SURVIVAL FACTORS GROUP

CHAIRMAN FACTUAL REPORT

ATTACHMENT 3
SKAGIT COUNTY 911 RADIO COMMUNICATIONS PLAN

Bridge Collapse
Mount Vernon, WA; 05/23/2013

HWY-13-MH-012
(31 Pages)

Skagit County 911

Radio Communications Plan

Fire-EMS Radio System

Version 8.0

Skagit County 911 Radio Communications Plan
Fire-EMS Radio System

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Skagit County 911 Radio Communications Plan
Fire-EMS Radio System

PURPOSE OF THE PLAN

1. To provide information on the Skagit County Fire-EMS Radio System.
2. Provide a standardized radio frequency template to all Skagit County Fire and EMS agencies.
3. To define communications zones for the assignment of incident tactical channels.
4. To establish guidelines for the use of the radio system.
5. To define interoperability and establish the means for achieving interoperability.

SYSTEM OVERVIEW

The Skagit County Fire-EMS radio system consists of eight communications sites located on Mount Erie, Little Mountain, Lyman Hill, Rockport, Marblemount, Newhalem, Diablo Dam, and the Skagit 911 center.

The lower valley sites (Mount Erie, Little Mountain, Lyman Hill, and the Skagit 911 center) are linked to the communications center via a looped digital microwave system that provides redundancy and fault tolerance. The upper valley sites (Rockport, Marblemount, and Diablo Dam) are linked to the communications center via dedicated wire line radio circuits.

The communications frequencies are divided into two main categories Fire and EMS. The fire frequencies fall within the VHF (150MHz) band. The EMS frequencies fall within both the VHF (150MHz) and the UHF (450MHz) band.

The Fire and the VHF EMS channels are sub-categorized as either dispatch channels or as tactical channels. The UHF EMS channels, also known as the MEDCOM channels, are designated for incident/ambulance to hospital communications.

DEFINITIONS

Air/Ground Communications - Shall mean those radio communications between an Air Ambulance assigned to the incident and the Landing Zone Coordinator (Air Tactical Group Supervisor).

Base Station – Is a radio that transmits and receives using the same radio frequency for both transmitting and receiving radio traffic. Base stations do not enhance the range of mobile to mobile and portable to portable radio transmissions.

Continuous Tone-Controlled Squelch System (CTCSS) – A system where radio transmissions can only be heard when the proper tone is transmitted by the sender. Other common names for this type of system are Private Line (PL) and Channel Guard (CG).

Command Communications - Shall mean those radio communications between the Incident Commander, Command and General Staff, various subordinate team leaders, and the Incident communications Center pertaining to command and control of the incident. This does not include communications between the team leaders and their respective assigned units.

Encryption - Digitalization and scrambling of the voice signal to prevent unauthorized monitoring of the message over the airwaves.

Medical Communications – Shall mean those communications limited to emergency medical incidents.

Repeater – A radio that transmits and receives using different radio frequencies for transmitting and receiving radio traffic. Repeaters greatly enhance the range of mobile to mobile and portable to portable radio transmissions. In other words, each radio talks to a mountain top radio which then rebroadcasts the message to the other radios.

Simplex – A Mode of communication where transmission and reception of messages occurs on the same frequency. In other words, each radio talks directly to the other radio.

Simulcast - A wide area radio system where radio transmissions occur on the same frequency on multiple radio sites at the same time.

Support Communications – Shall mean those communications limited to incident support functions (i.e. Traffic control).

Tactical Communications - Shall mean those radio communications between the team leaders and their respective assigned units for the purpose of carrying out their assigned missions.

Travel Communications - Shall mean those radio communications from units responding to an incident and the Communications Center or Incident Commander responsible for the incident. Typical communications would be those advising of response status (enroute or on-scene) on multi-alarm incidents.

Voting - A radio system that uses a computer (comparator) to listen to the same radio frequency on multiple sites to determine the best signal source of a given radio transmission and then routes that signal to the dispatch console.

Radio Frequencies

Primary Fire/EMS Frequencies

Name	Receive	Tone NAC	Transmit	Tone NAC	Uses	Narrow Band	Features	Location
FIRE 1	**154.265**	**136.5**	**154.265**	**136.5**	Dispatch	Yes	Simplex Simulcast Voted Analog	All Sites
FIRE 1Cav	155.595	151.4	155.595	151.4	Dispatch	Yes	Simplex Analog	CAV
TAC 2	**154.430**	**136.5**	**154.430**	**136.5**	Tactical Command	Yes	Simplex Simulcast Voted Analog	ME LM LH
TAC 3	**155.685**	**136.5**	**154.710**	**127.3**	Tactical Command	Yes	Repeated Analog	LM
TAC 4	154.235	136.5	154.235	136.5	Tactical Command Travel	Yes	Simplex Analog	RP MM DD
TAC 5	155.805	136.5	159.015	110.9	Tactical Command	Yes	Repeated Analog	LM
TAC 6	159.150	151.4	154.9575	151.4	Tactical Command	Yes	Repeated Voted Analog	ME AFD2 Rx TS Rx
TAC 7	**155.7675**	**136.5**	**155.7675**	**136.5**	Tactical Command	Yes	Simplex Voted Analog	ME AFD2 Rx TS Rx
TAC 8	153.785	151.4	154.650	151.4	Tactical Command	Yes	Repeated Analog	LH
TAC 8Cav	154.650	110.9	153.785	110.9	Tactical Command	Yes	Repeated Analog	CAV
TAC 9	**155.6325**	**151.4 $136**	**158.9925**	**110.9 $110**	Command Tactical Travel	Yes	Repeated Simulcast Voted Analog P25 Encryption Capable	ME LM LH
HEAR	**155.340**	**136.5**	**155.340**	**136.5**	Medical	Yes	Simplex Analog	LH 911 RP MM DD NH
AIR/TAC	155.1375	136.5	155.1375	136.5	Air/Ground Support	Yes	Analog	N/A

ME-Mount Erie, **LM**-Little Mountain, **LH**-Lyman Hill, **RP**-Rockport, **MM**-Marblemount, **DD**-Diablo Dam, **911**-911 Center, **NH**- Newhalem, **CAV**-Lake Cavanaugh, **GI**-Guemes Is, **RR**-Reservation Rd, **LT**-La Conner Tank, **AFD2**-AFD voter, **TS**-Tesoro Voter

Frequency Notes:

1. **AIR/TAC** – Portable radio use only. Limited to 5 watts effective radiated power by FCC rule.
2. **H.E.A.R** – To be used for intra-facility transfers. May be used as a MED TAC in the upper valley area.

