

ETS Emergency Communications Response



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Idea

Success is When Persistence Meets Preparation

The rapid response for communication when the Maui wildfire struck underscored the invaluable foresight and preparedness of the ETS Radio section. Their proactive approach to disaster management was evident long before the crisis emerged, as demonstrated by their astute monitoring capabilities via the expansive HIWIN camera network. The emergency situation on August 8th was unprecedented, with the total shutdown of cellular and data communication on Maui's west side, making the role of HIWIN's communication assets paramount.

Crucial communication assets set the stage for an effective immediate response. The deployment of satellite and cellular kits, which were strategically purchased in anticipation of such emergencies, not only facilitated vital communication channels when most needed but were the some of the very first to provide cellular and data connectivity in the affected regions.

The ETS entrusts its Radio Section with the management of the Hawaii Wireless Interoperability Network (HIWIN). HIWIN's primary mission is to manage and operate a network of over 45 remote radio facilities that provide crucial public safety data and land mobile radio network to first responders across the state. It is a comprehensive program ensuring uninterrupted communication for those who safeguard our communities. On the radio networks, the statewide interoperability network operates on the 700/800 MHz conventional radio bands utilized by multiple state departments, agencies, airports, and the University of Hawaii. This coverage represents trunked radio systems (TRSs) that follow the open APCO Project 25 Standard for Public Safety TRSs. These systems ensure interoperable communications between all of Hawaii's first responders regardless of what island they are on as long as there is connectivity.

The Hawaii Wireless Interoperability Network (HIWIN). HIWIN encompasses:

1. Land Mobile Radio (LMR)
2. A broad-reaching point-to-point microwave data network
3. A comprehensive range of emergency communication tools covering cellular, data, radio, and satellite assets.



Implementation

Energized the Communications Infrastructure

Through previous year risk management and contingency planning, ETS procured cellular and satellite kits months before the Maui wildfire. FirstNet Compact Rapid Deployable (CRD) units from Rescue42 provided cellular access and satellite terminals from Starlink provided wireless internet access in areas cut off from conventional communications relying on cable or fiber optics systems destroyed by the fire. ETS radio section had the infrastructure on standby before the Maui wildfires started and operationally deployed midday after emergency proclamation was declared. With the overall communications infrastructure destroyed by the wildfires, time was of the essence to coordinate and stand up a backup communications infrastructure. ETS jumped into action to support the Maui wildfires disaster. ETS stood up and implemented several critical infrastructure management systems, provided hardware and support, and provisioned multiple Starlink terminals that provide internet access in remote areas. The ETS worked with cellular carriers to add voice & data capacity in temporary government facilities in addition to supporting added capacity on the State Government land mobile radio system used by many federal, state, county, and agencies as their primary communications on Maui.

- ETS provisioned multiple Starlink satellite terminals that provided Internet Access in remote areas
- ETS worked with cellular carriers to add voice & data capacity in temporary government facilities
- ETS staff programmed and delivered 84 radios to Maui to support county government response efforts
- Radio communication needs
 - Provided on-site assistance to coordinate of available ETS equipment in the response efforts
- ETS provided as Information Technology Service Unit Leader (ITSL) to support the Maui wildfire response and recovery efforts with the Joint Command Post on site to support recovery efforts



