Berks County, PA

ASTRO P25 System Overview

Berks County System Overview

- System Components:
  - ASTRO 25 Digital Trunked System - 700 MHz
    - South Simulcast Cell
      - 16 channels and 10 Sites
      - 30 talkpaths
    - North Simulcast Cell
      - 12 channels and 9 sites
      - 22 talkpaths
  - Conventional Subsystems
    - Interoperability Overlays in 800 MHz, UHF, VHF, Low Band
    - Analog Simulcast VHF Paging
    - Single Site Backup Paging Repeaters
    - DES
  - Dispatch/Console Subsystem
  - Microwave Backhaul & MPLS Network
  - Logging Recorder Subsystem
  - Network Management and MOSCAD

- Subscriber types:
  - Mobiles
    - APX7500
    - APX6500
    - APX4500
  - Portables
    - APX7000
    - APX6000
    - APX4000
  - Control Stations:
    - Consolette Control Stations
      - MCD5000 desksets
    - Mobile in a Tray
  - Digital Vehicular Repeaters (DVRS)

ASTRO 25 Trunked System – 700 MHz

- South Simulcast Site:
  - One Control Channel
  - 15 TDMA Channels - 30 Talkpaths
  - 10 Remote Sites:
    - Courthouse (Prime Site)
    - Mt. Penn II (Redundant Prime Site)
    - Bally
    - Earl
    - Alsace
    - Cumru
    - Union
    - Robeson
    - Ontelaunee
    - Turnpike

- North Simulcast Site:
  - One Control Channel,
  - 11 TDMA Channels - 22 Talkpaths
  - 9 Remote Sites:
    - North Campus (Prime Site)
    - Hamburg (Redundant Prime Site)
    - Kutztown
    - Albany
    - Bethel
    - Blue Mountain
    - Longswamp
    - West Penn
    - N. Heidelberg

BERKS COUNTY PUBLIC SAFETY RADIO PROJECT PROPAGATION BY SITE
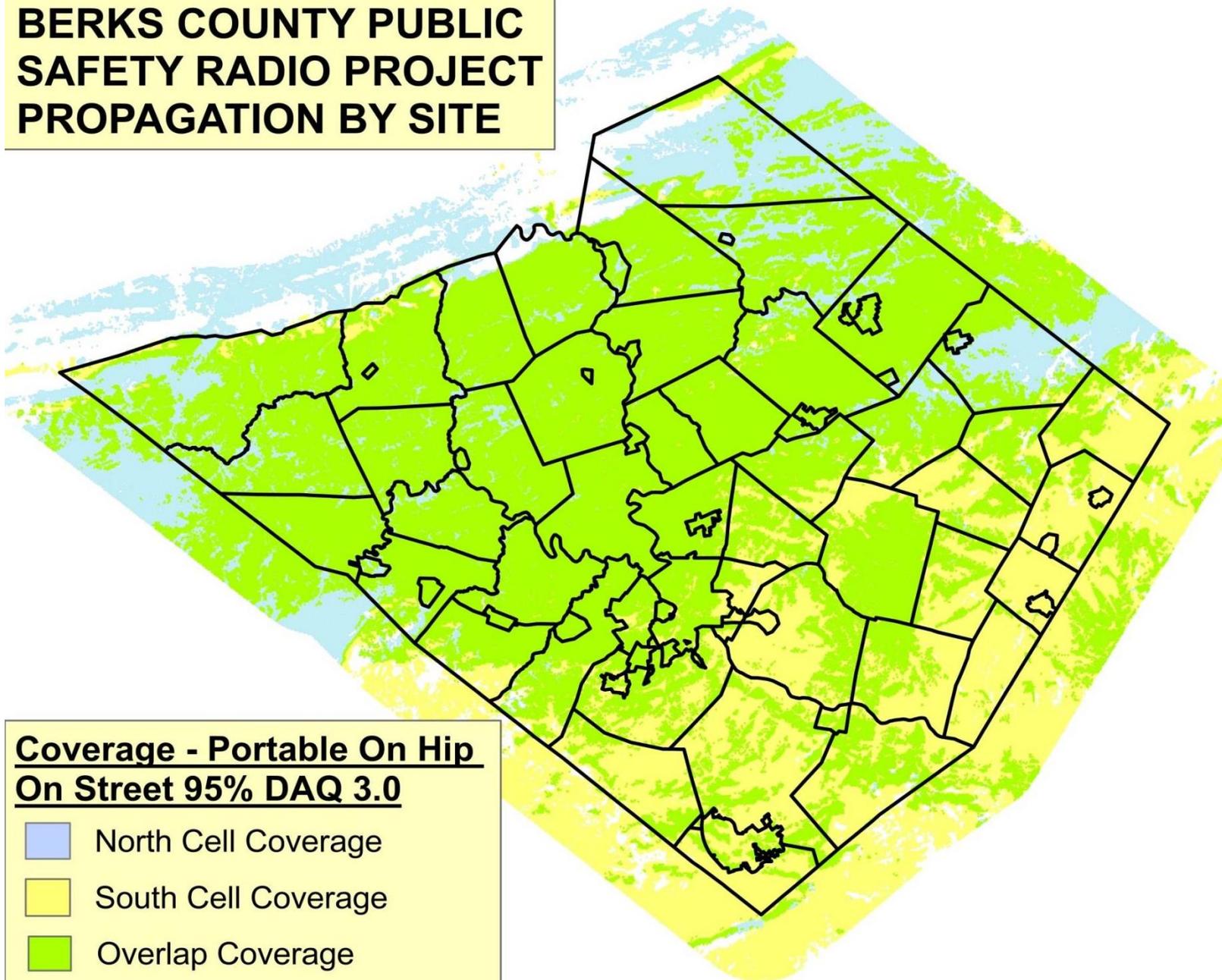
**Coverage - Portable On Hip On Street 95% DAQ 3.0**