EMS Use Only Frequencies

Name	Receive	Tone	Transmit	Tone	Uses	Narrow Band	Features	Location
MEDCOM 1 SMC	**463.000**	**CSQ**	**468.000**	**179.9**	Medical Coordination	Yes	Repeated Analog	GM
MEDCOM 3	**463.050**	**136.5**	**468.050**	**136.5**	Medical	Yes	Repeated Analog	ME LM LH
MEDCOM 4	**463.075**	**136.5**	**468.075**	**136.5**	Medical	Yes	Repeated Analog	ME LM LH
MEDCOM 7 COMMON	**463.150**	**136.5**	**468.150**	**136.5**	Medical	Yes	Repeated Analog	ME LM LH
MEDCOM 8	**463.175**	**136.5**	**468.175**	**136.5**	Medical	Yes	Repeated Analog	ME LM LH
MEDCOM 10 VDR	**462.975**	**136.5**	**467.975**	**136.5**	Medical	Yes	Repeated Analog	ME LM LH
Definitions: **SMC** – State Medical Coordination; **COMMON** – Statewide Unit to Unit; **VDR** – Vehicle Dispatch and Response - Reserved for Dispatching Units.								
ME-Mount Erie, **LM**-Little Mountain, **LH**-Lyman Hill, **RP**-Rockport, **MM**-Marblemount, **DD**-Diablo Dam, **911**-911 Center, **GM –** Galbraith Mountain, **GI**-Guemes Is, **RR**-Reservation Rd, **LT**-La Conner Tank, **AFD2**-AFD voter								

Frequency Notes:

1. **MEDCOM 1/SMC** – This channel is reserved for Statewide Medical Coordination. According to the State Plan all Emergency Medical Facilities and BLS/ALS transport units should have radios capable of operating on this frequency.

2. **MEDCOM 3, 4, 8** – These are the channels assigned to Skagit County by the Office of Emergency Medical Services for communication with Emergency Medical Facilities located in Skagit County.

3. **MEDCOM 7** – This channel is designated by the Office of Emergency Medical Services for local on-scene coordination between transport units and air to ground communications.

4. **MEDCOM 10** – This channel has been designated by the Office of Emergency Medical Services for vehicle dispatch and response.

Additional Tactical/Interoperability Frequencies

Note: None of these frequencies are monitored by the 911 Center Except SCDEM

Name	Receive	Tone	Transmit	Tone	Uses	Narrow Band	Features	Location
REDNET	**153.830**	**None**	**153.830**	**None**	Mobilization Div/Grp Channel Training Interoperability	Yes	Portable or Mobile Only	County Wide
OSCCR	**156.135**	**None**	**156.135**	**203.5**	Mobilization Interoperability	Yes	Portable or Mobile Only	Limited to use east of Avon Allen Road
VCALL 10	155.7525	None	155.7525	203.5	Mobilization Div/Grp Channel Training Interoperability	Yes	Portable or Mobile Only	County Wide
VTAC 11	151.1375	None	151.1375	203.5	Mobilization Div/Grp Channel Training Interoperability	Yes	Portable or Mobile Only	Is the alternate to OSCCR County Wide
VTAC 12	154.4525	None	154.4525	203.5	Mobilization Div/Grp Channel Training Interoperability	Yes	Portable or Mobile Only	County Wide
WASAR	**155.160**	**None**	**155.160**	**100.0**	Permission needed from SCDEM	Yes	Portable or Mobile Only	County Wide
Mountain Rescue	**155.205**	**None**	**155.205**	**None**	Permission needed from SCDEM	Yes	Portable or Mobile Only	County Wide
DIKE 1	**154.100**	**136.5**	**154.100**	**136.5**	Flood Cntrl Ops Permission needed from MVFD or Flood Control Council	Yes	Portable or Mobile Only	County Wide
DIKE 12	**154.085**	**136.5**	**154.085**	**136.5**	Flood Cntrl Ops Permission needed from Dike 12	Yes	Portable or Mobile Only	County Wide
DIKE 12 TAC 1	**158.805**	**136.5**	**158.805**	**136.5**	Flood Cntrl Ops Permission needed from Flood Control Council	Yes	Portable or Mobile Only	County Wide
DIKE 12 TAC 2	**158.835**	**136.5**	**158.835**	**136.5**	Flood Cntrl Ops Permission needed from Flood Control Council	Yes	Portable or Mobile Only	County Wide
SCDEM	**151.055**	**CSQ**	**156.060**	**97.4**	Permission needed from SCDEM	Yes	Repeated	From Concrete West

Frequency Notes:

1. **REDNET** - Primary channel for State Fire Mobilization usage. It may be used for training operations, support communications, or as a Division/Group channel on a large incident. Authorization letter is required from the Washington State Association of Fire Chiefs.

2. **OSCCR** - State Mobilization channel as well as a Statewide on scene command and control channel. Authorization letter is required from Skagit DEM or Washington State EMD.

3. **VCALL 10, VTAC 11, and VTAC 12** – Are national interoperability channels. No FCC license is required for use when installed in a mobile or portable radio. The may be used for training operations, support communications, or as a Division/Group channel on a large incident. VTAC 11 is the alternate to OSCCR in areas where OSCCR is restricted due to Canadian Interference.

4. **WASAR** – Is the State search and rescue frequency. It may be used for coordination with County and State search and rescue assets when jointly working on a search and rescue incident.

5. **Mountain Rescue** - Is the State Mountain rescue frequency. It may be used for coordination with County and State search and rescue assets when jointly working on a search and rescue incident.

6. **DIKE Frequencies** – Are used to coordinate flood control activities with various agencies. Permission to use the frequencies is required from the agencies listed in the table above.

7. **SCDEM** – May be used to communicate directly with SCDEM units. The Communications Center monitors this frequency. This is a repeated frequency. Permission to use this repeater must be obtained from SCDEM.

RADIO SYSTEM TEMPLATE

The following frequencies make-up the minimum channel compliment that should be programmed in to every Fire and EMS agency's portable and mobile radios. Please note that some frequencies are optional or have limitations.

