

**MARIN EMERGENCY RADIO AUTHORITY**

c/o Town of Corte Madera  
300 Tamalpais Drive, Corte Madera, CA 94925  
PHONE: (415) 927-5050  
[WWW.MERAONLINE.ORG](http://WWW.MERAONLINE.ORG)

**DATE:** October 28, 2020  
**TO:** MERA Governing Board  
**FROM:** Betsy Swenerton, Acting Operations Officer  
**SUBJECT:** AGENDA ITEM C-1: Report on Current MERA System Major Maintenance and Repair Evaluation

Discussion: The MERA Executive Board requested that DPW Communications Staff prepare a staff report on the Gen1 MERA System Major Maintenance and Repair Evaluation.

Background: The operation and maintenance of the Gen1 System is performed by the staff of the Communications Division together with our manufacturer partners: Motorola for the trunked radio system and Aviat Systems for the microwave backhaul network.

Gen1 Radio System: Motorola has committed to support the MERA Gen1 system in its Statement of Annual Support through June of 2021. DPW has an annual technical services contract with Motorola for best effort phone support when failures occur.

The Gen 1 system is over 16 years old and, given its age, is in good working order. Since much of the equipment is known to be past its design life, we cannot predict what components might fail in the near term. Past analysis by Motorola and DPW has highlighted the most critical components that have the greatest potential impact on the overall system and recommended keeping spares on hand to facilitate repair. As time goes on, finding spare equipment has been a challenge – but DPW is working with Motorola, Federal Engineering and directly with other agencies that are retiring similar radio systems to maintain a cache of spares.

Third-Party Engineering Analysis: With NextGen go-live approximately three years out, DPW feels it would be prudent to engage a third-party Engineer to perform an updated analysis on the Gen1 system. The goal of this analysis would be to identify equipment at a high risk of failure and provide guidance on contingencies. This analysis would also inform the MERA Board if it should continue its annual technical services contract with Motorola, or take a different approach to safeguarding the Gen1 system until NextGen comes online. Pursuant to our Technical Services Agreement with MERA, DPW can solicit proposals for engineering services to perform this analysis and provide recommendations.

Gen1 Microwave System: DPW just executed a three-year extended warranty agreement with Aviat Systems for support on the microwave backhaul system. This warranty provides 24/7 priority technical support, web support, repair services including advanced replacement, and 24/7 ProVizion support. Together with the Microwave channel bank equipment replacements, the extended warranty with Aviat Systems is a reliable safeguard for the Gen1 microwave system.

Microwave Channel Bank Equipment: At your Board's September meeting, DPW recommended that MERA invest funds to replace critical network cards and components in response to a network card failure at the Prime Site. Your Board approved proactively replacing the complete chassis, including network cards, at the Prime Site and Microwave Loop sites. During in-depth discussions on the "health" of the Gen1 System, after the September GB meeting, DPW staff are recommending a revised approach for safeguarding the microwave system. Rather than proactively replacing equipment, DPW staff recommends investing in spare equipment to have on hand in the event

of another outage. This approach is more cost-effective and less intrusive, reducing the risk of compromising County-wide communication while working on the system.

Below is a list of recommended spare equipment and the estimated cost prepared by DPW staff:

Spare Microwave Equipment Recommendations:

- 2x 891830 - IMACS 800 Chassis
- 4x 890220 - Power Supply
- 4x 880370 - CPU Card, XCON Cross-connected
- 4x 60632 - CPU Firmware Version 6.3.2 (Motorola Standardized)
- 4x 801070 - WAN DUAL SS
- 2x WAN SINGLE SS
- 3x 801470 - WAN-R DUAL SS
- 3x 892260 - Interface-E Card
- 4x 816460 - DSM II Card
- 4x 811960 - E&M Card
- 8x 822061U - SRU Card/822570 - LD-SRU Card

Total: \$110,000