

COMMUNICATIONS SYSTEM EVALUATION AND RECOMMENDATION

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AGENDA

- ▶ Scope of Work
- ▶ User Surveys
- ▶ Coverage Studies
- ▶ Dispatch
- ▶ Radio System Options
 - ▶ Stand Alone Systems
 - ▶ Partnership Opportunities
- ▶ Recommendations



SCOPE OF WORK

- ▶ Understand radio needs and expectations for users of the existing METCOM system and organization.
- ▶ Work with user members of the METCOM organization to understand their day-to-day operational needs both current and future.
- ▶ Provide a report that identifies existing conditions and outlines the current operational capabilities or deficiencies.
- ▶ Provide detailed evaluation and recommendation of short and long term options available to METCOM, including partnership opportunities. Evaluations and recommendations should include suitability of the solution based on identified METCOM user needs, technical feasibility and use of existing infrastructure and sites. Evaluations should include risk factors and major cost drivers.

USER SURVEYS

- ▶ Radio coverage issues, particularly with portables
- ▶ Fire tone out issues, particularly on South Fire
- ▶ Site selection for Dispatch and for Agencies, particularly on South Fire and for various Law Enforcement agencies
- ▶ Need technical guidance
- ▶ Budgets are tight – up front and ongoing cost

COVERAGE STUDIES

- ▶ Cascade Mobile coverage studies performed using RadioCompass by RadioSoft
- ▶ Studies are based on locations, antenna heights and power shown on FCC licenses



DISPATCH

- ▶ Console is obsolete. Should be replaced as soon as feasible
- ▶ Dispatchers expressed the same frustrations as users in the field
 - ▶ Opposite ends of the same pipe, a problem at one end is a problem at the other
- ▶ Radio system forces dispatch to use complex and error prone procedure for South Fire multi-agency tone outs - [video](#)
- ▶ Even experienced dispatchers didn't always know what site was best for communications
- ▶ Coverage issues are particularly acute on South Fire, Aumsville PD and Woodburn PD/Hubbard PD

ISSUE RECAP

- ▶ Fire tap out frustrates everyone
- ▶ Lack wide area repeated channels
- ▶ Radio coverage
 - ▶ Site selection
- ▶ Money is tight – best long term value

RADIO SYSTEM OPTIONS

- ▶ Stand alone solutions
 - ▶ VHF Multicast
 - ▶ VHF Simulcast
 - ▶ VHF NXDN Trunking
- ▶ Partnership opportunities
 - ▶ Silke FleetNet System
 - ▶ ODOT/OSP 700 MHz P25 System
 - ▶ Salem 800 MHz P25 System



STAND ALONE SOLUTIONS

- ▶ VHF Multicast
- ▶ VHF Simulcast
- ▶ VHF NXDN Trunking

VHF MULTICAST

▶ Advantages

- ▶ Uses existing subscriber units
- ▶ Makes use of existing METCOM infrastructure
- ▶ Mostly solves fire paging issues
- ▶ Wide area repeated channels

▶ Disadvantages

- ▶ Doesn't necessarily fix coverage issues
- ▶ Users need to know what site to select based on location
- ▶ Licensing additional frequencies can be an issue

VHF SIMULCAST

▶ Advantages

- ▶ Can reuse some of your existing infrastructure
- ▶ Wide area roaming without changing channels
- ▶ Solves paging issues to a degree

▶ Disadvantages

- ▶ Doing it right requires a lot of engineering = \$\$\$
- ▶ A "perfect" simulcast system has 5% of its coverage area which is unusable
- ▶ Audio quality in 20% of coverage area is compromised
- ▶ A good analog simulcast system will cost almost as much as a good digital simulcast system (not including subscribers)

VHF NXDN TRUNKING

▶ Advantages

- ▶ Relatively low cost for a full featured digital trunking system
- ▶ Some of your existing infrastructure and subscriber units can be reused
- ▶ You control the backbone

▶ Disadvantages

- ▶ Requires a lot of very hard to get VHF frequencies
- ▶ Makes getting State administered DHS interoperability grants almost impossible
- ▶ Creates some interoperability challenges

PARTNERSHIP OPPORTUNITIES

- ▶ Silke FleetNet System
- ▶ ODOT/OSP 700 MHz P25 System
- ▶ Salem 800 MHz P25 System





