

# NTEMC Radio Sync

## Meeting Topics – 11 March 2022

Items which have changed since the last weekly meeting are highlighted below

### A. Tribal Ham Radio Net

*Overview: Within ham radio, a “net” is a periodic “over the air” meeting of licensed amateur radio operators. The purpose of a Tribal Ham Radio Net is to enable tribes to talk with each other via amateur radio on a regular basis. After initial check-in this net would be a roundtable discussion where each tribe would share information about activities they are undertaking pertaining to amateur radio, emergency preparedness and response, STEM education, etc.*

1. Survey to gauge interest level:
  - a. Survey questions and format finalized 21 January
  - b. Technical items:
    - i. Lynda paid for Leo to upgrade his Survey Monkey account
    - ii. Leo to set the survey to forward survey responses to Lynda, Steve, and Ray
    - iii. Need to verify the survey responses are being forwarded correctly
  - c. Once Survey Monkey is correctly configured Lynda to share the survey link with the tribes
2. Pilot project
  - a. Invite a few local tribes to participate
  - b. Guide the tribes on purchasing equipment
  - c. Coordinate with DMR system operators on a talk group to use
3. Acquisition of DMR-capable radios and optional MMDVM hotspots
  - a. Tribal (or individual) purchases
    - i. NTEMC can provide specifications
  - b. May need to apply for a grant

### B. Thunderbird and Whale 2022 National Level Exercise

*Overview: The exercise scenario is a simulated full-length rupture of the Cascadia Subduction Zone (CSZ) fault between Cape Mendocino in Northern California and Nootka Island in British Columbia. This Functional Exercise is designed to test the ability of participants to jointly respond to a CSZ magnitude 9.0+ earthquake, and the associated subsidence, liquefaction, landslides, tsunamis, releases of hazardous materials, and aftershocks affecting tribal nations located along the west coast of North America. This exercise will examine the ability of tribes to communicate with each other and with outside entities for disaster relief support.*

1. Exercise Dates
  - a. FEMA Phase 2a – Immediate Response 9-11 June 2022
  - b. FEMA Phase 2b – Deployment 12-15 June 2022
  - c. FEMA Phase 2c – Sustained Response 16-19 June 2022
  - d. Exercise “Hot Wash” 20 June 2022

## NTEMC Radio Sync Meeting Topics – 11 March 2022

### 2. ESF #2 Objectives:

- a. See the ESF #2 sections of the “[TW22,Exercise-Objectives,NTEMC.pdf](#)” and “[TW22,Exercise-Objectives,tribal-template.odt](#)” documents on the NTEMC website (*eventually*).

### 3. Exercise Tasks – Amateur Radio Communications (ESF #2)

- a. See the “[TW22,Overview,Amateur-Radio.pdf](#)” documented on the NTEMC website (*eventually*).

## C. EOC and Airport Radio Equipment

*Overview: Amateur Radio stations are needed at both the NTEMC EOC and at airports to communicate with air operations resources supporting tribes.*

1. Design, procure, and install a radio station for the new EOC in the NTEMC Innovation Center at Maltby, WA
  - a. Defined three ham radio operating positions (HF, VHF/UHF analog, VHF/UHF digital)
  - b. Other radio systems:
    - i. GMRS radio
    - ii. Marine radio
      - [Icom M330 / M330G VHF Marine Fixed Mount](#)
    - iii. Airband radio
      - [Icom A120 VHF Air Band Transceiver](#)
    - iv. SDRplay receiver
    - v. GOES weather satellite receiver
    - vi. CB radio
      - [Uniden BEARCAT 980SSB](#)
  - c. Station power – solar panels, charge controller, and storage batteries
    - i. Steve is working with WSDOT on some electrical safety issues with installation in commercial spaces (as we expect to clone their solution)
  - d. A detailed parts list was drafted on 26 January and will (hopefully) be completed in one or two more work sessions.
    - i. Are there trees on surrounding properties that would block a HamWAN connection?
      - Need to check path to high-level sites with a drone
    - ii. Would it work to have antenna masts located on two sides of the new pond (so that the broadband di-pole would mount between the two)?
      - Yes, and Ray has create a prototype position document

## NTEMC Radio Sync Meeting Topics – 11 March 2022

- e. We are unsure that the radio equipment within the NTEMC Innovation Center will be able to be situated in a location where the building owners will permit penetration of the exterior wall to install a tube (and weather head) for coaxial cable ingress.
  - i. It may be necessary to install a temporary radio station in an on-site trailer or construction-style portable office.
    - Electrical service and heating/cooling could be issues.

