls. If a BEECN receives one of these messages it takes priority over and interrupts all other radio traffic.
2. **Damage Assessments and Casualty Reports**: members of the public reporting significant damage to property and infrastructure, or reports of injuries and casualties. Portland Fire & Rescue will be the lead resource responsible for these.
3. **Government employee check-in:** Government and TriMet employees have systems in place to contact their employers. If necessary there are "Post Earthquake Employee Check In" forms included in the loose leaf notebook in each BEECN cache.
4. **Person Location**: this is a request from someone to help find a missing loved one. BEECN volunteers can direct people to resources but will not facilitate reunification of families, house mates or loved ones.
5. **Other**: Any traffic that does not fall into the above categories (e.g. media requests).

400.50
BEECN Station List

The following table indicates which BEECNs each fire station will communicate with and the UHF channel to use:

FS	FS Location	BEECN	Location	UHF Channel
1	55 SW Ash Street	SW-22	Lincoln High School	5
2	4800 NE 122nd Avenue	NE-19	Parkrose High School	4
		NE-20	Wilkes Park	
3	1715 NW Johnson Street	NW-3	Chapman Elementary School	2
		NW-4	The Fields City Park	
4	511 SW College Street	SW-23	Portland State University	5
		SW-25	Lair Hill Park	
		SE-35	Brooklyn Park	
		SW-49	Elizabeth Caruthers Park	
5	1505 SW DeWitt Street	SW-27	Gabriel Park	1
		SW-28	Wilson High School	
		SW-29	Sunstone Montessori School	
6	3660 NW Front Avenue		*Serves as a secondary fire station*	2
7	1500 SE 122nd Avenue	NE-21	Glenfair Park	2
		SE-44	Ventura Park	
		SE-45	Mill Park	
		SE-46	Gilbert Heights Elementary School	
		SE-48	Parklane Church	
8	7134 N Maryland Avenue	N-8	Arbor Lodge Park	2
9	1706 SE Cesar E. Chavez Boulevard		*Serves as a secondary fire station*	5
10	451 SW Taylors Ferry Road	SW-33	Riverdale High School	4
11	5707 SE 92nd Avenue	SE-41	Lents Park	2
		SE-42	Flavel Park	

FS	FS Location	BEECN	Location	UHF Channel
12	8645 NE Sandy Boulevard		*Serves as a secondary fire station*	3
13	926 NE Weidler Street	NE-13	Irvington Elementary School	3
14	1905 NE Killingsworth Street	NE-11	Woodlawn Park	3
		NE-12	Alberta Park	
15	1920 SW Spring Street	SW-24	Ainsworth Elementary School	5
16	1715 SW Skyline Boulevard	SW-26	Hamilton Park	1
17	848 N Tomahawk Island Drive	N-7	Jantzen Beach Mall	2
		NE-10	Columbia Site Field	
18	8720 SW 30th Avenue	SW-30	West Portland United Methodist Church	4
		SW-31	Holly Farm Park	
		SW-32	Stephenson Elementary School	
		SW-33	Riverdale High School	
19	7301 E Burnside Street	NE-17	Montavilla Park	3
		SE-40	Harrison Park	
20	2235 SE Bybee Boulevard	SE-36	Sellwood Middle School	1
		SE-37	Duniway	
21	5 SE Madison Street	SE-34	Colonel Summers Park	5
22	7205 N Alta Avenue	NW-1	Linnton Plywood Mill (behind)	2
		N-5	St. Johns Park	
24	4515 N Maryland Avenue	N-9	Jefferson High School	2
25	5211 SE Mall Street	SE-38	Woodstock Park	3
		SE-39	Clinton City Park	
26	5247 N Lombard Street	N-6	University of Portland Public Safety Parking Lot	2
27	3130 NW Skyline Boulevard	NW-2	Forest Park Elementary School	2
28	5540 NE Sandy Boulevard	NE-14	All Saints School	3
		NE-15	Rigler Elementary School	
		NE-16	Roseway Heights School	

