

# 800 MHz Subscriber Training

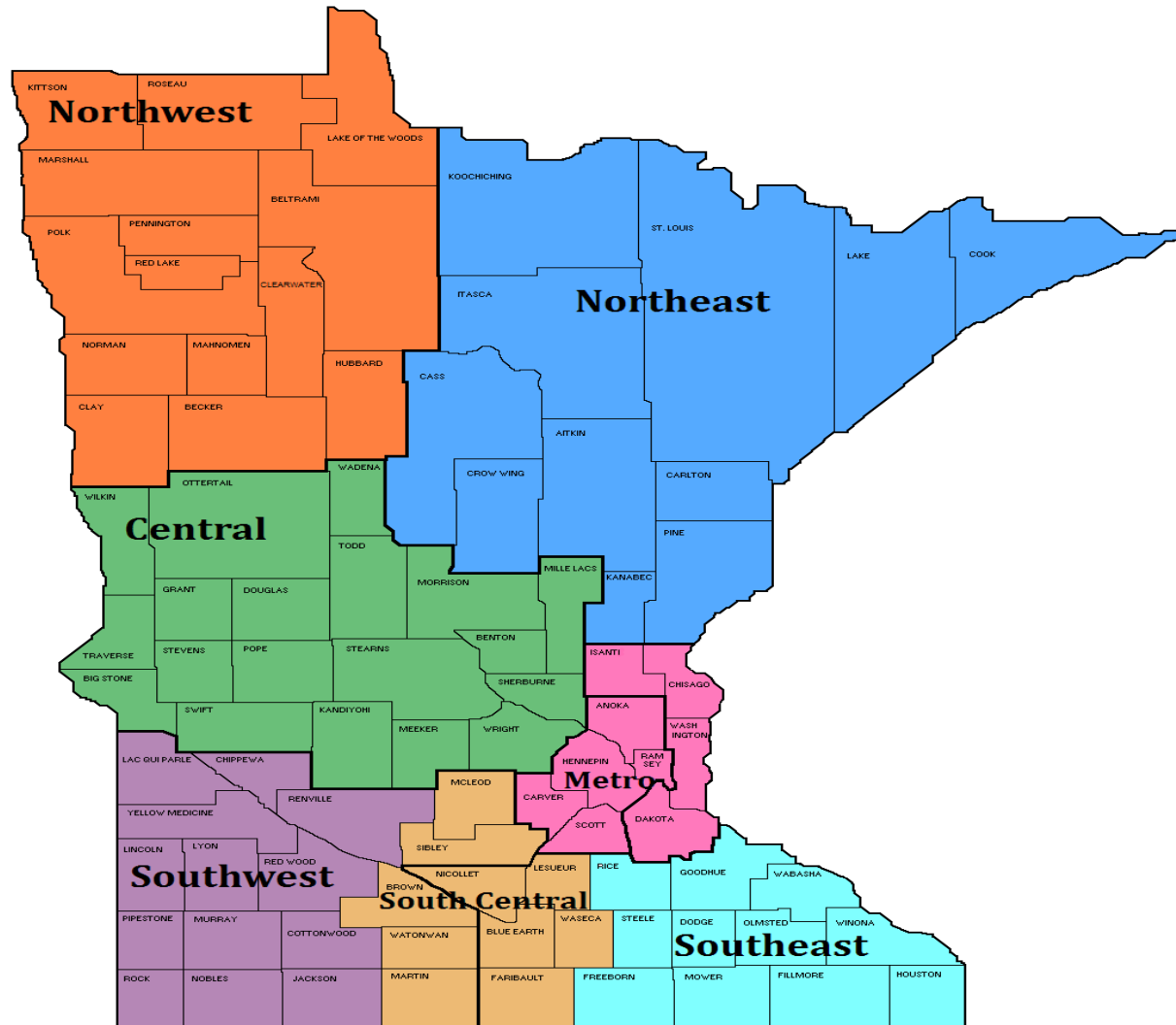
Wakota Caer

# 800 MHz Subscriber Training

## ▶ ARMER Radio System

- Allied Radio Matrix for Emergency Response.
  - Statewide 800 MHz System
    - 317 of the 324 Sites on the air (97%)
    - State and Local owned sites
      - Local Owned site are for coverage and capacity enhancements
- More information can be found “<http://www.dot.state.mn.us/oec/>”

