



www.firstnet.gov

FirstNet[®]



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

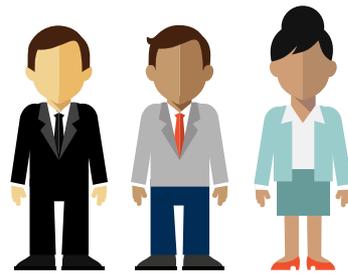


FirstNet will be a Win-Win-Win



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

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**

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

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

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

Scope

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

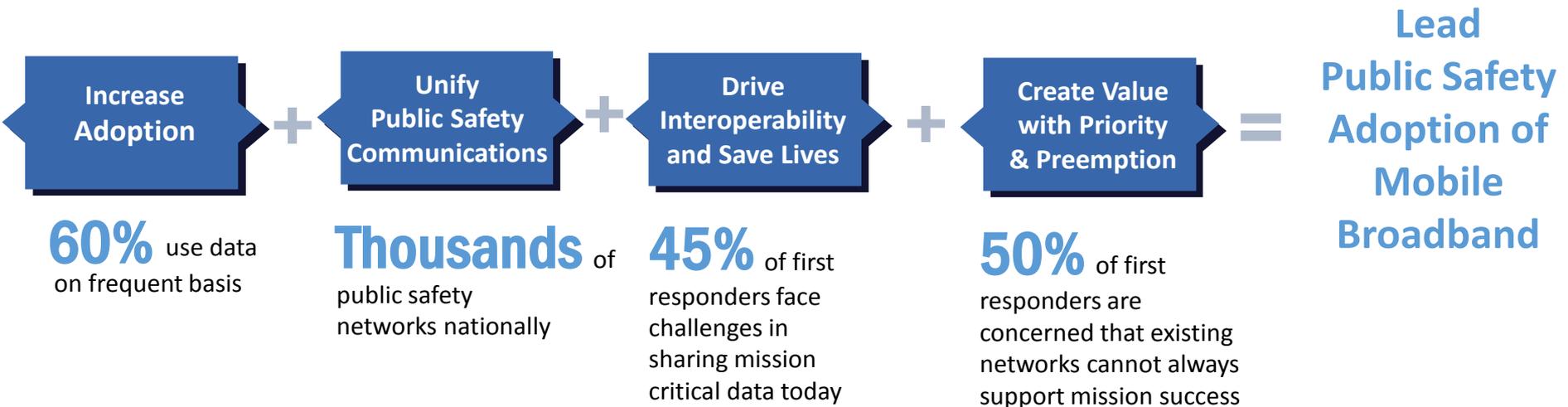
Methodology

- 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



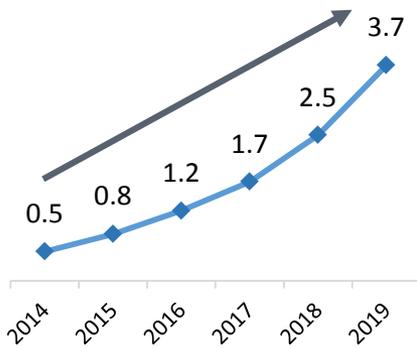
All facts, figures and information provided for illustrative purposes only. No information contained herein should be relied on as the basis for a proposal to FirstNet or for any other purpose. Information about the sources of facts, figures and information herein is located at www.firstnet.gov/resources

FirstNet Business Case Drivers



Innovative Solution to Meet Exploding Demand

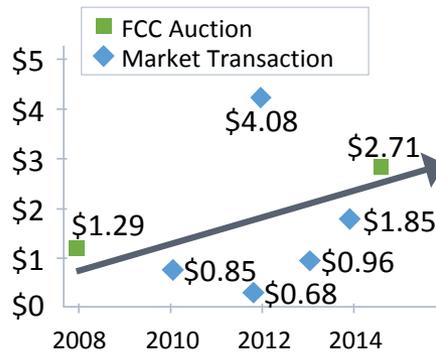
U.S. Mobile Data Traffic (exabyte/month)



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

Alternative Approach to Traditional Spectrum Acquisition

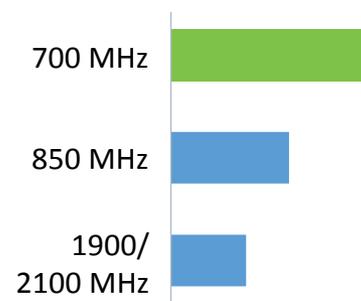
Comparable Transactions 700 MHz/AWS Spectrum (\$/MHz-PoP)



