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# FirstNet<sup>®</sup>



## Industry Day

August 27, 2015

- Introduction and Ground Rules – Terrie Callahan
- Remarks - Mike Poth
- The FirstNet Opportunity – TJ Kennedy
- Review of the Results of the Q&A and Comments Process – James Mitchell
- Operational Architecture Update – Zachary Smith
- FirstNet Cyber Security Concepts – Glenn Zimmerman
- Device and Applications Ecosystem – Mark Golaszewski
- Instructions and Evaluation in the RFP – Terrie Callahan
- Q&A Panel

# Introduction and Ground Rules

Terrie Callahan  
Contracting Officer



# Industry Day Logistics & Ground Rules



- Ensure you have signed in at the registration desk
- Hold all questions until the end of the presentation
  - Answer as many as possible time allowing
  - May defer to a formal written response
  - Please come to the microphone when asking questions and introduce yourself
- Place cell phones/devices on silent

# Disclaimer



The following presentation contains a brief overview of the draft request for proposals and FirstNet's potential acquisition strategy. Any discussion of requirements or potential future procurements does not constitute a commitment by FirstNet and should not be relied upon in planning future courses of action.

The Government will provide public notice of any procurements using the Federal Business Opportunities website (<https://www.fbo.gov/>) in accordance with applicable laws and regulations.

In the event that there is a conflict between any future request for proposals' terms and conditions and the information contained herein or disseminated during today's meeting, the request for proposals' terms and conditions shall control. The request for proposals and any formal amendments are the only documents that should be relied upon in determining the Government's requirements and ultimate acquisition approach.

# Remarks

Mike Poth  
CEO



***The First Responder Network Authority shall hold the single public safety wireless license and take all actions necessary to ensure the building, deployment, and operation of the interoperable nationwide public safety broadband network (NPSBN)***

# The FirstNet Opportunity

TJ Kennedy  
President



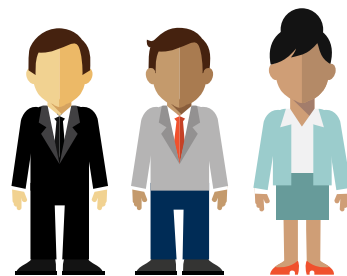


# FirstNet will be a Win-Win-Win



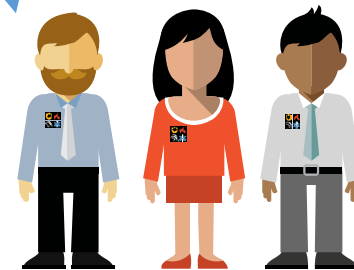
## PUBLIC SAFETY

- Additional capabilities to support mission
- Increase safety for personnel and the public
- Receive resilient broadband communications



## OFFEROR(s)

- Lead Public Safety communications growth
- Gain access to valuable low-band spectrum
- Leverage up to \$6.5 billion in cash to meet public safety objectives



## FIRSTNET

- Achieve mission of national importance
- Promote public safety broadband adoption to save lives
- Become financially sustainable

FirstNet needs to be  
**'win-win-win'** for all  
parties

# The FirstNet Business Opportunity



FirstNet brings up to **\$6.5B** of cash and **20 MHz** of spectrum

**Partner with FirstNet to Serve Public Safety**

All facts, figures and information provided for illustrative purposes only. No information contained herein should be relied on as the basis for a proposal to FirstNet or for any other purpose. Information about the sources of facts, figures and information herein is located at [www.firstnet.gov/resources](http://www.firstnet.gov/resources)

# The FirstNet Business Opportunity



**Modernize  
public safety  
communications**

FirstNet brings up to **\$6.5B** of  
cash and  
**20 MHz** of spectrum

**Partner with FirstNet to Serve Public Safety**

**Millions of potential users,  
Capture share of multi-billion \$ U.S. public  
safety communications market**

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# The FirstNet Business Opportunity



**Modernize  
public safety  
communications**

FirstNet brings up to **\$6.5B** of  
cash and  
**20 MHz** of spectrum

**Partner with FirstNet to Serve Public Safety**

**Tens of billions \$ from commercial use of  
excess capacity**



**Expand  
the mobile  
broadband  
market**

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## Scope

- FirstNet contracted with a 3<sup>rd</sup> party global advisory services firm to provide a perspective of the Public Safety mobile data market

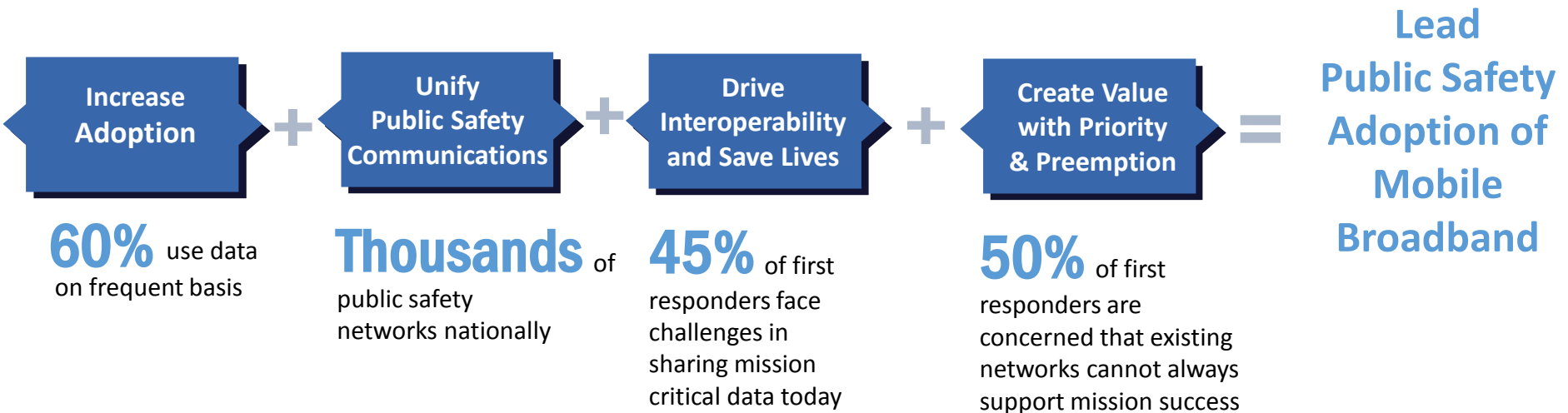
## Methodology

- Primary and secondary market research approach utilized
  - Interviews with high-level Public Safety officials to obtain detailed thoughts and opinions on the current state of telecommunication capabilities and issues facing Public Safety
  - Web based survey of First Responder mobile data user and decision makers
  - Secondary research from a broad variety of sources to obtain relevant data and provide additional context

## Outcome

- Key survey findings validated major themes of the Special Notice and Draft RFP documents
- Validation of assumptions in business model, including potential addressable market size

# Lead Public Safety Adoption of Mobile Broadband



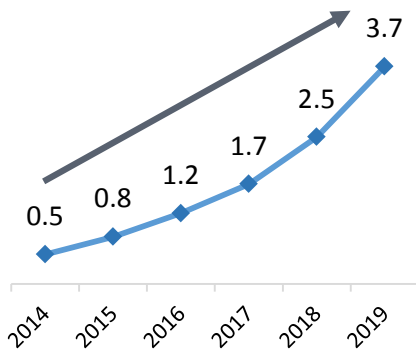
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# FirstNet Business Case Drivers



## Innovative Solution to Meet Exploding Demand

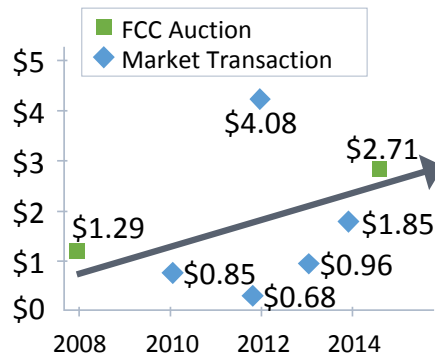
U.S. Mobile Data Traffic (exabyte/month)



Excess network capacity will provide additional options for meeting rising data demand.

## Alternative Approach to Traditional Spectrum Acquisition

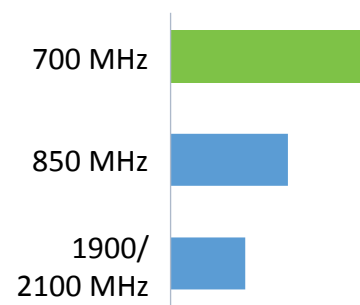
Comparable Transactions 700 MHz/AWS Spectrum (\$/MHz-PoP)



The RFP offers an alternative to increasingly expensive spectrum transactions.

## “Beachfront Property” that Promotes Efficient Coverage & Capacity

Propagation Range



Efficient 700 MHz band spectrum allowing signals to penetrate buildings and to cover larger geographic areas with less infrastructure.

## Superior Working Capital Profile

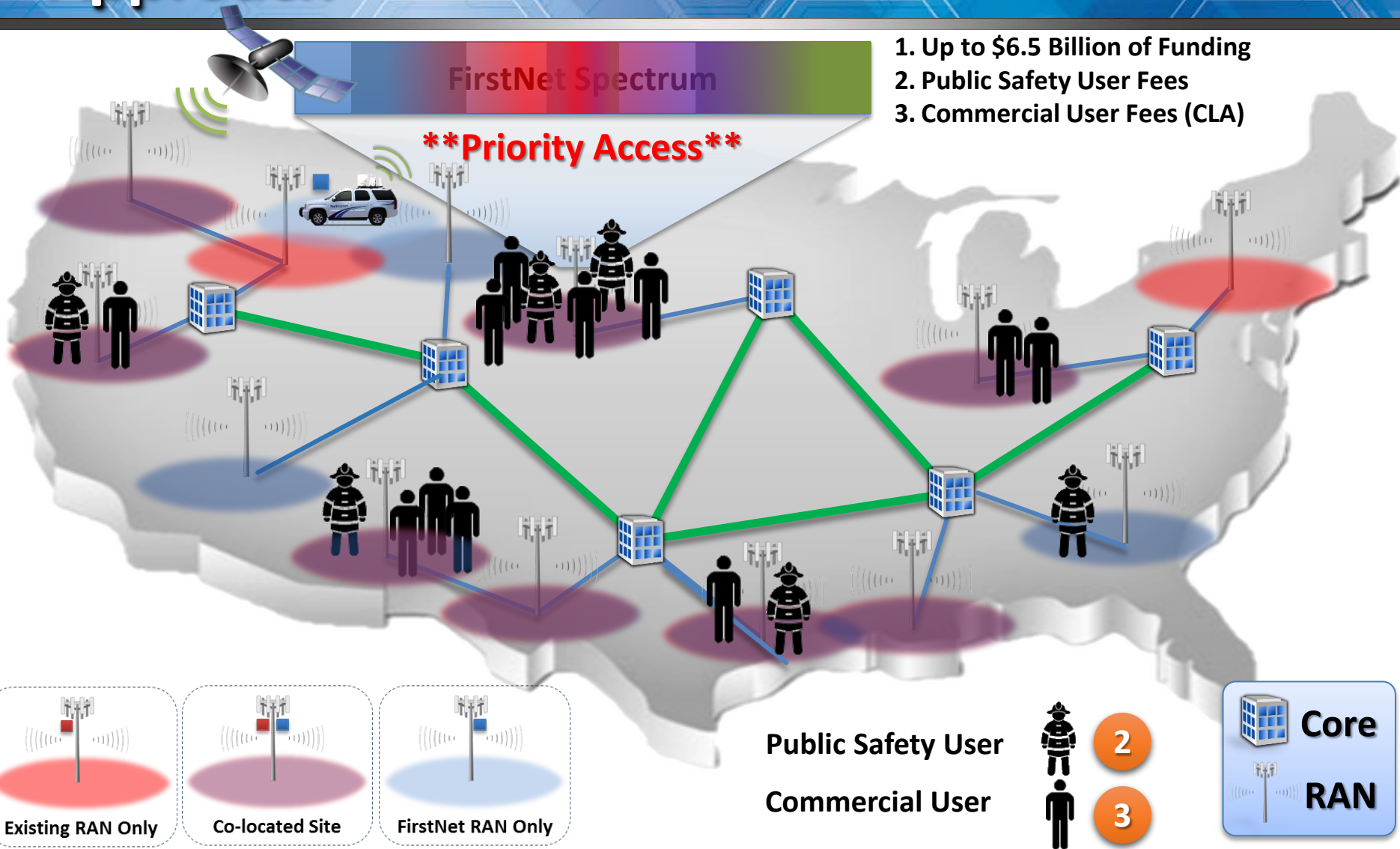
Cash Outlay



Acquiring spectrum typically requires significant upfront cash. Relationship with FirstNet enables more favorable outflows.

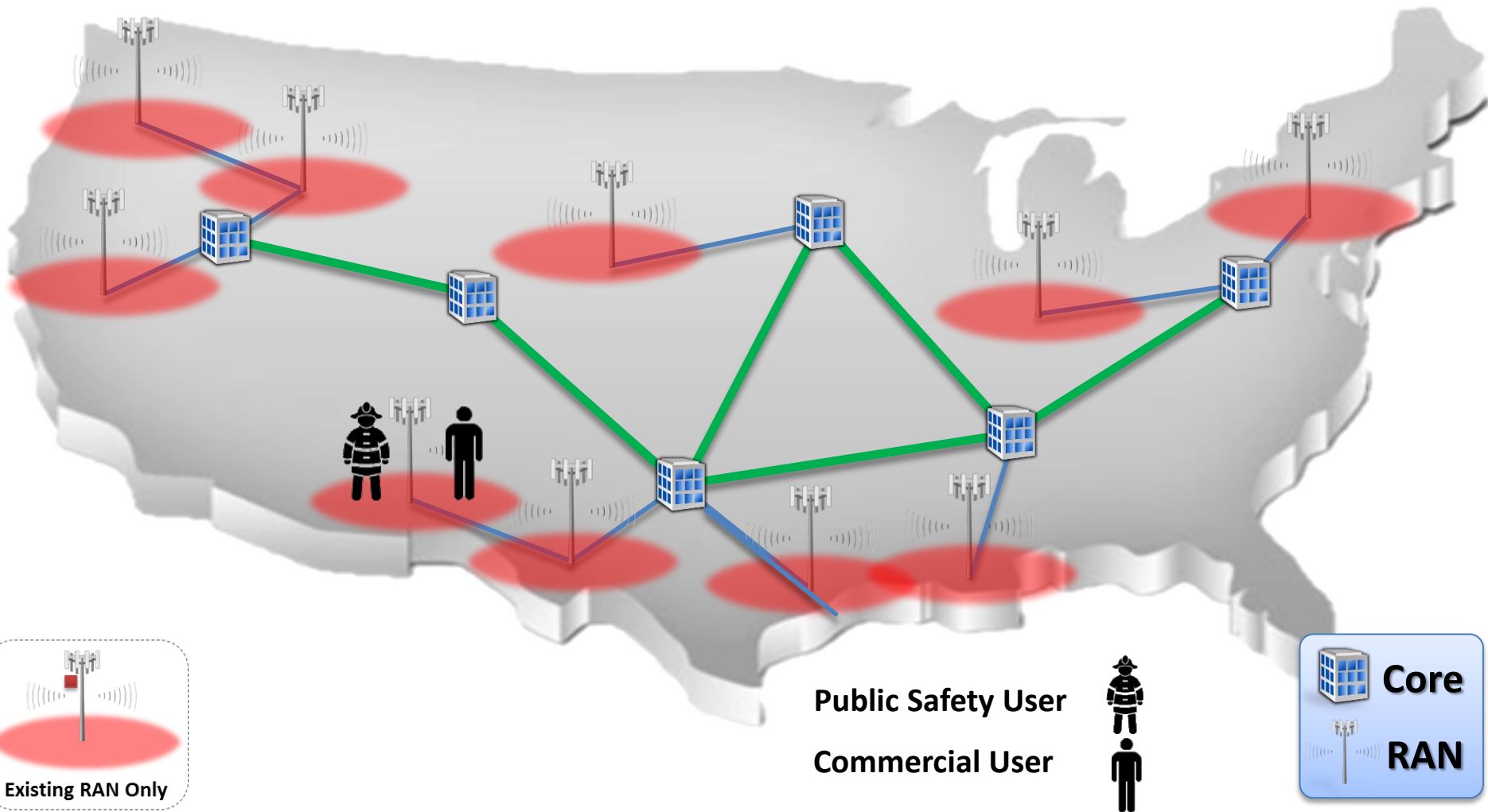
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# Notional Deployment Approach