Channel	Name	Status	Limitations
1	FIRE 1	**Required**	
2	TAC 2	**Required**	
3	TAC 3 Rptr	**Required**	
4	TAC 4	**Required**	
5	TAC 5 Rptr	**Required**	
6	TAC 6 Rptr	**Required**	
7	TAC 7 Rptr	**Required**	
8	TAC 8 Rptr	**Required**	
9	TAC 9 Rptr	**Required**	
10	H.E.A.R	**Required**	
11	AIR/TAC	**Required**	**Portable Radio Use Only**
12	REDNET	**Required**	
13	VTAC 11	**Required**	
14	VTAC 12	Optional	
15	OSCCR	Optional	
16		Optional	

RADIO SYSTEM USE GUIDELINES

Fire Dispatch Channel (FIRE 1)

This channel is restricted to dispatch operations. This channel shall not be assigned as a working TAC channel (Exception: Upper Valley Departments as a secondary TAC). Non-Incident communications between units should take place on a TAC channel or one of the secondary frequencies. This channel should also be used for routine non-incident communications between the dispatch center and fire/EMS units.

Fire Tactical Channels (TAC 2,3,4,5,6,7,8,9)

These channels are assigned by the dispatcher. If there is a need to use a channel for training, planned events, etc, units need to request and be assigned a TAC channel by a dispatcher.

NOTE: On large incidents requiring multiple TAC channels for Division/Group assignments, the fire dispatcher will only monitor the initially assigned TAC Channel. The Initially assigned TAC channel will become the command channel. WAC 296-305 (15) requires that Incident radio communication capabilities within the incident command structure shall include monitoring of incident-assigned frequencies.

Medical Channels (HEAR and MEDCOM)

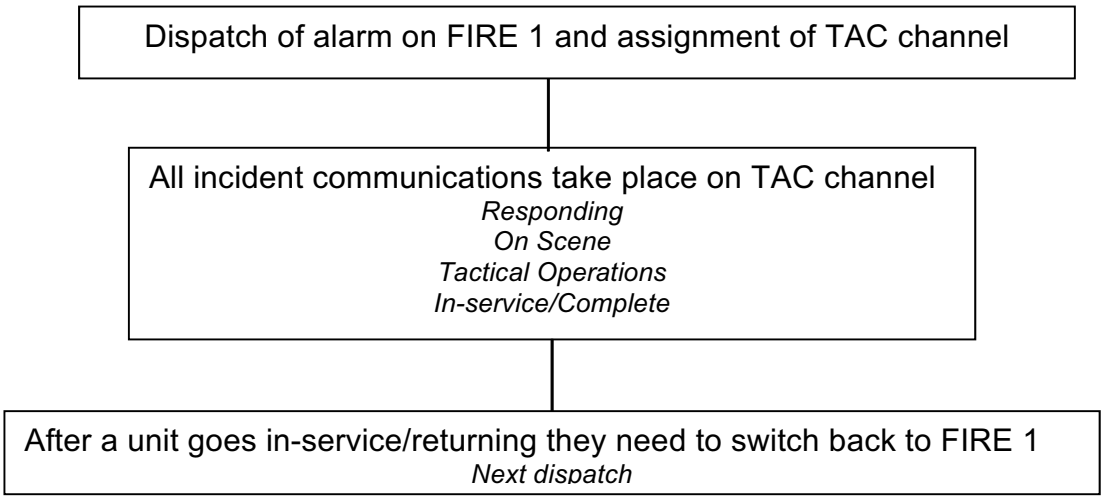
These channels are restricted to use on and for medical incidents.

AIR/TAC Channel (AIR/TAC)

This channel shall be limited to air to ground communications or incident support communications. Air to ground communications will have priority on this channel and all other communications must cease when units are engaged in air to ground operations. *This channel is restricted to portable radio use only and a maximum of 5 watts power output.*

Routine Operations

Under normal circumstances channel workflow should follow this flow chart:



Multi-Alarm Incidents (Lower Valley Area – Concrete West)

Units assigned to an incident as part of a 3rd or 4th alarm assignment or as part of a strike team or taskforce will be assigned a travel channel on which to respond. This will prevent the greater alarm/strike team/taskforce unit's radio traffic (responding, on scene, etc) from interfering with incident tactical communications. Under this model greater alarm/strike team/taskforce units would report to a staging area on arrival. The staging area manager would then communicate with the incident commander or operations section chief to obtain work assignments for these units. Note: The use of a travel channel may be instituted at the 2nd alarm level if so ordered by the incident commander.

ASSIGNING FREQUENCIES TO INCIDENTS

The following Tactical Zones are designed to assist the dispatch center in assigning TAC Channels to Fire/EMS agencies.

Zone	Departments	Primary	Secondary	Notes
Zone 1	Anacortes District 5 District 11 District 12 District 13 (West of Slough) District 17	TAC 6 ® TAC 7 ® TAC 9 ®	TAC 2	**TAC 2** is simplex and covers the lower valley. **TAC 9** may be used when a single TAC channel will not adequately cover a response in a given area. TAC 9 is also Primary Travel Channel.
Zone 2	Burlington/District 6 Central Valley Amb LaConner Mount Vernon/District 1 District 2 District 4 District 9 District 13 (East of Slough) District 14	TAC 3 ® TAC 5 ® TAC 9 ®	TAC 2	**TAC 2** is simplex and covers the lower valley. **TAC 9** may be used when a single TAC channel will not adequately cover a response in a given area. TAC 9 is also Primary Travel Channel. **TAC 8** – Do not use TAC 8 for District 14.
Zone 3	Aero-Skagit Concrete Hamilton Sedro-Woolley District 8 District 16	TAC 8 ® TAC 2	TAC 9 ®	**TAC 9** may be used when a single TAC channel will not adequately cover a response in a given area. TAC 9 is also Primary Travel Channel.
Zone 4	District 15	TAC 2	TAC 8 ®	**TAC 6/7** may be used for incidents in the western portion of this District along Hwy 534. **TAC 9** may be used when a single TAC channel will not adequately cover a response in a given area. TAC 9 is also Primary Travel Channel.
Zone 5	District 19 Aero-Skagit	TAC 4	FIRE 1 HEAR	**FIRE 1** may be used as a secondary TAC Channel for the Upper Valley agencies.
Zone 6	District 10 Aero-Skagit	TAC 8 ® TAC 2	TAC 4 TAC 9 ® HEAR	**TAC 4** may have to be used in place of TAC 8/9 for the southeast half of District 10. **TAC 9** may be used when a single TAC channel will not adequately cover a response in a given area. TAC 9 is also Primary Travel Channel.
Zone 7	District 7	TAC 8Cav ®	FIRE 1Cav	**TAC 8C/Fire 1C – are part of a special radio system for use in SCFD 7 only.**
Zone 8	District 3	TAC 3 ® TAC 5 ®	TAC 9 ® TAC 2	**TAC 6/7** Will provide some coverage in the gaps on Hwy 534. **TAC 9** may be used when a single TAC channel will not adequately cover a response in a given area. TAC 9 is also Primary Travel Channel.