FS	FS Location	BEECN	Location	UHF Channel
29	13310 SE Foster Road	SE-43	Lincoln Memorial Cemetery	2
		SE-47	Clatsop Butte Park	
30	13313 NE San Rafael Street	NE-18	Knott City Park	4
31	1927 SE 174th Avenue		*Serves as a secondary fire station*	2

400.55
Amateur radio script for fire station ARO to Net Control (ECC)

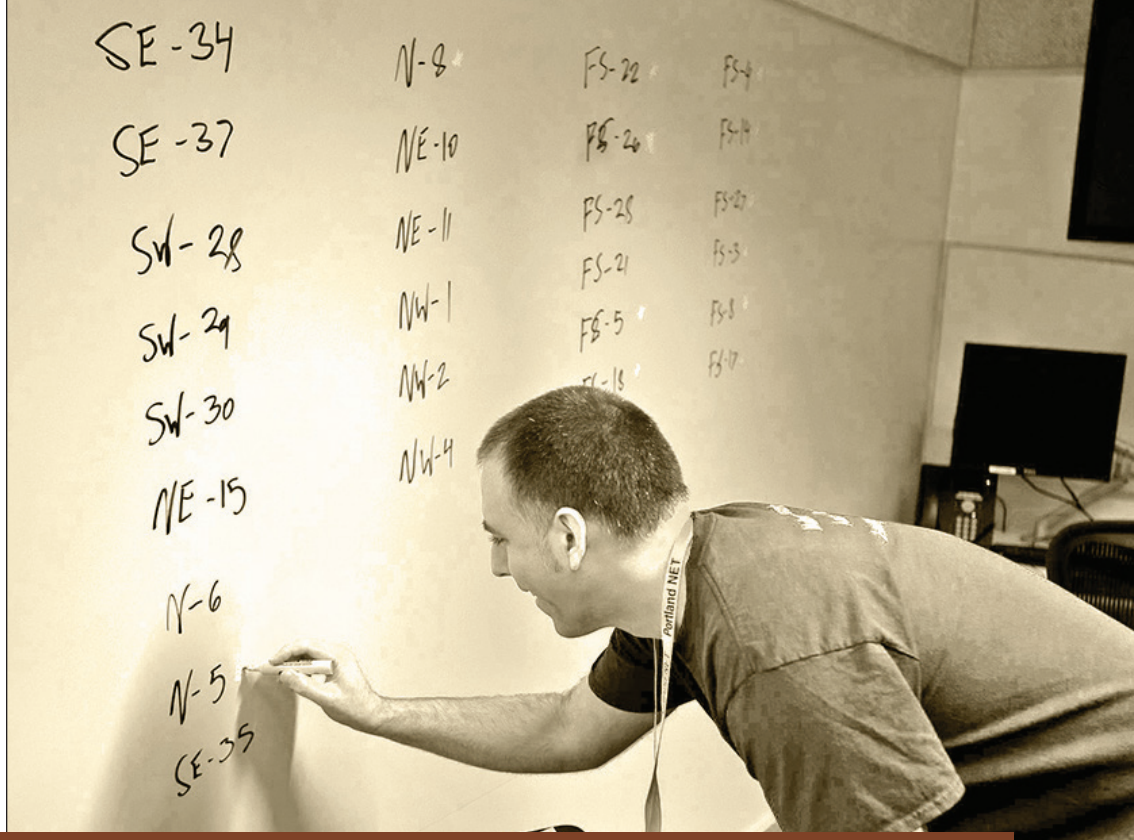
Scripts appear as ***Appendix A*** of these Guidelines.

400.60
Fire Station BEECN Activity Demobilization

a. Scripts appear as ***Appendix A*** of these Guidelines.

b. Re-pack all equipment inside the orange Pelican case. If any equipment is missing, volunteers should indicate that at the end of the log along with any explanation as to why the equipment is missing. Volunteers may then leave the log inside the orange Pelican case, for PBEM to pick up later.

c. Volunteers should next return the Go-Kit to its storage area at the fire station and let PF&R staff at the station know that BEECN activities have ceased.



