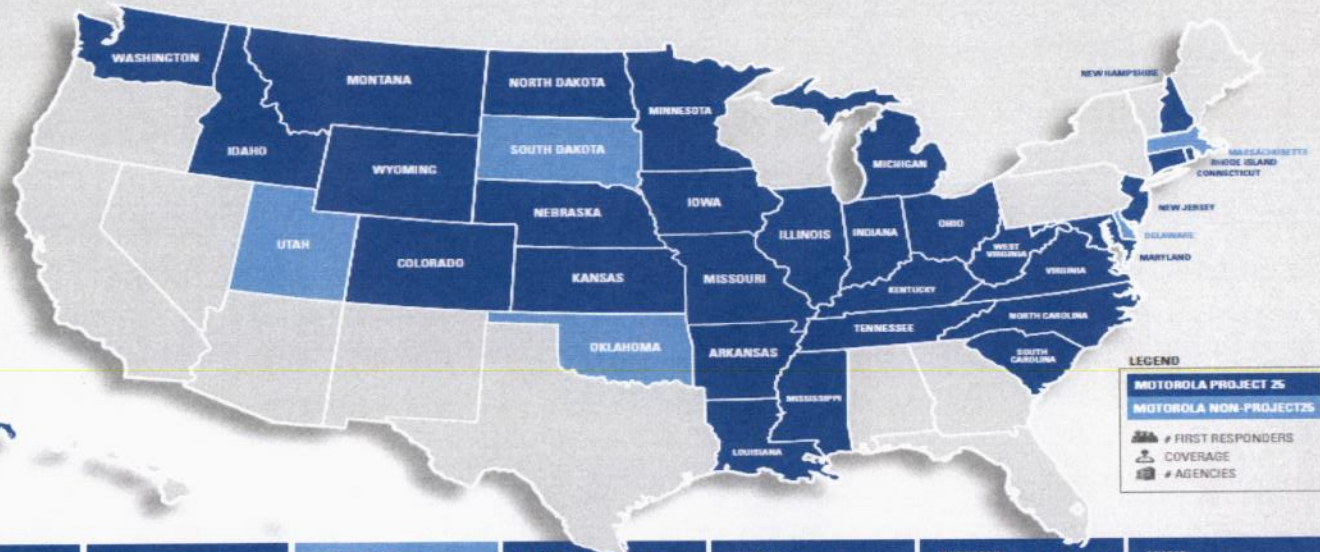# MARSHALL COUNTY KENTUCKY

## EXPANSION OF KSP's NEW RADIO SYS

- ○ Overview & Proposed Confirmed KSP Sites
- ○ Proposed Coverage | Various Loss Factors

6th of April 2021 – Fiscal Court Meeting
Robbie Smith – Local Account Executive
Jay Burla – Area Sales Manager IN/KY