- North Cell Coverage
- South Cell Coverage
- Overlap Coverage

700 MHz P25 System Map
Remote Radio Sites
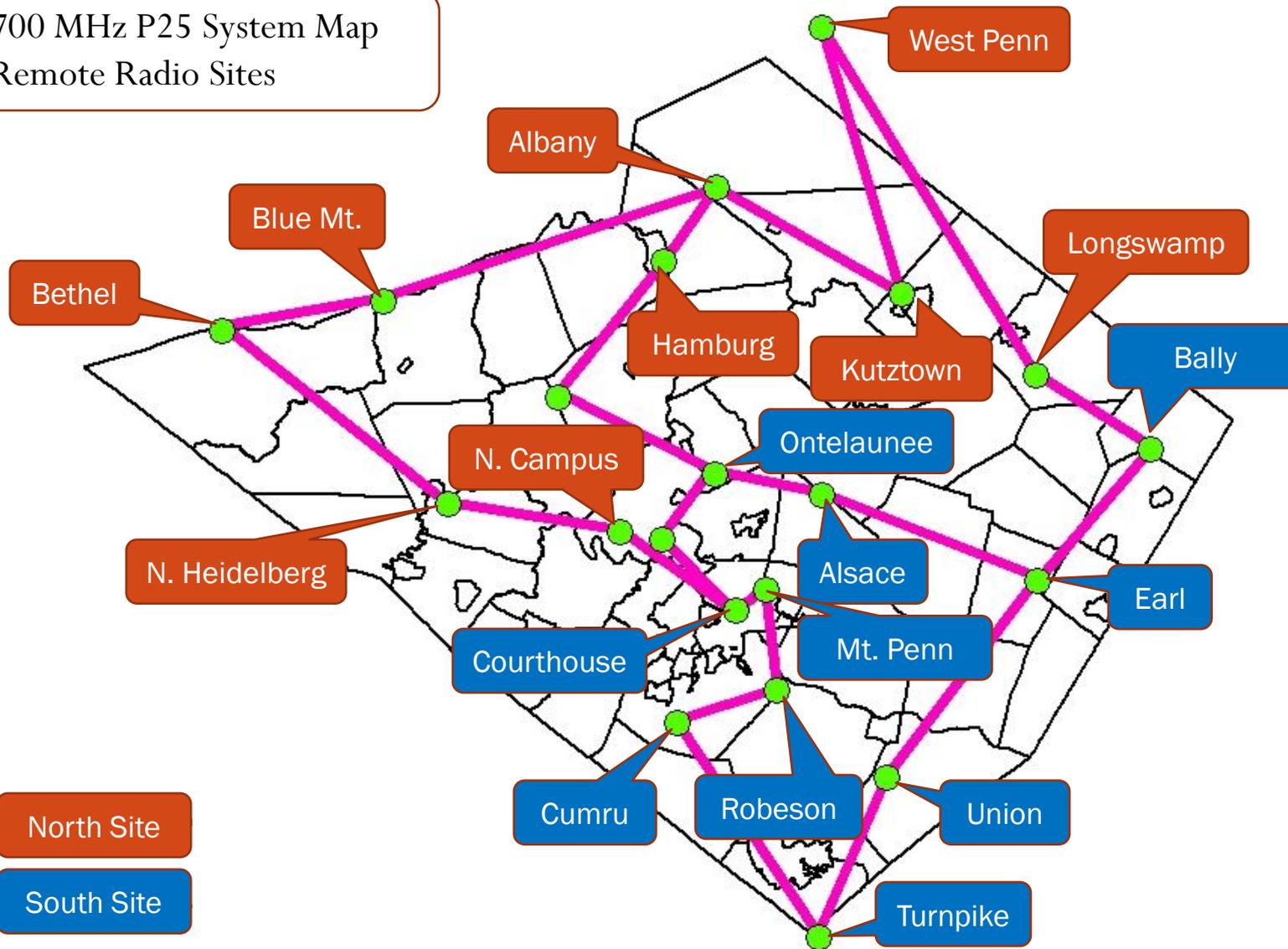
700 MHz P25 System Map
