SECTO

# SAFETY EDUCATION

## PROGRAMMING RADIOS

# PURPOSES FOR PROGRAMMING

EXCELLENCE
explore | execute | expand

# PURPOSES FOR PROGRAMMING

**Safety**

- It is much easier to change channels rather than input frequencies, particularly when traveling in the car or on the go in the woods

**Consistency**

- Based on my experiences with ZIP we are much more likely to rag-chew and communicate when using pre-defined channels. Having consistent channels makes it all the more easier when we are communicating

**Simplicity**

- We have developed a channel list based on our needs, while making the programming easy enough for our non-ham family and friends to monitor

**Privacy**

- While it is pretty difficult to achieve complete privacy, channels make it possible for us to switch to different frequencies without calling the frequency over the air.

# PROGRAMMING FOR EMERGENCIES

EXCELLENCE
explore | execute | expand

SECTO

# EMERGENCY PROGRAMMING

## Emergency Preparedness

Setting up the non-licensed for listening

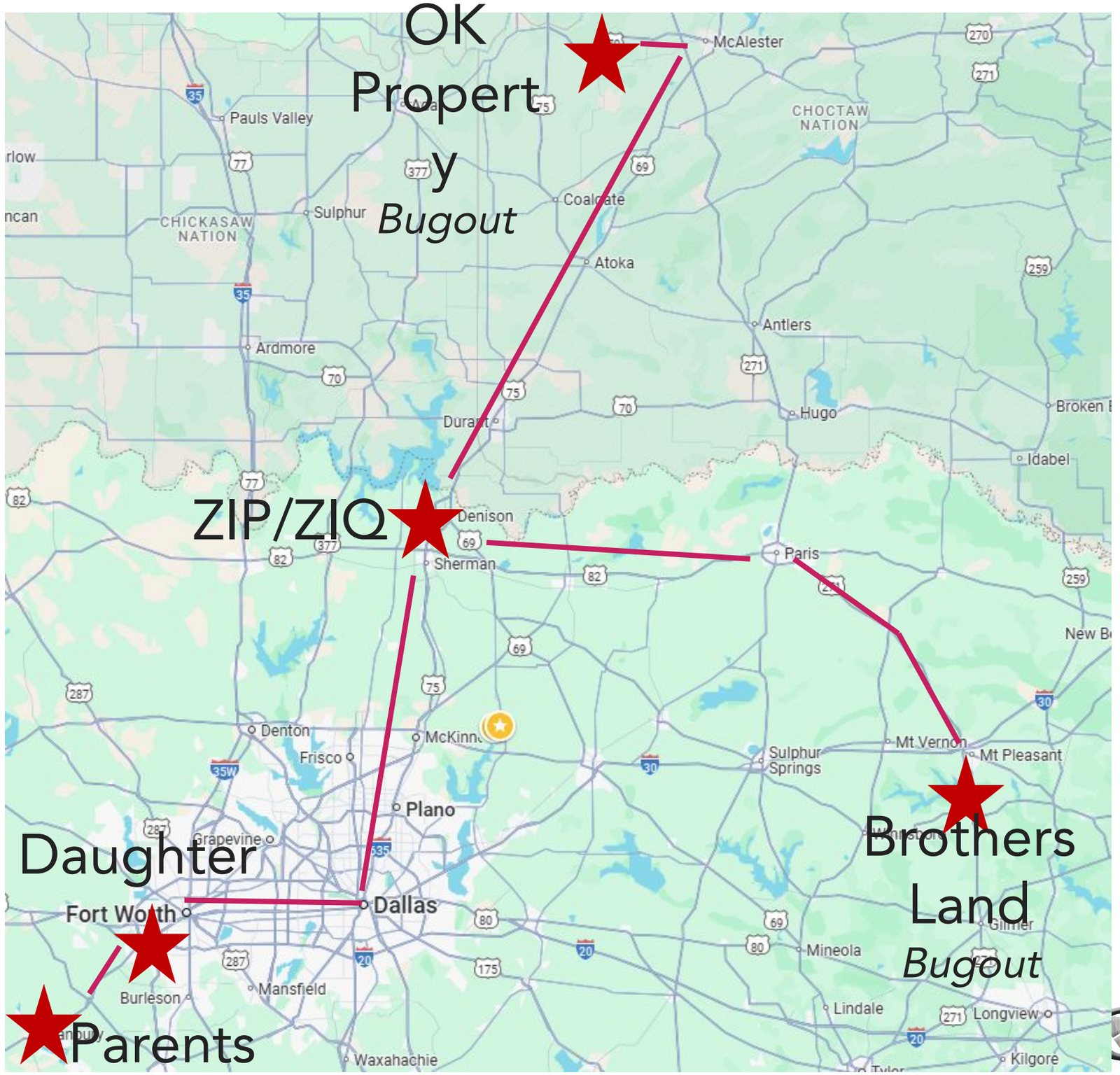
- Have empathy when thinking about the limitations non-licensed family and friends
- Program what makes sense to them
  - Local repeaters
  - Emergency Simplex Frequencies
  - NOAA Weather Radio
  - Local police, fire
  - GMRS, FRS