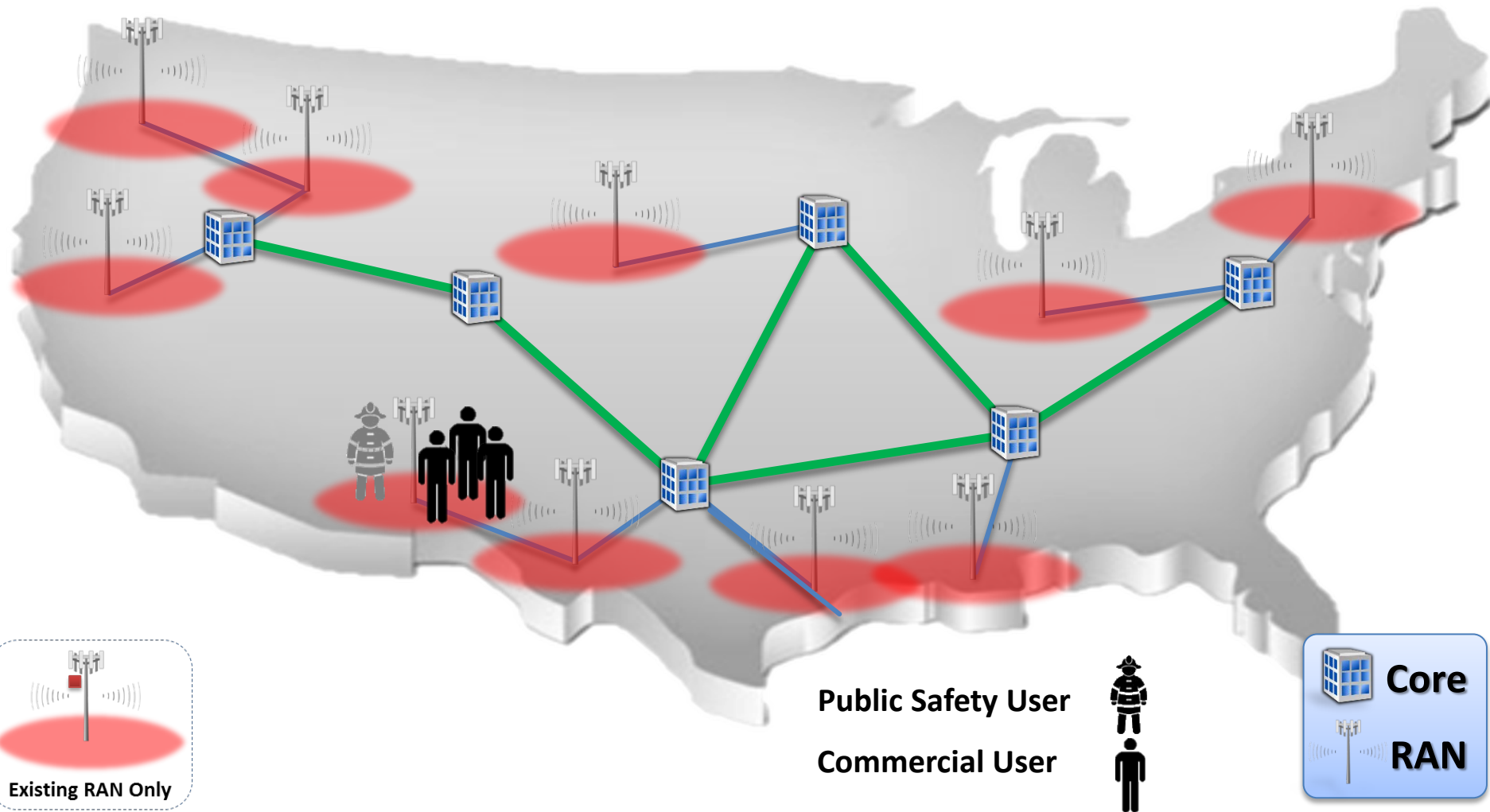




# Notional Deployment Approach



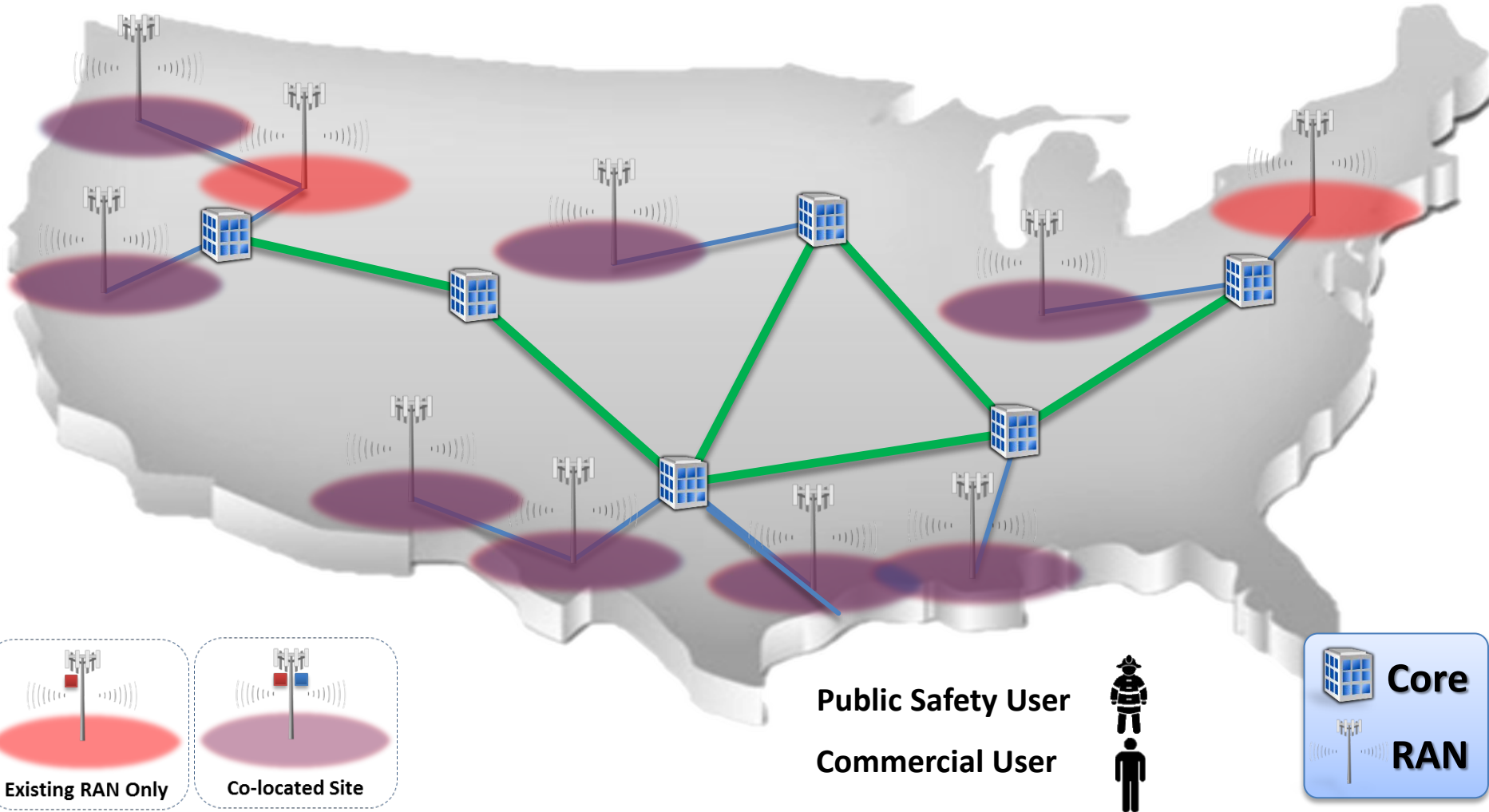
# Notional Deployment Approach



# Notional Deployment Approach



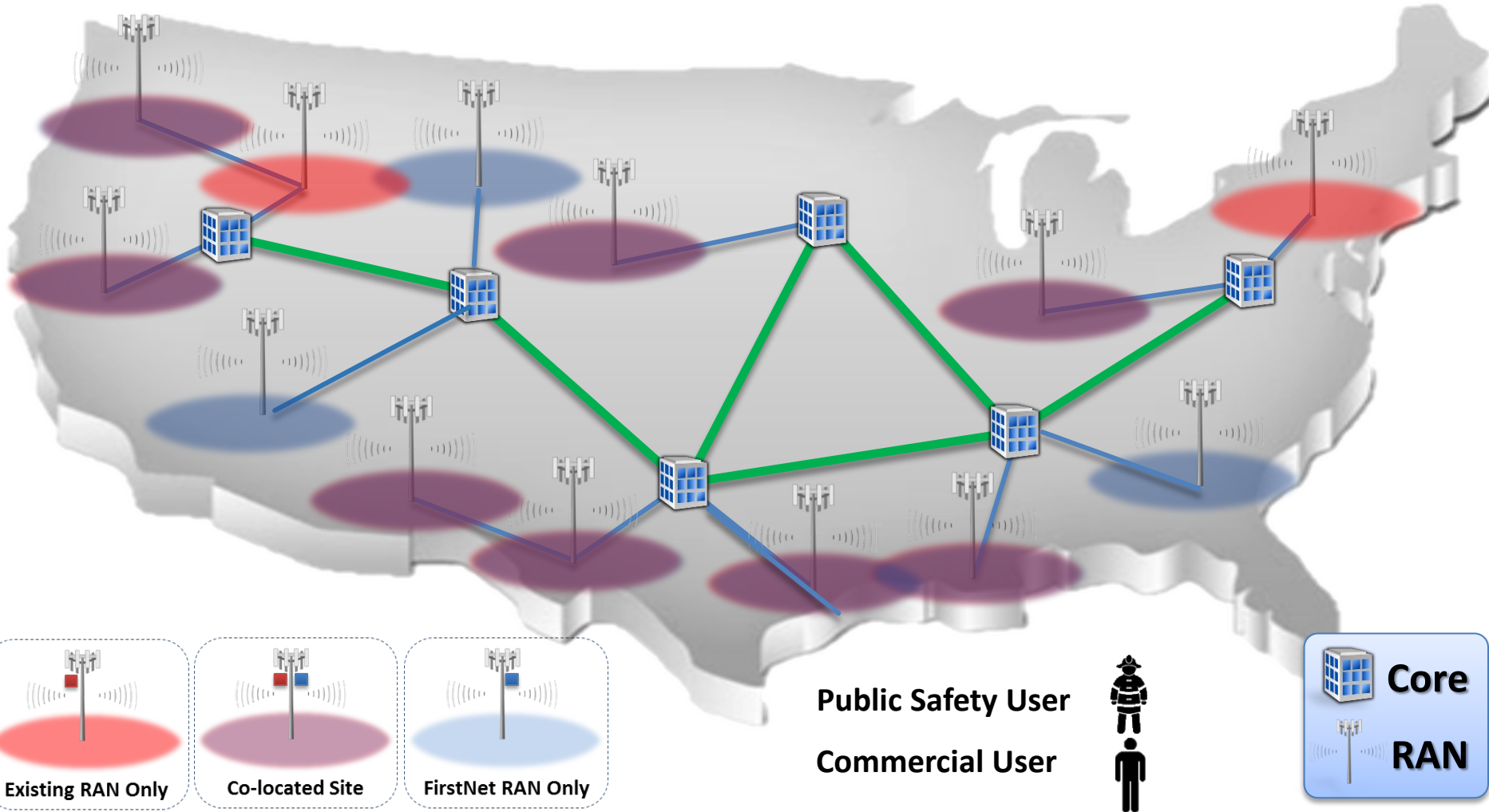
1. Up to \$6.5 Billion of Funding



# Notional Deployment Approach



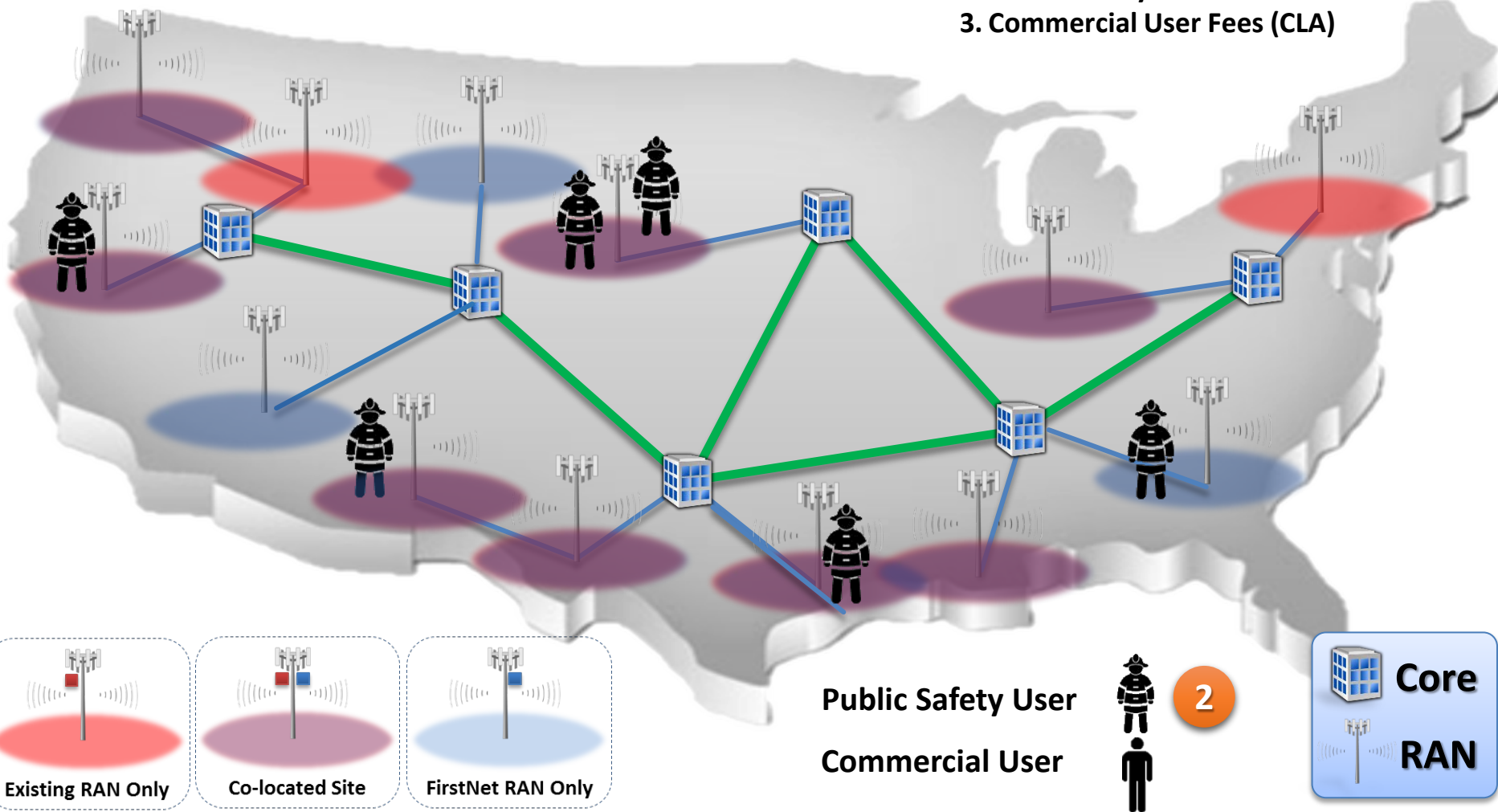
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# Notional Deployment Approach



