

MICROWAVE AND LAND MOBILE RADIO REPLACEMENT PROJECTS

*NEXT GENERATION OF RADIO TECHNOLOGY
FOR RELIABLE COMMUNICATIONS*

February 6, 2017

BOARD ACTION REQUESTED



PRESENTATION PURPOSE

- Provide background information on Microwave and Land Mobile Radio Systems
- Explain purpose and scope of replacement projects (included in 2017 budget)
- Request Board Action to authorize service agreement amendment – this afternoon

SYSTEM BENEFITS



Natapoc Radio and Microwave Site

- Provides reliable communications for mobile crews and remote sites for protecting, operating and maintaining District assets safely and effectively
- Highly available telecom systems meet operational needs during normal and emergency conditions
 - Recent Examples:
 - 2012 Lake Wenatchee Ice Storm
 - 2015 Chelan Fires
 - 2016 Leavenworth Fire

SYSTEM DESCRIPTIONS

They are different and distinct:

- **Microwave System:**
 - Highly reliable radio-based transmission system used to transport critical voice and data traffic
 - Land Mobile Radio traffic, Transmission Telemetry, W/WW Control Systems, Hatchery communications, Phone/Data – Remote Sites, Other Agency use
- **Land Mobile Radio System:**
 - Dedicated and purpose-built radio system used to deliver critical voice communication to District personnel
 - System Ops, Line Ops, CM, W/WW, Fiber, F&W, Hatcheries, Fleet, Facilities, Warehouse, Etc.

WHY REPLACE?



Blag Mountain Radio and Microwave Site

- Systems have exceeded their useful life:
 - 20-year-old equipment
 - No longer supported by manufacturers
 - Increasing risk of failure
 - Difficult to locate parts
- New systems offer:
 - Industry Standards
 - Additional traffic types/services
 - Increased bandwidth
 - Ability to expand radio coverage

PROJECT DEVELOPMENT

- Consultant Selection
 - Adcomm Engineering
- Assessment and Feasibility Study
 - Conducted Site Assessments
 - Interviewed Stakeholders
 - Gathered Essential Requirements
 - Considered Alternatives
 - Push-to-talk over cellular
 - Satellite
- Business Case
 - Recommended replacement with like-kind systems to meet essential functionality
 - Recommendation reviewed and approved by operational unit Managing Directors



TV Badger Radio and Microwave Site

MICROWAVE PROJECT



Wenatchee HQ Microwave

- Site & Power Improvements (2017)
- New Microwave Equipment
 - Design (2017)
 - Technology Review
 - Current and future requirements
 - Purchase and Install (2018)
 - Run parallel systems to minimize interruptions
 - Migrate traffic
 - Phase out old equipment (2019)

MICROWAVE COST ESTIMATE

• Feasibility (Completed)	\$136,000
• Contract Engineering	\$353,000
• Equipment Purchase	\$1,374,000
• Contract Installation	\$747,000
• Sales Tax	\$178,000
• District Labor	\$355,000
• Contingency	\$577,000
• MICROWAVE REPLACEMENT	\$3,720,000

LAND MOBILE RADIO PROJECT

- New Radio Equipment
 - Design (2017)
 - Technology Review
 - Current and future requirements
 - Purchase and Install (2018)
 - Run parallel systems to minimize interruptions
 - Change out mobile and portable radios
 - Phase out old equipment (2019)



Ski Badger Radio and Microwave Site

RADIO COST ESTIMATE

• Contract Engineering	\$450,000
• Equipment Purchase	\$3,100,000
• Contract Installation	\$690,000
• Sales Tax	\$320,000
• District Labor	\$200,000
• Contingency	\$840,000
• RADIO REPLACEMENT	\$5,600,000

NEXT STEPS

- Request approval of resolution to amend SA-TA with ADCOMM Engineering for Contract Engineering for both projects



Burch Mountain Radio and Microwave Site

QUESTIONS?



Rock Island Powerhouse 1 Microwave



CHELAN COUNTY
POWER

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