# PROGRAMMING FOR EMERGENCIES

**Identify Locations of non-licensed users**

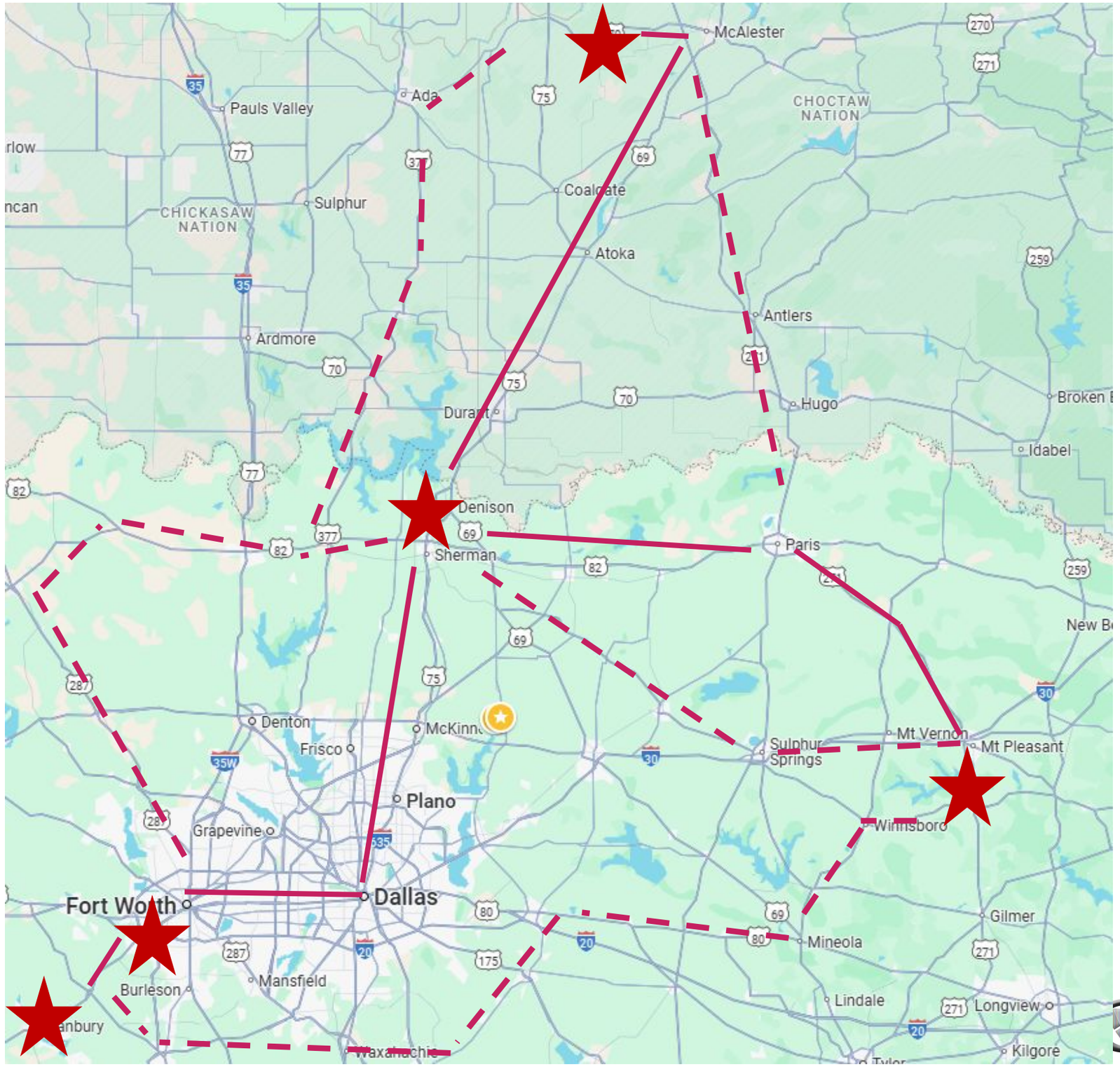
**If you are really into preparedness you might want to identify your bug-out locations**