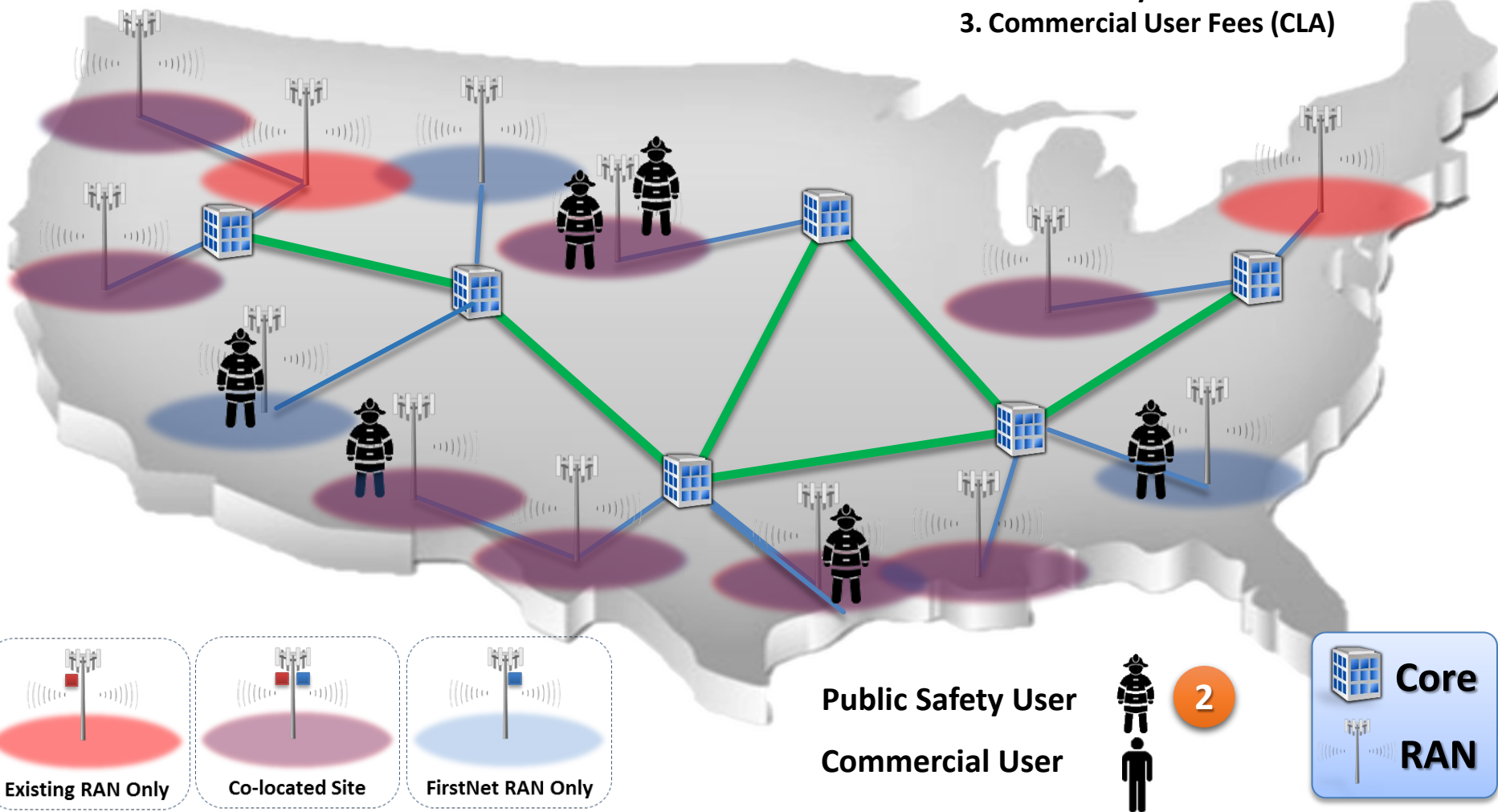
1. Up to \$6.5 Billion of Funding
2. Public Safety User Fees
3. Commercial User Fees (CLA)



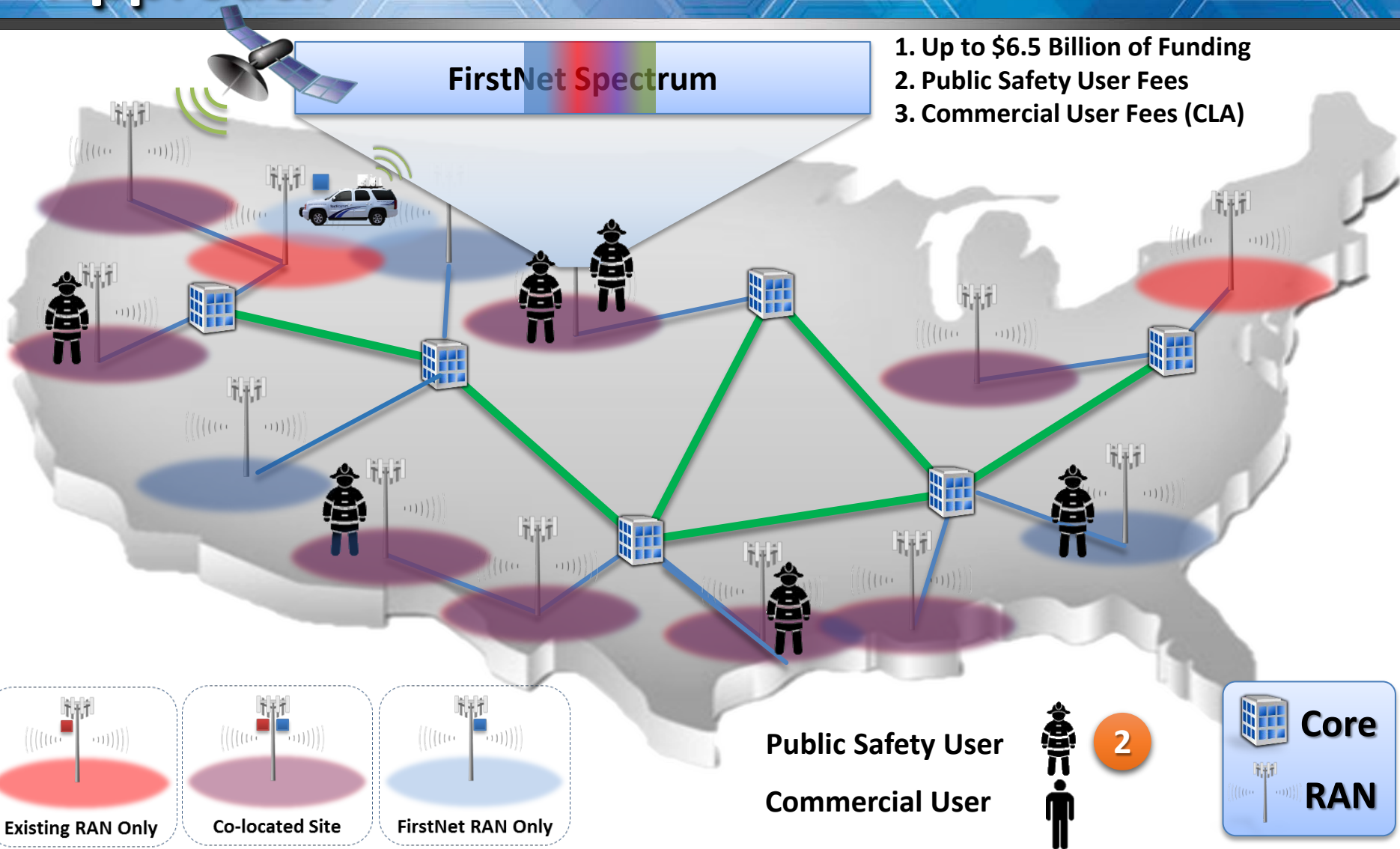
# Notional Deployment Approach



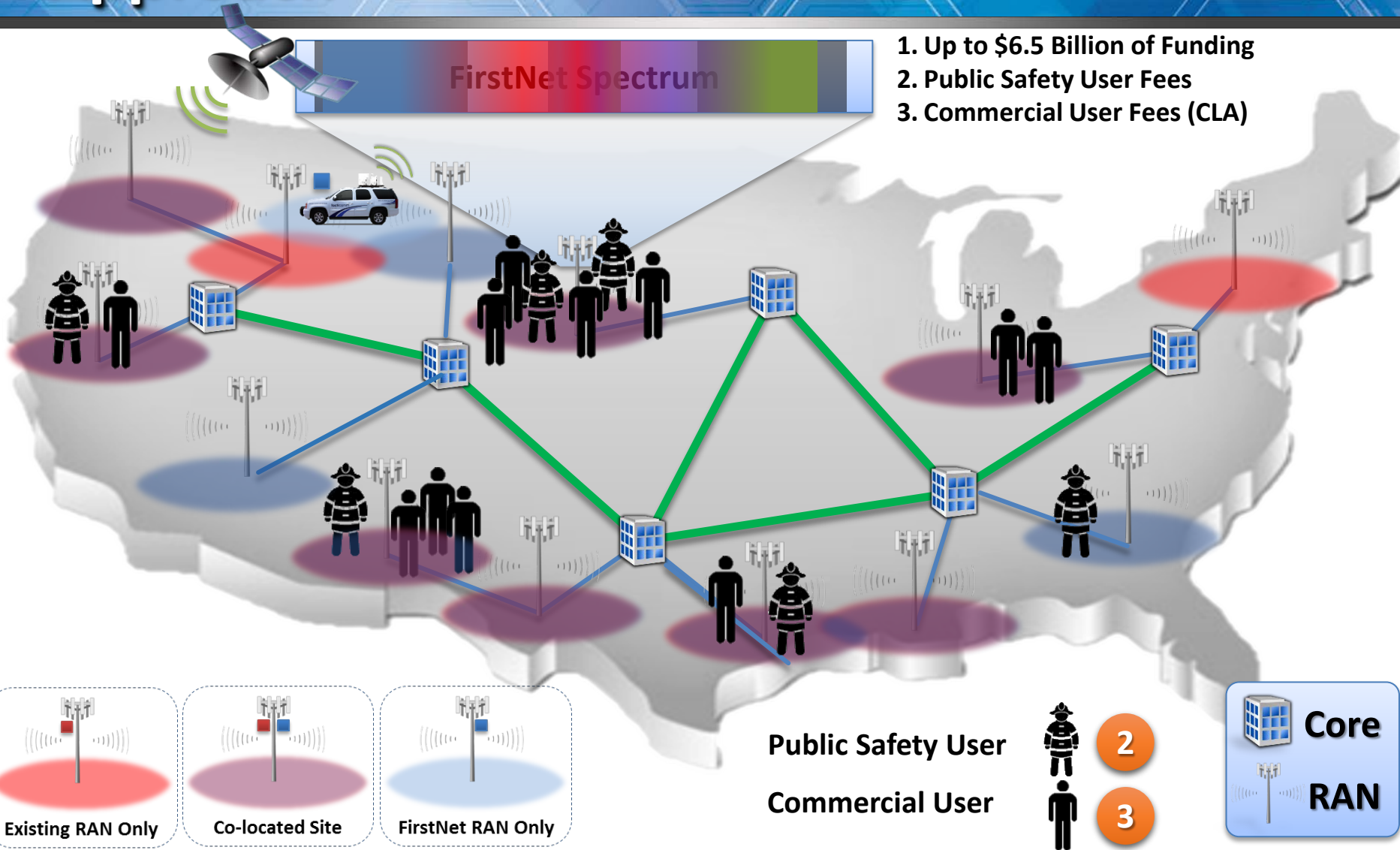
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# Notional Deployment Approach

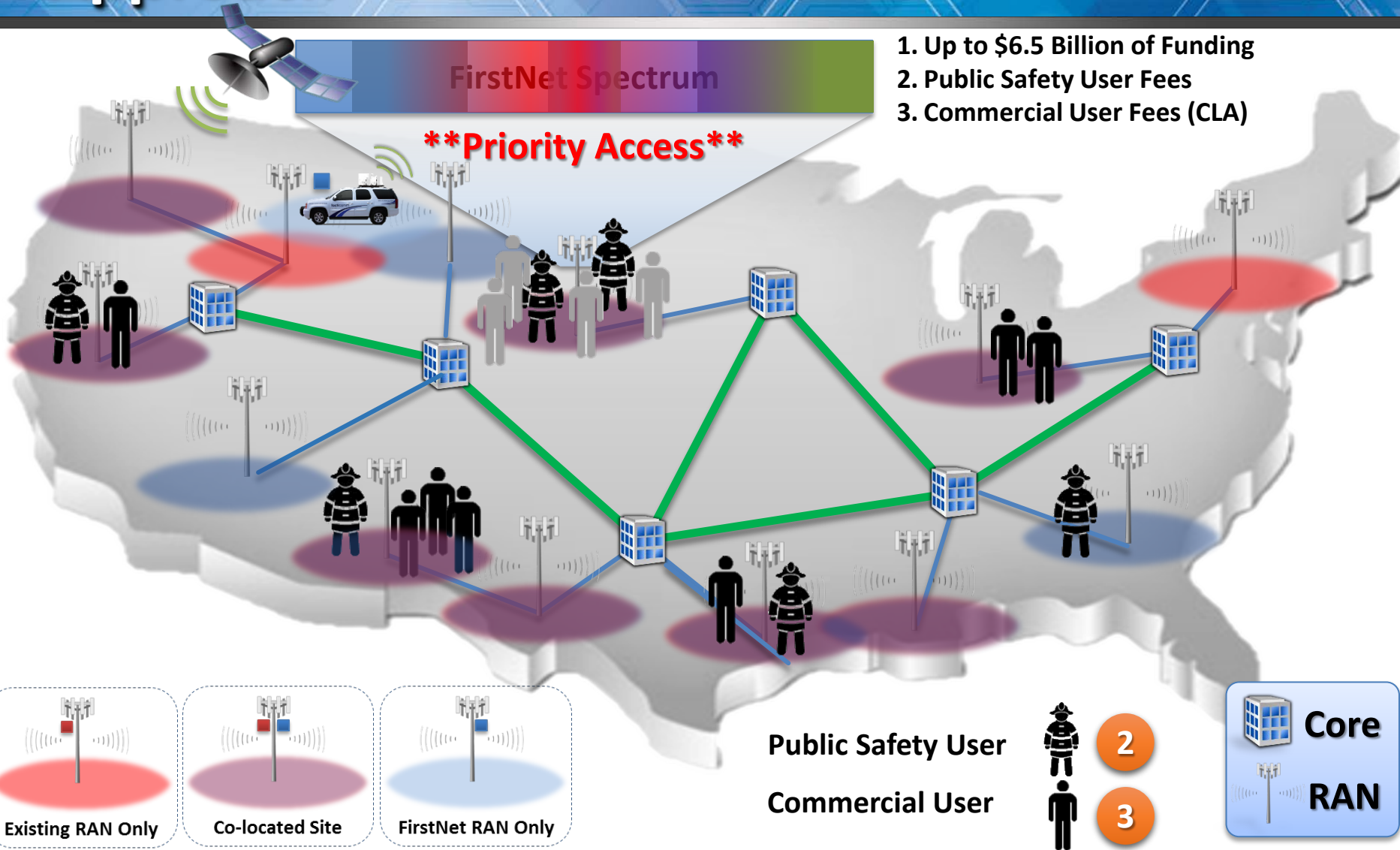


# Notional Deployment Approach





# Notional Deployment Approach



# Ability to Monetize Full 20 MHz of Spectrum



20 MHz of 700 MHz Low Band Spectrum

Commercial Value (CLA)

Public Safety Value



Offeror Receives Public Safety User Fees

Offeror Receives Commercial User Fees

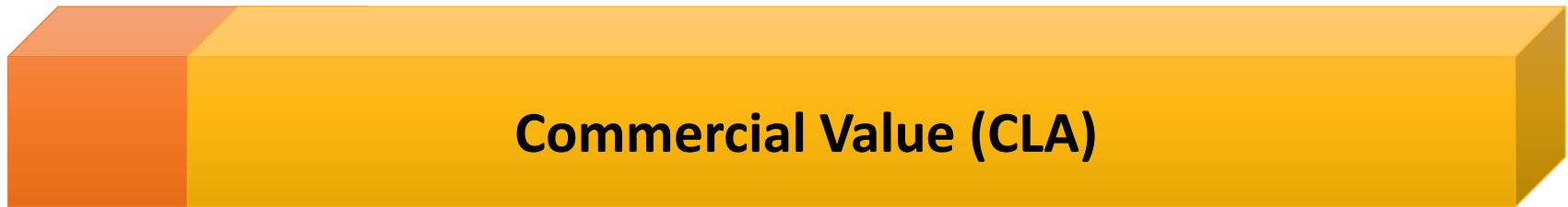
Total User Fee Revenue to Offeror

\*not to scale; for illustrative purposes only.

