



# Public Safety Radio Upgrade Project

Office of Emergency Services  
Broome County, NY

# Agenda

- Introductions
- Current Radio System
- New Radio System
- Implementation
- Financials
- Questions

# Current Radio System

# Current System

- We are currently using 12 different radio systems with portions dating back to 1970, covering 55 different primary agencies
  - These are all systems left over from the 911 consolidation that occurred between 1997 and 2004.
  - Major radio coverage gaps in current system are a safety issue for first responders.
  - Systems operate on three different “bands” meaning interoperability (or the ability for one unit to talk to another one) for mutual-aid is virtually impossible.
- Comprehensive study completed in 2012 shows a need for a complete system replacement.

# Current System

- Existing systems have their met and exceeded its useful service life
- Equipment and infrastructure are failing
- Replacement parts not available
- County-wide radio system coverage is inadequate and doesn't meet public safety standards

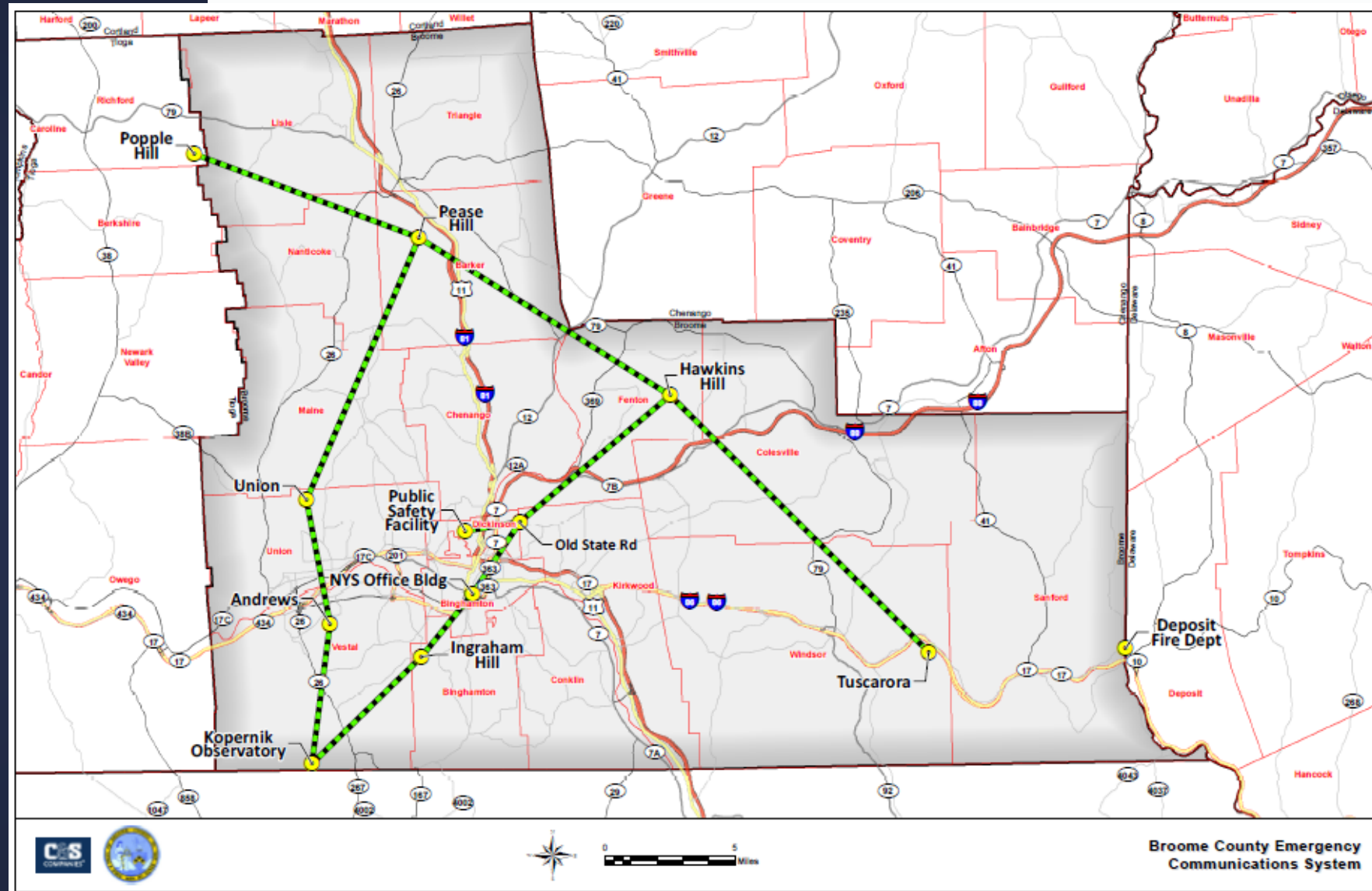


# Current System

- Inter-agency equipment and systems have poor compatibility
- The current system does not allow for contact with schools, other governmental agencies.
- The current system only enables us to talk to Police/Fire/EMS units, some DPW units, and no contact with schools or other government agencies.
  - None of these disciplines can talk to each other and many can't talk within their own discipline.
  - System does not meet NYS interoperability guidelines

# Existing Radio Sites

9 Primary Radio Sites



# Recent System Improvements

2011-2012

## Comprehensive Radio Study

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- Established a blueprint for system improvements moving forward

2016-2017

## NYS Radio Construction Grant

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- Replaced 7 existing county radio towers
- New microwave connectivity

2016-2017

## Paging Infrastructure

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- Replaced radio paging infrastructure
- Improved coverage and functionality for 45 departments

2017-2018

## Conceptual Designs for Future System Completed

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- FCC Licensing Completed
- Radio Vendor Selected