Figure 2: HIWIN Multiple Island Overlap Coverage → Lahaina Identified in Red

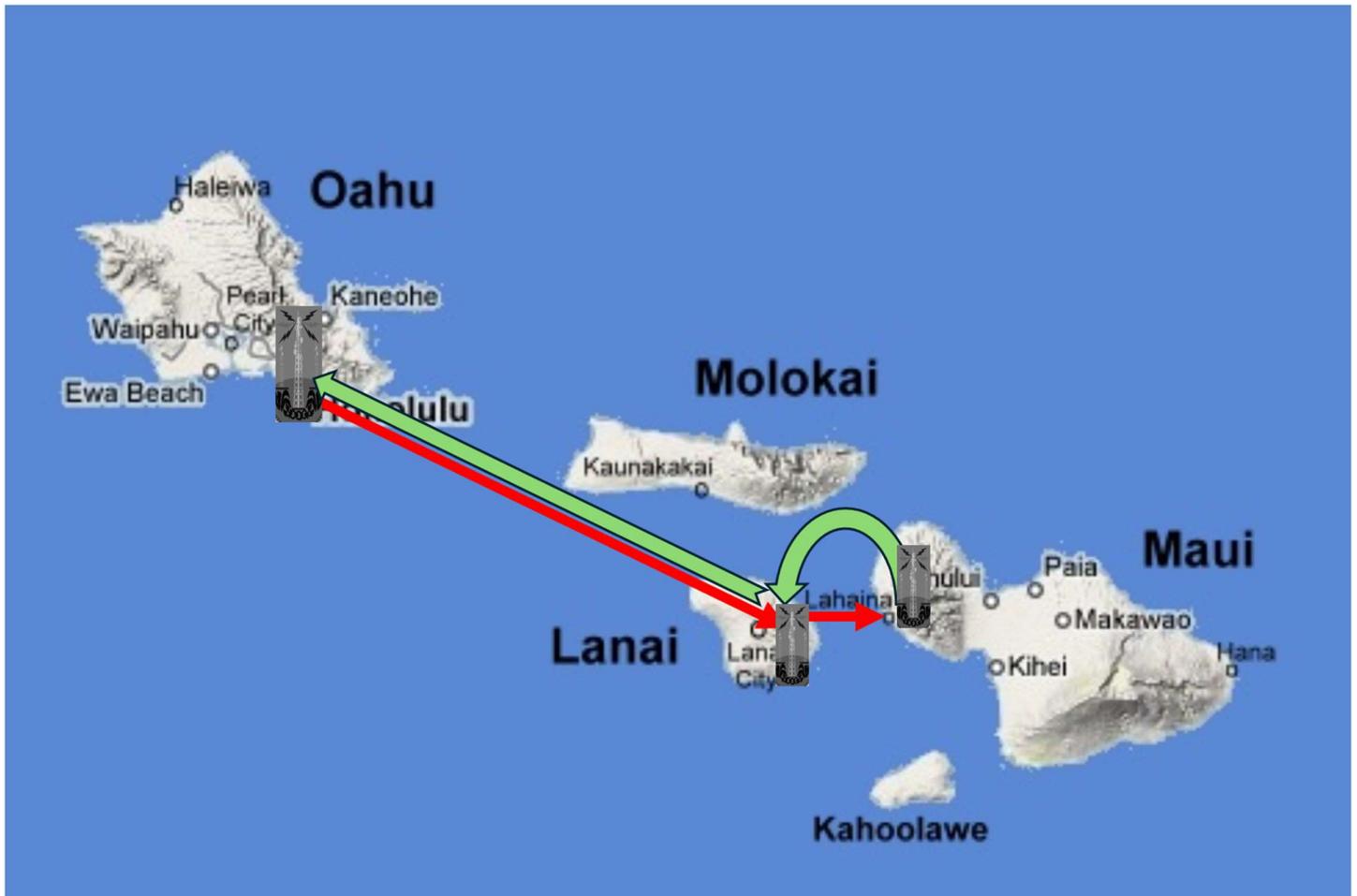


Figure 3: HIWIN Example Communications Path → Honolulu to Lahaina Round Trip



HIWIN Deployments

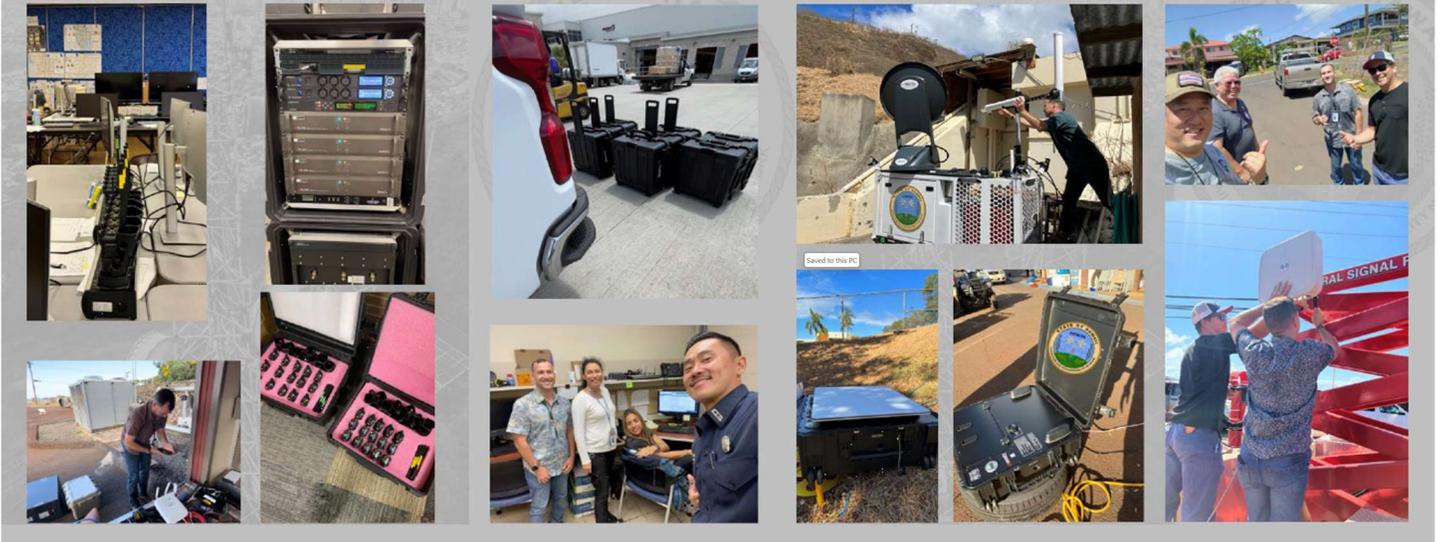


Figure 4: HIWIN Lahaina Maui Deployments

Impact

With the overall communications for Lahaina destroyed during the wildfires, the ETS Emergency Communications Infrastructure restored services for first responders, medical personnel, law enforcement.

ETS Emergency Communications system enabled:

- Emergency medical crews were able to locate and medivac patients in need of critical care to Honolulu for advanced treatment
- Search teams to communicate and locate survivors
- Emergency Management Agency to coordinate lifesaving medical supplies
- Emergency Management Agency to coordinate food, and water
- Sheriffs to communicate to mitigate looting and crime
- First responders to save lives
- The Governor to communicate Oahu Residents of the State of Hawaii and to the world
- Senators to communicate to residents of the State of Hawaii and to the world



Figure 5: President Biden, First Lady Jill Biden, Senator Schatz and Senator Hirono at Ground Zero

As the overall communications infrastructure destroyed during the wildfires is not fully restored, ETS continues to support provisioning telephone, data communications, radio communications, and Internet services required by the additional federal, state, county, and National Guard presence in and around West Maui and in the Lahaina disaster recovery centers.

ETS Did the Following:

- Provision multiple Starlink terminals that provide Internet Access in remote areas
- Worked with cellular carriers to add voice & data capacity in temporary government facilities
- Supported added capacity on the State Government land mobile radio system used by many federal, state, county, and National Guard agencies as their primary communications on Maui
- Sent ETS staff to Maui to support county government radio communication needs
- Request for Assistance was made to provide a Information Technology Service Unit Leader (ITSL) to support the Maui brushfire response and recovery efforts with the Joint Command Post. ETS Radio Section is responding with a resource to fulfill the request.