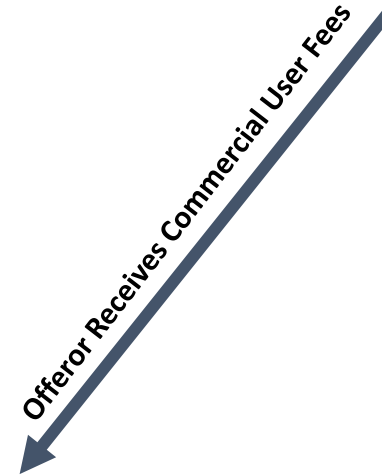
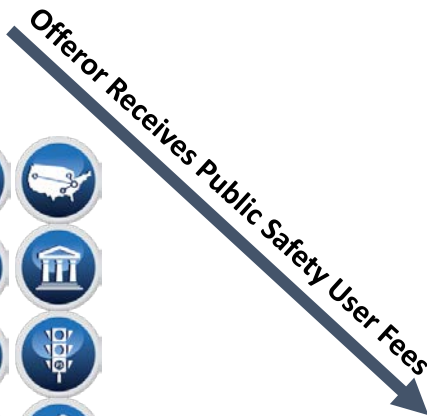
# Ability to Monetize Full 20 MHz of Spectrum



20 MHz of 700 MHz Low Band Spectrum



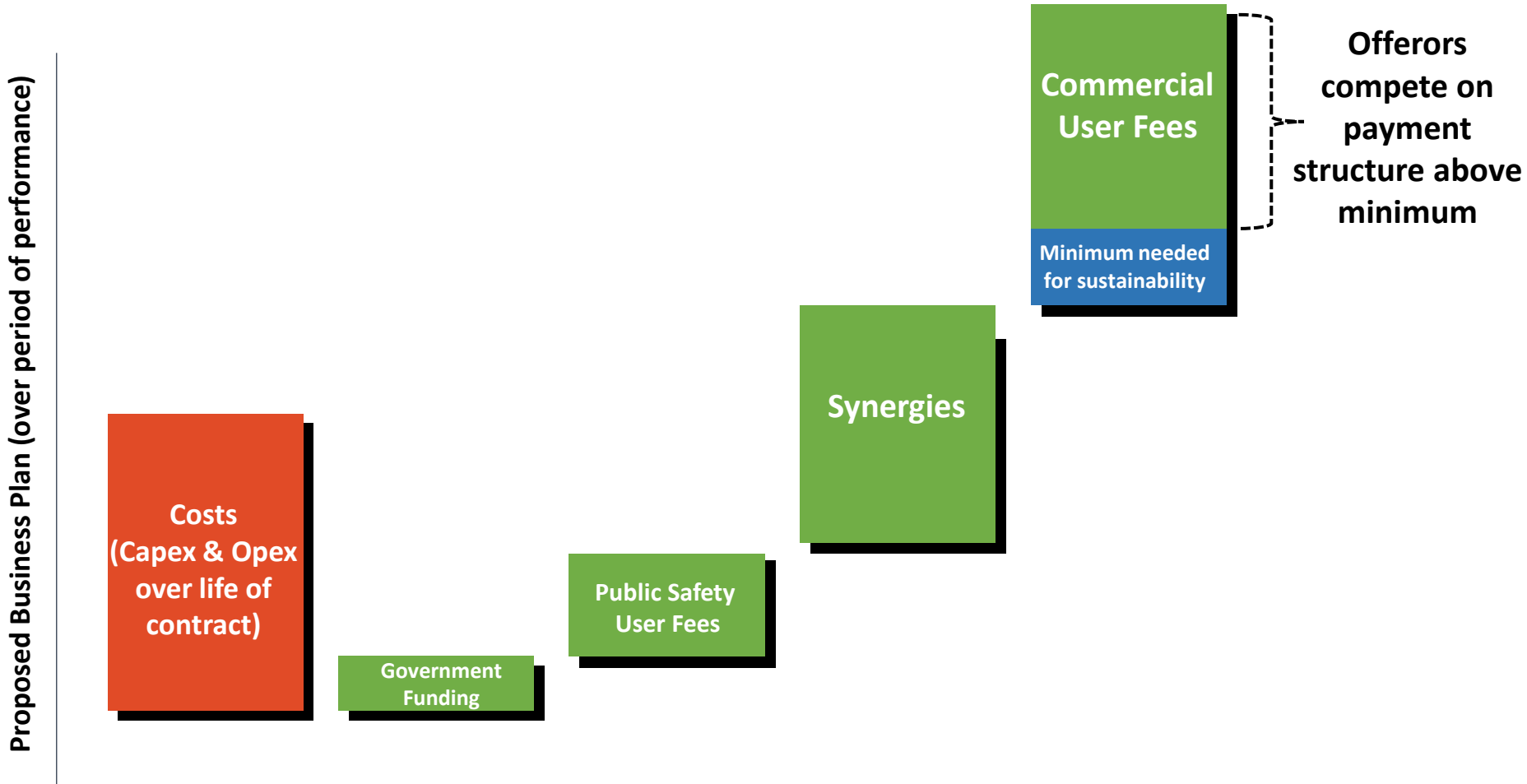
Public Safety Value



Total User Fee Revenue to Offeror

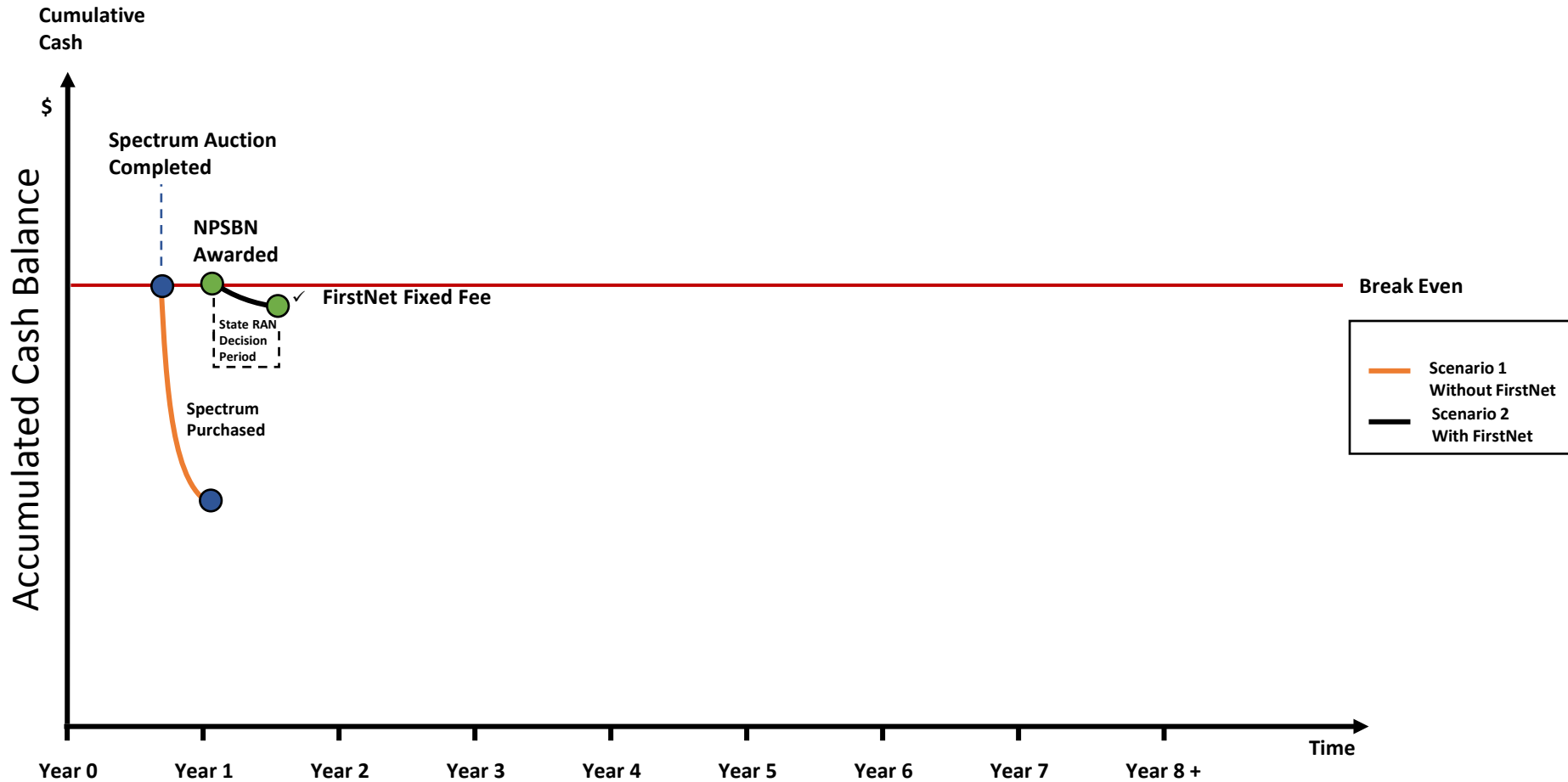
\*not to scale; for illustrative purposes only.

# Evaluating Offeror's Pricing



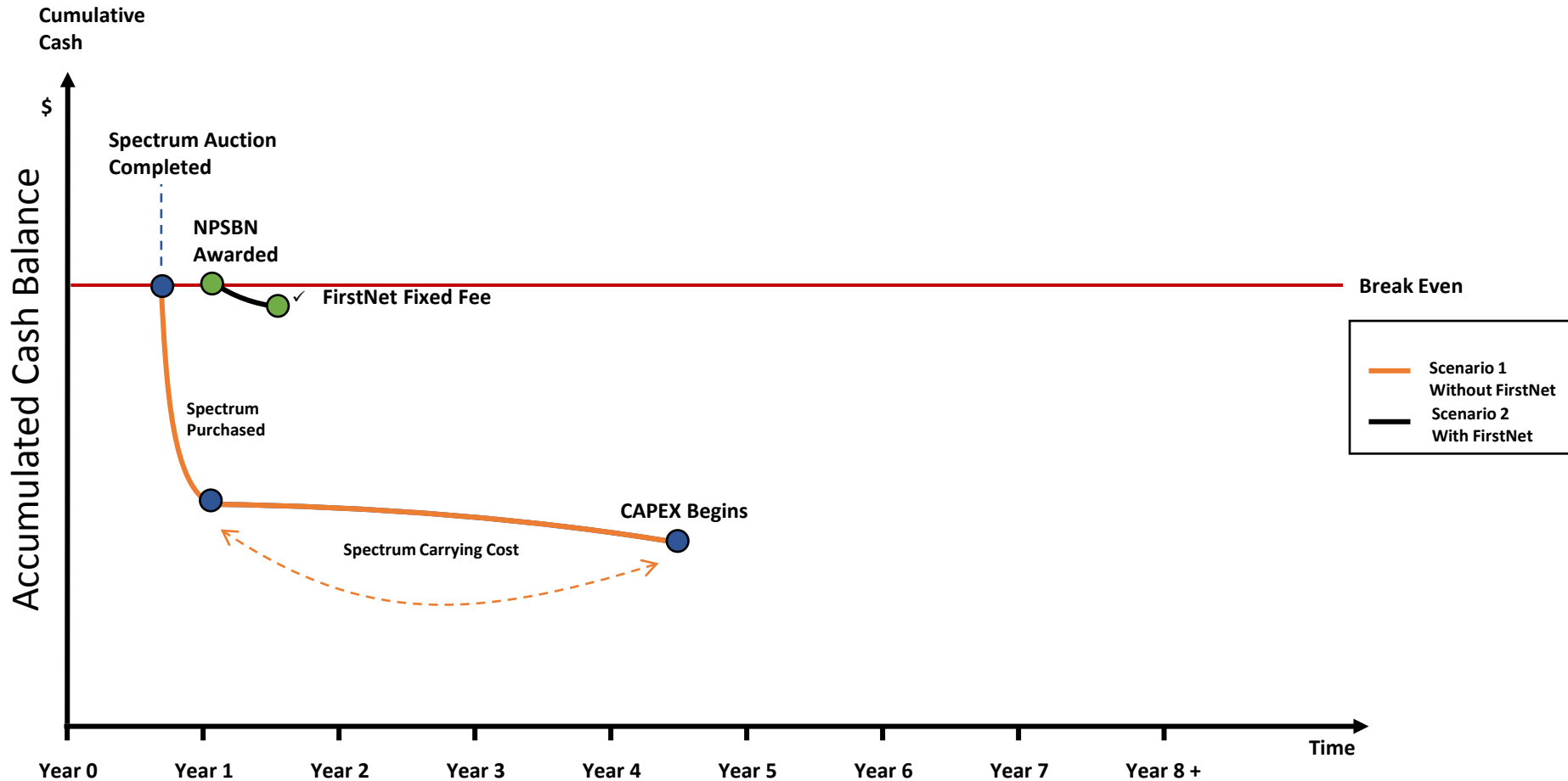
\*not to scale; for illustrative purposes only.