**Determine routs of travel**



# PROGRAMMING FOR EMERGENCIES

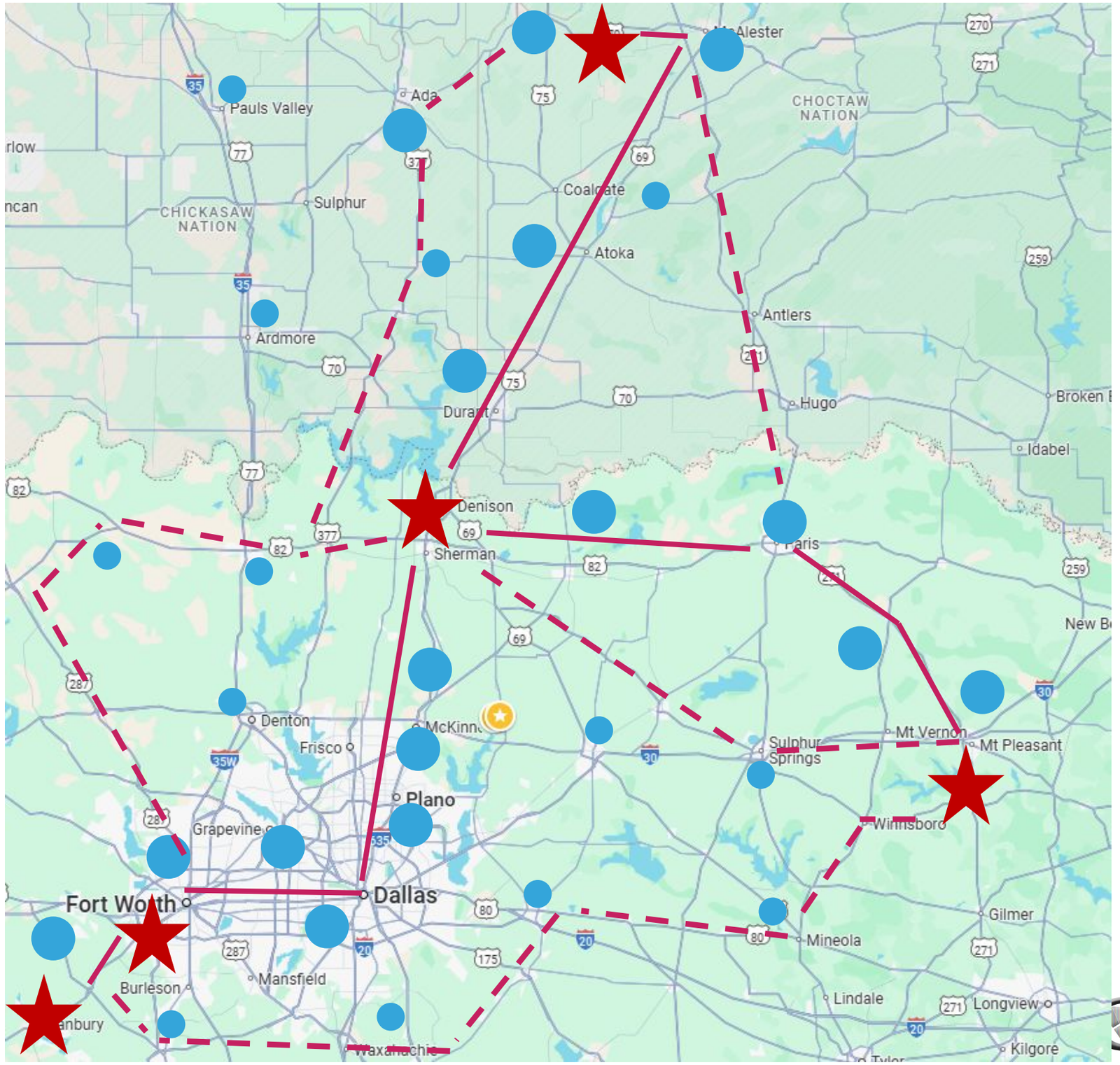
**Identify secondary routs of travel to avoid major problems in cities**



