



# Agenda Item 7- WCRCs Infrastructure Maintenance & Replacement



# Infrastructure Maintenance

- DC battery banks & rectifier testing
- HVAC inspection & repair
- Dehydrator/Waveguide pressure testing
- Generators inspections and repair
- Tower inspections
- Radio maintenance & alignments
- Security cameras maintenance and installation
- Remote alarms verification and tests



# Infrastructure Replacement

- Marble Bluff Tower Replacement
  - Angel Tension Steel Tower built between 1947-1967 by LADWP
  - Towers typically replaced every 50 year per OSHA/FCC “Good Engineering Practice Guide”. (ANSI/TIA-222-H)
  - Structural Analysis to be conducted April 20<sup>th</sup>, 2021. To help determine whether the tower is to be replace or structurally reinforced.





# Infrastructure Replacement

- Fox Mountain Solar Panel Replacement
  - Solar Array installed between 2006-2008. (15 years old)
    - First generation Solar panels had a life expectancy of 15-20 years.
    - These panels were first generation solar panels, and are effectively operating below 30% of expected power output.
  - The Solar Array at Fox operates at a 30% decrease in power output, and will not be able to sustain current system load soon. Meaning it will not be able to carry the future P25 expected loads.
- Solar technology has changed since this install
  - Average Solar Panel now last 25-30 years
  - Older generation Solar arrays yielded 125Amp per panel, instead of newer panels that can yield 400Amps per panel
  - On Average (depending on manufacturer), the first 10 years solar panels decrease in efficiency by 10% and by 20% by reaching 25 years.



# Infrastructure Replacement

- Grounding system remediation needed to accommodate new system.
  - Grounding practices have changed, and require upgrading to accommodate the design of new P25 system.
- DC Power plants need to be replaced and upgraded from 24VDC system with converters to new 48VDC system.
- Generator replacement
  - Standardization of equipment at all sites
  - Plan to replace 2 units a year prior to failures
- Microwave Redundancy
  - Virginia Peak to Peavine Peak is critical Link (Loss of Link cuts off communication to all sites north of Sparks).
    - New Proposed links to help with redundancy



# Infrastructure Replacement

- WCRCS will be focusing on a Maintenance replacement program for replacement of equipment that support the overall radio system.
- This replacement program will focus on standardizing equipment for appropriate sparing, as well as looking at technologies that are more resilient, reliable and efficient.



# Questions?

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