# 800 MHz Subscriber Training



# 800 MHz Subscriber Training

- All users on the ARMER Radio system are governed by a number of State and Regional Standards. These standards can be reviewed at the following links:
- Statewide Radio Standards
  - <https://dps.mn.gov/divisions/ecn/programs/armer/Pages/armer-standards.aspx>
- Regional Radio Standards
  - <http://www.mn-mesb.org/metro-area-armer-system/metro-standards/>

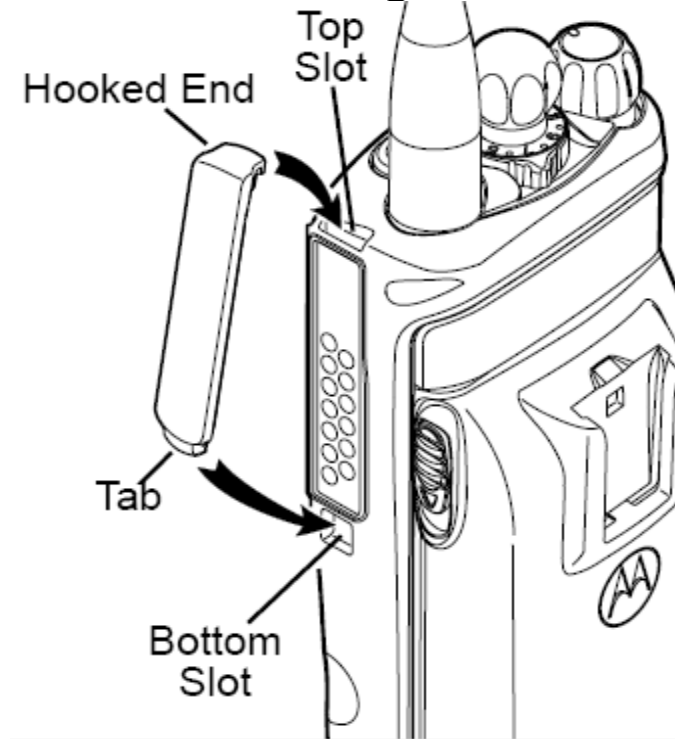
# 800 MHz Subscriber Training

- Radio Unique Identification Number
  - Each subscriber radio is programmed with a unique identification number or UID.
  - Radios can be tracked across the system
  - System Administrator can disable a radio(s) from operation or inhibit the unit.

# 800 MHz Subscriber Training

## ▶ Portable Radio Operation

- The microphone Connector should always be covered. There is voltage at the contacts and if they come contact with metal objects the radio can be damaged.



