Build or Join? Best Radio System for my Operations?

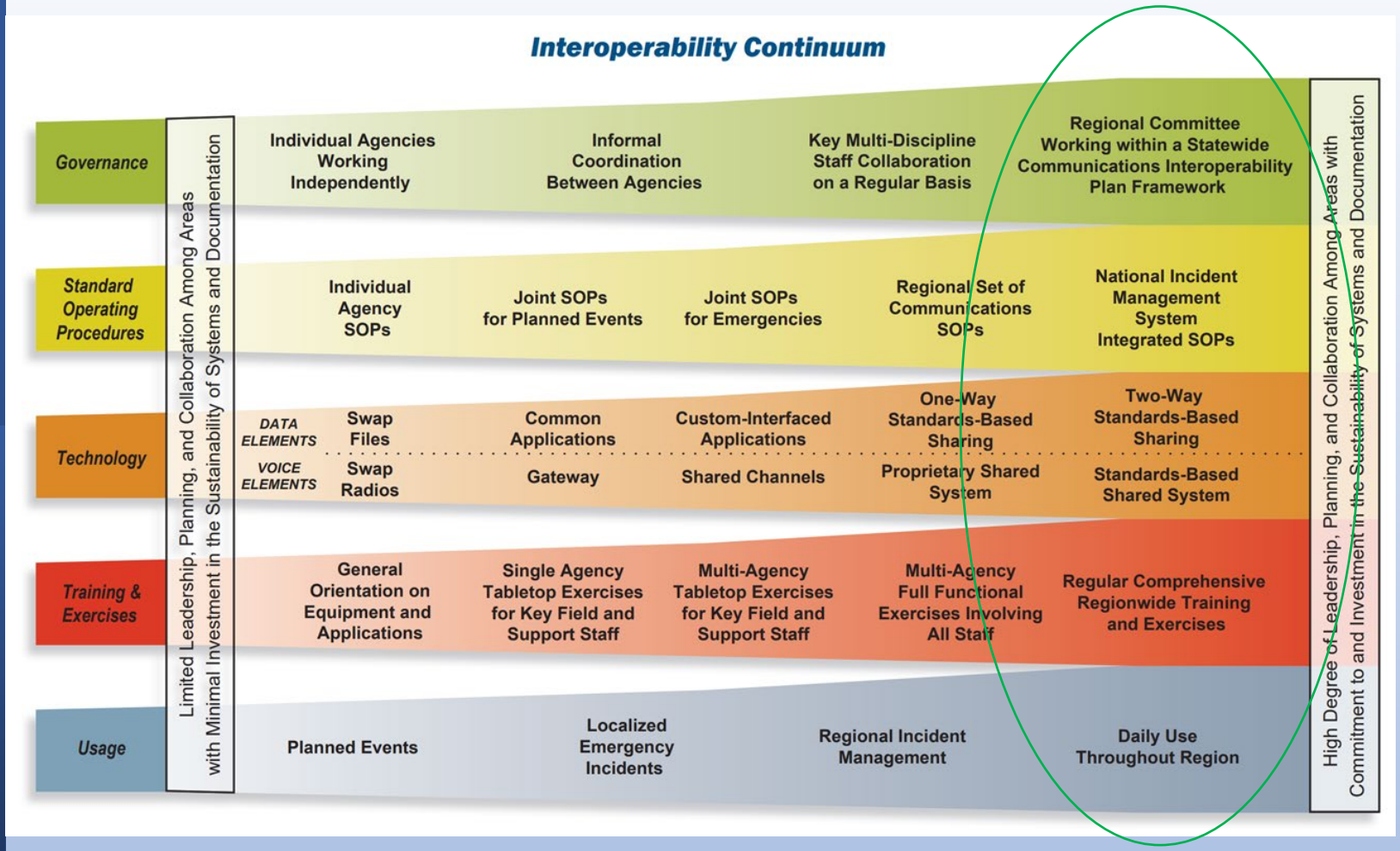
IWCE 2022

March 23,2022

Agenda

- Introductions
- Key Considerations
- Join Perspectives
  - Local
  - State
- Recap
- Q&A
- Closing