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

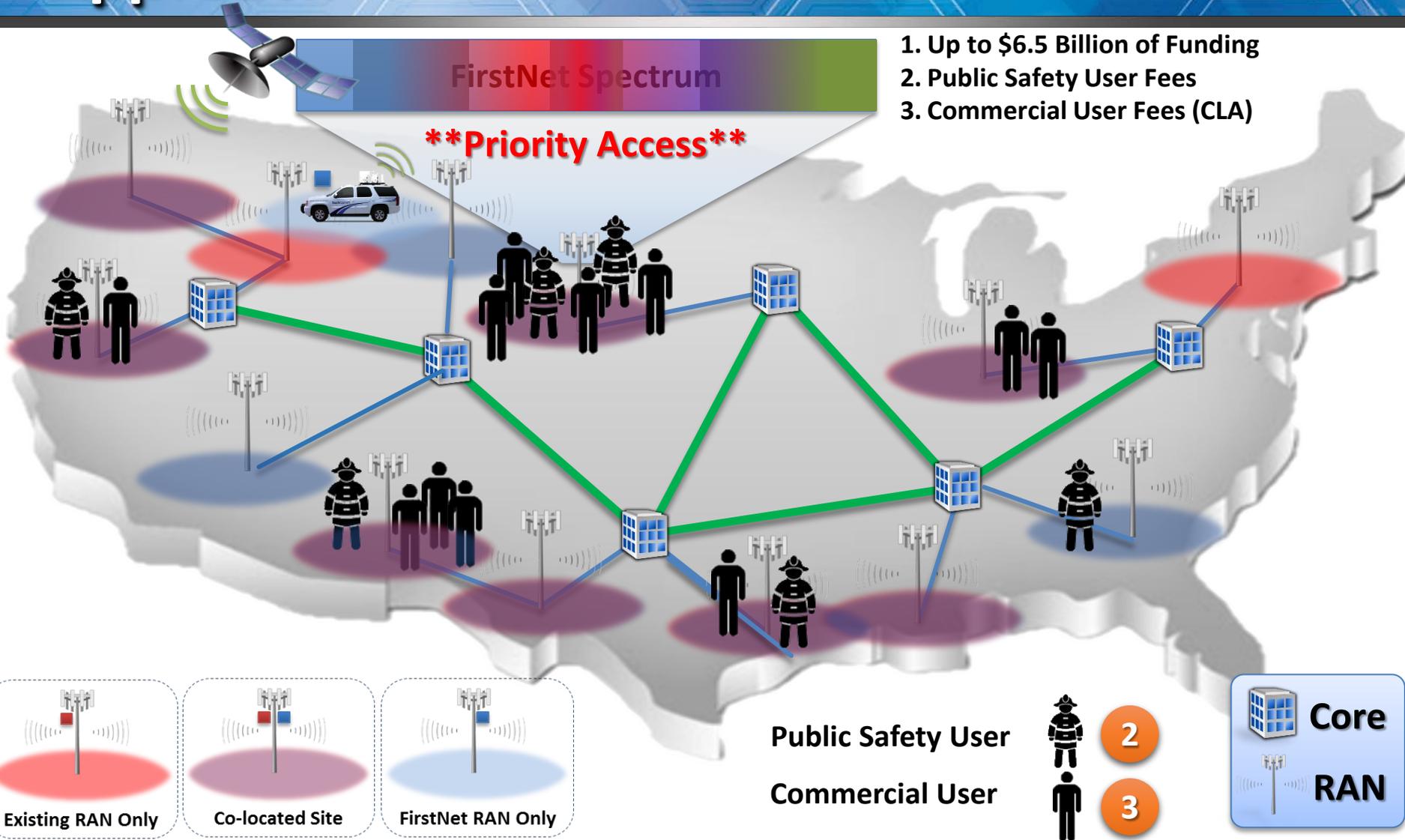
Cash Outlay



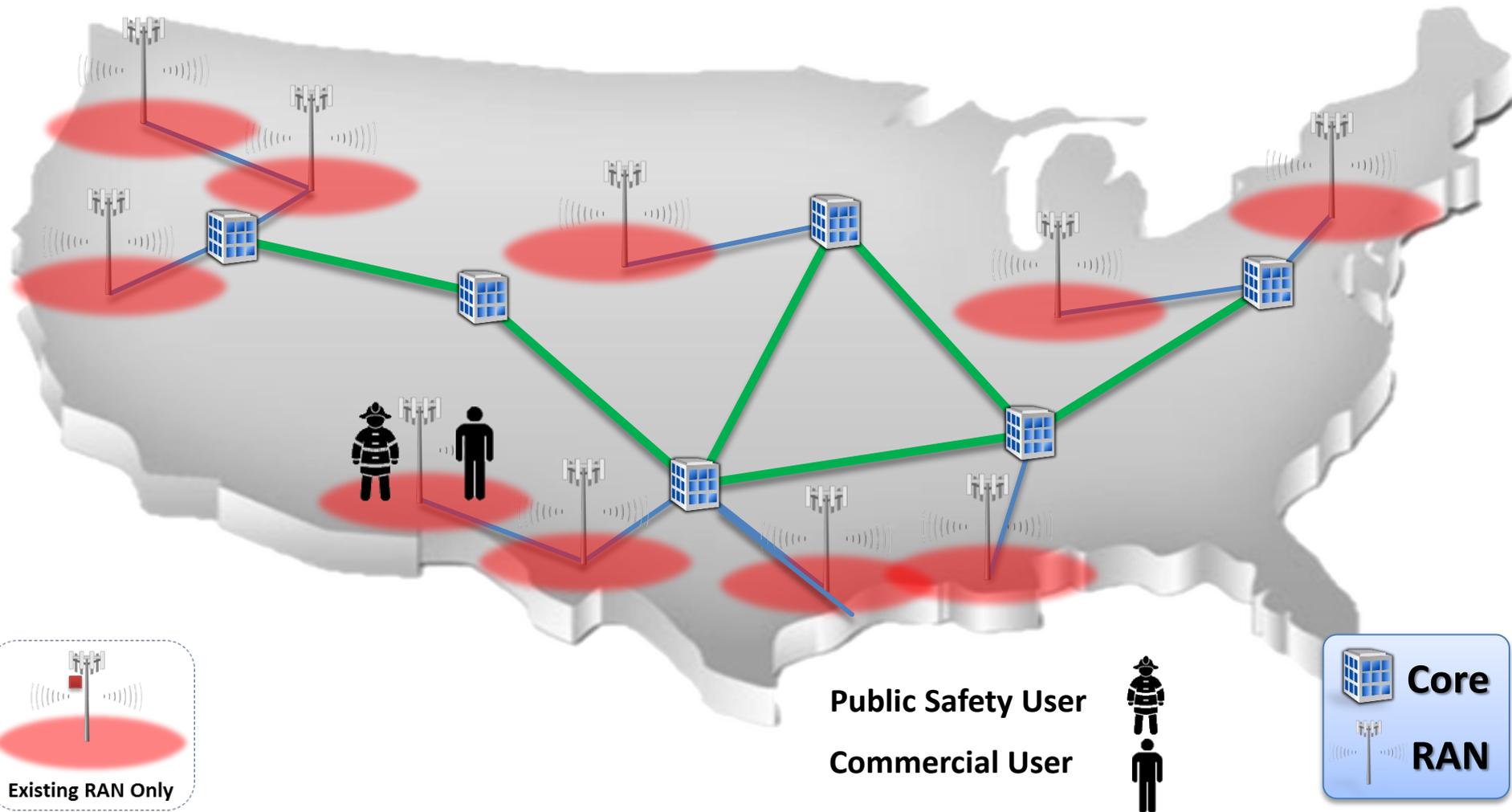
Acquiring spectrum typically requires significant upfront cash. Relationship with FirstNet enables more favorable outflows.