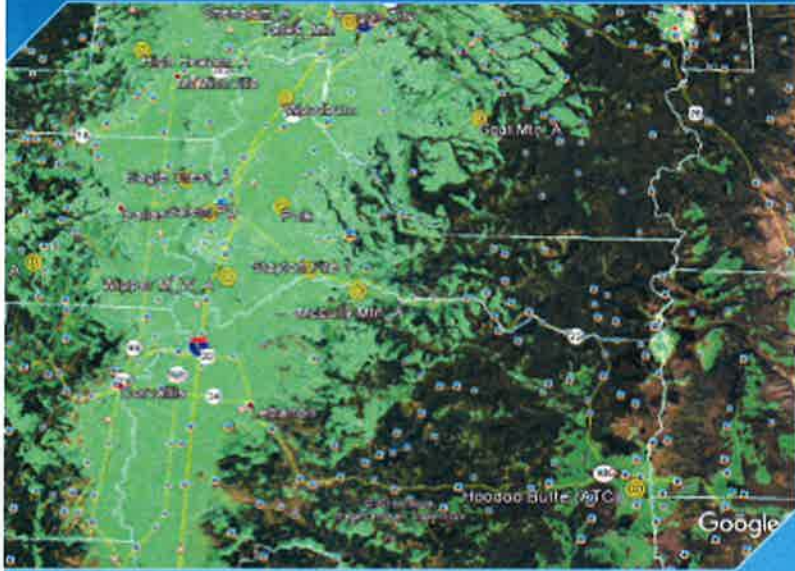
SILKE FLEETNET TRUNKING SYSTEM

Advantages

- Existing system
- No backbone cost
- Feature rich trunking system

Disadvantages

- UHF – interoperability challenges with BLM/USFS
- Loss of State managed DHS Interoperability grants
- Monthly recurring charge ~ \$12-\$15/radio



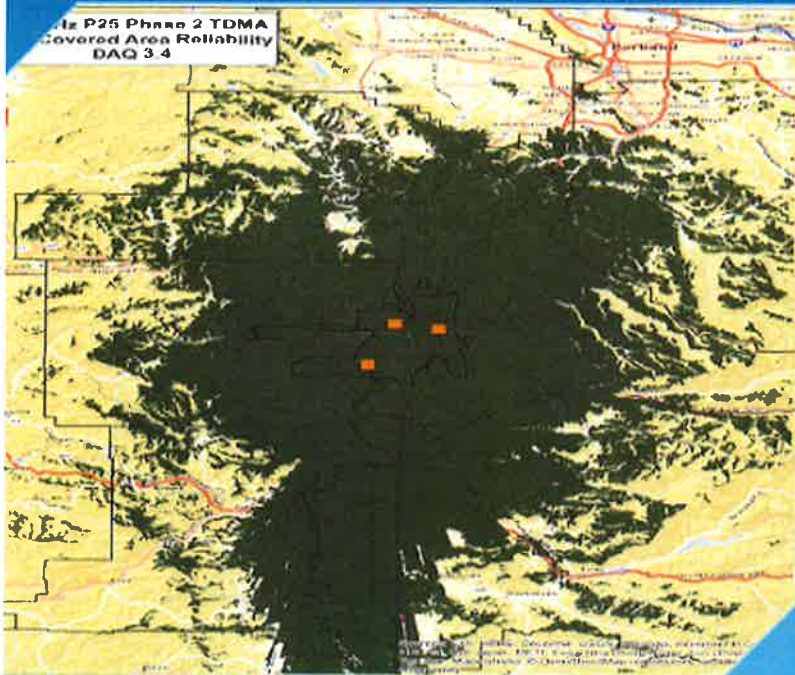
ODOT/OSP 700 MHZ P25 SYSTEM

Advantages

- Feature rich trunking system – flexible talkgroups, UID, etc.
- Easy interoperability with surrounding agencies

Disadvantages

- Interoperability with BLM/USFS is challenge
- Control of backbone
- Cost of subscriber units
- Monthly fees?



SALEM 800 MHZ P25 SYSTEM

Advantages

- Feature rich trunking system – flexible talkgroups, UID, etc.
- Easy interoperability with surrounding agencies
- Could facilitate future consolidation with WVCC

Disadvantages

- Interoperability with BLM/USFS is challenge
- Control of backbone
- Cost of subscriber units
- Monthly fees

RECOMMENDATIONS

- ▶ First and foremost create a communications plan to guide short, medium and long term direction
- ▶ Partnering with an 700/800 MHz P25 trunking system is the best long term solution
- ▶ Short and medium term improvements could be made to existing system
 - ▶ Console support for streamlined paging
 - ▶ Multicast repeated channels
 - ▶ Engineering study to reduce coverage issues
 - ▶ Routine maintenance of subscriber units

THANK YOU!!

- ▶ Questions?
- ▶ Comments?
- ▶ Rotten Fruit (please throw at Chris)