Control Sites

Hamburg - N. Redundant Prime

BCCC Master Site

Mt. Penn - S. Redundant Prime

N. Campus N. Prime

Courthouse Master Site

Courthouse S. Prime
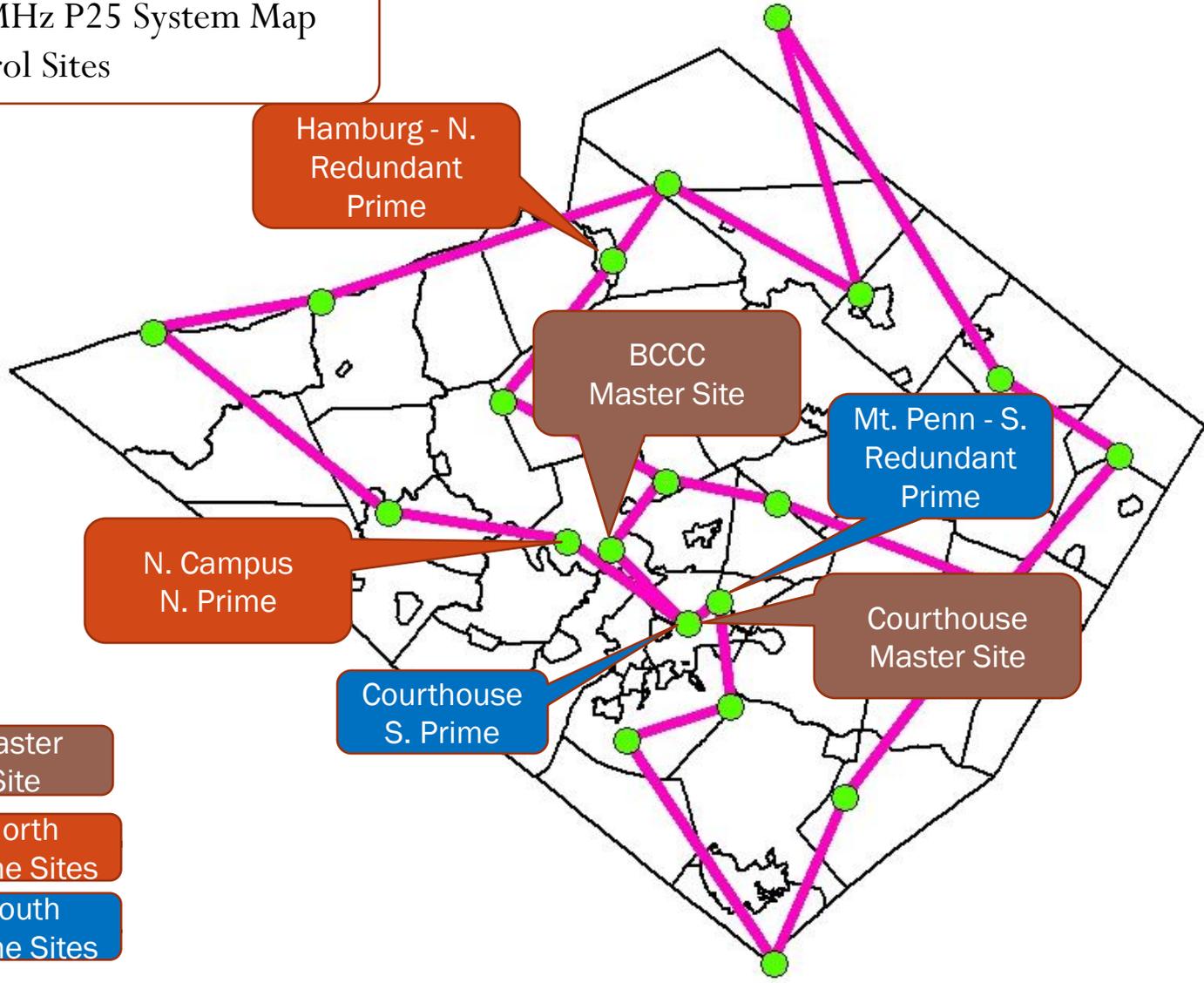