**MOTOROLA** SOLUTIONS

# MOTOROLA STATEWIDE COMMUNICATIONS
## COVERAGE FROM COAST TO COAST

**LEGEND**
- MOTOROLA PROJECT 25
- MOTOROLA NON-PROJECT 25
- # FIRST RESPONDERS
- COVERAGE
- # AGENCIES

| State / System | # First Responders | Coverage | # Agencies |
|---|---|---|---|
| **ALASKA** (ALMRS) ALASKA LAND MOBILE RADIO SYSTEM | 20,000 | 90% | 125 |
| **ARKANSAS** (AWIN) ARKANSAS WIRELESS INFORMATION NETWORK | 28,000 | 95% | 900 |
| **COLORADO** (DTRS) COLORADO STATEWIDE DIGITAL TRUNKED RADIO SYSTEM | 81,000 | 95% | 900 |
| **CONNECTICUT** CONNECTICUT STATE POLICE COMMUNICATIONS SYSTEM | 10,000 | 95% | 7 |
| **DELAWARE** STATE OF DELAWARE 800 MHZ STATEWIDE RADIO SYSTEM | 10,000 | 95% | 150 |
| **IDAHO** (ICAWN) IDAHO COOPERATIVE AGENCIES WIRELESS INTEROPERABLE NETWORK | 9,300 | 85% | 350 |
| **ILLINOIS** (STARCOM21) STATE OF ILLINOIS INTEROPERABLE COMMUNICATIONS PLATFORM | 43,000 | 98% | 1,600 |
| **INDIANA** (IPSC) INTEGRATED PUBLIC SAFETY COMMISSION | 62,000+ | 95% MOBILE | 838 |
| **IOWA** IOWA STATEWIDE INTEROPERABLE COMMUNICATIONS SYSTEM | 4,600 | 95% | 4 |
| **KANSAS** (KSICS) KANSAS STATEWIDE INTEROPERABLE COMMUNICATION SYSTEM | 28,000+ | 95% | 1,100 |
| **KENTUCKY** (KSP) KENTUCKY STATE PATROL | 1,200 | 95% | 1 |
| **LOUISIANA** (LWIN) LOUISIANA WIRELESS INFORMATION NETWORK | 79,000 | 95% | 500 |
| **MARYLAND** (Maryland FiRST) MARYLAND FIRST RESPONDERS INTEROPERABLE RADIO SYSTEM TEAM | 25,000 | 95% | 35 |
| **MASSACHUSETTS** (CoMIRS) COMMONWEALTH OF MASS INTEROPERABLE RADIO SYSTEM | 16,000 | 90% | 75 |
| **MICHIGAN** (MPSCS) MICHIGAN'S PUBLIC SAFETY COMMUNICATIONS SYSTEM | 72,000+ | 97% | 1,500 |
| **MINNESOTA** (ARMER) ALLIED RADIO MATRIX FOR EMERGENCY RESPONSE | 85,000 | 95% | 1,000+ |
| **MISSISSIPPI** (MSWIN) MISSISSIPPI WIRELESS COMMUNICATION COMMISSION | 20,000 | 97% | 405 |
| **MISSOURI** (MOSWIN) MISSOURI STATEWIDE INTEROPERABILITY NETWORK | 33,000 | 95% | 1,300 |
| **MONTANA** STATE OF MONTANA TRUNKED RADIO SYSTEM | 4,000 | 50% | 50 |
| **NEBRASKA** (SRS) NEBRASKA STATEWIDE RADIO SYSTEM | 4,000 | 95% | 18 |
| **NEW HAMPSHIRE** (NHDOS) NEW HAMPSHIRE DEPT. OF SAFETY | 700 | 85% | 2 |
| **NEW JERSEY** (State NJICS) NEW JERSEY INTEROPERABLE COMMUNICATIONS SYSTEM (NJICS) | 25,000 | 95% | 52 |
| **NORTH CAROLINA** (VIPER) VOICE INTEROPERABILITY PLAN FOR EMERGENCY RESPONDERS | 78,000 | 95% | 268 |
| **NORTH DAKOTA** STATE OF NORTH DAKOTA STATE RADIO SYSTEM | 4,700+ | 90% MOBILE | 75+ |
| **OHIO** (MARCS) MULTI-AGENCY RADIO COMMUNICATION SYSTEM | 50,000 | 97.5% | 1200 |
| **OKLAHOMA** (OKWIN) OKLAHOMA PUBLIC SAFETY NETWORK | 35,000+ | 90% | 550 |
| **RHODE ISLAND** (RISCON) RHODE ISLAND STATEWIDE COMMUNICATION NETWORK | 9,000 | 90% | 70 |
| **SOUTH CAROLINA** (Palmetto 800) PALMETTO 800 RADIO SYSTEM | 30,000 | 95% | 750 |
| **SOUTH DAKOTA** STATE OF SOUTH DAKOTA STATEWIDE RADIO SYSTEM | 20,000 | 98% MOBILE | 500+ |
| **TENNESSEE** TENNESSEE STATE WIDE P25 COMMUNICATIONS SYSTEM | 20,000 | 97% | 46 |
| **UTAH** UTAH'S STATEWIDE COMMUNICATIONS SYSTEM | 20,000+ | 90% APPROX. | 170 |
| **VIRGINIA** (STARS) STATEWIDE AGENCIES RADIO SYSTEM | 10,000 | 95% | 27 |
| **WASHINGTON** (WSP) WASHINGTON STATE PATROL | 3,000 | NA | 8 |
| **WEST VIRGINIA** (SIRN) STATEWIDE INTEROPERABLE RADIO NETWORK | 20,000 | 90% MOBILE | 200 |
| **WYOMING** (WyoLink) WYOMING STATEWIDE PUBLIC SAFETY INTEROPERABLE RADIO COMMUNICATIONS SYSTEM | 17,200 | 90% | 73 |