# PROGRAMMING FOR EMERGENCIES

**I generally choose my programmed repeaters based on local clubs and SKYWARN groups**

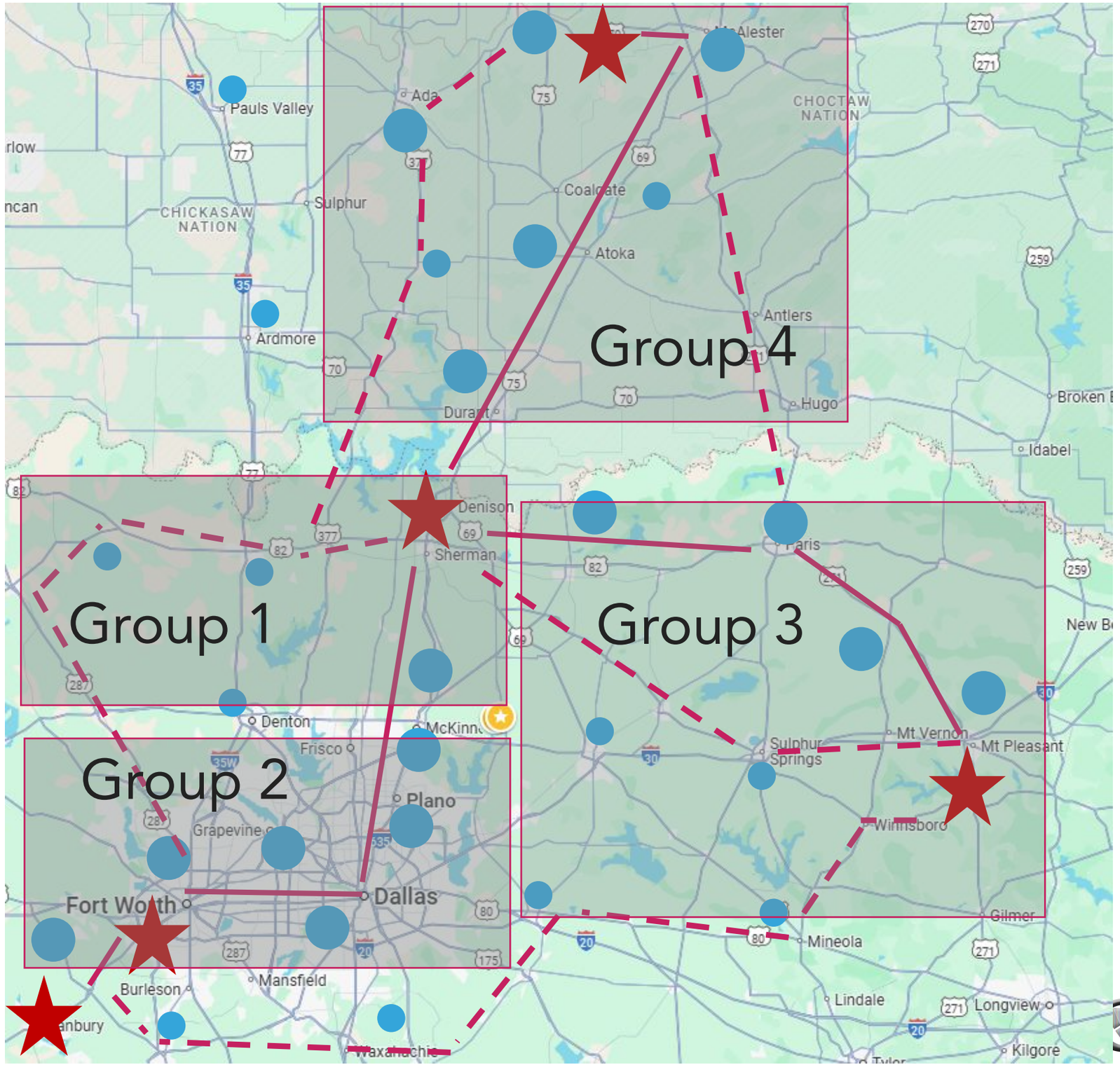
**This can be found on RepeaterBook.com**



