



# COCHISE COUNTY

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NETWORK & MICROWAVE WIRELESS  
REFRESH PROPOSAL 2014

# Existing Infrastructure

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## ■ Network

- Equipment installed in all Cochise County facilities
- Initially installed in early 00's with a projected lifespan of 5-7 years
- Cisco routers, switches, firewalls, call manager (voice)

## ■ Microwave Wireless

- 13 Primary sites that create the backbone for radio, voice, and data services
- Initially installed in mid-late 90's with a projected lifespan of 10 years
- Microwave Networks CM6 & DR+



# Infrastructure Challenges

- Network
  - Non-standardized equipment configurations
  - End of life / End of Support (no bug fixes, security issues)
  - Higher rate of equipment failures
  - Bandwidth Limitations (performance problems)
- Microwave
  - No new equipment replacements (used only)
  - Higher rate of equipment failures
  - Bandwidth Limitations (performance problems)
- Staffing
  - No Dedicated Engineering Staff
    - Rural Area – Challenge in Recruitment Efforts
  - No certified, insured tower climbers
- Budget
  - Insufficient for current and future infrastructure needs

## Legacy Products

The following list indicates those items that are no longer sold by Microwave Networks as "Standard Product". They include products that were manufactured under several different names, including Avantek, Motorola Microwave, Telescience, Microwave Networks Incorporated, Microwave Radio Corporation, Microwave Network Systems, California Microwave, and Tadiran Microwave Networks.

Microwave Networks continues to offer support and repair of these products at various levels. Please contact our Customer Support department for more information regarding your specific product.

### Digital Radios & Multiplex

- CM Series
- Proteus AMT (not including L-Series or M-Series)
- Pinnacle
- DR +
- DR Radios (MRC)
- Telestar
- K-Model Radios
- Q-model Radios
- Starpoint D-Series



# Infrastructure Needs



- Must Build a Solid Foundation for Technology Programs to...
  - Increase Reliability supporting a technologically dependent workforce
  - Increase Bandwidth to satisfy applications and programs dependent on high bandwidth availability
  - Provide Security to increase availability and safeguard all county information
  - Standardize to ease overall management and administration
  - Comply with current and future federal and state mandates
  - Ability to scale out for future technology needs



# Infrastructure Options

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- Rolling Upgrade (least ideal option)
  - Expensive, inefficient, difficult to manage, impossible to standardize
  - Does not eliminate firefighting (older equipment ages and begins to exhibit problems)
  - Does not resolve current issues of unreliable, non-compliant equipment that is impacting IT services regularly (will take years to eliminate existing problems)
  - No way to leverage additional discounts for volume purchases
- Outright Buy
  - Difficult to budget
- Finance or Lease
  - Interest rate is additional cost (though rates are low and discounts for volume purchase will offset this)
  - Predictable, annual budget for infrastructure maintenance
    - Ideally – Not longer than 5 year cycle for network and 10 year cycle for microwave refresh

# Infrastructure Solution

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- Network Refresh
  - \$540,000 -or-
  - 5YR ~ \$10,000 / month (estimated)
- Microwave Refresh
  - ~\$1,500,000 -or-
  - 10YR ~ \$12,500 / month (estimated)

Note: The proposals will not replace equipment that is effective and still supported. I intend to reuse relatively new equipment to help contain costs as much as possible.

# Infrastructure Future



- Become an Internet Service Provider
  - Establish a County-wide consortium for Internet Service
    - Increase bandwidth, lower costs
    - Possible revenue stream
- Cloud services are increasingly common and refreshing our infrastructure will prepare us for this
- Reliable, secure, and fast infrastructure through which existing County services will be enhanced and future services are possible



# Next Steps

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- Where do we go from here?