Join



"Regional shared systems are the optimal solution for interoperability. …standards-based shared systems promote competitive procurement and a wide selection of products to meet specific user needs. With proper planning of the talk group architecture, interoperability is provided as a byproduct of system design thereby creating an optimal technology solution."
DHS Interoperability Continuum

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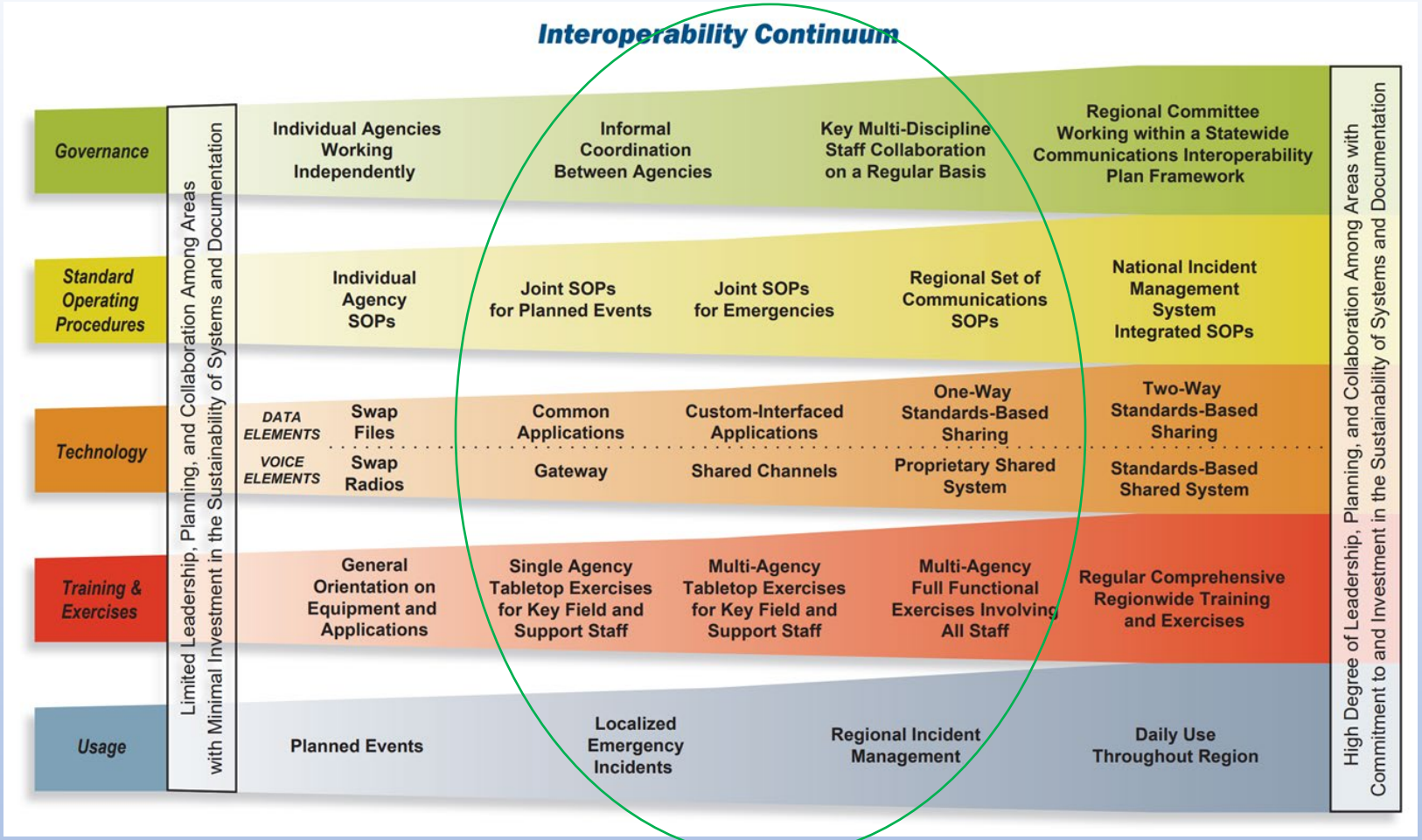
Build