Master Site

North Prime Sites

South Prime Sites

System Map
Backhaul

Ring 1

Ring 2

Ring 3
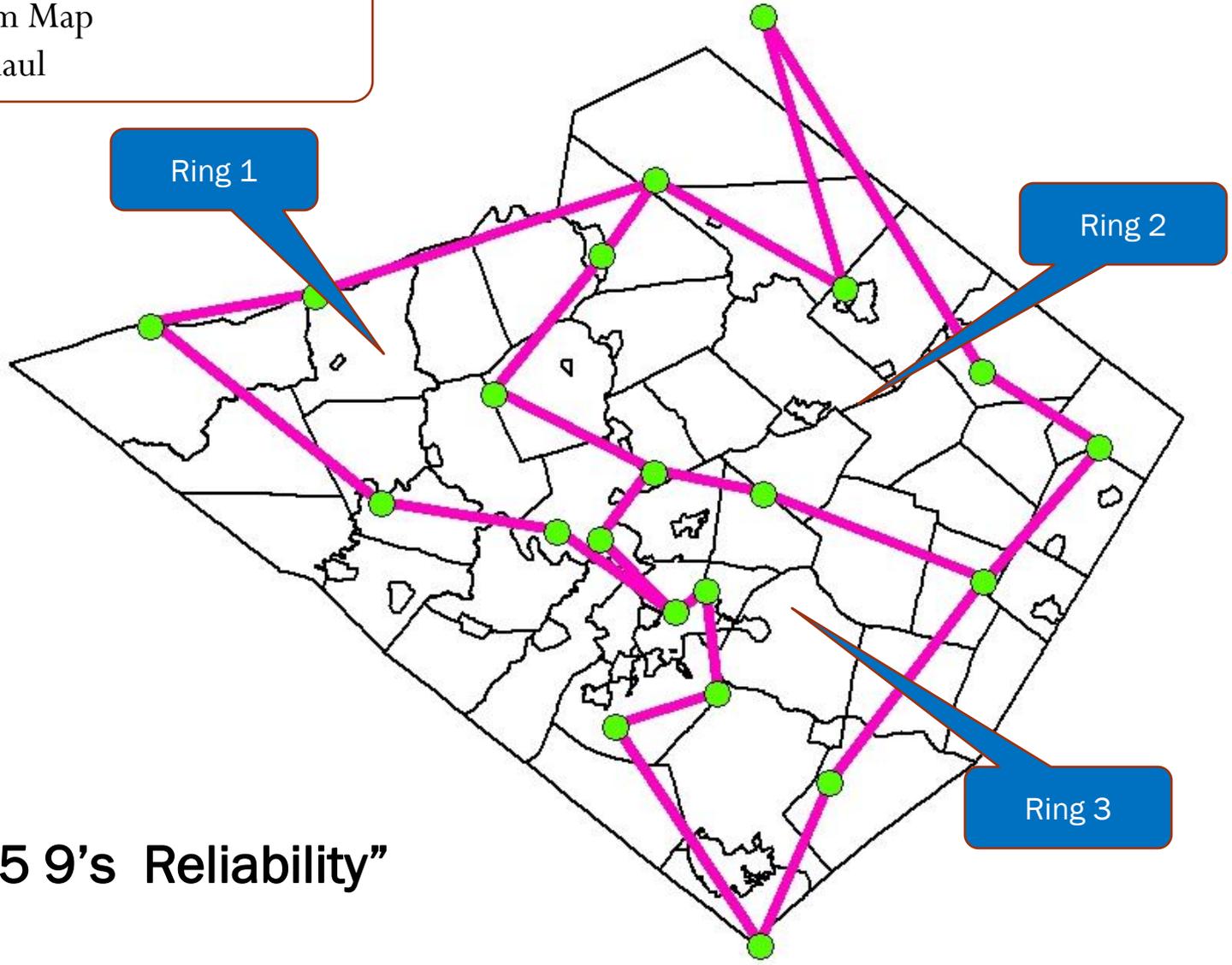
"5 9's Reliability"