# PROGRAMMING FOR EMERGENCIES

**Block groups of repeaters bases on geographic location**

**I try to group my channels in groups of 9 if possible**



# PROGRAMMING FOR EMERGENCIES

**Determine other frequencies that could be helpful: GMRS, FRS, NOAA**

**This can be challenging when using a less expensive radio like a Baofeng with limited storage in memory settings.**

**You might want to consider having 2 radios with different memory settings**

**Also consider programming differences with the different radios you use. Particularly programming channel limitations.**

# PROGRAMMING FOR EMERGENCIES

## What were my goals?

1. Prepare a programming list for a worst case scenario. This would be having to use my $25 Baofeng stored in my bug-out bag.
2. Include simplex frequencies and frequencies that were local to Sherman repeaters and all repeaters in potential travel areas .
3. Include channels for NOAA, GMRS, FRS
4. Have VHF/UHF consistency with channels across all radio models
5. Have an easy programming solution/ software  for my radios

128
Channels


BaoFeng Radio (Upgrade of UV-5R) 8-Watt Ham Radio Handheld Two Way Radio VHF UHF Dual Band Long Rang Walkie Talkie Rechargeable with USB Charger Cable

# CHANNEL CONSISTENCY

## Baofeng 128 Channels


Non-ham Family and Friends

ZIP/ZIQ Go-bags

General use

Programs with CHIRP

## Yaesu FT-991a 100 Channels


Home Base Station

Channel consistency with simplex and first 50 frequencies

Programs with rtSYSTEMS 991a Software

## Yaesu FTM-300D 300 Channels


All vehicles have this radio

Channel consistency with HT's + additional programming

Programs with rtSYSTEMS FTM-300D Software

## TYT TH-9800 800 Channels


Secondary base /SOTA/Primary on OK

Channel consistency with HT's plus additional programming

Programs with TYT and CHIRP Software's

# PROGRAMMING FOR EMERGENCIES

Setting up the channel “grouping” using CHIRP.

National Emergency and Chat Frequencies

General Use Simplex Frequencies

ARES Grayson Emergency Use Backup Frequencies

| | Frequency | Name | Tone Mode | Tone | Tone Squelch | DTCS | RX DTCS | DTCS Polarity | Cross Mode | Duplex | Offset/ TX Freq |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 147.170000 | EMER2M | | | | | | | | + | 0.600000 |
| 2 | 462.675000 | EMER70 | | | | | | | | | |
| 3 | 146.520000 | SMNA2M | | | | | | | | | |
| 4 | 466.000000 | SMNA70 | | | | | | | | | |
| 5 | 146.535000 | SM05 | | | | | | | | | |
| 6 | 146.550000 | SM06 | | | | | | | | | |
| 7 | 146.565000 | SMZZ07 | | | | | | | | | |
| 8 | 146.580000 | SM08 | | | | | | | | | |
| 9 | 146.595000 | SM09 | | | | | | | | | |
| 10 | 147.420000 | SM10 | | | | | | | | | |
| 11 | 147.435000 | SM11 | | | | | | | | | |
| 12 | 147.450000 | SM12 | | | | | | | | | |
| 13 | 147.465000 | SM13 | | | | | | | | | |
| 14 | 147.480000 | SM14 | | | | | | | | | |
| 15 | 147.495000 | SM15 | | | | | | | | | |
| 16 | 147.510000 | SM16 | | | | | | | | | |
| 17 | 147.525000 | SMZZ17 | | | | | | | | | |
| 18 | 445.950000 | SM70CM | | | | | | | | | |
| 19 | 146.420000 | SMARS1 | | | | | | | | | |
| 20 | 146.460000 | SMARS2 | | | | | | | | | |
| 21 | 146.480000 | SMARS3 | | | | | | | | | |
| 22 | 146.700000 | SMRAC1 | | | | | | | | off | |
| 23 | 441.925000 | SM A R | | | | | | | | off | |