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

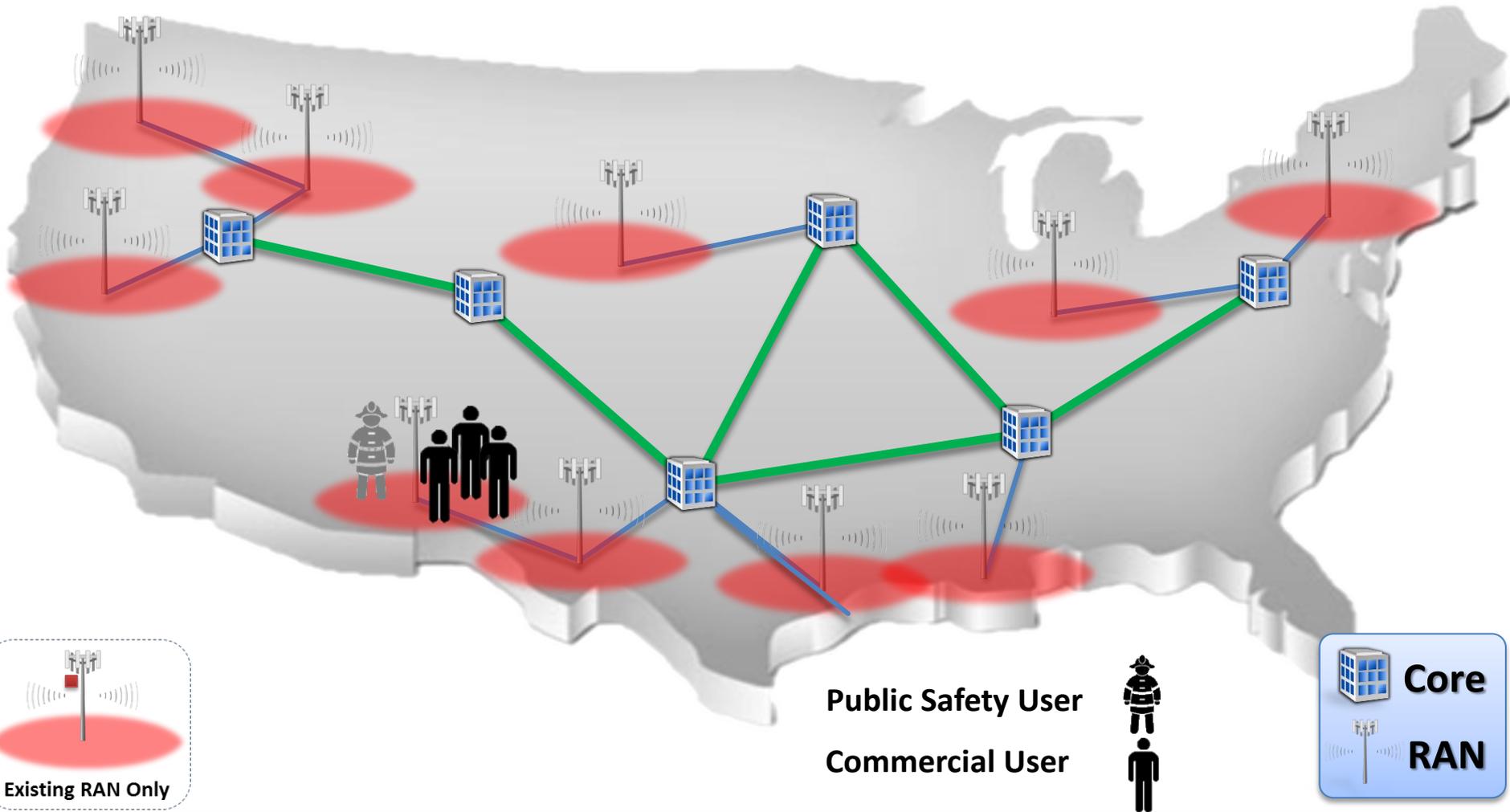
Notional Deployment Approach



Notional Deployment Approach



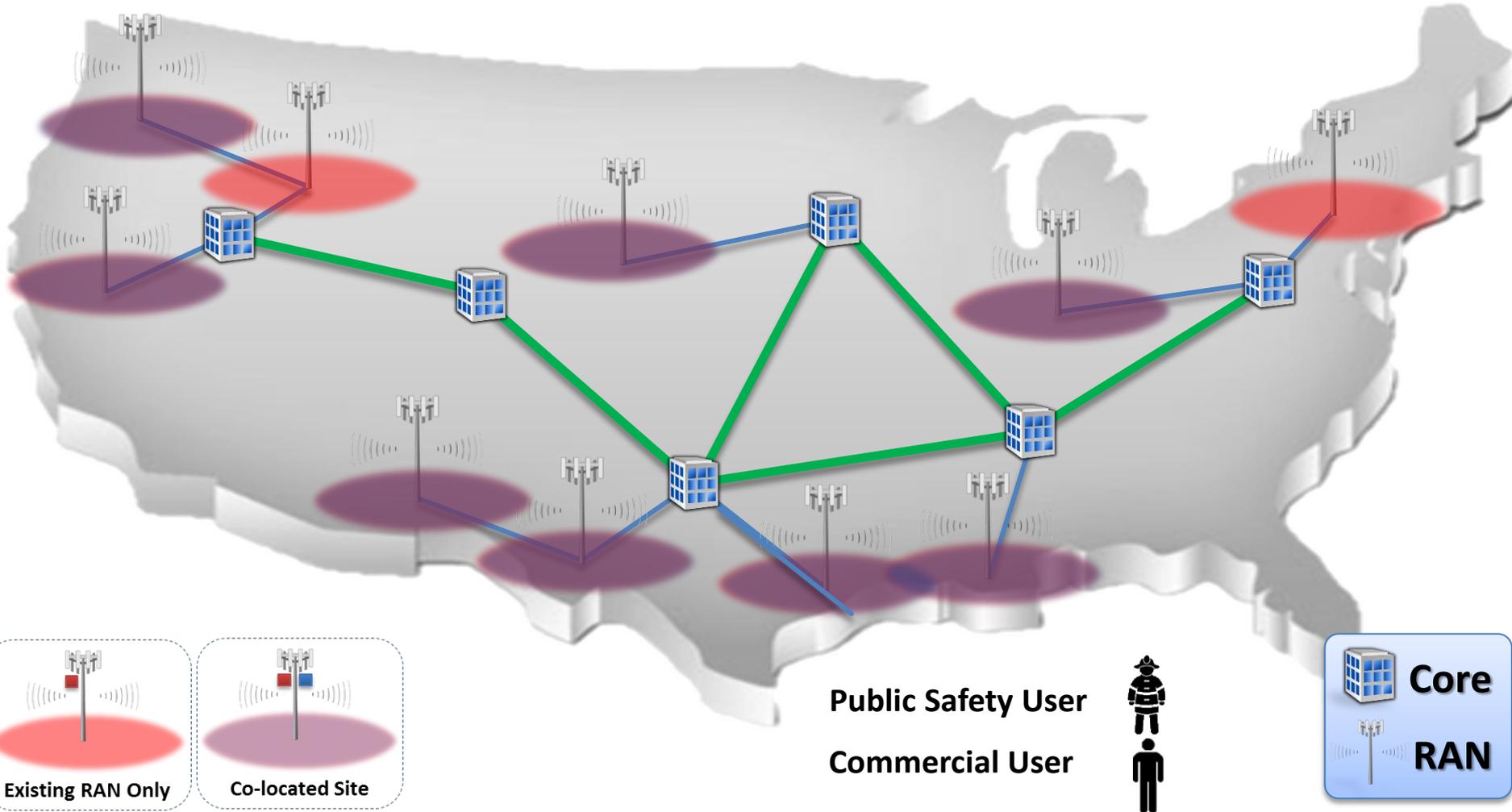
Notional Deployment Approach



Notional Deployment Approach



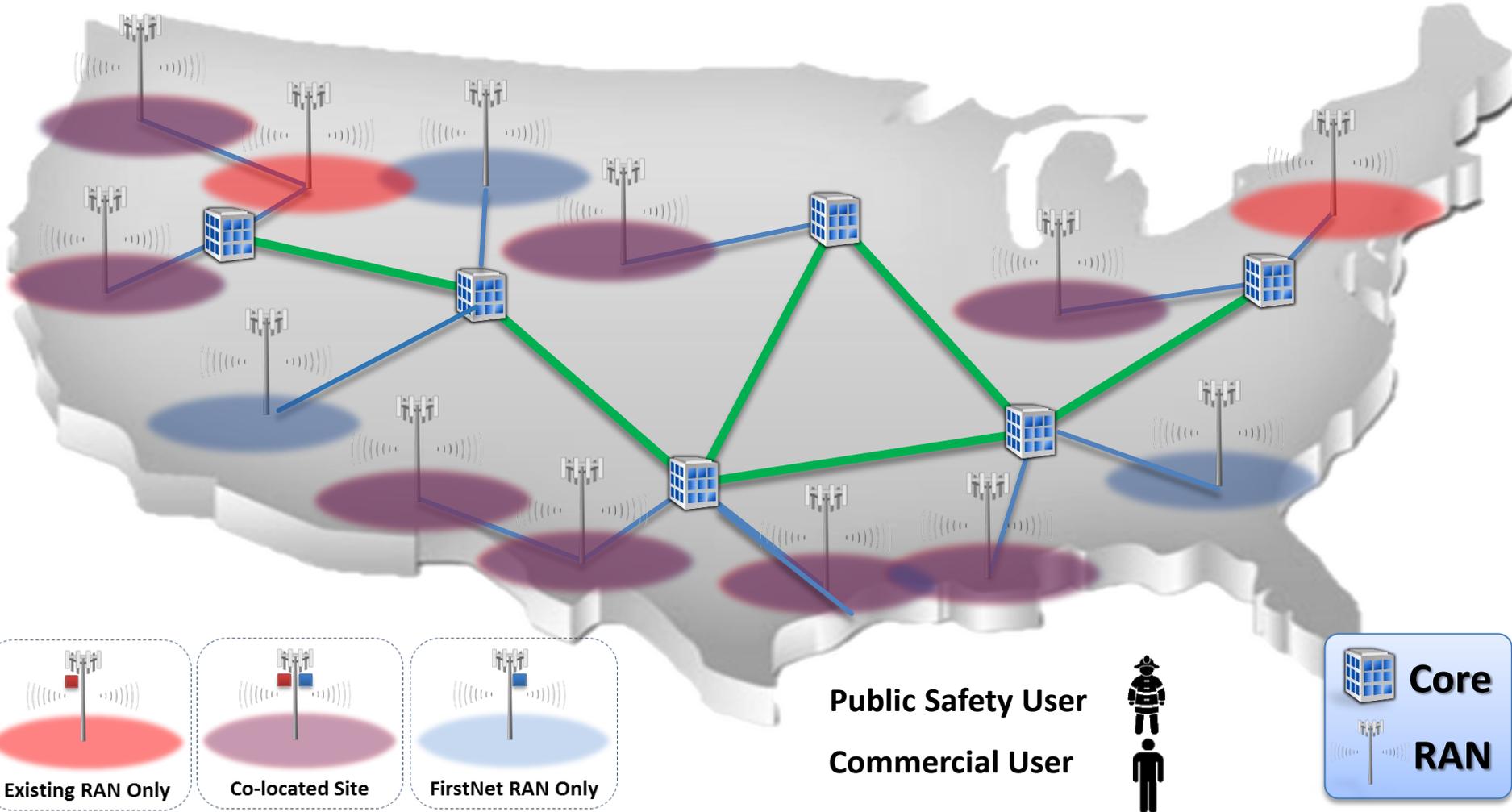
1. Up to \$6.5 Billion of Funding



Notional Deployment Approach



1. Up to \$6.5 Billion of Funding



Existing RAN Only

Co-located Site

FirstNet RAN Only