APPENDIX A: SCRIPTS AND SAMPLE FORMS

Important note: you can ***download a copy of these scrips in MS Word (.doc) format*** *to easily change the text and print from:*

OPERATIONS SCRIPT 1: Resource Net Control to Fire Stations

During BEECN exercises and operations, please listen for and use the following script. Text highlighted in yellow are variable parts of the script, while blue highlights an action.

OPENING

[EXERCISE, EXERCISE]. Good [*morning/afternoon*], this is [NAME], [CALLSIGN], net control for the Multnomah County ARES/Portland NET team resource net. This is a directed net, and all stations are asked to remain on frequency until directed by net control. This net will run until approximately [TIME] today and is a coordinating hub for Portland NET radio operators deploying to fire stations for the Portland Bureau of Emergency Management BEECN [*drill/operations*] today. This is only an exercise.

Stations are asked to check in with their callsign spelled phonetically and their fire station number. Station wishing to check into the net please come now.

[*Record each check in callsign and fire station number*]

Do we have any other stations wishing to check in to this resource net?

TO TACTICAL

[When all stations are checked in, call ***[TACTICAL NET CONTROLLER CALLSIGN]*** *and ask if they are ready to move to the drill net on* ***[FREQUENCY].]***

All stations should now move to [FREQUENCY] and return to this frequency at the end of the *[drill/operational period]* to check out.

CHECK-INS

Every 10 minutes recite: This is [NAME], {CALLSIGN], net control for the Multnomah County ARES/Portland NET team drill resource net. Are there any stations wishing to check in?

When stations return from the [tactical net], *tell them they are free to secure and thank them for their participation today. Record check outs and time.*

CLOSING NET

This is [NAME], [CALLSIGN], net control for the Multnomah County ARES/ Portland NET teams resource net. Thank you to all stations who participated in this [*drill/operation*] and to all other stations who stood by to give us a clear operating frequency. We also thank the Hoodview Amateur Radio Club for the use of this repeater. All stations may now secure. This net is closed at [TIME] and the frequency is now returned to normal amateur radio use. [CALLSIGN] clear.

OPERATIONS SCRIPT 2: Tactical Net Control to Fire Stations

During BEECN exercises and operations, please listen for and use the following script. This script is used when fire stations checking into the control net are moved to the tactical net. Text highlighted in yellow are variable parts of the script, while blue highlights an action.

OPENING

[EXERCISE, EXERCISE]. This is [NAME], [CALLSIGN] as W7ECC, City of Portland Emergency Coordination Center establishing net control for a Basic Earthquake Emergency Communication Node exercise. This exercise will last until approximately [TIME] and will involve communication between the City of Portland Emergency Coordination Center and various Fire Stations located in the city of Portland. This is only an exercise.

This is a directed net, and all stations are asked to remain on frequency until excused by net control. Only stations directly involved with this training exercise are asked to check in.

Stations are asked to check in with their tactical call sign, amateur operator call signs at their location, power source and presence or absence of the BEECN UHF radio operator at their location.
Call for first fire station, e.g. "Fire station 04 ('zero four')?"

FS CHECK-IN

Per example ***[FS 04:]*** This is Fire Station 04, [CALLSIGN]. Operating on [battery power (or 120V mains, generator or other as appropriate)]. The BEECN UHF Operator is on station and ready/the BEECN UHF operator is not on station at this time]. Fire station #, {amateur call}.

Net Control *continues for each Fire station*

Net Control: Are there any other fire stations that haven't checked in yet? Please check in now. [all other fire stations begin checking in]

continued...

Net Control: All stations, please monitor your UHF radio and be ready to receive check-ins from your assigned BEECNs and monitor this frequency for further instructions from net control. This is net control, W7ECC. This is an exercise.