ZIP/ZIQ Default

ZIP/ZIQ Default

# PROGRAMMING FOR EMERGENCIES

Setting up the channel “grouping” using CHIRP.

Sherman/ Denison Area

East Frequencies Reachable From Sherman

South Frequencies Reachable From Sherman

South Frequencies In Colin County

West Frequencies In Denton County

GCARC 147.000

| | | | | | | |
|---|---|---|---|---|---|---|
| 24 | 147.000000 | GCARC | Tone | 100.0 | + | 0.600000 |
| 25 | 147.280000 | ARESRP | Tone | 107.2 | - | 0.600000 |
| 26 | 442.875000 | RPTO14 | Tone | 100.0 | + | 5.000000 |
| 27 | 444.750000 | ARES2M | Tone | 100.0 | + | 5.000000 |
| 28 | 145.330000 | WEBNCH | Tone | 100.0 | - | 0.600000 |
| 29 | 441.350000 | DENISN | Tone | 100.0 | + | 5.000000 |
| 30 | 441.325000 | ANDRPT | Tone | 82.5 | + | 5.000000 |
| 31 | 444.750000 | COMNET | Tone | 100.0 | + | 5.000000 |
| 32 | 443.750000 | BMNCTC | Tone | 100.0 | + | 5.000000 |
| 33 | 145.470000 | FCARC | Tone | 100.0 | - | 0.600000 |
| 34 | 444.950000 | BELLS | Tone | 88.5 | + | 5.000000 |
| 35 | 441.625000 | TMB2FV | Tone | 100.0 | + | 5.000000 |
| 36 | 441.650000 | TMBN | Tone | 100.0 | + | 5.000000 |
| 37 | 443.800000 | VNALST | Tone | 103.5 | + | 5.000000 |
| 38 | 442.825000 | TIOTNX | Tone | 123.0 | + | 5.000000 |
| 39 | 146.740000 | MCKNSW | Tone | 110.9 | - | 0.600000 |
| 40 | 147.380000 | TCOLON | Tone | 110.9 | + | 0.600000 |
| 41 | 443.300000 | TCLTNX | | | + | 5.000000 |
| 42 | 444.675000 | RICHSN | Tone | 100.0 | + | 5.000000 |
| 43 | 147.180000 | ALLNSW | Tone | 107.2 | + | 0.600000 |
| 44 | 146.920000 | DCARC | Tone | 110.9 | - | 0.600000 |
| 45 | 145.170000 | DNTALT | Tone | 110.9 | - | 0.600000 |
| 46 | 147.200000 | KLRNCT | Tone | 110.9 | + | 0.600000 |

# PROGRAMMING FOR EMERGENCIES

Setting up the channel “grouping” using CHIRP.