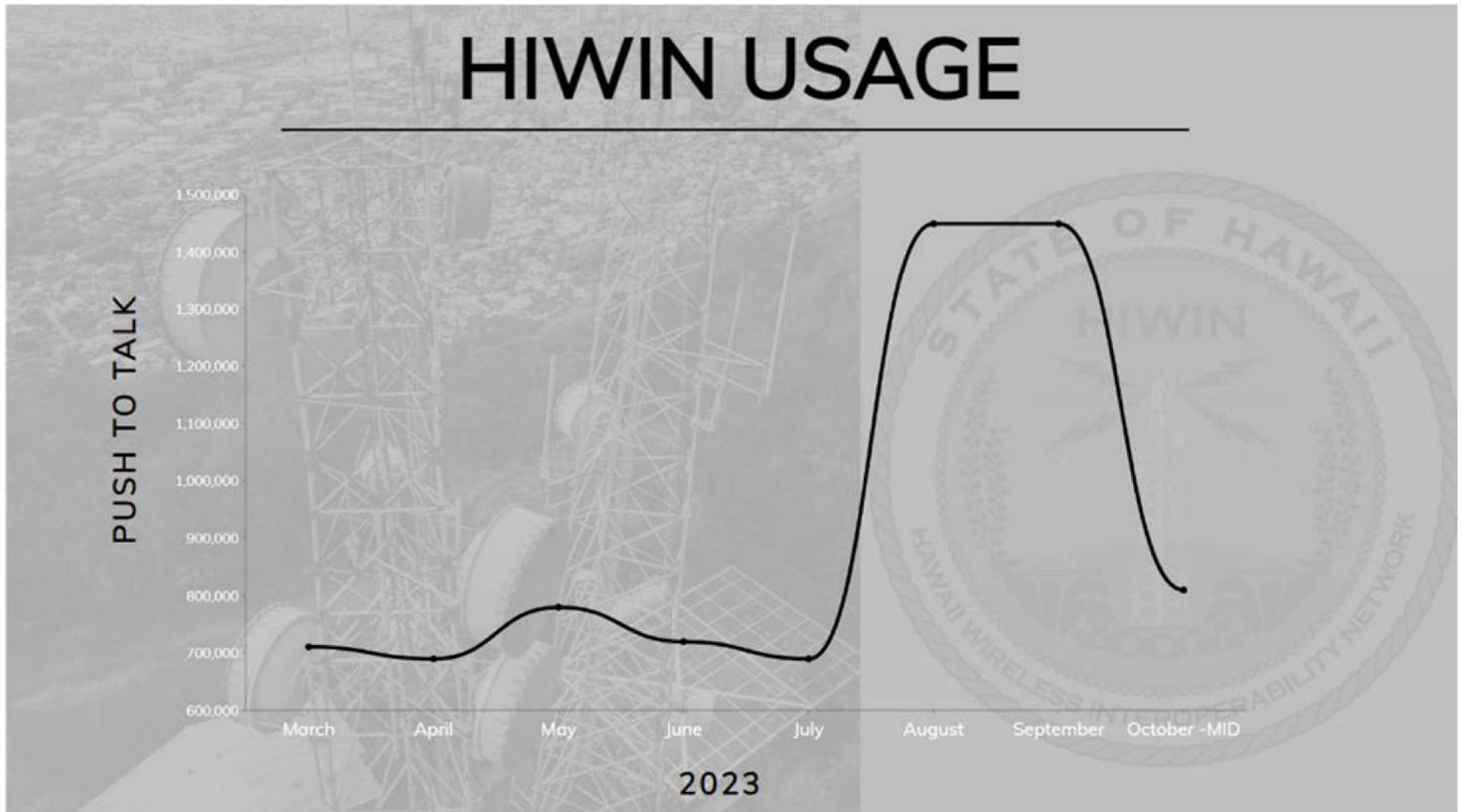


Figure 6: HIWIN Usage Before, During, and After the Lahaina Wildfires

References

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Ref 2. Governor Photos Statement – Photography Courtesy of the Office of The Governor Josh Green M.D.

Ref 3. <https://hiwin.hawaii.gov/main/understanding-hiwin-the-backbone-of-hawaiis-emergency-response-network/>

Ref 4. <https://hiwin.hawaii.gov/what-is-hiwin/>