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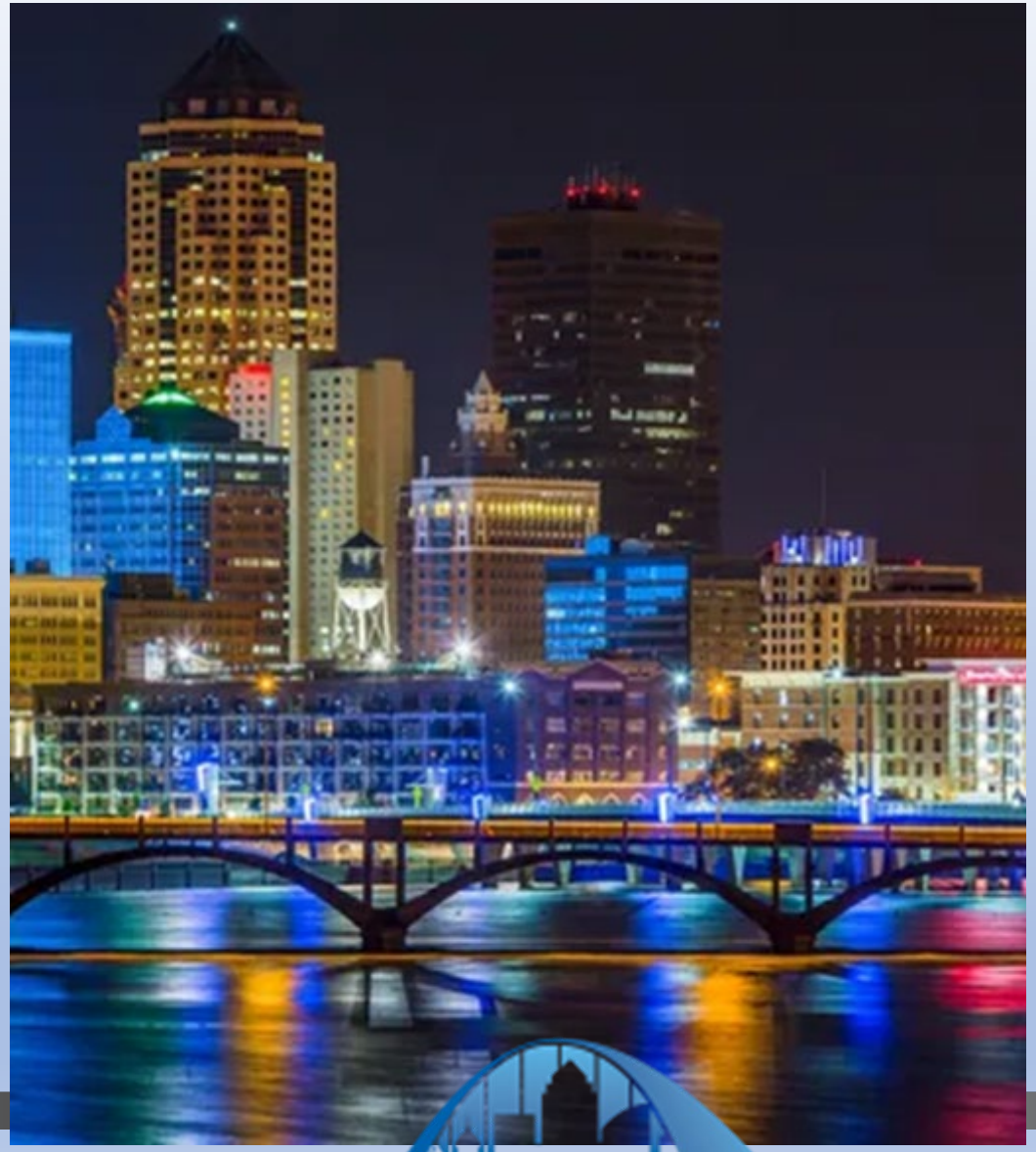
Des Moines, IA Emergency Radio Project

Capitol City in Midwest

Population 214,133

Metro 552,000



CITY OF DES MOINES

Selected Leading National Consultant

- **Needs Analysis – Critical Deficiencies**
  - 1973 Conventional System – End of Life
  - Operability, Interoperability
  - In-building Coverage
  - Capacity, Security
  - Resiliency, Redundancy
- **Identified Alternatives**
  - Build – $20M+
  - Join Regional (Expansion) – $7M
  - Join Public (ISICS) – $12M
    - Iowa Statewide Interop Comms System
- **Technical Specs, RFP, Negotiations**
- **System Build Out**