CHECK-INS

[ID Every 10 Minutes] This is W7ECC, net control for the PBEM BEECN net. This is an exercise.
[ID Every 30 Minutes] Exercise, Exercise. This is W7ECC, net control for the Basic Earthquake Emergency Communication Node exercise. This net will be active until approximately [TIME] and will involve communication between the City of Portland Emergency Coordination Center and various Fire Stations located in the City of Portland. Amateur operators not involved in the exercise are asked to use an alternate frequency unless they have emergency traffic. This is only an exercise. Net Control, W7ECC.

CLOSING NET

As stations secure, remind them to call net control on MC-2 and check themselves out of the resource net, and remove the batteries from UHF radios.

This is W7ECC, Net Control station, closing the Portland Bureau of Emergency Management Basic Earthquake Emergency Communication Node exercise net. After your station has secured from this tactical net please check out on the resource net on the MC-2 frequency. Thanks to all stations who participated today and to those who stood by to give us a clear operating frequency. The K7RPT repeater is owned and operated by the Amateur Radio Relay Group and permission for its use is greatly appreciated by Multnomah County ARES.

This is [CALLSIGN], signing the net clear at [TIME] local. This repeater is now returned to general amateur use.

BEECN Profile for NE-50

St. James's Park

Primary	Channel 5	Fire Station 12
Secondary	Channel 7	Fire Station 23

Click here for an online map

Basic BEECN Exercise Instructions

- Bring a cell phone so you can reach the ECC or so the ECC can reach you. If you require assistance at any time, call the ECC help line: 503-823-2323.
- Dress for the weather outside. Also wear your vest and volunteer ID. Hardhats are not necessary.
- VERY IMPORTANT: do not leave batteries inside the radio. Please remove the batteries after the exercise is complete.
- If it is raining, DO NOT pack the tent in its bag if it was deployed. Place the tent canopy loosely on top of everything else inside the box and close the lid.
- Please do not leave BEECN equipment unattended. If nobody is available to supervise a deployed BEECN, please pack up and secure the box.
- Please bring any supplies, extra water or medications you need to stay at the BEECN for the entire shift.

Notes About This BEECN

St. James's Park is located in Wemmick Heights, on 2000 Pumblechook Way (40.7350° N, 73.6883° W). This particular BEECN cache is found in the bottom of the bog and SCUBA gear is required to recover it. Do not disturb the piranhas. Once BEECN is recovered, drag ashore and commence operations.

X = BEECN location

CONFIDENTIAL - PLEASE DO NOT SHARE

CONFIDENTIAL - PLEASE DO NOT SHARE

SAMPLE BEECN Profile

BEECN Radio Room Log - for use at the ECC (page 1) **DATE:** _____

Fire Station	FCC Call Sign(s)	Time Checked In	Time Checked Out	Power Source	UHF Operator Present?	BEECN	Signal Report	Time Reported	
1				mains/battery/ other:	Y/N	SW-22			
2				mains/battery/ other:	Y/N	NE-19			
						NE-20			
3				mains/battery/ other:	Y/N	NW-3			
						NW-4			
4				mains/battery/ other:	Y/N	SW-23			
						SW-25			
						SE-35			
						SW-49			
5				mains/battery/ other:	Y/N	SW-27			
						SW-28			
						SW-29			
7				mains/battery/ other:	Y/N	NE-21			
						SE-44			
						SE-45			
						SE-46			
						SE-48			
8				mains/battery/ other:	Y/N	N-8			
11				mains/battery/ other:	Y/N	SE-41			
						SE-42			