Conventional Subsystems

- Analog Conventional Interop Subsystems:
  - 800 MHz: 11 Sites, 5 Channels
  - UHF: 8 Sites, 3 Channels
  - VHF: 14 Sites, 5 Channels
  - Low Band: 11 Sites, 2 Channels

- DES Subsystem:
  - 4 Repeater Sites

- Analog Main Paging Subsystem:
  - 12 Analog Simulcast Sites
  - One channels: 151.22 MHz

- BU Paging Repeaters:
  - 10 Repeater sites
  - Standalone operation

Site System Matrix

Site Name	Master Site	Prime Site	Dispatch Site	700 MHz (North)	700 MHz (South)	800 MHz	UHF	VHF	Low Band	DES	Paging	Backup Paging
BCCC (Direct Link)	Main		X									
North Simulcast Cell												
North Campus		X		T/R								
Hamburg		X		T/R							T	T/R -New
Albany				T/R		T/R	T/R	T/R	T/R			
Bethel				T/R		T/R	T/R	T/R	T/R		T	T/R
Blue Mountain				T/R				R	T/R			
Kutztown				T/R				R			T	
Longswamp				T/R		T/R	T/R	T/R	T/R		T	T/R
N. Heidelberg				T/R		T/R		R			T -New	
West Penn				T/R		T/R		R	T/R		T	
South Simulcast Cell												
Courthouse	DSR	X	X		T/R							
Mt. Penn II		X			T/R	T/R	T/R	T/R	T/R	T/R	T	
Alsace					T/R	T/R		R				
Bally					T/R	T/R	T/R	T/R	T/R		T	T/R -New
Cumru					T/R	T/R	T/R	T/R	R		T	T/R -New
Earl					T/R	T/R	T/R	T/R	T/R	T/R	T	T/R
Ontelaunee					T/R							
Robeson					T/R							
Turnpike					T/R			R	R		T-New	T/R -New
Union					T/R	T/R	T/R	R	R			
Centre										T/R	T	T/R
City Hall			X									
New Tripoli										T/R		T/R
Mt. Penn-RMI												T/R
TOTALS	2	4	3	9	10	11	8	14	11	4	12	10

Dispatch/Console Subsystem

- MCC7500 Dispatch Sites
  - BCCC Location (County)
    - 13 Dispatch Op-Positions
    - 4 Training Op-Positions
  - Courthouse (County)
    - 6 Backup Dispatch Op-Positions
  - City Hall: (City)
    - 6 Dispatch Op-Positions

Logging Recorder Subsystem

- Console Recording – IP Logging of up to 256 resources (talk groups and conventional channels)
- Console Recording – Analog recording of Select and Unselect speakers at all positions
- 9-1-1 – Analog recording of all calls (includes ANI/ALI information)
- 9-1-1 – Digital recordings of all phones at DES
- VoIP – Digital recording of select administrative phones

All recordings and data storage centers are redundant

Network Management, MOSCAD and Security

- Network Management Clients
  - Administrative Access to the System
  - Management of the Radio Fleet
  - Usage
  - System Maintenance and Health
- MOSCAD
  - Component Level Monitoring of Electronics
  - Environmental Conditions At Tower Sites
- Security
  - Door Controls and Electronic Access
  - Interior and Exterior Camera Systems