# Case Study: Wireless Economics With and Without FirstNet



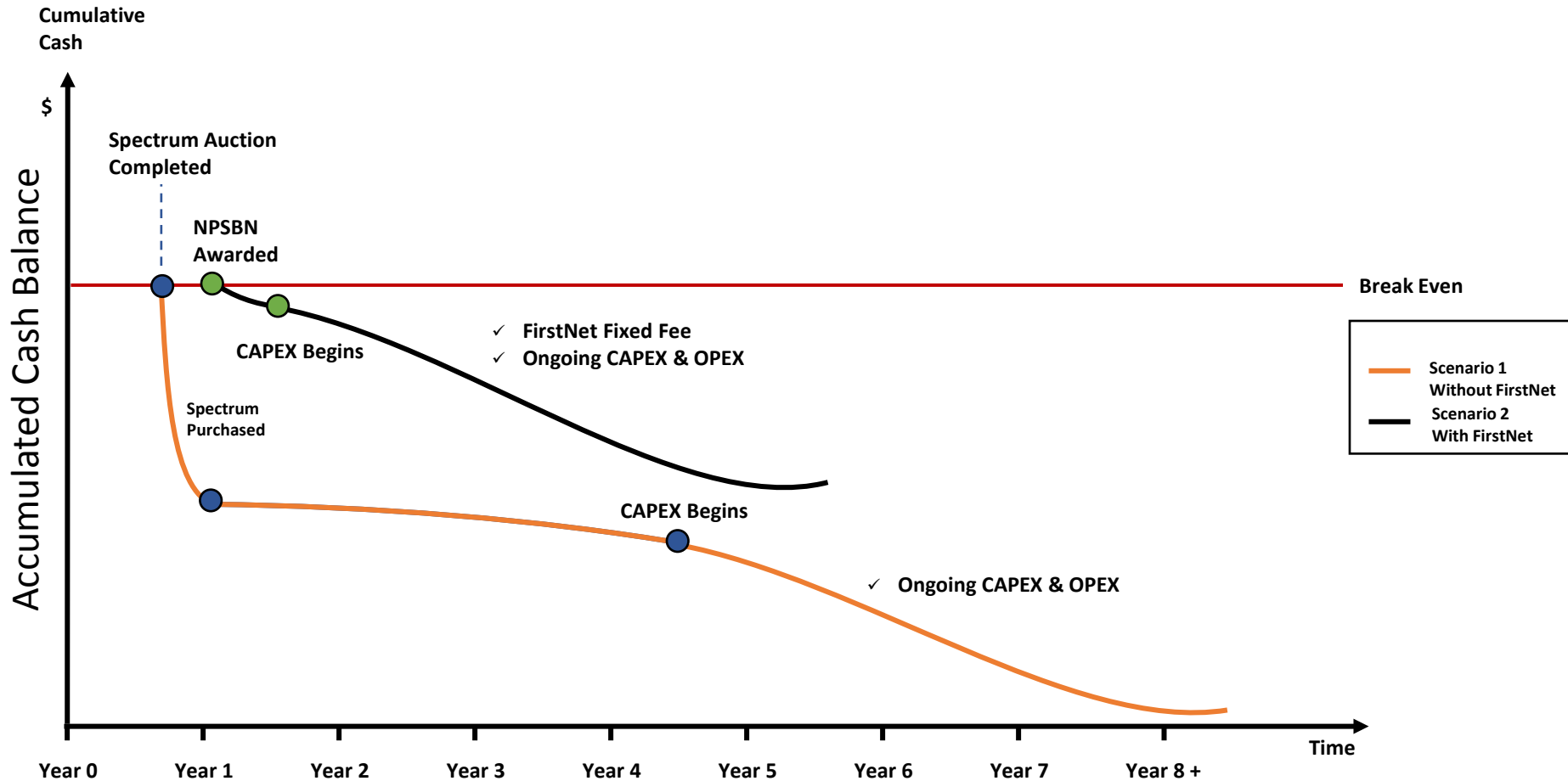
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# Case Study: Wireless Economics With and Without FirstNet



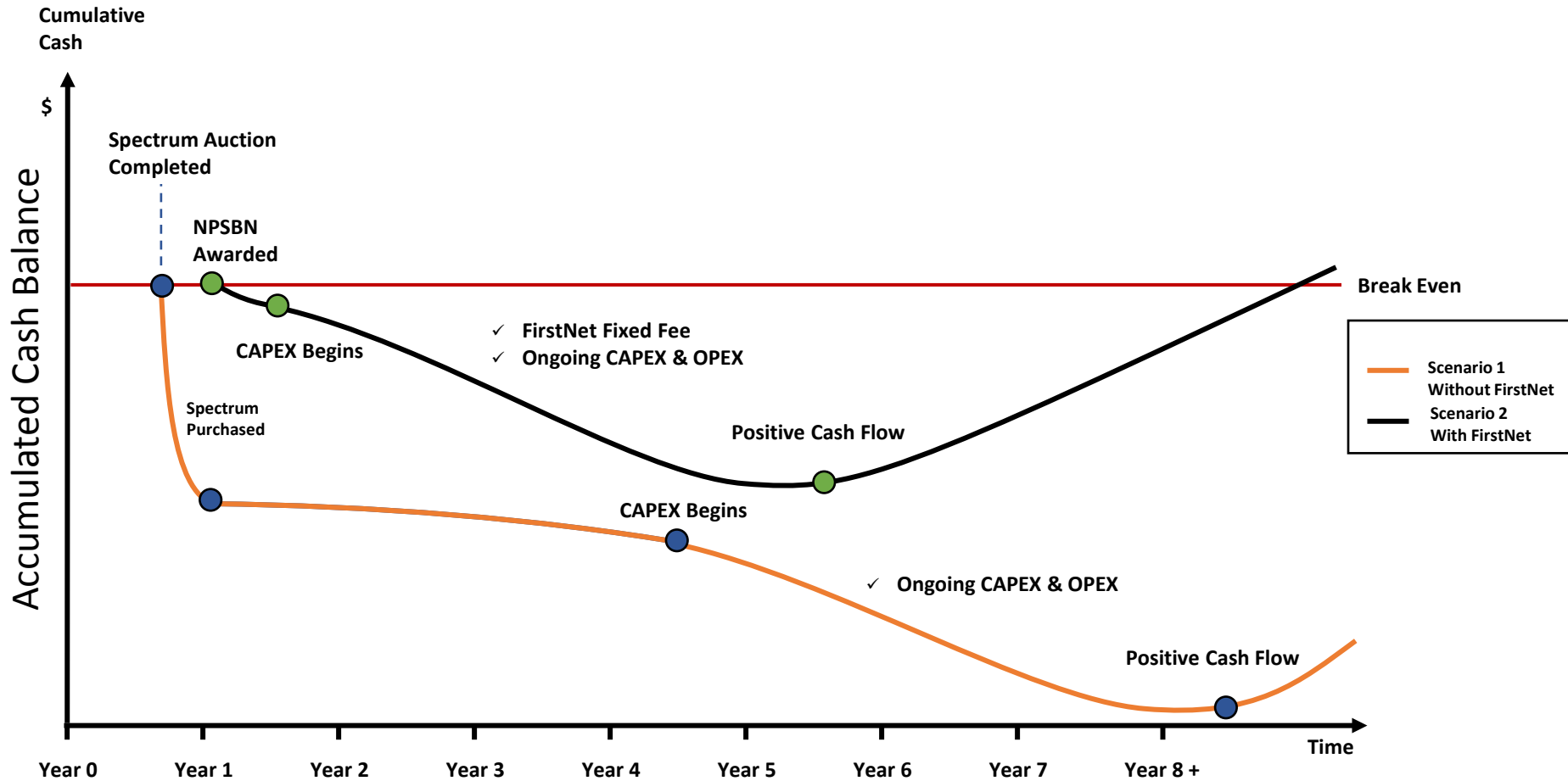
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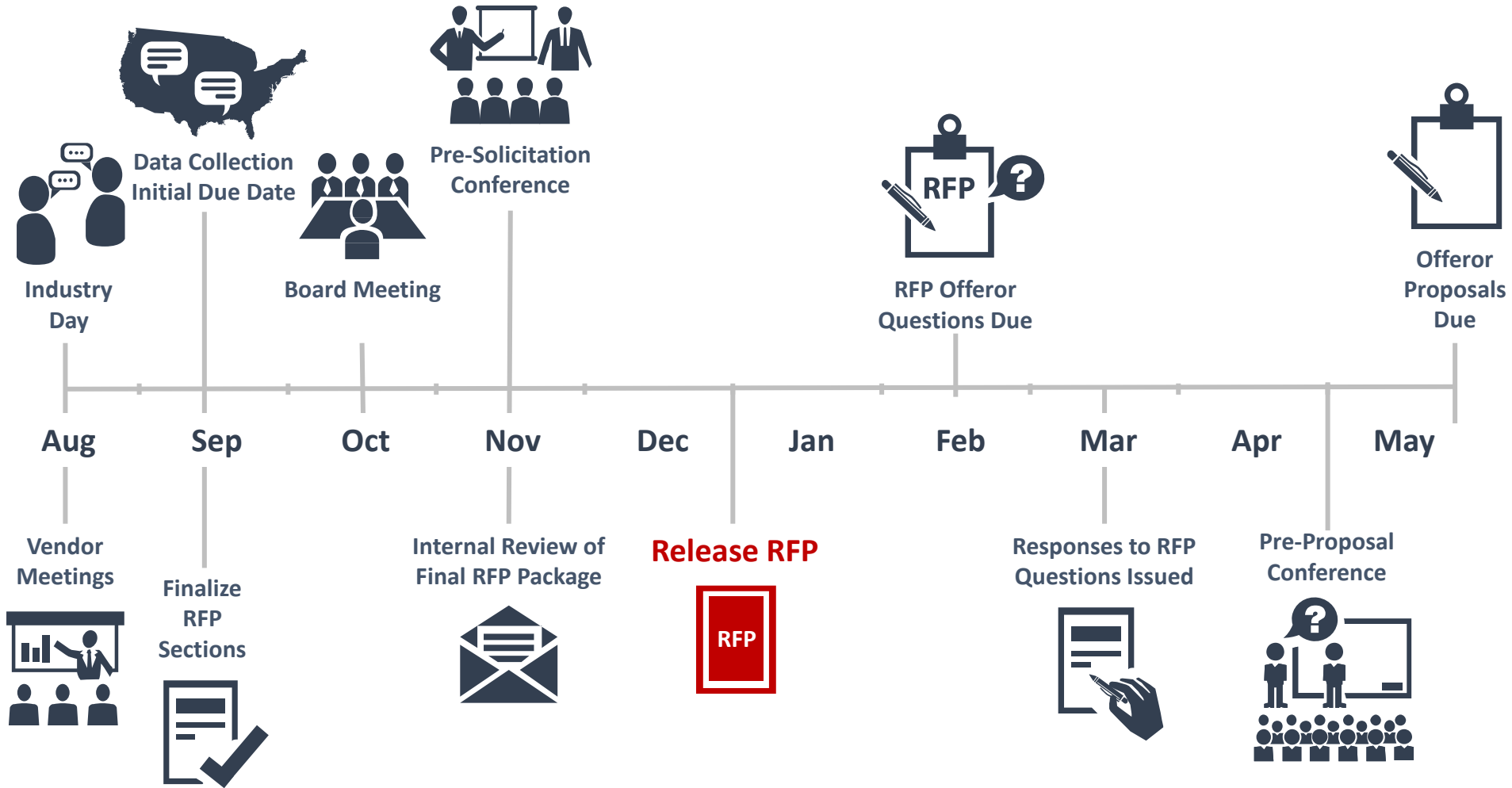
# Review of the Results of the Q&A and Comments Process

James Mitchell

Senior Program Manager for Operations



# FirstNet is On Schedule

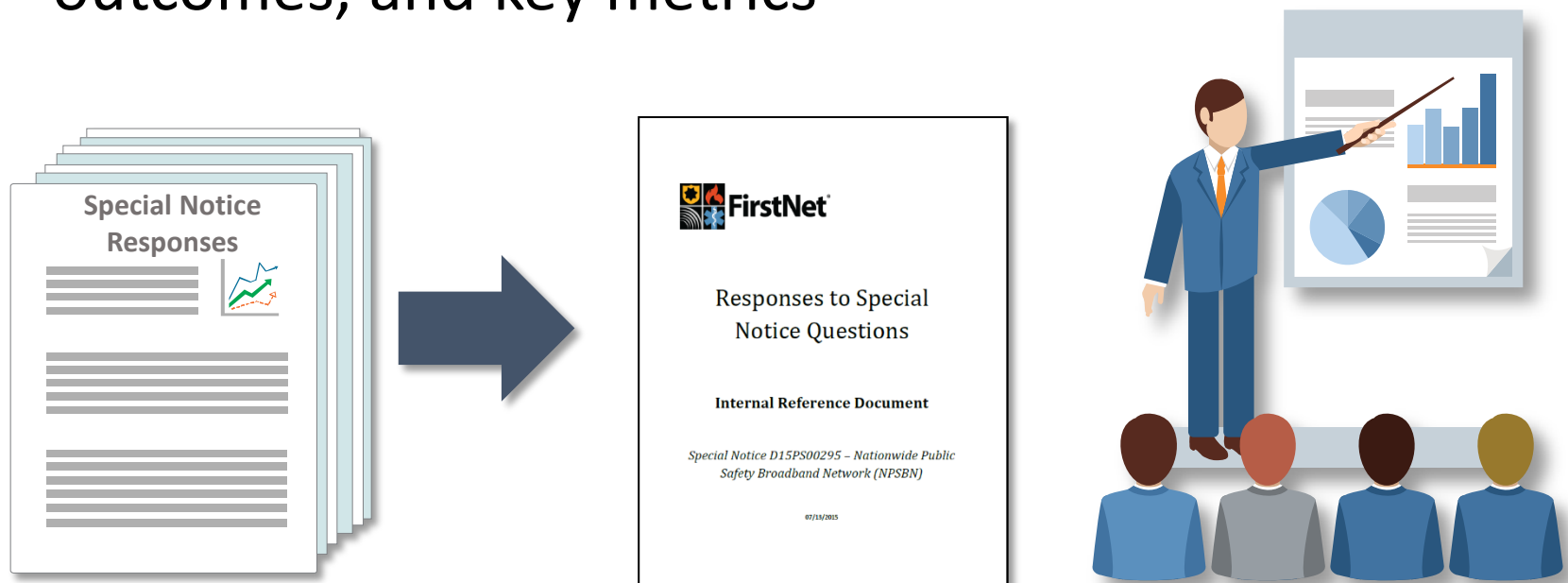


\* Events and dates subject to change

[Play](#)

# Questions & Answer Process and Outcomes

- 650+ questions submitted to FirstNet
- Responses posted by 1 July at [www.fbo.gov](http://www.fbo.gov)
- FirstNet continues to analyze for lessons learned, outcomes, and key metrics