# New Radio System

# New Radio System

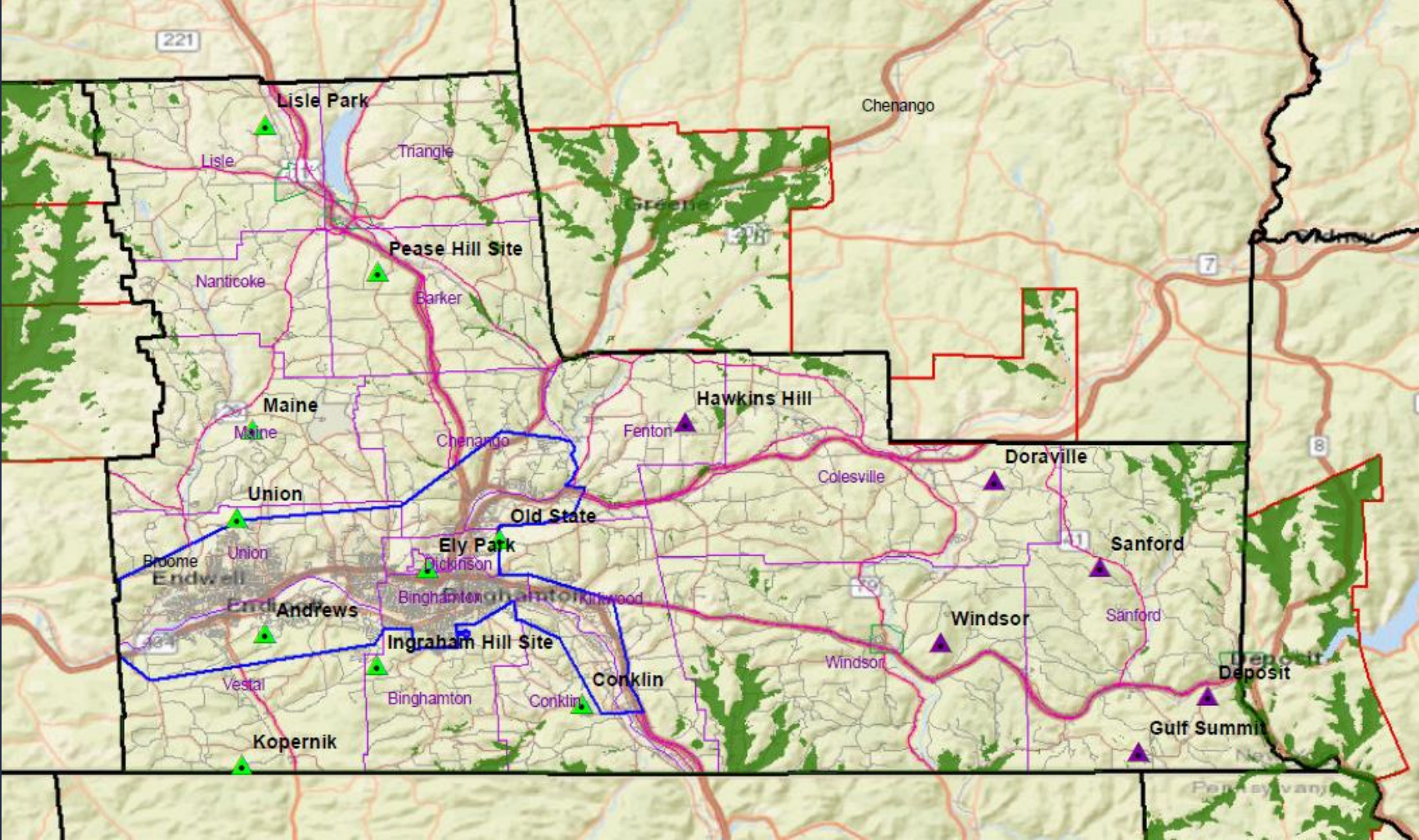
- Motorola Solutions
- 16 tower sites (8 new sites, 8 existing sites)
- Vastly improved system coverage that meets public safety radio system standards
  - 95% coverage
  - UHF P25 Phase II Digital Trunked System
- New radio equipment for all emergency responders
- Eliminates interoperability issues between agencies – one system

# New Radio System

- Establishes improved communications with neighboring counties
- Shares infrastructure with Cortland County
- Complies with NYS interoperability standards
- Provides capacity for future growth and technology improvements
  - School Districts
  - Hospitals