- 2. Design a communications trailer for the Arlington Airport
  - a. This will be a prototype which can be cloned at other airports
  - b. Same operating positions, radios, and antennas as the NTEMC EOC
  - c. Antennas will need mounting systems on the trailer
    - i. Fixed sleeves or tilt up scheme for the antenna masts
  - d. Both solar and generator power capability
- 3. Next steps
  - a. Complete detailed parts lists
  - b. Grant application(s) for the equipment

### D. Amateur Radio Training

*Overview: Tribal nations have adopted amateur radio to provide supplemental and backup communications in times of emergencies and disasters. Fundamental to this effort, is the necessity to have an adequate supply of ham radio licensees. This effort will create a series of amateur radio training videos for tribal members to study.*

- 1. Lesson planning:
  - a. Met with animators on 12 January 2022
    - i. Next step is to develop a script
      - This is needed before project costs can be finalized
    - ii. Lynda is looking for a small grant to cover script writing
  - b. Released – 2022-2026 Technician License question pool
    - i. Updated link (7 March 2022):
      - <http://ncvec.org/downloads/Technician%20Pool%20and%20Syllabus%202022-2026%20Public%20Release%20Errata%20March%207%202022.pdf>

### E. Inter-Tribe Amateur Radio Communications System

*Overview: In order for tribes to establish resilient amateur radio backup emergency/disaster communications with each other and with adjacent local jurisdictions, a system of interconnected radio repeaters is a fundamental building block. To achieve this goal, the NTEMC is advocating building a system of tribal radio repeaters and microwave relay points which will be attached to existing non-tribal repeater networks.*

- 1. Pilot Project, Pacific Northwest
  - a. Grant applications:

**NTEMC Radio Sync  
Meeting Topics – 11 March 2022**

- i. Notifications on NTIA-CMCP-2021 grant applications expected in March 2022
- ii. Upcoming grant opportunities?
  - Steve met with Sonya Richmond of Mutualink and gave her a ESF #2 overview
    - Lynda met with Sonya
- b. Next steps:
  - i. Local and regional partnerships
    - Sample resolution adopting amateur radio
    - Draft agreement for tribes receiving radio equipment and support (current & future)
  - ii. Identify potential repeater sites and existing communications site infrastructure.

**F. Amateur Radio Satellite System**

*Overview: Due to the remote locations of many tribes, a ground-based amateur radio system needs to be augmented by an amateur radio satellite system. To achieve a high level of communications resiliency, the NTEMC is advocating building a system of tribal amateur radio satellites.*

- 1. Interest/Involvement by UW, OSU staff
- 2. Interest/Involvement by Canadian tribes, universities, etc.
- 3. Need to form teams to:
  - a. Develop specifications
  - b. Build partner relationships
  - c. Involve STEM programs in the schools
- 4. Note: Article in Nature about LEO collision and debris impact potential
  - a. <https://www.nature.com/articles/s41598-021-89909-7>

**G. Action Items**

- 1. Set the radio survey to email survey responses to Lynda, Steve, and Ray Leo
- 2. Verify the radio survey responses are being forwarded correctly Lynda, Steve, Ray
- 3. Share the radio survey link with all tribes Lynda
- 4. Invite a few local tribes to participate in a weekly radio net pilot project Ray, Steve
- 5. If needed, guide tribes on purchasing radio equipment Steve
- 6. Coordinate with DMR system operators on a talk group to use Steve
- 7. Meet with Sonya Richmond of Mutualink regarding grant opportunities [completed] Lynda
- 8. Set up Technician License Class in April at NTEMC HQ in Maltby, WA Ray, Steve

**NTEMC Radio Sync**  
**Meeting Topics – 11 March 2022**

9. Apply to the Federal Communications Commission (FCC) for waivers:
- a. To permit this TW22 "communications for RACES training" to exceed 72 hours in duration [47 CFR §97.407(d)(4)] Monte, Lynda
  - b. To permit SSB voice interoperability with Canada on frequencies where U.S. Radio Amateurs only have CW privileges Monte, Lynda
-