BEECN Radio Room Log - for use at the ECC (page 2) **DATE:** _____

Fire Station	FCC Call Sign(s)	Time Checked In	Time Checked Out	Power Source	UHF Operator Present?	BEECN	Signal Report	Time Reported	
13				mains/battery/ other:	Y/N	SE-13			
14				mains/battery/ other:	Y/N	NE-11			
						NE-12			
15				mains/battery/ other:	Y/N	SW-24			
16				mains/battery/ other:	Y/N	SW-26			
17				mains/battery/ other:	Y/N	N-7			
						NE-10			
18				mains/battery/ other:	Y/N	SW-30			
						SW-31			
						SW-32			
						SW-33			
19				mains/battery/ other:	Y/N	NE-17			
						SE-40			
20				mains/battery/ other:	Y/N	SE-36			
						SE-37			
21				mains/battery/ other:	Y/N	SE-34			

BEECN Radio Room Log - for use at the ECC (page 3) **DATE:** _____

Fire Station	FCC Call Sign(s)	Time Checked In	Time Checked Out	Power Source	UHF Operator Present?	BEECN	Signal Report	Time Reported	
22				mains/battery/ other:	Y/N	NW-1			
						N-5			
24				mains/battery/ other:	Y/N	N-9			
25				mains/battery/ other:	Y/N	SE-38			
						SE-39			
26				mains/battery/ other:	Y/N	N-6			
27				mains/battery/ other:	Y/N	NW-2			
28				mains/battery/ other:	Y/N	NE-14			
						NE-15			
						NE-16			
29				mains/battery/ other:	Y/N	SE-43			
						SE-47			
30				mains/battery/ other:	Y/N	NE-18			

BEECN RADIO LOG

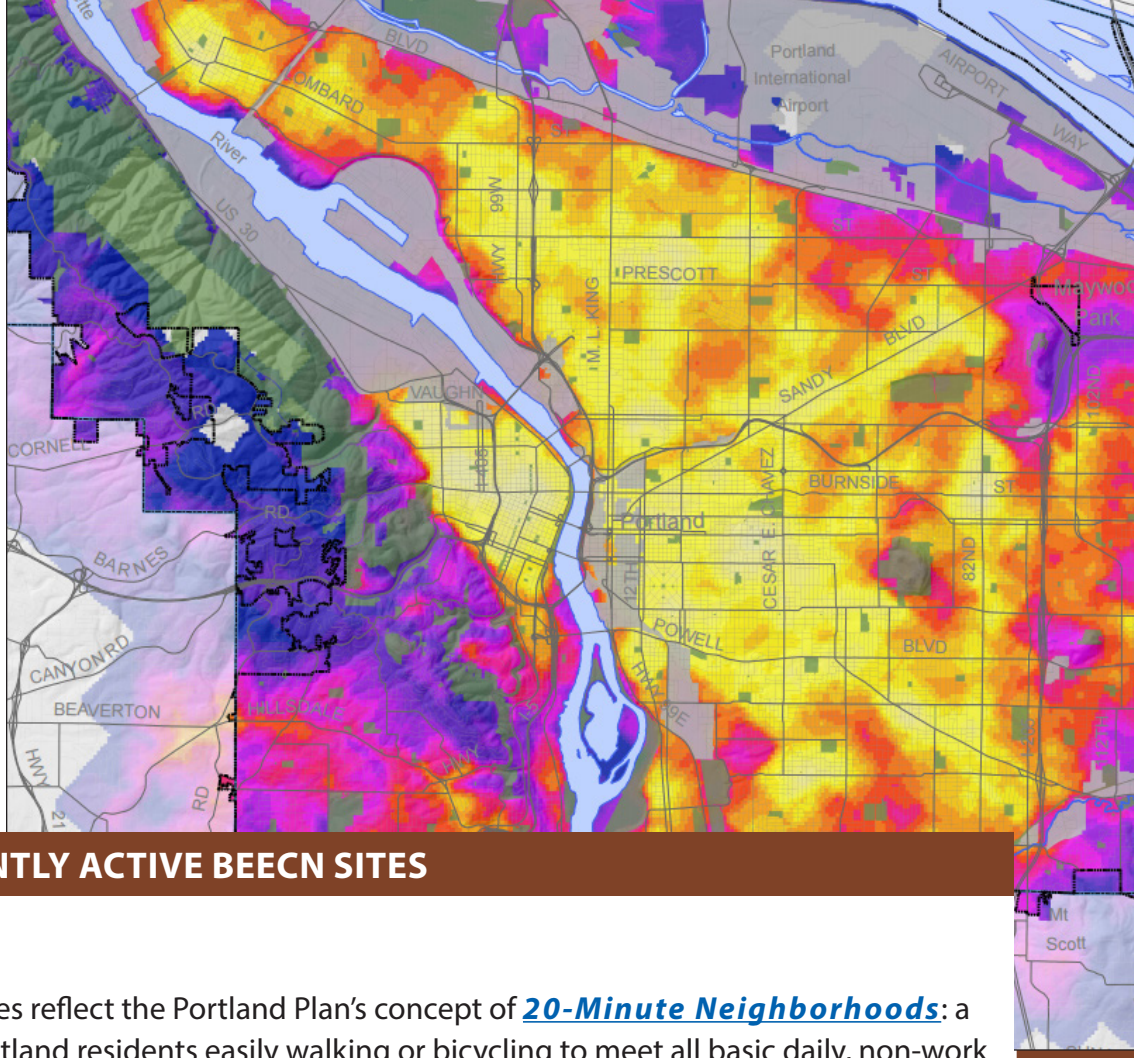
BEECN RADIO LOG RECORD COMMS & MAJOR EVENTS	DATE:	TIME FROM: _____ TIME TO: _____
FOR OP. PERIOD #	BEECN or FIRE STATION:	
RADIO OPERATOR:	LOG KEEPER:	STATION CALLSIGN:
TASK #	TASK NAME:	