# KSP 7/800 SYSTEM ARCHITECTURE





## GEOGRPAHICALLY REDUNDANT ASTRO CORES – Phase I

- **PRIMARY CORE**
  - Frankfort, KY

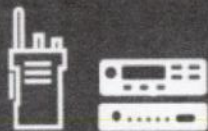- **SECONDARY CORE**
  - Elizabethtown, KY

## BACKHAUL PROVIDED VIA KEWS

- **KENTUCKY EMERGENCY WIRELESS SYSTEM**
- Goal is to offer a statewide, integrated communications and information network with high speed, high capacity delivery of voice, data and video transmissions positioning the Commonwealth to better serve our citizens with advanced applications and future technologies

# COMMONWEALTH OF KENTUCKY **P25 LMR PROJECT**

## PHASE 1A & 1B | 2018

### SUBSCRIBER EQUIPMENT

1200 APX8000 PORTABLE TROOPER HANDHELDS
540 APX8500 MOBILE TROOPER VEHICLE RADIOS
540 VRX1000 IN CAR REPEATER SYSTEMS

### CORES & CONSOLES

KEWS HQ & KSP POST 4 UPGRADES
REDUNDANT MASTER SITE CORES TO MAXIMIZE UPTIME & NETWORK HEALTH
KSP DISPATCH CENTER UPGRADES
66 MCC 7500E CONSOLE POSITIONS AT ALL 16 KSP POSTS

## PHASE 1C | 2019



### POST 1 & 2 BUILDOUT |

19 RF SITES
6 CHANNEL FDMA OPERATION
NICE LOGGING RECORDING SOLUTION
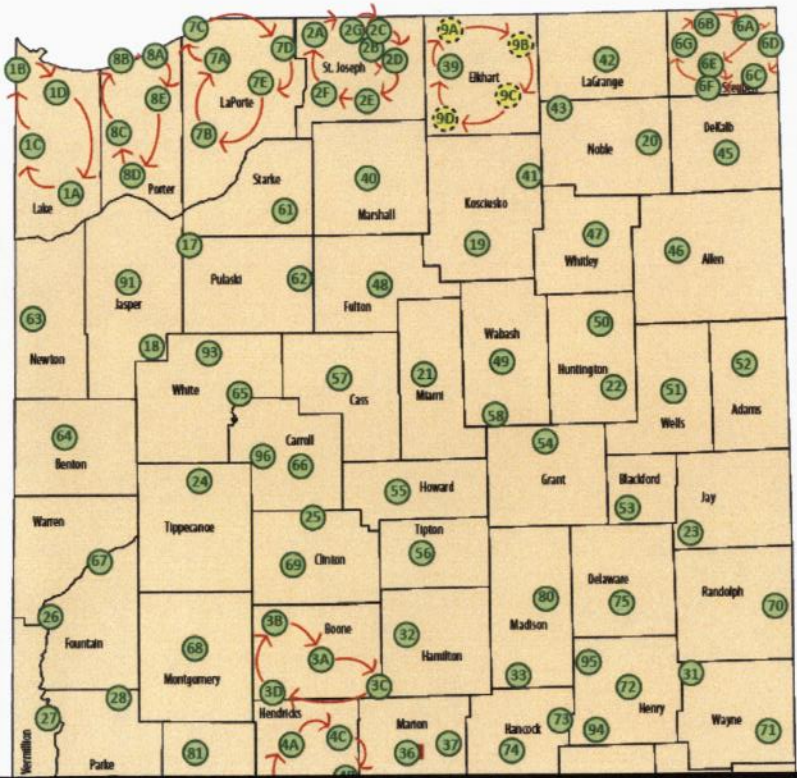
## PHASE 2 | 2021