RADIO SYSTEM OPERATIONS LEVELS

Level 1 Operations

Normal day to day operations. Call volume and dispatcher workload fall within the work limits of the number of Fire/EMS dispatchers and fire dispatch back-up personnel on duty. No restrictions on Fire/EMS Agency radio communications.

Level 2 Operations

High call volume. Call volume and dispatcher workload are at the work limits of the number of Fire/EMS dispatchers and Fire/EMS dispatch back-up personnel on duty. Radio communications with Fire/EMS Dispatchers is restricted to essential traffic only.

Routine Aid calls and other non-priority calls may be grouped together on a single TAC Channel. Motor Vehicle Accidents, and all Fire Responses will be assigned their own TAC Channel.

When Fire/EMS dispatch needs to go to Level 2 Operations they shall announce it on the air.

Level 3 Operations

Extremely high call volume. Call volume and dispatcher workload exceed the work limits of the number of Fire/EMS dispatchers and Fire/EMS dispatch back-up personnel on duty. Radio communications with Fire/EMS Dispatchers is restricted to essential traffic only. Jurisdictions affected by high call volumes should establish an agency command (Example: District 13 Command). Low priority calls are routed to the proper agency command by the Fire/EMS Dispatcher for assignment of resources. Time tracking for low priority calls is the responsibility of the affected agency. Fire/EMS Dispatchers will notify the proper agency of low priority calls for their jurisdiction via TAC 9 or via phone. Fire/EMS Dispatch continues to dispatch high priority calls as usual.

Examples of Level 3 Situations: Wind storm, Heavy rainfall with extensive urban flooding.

When Fire/EMS dispatch needs to go to Level 3 Operations the following procedures will be implemented:

1. The duty chief for those jurisdictions affected by high call volumes will be toned and advised that the dispatch center has activated Level 3 Operations and a Duty Chief or Representative needs to maintain a radio watch for non-emergency events.

Example message:

"Cascade all duty chiefs, Cascade is at Level 3 operations. Duty Chief or representative identify and maintain radio watch for non-emergency events on Fire 1"

2. **Each affected agency is responsible for establishing and identifying their point of contact to receive non-emergency events.** Once the point of contact is determined by the agency, they should notify the dispatcher who they are on Fire 1. All non-emergency events will then be broadcast to that agency representative on Fire 1 (or assigned tactical frequency) without tones as radio traffic allows. Once the call is acknowledged by the agency representative, the dispatcher will note the broadcast in the call and then close it. All further communications and call tracking for that event will be done by the agency representative and then entered manually into their reporting system if applicable.

3. Upon request by the Duty Chief or representative, the dispatcher will tone for manpower.

4. Use of Skagit County Fire tactical frequencies may be assigned by Skagit 911 upon request by an agency as emergency communications allows. This assignment will not be monitored by the dispatcher. If an emergency event requires the use of that frequency, the agency will be notified.

5. **High priority calls will continue to be toned and dispatched as usual. TAC channel assignments will be made by dispatch personnel based on the incident type, channel loads and locations.**

6. Once it has been determined by the 911 Center that normal operations can resume, the dispatcher will make announcement that on the air.

INTEROPERABILITY

Interoperability for the purpose of the Skagit County Fire/EMS Radio system is when Cooperating Agencies can go anywhere in Skagit County and have immediate radio communications with each other using their own equipment on designated channels.

Interoperability in Skagit County can be achieved in several ways or, if you will, levels.

Level 1 Interoperability – Portable Radio Exchange

The simplest and most basic level of interoperability is the physical exchange of radios with other agencies involved in an event. However, it is impractical for every agency to have extra radios on hand for each member of every other possible agency that could appear on-scene, especially for large scale events. However, Skagit County has a portable radio cache that could be deployed on a moments notice to an incident anywhere in the County. The radios in the cache are pre-programmed with the Fire/EMS radio template channels as well as TAC 9 in digital and digital encrypted mode.

Level 2 Interoperability – Deployable or Fixed Cross Band Repeater

At this level interoperability is achieved by linking all first responder radio systems. Cross band repeaters retransmit signals input from one frequency band to an output in a different frequency band. The cross band repeaters available in Skagit County are complex yet simple to use devices capable of bridging multiple frequency bands (e.g., UHF, VF Low Band, VHF High Band, and 800 MHz). This level is divided into two sub-categories:

Level 2A – Interoperability – Deployable Cross Band Repeater

Within minutes after arriving on the scene of an incident, the Incident Command Radio Interface (ICRI) can be setup to support the frequencies of participating agency radios. The ICRI can also provide a bridge to the public switched telephone network (PSTN).

With the ICRI unit, portable radios from each agency are attached to the ICRI unit, turned to the correct channels, and the ICRI unit turned on. Once the ICRI is turned on the unit links the two radios and thus both agencies seamlessly. The ICRI unit is capable of providing two separate talk groups. There is one criterion that must be met in order to use this system: 1) Each cooperating agency must supply a portable radio to be used with the ICRI unit.

Level 2A: Deployable Cross Band Repeater

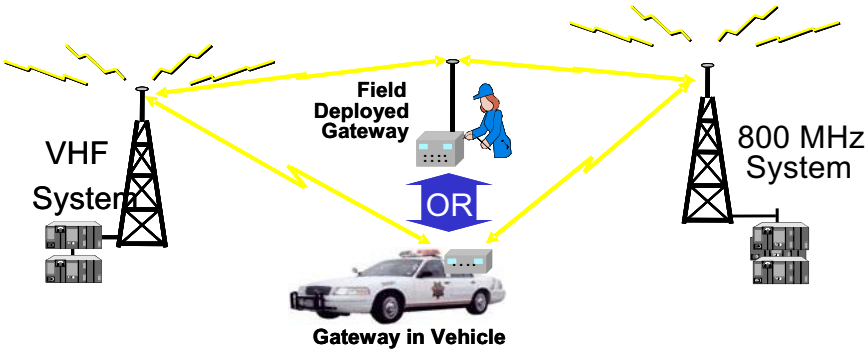


Figure 2

Level 2B -Interoperability – Fixed Cross Band Repeater

This system operates similarly to a deployable unit only it is installed at the communications center. Within seconds, a dispatcher can link agencies operating in different frequency bands by using the JPS ACU-1000 computer terminal. *There are two criteria that must be met in order to use this system: 1) The desired talk frequencies must be pre-programmed into the MCS2000 radios at the dispatch center; 2) Best results requires the use of mountain top repeated channels or good line of sight to the tower located at the 911 center.*