# 800 MHz Subscriber Training

## ► Portable Radio Operation

- Buttons – XTS 2500

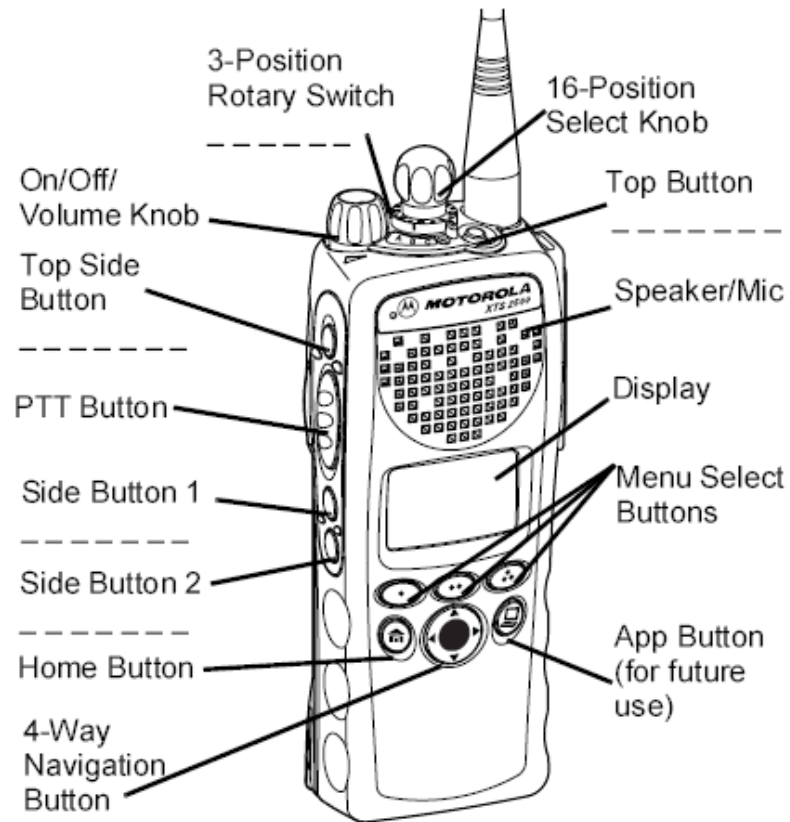
Top Button (Orange) – Light

3 Position Rotary Switch – Scan / Blank / Scan Edit

Top Side Button (Purple) – Monitor / Call Response

Side Button 1 – Keypad Lock

Side Button 2 – Talk around / Site Display/Search

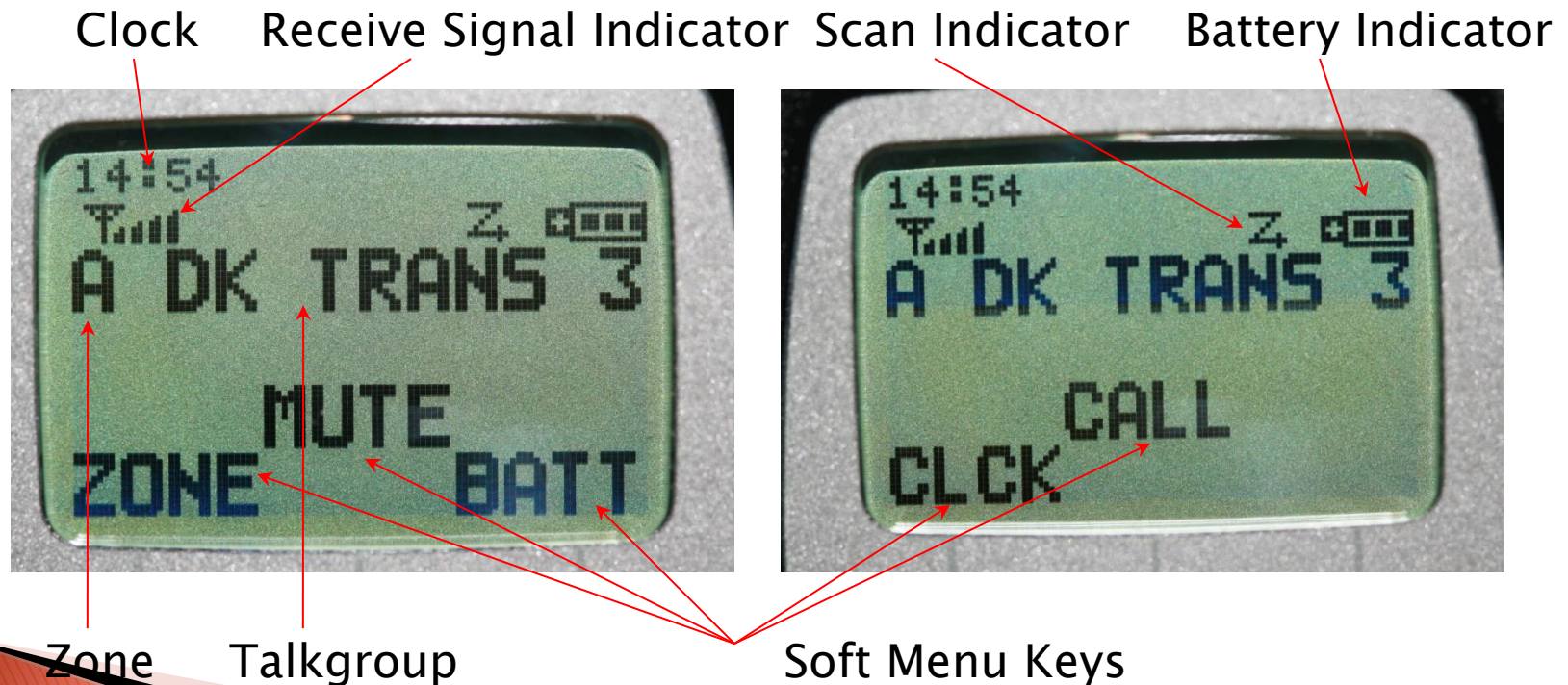




# 800 MHz Subscriber Training

## ► Portable Radio Operation

- Display – XTS 2500





# 800 MHz Subscriber Training

## ► Portable Radio Operation

- Display – XTS 2500

Receive Signal Indicator   Scan Indicator   Scan Edit (Flashing)



Zone

Talkgroup

Battery Indicator

# 800 MHz Subscriber Training

## ▶ Soft Menu Options

### ◦ Conventional & Trunked Modes

- Zone – Allows user to change the operating zone of the radio.
- NUIS – Nuisance delete when in scan mode pressing this button temporarily removes that active talkgroup / channel from the scan list.
- MUTE – Toggles the audio produced by the keypad selection and channel change tones on or off. This does not remove the Proceed to talk beep.
- CLCK – Allows user to adjust the time and parameters of the radio clock display.
- BATT – Displays the Rated Capacity, Remaining Capacity, and the Estimated number of charges of the attached battery.
- CALL – Used to generate radio to radio ID calls. (Technicians use this to check the ID of the radio)

# 800 MHz Subscriber Training

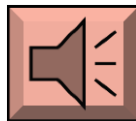
## ► General Operation

### ◦ Receiving a Call

- Straight forward – as long as the volume is turned up the radio will receive the incoming call and relay the audio through the built in speaker.

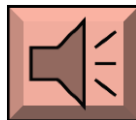
### ◦ Transmitting a Call

- The major difference with the 800 MHz radios to WAIT FOR THE PROCEED TO TALK TONE or “beep” before speaking. If you do not, the first part of your message will not be transmitted or if it is a short transmission the entire message could be missed.