### 8 POST BUILDOUT |

65 RF SITES, 1 PRIME SITE
GENESIS PERFORMANCE MANAGEMENT SOFTWARE
KMF CLIENT
CRITICAL SITE SPARES FOR EACH POST

Integrated Public Safety Commission
P25 System Map

# NORTH GROWTH & BENEFITS

March 27, 2014 Executed Upgrade Contract

Number of Simulcast Systems went from 5 to 9

Number of Simulcast Sub sites went from 19 to 42

Number of ASR sites went from 134 – 149

All DOCs added their own sites at each center

County's directly connecting for dispatch went from 7 to 24 and counting

Commitment to at least 2037

Overall growth since first system in early 2000s was 92 sites to 190+ and overall users on system is **90,000+**

# EXISTING KSP MOBILE COVERAGE

KSP RF Sites Surrounding Marshall County

## KSP SITES SURROUNDING MARSHALL COUNTY
- 1-02 (Mayfield),1-03 (MSU) 1-04 (Lyon County), 1-06 (Paducah) and 1-08 (Livingston)

## Existing Site To Add
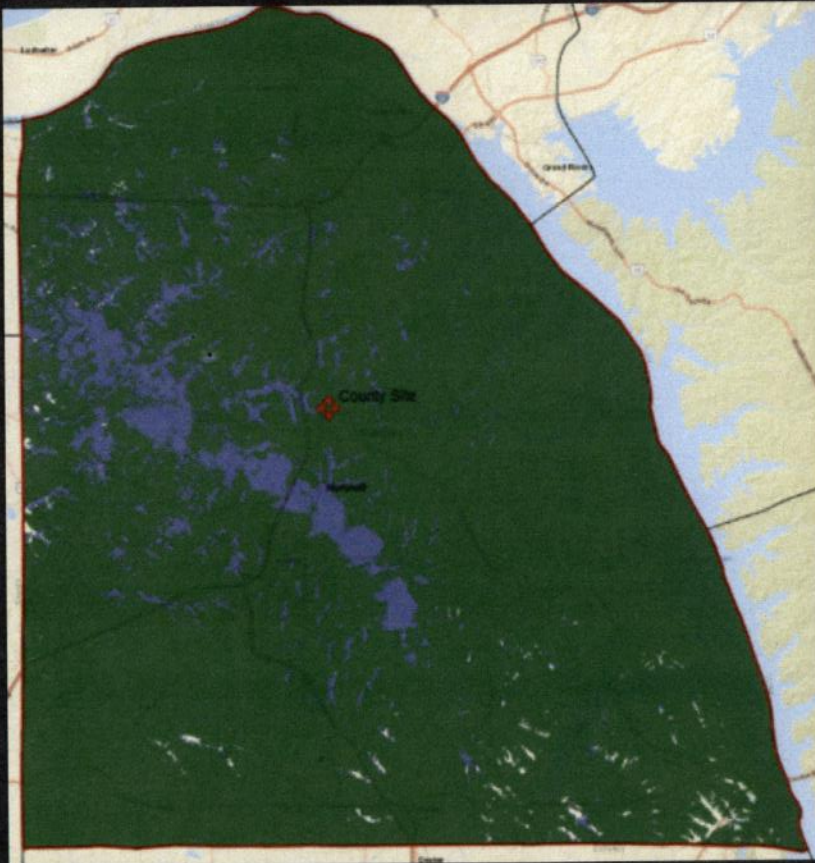- 300' Tower
- Draffenville, Kentucky

# EXISTING KSP COVERAGE

<u>Mobile</u> Coverage within Marshall County after adding County's site to KSP system (Blue Shade)
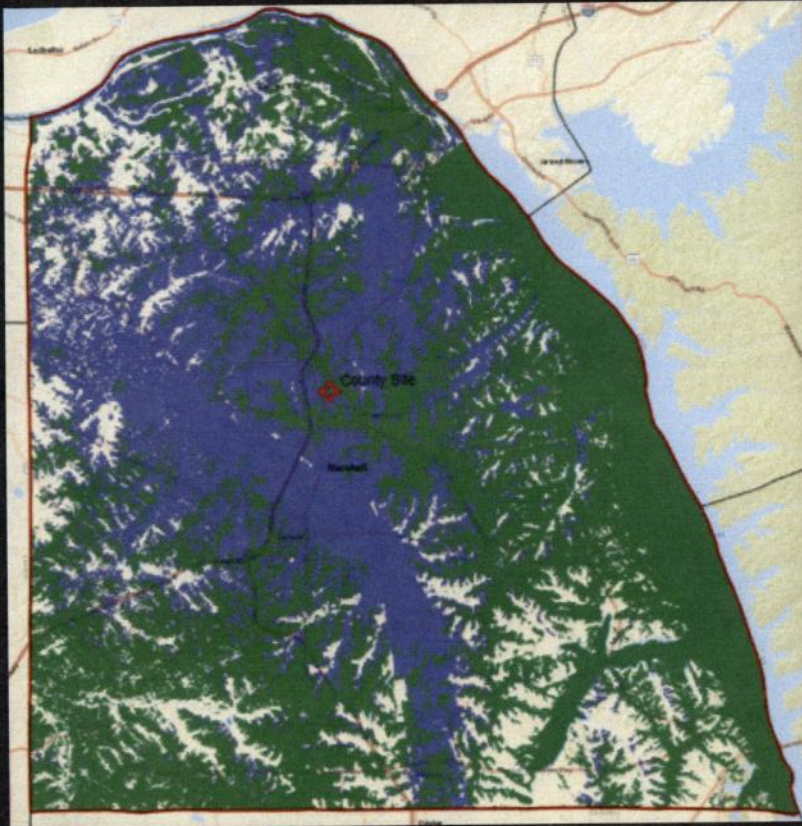
## Outbound System Coverage

- Outbound Coverage = Dispatch to Subscriber
- System Designed for Mobile Coverage
- Motorola APX Mobile P25 FDMA
- Shaded Areas 95% Coverage
- Non Shaded - <95% Coverage
- Coverage into surrounding Counties

# EXISTING KSP COVERAGE

APX 4000 <u>Portable</u> Coverage within Marshall County after adding County's site to KSP system
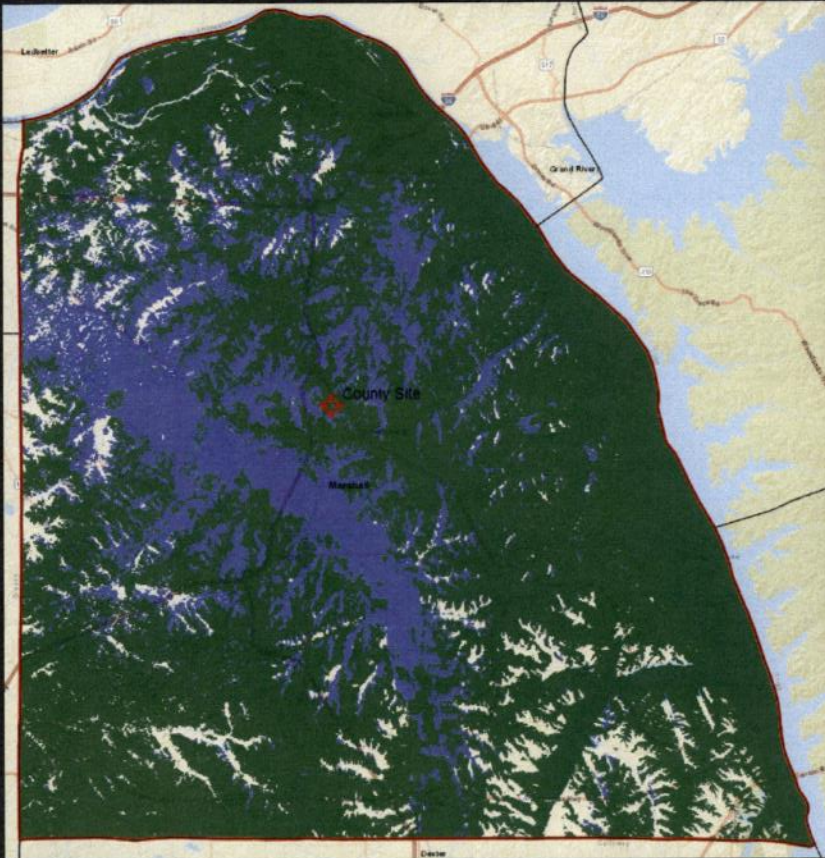
## Inbound System Coverage