Level 2B: Fixed Cross Band Repeater

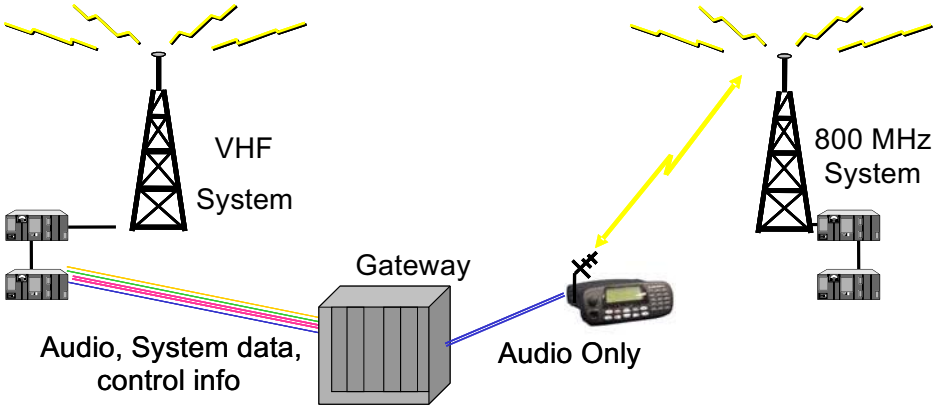


Figure 3

MEDCOM SYSTEM USE

The use of these frequencies is coordinated through the Dispatch Center. If the need arises to use the MEDCOM system to communicate with an ER, the user(s) need to notify the Dispatch Center. The Dispatch Center will assign either MEDCOM 3, 4, or 8 and notify the appropriate ER to expect communication on the assigned MEDCOM Channel.

The MEDCOM channels could be used for incident scene to hospital communications to coordinate patient destination during an MCI. If an Incident Commander or Medical Group Supervisor intends on using the MEDCOM system for this type of communication, they need to coordinate with the dispatch center as outlined above.

The following normal MEDCOM channelization plan will be used unless the dispatch center needs to make changes to facilitate communications for a particular incident.

1. Mount Erie – MEDCOM 3
2. Lyman Hill – MEDCOM 4
3. Little Mountain – MEDCOM 8

NOTE: The MEDCOM channels are repeated and on high mountain tops. Thus, these channels have far greater range than the H.E.A.R system.

It is recommended that all transport capable units and command vehicles have the capability to use the MEDCOM channels.

CELLULAR TELEPHONE USE

It is recognized that widespread use of cellular phones exists today in the public safety arena. It is further noted that there is a reliance on this form of communication for a substantial amount of essential public safety communications. However, it should be noted that this form of communication should not be considered a replacement for a well designed public safety radio communications system.

Cellular phone systems often become unreliable or useless during major emergencies. Cellular phone systems have limited capacity and can easily be overwhelmed during major events and become useless for public safety communications. Cellular phone systems are reliant on the public utility networks (power and phone) in order to make them work. If disruption of the public utility networks occurs, cellular phone systems will likely become non-operational.

In the event of cellular phone system failure, all Skagit County Fire and EMS agencies need to make sure that they have radios that can take full advantage of the VHF and UHF features of the Skagit County Fire/EMS radio system.

RADIO IDENTIFICATION (MDC-1200 RADIO PUSH TO TALK ID)

Many portable and mobile radios are capable of transmitting a unique ID code which will identify the transmitting unit to other radios. Additionally, this ID code may be decoded and viewed by Skagit 911. The major benefit of this feature is enhanced fire fighter safety. For example: Radio ID codes can be used to identify units calling for assistance where the voice is unreadable. Radio ID codes need to be coordinated not only within Skagit County but with other counties that share common frequencies. See Appendix B for the complete Radio ID plan.

TIME OUT TIMER

Portable and mobile radios equipped with a time-out-timer shall have the feature enabled and set to a maximum of 90 seconds. The time-out-timer temporarily shuts off the transmitter of a radio where the push-to-talk button is stuck on or has been inadvertently pressed and held without the knowledge of the user. This feature prevents a radio channel from becoming unusable due to radio malfunction or inadvertent action by the user.

MOBILE DATA COMPUTER - SPILLMAN® FIRE MOBILE

See Appendix A for the Standard Operating Guidelines for agencies/units equipped with mobile data computers operating on Spillman® FIRE Mobile. This guideline has been adopted by the Spillman® FIRE Mobile operations committee.

PERIODIC PLAN REVIEW AND RADIO SYSTEM REVIEW

The success of this and all plans is dependant on regular review and updating. As this is a brand new plan and a brand new radio system this plan and radio system should be reviewed quarterly during its' first year of operation and implementation and adjustments and changes made as needed. Thereafter, this plan and radio system should be reviewed and necessary changes made on an annual basis.

DISTRIBUTION OF THIS PLAN

A copy of this plan shall be distributed to the following agencies and organizations:

Fire Districts	Fire Departments	Agencies/Organizations
Skagit County Fire District 2 Skagit County Fire District 3 Skagit County Fire District 4 Skagit County Fire District 5 Skagit County Fire District 6 Skagit County Fire District 7 Skagit County Fire District 8 Skagit County Fire District 9 Skagit County Fire District 10 Skagit County Fire District 11 Skagit County Fire District 12 Skagit County Fire District 13 Skagit County Fire District 14 Skagit County Fire District 15 Skagit County Fire District 16 Skagit County Fire District 17 Skagit County Fire District 19	Anacortes Fire Dept. Burlington Fire Dept. Concrete Fire Dept. Hamilton Fire Dept. La Conner Fire Dept. Mount Vernon Fire Dept. Sedro-Woolley Fire Dept.	Aero Skagit Central Valley Ambulance Island Hospital Skagit Valley Hospital United General Hospital

ADOPTION OF THE PLAN

This plan was adopted by the Skagit County 911 Fire/EMS Technical Advisory Committee on XXXXX, 2012. This plan will take effect on XXXX, 2012 at midnight.

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Jim Grove – Chairperson

VERSION CONTROL

Version 5.0: Replaced by version 6.0. Adopted July 17th, 2007– Mark Anderson Fire Tech Chairperson
Version 6.2: Replaced by 7.0
Version 7.0: Replaced by version 8.0 Adopted August 16th, 2011 – Jim Grove Chairperson
Version 8.0: Adopted June XXXXX, 2012 – Jim Grove Chairperson

Appendix A

Spillman® Fire Mobile Operations

Standard Operating Guideline
Spillman® Fire Mobile Operations
Skagit County Fire and EMS Agencies

1. PURPOSE

To specify the method by which Mobile Data Computer (MDC) equipped Fire and EMS units shall be dispatched, monitored, and acknowledged.