East Texas Frequencies

North Frequencies in Oklahoma

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 47 | 146.760000 | PARIS | Tone | 203.5 | | | | | | - | 0.600000 |
| 48 | 147.040000 | QNLN | Tone | 118.8 | | | | | | + | 0.600000 |
| 49 | 147.320000 | MTVERN | Tone | 151.4 | | | | | | + | 0.600000 |
| 50 | 147.020000 | COMERC | Tone | 167.9 | | | | | | + | 0.600000 |
| 51 | 146.920000 | RAINS | Tone | 88.5 | | | | | | - | 0.600000 |
| 52 | 147.040000 | GRNVLL | Tone | 118.8 | | | | | | + | 0.600000 |
| 53 | 147.225000 | DRANT | Tone | 114.8 | | | | | | + | 0.600000 |
| 54 | 147.390000 | DRANT | Tone | 118.8 | | | | | | + | 0.600000 |
| 55 | 147.165000 | COLEMA | Tone | 131.8 | | | | | | + | 0.600000 |
| 56 | 145.250000 | COALGA | Tone | 123.0 | | | | | | - | 0.600000 |
| 57 | 145.430000 | ATOKA | Tone | 114.8 | | | | | | - | 0.600000 |
| 58 | 442.400000 | DAISY | Tone | 114.8 | | | | | | + | 5.000000 |
| 59 | 146.730000 | CLYT | Tone | 114.8 | | | | | | - | 0.600000 |
| 60 | 147.270000 | CLYTSW | Tone | 141.3 | | | | | | + | 0.600000 |
| 61 | 145.410000 | TALIHI | Tone | 88.5 | | | | | | - | 0.600000 |
| 62 | 146.895000 | STUART | Tone | 114.8 | | | | | | - | 0.600000 |
| 63 | 145.370000 | MCALSW | Tone | 114.8 | | | | | | - | 0.600000 |
| 64 | 444.625000 | MCALLK | Tone | 88.5 | | | | | | + | 5.000000 |
| 65 | 146.685000 | EWFAUL | Tone | 141.3 | | | | | | - | 0.600000 |
| 66 | 444.175000 | PRESTO | Tone | 88.5 | | | | | | + | 5.000000 |
| 67 | 442.100000 | ENTERP | Tone | 123.0 | | | | | | + | 5.000000 |
| 68 | 147.015000 | WEWOKA | Tone | 141.3 | | | | | | + | 0.600000 |
| 69 | 145.270000 | ADA | Tone | 141.3 | | | | | | - | 0.600000 |
| 70 | 145.190000 | SHAWNE | Tone | 131.8 | | | | | | - | 0.600000 |

# PROGRAMMING FOR EMERGENCIES

Setting up the channel “grouping” using CHIRP.

FRS Channels 1-20

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **71** | 462.562500 | FR01 | | | | | | | | | | NFM |
| **72** | 462.587500 | FR02 | | | | | | | | | | NFM |
| **73** | 462.612500 | FR03 | | | | | | | | | | NFM |
| **74** | 462.637500 | FR04 | | | | | | | | | | NFM |
| **75** | 462.662500 | FR05 | | | | | | | | | | NFM |
| **76** | 462.687500 | FR06 | | | | | | | | | | NFM |
| **77** | 462.712500 | FR07 | | | | | | | | | | NFM |
| **78** | 467.562500 | FR08 | | | | | | | | | | NFM |
| **79** | 467.587500 | FR09 | | | | | | | | | | NFM |
| **80** | 467.612500 | FR10 | | | | | | | | | | NFM |
| **81** | 467.637500 | FR11 | | | | | | | | | | NFM |
| **82** | 467.662500 | FR12 | | | | | | | | | | NFM |
| **83** | 467.687500 | FR13 | | | | | | | | | | NFM |
| **84** | 467.712500 | FR14 | | | | | | | | | | NFM |
| **85** | 462.550000 | FR15 | | | | | | | | | | NFM |
| **86** | 462.575000 | FR16 | | | | | | | | | | NFM |
| **87** | 462.600000 | FR17 | | | | | | | | | | NFM |
| **88** | 462.625000 | FR18 | | | | | | | | | | NFM |
| **89** | 462.650000 | FR19 | | | | | | | | | | NFM |
| **90** | 462.675000 | FR20 | | | | | | | | | | NFM |

# PROGRAMMING FOR EMERGENCIES

Setting up the channel “grouping” using CHIRP.