Proceed to Talk

- If the talkgroup you are attempting to transmit on is in use by another user you will get a “bonk”. The system does not allow users to transmit over one another with the exception of the dispatch console positions at the Dakota Communication Center (DCC).

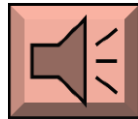


Talkgroup in Use

# 800 MHz Subscriber Training

## ▶ General Operation

- On the rare occasion that all of the repeaters in the system are busy you will get an audible busy indication. In this case you may either continue to hold the PTT button in the depressed position and wait for the proceed to talk tone or simply release the PTT button and when the system has freed up a repeater you will hear the proceed to talk tone. You can then press the PTT and begin your transmission after the proceed to talk tone (beep).



System Busy

- The unit will always transmit on the selected talkgroup

# 800 MHz Subscriber Training

## ▶ Portable Radio Operation

### ◦ Changing Talkgroups \ Channels

- To change from one talkgroup to another in the same zone simply rotate the channel selector knob on the top of the unit. The talkgroups will be shown on the display.


### ◦ Changing Zones

- To change the active zone of the radio, press the soft menu button below the word zone on the display, the Zone identifier or first letter(s) on the display will begin to flash. Toggle through the zones using the left and right arrows of the 4-way navigation button on the front of the unit. When the desired Zone is reached press the home key briefly to leave the Zone select mode. The zone identifier character on the front display will stop flashing. The channel select knob can then be rotated to select the desired talkgroup \ channel. Alternately once the desired zone is reached the channel selector knob can be turned to the desired channel / talkgroup in that zone.