# What did you ask us about?



# What did you ask us about?



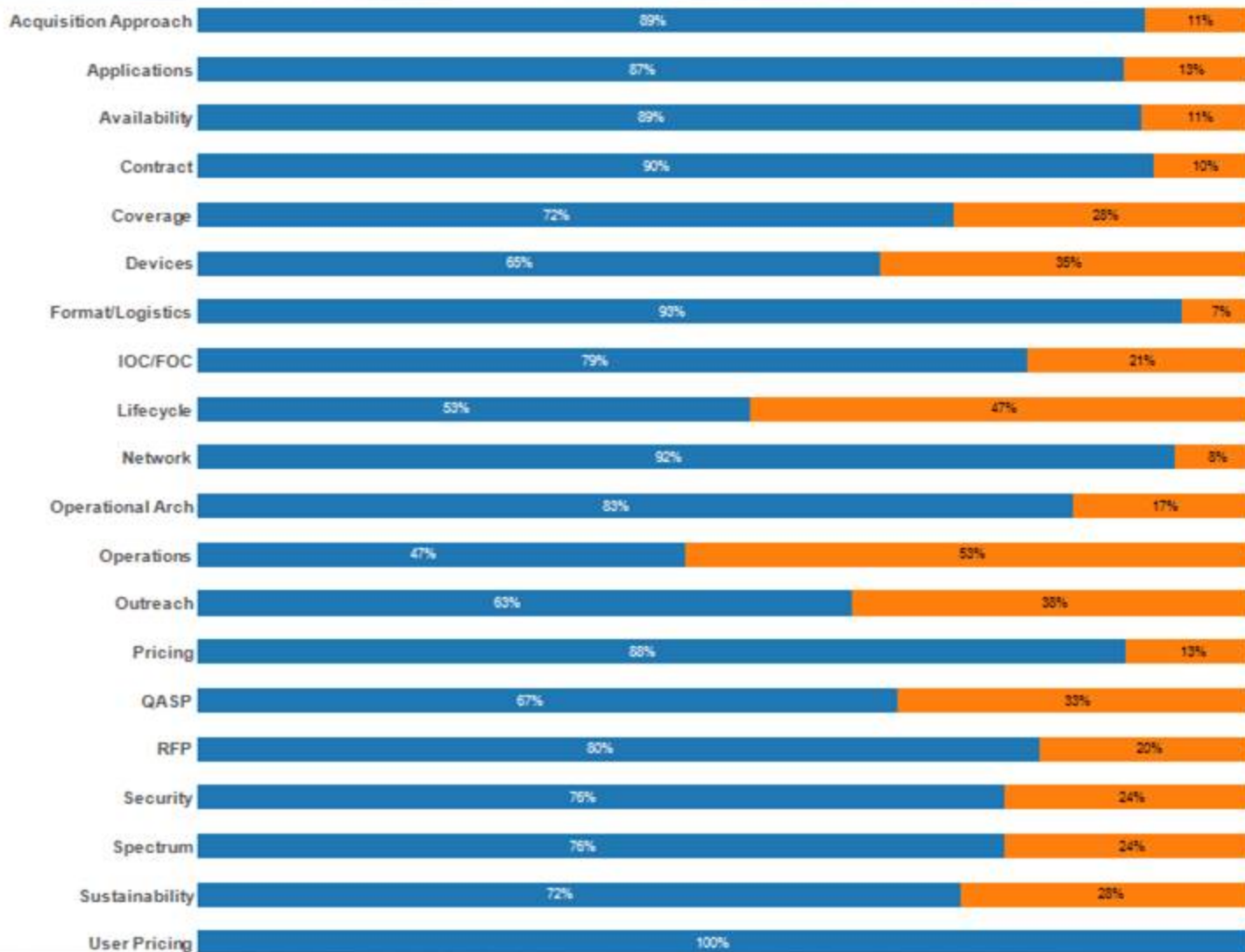
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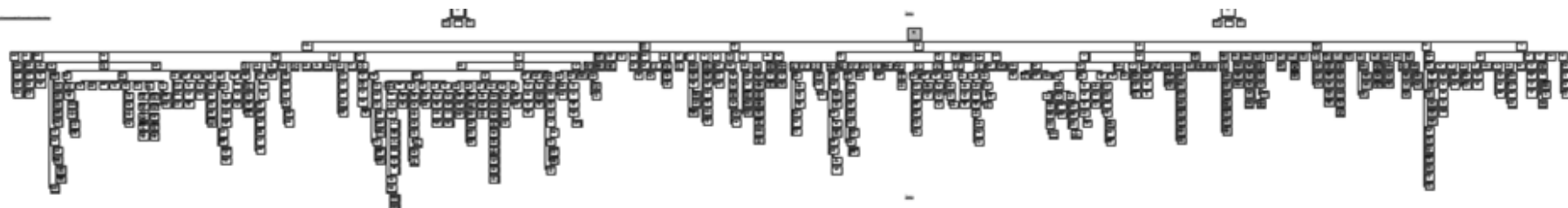
# Special Notice Questions by Topic and Source



Source  
States  
Industry



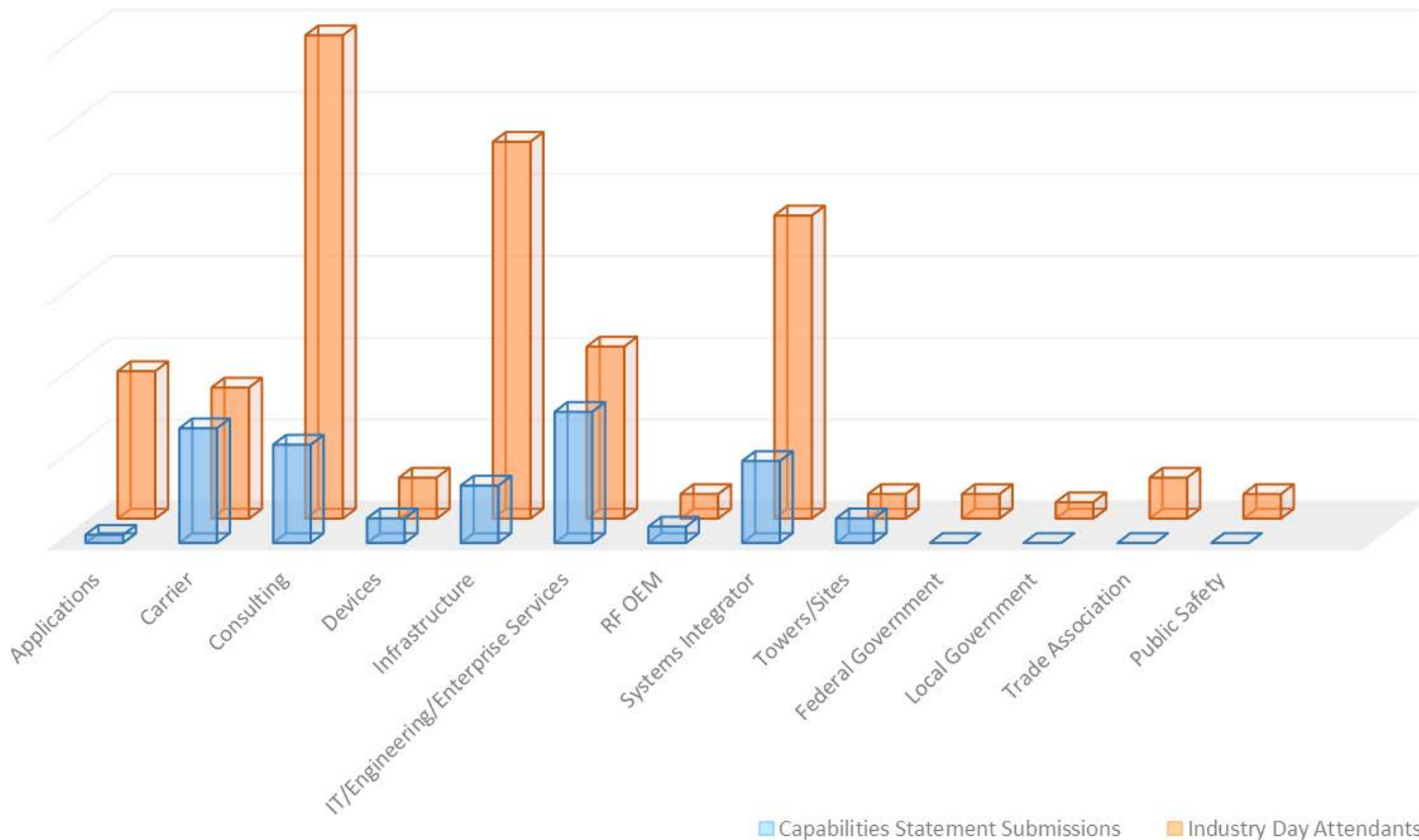
# Managing Inputs into the Special Notice and Draft RFP documents

A central illustration of seven stylized human figures representing different professions: a woman in a light blue business suit, a man in a black suit, a man in a grey suit, a police officer in a blue uniform and cap, a firefighter in a red uniform and helmet, another police officer in a blue uniform and cap, and a paramedic in a blue uniform with a stethoscope and a caduceus on his chest.

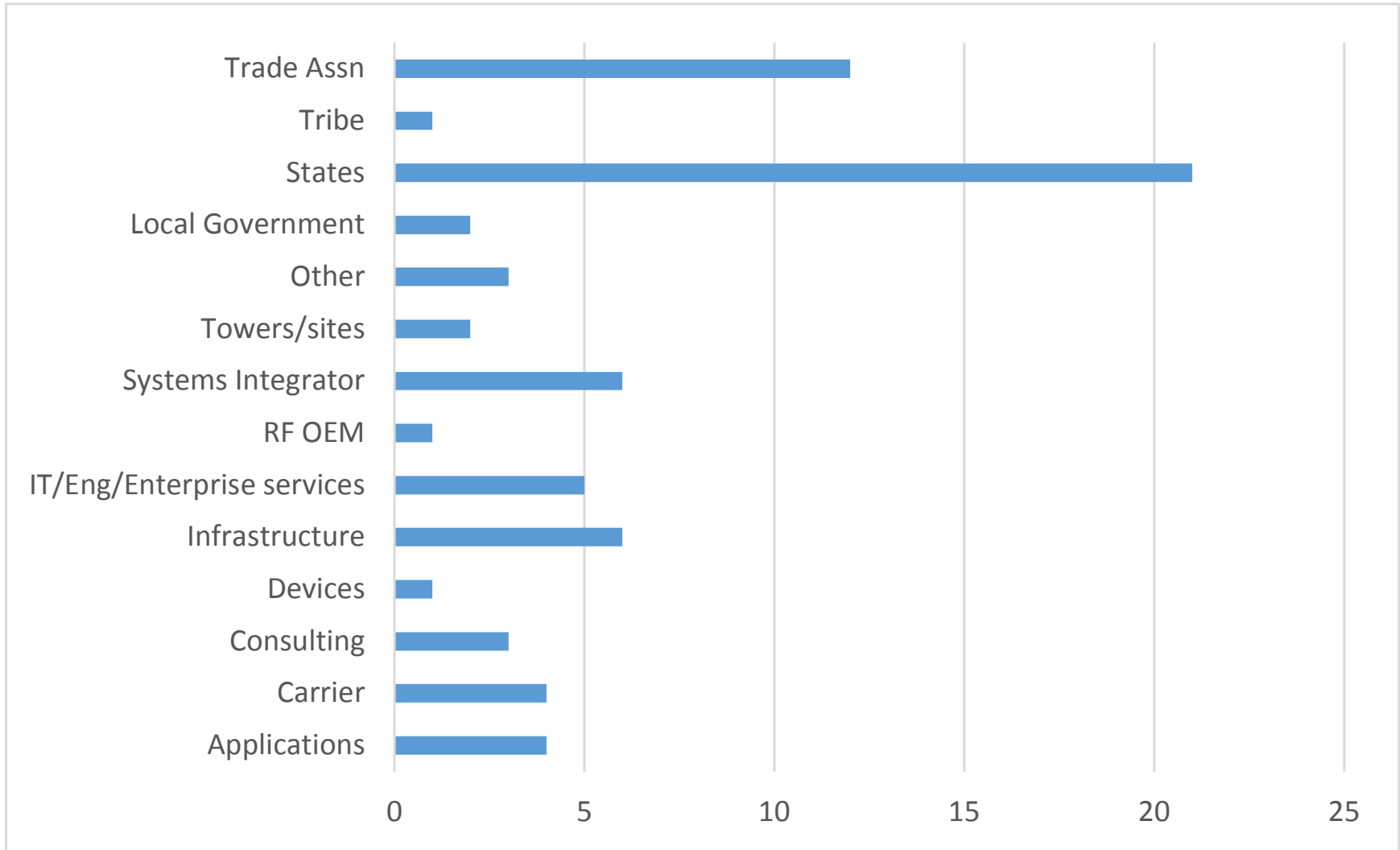
 **Capabilities Statements**  
Internal Reference Document  
*Special Notice D15PS00295 - Nationwide Public Safety Broadband Network (NPSBN)*  
07/13/2015

 **Comments**  
Internal Reference Document  
*Special Notice D15PS00295 - Nationwide Public Safety Broadband Network (NPSBN)*  
07/13/2015

