

D

Functional Annex – Communications

Approved (January 6, 2014)

This page left blank intentionally

Table of Contents

1 Purpose.....3

2 Situation and Assumptions3

2.1 Situation.....3

2.2 Assumptions7

3 Concept of Operations.....9

3.1 Definitions – See TAB 19

3.2 General.....9

3.3 WCCCA Operations Modes9

3.4 Mitigating Communication Limitations..... 11

**3.4.1 Resource Prioritization and Consideration of Alternate
Communications Resources..... 12**

4 Organization and Assignment of Responsibilities 13

4.1 General..... 13

4.2 Task Assignments during Major Emergencies or Disasters..... 13

4.2.1 All Washington County Departments 13

4.2.2 Washington County Consolidated Communications Agency . 14

4.2.3 Washington County Emergency Operations Center 14

4.2.4 All Washington County Department Operations Centers 14

4.2.5 Washington County Sheriff’s Office..... 15

4.2.6 Washington County Land Use and Transportation DOC 15

4.2.7 Washington County Information Technology Services 15

5 Direction and Control..... 16

5.1 General..... 16

5.2 Continuity of Government 16

6 Readiness Levels 17

7 Administration and Logistics 18

7.1 Facilities and Equipment 18

7.2 Maintenance of Records 18

7.3 Maximizing Communications 18

7.3.1 Radio Discipline..... 18

7.3.2 Telephone (common carrier) 18

7.3.3 Telephone (Washington County-owned systems) 19

7.3.4 Computer Network (Internet) 19

7.3.5 Computer Network (Washington County-owned systems) 19

7.4 Physical Security..... 19

7.5 Training..... 19

7.6 Support 20

8 Annex Development and Maintenance 20

9 References..... 20

10 Tabs..... 20

Tab 1 – Definitions of Commonly Used Terms..... 22

Tab 2 – Communications Systems Used by Public Agencies 28

**Tab 3 – A Brief Description of the Joint WCCCA/CCOM Public Safety
Communication System..... 29**

1 Purpose

This annex describes how Washington County will coordinate communications with partner agencies and deploy available communications resources during a major emergency or disaster. The plan emphasizes public safety radio, but includes amateur radio, landline, cellular and satellite telephone and the Internet and Intranet.

2 Situation and Assumptions

2.1 Situation

- Washington County, partner agencies, and cities use a combination of land mobile radio (LMR), landline telephone, cellular telephone, text messaging and Internet email to accomplish communication necessary to conduct business and support governmental operations.
- Day-to-day public safety radio communication is provided by the Washington County Consolidated Communications Agency (WCCCA) which is also the Public Safety Answering Point (PSAP) for Washington County. In this role WCCCA answers all 9-1-1 calls for service and dispatches all fire and law enforcement emergency responders,¹ using a joint C-COM/WCCCA Motorola Smartzone 800 MHz trunked radio system (TRS).²
- Each of these systems is relied upon, to a greater or lesser extent, during emergencies. As such, the loss of one or more could negatively impact the management of and response to the incident, not to mention hinder routine county operations.
- In particular, the loss of emergency radio communications and/or the public telephone system, that allows citizens to report emergencies via the 9-1-1 system, could on its own constitute an emergency requiring rapid intervention to re-establish functionality.
- WCCCA provides non-trunked communications that can augment the TRS when required to overcome potential communication shortfalls during an emergency. Included are:

¹ Emergency Medical Service calls for service are received by WCCCA through the 9-1-1 system and then retransmitted to Metro West Ambulance Service who dispatches their own resources.

The Oregon State Police are dispatched through OSP Northern Command Center in Salem, but troopers assigned locally also carry 800 MHz radios for local interoperability.

² See Tab 3 for a brief description of the WCCCA/C-COM Public Safety Radio System.

- *National Public Safety Planning Advisory Committee (NPSPAC) Repeaters* – WCCCA maintains conventional repeaters at multiple sites that support the 800 MHz National Mutual Aid Repeater Channels. These NPSPAC repeaters are 800 MHz conventional repeaters (non-trunked) and do not utilize system frequencies from the TRS. All 800 MHz subscriber radios associated with the WCCCA TRS have these channels programmed into them for emergency use.³
- *State 800 MHz Interoperability Channels* – Much like the NPSPAC 800 MHz channels, there are five state interoperability channels in the 800 MHz band. Otherwise known as OROPS (Oregon Operations) channels, these are programmed into all radios that use the WCCCA system.⁴ State 800 MHz Interoperability Channel are supported through towers at the Buxton and Parrett Mt. radio sites.⁵
- *VHF/UHF Interoperability Channels* –These channels are designated by the federal government to support radio interoperability during a major disaster/emergency. WCCCA has remote base station radios located at the Bald Peak and Buxton radio sites that support these channels.⁶
- Other radio resources that are available to augment the WCCCA system for day-to-day operations, special events, wilderness search and rescue, and emergencies or disasters, include:
 - *Tactical Dispatch Units (Communication Bridges)* – Washington County Sheriff’s Office has two portable tactical dispatch units that are comprised of VHF, UHF, Air Band and 800 MHz radios and a radio gateway. These are designed to augment on-scene communication at a major incident. Presently, these units are accessed by contacting the Washington County Sheriff’s Office.
 - *UHF Radio Cache and “Old Dispatch System”* – This 460 MHz analog UHF land mobile radio system in the public safety band was the primary public safety dispatch system prior to the 800 MHz trunked system. The Washington County Sheriff’s Office maintains a cache of radios that operate on this system. These radios are also programmed with federal and non-federal interoperability

³ Use of NPSPAC and other federal and non-federal interoperability channels is detailed in the National Interoperability Field Operations Guide (NIFOG ver. 1.4)

⁴ These radios are also programmed with Washington OPS (WAOPS) 800 MHz channels, but these may only be used in Washington State or when needed to operate with Washington jurisdictions.

⁵ WCCCA currently plans to add 800 MHz interoperability radios to the Gales Peak, Bald Peak, Round Top and Canterbury sites in mid-2014.

⁶ These are due to be upgraded to repeaters in 2014.

channels.⁷ WCCCA maintains stand-alone repeaters that provide extended coverage on these licensed channels.