# 800 MHz Subscriber Training

## ▶ Portable Radio Operation

### ◦ XTS 2500 Scan \ Priority Mode

- The 3-Position Rotary switch is used to change the scan modes.
  - Position A – The radio in scan mode. When the radio is actively scanning there will be a “Z” with an arrow on the bottom leg just before the battery indicator on the display. The radio will now scan the talkgroups in the scan list. 
  - Position B – The radio is not scanning and operates only on the selected channel.
  - Position C – The radio is scan list edit mode.
- The selected talkgroup is programmed to be the priority talkgroup. This is also where any transmission will be generated when the PTT is depressed.



# 800 MHz Subscriber Training

## ▶ Portable Radio Operation

### ◦ XTS 2500 Editing the Scan List

The scan list in the radio can be reprogrammed by the end user. This is accomplished via the scan edit mode and the soft menu keys.

To modify or review the scan list, put the radio into scan edit mode by placing the 3-position rotary switch in the “C” position. A flashing square will be displayed above the battery indicator. The soft menu keys will now display “SEL” for select, “DEL” for delete and “RCL” for recall.

Rotate the channel selector knob to the desired channel / talkgroup and press the soft menu key for select. The “Z” with an arrow on the bottom leg will be displayed on the screen indicating this talkgroup is now in the scan list. To remove a talkgroup press the delete soft menu key.

Pressing the recall key will toggle through each of the talkgroups in the current scan list.

# 800 MHz Subscriber Training

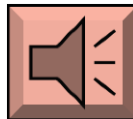
## ▶ Portable Radio Charger / Charging

- XTS Portable Radio utilizes an IMPRES™ charging scheme which allows the battery to remain in the charger for extended periods of time.
- Charger LED Display
  - Flashing RED – Battery can not be charged – Contact Radio Services.
  - Flashing YELLOW – Battery is waiting to charge – This is usually caused by the battery being too hot or too cold.
  - Steady RED – Rapid Charge mode – Normal operation.
  - Flashing GREEN – Battery is almost completely charged – Normal operation.
  - Steady GREEN – The battery is completely charged and ready for use – Normal operation.
  - Flashing RED / GREEN – The battery is not charging properly – Contact Radio Services.
  - Steady YELLOW – Reconditioning the battery – The charger is discharging the battery after it has reached the discharged level the unit will go into rapid charge mode and the LED will display steady RED.
  - If the LED does not light check the radio for proper insertion into the charger base.

# 800 MHz Subscriber Training

## ▶ Portable Radio Charger / Charging

- XTS 1500 utilizes an IMPRES™ charging scheme which allows the battery to remain in the charger for extended periods of time.
- Charger LED Display
  - Flashing RED – Battery can not be charged – Contact Radio Services.
  - Flashing YELLOW – Battery is waiting to charge – This is usually caused by the battery being too hot or too cold.
  - Steady RED – Rapid Charge mode – Normal operation.
  - Flashing GREEN – Battery is almost completely charged – Normal operation.
  - Steady GREEN – The battery is completely charged and ready for use – Normal operation.
  - Flashing RED / GREEN – The battery is not charging properly – Contact Radio Services.
  - Steady YELLOW – Reconditioning the battery – The charger is discharging the battery after it has reached the discharged level the unit will go into rapid charge mode and the LED will display steady RED.
  - If the LED does not light check the radio for proper insertion into the charger base.



Low Battery Chirp

# 800 MHz Subscriber Training

## ► Portable Radio Charger

Radio must face forward and make sure the fins of the charger fit into the grooves of the battery and the LED indicator lights