# Capabilities Statement Submissions and Industry Day Attendants



# Comments Received by Type of Respondent



# FirstNet's Statement of Objectives Envisions a World Class Public Safety Network



**Build, Deploy,  
Operate &  
Maintain the  
NPSBN**



**Financial  
Sustainability**



**Compelling &  
Competitively  
Priced Services**



**Device  
Ecosystem**



**Application  
Ecosystem**



**Accelerate  
Speed to  
Market**



**User Service  
Availability**



**Service  
Capacity**



**Cyber Security**



**Priority  
Services**



**Integration  
Of Opt-out  
State RANs**



**Integrate Existing  
State/Local/  
Commercial/  
Federal  
Infrastructure To  
Support NPSBN  
Services**



**Lifecycle  
Innovation**



**Program and  
Business  
Management**



**Customer  
Care and  
Marketing**



**Facilitate  
FirstNet's  
Compliance  
With The Act  
& Other Laws**

# Multiple Objectives Provide Opportunities to Team



**Contractor  
Capabilities**



# Objectives Translate into Offeror Authored Requirements



Statement of Objectives



Contractor Statement of Work



Contractor Work Breakdown Structure

Constitutes Offeror Proposal

# Objectives Translate into Offeror Authored Requirements



Statement of Objectives



Contractor Statement of Work



Contractor Work Breakdown Structure

Constitutes Offeror Proposal

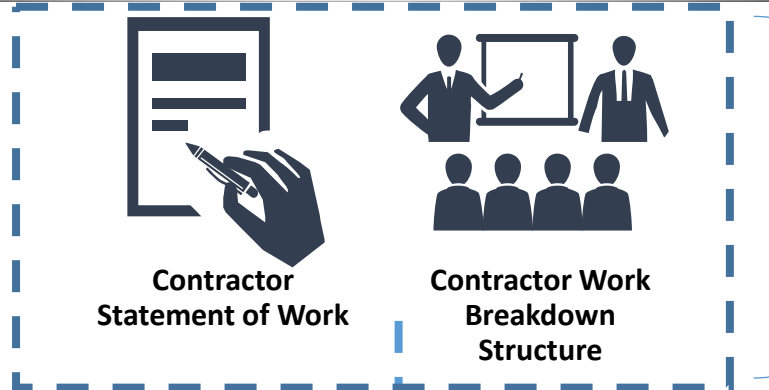


Potential Discussions with FirstNet And Offerors

# Those Requirements are Negotiated to Become an Award



Statement of Objectives

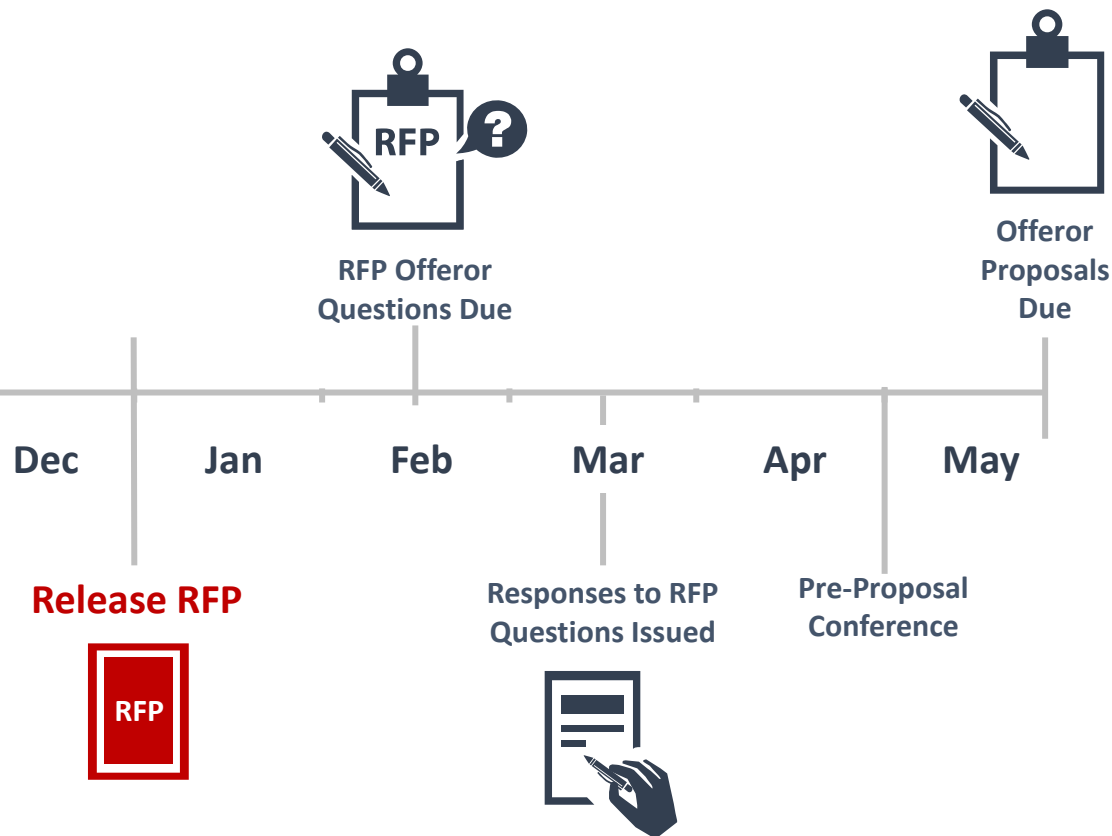


Constitutes Offeror Proposal

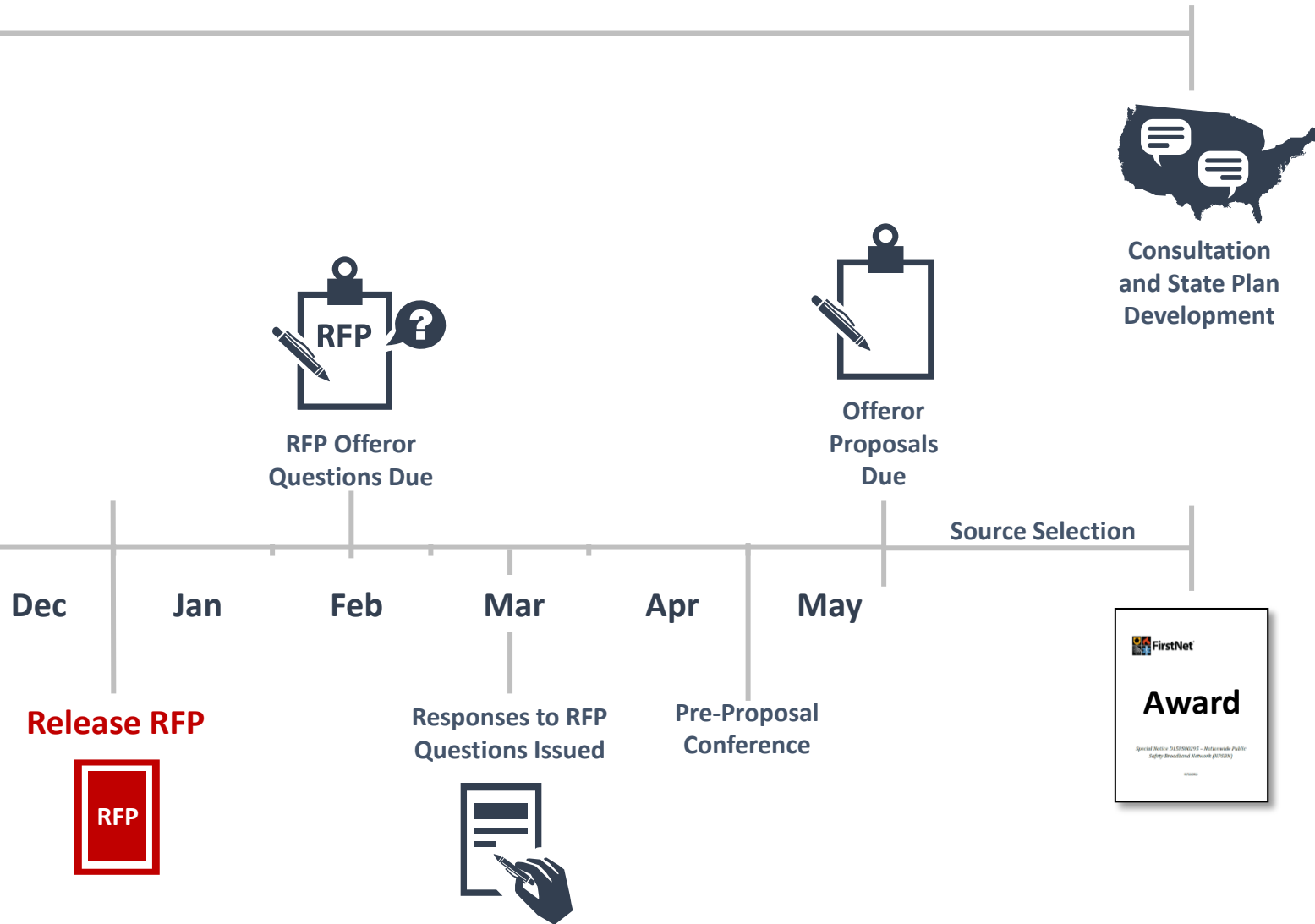




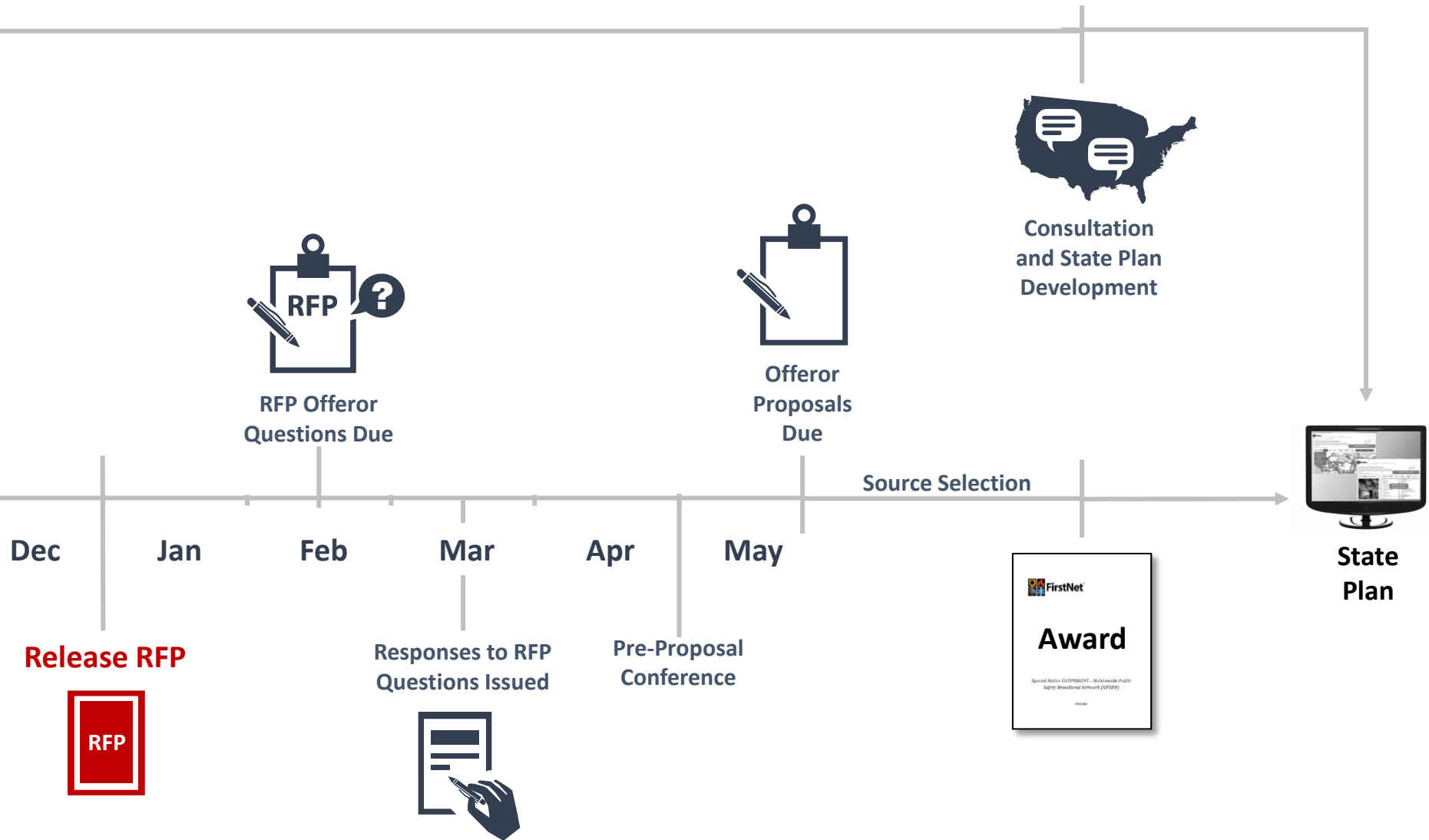
# The State Plans and Award are Developed Together



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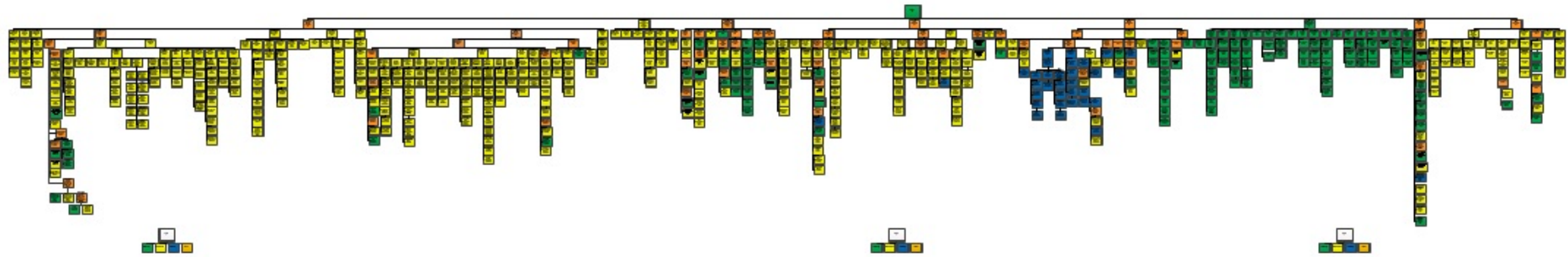
# Operational Architecture

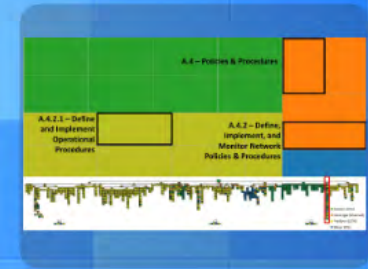
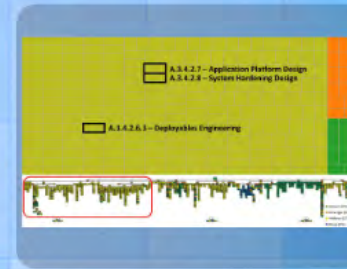
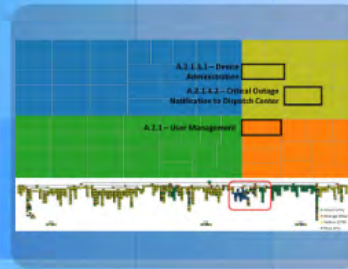
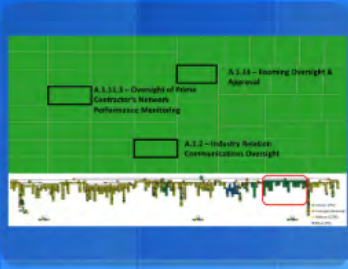
Zachary Smith  
Emergency Management Specialist



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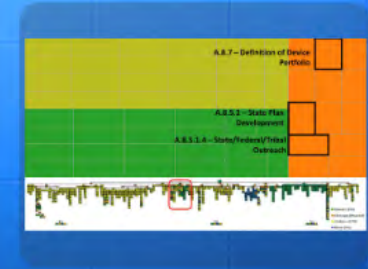
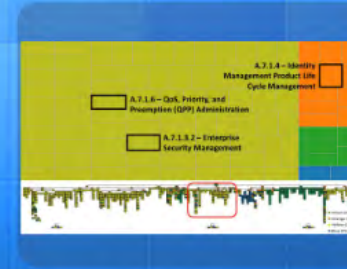
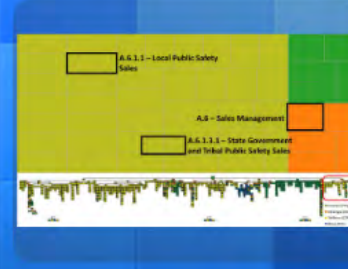
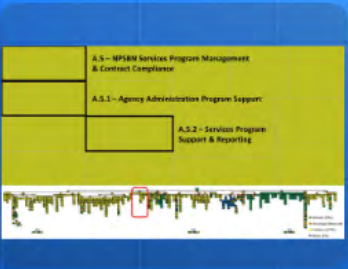
# Operational Architecture Inputs and Analysis





# FirstNet<sup>®</sup>

## Operational Architecture



# OA Response Metrics

- 10,000+ Responses
- 9,000+ Comments
- 60% Respondents provided input to over half the OA

## OA Common Understanding

Blue, Green, Yellow, Orange

Functions represent Scope

Color = Ownership ≠ Participation

Function ≠ Employees

Viewed from multiple perspectives

# OA Common Understanding

**Blue, Green, Yellow, Orange**

Functions represent Scope

Color = Ownership  $\neq$  Participation

Function  $\neq$  Employees

Viewed from multiple perspectives





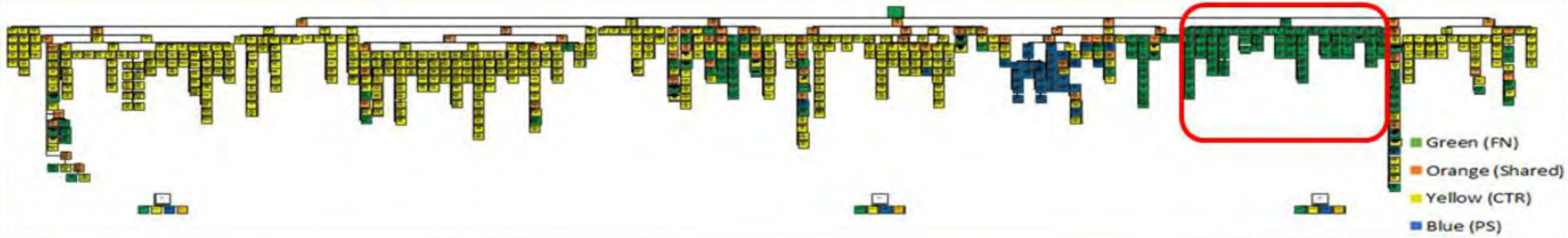
**A.1.11.3 – Oversight of Prime Contractor's Network Performance Monitoring**