- *VHF Radio Cache* – These VHF portable radios are programmed with channels to allow interoperable communication with adjacent agencies that use VHF radio as their primary dispatch system. They are also programmed with statewide VHF frequencies for search and rescue, Oregon State Police, Oregon Department of Transportation, Marine channels as well as federal and non-federal interoperability frequencies.⁸
 - *Accessing the Radio Caches:*
 - When the EOC is activated, these caches are accessed via an order placed with the EOC Logistics Unit.
 - When the EOC is not activated, the caches are accessed by contacting the WCSO Search and Rescue (SAR) Coordinator, either through the main telephone number for the Washington County Sheriff's Office, or after hours, through the non-emergency dispatch number at WCCCA.
- WCCCA maintains an emergency communications trailer and tow vehicle that is available in the event that additional on-scene communications support is required. This resource includes:
 - Four conventional 800 MHz repeater systems on National Interoperability frequencies
 - Four conventional UHF (450 MHz) repeater systems on National Interoperability frequencies
 - Four conventional VHF (150 MHz) repeater systems on National Interoperability frequencies.
 - Two 700/800 MHz trunked radios used to link WCCCA, C-COM⁹, BOEC¹⁰ and CRESA talk groups to one or more of the interoperability repeaters (VHF, UHF, 800 MHz).

⁷ National Interoperability Field Operations Guide ver. 1.4 (NIFOG)

⁸ These radios are programmed with frequencies and channels as found in the Portland UASI Area Tactical Interoperability Communications Plan (TICP) and the NIFOG.

⁹ Clackamas Communications is the 9-1-1 and public safety dispatch center for Clackamas County.

¹⁰ Bureau of Emergency Communication – 9-1-1 and public safety dispatch for Multnomah County.

- IP (Internet Protocol) based patch subsystem that interconnects the 800 MHz, 450 MHz and 150 MHz repeater systems and the two 800 MHz trunked radio links.
- 18 KW trailer mounted generator with 100+ gallons of diesel fuel.
- 600 Amp Hours battery backup to support operations of the radio equipment for up to two days.

NOTE: 48 of the cache radios are stored in bank chargers and ready for immediate transport/deployment with the trailer. The tow vehicle has an auxiliary refueling capacity of 75 gallons of diesel fuel in addition to normal vehicle fuel capacity to be used to refuel the trailer generator in the field. The trailer uses a 2" tow ball.

- *DLUT VHF Radios* - The Department of Land Use and Transportation (DLUT) uses both the 800 MHz TRS and VHF channels for communication. The VHF radios do not have the capacity for interoperability channels and are limited to DLUT licensed frequencies/channels.
- *DHHS "Go Kits"* - The Department of Health and Human Services (DHHS) has five VHF "Go Kits". These kits include a VHF radio, power supply and antenna mounted in a small "pelican" case. Power is supplied by plugging the kit into a cigarette lighter. These kits are programmed with a modified template based on the Portland UASI Area Tactical Interoperability Communications Plan (TICP). These Go Kits are maintained by the Washington County Sheriff's Office.
- In addition to these various LMR systems, Washington County's emergency communications structure incorporates the following components:
 - *Satellite Phones* – The EOC, Emergency Management, WCSO Patrol, WCSO Search and Rescue, Support Services (SS), DLUT and DHHS have Iridium Satellite Phones for use in emergencies, or when out of reach of other communications methods.
 - *Amateur or "HAM" Radio* – Volunteer amateur radio operators, affiliated with Amateur Radio Emergency Services/Radio Amateur Civil Emergency Services (RACES), support emergency communications through the staffing of amateur radio stations at several served agencies and may also support on-scene communications needs using mobile amateur radio stations.
 - *Agency-Issued Cellular Phones* – Cellular phones are intrinsically interoperable and some Washington County agencies issue selected personnel with cellular phones. Many, if not most, staff have personal cellular phones that provide a further means of communication. Selected Washington County employees have enhanced priority access to the cellular system via the Wireless Priority System (WPS). This program is a component of the Government Emergency Telephone System. (See next bullet)

- *Public Switched Telephone Network (PSTN)* – In addition to its day-to-day function, the PSTN has an important role in emergency communication. While overload of the system presents problems similar to overload of the cellular system, selected employees have enhanced priority access via the Government Emergency Telephone System.¹¹

2.2 Assumptions

- These communications systems listed are adequate for normal operations, planned events and the majority of emergency situations that might arise.
- In the vast majority of cases, there will be sufficient local communications resources available to meet the needs of an incident or emergency. Nonetheless, a situation could arise wherein one or more primary modes of communication are overloaded, damaged, or destroyed. In these instances, alternative methods of communication are available to supplement, or replace the primary system. Reasons that can result in the need to use auxiliary resources include:
 - System Overload – Any system has a limit to its capacity. While the WCCCA TRS has sufficient system overhead to handle large spikes in demand, it remains that a sufficiently large or rapidly escalating emergency or disaster could potentially overload the 800 MHz system, both the hardware and also the dispatchers and call-takers who receive calls from the public and dispatch responders. Additionally, such emergencies can generate a spike in cellular and landline phone traffic that can result in busy signals and render those systems useless to most users.
 - Damage – Any number of natural or manmade hazards can damage, destroy, or otherwise render unusable one or all of the systems routinely used in Washington County.
- Damage to primary communications systems, such as WCCCA’s 800 MHz system, may seriously impede operations during a disaster, potentially putting lives and property at greater risk. WCCCA will rapidly respond to restore communications capacity, but restoration will be predicated on the scale of damage, availability of repair parts and technicians, and other factors beyond their control.
- Due to substantial system redundancy, the threat of complete failure of the WCCCA 800 MHz system infrastructure is considered to be low. However, the possibility

¹¹ Additional information about GETS and WPS can be found at <http://wps.ncs.gov/index.html>.