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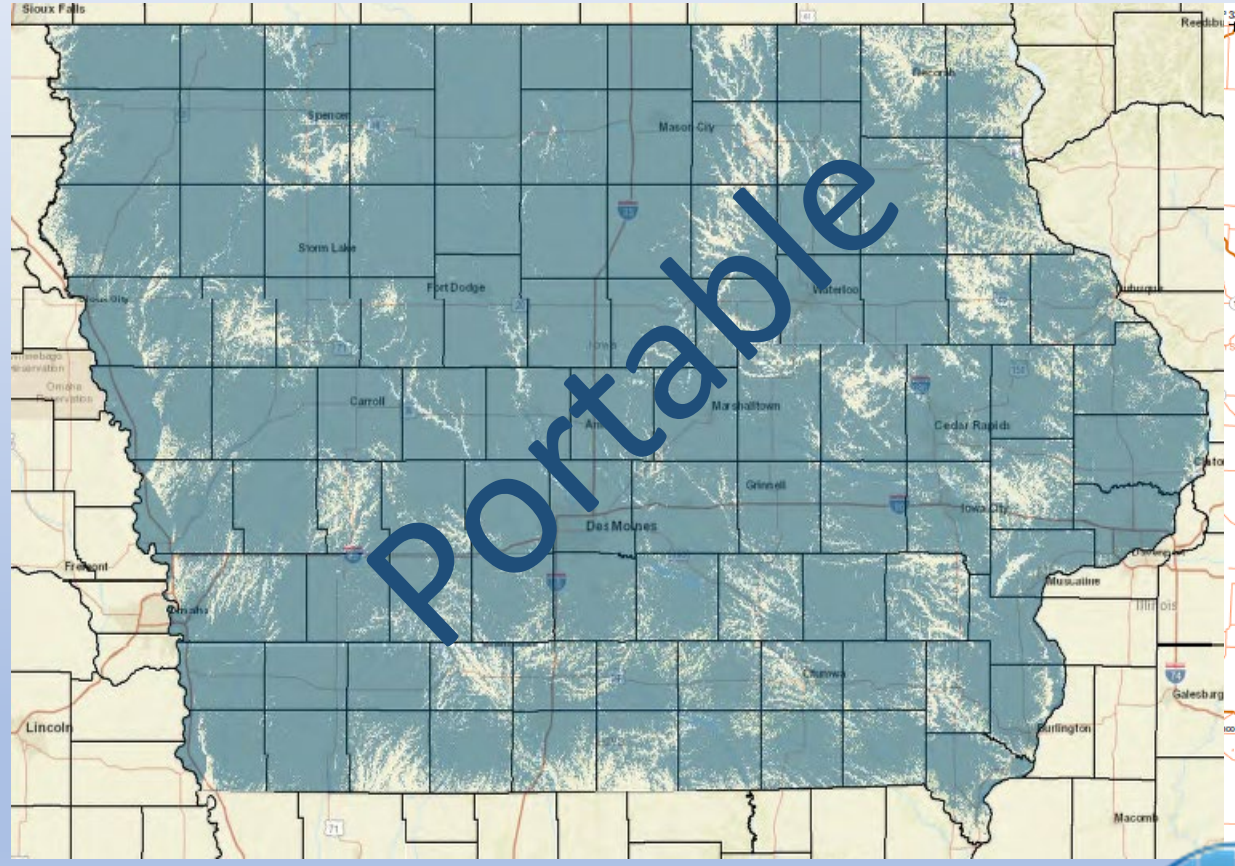
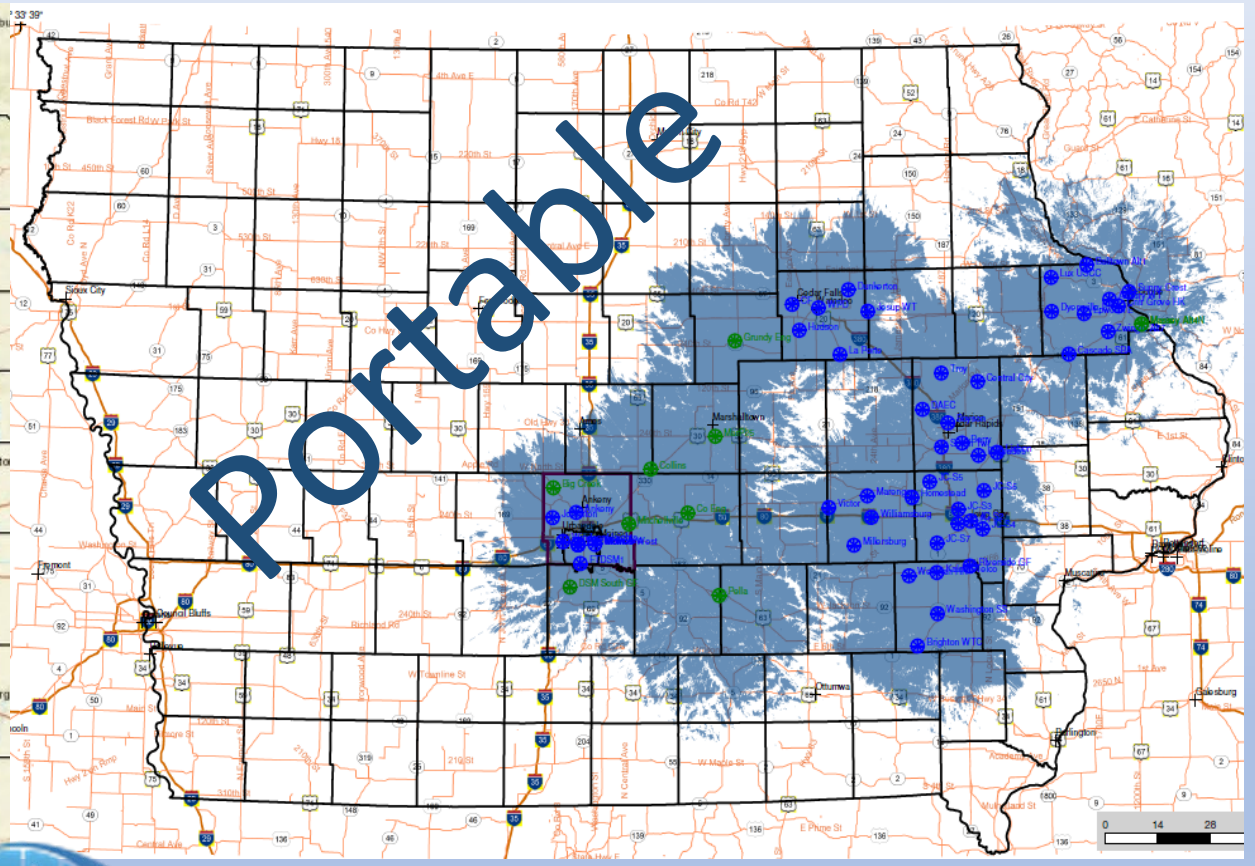
Coverage - Portable on Street