Public Safety User

Commercial User

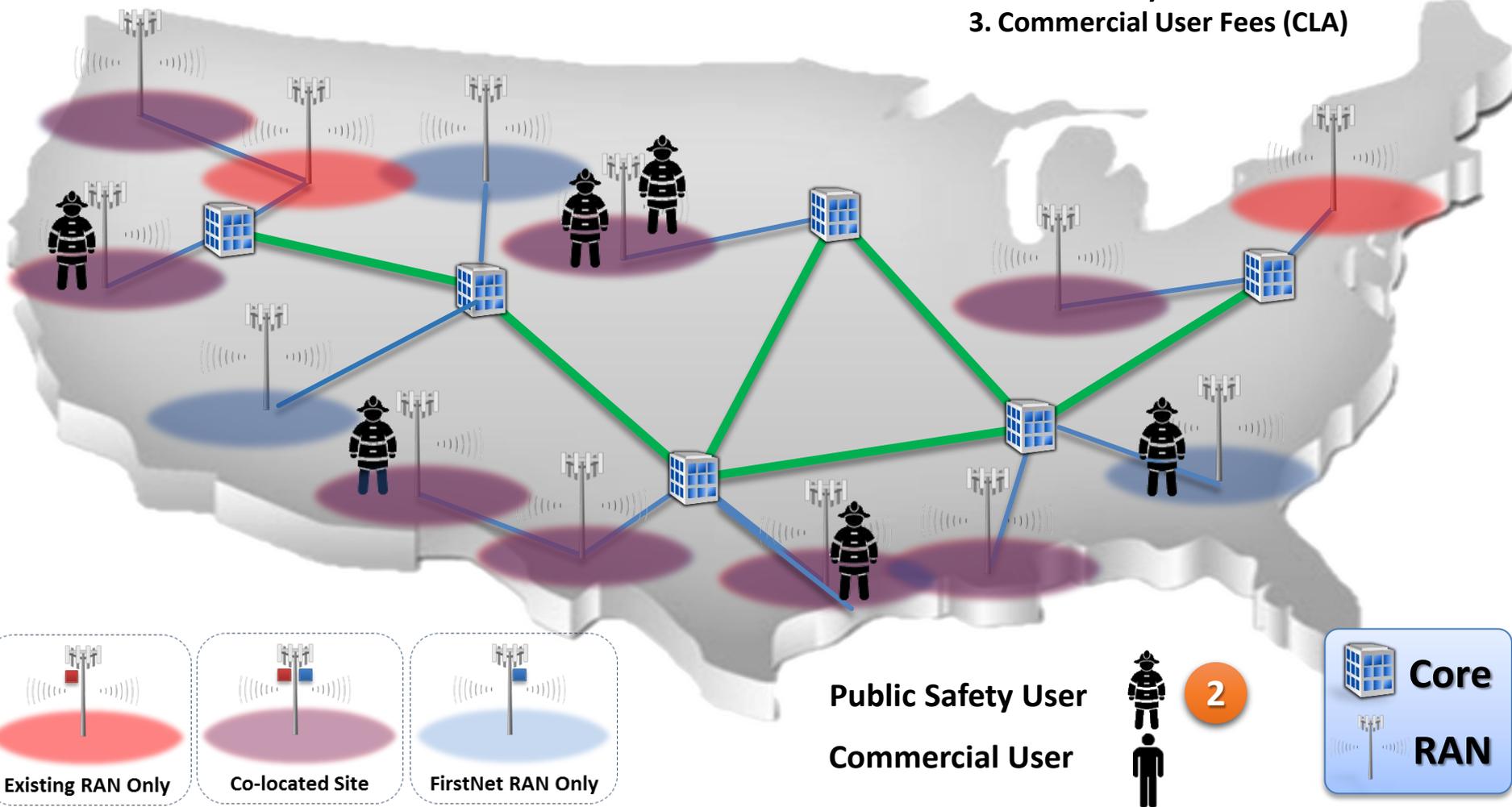
Core

RAN

Notional Deployment Approach



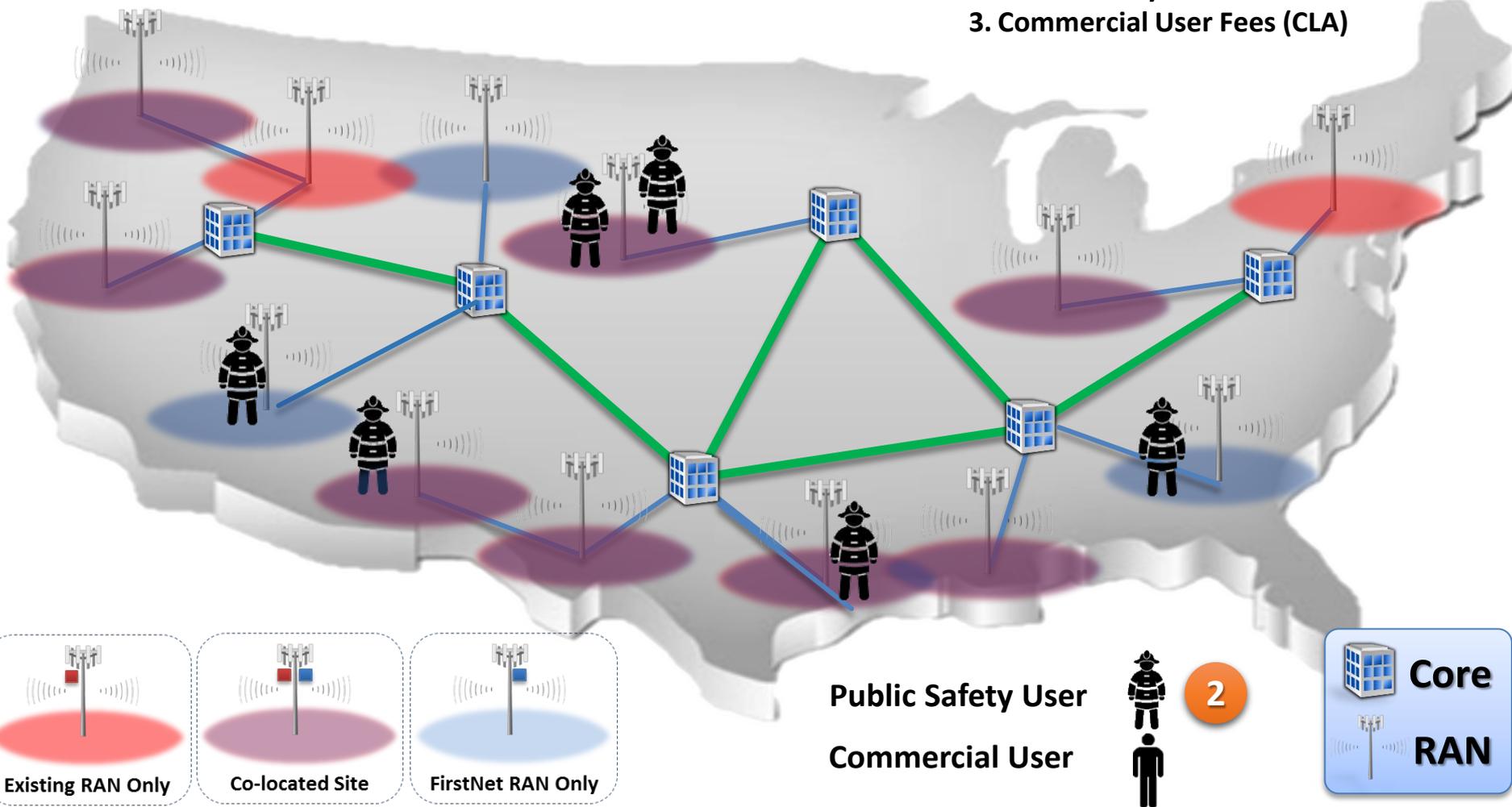
1. Up to \$6.5 Billion of Funding
2. Public Safety User Fees
3. Commercial User Fees (CLA)



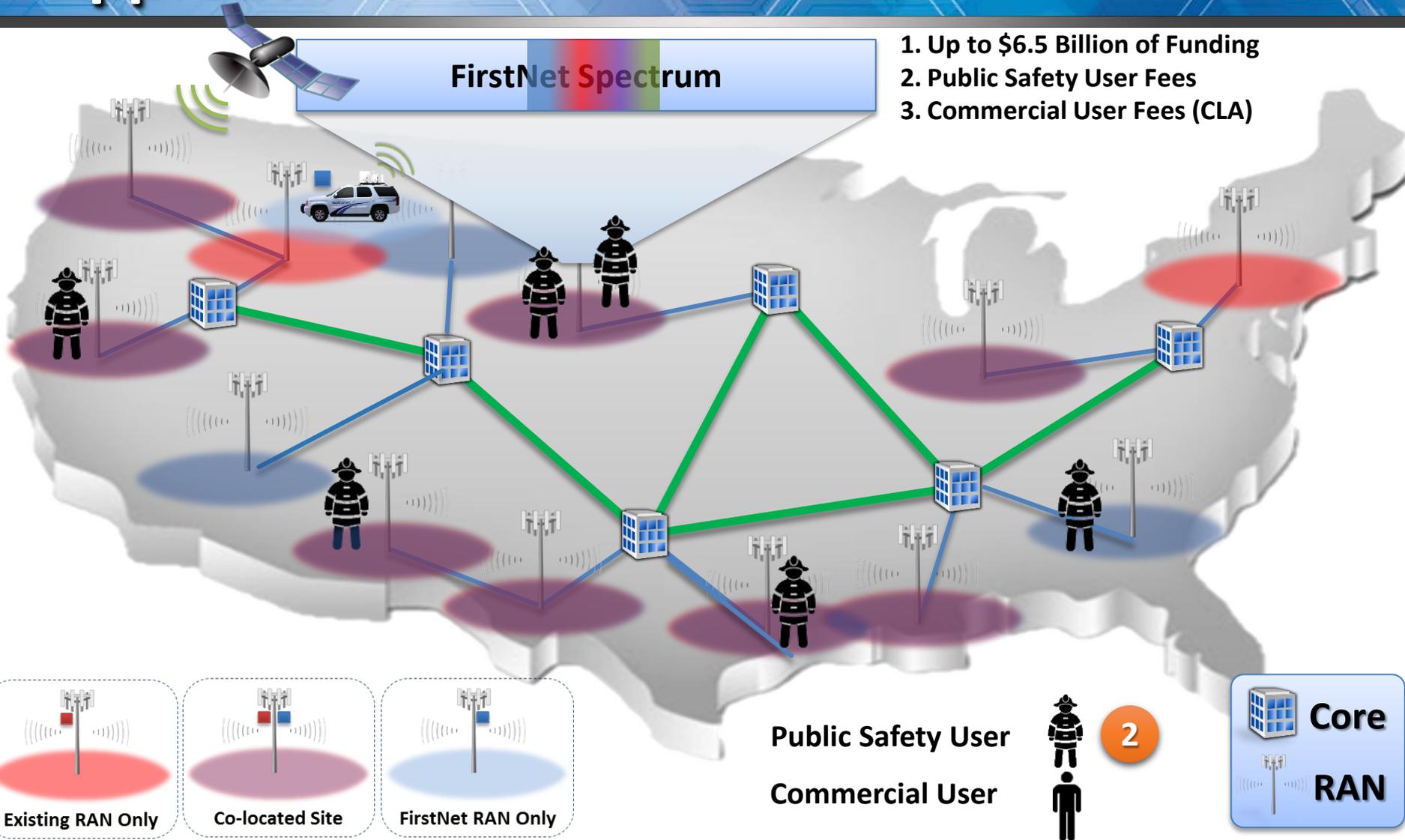
Notional Deployment Approach



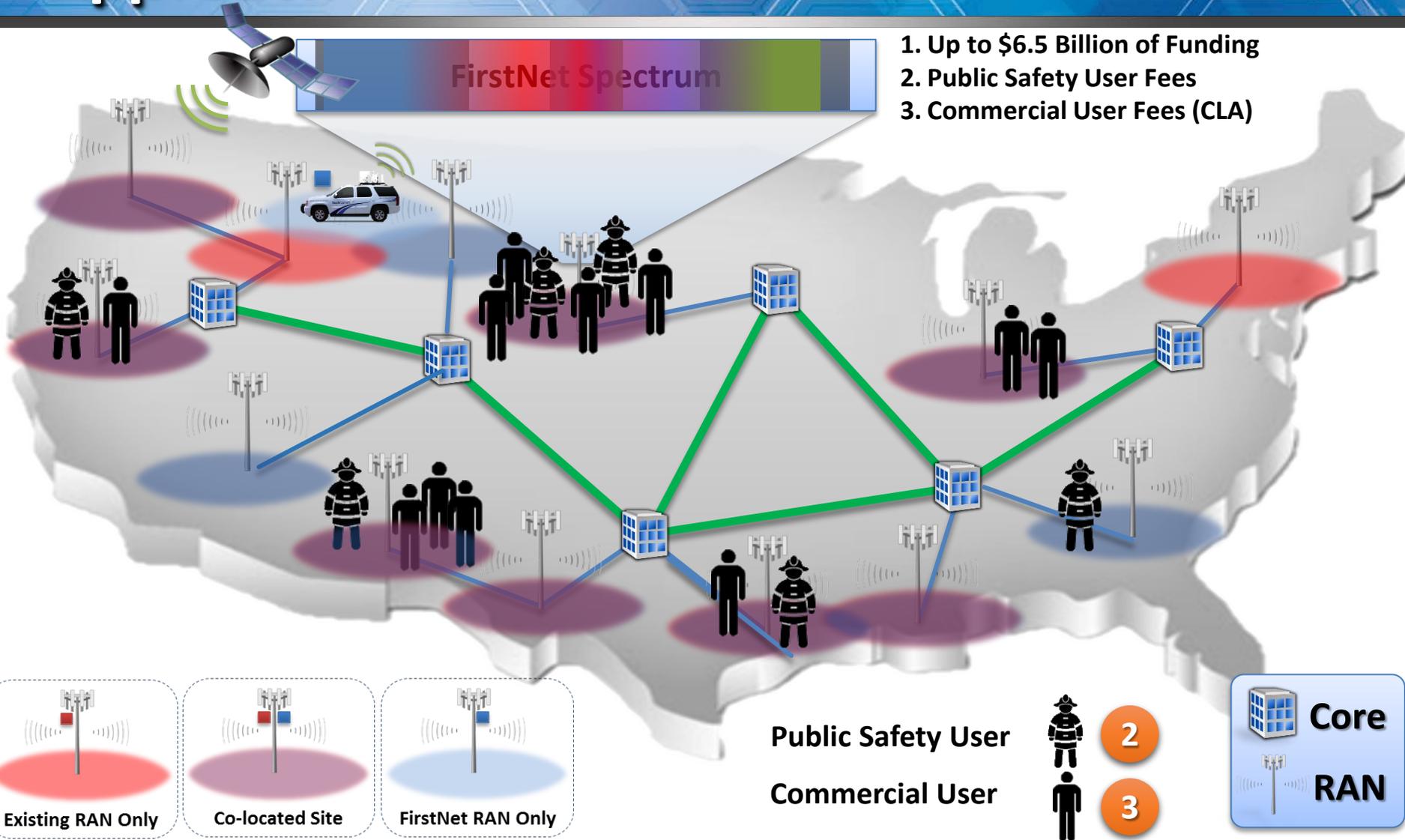
1. Up to \$6.5 Billion of Funding
2. Public Safety User Fees
3. Commercial User Fees (CLA)