2. BACKGROUND

2.1. Some of the local Fire and EMS agencies are implementing MDC's for the receipt of dispatch information and secure two-way communications with Skagit 911.

2.2. Apparatus equipped with Mobile Data Computers (MDCs) may record changes in CAD as to their status (Enroute, On Scene, Complete, etc), recall information from the CAD system to their screen for review, use the mapping application to locate the incident and other map related details, as well as have their location updated at Skagit 911 in real time.. These devices can also be used to send electronic messages between the unit and any other CAD or MDC terminal connected to the system. The Mobile Data System makes many routine voice transmissions obsolete and also serves as a tool for the dispatcher to communicate with the unit by secure electronic means.

3. POLICY

3.1. It shall be the policy of Skagit 911 to adhere to these procedures whenever dispatching Fire and EMS units that are equipped with an MDC unit.

3.2. It shall be the policy of MDC equipped Fire and EMS agencies to adhere to these procedures when responding to an incident.

3.3. This policy shall not apply to apparatus not equipped with an MDC.

PROCEDURE

3.4. Incident Dispatching

3.4.1. All Fire/EMS incidents shall be dispatched in the same manner regardless of whether or not the agency has MDCs: Alarms will be toned out over FIRE 1 with a verbal report of the address and nature of the incident.

3.5. Apparatus Response – All Agency Units Equipped with MDC

3.5.1. Apparatus personnel shall execute the appropriate key sequence on the MDC to update their status as necessary (Enroute, On-Scene, Complete, etc). If a unit updates their status via MDC they should not announce their status on the radio unless no response is received from the fire dispatcher.

3.5.2. The dispatcher shall acknowledge the MDC status update of each apparatus via the radio (Engine XXX Enroute, etc). The dispatcher should wait to announce the Enroute status of the alarm assignment until all units have made the status update via MDC. If a unit does not update their status or one is not received the dispatcher should follow existing protocols to verify the unit received the alarm.

3.5.3. The dispatcher does not need to provide a verbal short report to agencies that are fully equipped with MDCs as the call information is available on screen.

3.5.4. The first arriving unit at a major incident will update their response status to Arrived using the MDC. Do not announce arrival on the radio. The unit will then announce the short report over the radio and name command. Example: “Cascade Engine XXX size-up: 2 story, wood frame, residence, nothing visible, XYZ Command”.

3.5.5. Units responding on medical incidents or non-priority incidents may provide all status updates via MDC.

3.5.6. It is critically important that apparatus personnel update their status as it happens. Likewise, it is critically important that the dispatchers continuously monitor their CAD terminals for MDC updates.

3.5.7. Placing an apparatus in Out of Service Status must be done over the radio and the status change made by the fire dispatcher.

3.5.8. If the fire dispatcher notices an MDC status update error they should initiate contact with the unit involved to rectify the problem.

3.6. Apparatus Response – Single or Multi Agency Response where only some Units are Equipped with an MDC.

3.6.1. Units with MDC

3.6.1.1. Apparatus personnel shall execute the appropriate key sequence on the MDC to update their status as necessary (Enroute, On-Scene, Complete, etc)

3.6.1.2. The dispatcher shall acknowledge the MDC status update of each apparatus via the radio (Engine XXX Enroute, etc). The dispatcher should wait to announce the Enroute status of the alarm assignment until a unit from each agency goes Enroute via MDC or radio. If a unit does not update their status or one is not received the dispatcher should follow existing protocols to verify the unit received the alarm.

3.6.1.3. The first arriving unit at a major incident will update their response status to Arrived using the MDC. Do not announce arrival on the radio. The unit will then announce the short report over the radio and name command. Example: "Cascade Engine XXX size-up: 2 story, wood frame, residence, nothing visible, XYZ Command".

3.6.1.4. Units responding on medical incidents or non-priority incidents may provide all status updates via MDC.

3.6.1.5. It is critically important that apparatus personnel update their status as it happens. Likewise, it is critically important that the dispatchers continuously monitor their CAD terminals for MDC updates.

3.6.1.6. Placing an apparatus in Out of Service Status must be done over the radio and the status change made by the fire dispatcher.

3.6.1.7. If the fire dispatcher notices an MDC status update error they should initiate contact with the unit involved to rectify the problem.

3.6.2. Units without an MDC

3.6.2.1. Apparatus personnel will announce all status changes via radio (Enroute, On-Scene, Complete, etc).

3.6.2.2. The dispatcher shall acknowledge the status update of each apparatus via radio (Engine XXX Enroute, etc). The dispatcher should wait to announce the Enroute status of the alarm assignment until a unit from each agency goes Enroute via MDC or radio.

3.6.2.3. It is critically important that apparatus personnel update their status as it happens. Likewise, it is critically important that the dispatchers continuously monitor their CAD terminals for MDC updates.

3.7. Cross-Staffed Apparatus Status

3.7.1. Apparatus personnel will first status the responding apparatus via the MDC and then status the unavailable apparatus via the radio.

3.8. Adding/Exchanging Units to an Incident

3.8.1. Apparatus personnel may add their unit to an incident via their MDC.

3.8.2. Apparatus personnel exchanging a unit on an incident must do so via the Fire Dispatcher. An apparatus exchange occurs when one apparatus is dispatched on an incident and another apparatus responds in place of the dispatched apparatus. Apparatus exchanges may not be done via MDC.

4. SPECIAL INFORMATION

4.1. Incident updates or additional details that contain information that needs to be kept secure (key locations, lock combinations, etc) will be relayed via the secure messaging components with in Spillman Mobile.

4.2. The MDCs allow for communication of official business between Fire, EMS, Law Enforcement vehicles, and between Skagit 911. No vulgar, obscene, or derogatory messages, racially and/or sexually derogatory remarks shall be transmitted via the MDC nor shall any private, non-official business conversations be conducted between units through the MDC.

5. UPDATES

5.1. This SOG shall be reviewed and updated as necessary during the first year of implementation and annually thereafter.