ISICS

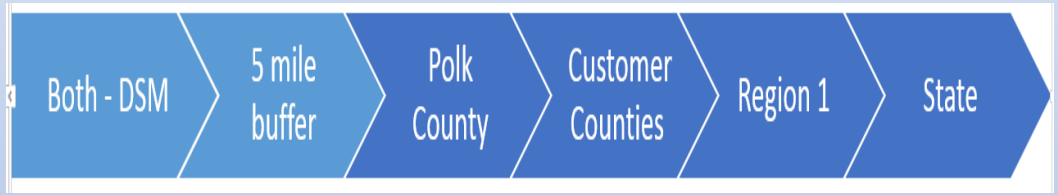


REGIONAL EXPANSION



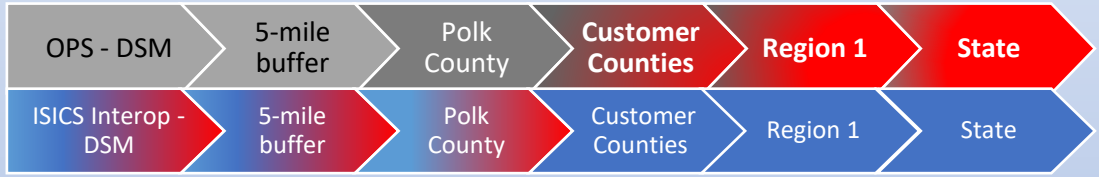
Coverage - Impacts

ISICS



- **Operable (day to day) Communications and Interoperable (with other agencies) Communications are on the SAME system.**