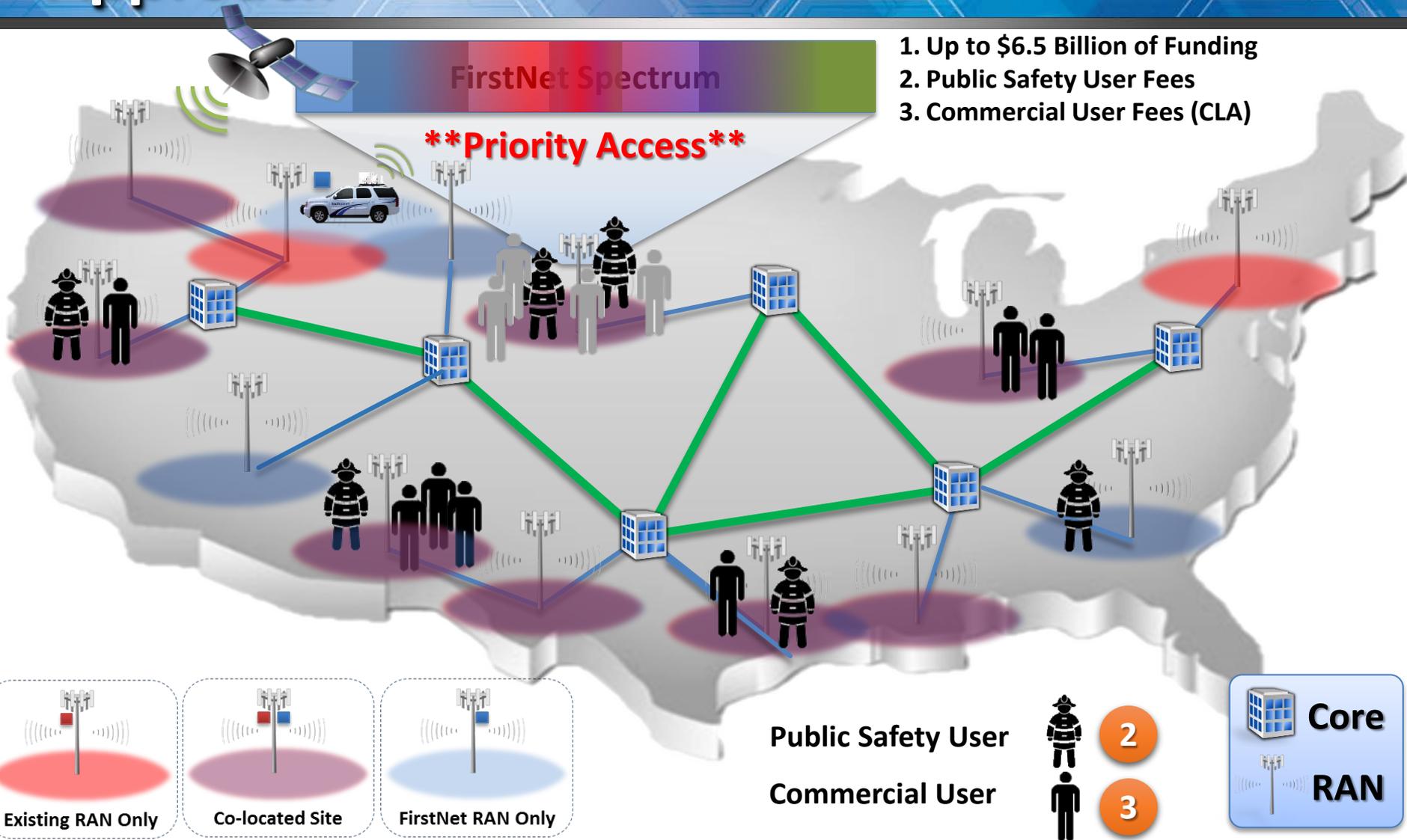
Notional Deployment Approach



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

Commercial Value (CLA)

Public Safety Value

Offeror Receives Public Safety User Fees

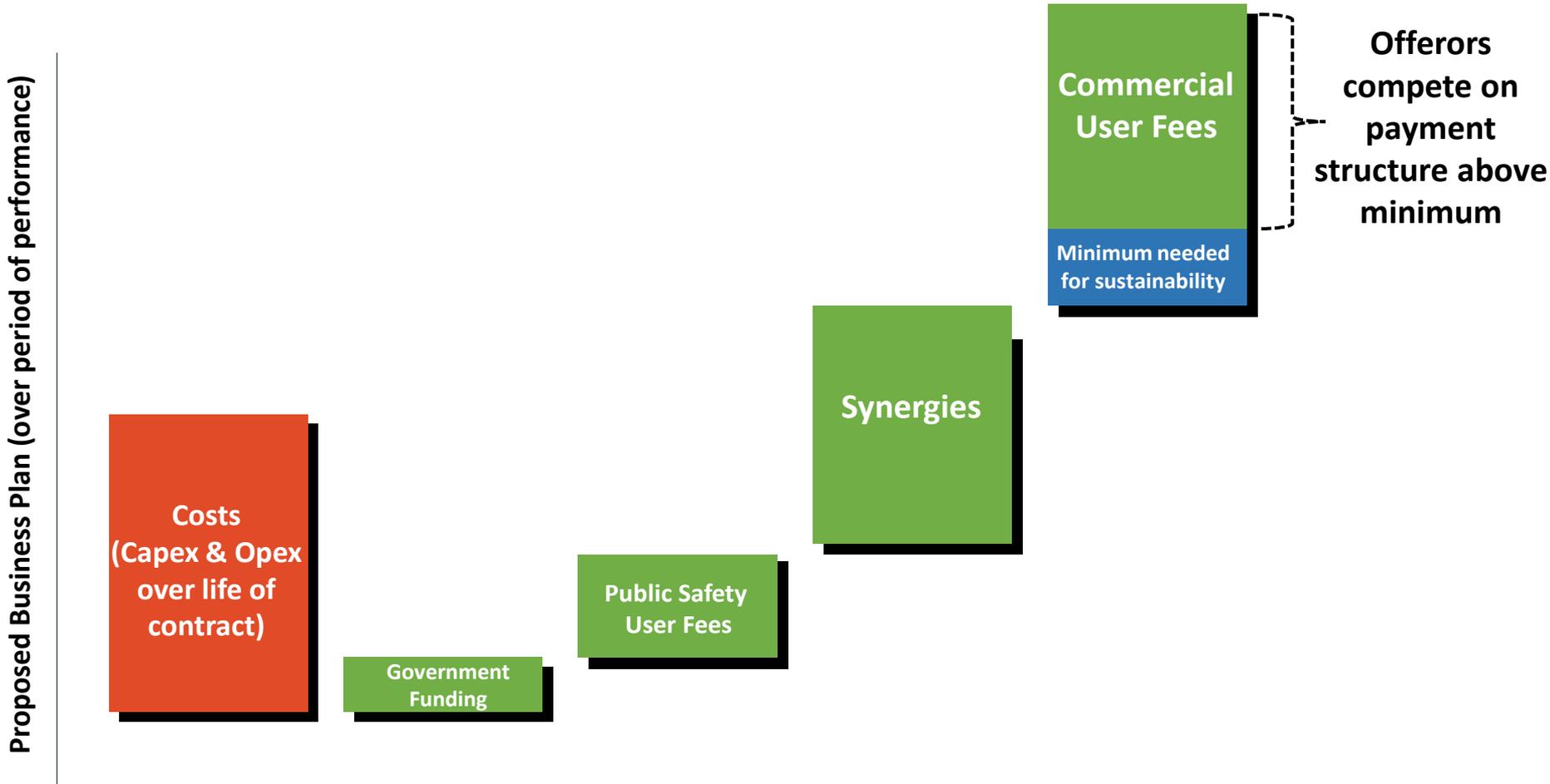


Offeror Receives Commercial User Fees

Total User Fee Revenue to Offeror

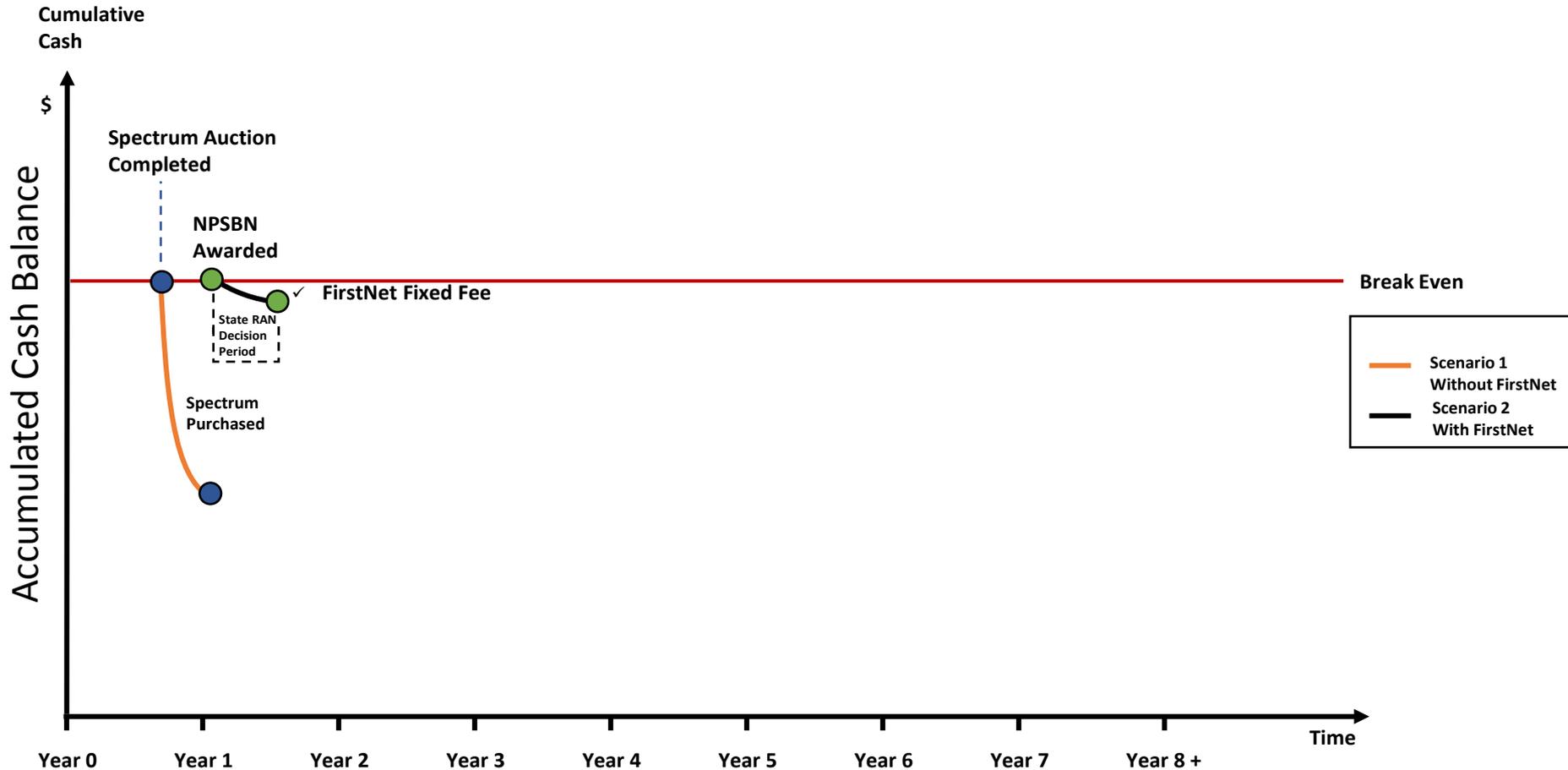
*not to scale; for illustrative purposes only.