TIME	STATION I.D.		SUBJECT
	STN. CALLED	THIS IS	

PAGE _____ OF _____

Page last updated: December 14, 2019 1:35 PM

Portland 20-Minute Neighborhood concept (2010)



APPENDIX B: CURRENTLY ACTIVE BEECN SITES

Introduction

The placement of BEECN sites reflect the Portland Plan's concept of ***20-Minute Neighborhoods***: a goal envisioning 90% of Portland residents easily walking or bicycling to meet all basic daily, non-work needs in their neighborhood inside 20 minutes. Each of Portland's 24 "20-minute community hubs" includes two BEECN sites.

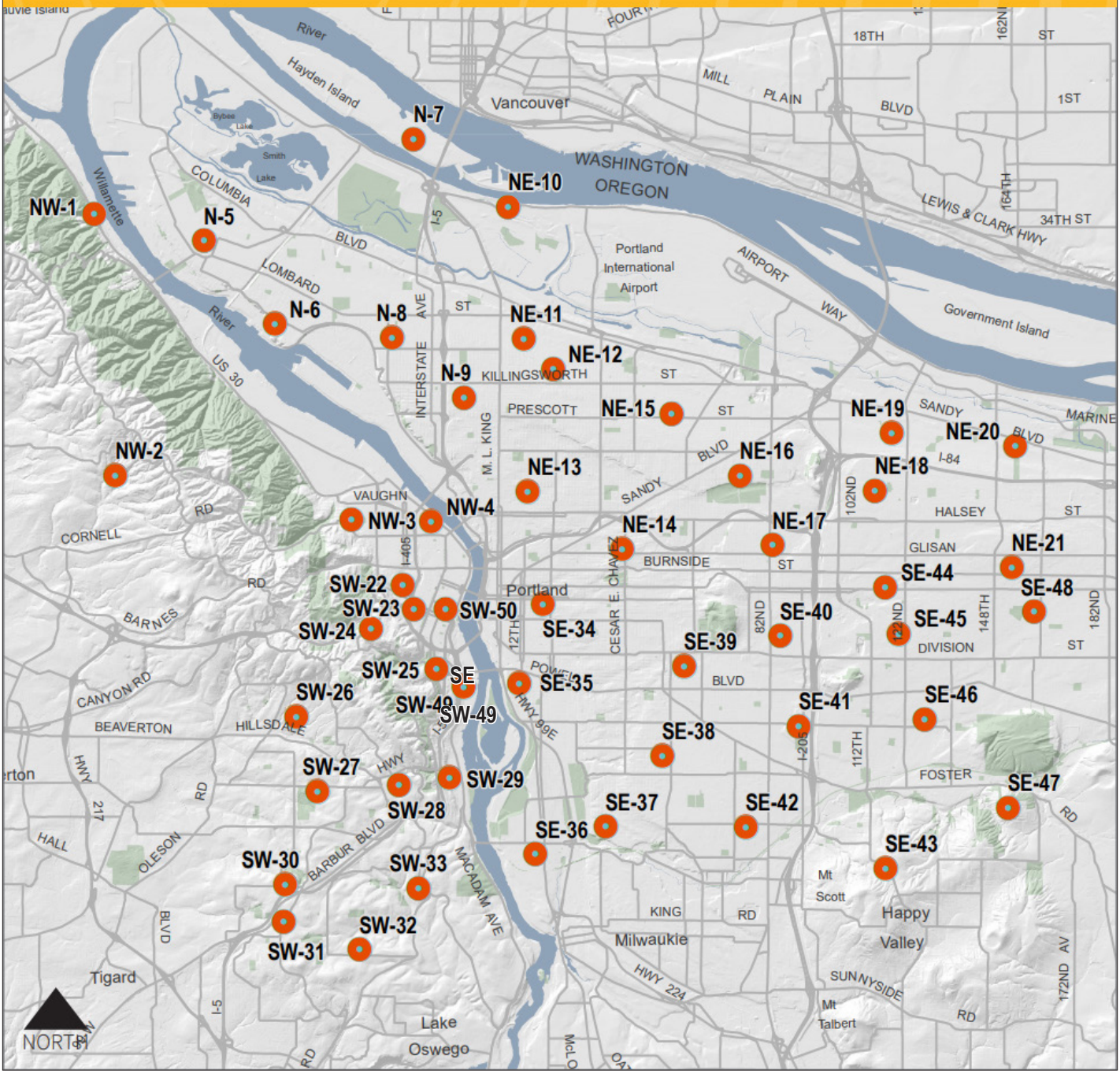
The data in this section is subject to change. For the most up-to-date information, visit ***https://www.portlandoregon.gov/pbem/***.

BEECN sites NW-1 to SE-48: established December 2012

BEECN site SW-49: established June 2017

BASIC EARTHQUAKE EMERGENCY COMMUNICATION NODES

Locate the earthquake "beacon" closest to where you live and/or work at portlandoregon.gov/beecn



Working together during an exercise

APPENDIX C: BEECN VOLUNTEER CODE OF CONDUCT

Code of Conduct

In a disaster it is quite common for people to come together for help and comfort. The Basic Earthquake Emergency Communications Node (BEECN) Program prepares neighborhoods for self-sufficiency during a disaster by providing individuals with information and training related to emergency preparedness, response, and recovery. By preparing in advance, trained BEECN members are able to help themselves, and their families, friends and neighbors recover as quickly as possible after a disaster.

In order to accomplish their mission, volunteers in the BEECN program must be committed to the values of personal responsibility, respect and safety embodied in this BEECN code of conduct.

Personal Responsibility

When an emergency occurs, my first responsibility is to ensure my own safety and the safety of my family.

I must be officially deployed and assigned to work in an official capacity by the BEECN Program Coordinator or designee. If a large-scale event has caused a communications failure, I will follow the Standard Operating Procedure for BEECN activation.

I understand that BEECN ID cards, vests and hard hats shall only be worn during official BEECN activities which include, but are not limited to, activations, trainings, meetings and special events.