6. DOCUMENT VERSION CONTROL

6.1. Version 3.0 – The initial version. Adopted 6/2012.
6.2. Version 3.1 – Minor update to version 3.0. Adopted 6/2012

Appendix B

Radio Push to Talk Identification (MDC-1200 Format)
Radio Emergency Push Button Operation

Standard Operating Guideline

Radio Push to Talk Identification (MDC-1200 Format)
Radio Emergency Push Button Operation
All Public Safety Agencies

1. Purpose

1.1. To assign an MDC-1200 code range to each agency.

1.2. To define the format of the text alias for each type of subscriber.

1.3. To describe the procedures to use in the event of a Radio Emergency Button activation.

2. Background

2.1. Many portable and mobile radios are capable of transmitting a unique ID (MDC-1200 format) code which will identify the transmitting unit to other radios. Additionally, this ID code may be decoded and viewed by Skagit 911.

2.2. The major benefit of this feature is enhanced first responder safety. For example: Radio ID codes can be used to identify units calling for assistance where the voice is unreadable.

2.3. Many portable and mobile radios are equipped with Emergency Buttons, that when activated, can signal other units and Skagit 911 that an emergency exists.

3. MDC-1200 Code Range by Agency

3.1. Radio ID codes need to be coordinated not only within Skagit County but with other counties that share common frequencies.

3.2. Radio ID codes will only be broadcast on the following frequencies:

3.2.1. Fire Frequencies

3.2.1.1. FIRE1, TAC 2, TAC 3, TAC 4, TAC 5, TAC 6, TAC 7, TAC 8, TAC 9 and AIRTAC.

3.2.2. Law Enforcement Frequencies

3.2.2.1. Anacortes PD, Burlington PD, Mount Vernon PD, Skagit County Sheriff, LE TAC 1, LE TAC 2, SCSO TAC.

3.3. Agency Code Ranges – Fire/EMS

Agency	Code Range		Agency	Code Range		Agency	Code Range
Anacortes Fire	A101-A199		Fire District 2	A500-A574		Fire District 11	B100-B149
Burlington Fire	A200-A249		Fire District 3	A575-A674		Fire District 12	B150-B199
Concrete Fire	A250-A274		Fire District 4	A675-A724		Fire District 13	B200-B299
Hamilton Fire	A275-A299		Fire District 5	A725-A824		Fire District 14	B300-B374
La Conner Fire	A300-A349		Fire District 6	A825-A874		Fire District 15	B375-B424
Mount Vernon Fire	A001-A100		Fire District 7	A875-A899		Fire District 16	B425-B474
Sedro-Woolley Fire	A350-A449		Fire District 8	A900-A999		Fire District 17	B475-B524
Central Valley Amb	A450-A499		Fire District 9	B001-B049		Fire District 19	B525-B574
			Fire District 10	B050-B099			

3.4. Agency Code Ranges – Law Enforcement

Agency	Code Range		Agency	Code Range		Agency	Code Range
Anacortes PD	C001-C099		Burlington PD	C100-C199		Mount Vernon PD	C200-C299
Swinomish PD	C300-C399		Sedro-Woolley PD	C400-C499		Skagit County SO	C500-C649
Upper Skagit PD	C650-C699		Sauk-Suiattle PD	C750-C-800			

3.5. Push to Talk Configuration

3.5.1. For Fire/EMS agencies, the PTT will be configured to transmit the PTT ID when the PTT switch on the radio is depressed. Additionally, it is recommended that the PTT short tone also be used to notify the user that the radio is ready to transmit their voice message.

3.5.2. For Law Enforcement agencies, the PTT will be configured to transmit the PTT ID when the PTT switch on the radio is released. Additionally, the PTT short tone is not needed in this configuration.

4. Alias Text Standards for Fire/EMS Subscriber Units

4.1. Fire Apparatus

4.1.1. Engines – **ENG XXX**
4.1.2. Ladders – **LAD XXX**
4.1.3. Rescues – **RES XXX**
4.1.4. Brush Trucks – **BR XXX**
4.1.5. Tenders – **TND XXX**
4.1.6. BLS Unit – **AID XXX**
4.1.7. ALS Units – **MED XXX**
4.1.8. ALS/BLS Units based on staffing– **MA XXX**
4.1.9. Battalion Units – **BAT XXX**
4.1.10. Chief Officer/Staff Units – **AGENCY XXX (Ex: MVFD 101, SCFD3 301)**
4.1.11. Miscellaneous Units – **UTL XXX, REHAB XXX**

4.2. Portables Assigned to Fire Apparatus

4.2.1. Engines – **ENG XXX P1, ENG XXX P2, etc.**
4.2.2. Ladders – **LAD XXX P1, LAD XXX P2, etc.**
4.2.3. Rescues – **RES XXX P1, RES XXX P2, etc.**
4.2.4. Brush Trucks – **BR XXX P1, BR XXX P2, etc.**
4.2.5. Tenders – **TND XXX P1, TND XXX P2, etc.**
4.2.6. BLS Unit – **AID XXX P1, AID XXX P2, etc.**
4.2.7. ALS Units – **MED XXX P1, MED XXX P2, etc.**
4.2.8. ALS/BLS Units based on staffing– **MA XXX P1, MA XXX P2, etc.**
4.2.9. Battalion Units – **BAT XXX P1, BAT XXX P2, etc.**
4.2.10. RIT Bag Radios – **LAD 125 RIT, ENG 1811 RIT, etc**
4.2.11. Miscellaneous Units – **UTL XXX P1, REHAB XXX P1, etc.**

4.3. Portables Assigned to Individual Fire/EMS Personnel

4.3.1. Chief Officers – **AGENCY XXX (Ex: MVFD 101, SCFD3 301)**
4.3.2. Skagit County Medical Program Director **– SC MPD XX**
4.3.3. Agency Medical Services Officers **– AGENCY MSO X (Ex: SMO MSO 1)**

5. Alias Text Standards for Law Enforcement Subscriber Units

5.1. Law Enforcement Vehicles

5.1.1. Anacortes PD – **APD XXX** (Where XXX is Vehicle Number)
5.1.2. Burlington PD - **BPD XXX** (Where XXX is Vehicle Number)
5.1.3. Mount Vernon PD - **MVPD XXX** (Where XXX is Vehicle Number)
5.1.4. Skagit County Sheriff - **SCSO XXX** (Where XXX is Vehicle Number)
5.1.5. Sedro-Woolley PD – **SWPD XXX** (Where XXX is Vehicle Number)
5.1.6. Swinomish PD – **SWNMSH XXX** (Where XXX is Vehicle Number)
5.1.7. Upper Skagit PD – **USPD XXX** (Where XXX is Vehicle Number)
5.1.8. Sauk-Suiattle PD – **SAUK XXX** (Where XXX is Vehicle Number)

5.2. Portables Assigned to Individual Law Enforcement Personnel

5.2.1. Anacortes PD – **DAVID XXX**
5.2.2. Burlington PD – **HENRY XXX**
5.2.3. Mount Vernon PD – **XRAY XXX**
5.2.4. Skagit County Sherriff – **UNION XXX**
5.2.5. Sedro-Woolley PD – **GEORGE XXX**
5.2.6. Swinomish PD – **IDA XXX**
5.2.7. Upper Skagit PD – **WILL XXX**
5.2.8. Sauk-Suiattle PD – **SAM XXX**

6. Emergency Button Activation – Fire/EMS

6.1. Background Information

6.1.1. Most portable radios (and some mobiles) are equipped with Emergency Alert Buttons. These buttons are Orange in color and are located on the top of the radio. Emergency Alert is activated by depressing the orange button.