- exists and planned remedies can take a number of forms (listed in increasing order of severity):
- *Site-Specific Trunking* – In the event that the connection from a radio site to one or more of the trunking system controllers is lost, most likely from a misalignment of the microwave links that connect the various tower sites, the radio system remains functional, but may not be simulcast county-wide. As an example, radio traffic in Timber may not be audible in Beaverton, depending on which controller has lost connectivity.
 - *Failsoft* – In the event where one or more trunking controllers fail, some or all of the system will be unable to operate in the trunking mode. Instead of going into a condition that stops all communication, the system will switch to a linked conventional repeater mode. User radios are able to recognize this state and automatically switch to a predetermined frequency (one of the trunk system frequencies depending on their selected talkgroup. No adjustment of the radio is required by the user. Each WCCCA-served discipline is pre-assigned three channels, one of which is a primary Dispatch channel. This is automatically controlled by the software in the radio and will indicate to the user that the system is in FAILSOFT with a message and a tone on the radio. When the system resets, it is totally unavailable for 13 seconds.
 - *Conventional Repeater Mode* – The combination of microwave link failure, trunking and site controller failure causes each radio site to revert to conventional repeater mode. Essentially, each repeater site becomes its own independent system allowing repeated communication between units within range of its signal, but not with other towers or users. Switching to this mode requires WCCCA technical staff to go to the repeater site and program this mode. Delays can be significant due to travel time and site access. WCCCA will notify system users when this occurs and an approximate timeframe for implementation.
 - *Site Failure and/or Total System Failure* – Loss of trunking controllers, site controllers, microwave and/or all power, or the physical loss/significant damage to any or all radio sites in the WCCCA service area. This could result in the failure of trunked or repeated communication in some or all of the system. In the case of a site failure, WCCCA may be able to notify users of the problem. However, a total system failure would be its own warning, as radios will not work on repeated talk groups. In this event, direct (simplex) operation would still be available between radios programmed with simplex channels.
- As previously indicated a large scale emergency or disaster will likely require deviation from normal day-to-day practice to cope with the greater demand for communications resources, particularly during the initial response to the emergency, even in the absence of damage to existing communications infrastructure. To the extent possible, WCCCA will manage the TRS in order to ensure command and control message traffic is maintained to support emergency response. This is described in detail in the next section, “Concept of Operations”.

3 Concept of Operations

3.1 Definitions – See TAB 1

3.2 General

- Communications during a major emergency or disaster are predicated on the size and complexity of the incident, the condition of supporting communications infrastructure, the amount of communications traffic needed to support the response, and the availability of additional resources to meet the need. WCCCA and its user agencies have adopted a common framework of *operational modes*, to address these scenarios.

3.3 WCCCA Operations Modes

- *Normal Operations* – This mode is by far the most commonly used in Washington County and covers the vast majority of day-to-day demands including situations that may temporarily result in higher demands being placed on the system. In this mode, centralized communication infrastructure and staffing are intact, and demand falls within normal operational capability. Agencies conduct standard routine and emergency response activities using normal communications protocols including:
 - 800 MHz public safety radio system (WCCCA). VHF and UHF land mobile systems (WCSO Search and Rescue¹², Metro West Ambulance Company, various school districts, public works, etc.).
 - Landline and cellular telephone.
 - Internet and email.
- *Expanded Operations* – This mode provides for enhanced communications support functions during a large incident or multiple incidents, while minimizing the impact on routine operations within the county. Centralized communications are intact, but demand is exceptional and requires some adjustment to meet current needs.
 - DOC and EOCs may be partially or fully activated.
 - Special incident prioritization procedures are implemented by both WCCCA and emergency response agencies to ensure critical resources are assigned to incidents with life-safety issues and to reduce the load on the emergency communications infrastructure. Such procedures may involve a supervisor or higher level person working directly with WCCCA dispatchers to manage tactical resources.

¹² WCSO Search and Rescue use a combination of the WCCCA 800 MHz and legacy UHF systems in addition to the State or Oregon licensed “State SAR” VHF system.

- *Tactical Dispatch* - Tactical dispatch, a variation of expanded dispatch, involves the deployment of one or more dispatchers to the scene of an ongoing tactical operation to work directly with the on-site overhead team.
- In order to limit impacts on emergency responders not involved in the incident, cache radios and/or Mobile Tactical Dispatch Units (TDUs) may also be used to support on-scene response.
- Agencies not involved in the incident may, in large part, continue to operate under Normal Operations Mode.
- *Major Emergency Operations* – In this mode, centralized communications are intact, but there are insufficient responder resources to handle all requests for emergency services; unlike *Expanded Operations*, this mode affects the entire emergency response system within the County.
- DOCs and EOCs may be partially or fully activated to help coordinate response and/or recovery efforts.
- As in *Expanded Operations*, procedures are implemented by both WCCCA and emergency response agencies to ensure critical resources are assigned to incidents with the highest priority.
- Due to high call volume communications “bandwidth” may be insufficient to handle emergency response needs. Steps may be implemented to reduce the load on the 800 MHz system. Such steps may include the use of pre-programmed interoperability channels, increased use of simplex channels, deployment of cache radios, and use of TDUs.
- In Washington County, the most common situations that have necessitated a transition from Normal Operations to Expanded Operations or Major Emergency Operations have been severe weather events such as high wind, rain, thunderstorms, winter storms, and flooding.
- *Disaster Operations* - Due to direct damage or failure of key supporting infrastructure, centralized communications such as the WCCCA 800 MHz system and telephones are not functioning, the general public cannot call 9-1-1 for assistance and WCCCA is unable to dispatch resources.
- County and city EOCs and agency DOCs, the Multi-Agency Coordination Group (MACG) are, or may be activated.
- Field supervisory staff and emergency responders are functioning independently to identify, prioritize, and respond to incidents.

- If the trunked radio system is inoperable, or curtailed in capacity, alternative methods must be taken to provide communications capability. Such methods include:
 - Deployment of the WCCCA Mobile Communications Trailer that is stocked with portable 800 MHz, VHF and UHF interoperable repeaters and 800 MHz cache radios.
 - Simplex radio communication, including use of human repeaters, using pre-programmed 800 MHz simplex channels.
 - Use of non-trunked interoperability channels such as OROPS channels and 8TAC (tactical interoperability) channels on the 800 MHz radios.
 - Use of UHF cache radios and available county owned repeaters (if operable) or on programmed simplex channels.
 - Use of VHF cache radios programmed with interoperability channels. This cache of radios is programmed with channels designated in the Urban Area Security Initiative Tactical Interoperable Communications Plan or UASI TICP.
 - Deployment of Tactical Dispatch Units (Communications Bridges) maintained by the Washington County Sheriff's Office that can provide limited emergency repeater functionality on 800 MHz and VHF in the event of a WCCCA system failure/partial failure.
 - Deployment of WCCCA portable control stations configured as relocatable dispatch positions. These control stations are on the WCCCA/C800¹³, Portland, and CRESA systems as well as being programmed with National and State interoperable channels and simplex channels.