Evaluating Offeror's Pricing



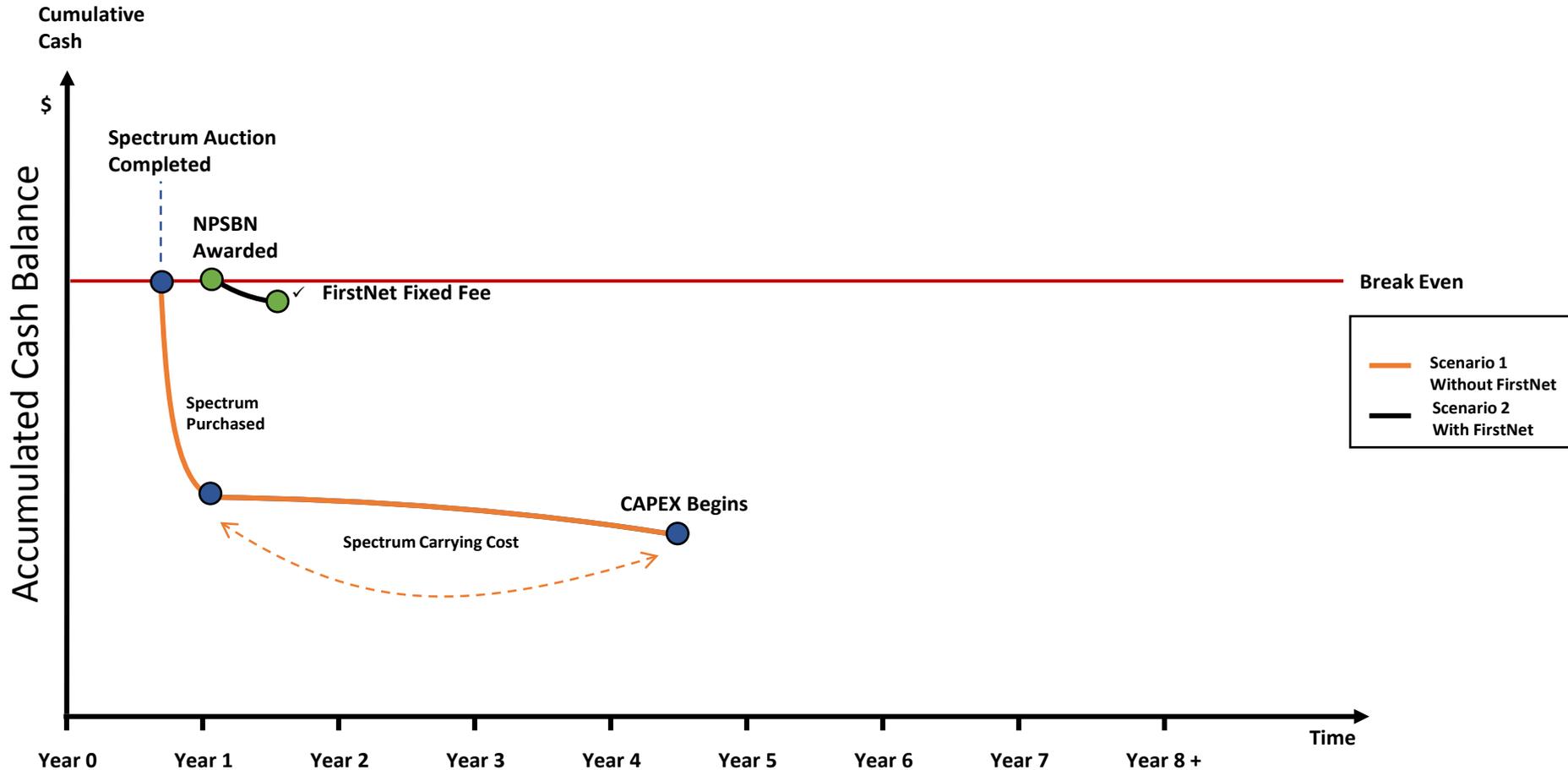
*not to scale; for illustrative purposes only.

Case Study: Wireless Economics With and Without FirstNet



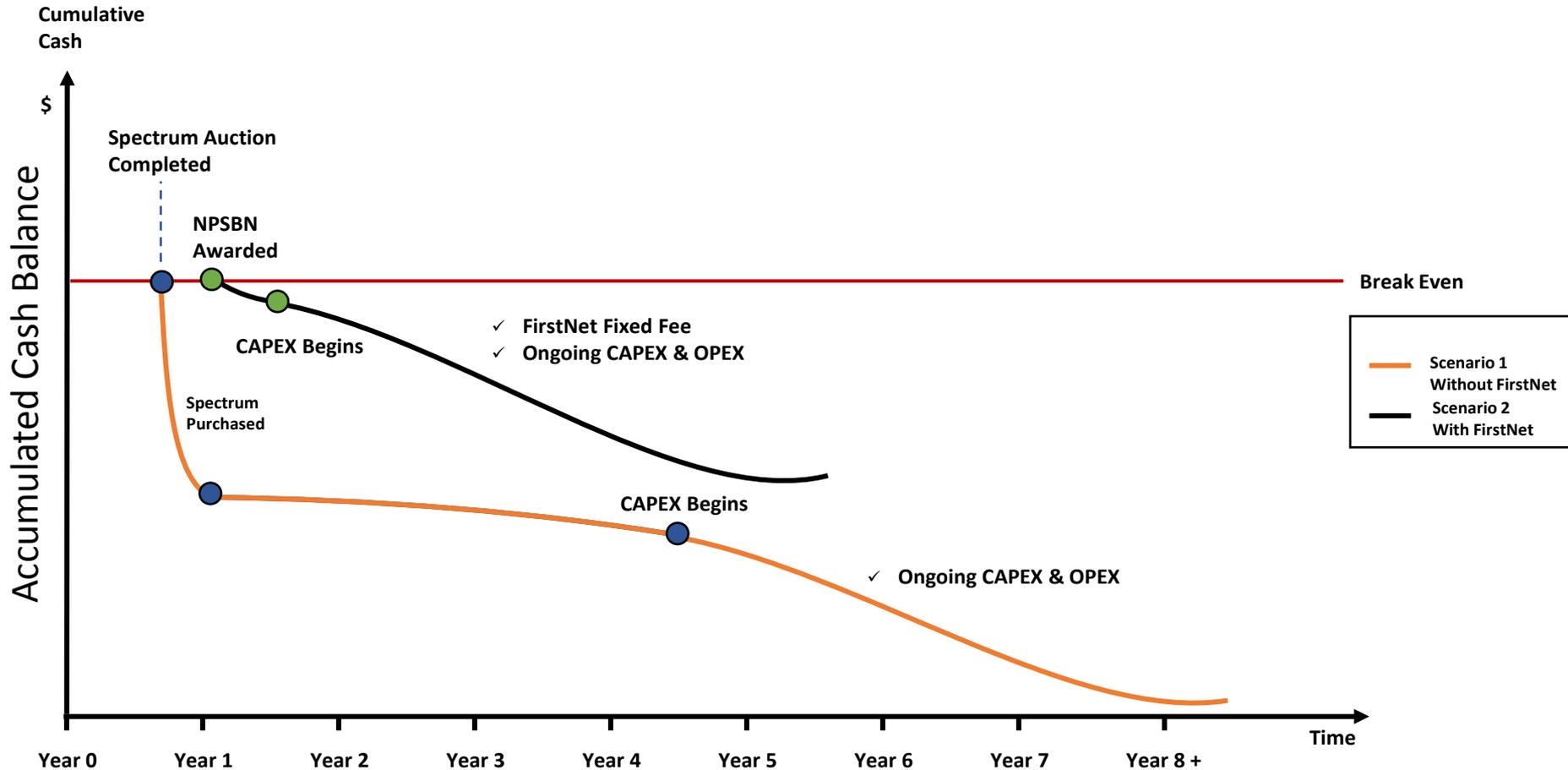
*not to scale; for illustrative purposes only.