# New Radio Sites

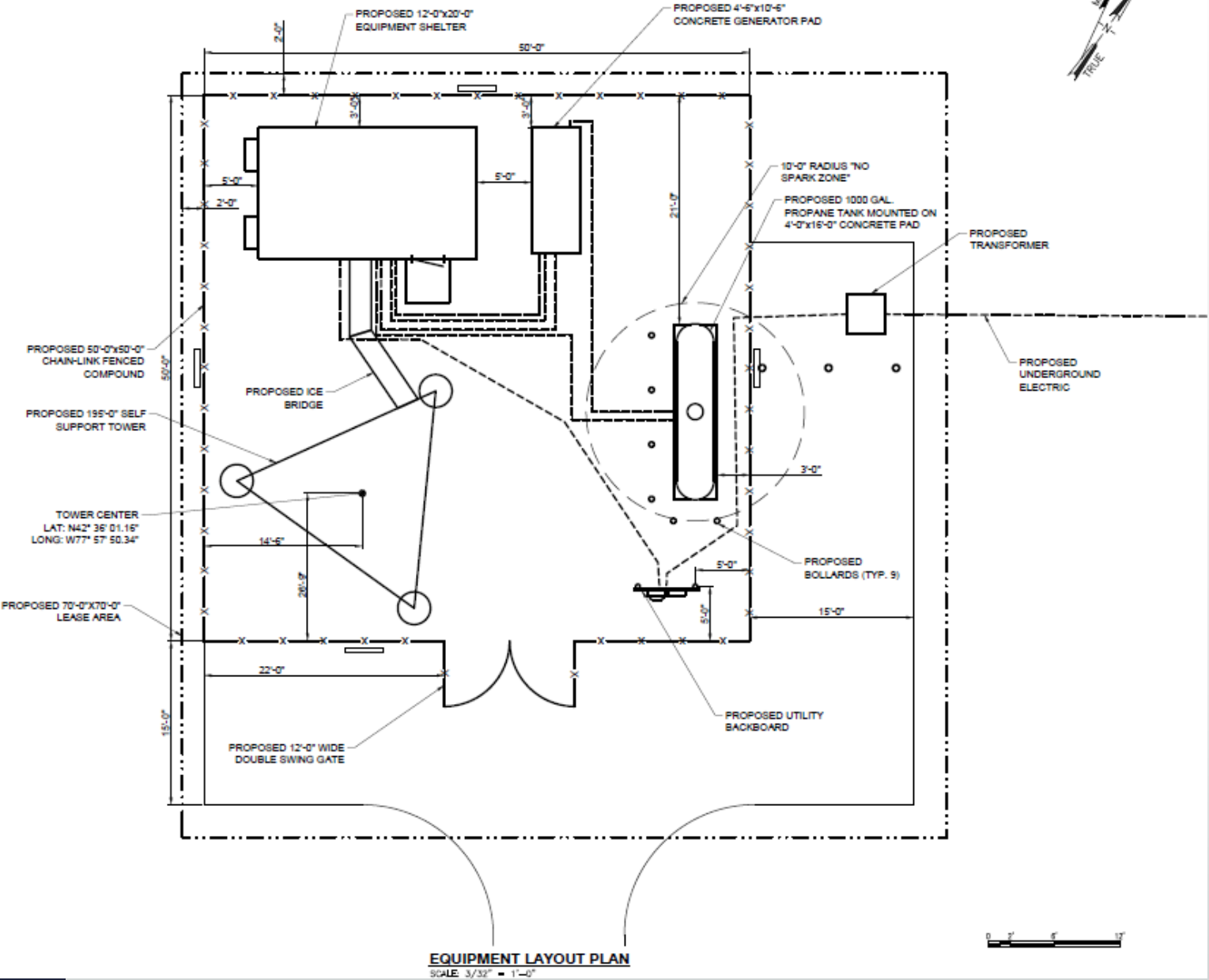
16 Primary Radio Sites



# Typical Site Configuration

- 50 foot x 50 foot fenced area (0.06 acres)
- 195 foot steel lattice tower
  - No lights
- 12 foot x 20 foot concrete building
- Generator
- Propane Tank
- Gravel Driveway

# Typical Site Configuration

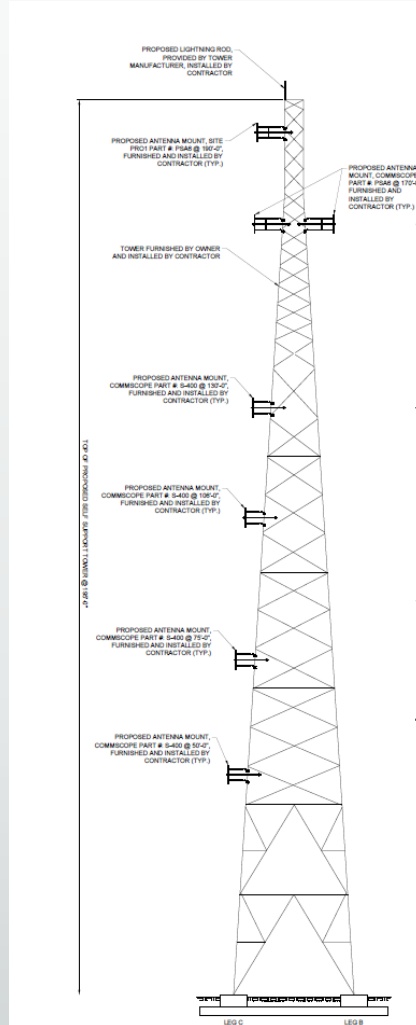




# Typical Site Configuration



# Typical Site Configuration



# Subscriber Equipment

- Equipment used by first responders
  - Portable Radio
  - Mobile Radio
  - Base Stations
- Nearly 4750 subscriber units
  - Allocated by agency need and formula
    - i.e. number of seats in a vehicle
- No local funds required