When responding to a disaster as a BEECN member, I will stay within the scope of the training received under the Portland Bureau of Emergency Management BEECN curriculum.

I will conduct myself in a manner to avoid the appearance of impropriety. Conduct that could appear dishonest to a reasonable observer will undermine the BEECN program's credibility even if the conduct is not illegal.

Page 56 of 58

I will not represent myself in a capacity that exceeds my status in the BEECN program.

Unless approved by the Director of the Portland Bureau of Emergency Management (PBEM), I will not use or authorize the use of the name, emblem, endorsement, services or property of the BEECN program for the purpose of obtaining a benefit or advantage for any person or organization, including the BEECN program. I will not contact organizations or individuals to solicit funds on behalf of the BEECN program unless I have been given permission by an authorized member of the Portland Bureau of Emergency Management (PBEM) staff.

I will keep my BEECN team leader and BEECN Program Coordinator informed of progress, concerns and problems with assigned tasks.

I will accept feedback from BEECN team leaders and City staff in order to do the best job possible.

Respect

I will treat fellow BEECN members, team leaders, City employees and individuals I serve with dignity, respect and courtesy. I will take steps to quell profane, abusive, demeaning, belittling or harassing interactions or communications with others.

I will not engage in destructive or demoralizing criticism about individual BEECN Program members or PBEM in public forums and on the Internet including social media.

I will confer with and obtain the consent of the BEECN Program Coordinator prior to making public statements about the BEECN program or BEECN members or engaging in lobbying efforts on behalf of the BEECN program. I will direct anyone who is looking for official statements concerning the BEECN program to the BEECN Coordinator.

BEECN members have access to non-public information which is sensitive, private, personal, or confidential. The disclosure of some kinds of personal information is strictly prohibited by law, such as a person's name in combination with a social security number. Other information is considered private, such as the contact information of a fellow volunteer, or confidential, such as public safety plans (including BEECN cache locations). I will safeguard all such information from improper disclosure.

I will make a personal commitment to be nonjudgmental about cultural differences and refrain from engaging in conversations about my political, cultural or religious beliefs.

Safety

I will not participate in BEECN activities while I am under the influence of intoxicants and will not use or possess intoxicants while attending BEECN activities. BEECN activities include but are not limited to activations, trainings, meetings and special events.

I will not bring guns, knives, sticks or other weapons to BEECN activities even if my possession of them would not be unlawful. (Lock blade pocket knives or fixed blade knives under 6" may be carried). BEECN activities include but are not limited to activations, trainings, meetings and special events.

During my service in BEECN, I will immediately notify the BEECN Program Coordinator if I am convicted of any crimes or subject to an active restraining order.

I will engage only in activities that are consistent with my physical capabilities and will not take risks that could cause injury to myself or others.

In return for my compliance with the BEECN code of conduct, I can expect to:

- **Be treated with respect and courtesy by all BEECN members, BEECN team leaders, the BEECN Program Coordinator and other PBEM staff**
- **Be provided with a safe atmosphere in which to volunteer**
- **Be provided with necessary training opportunities**
- **Be provided support, guidance and assistance in order to promote and advance the BEECN program and community resiliency**
- **Be appreciated for your contributions to the BEECN program and the PBEM**

By signing below, I do hereby certify that I have read, understand and agree to comply with the BEECN code of conduct as it is set forth. I understand that failure on my part to comply with any program rules, procedures and guidance documents or disclose information on the background check forms could result in the termination of my volunteer service as a BEECN member. I further understand that if I am removed from service, it is my responsibility to return all issued equipment and materials that I have received from the BEECN program. If I fail or refuse to return the equipment or materials, I agree to pay the cost to replace any items not returned.

Finally, I understand that as a City of Portland volunteer, I am also responsible for abiding by the City's Code of Ethics when representing the BEECN program.*

**the Code of Ethics is available for view at:*
http://www.portlandonline.com/auditor/index.cfm?c=28153