3.4 Mitigating Communication Limitations

- Steps should be taken to mitigate system damage, limit system overload and support interoperability. Potential solutions include:
 1. Utilize *face-to-face* communications wherever possible. For example, the co-location of all Command and General Staff at the Incident Command Post (ICP) provides the best direct communications and reduces the demand on communication system resources.

¹³ C800 denotes the 800Mhz portion of C-COM

2. Whenever possible use shared *tactical channels* that work in *simplex* mode. Simplex channels do not use system resources and may even work better than repeated channels for on scene communications.
3. If responding agencies do not share systems or channels, utilize a *gateway* to establish interoperable communications, e.g. TDUs.
4. Where interoperable communications cannot otherwise be established between response agencies, exchange or use *cache radios* to establish interoperable communications for responders.
5. Use cellular phones (regular cellular or push-to-talk), if available and functioning.
6. If no other method of communication can be established, use *runners*.
7. Use Amateur Radio Operators affiliated with Amateur Radio Emergency Service (ARES)/ Radio Amateur Civil Emergency Service (RACES). Amateur radio uses dedicated band spectrum allocations that can augment, or replace crowded or unavailable radio spectrum.

3.4.1 Resource Prioritization and Consideration of Alternate Communications Resources

- When available resources are insufficient to support every incident, resource assignments should be based on the priority levels in accordance with the National Incident Management System (NIMS), i.e.:
 - Life Safety
 - Property protection
 - Environmental preservation
- In response to events or incidents which cross over jurisdictional boundaries, there potentially could be competing demands and priorities for interoperable communications assets. Coordination of assets using designated Communication Unit Leaders (COMLs; on-scene or in the EOC), or Communications Coordinators (COMCs; located at PSAPs) can help to deconflict communications issues by managing available equipment and bandwidth. Should conflicts persist, coordination through the Multi-Agency Coordination System (MAC) may be necessary.
- Regardless of the Operational Mode, overall communication efforts will be prioritized as follows:
 - Alert and warning communications will be given the highest priority on all communications systems. Alert and warning will be accomplished in accordance with the Alert and Warning Annex to the Emergency Operations Plan (EOP).
 - Tactical Command and Control and Life Safety communications.
 - Administrative and other uses will be restricted as necessary to sustain communications with a higher priority.

- To meet the increased communications needs created by an emergency, various state agencies, amateur radio operators, and other volunteer organizations, are available to supplement the county's existing communications capabilities. These resources are listed in TAB 2, and can be requested through the EOC.
- In a major emergency or disaster, state and/or federal resources may be required to augment communications capacity to meet Command and Control and response needs. Such resources are requested via the County EOC, who will forward the request to the state Emergency Coordination Center.

4 Organization and Assignment of Responsibilities

4.1 General

- Each Washington County Department shall:
 - *Plan* - Prepare and maintain plans to ensure readiness to deploy internal communications resources during major emergencies or disasters, or when called upon to do so by the County Incident Commander.
 - *Equip* - Maintain readiness of departmental communications equipment.
 - *Train* – Educate department staff on department communication procedures in order to support said deployment.

4.2 Task Assignments during Major Emergencies or Disasters

4.2.1 All Washington County Departments

- The EOC shall coordinate, with WCCCA, the implementation of major emergency or disaster operations on the part of the county. The EOC is responsible for communicating that decision to all county departments, municipalities and special districts as soon as practical. Each department is responsible for the implementation of major emergency or disaster operations as it applies to them.
- When a major emergency or disaster occurs, each county department shall establish and maintain a communications link with the County EOC and provide an agency communications plan to the EOC Communications Unit as soon as possible. This may require the use of non-traditional communications, i.e. runners or amateur radio operators, due to unavailability of telephones or radio. Communications with staff in the field may also be compromised and require similar extraordinary communications protocols.
- When directed by the EOC, county departments will re-deploy or assign communications resources and personnel as required.
- Coordinate restoration and/or repair of normal communications modes with the EOC.

- Demobilize communications resources, when appropriate.

4.2.2 Washington County Consolidated Communications Agency¹⁴

- Initiate Major Emergency or Disaster Operations per WCCCA Standard Operating Procedure and notify system users. Allocate system resources and assign 800 MHz talk groups to public safety agencies and other users as needed.
- Along with other regional PSAPs, will deconflict and/or coordinate interoperable channel use across the metro region.
- Activate the alternate 9-1-1 Dispatch Center at the Law Enforcement Center if required.
- During a major emergency/disaster, support equipment repair on a 24-hour basis,.
- Continue communications support throughout recovery operations.
- Restore communications systems to pre-emergency conditions as soon as possible.

4.2.3 Washington County Emergency Operations Center

- Contact EOCs and DOCs representing local governments, hospitals, utilities, special districts, and departments and confirm/establish communication links with those organizations. (Operations, Planning, and Logistics Sections)
- Coordinate and publish a Communications Plan (ICS 205) and distribute as appropriate. (Logistics – COML)
- Coordinate the deployment of Washington County communications resources to ensure the most efficient use. (Logistics – COML)
- Regularly update the Incident Communications Plan. (Logistics – COML)
- Allocate, and coordinate the use of, amateur radio resources to “served agencies” within Washington County. (See Amateur Radio Plan, under separate cover. (Logistics – COML).

4.2.4 All Washington County Department Operations Centers

¹⁴ The reference to WCCCA should not be construed to imply it is are under the jurisdictional authority of Washington County and is intended to show its role in the communications organization.

- Confirm communications links with the EOC and partner agencies. Receive the Communications Plan from the County EOC (WebEOC or other means) and distribute internally as necessary.
- Prepare a department communications plan and provide a copy to the county EOC, along with updates as they are published.
- Coordinate all radio use with the EOC to ensure maximum efficiency of available resources.

4.2.5 Washington County Sheriff's Office

- Provide security for Washington County communications resources as necessary and as resources are available.
- Coordinate the use of the 800 MHz system interoperability/auxiliary resources, i.e. tactical dispatch units and cache radios, with WCCCA.
- With Emergency Management and Washington County Support Services, validate the availability of telephone lines, computer networks, and electrical power in support of the primary EOC at the Law Enforcement Center.
- Ensure the readiness of the UHF/VHF radio cache, Tactical Interoperability Units, and other radio equipment for immediate deployment.
- Upon the request of the EOC, deploy communications personnel and available radio equipment and/or caches as directed.
- As needed, provide manual relay of emergency communications traffic between field command posts and the EOC.