LED Indicator

# 800 MHz Subscriber Training

## ► Fleetmap

### ◦ XTS 2500 Wakota Caer Fleetmap

#	ZONE - 1	ZONE - 2	ZONE - 8C	ZONE - MN
1	CAER	8SOA1	CAER	CAER
2	PCA EXT	8SOA2	8CALL90R	STAC 1
3	MN HAZMAT	H-TAC3	8TAC91R	STAC 2
4	MNHAZTAC1	H-COMM	8TAC92R	STAC 3
5	MN DO	DK AV OP2	8TAC93R	STAC 4
6	HSEM	DK B2 OP2	8TAC94R	STAC 5
7	ME TAC 5	DK EA OP2	8CALL90D	STAC 6
8	ME TAC 6	DK FF OP2	8TAC91D	STAC 7
9	ME TAC 7	DK HA OP2	8TAC92D	STAC 8
10	ME TAC 8	DK RH OP2	8TAC93D	STAC 9
11	STAC 1	DK IF OP2	8TAC94D	STAC 10
12	STAC 2	DK LA OP2	8SOA1	STAC 11
13	STAC 3	DK MF OP2	8SOA2	STAC 12
14	STAC 4	DK MV OP2	8SOA3	8SOA1
15	CAER	DK R1 OP2	8SOA4	8SOA2
16	DYN REGP	DK SM OP2	CAER	CAER