Case Study: Wireless Economics With and Without FirstNet



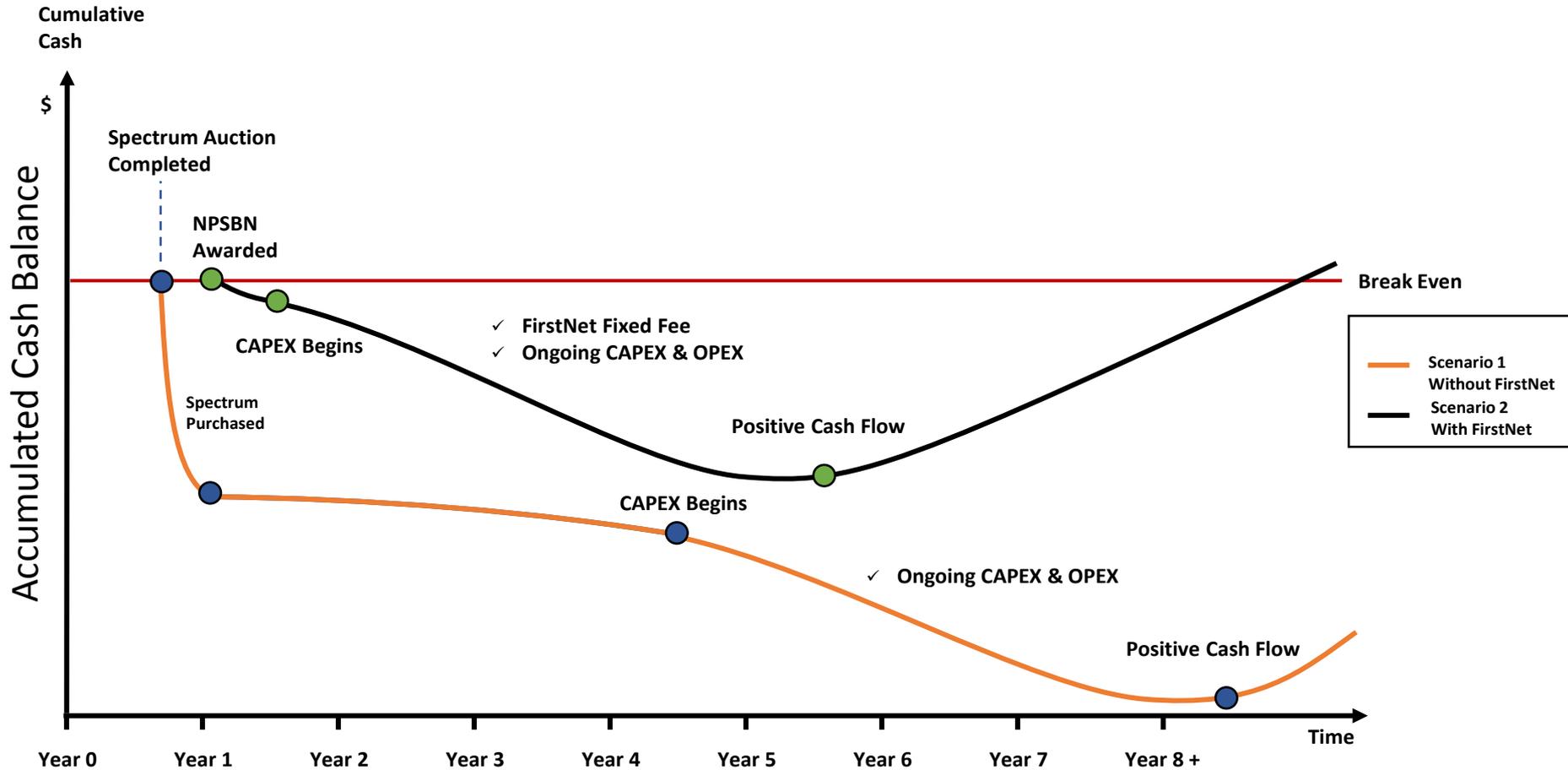
*not to scale; for illustrative purposes only.

Case Study: Wireless Economics With and Without FirstNet



*not to scale; for illustrative purposes only.

Case Study: Wireless Economics With and Without FirstNet



*not to scale; for illustrative purposes only.

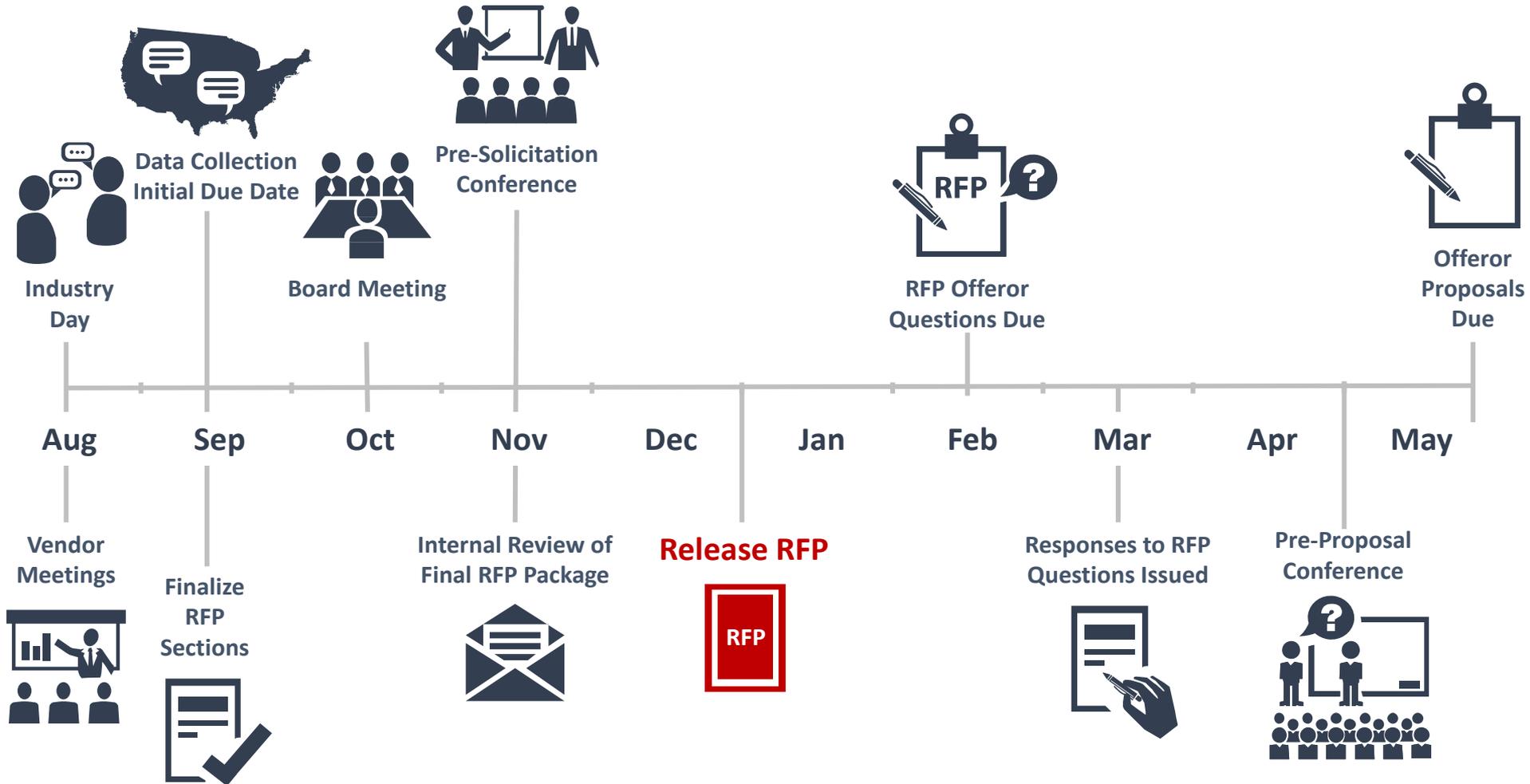
Review of the Results of the Q&A and Comments Process

James Mitchell

Senior Program Manager for Operations



FirstNet is On Schedule

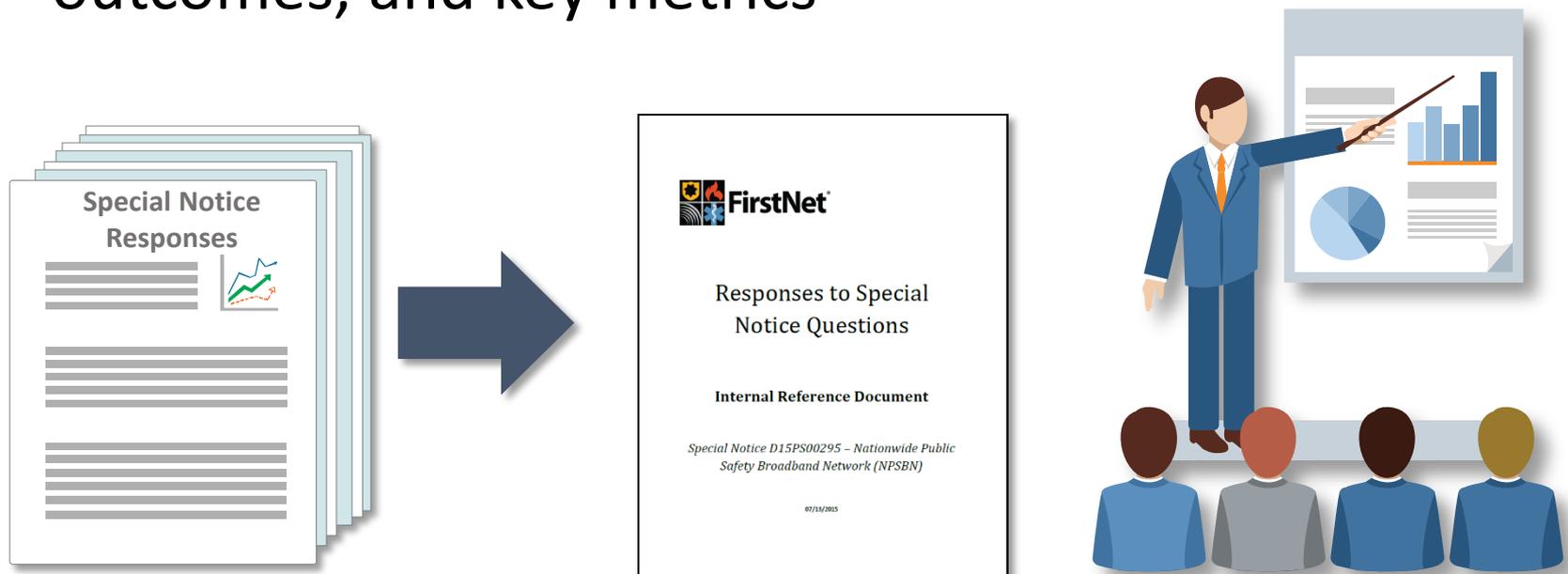


* Events and dates subject to change

[Play](#)

Questions & Answer Process and Outcomes

- 650+ questions submitted to FirstNet
- Responses posted by 1 July at www.fbo.gov
- FirstNet continues to analyze for lessons learned, outcomes, and key metrics



What did you ask us about?