4.2.6 Washington County Land Use and Transportation DOC

- Coordinate 800 MHz and VHF radio use with WCCCA and the County EOC.

4.2.7 Washington County Information Technology Services

- Coordinate the deployment of County information technology and telecommunications resources to support EOC operations at the primary or alternate facilities.
- Assess the status of the County's information technology and telecommunications resources and determine restoration priorities.
- Restore damaged telecommunications and information technology functionality as soon as possible.

- Maintain IT and Telecomm equipment at Washington County's primary and alternate EOCs and DOCs during emergency operations.

5 Direction and Control

5.1 General

- The Incident Commander at the EOC has the authority to coordinate the use and deployment of County owned communications resources, and to order additional resources as necessary. Authority may be delegated to the Logistics Section Chief.
- The Logistics Section Chief receives requests for communications resources and, as appropriate, match available resource requests with available resources. The Logistics Section Chief may, with the approval of the IC, order additional resources as needed.
- Technical management of communications resources may be further delegated to a qualified COML who will coordinate the use of interoperable assets with the COMC at WCCCA, and with other spectrum users.¹⁵ The COML will submit a plan for incident communications to the Logistics Section Chief for approval.
- The EOC may activate Washington County amateur radio volunteers through the RACES Radio Officer to provide emergency communications. ARES/RACES volunteers may also be dispatched throughout the county to provide situation assessment, conduct damage assessments, conduct welfare checks, or otherwise provide or augment emergency communications between an incident site and the County EOC or DOC.

5.2 Continuity of Government

- Each County department or agency with communications responsibilities shall establish a line of succession for communications personnel to provide a point of contact for partner agencies.
- If communications cannot be established between the Washington County EOC, the County Administrator, and/or elected officials, a Washington County Sheriff's Deputy, other County staff, or an ARES/RACES volunteer, equipped with a radio may be utilized to contact the person(s) in question and provide a communications relay, as needed.

¹⁵ At present, there is no region wide plan for coordination/allocation of interoperability frequencies. In the event of a major disaster affecting the region or state, such coordination will be essential.

- The Washington County EOC shall maintain communications with Oregon Emergency Management's Emergency Coordination Center (ECC).

6 Readiness Levels

Not all incidents or events require an immediate response beyond day-to-day normal operations. It may suffice to simply monitor the situation and make subsequent adjustments to operations as conditions warrant. Monitoring is divided into three levels:

- Level 3 - Monitoring
 - Operate and maintain communications systems according to standard operating procedures.
 - Ensure that emergency operations and maintenance measures are ready to be implemented during disaster.
- Level 2 – Partial Activation of the EOC
 - Continue Monitoring as in Level 1.
 - Inform the County Administrator, County department heads, EOC staff, local emergency managers, WCCCA.
 - Contact ARES/RACES to confirm readiness and availability for activation. Check readiness of all equipment and facilities, and correct any deficiencies.
- Level 1 – Full Activation of the EOC
 - Continue Level 3 and 2 activities as appropriate.
 - Determine the operational status of all communications systems and activate auxiliary systems as needed.
 - Deploy appropriate staff for emergency duty and provide periodic updates on availability of non-deployed staff.
 - Activate and deploy volunteer communication organizations (ARES/RACES) as required by the emergency. Determine readiness status and availability for activation on non-deployed personnel.
 - Prepare and disseminate public emergency messages as needed. (See Emergency Public Information Annex)
 - Plan for possible 24-hour staffing of EOC and incident response.
 - Conduct periodic communications checks of equipment and with field personnel.

7 Administration and Logistics

7.1 Facilities and Equipment

- County departments that maintain their own communications equipment shall provide an updated inventory of equipment to the EOC when requested by the Incident Commander.

7.2 Maintenance of Records

- All documents generated as part of an activation of this plan shall be maintained in accordance with applicable state records retention rules. Examples of such documents include, but are not limited to:
 - Communication Plans (ICS 205)
 - Community Notification System (CNS) messages
 - Emergency Alert System (EAS) messages
 - WebEOC Incidents
- If the EOC is activated, maintenance of these records will be the responsibility of the Planning Section Documentations Unit.
- If the EOC is not activated, or after the EOC is deactivated, maintenance of these records is the responsibility of Washington County Emergency Management.

7.3 Maximizing Communications

7.3.1 Radio Discipline

- All radio system users should be advised to use appropriate radio discipline to maximize the availability of limited radio bandwidth during emergencies or disaster. All 800 MHz radio system users will also be reminded of proper procedures in response to system busy signals.
- During emergencies involving multiple agencies and/or jurisdictions, users should strive to use plain language, avoiding unnecessary codes and jargon.

7.3.2 Telephone (common carrier)

- Overloaded Circuits
 - Overloaded telephone circuits should be expected. While steps to minimize overload may be attempted, such as asking the public to limit calls to

emergencies only, emergency users should expect overloads to continue until the emergency diminishes.

- Telephone and cellular users with GETS/WPS privileges will have access to the public switched telephone system and wireless/cellular systems using their GETS and/or WPS cards, assuming that they can get a dial tone/cellular signal.

- **Emergency Service**

- During major emergencies, the Washington County EOC and local carriers may wish to exchange liaisons or direct telephone numbers to coordinate service restoration.

7.3.3 Telephone (Washington County-owned systems)

- To decrease the load on internal telephone systems during an emergency or EOC activation, county employees may be directed to limit calls to those of vital operational need.

7.3.4 Computer Network (Internet)

- During major emergencies, the Washington County EOC and its broadband service provider may wish to exchange liaisons or direct telephone numbers to coordinate service restoration.

7.3.5 Computer Network (Washington County-owned systems)

- During major emergencies, members of the Broadband User Group (BUG) may agree to limit use of the backbone system to accommodate emergency bandwidth requirements for all users (e.g., no streaming video of television broadcasts).

7.4 Physical Security

Depending on the nature of the event, physical security measures will be instituted to ensure that only authorized personnel will have access to communications facilities. Levels of physical security vary by facility. Refer to each department's or facility's security policy and terrorism protection measures for details.

7.5 Training

Each County department is responsible for ensuring that their employees are trained on the procedures and mechanics of using their communications systems.