# 800 MHz Subscriber Training

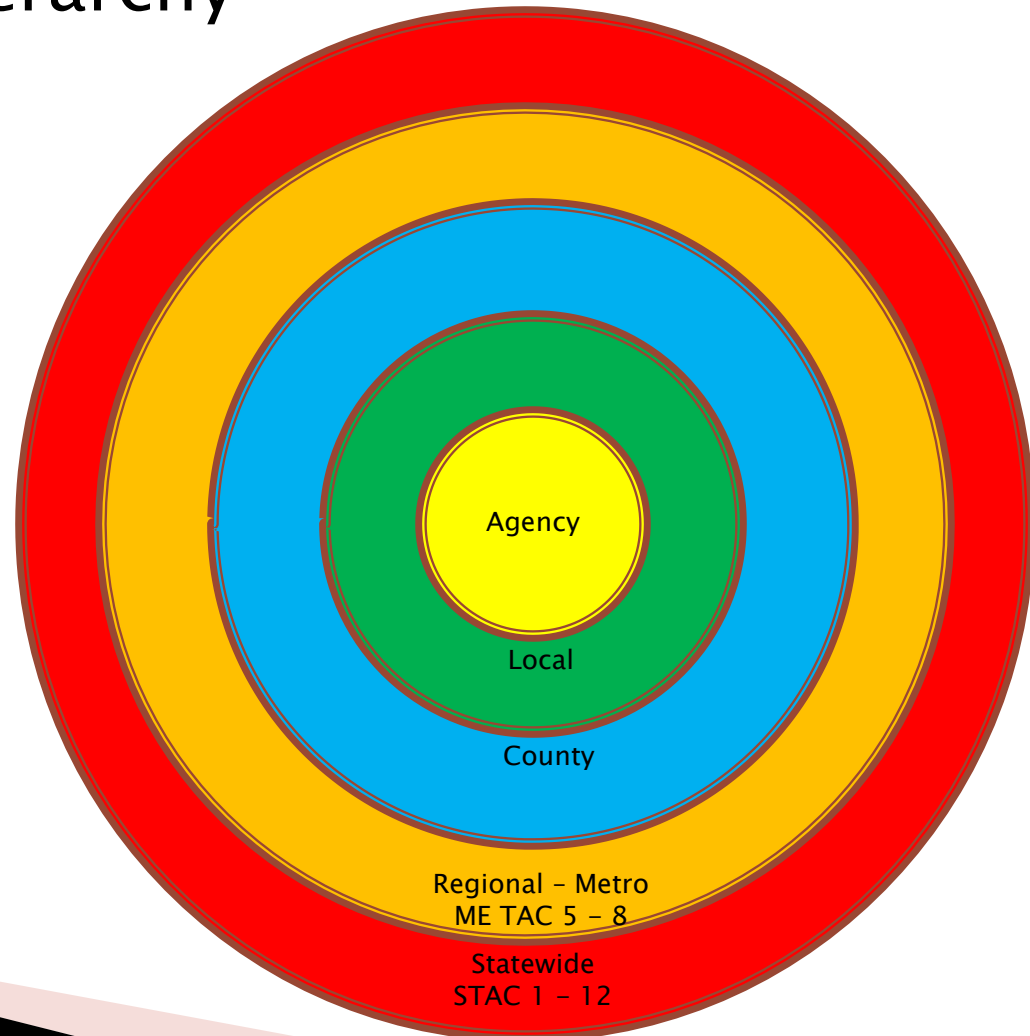
## ► Fleetmap

- Zone 1 – Daily Operations – This is the zone where most of the typical ERT communications will take place.
- Zone 2 – Dakota County Fire – This zone contains the talkgroups where on scene operational communications would be conducted between Wakota Caer staff and Dakota County Fire Department personnel.
- Zone 8C – This zone contains 800 MHz conventional resources used for large scale events that are not on the ARMER System. These resources could be assigned for a large scale incident outside of Minnesota.
- Zone MN – Regional ICS – This is the Incident Command Zone. If a major incident were to happen in Dakota County which would require multiple agencies to work together the communications would take place on these resources. These are regional and statewide talkgroups.



# 800 MHz Subscriber Training

## ► Talkgroup Hierarchy



# 800 MHz Subscriber Training

## ► Talkgroup Definitions

- CAER – This talkgroup is designed for Wakota Caer radio to radio communications.
- PCA EXT, MN HAZMAT, MNHAZTAC1, and HSEM are statewide HAZ MAT response talkgroups.
- MN DO is a talkgroup used to contact the Minnesota Duty Officer
- ME TAC 5 – 8 – These are Metro-region talkgroups requested to be in all radios for interoperability communications on major incidents. Note: ME TAC 1 – 4 are reserved for public safety and are not allowed in these radios.
- STAC 1 – 12 – These are statewide talkgroups requested to be in all radios for interoperability communications on major incidents.
- DYN REGP – this is a location in the radio where Radio Services can reprogram the radio over the air or remotely to a new talkgroup. This would be used in a large scale incident where multiple disciplines need to communicate and the other talkgroups were in use.

# 800 MHz Subscriber Training

## ► Talkgroup Definitions (continued)

- 8SOA 1 - 4 - These are the Scene of Action channels. They only communicate from radio to radio, not through the system. This limits the range of the communications but is used as a fall back if major problems occur with the system, or users are in an area with poor coverage.
- H-TAC3 and H-COMM are Hennepin County assigned talkgroups and would be assigned for use in Hennepin County
- DK "XX" OP2- This set of talkgroups are the operational talkgroups used by each of Dakota County's Fire Agency's for on scene communications.
  - AV = Apple Valley      B2 = Burnsville      EA = Eagan
  - FF = Farmington      HA = Hastings      RH = Randolph / Hampton
  - IF = Inver Grove Heights      LA = Lakeville      MF = Mendota Heights
  - MV = Miesville      R1 = Rosemount      SM = South Metro

# 800 MHz Subscriber Training

## ▶ Talkgroup Definitions (continued)

- 8CALL90R – National 800 MHz Hailing frequency – repeated
- 8TAC91R – 8TAC94R – National 800 MHz frequencies used for on scene communications – repeated
- 8CALL90D – National 800 MHz Hailing frequency – direct or not repeated
- 8TAC91D – 8TAC94D – National 800 MHz frequencies used for on scene communications – direct or not repeated

# 800 MHz Subscriber Training

## ► Talkgroup Definitions (continued)

- 8CALL90R – National 800 MHz Hailing frequency – repeated
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- 8TAC91D – 8TAC94D – National 800 MHz frequencies used for on scene communications – direct or not repeated

# 800 MHz Subscriber Training

- ▶ More Training Options / Requirements
  - Alexandria Technical College
    - Radio 101 – optional
    - ▪ History of ARMER – optional
    - ▪ Interoperability 101
    - ▪ Interoperability – How to Communicate Outside of Your Agency
  - These courses, created on behalf of the Statewide Emergency Communications Board (SECB) and reviewed and approved by subject matter experts, are hosted through the Alexandria Technical & Community College online website. They can be accessed from the Emergency Communication Network (ECN) website under ARMER Standards.



# 800 MHz Subscriber Training

▶ QUESTIONS