NOAA Weather Radio Service

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **91** | 162.400000 | WX1 | | | | | | | | | | FM |
| **92** | 162.425000 | WX2 | | | | | | | | | | FM |
| **93** | 162.450000 | WX3 | | | | | | | | | | FM |
| **94** | 162.475000 | WX4 | | | | | | | | | | FM |
| **95** | 162.500000 | WX5 | | | | | | | | | | FM |
| **96** | 162.525000 | WX6 | | | | | | | | | | FM |
| **97** | 162.550000 | WX7 | | | | | | | | | | FM |
| **98** | 161.650000 | WX8 | | | | | | | | | | FM |
| **99** | 161.775000 | WX9 | | | | | | | | | | FM |
| **100** | 163.275000 | WX10 | | | | | | | | | | FM |

# PROGRAMMING FOR EMERGENCIES

## Setting up the channel “grouping” using CHIRP.

GMRS Channels
1-20
and
Repeater 1-5

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **101** | 462.562500 | GMRS01 | | | | | | | | | FM |
| **102** | 462.587500 | GMRS02 | | | | | | | | | FM |
| **103** | 462.612500 | GMRS03 | | | | | | | | | FM |
| **104** | 462.637500 | GMRS04 | | | | | | | | | FM |
| **105** | 462.662500 | GMRS05 | | | | | | | | | FM |
| **106** | 462.687500 | GMRS06 | | | | | | | | | FM |
| **107** | 462.712500 | GMRS07 | | | | | | | | | FM |
| **108** | 467.562500 | GMRS08 | | | | | | | | | NFM |
| **109** | 467.587500 | GMRS09 | | | | | | | | | NFM |
| **110** | 467.612500 | GMRS10 | | | | | | | | | NFM |
| **111** | 467.637500 | GMRS11 | | | | | | | | | NFM |
| **112** | 467.662500 | GMRS12 | | | | | | | | | NFM |
| **113** | 467.687500 | GMRS13 | | | | | | | | | NFM |
| **114** | 467.712500 | GMRS14 | | | | | | | | | NFM |
| **115** | 462.550000 | GMRS15 | | | | | | | | | FM |
| **116** | 462.575000 | GMRS16 | | | | | | | | | FM |
| **117** | 462.600000 | GMRS17 | | | | | | | | | FM |
| **118** | 462.625000 | GMRS18 | | | | | | | | | FM |
| **119** | 462.650000 | GMRS19 | | | | | | | | | FM |
| **120** | 462.675000 | GMRS20 | | | | | | | | | FM |
| **121** | 462.700000 | GMRS21 | | | | | | | | | FM |
| **122** | 462.725000 | GMRS22 | | | | | | | | | FM |
| **123** | 467.550000 | GMRSR1 | | | | | | | - | 5.000000 | FM |
| **124** | 467.575000 | GMRSR2 | | | | | | | - | 5.000000 | FM |
| **125** | 467.600000 | GMRSR3 | | | | | | | - | 5.000000 | FM |
| **126** | 467.625000 | GMRSR4 | | | | | | | - | 5.000000 | FM |
| **127** | 467.650000 | GMRSR5 | | | | | | | - | 5.000000 | FM |

# PROGRAMMING FOR EMERGENCIES

## Overall similarities/differences

1. My Baofeng's, TYT's and Yaesu 300D's are programmed exactly the same for the first 128 channels.

2. My TYT's and Yaesu 300D's start additional regional repeater programing at channel 150. These include Dallas county, (working on) south to San Antonio, east to Palestine and (working on) south to Houston.

3. My Yaesu FT-991a is similar to the others up to channel 70. It does not include the FRS, GMRS and NOAA frequencies.

# PROGRAMMING FOR EMERGENCIES

## Multiple Radio’s for Emergencies

## If you are accounting for 2 Radios for emergencies, consider programming them accordingly:


Red for Emergency:

CHAN 1-70
Simplex and Repeaters

Remaining Channels
additional local frequencies

Use for scanning


Yellow for Secondary:

CHAN 1-20
FRS

CHAN 21-40
GMRS

CHAN 101-111
NOAA

# GENERAL PROGRAMMING TIPS WITH CHIRP

EXCELLENCE
explore | execute | expand

SECTO

# CHIRP BENEFITS

1. Once you get the first programming data set, it is easy to copy that data to other similar radios
2. YouTube videos for support
3. Versatile with most Baofeng’s
4. Easy to edit program tool

# CHIRP CHALLENGES

1. Programming cable issues
2. CHIRP updates can cause all kinds of problems
3. Great for most HT's, but can be difficult with base and mobile stations
4. Editing the program tool is easy at first set-up, but can be confusing after that
5. I have had problems with my Apple Computer