REGIONAL



- **Operable (day to day) and Interoperable (with other agencies) comms on DIFFERENT systems.**
  - **Regional for operations**
  - **ISICS for Statewide interoperability**

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Statewide Versus Regional

Objective	ISICS	Regional (Expansion)	
Coverage on system	City, County, Region & State	City, County	
Capacity	9 Site Simulcast 12 Channel	6 Simulcast 12 Channel	4 Multicast 6 Channel
Resiliency	1 Backhaul single path	3 Backhaul single path	
First Responder Safety	SAME function operable or interoperable	DIFFERENT function operable and interoperable	
Governance	Representation by law – State	Self governed by users – County	
Cost	$12 Million	$6.3 Million + Unknown User fees	
Effectiveness & ROI	Single System – Statewide Interoperability Includes Hardware for Updates	Multiple Systems – Interoperability challenges Hardware extra when needed	

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Experience with Statewide System

- Coverage: On-street, In-building
- Capacity, Resiliency
- First Responder Safety
- Governance: Chair Board, Committees
- Cost: Achieved Under Budget
- Overall Effectiveness & Return on Investment

Exceeded Expectations by Each Measure

Consultant and Project Team Deserve Credit

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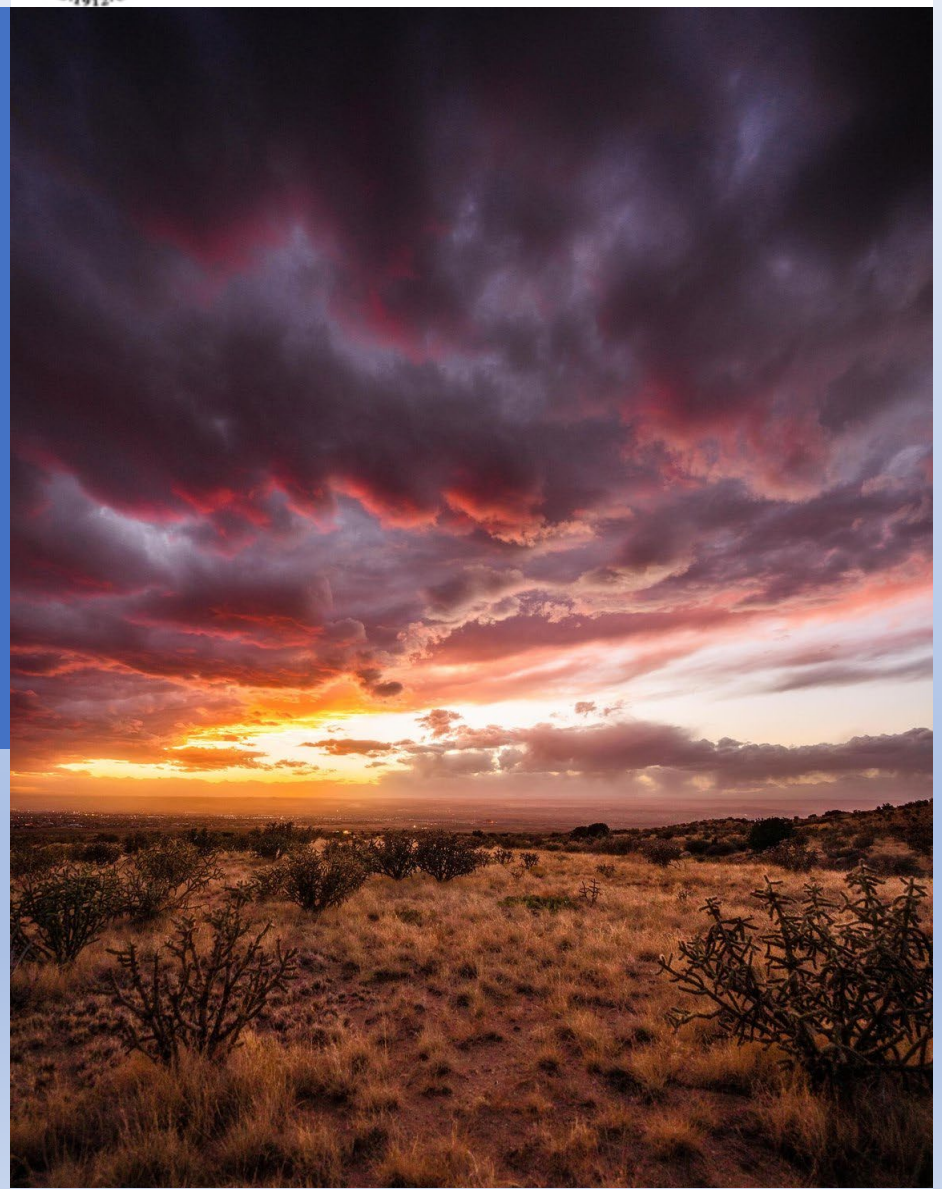
The State of New Mexico
NEWMEXICO.GOV