Washington County Emergency Management is responsible for ensuring that the EOC staff is familiar with set-up and operation of EOC communications.

7.6 Support

If communications requirements exceed the capability of local resources, the EOC may request additional support from mutual aid partners, commercial communications companies, or the state through the state ECC.

8 Annex Development and Maintenance

- Washington County Emergency Management is responsible for maintaining this annex.
- Each tasked department or agency will develop procedures to implement this annex.
- This annex will be updated according to the schedule outlined in the Basic Plan.

9 References

- Oregon Revised Statutes (ORS) Chapter 401, Emergency Management and Services, 2011 Edition and ORS Chapter 403, 9-1-1 Emergency Communications Systems; 2-1-1; Public Safety C Communications Systems
- Washington County Emergency Management Ordinance, Chapter 8.36
- Major Emergency Guidelines (WCCCA SOG 29)
- Evacuation of Dispatch Center (WCCCA SOG)
- 9-1-1 Service Interruption (WCCCA Agency Directive 3.4.10)
- Notification of the Emergency Management Cooperative (WCCCA Agency Directive 3.4.12)
- Evacuation of Dispatch Center (WCCCA Agency Directive 3.4.5)
- Washington County Amateur Radio Communications Plan
- National Interoperability Field Operations Guide (NIFOG ver. 1.4), U. S. Department of Homeland Security, January 2011
- National Response Framework, ESF 2 (Communications)
- Portland UASI Area Tactical Interoperability Communications Plan

10 Tabs

- Tab 1 – Definitions of Commonly Used Terms

- Tab 2 – Communications Systems Used by Public Agencies

- Tab 3 – A Brief Description of the Joint WCCCA/C-COM Public Safety Communication System

Tab 1 – Definitions of Commonly Used Terms

Analog – For the purpose of this plan, analog refers to radio communications or systems that use a continuous function of non-quantized variances in frequency and amplitude to propagate information via radio waves. The 800 MHz trunked radio system is an analog system.

ARES – *Amateur Radio Emergency Services* – A volunteer amateur radio organization under the auspices of the American Radio Relay League, which provides emergency communications support using amateur radio equipment and frequencies during emergency or disaster situations. In Washington County ARES volunteers are concurrently identified as RACES volunteers. (See RACES)

Bandwidth – The amount of information, whether analog or digital that can be carried by a communications system during a specific time period, i.e. the size of the “pipe” that carries voice or data communications. As it relates to radio systems, bandwidth is limited by the number of frequency pairs (think traffic lanes) allocated to a system. This limits the number of users who can simultaneously use the system.

C800 – The 800 MHz portion of the Clackamas County Department of Communications public safety radio system.

C-COM – The Clackamas County Department of Communications, also known as C-COM (pronounced see-COM), provides 9-1-1 emergency and non-emergency call taking service to the public. C-COM also provides radio dispatch services to 6 law enforcement agencies and 9 fire districts and departments. Please browse the menu above for additional information.

CityWatch – An Internet based system that allows for mass alerts via landline and cellular phones, pagers, email and text messaging. The system can also be used to send messages to predetermined groups of responders.

Cellular – Wireless telephone services provided by various commercial vendors.

Critical Facilities - In the course of conducting a windshield survey of a first response area, responders should assess these facilities for major damage. Examples of critical facilities include: schools (if in session), hospitals, nursing homes, public safety buildings, major hazardous materials facilities, major thoroughfares, including overpasses and bridges.

COML – *Communications Unit Leader*. The COML is an NIMS ICS position in the Services Support Group under the Logistics Section. Qualifications for the COML position include attendance at a Type III or higher COML course and the completion of a COML workbook based on standards set by the Office of Emergency Communications – Department of Homeland Security.

COMC – *Communications Coordinator*. The COMC is an official in control of radio spectrum within a defined geographical area. The COMC works with COMLs to coordinate use of licensed or granted radio spectrum among multiple user organizations.

Community Notification System (CNS) – See *CityWatch*.

Communications Bridge – A set of radios that are interconnected through a “gateway” providing interoperability between otherwise exclusive systems.

CRESA – Clark Regional Emergency Services Agency – The emergency management agency for Clark County Washington.

Department Operations Center (DOC) - Location from which Washington County departments direct incident operations and manage department resources.

Digital - A digital system is a data technology that uses discrete (discontinuous) values, i.e. ones and zeroes. By contrast, non-digital (or analog) systems represent information using a continuous function.

EAS – The Emergency Alert System is a national public warning system that requires broadcasters, cable television systems, wireless cable systems, satellite digital audio radio service (SDARS) providers, and direct broadcast satellite providers to provide the communications capacity to the President to address the American public during a national emergency. The system may also be used by state and local authorities to deliver important emergency information, such as AMBER alerts and weather information targeted to specific areas. In Washington County, the EAS is maintained by WCCCA.

ECC – Emergency Coordination Center – Essentially the functional equivalent of an EOC. Two examples of the use of ECC vs. EOC are the City of Portland and Oregon Emergency Management. The use of *coordination* rather than *operations* is intended to indicate the center’s primary focus on coordination of resources versus the direct command of on-scene operations.

EOC – *Emergency Operations Center* – During major emergency or disaster operations, the County EOC establishes strategic goals for County and countywide activities, manages resources and information, and coordinates with local, state and other agencies. The EOC is generally responsible for coordinating public information, resource allocation decisions, and policy decisions on a countywide basis in support of DOCs, FOCs, city EOCs, other EOCs, and a regional EOC if activated.

EOP – Emergency Operations Plan

Expanded Dispatch – A structure and procedure for optimizing resource management during large incidents and major emergencies, when demand exceeds system capacity and incident prioritization may be necessary. EOC activation is usually not indicated. Washington County expanded dispatch is located at WCCCA and is supported by Hillsboro and TVFR incident management teams and also by law enforcement for event and certain other law enforcement activities.

Failsoft – A condition wherein the 800 MHz trunked system zone controller has suffered a failure. “FAILSOFT” will appear in the radio display and the radio will default to a predefined “zone”. Users will have limited channel availability.

First Responder – Anyone tasked with responding to emergency situations in the field including Firefighters, law enforcement officers, EMS personnel and public works crews. Major emergencies/disasters may require the use of non-first responders to assume the role of first responder.