- Inbound Coverage = Subscriber to Dispatch
- Motorola APX Portable P25 FDMA
- Shaded Areas 95% Coverage
- Non Shaded - <95% Coverage
- Coverage into surrounding Counties

# EXISTING KSP COVERAGE

APX 4000 <u>Portable</u> Coverage within Marshall County after adding County's site to KSP system
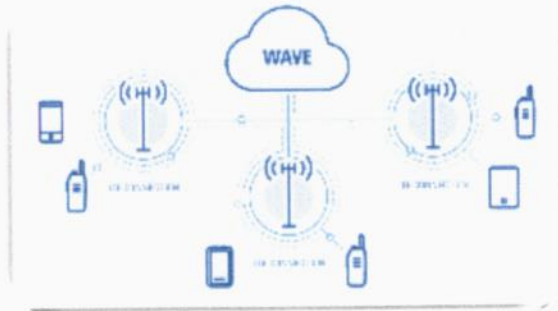
## Outbound System Coverage

- Outbound Coverage = Dispatch to Subscriber
- Motorola APX Portable P25 FDMA
- Shaded Areas 95% Coverage
- Non Shaded - <95% Coverage
- Coverage into surrounding Counties

# Coverage Gaps – How to Fill?

- **Marshall County Possibilities**
- **KSP _Potential_ Future Possibilities**

Simulcast System

- Multiple Sites – can be added later

- Efficient Use of Frequency

- Timed launches for Improved overall coverage



**SmartConnect – Requires KSP approval**

- Roam via APX NEXT from LMR to ATT or Verizon

- Roam APX6000/8000 LMR to Wi-Fi in coverage gaps

- Great for schools, hospitals, government buildings

**CriticalConnect – Requires KSP approval**

- Provides for WAVE (PTT over Cellular) connected to LMR

- Roam System to System

# SMARTCONNECT

## EHANCE

"In the County we have some dead spots where we don't get radio coverage because of the mountains or the distance. Having continuous coverage, even when we're in those areas, will be a plus for officer safety" IT Systems Manager Spokane County Sheriff's Office

## SAVINGS

Rethink the use of BDAs, patch work signaling, control stations with hard lined antennas and the old adage of just accepting there isn't an answer



**STAY CONNECTED TO YOUR LIFELINE WITH SMARTCONNECT**

SmartConnect automatically switches your voice communications to broadband if you lose radio coverage.

When you move beyond the limits of your radio system's coverage, you shouldn't have to leave your lifeline behind. Whether a pursuit takes you out of coverage, or you're assisting another agency, SmartConnect ensures your lifeline is always in reach.

EXPLORE SMARTCONNECT

# Cost Structure

- Marshall County Responsibility

    - Purchase 6 Channel RF Site

    - Purchase Microwave path from Draffenville to KSP (Mayfield)

    - Purchase Software Upgrade plan with MSI

    - Keep system maintained with authorized Motorola technicians

    - Maintain current VHF capabilities to work along with new system – MSI not touching this

    - Add Consolettes to current Zetron system

- KSP Responsibility

    - Maintain relationship with KEWS and KSP

    - Current upgrades contracted through 2032

    - Provide Radio IDs to Marshall County (MSI)

    - Maintain system with current trained techs

    - Validating User Agencies and TG allotment