New Mexico

Digital Trunked Radio System (DTRS)



State of New Mexico

NM DEPARTMENT OF INFORMATION TECHNOLOGY
PUBLIC SAFETY RADIO

Department of Information Technology

- Statewide enterprise communications services provider

Where we came from:

- Statewide VHF, UHF and Low band conventional systems
- 100% Self maintained systems
- ~7000 subscribers across 13 agencies, 20 dispatch centers
- Disparate technologies, no interoperability, poor coverage, poor quality

Shared statewide radio system development started in 2014

The Solution

- DTRS
  - Muti-year deployment, capitally funded (so far)
  - Project 25 7/800 MHZ Phase II System
  - Statewide coverage, building out to ~85% mobile coverage
  - Approximately 165 sites planned
  - Deployment plan based on major road corridors and local partners
  - Available to all state, local, federal, tribal agencies

Challenges and Options

NM DEPARTMENT OF INFORMATION TECHNOLOGY
PUBLIC SAFETY RADIO

Perceptions

- New Mexico has always been a VHF conventional state
- Trust and loss of control

Challenges

- Design considerations for 7/800 MHz
- Cost of infrastructure / radio replacement

Rationale for selected solution

- P25 standard, vendor agnostic platform, scalability and capacity
- Lack of VHF frequencies to deploy a state-wide system
- Improved performance characteristics
- Streamlined licensing in the 700 MHz spectrum

Benefits

- State maintains infrastructure for subscribers (minus dispatch)
- Cost savings through consolidation of resources, volume purchasing, reduction in maintenance costs
- Unprecedented interoperability and contemporary features
- Cross technology platform (LTE, Wi-Fi, LMR) maximizes coverage
- Support from DoIT Network Ops team and other subscribers
- Features and coverage that individual agencies may not be able to obtain are available now to subscribers

DTRS - Today

- 40% Mobile Coverage,15 Sites Online, 33 in implementation
- 40 additional sites planned for FY23
- Lawmakers see the benefit of a consolidated system
- Adoption of system at local and federal level has been tremendous
- 32 agencies currently on the system
- Major interoperability successes at numerous critical incidents have reinforced the benefits and importance of the project to New Mexico
- Subscribers Working Group provides a collective voice and forum for all users

Recap

Build or Join?

Join Option Characteristics

- Potential Advantages
  - Reduced costs
    - Sites
    - Control centers
    - Life cycle support
  - Direct Interoperability
  - Wide area coverage
  - Governance
- Potential Concerns
  - Local coverage
  - Governance
  - Costs
    - Expansions
    - User fees
  - Configurability
    - Upgrade paths
  - Sustainability
    - Life cycle support

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Build Option Characteristics

- Potential Advantages
  - Local Coverage
  - Configurability
    - Upgrade paths
  - Governance
    - Local control
- Potential Concerns
  - Interoperability
  - Capacity
  - Costs
  - Sustainability
    - Life Cycle Support