FOC – *Fire Operations Center* – Location from which TVF&R incident management directs, coordinates, and supports major emergencies. The primary location for the FOC is at the TVF&R headquarters in Tigard.

Frequency – An established slice of radio spectrum used for simplex communications, e.g. 155.805 MHz.

GETS – *Government Emergency Telephone System*. GETS, in cooperation with the landline telephone service provider, provides enrolled users with priority access to an overloaded landline system, i.e. “head of the line” privileges. GETS, and its wireless counterpart WPS, should only be used in an emergency or crisis situation when the PSTN is overloaded (congested) and the ability to complete a call by normal means is significantly decreased.

GHz – Gigahertz. Equal to one billion Hertz.

Hz – Hertz. A unit of frequency defined as the number of cycles per second of a periodic phenomenon. In radio, hertz is used to describe a radio frequency sine wave.

IP – Internet Protocol

Interoperability – Interoperability is the ability of public safety agencies to talk across disciplines and jurisdictions via radio communications systems, exchanging voice and/or data with one another on demand, in real time, when needed, and as authorized.

- The federal government has established a set of federal interoperability channels across the radio spectrum that can be programmed into local radios. The National Interoperability Field Operations Guide (NIFOG) has information on channel programming as well as rules governing the use of these channels.
- Locally, the Portland UASI Region Tactical Interoperability Communications Plan (TICP) contains agreed upon standard operating procedures for the joint use of local, state and federal radio spectrum during an emergency or disaster.

Incident Prioritization -

- | | |
|----------------------------|--|
| Priority 1 Incident | Requires immediate action. Known life safety risk and/or confirmed multiple victims/patients. |
| Priority 2 Incident | Unknown life safety risk or known minor injuries. |
| Priority 3 Incident | Property damage, alarms (expect medical) or public assistance calls. These incidents only receive resources when all Priority 1 & 2 incidents have been handled. |

Iridium – One of several proprietary satellite telephone and data systems. Iridium is the predominant system used for Washington County emergency backup communication.

Landline – *See PSTN.*

MHz – *Megahertz.* Equal to one million Hertz.

NPSPAC – National Public Safety Planning Advisory Council. NPSPAC frequencies, or channels, refer to public safety radio spectrum from 886-869 MHz. This spectrum is governed by 55 regional NPSPAC planning committees that coordinate its use. In this document NPSPAC generally refers to 800 MHz interoperability channels pre-programmed into responder radios.

Operation SECURE - *State Emergency Communications Using Radio Effectively* is a high-frequency (HF) radio network that provides a secondary emergency back-up communications capability for intra- and inter-state use.

PSAP – *Public Safety Answering Point* - A physical location where 9-1-1 emergency telephone calls are received and then routed to the proper emergency services.

PSTN – *Public Switched Telephone Network* – Also known as POTS, or *Plain Old Telephone Service*. The standard landline telephone system in use throughout the country.

RACES - *Radio Amateur Civil Emergency Service* - A protocol created by the Federal Emergency Management Agency (FEMA) and the Federal Communications Commission and in accordance with FCC Regulations (Title 47, Part 97.407). RACES volunteers serve their respective jurisdictions pursuant to guidelines and mandates established by local emergency management officials. (See ARES)

Radio Channel – A name given to a frequency or frequency pair that describes the intended use. An example would be the Non-Federal VHF channel known as VTAC 34 which is a coordinated pair of radio frequencies that are used in a radio repeater for interoperability.

Satellite Communication – The use of orbiting satellites that act as radio repeaters to transmit messages, both voice and data, over long distances.

Simplex – Radio communication between two mobile or portable radios using a single radio frequency, without the benefit of a repeater or trunked system. Simplex communication is generally restricted to line of site, although in ideal circumstances that can still be several miles.

Simulcast - Simulcast refers to the process of transmitting the same signal from multiple sites on the same frequency at the same time. In public safety radio systems, this permits users to have broader radio coverage than would be possible with a single site.

Tactical Dispatch Unit (TDU) – A type of portable radio gateway, or communications bridge, that incorporates an 800 MHz trunked radio, two VHF radios, a UHF radio and an Aviation (Air Band) radio. Washington County has two such systems that are maintained by the Sheriff's Office. In addition, each county in the five-county UASI region has two identical TDUs.

Tactical Negotiations Team – The Washington County Tactical Negotiations Team (TNT) is a highly skilled and specially-equipped tactical unit that responds to extremely hazardous situations where conventional police tactics and equipment may be inadequate.

Talk Group - A term describing a “channel” in a trunked radio system.

Tactical Interoperability Communications Plan (TICP) – The TICP is intended to document what interoperable communications resources are available within the urban area, how to access each resource, and what rules or operational procedures exist for the activation and deactivation of each resource.

TRS – *Trunked Radio System*. The concept of a trunked system is similar to a cellular phone system. It uses a system of geographically dispersed repeaters and a finite number of frequencies to support a large number of individual radio users. Because everyone is not using the radio at the same time, a trunked system can support literally hundreds of “talk groups” using a much smaller number of actual channels. In Washington County, the WCCCA system uses a total of 17 channels, 16 are dedicated to voice communication, while the 17th is used for data/system control.

Trunking Controller – The part of a trunked radio system that coordinates radio communication between several radio channels in a trunked radio system.

UASI – *The Urban Area Security Initiative*. The UASI comprises Clark County in Washington and Multnomah, Clackamas, Columbia and Washington counties in Oregon. In this plan UASI means the counties included in a geographical region who work together to coordinate emergency communications and interoperability.

UHF – *Ultra High Frequency*. The segment of the radio frequency spectrum between 300 MHz and 3 GHz.

VPN – *Virtual Private Network*. A VPN allows members of a computer network to securely access the network through a Wi-Fi link to the Internet. Generally, a VPN requires a user name and password to verify access.

VHF – *Very High Frequency*. The segment of the radio frequency spectrum between 30 – 300 MHz.

WCCCA – Washington County Consolidated Communications Agency (9-1-1). Washington County’s Public Safety Answering Point (PSAP).

Windshield Survey – A reconnaissance conducted to assess the scope of the problem and identify response priorities in a first response area.

Wi-Fi – A type of Wireless Local Area Network (WLAN) that allows electronic devices to exchange data or access the Internet through radio waves. Wi-Fi is accessed through Wi-Fi access points or “hotspots” that are, in turn, connected to the Internet, generally, via a wired connection.