6.1.2. When the Emergency Alert button is pressed, the radio will transmit an emergency signal, including the radio ID, to the dispatch center on the currently selected radio frequency.

6.1.3. Emergency Alerts may be reset by pressing the Emergency Alert button or by turning the radio off and then back on.

6.2. Emergency Alert FIRE/EMS – Single Unit Incident or EMS Incident

6.2.1. This section applies to incidents where only a single fire unit has been dispatched and to EMS incidents.

6.2.2. When an Emergency Alert is activated, Skagit 911 will attempt to contact the unit twice on the assigned tactical frequency using the following clear text**: "XXX XXX from Cascade EAS received".** (XXX XXX is the unit or agency identifier). **Status 2** has been designated by Skagit 911 as the code word for: *"I need a law enforcement emergency response".*

6.2.3. If there is no answer from the unit broadcasting the Emergency Alert after the second attempt by Skagit 911 to contact them, a law enforcement emergency response shall be dispatched to the incident. Also, Skagit 911 will close the involved TAC channel and announce **"Emergency Traffic only on TAC XX"** and activate the marker tone.

6.2.4. If the unit is able to answer Skagit 911 and a hostile situation is present the unit only needs to state**: "XXX XXX is status 2"**. Skagit 911 will then dispatch a law enforcement emergency response. Also, Skagit 911 will close the involved TAC channel and announce **"Emergency Traffic only on TAC XX"** and activate the marker tone.

6.2.5. If the Emergency Alert activation was accidental, the fire/EMS unit must respond with the exact phrase: **"Cascade from XXX XXX accidental activation of EAS".** (XXX XXX is the unit or agency identifier). The unit involved should then reset the Emergency Alert button on their radio. Skagit 911 will repeat back "**XXX XXX accidental activation of EAS".** *Any response other than the specified text will indicate that a hostile situation exists and a law enforcement emergency response is needed.*

6.3. Emergency Alert FIRE/EMS – Incidents with Incident Command Structure

6.3.1. This section applies to incidents where an incident command structure has been established.

6.3.2. When an Emergency Alert is received by Skagit 911 they will contact the Incident Commander to confirm receipt of the Emergency Alert. **Example: "XXX Command from Cascade, confirming EAS activation from XXX XXX".**

6.3.3. The Incident Commander will attempt to contact the unit activating the EAS twice: **"XXX XXX from XXX Command EAS Activation received"**. If there is no response the Incident Commander will initiate appropriate action which could include: Activation of RIT Team, requesting a law enforcement emergency response, etc.

6.3.4. If the unit is able to answer Command and a hostile situation is present the unit only needs to state**: "XXX XXX is status 2"**. The IC will then request a law enforcement emergency response. Also, Skagit 911 will close the involved TAC channel and announce **"Emergency Traffic only on TAC XX"** and activate the marker tone.

6.3.5. If the unit is able to answer Command and they do not need law enforcement but need immediate assistance they will broadcast a **MAYDAY** message in the LUNAR format (L-Location, U-Unit Number, N-Nature of Emergency, A-Air Supply of all Crew Members, R-Resources Required). The IC will then initiate the appropriate action. Also, Skagit 911 will close the involved TAC channel and announce **"Emergency Traffic only on TAC XX"** and activate the marker tone.

6.3.6. If the Emergency Alert activation was accidental, the unit must respond with the exact phrase: **"XXX Command from XXX XXX accidental activation of EAS".** (XXX XXX is the unit or agency identifier). The unit involved should then reset the Emergency Alert button on their radio. The Incident Commander will repeat back "**XXX XXX accidental activation of EAS".** *Any response other than the specified text will indicate that a hostile situation exists and a law enforcement emergency response is needed.*

7. Emergency Button Activation – Law Enforcement

7.1. Background Information

7.1.1. Most portable radios (and some mobiles) are equipped with Emergency Alert Buttons. These buttons are Orange in color and are located on the top of the radio. Emergency Alert is activated by depressing the orange button.

7.1.2. When the Emergency Alert button is pressed, the radio will transmit an emergency signal, including the radio ID, to the dispatch center on the currently selected radio frequency.

7.1.3. Emergency Alerts may be reset by pressing the Emergency Alert button or by turning the radio off and then back on.

7.2. Emergency Alert Law Enforcement

7.2.1. This section applies to law enforcement units.

7.2.2. When an Emergency Alert is activated, Skagit 911 will attempt to contact the unit twice on the assigned frequency using the following clear text**: "XXX XXX from Cascade Status 2 received".** (XXX XXX is the unit or agency identifier). Status 2 is the law enforcement code word for **"officer needs help".**

7.2.3. If there is no answer from the unit broadcasting the Emergency Alert after the second attempt by Skagit 911 to contact them, a law enforcement emergency response shall be dispatched to the incident. Also, Skagit 911 will close the involved channel and announce **"Emergency Traffic only on TAC XX"** and activate the marker tone.

7.2.4. If the unit is able to answer Skagit 911 and a hostile situation is present the unit only needs to state**: "XXX XXX is status 2"**. Skagit 911 will then dispatch a law enforcement emergency response. Also, Skagit 911 will close the involved channel and announce **"Emergency Traffic only on TAC XX"** and activate the marker tone.

7.2.5. If the Emergency Alert activation was accidental, the law enforcement unit must respond with the exact phrase: **"Cascade from XXX XXX accidental activation of Status 2".** (XXX XXX is the unit or agency identifier). The unit involved should then reset the Emergency Alert button on their radio. Skagit 911 will repeat back "**XXX XXX accidental activation of Status 2".** *Any response other than the specified text will indicate that a hostile situation exists and a law enforcement emergency response is needed.*