**A.1.14 – Roaming Oversight & Approval**



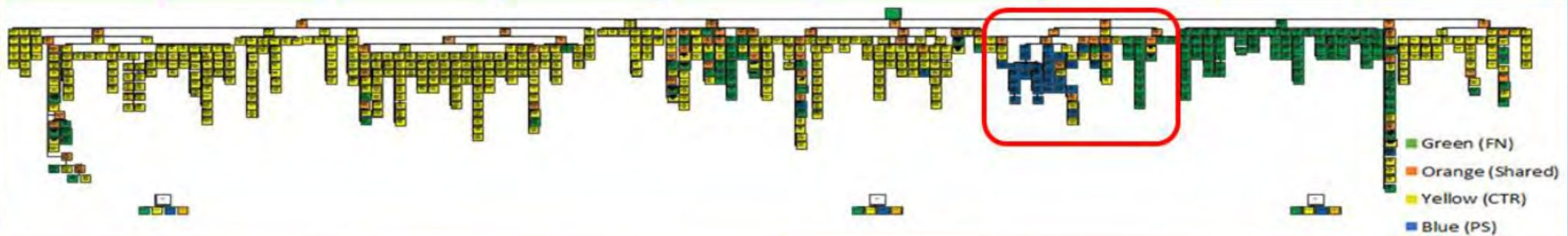
**A.1.2 – Industry Relation Communications Oversight**

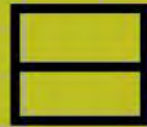


A.2.1.3.1 – Device Administration

A.2.1.4.2 – Critical Outage Notification to Dispatch Center

A.2.1 – User Management



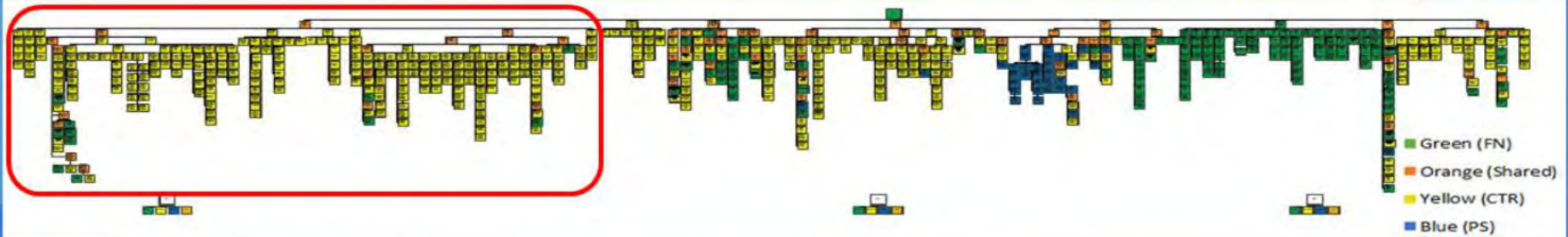


A.3.4.2.7 – Application Platform Design

A.3.4.2.8 – System Hardening Design



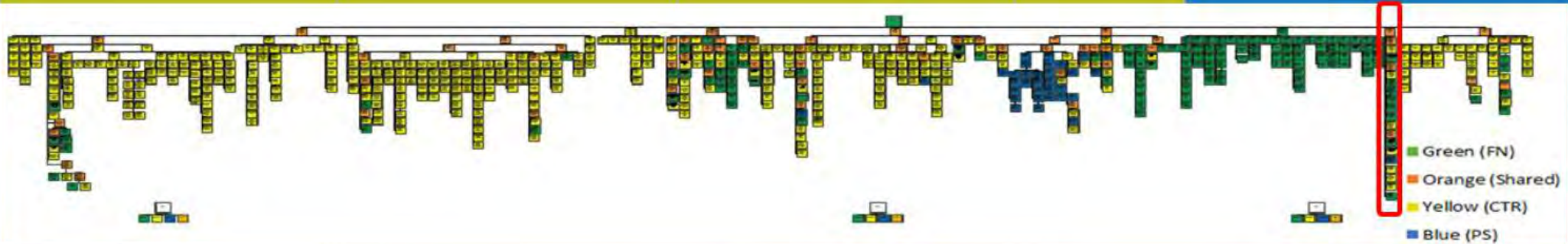
A.3.4.2.6.3 – Deployables Engineering



## A.4 – Policies & Procedures

A.4.2.1 – Define and Implement Operational Procedures

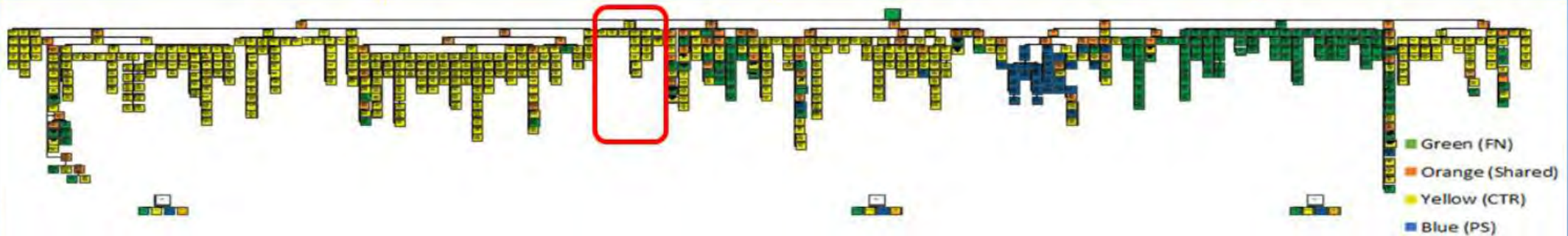
A.4.2 – Define, Implement, and Monitor Network Policies & Procedures



**A.5 – NPSBN Services Program Management  
& Contract Compliance**

**A.5.1 – Agency Administration Program Support**

**A.5.2 – Services Program  
Support & Reporting**



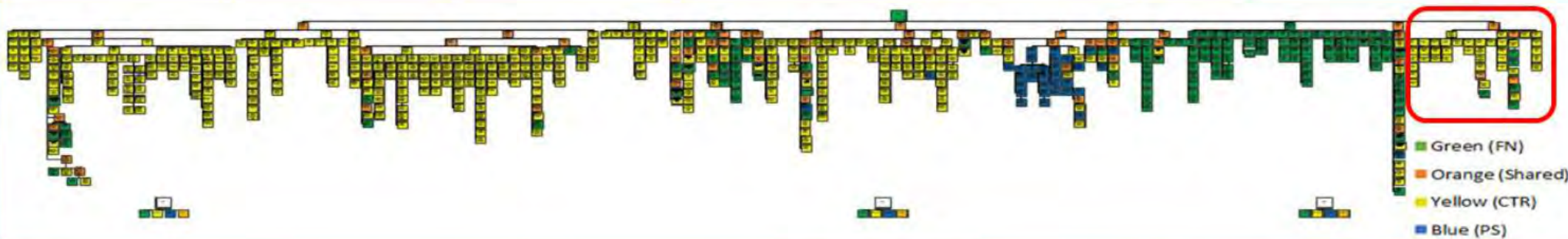


**A.6.1.1 – Local Public Safety Sales**

**A.6 – Sales Management**



**A.6.1.3.1 – State Government and Tribal Public Safety Sales**



A.7.1.4 – Identity Management Product Life Cycle Management



A.7.1.6 – QoS, Priority, and Preemption (QPP) Administration



A.7.1.3.2 – Enterprise Security Management



A.8.7 – Definition of Device Portfolio

A.8.5.2 – State Plan Development

A.8.5.1.4 – State/Federal/Tribal Outreach





# FirstNet Cyber Security Concepts

Glenn Zimmerman  
Senior Security Specialist



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# Special Notice: Cyber Security with Appendix C-10



- The Cyber Security challenges inherent in the NPSBN require a paradigm shift in how a network of this type is protected. FirstNet seeks input to effect this paradigm shift.
  
- FirstNet will release:
  - A Special Notice on Cyber Security
  - Draft Appendix C-10: Cyber Security Objectives
  
- FirstNet seeks from Industry and Stakeholders:
  - Feedback on our proposed cyber security objectives
  - Feedback on our proposed documents required to demonstrate an offeror's ability to meet the FirstNet cyber security objectives

- Our initial list of documents that would demonstrate how an offeror would realize FirstNet's cyber security objectives:
  - Cyber Security Architecture
  - Cyber Security Lifecycle
  - Cyber Security Methodology
  - Cyber Security Engineering Plan
  - Risk Analysis and Mitigation Plan
  - Cyber Security Incident Response Plan
  - Continuous Monitoring and Mitigation Methodology
  - Cyber Security Testing and Certification Plan
  - Network Management and Configuration Management Policy

# Device and Application Ecosystems

Mark Golaszewski  
Director of Applications



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## Strategy

- Create devices and apps that enable public safety user adoption
- Leverage scale and technologies of the commercial market

## Vision

- Needs of public safety to drive continuous innovation
- Support for a vibrant public safety developer community
- Secure coexistence of FirstNet and commercial apps on devices

## Offer Expectations

- Proposals for all components of the ecosystems
- Best-of-breed solutions
- Growing portfolio of public safety devices and apps

# Device Portfolio Vision



All inclusive, building on much larger economies of scale to drive lower cost

	Portables	Mobile Data	M2M & Specialized	Accessories
Device Types				
Functions	<ul style="list-style-type: none"> <li>• Smartphones (standard &amp; low cost)</li> <li>• Tablets</li> <li>• Rugged</li> </ul>	<ul style="list-style-type: none"> <li>• In-Vehicle Routers</li> <li>• Mobile Coms Unit (MCU)</li> <li>• Modems (USB, mPCIe)</li> <li>• Hotspots/MDTs</li> <li>• High Power</li> </ul>	<ul style="list-style-type: none"> <li>• M2M</li> <li>• Rugged</li> <li>• Unmanned</li> <li>• Cameras</li> <li>• Sensors</li> </ul>	<ul style="list-style-type: none"> <li>• Wearables</li> <li>• Smart devices</li> <li>• Rugged cases</li> <li>• Battery packs</li> <li>• Chargers</li> </ul>
Connectivity	<ul style="list-style-type: none"> <li>• LTE, 3G, 2G</li> <li>• Wi-Fi, Wi-Gig</li> <li>• Bluetooth</li> <li>• NFC</li> <li>• Tethering</li> </ul>	<ul style="list-style-type: none"> <li>• LTE, 3G, 2G</li> <li>• Wi-Fi, Wi-Gig</li> <li>• Satellite Fallback</li> <li>• Ethernet</li> <li>• USB</li> </ul>	<ul style="list-style-type: none"> <li>• LTE, 3G, 2G</li> <li>• Wi-Fi, Wi-Gig</li> <li>• Range Extension</li> <li>• Satellite Fallback</li> </ul>	<ul style="list-style-type: none"> <li>• Bluetooth</li> <li>• Wi-Fi, Wi-Gig</li> <li>• NFC</li> <li>• Miracast</li> <li>• PAN Connectivity</li> </ul>



## Enable Unique PS Applications

- Resilient, reliable, and easy-to-use mission-critical capabilities



## App Development Driven by Public Safety Needs

- Expand and support a vibrant PS app developer community



## Provide Lifecycle Management of Applications

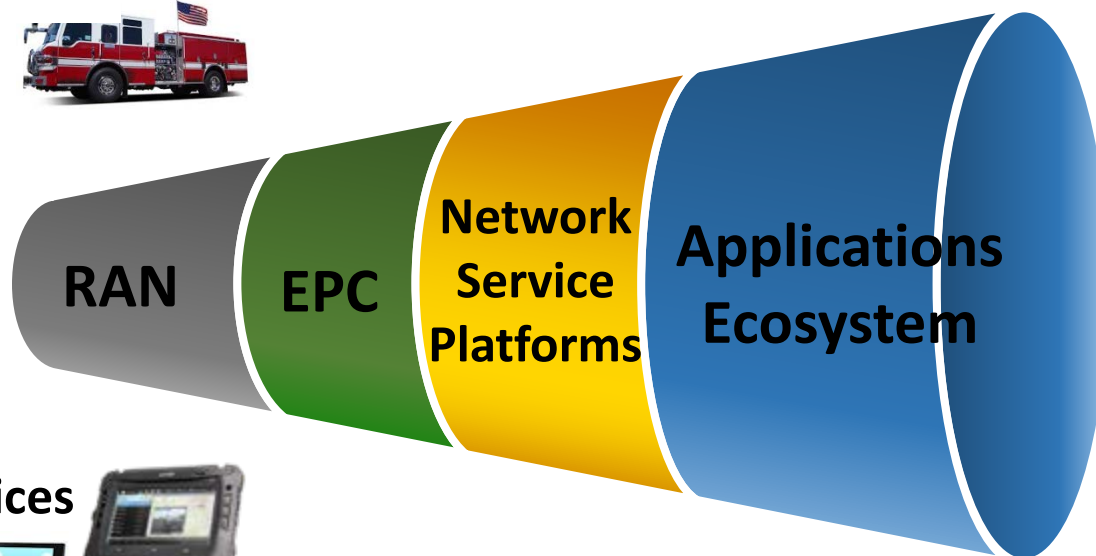
- Ecosystem including an applications platform, local control, and security

# Applications Vision

## Users



## Applications



## Developers



## Devices





# Applications Ecosystem Vision



## ICAM



Federated ICAM

## App Dev Env



Platform for developers

## Test & Cert



Certify as public safety grade

## App Store



Coexist with commercial apps

## SDP

Application Layer

Open  APIs

Service Delivery Platform

Network Services

## Cloud Services



Cost-effective agency options

## Local Control



Agency controls

## Mobility Mgmt



App and device management

## Proposals for Devices and Apps

- Solutions for all components of devices and apps ecosystems
- Plan for an expanding portfolio of devices
- Roadmap for a thriving, innovative app developer community



## Best-of-breed solutions, partners

- Evolving ecosystems on par or surpassing commercial market
- Partnering where necessary to develop world class solutions



## Public safety user success plans

- Device and apps plans that enable public safety user adoption
- Positive user experience: ease-of-use, training, rich set of devices, services, and apps



# Instructions and Evaluation in the RFP

Terrie Callahan  
Contracting Officer



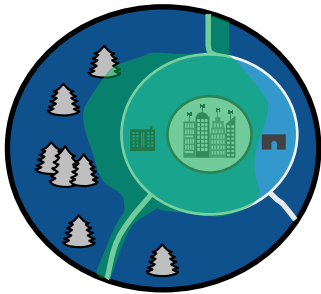
# Instructions to Offerors (Section L)



- The RFP will ensure an impartial and consistent evaluation
  
- Section L includes instructions, conditions, and any notices that are particular to the FirstNet acquisition and process.
  - Provides submission instructions and logistics regarding:
    - Technical and Price considerations
    - Pre-proposal conference logistics and dates
    - Due dates for questions on the RFP
    - Proposal due date
    - Oral presentations
    - Technical demonstrations

- Contains the evaluation factors, and any sub-factors, that proposals will be evaluated against
  - Identifies evaluation factor order of importance
  - Can include “go, no-go” phase
- Identifies the basis for award
  - Best value: obtain the highest technical quality considered necessary to achieve the objectives
- Identifies the evaluation process
  - Multiphase approach
  - Oral Presentations/Technical Demonstrations
  - Competitive Range Determination

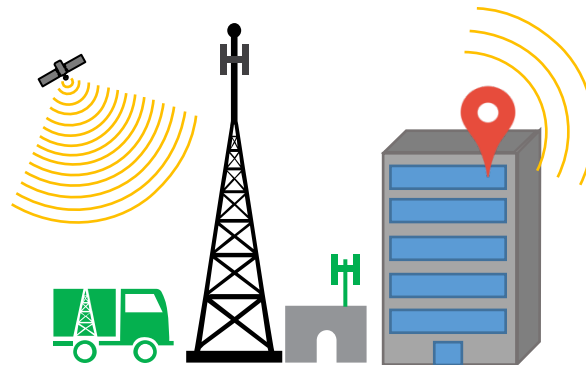
# Evaluation Tied to Objectives



**Coverage and Capacity**



**Business Management**



**Technical Solution, including  
Products and Architecture**



**Past Performance**



**Value Proposition**



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# Thank You



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## Q&A