Wireless – A communications system that utilizes radio frequency propagation to send data from one point to another. Commonly known as radio, wireless also includes broadcast radio, television, cellular telephone and paging among others.

WPS – *Wireless Priority System*. Similar to the Government Emergency Telephone System (GETS), WPS, in cooperation with the enrolled subscribers wireless telephone provider, allows users priority access into the wireless telephone system. As with GETS, the WPS should only be used in an emergency or crisis situation when the wireless telephone system is overloaded (congested) and the ability to complete a call by normal means is significantly decreased.

WebEOC – An Internet (web) based software application that provides a “Virtual EOC” environment that can be viewed by authorized users wherever an Internet connection exists.

Tab 2 – Communications Systems Used by Public Agencies

Communications Systems Used by Washington County Public Agencies

#	Name	Users	Freq. Band	Purpose	Equipment Maintenance
	Public Safety 800 MHz	Fire, Law Enforcement, franchise ambulance service	Motorola Smartzone Trunked 800 MHz	Public Safety Dispatch	WCCCA
	Amateur Radio	EOCs @ county, cities, hospitals, special service districts, utilities	HF, VHF, UHF, MW	Backup emergency and auxiliary communications	ARES/RACES
	Broadband Users Group (Internet)	Public agencies	Fiber, cable	Computer network backbone	CITY OF HILLSBORO
	Computer Aided Dispatch (CAD)	WCCCA, Public Safety Users	Data line	Public safety dispatch	WCCCA
	Community Notification System (CityWatch)	WCCCA, Public Safety Users	Computer, telephone	Alert & Warning for public, public safety agencies	WCCCA
	Fire Net	Statewide fire agencies	VHF	Fire service mutual aid net	WCCCA
	Fire VHF	Washington County Fire agencies	VHF	Backup communications	WCCCA
	LUT Dispatch	Washington County LUT	Trunked 800 MHz and VHF	Dispatch, comm w/field units. VHF used as auxiliary only.	WCCCA
	Metro West Dispatch	Metro West Ambulance Service	VHF	Ambulance Dispatch	METRO WEST
	Mountain Wave Communications	Sheriff's Office SAR	VHF, UHF, cellular, field IT support	SAR Operations	MOUNTAIN WAVE
	Public Works	Hillsboro, Cornelius, Forest Grove, North Plains	VHF	Public Works Dispatch, field units	CITY OF HILLSBORO
	SAR VHF	Sheriff's Office	VHF	Search & Rescue Operations	WCSO
	Satellite Phones	Sheriff's Office, Department of Health and Human Services, Facilities Division	N/A	Backup communications	Agencies in possession of phones.
	UHF 460 MHZ	Sheriff's Office	UHF	Search & Rescue Operations and backup to 800 MHz	WCSO, WCCCA

Tab 3 – A Brief Description of the Joint WCCCA/CCOM Public Safety Communication System

1. 800 MHz Trunked Radio System – Washington County Consolidated Communications System (WCCCA)

- Central System 16 channel 7 site Simulcast Trunking (has overlapping coverage into Clackamas, Clark, Marion and Yamhill Counties)
- West System 6 channel 4 site Simulcast Trunking (has overlapping coverage into Clark, Tillamook, Clatsop, and Columbia counties)
- Southwest Repeater Site 5 channel 1 site Trunking (has overlapping coverage into Yamhill, Marion and Clackamas Counties)
- Central West Repeater Site (Planned) – 5 channel 1 site Trunking. (Will have overlapping coverage into Tillamook and Yamhill counties).

2. 800 MHz Trunked Radio System – Clackamas County Department of Communications (C-COM)

- C800 Central System 10 channel 6 site Simulcast Trunking (has overlapping coverage into East Washington County from Beaverton South to the County line, North Marion and Multnomah counties)
- C800 East System 7 channel 3 site Simulcast Trunking (has overlapping coverage into Multnomah and Hood Counties)
- C800 SE Repeater Site 5 channel 1 site Trunking (has overlapping coverage into SW Washington County)
- C800 SW P25 Repeater Site 4 channel 1 site P25 Trunking (primarily for demonstration purposes but useable as might be needed for wide are communications) (has overlapping coverage into SW Washington County).

3. Non Trunked 800 MHz, VHF, UHF Resources (WCCCA)

- Six 800 MHz conventional interoperable repeaters operating on federal and state interoperability frequencies from three separate radio sites around the county.
- Two VHF remote base stations at two radio sites operating on non-federal VHF interoperability frequencies (VCALL and VTAC1)
- Two UHF repeater station at 2 radio sites operating on the UCALL and UTAC1 National Interoperable channel.

- One VHF repeater on Fire F1 channel located on Cooper Mountain.
- One VHF repeater on the State Fire net frequency at Bald Peak.
- Radio Cache consisting of 100 portable radios and chargers that are on the WCCCA, C800, Portland, CRESA systems as well as being programmed with National and State interoperable channels and simplex channels.
- Four portable control stations configured as re-locatable dispatch positions. These control stations are on the WCCCA, C800, Portland, and CRESA systems as well as being programmed with National and State interoperable channels and simplex channels.

4. WCCCA Mobile Communications Trailer and F-550 Tow Vehicle

- Four conventional 800 MHz repeater systems on National interoperability frequencies.
- Four conventional UHF (450 MHz) repeater systems on National interoperability frequencies.
- Four conventional VHF (150 MHz) repeater systems on National interoperability frequencies.
- Two 700/800 MHz trunked radios used to link WCCCA, C800, Portland, and CRESA talk groups to one or more of the Interoperable repeaters (VHF, UHF, 800).
- IP (Internet Protocol) based patch subsystem that interconnects the 800 MHz, 450 MHz and 150 MHz repeater systems and the two 800 MHz trunked radio links.
- 18 KW trailer mounted generator with 100+ gallons of diesel fuel.
- 600 AH of battery backup to support operations of the radio equipment for up to two days.
 - NOTE: 48 of the cache radios are stored in bank chargers and ready for immediate transport/deployment with the trailer.
 - NOTE: Tow vehicle has an auxiliary refueling capacity of 75 gallons in addition to normal vehicle fuel capacity to be used to refuel the trailer generator in the field.

5. High Capacity Mobile Generator.

- One 20 KW generator with onboard fuel tank and electrical panel/service for 120 VAC and 240 VAC power.

This page intentionally left blank.