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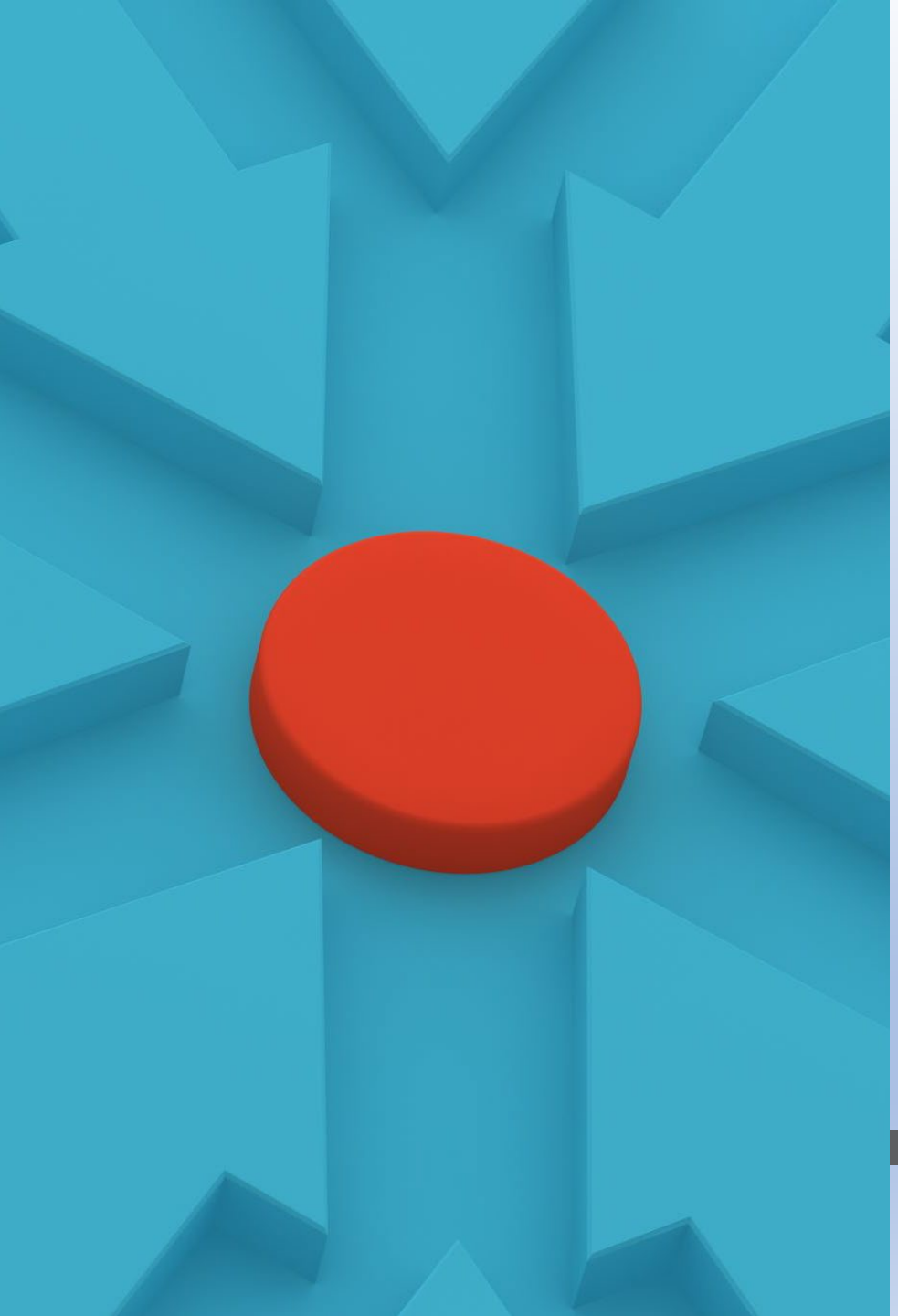

Choices

- Unique to each entity
- Often driven by external factors
- Require extensive analysis, time, effort and commitment
- Need stakeholder buy in and support
- **Must** have a lifecycle support plan

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Q&A

Resources

- Iowa Statewide Interoperable Communications System
  - https://isicsb.iowa.gov/
- New Mexico Digital Trunked Radio System
  - https://www.doit.nm.gov/programs/services/public-safety-radio-communications/
- DHS Guidance
  - Emergency Communications State, Local, Tribal, and Territorial Coordination | CISA

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Thank You!

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