Implementation

# Implementation

2019-2021

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- Engineering & Project Management (C&S Engineering)

2019

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- Property Acquisition
- Construct 3-5 new towers

2020

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- Construct 3-5 new towers
- Microwave Connectivity
- Radio Infrastructure Installation
- 911 Console upgrades

2021

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- Radio Infrastructure Installation
- System Acceptance
- Subscriber Unit Distribution and Training
- Command Vehicle Design and Replacement (2022)

# Financials



# Current Investment

- We have invested almost \$10 million in infrastructure improvements over the last 3 years.
- Between 2012 and 2018 we have spent \$1 million plus on “Band-Aids” to keep the current systems functional.

# Future Investment

- Remaining cost to complete the new system is projected at just under \$23 million.
  - \$7.5 million for physical infrastructure (bonded)
  - \$15.4 million for system infrastructure and subscriber equipment (leased)
- Debt service on both bonded and leased items is approximately \$2.86 million per year
- We are proposing increasing the 911 surcharge to cover the debt service

# Bonding

- \$7.5 Million
- Physical Infrastructure

Bonded Cost Item	Cost (with 10% contingency)
Property Acquisition	\$176,000.00
Site Construction	\$1,831,500.00
Electric Utility Fee	\$99,000.00
Equipment Shelters	\$473,000.00
Generators	\$193,600.00
Propane Tanks	\$38,500.00
Towers	\$445,500.00
Microwave Equipment	\$1,124,200.00
Paging Equipment	\$308,000.00
Mobile Command Vehicle	\$1,100,000.00
Console Equipment & Data Recorder	\$880,000.00
Project Mgmt., Engineering, Permitting	\$855,700.00
<b>Total Bonded Items</b>	<b>\$7,525,000.00</b>

# Cash Disbursement

- Bonding approval vs cash disbursement
- Cash disbursement will be evaluated each year
  - Controlling project costs
  - Grant opportunities
- Minimize exposure prior to surcharge approval

Bonded Cost Item	Cash Disbursement Years
Property Acquisition	2018-2019
Site Construction	2019-2020
Electric Utility Fee	2019
Equipment Shelters	2019
Generators	2019
Propane Tanks	2019
Towers	2019
Microwave Equipment	2020
Paging Equipment	2020
Mobile Command Vehicle	2021-2022
Console Equipment & Data Recorder	2020
Project Mgmt., Engineering, Permitting	2018-2022

# Bonding Approval

- Bonding approval is resolution:
  - #37 – Land Purchase
  - #38 – Mobile Command Vehicle
  - #39 – Radio Infrastructure Equipment
  - #40 – Tower Site Prep
  - #41 – Tower Site Equipment
- Grouped by years of probable use

# Lease

- \$15.4 Million Lease of equipment with Motorola
  - 10 year payback
  - Radio System Infrastructure - \$4.5 Million
  - Subscriber Equipment - \$10.8 Million
- Lease will not be executed until surcharge increase is passed by the state



# 911 Surcharge

- Raise the monthly county wireless fee from \$0.30 to \$1.39
- Raise monthly county wireline fee from \$0.35 to \$1.62
- 10 year sunset on both fees
- 911 funds are currently a protected fund under the law and the additional revenue will be further segregated within the protected fund accounts.
- Resolution #36
  - Figures are rounded per state requirements in resolution

Questions?