What did you ask us about?



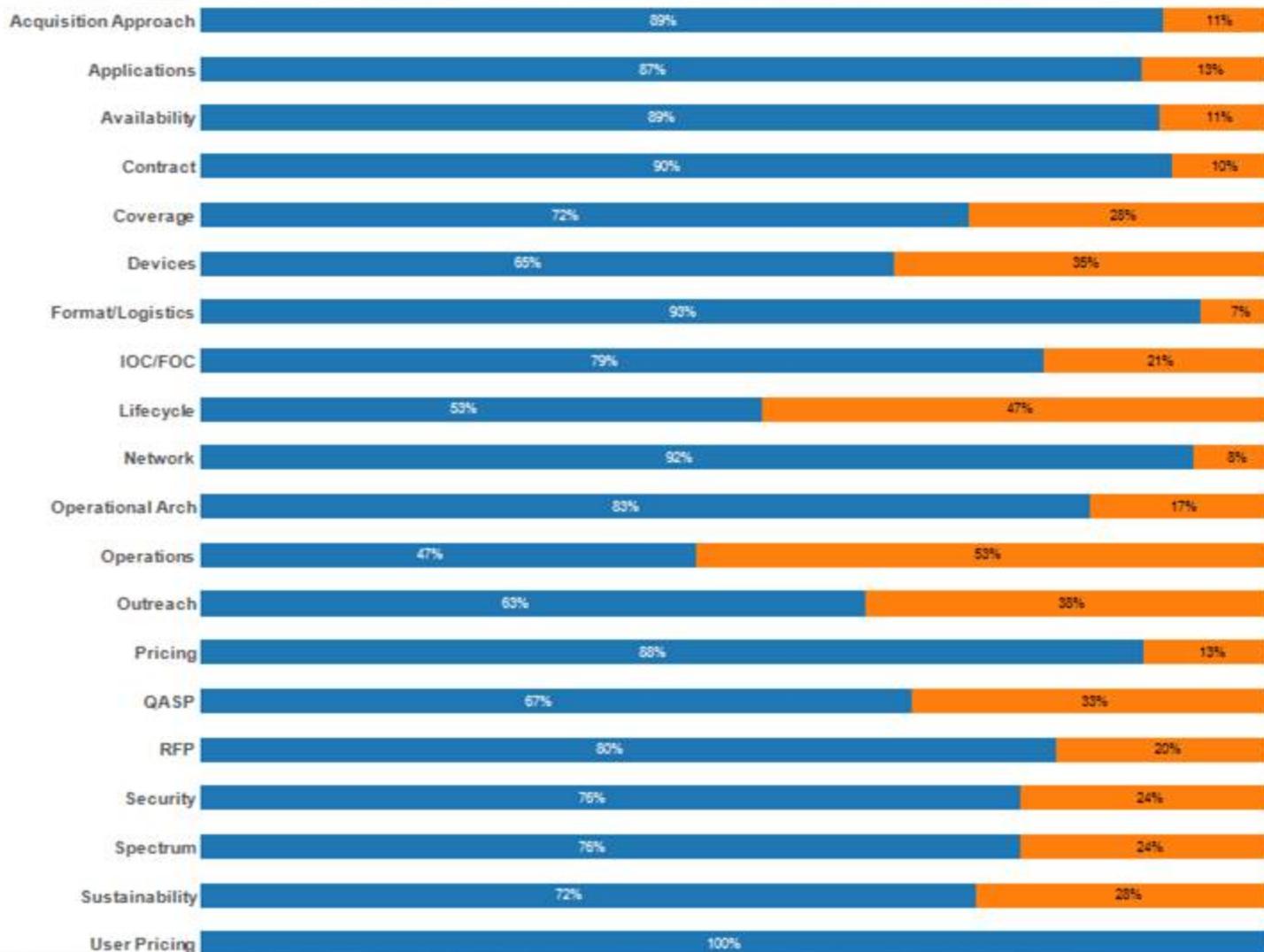
What did you ask us about?



What did you ask us about?

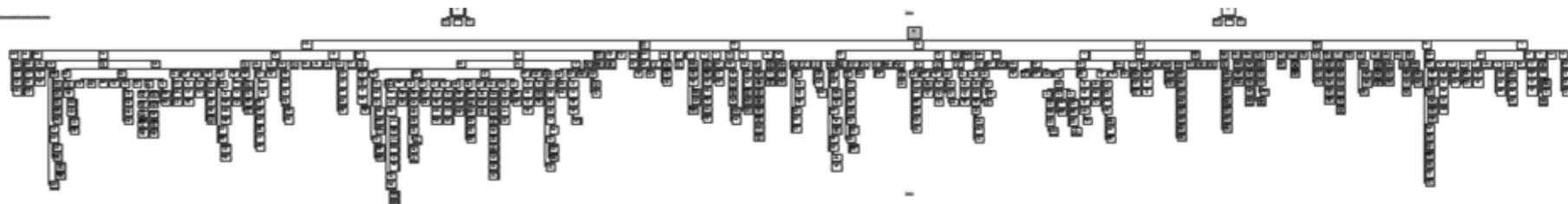


Special Notice Questions by Topic and Source



Source
States
Industry

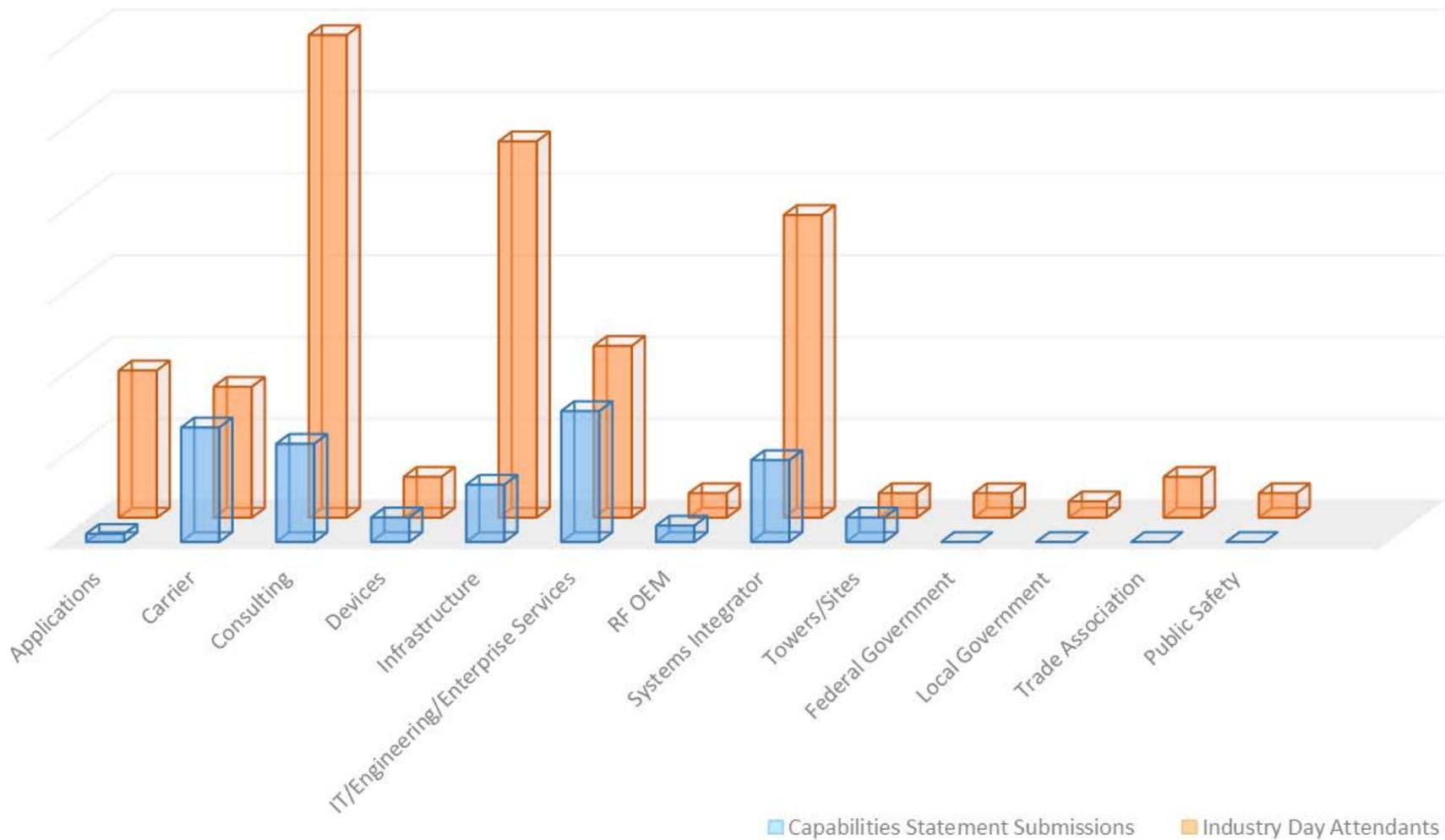
Managing Inputs into the Special Notice and Draft RFP documents

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, an EMT in a blue uniform and cap, and a doctor in a blue lab coat with a stethoscope.

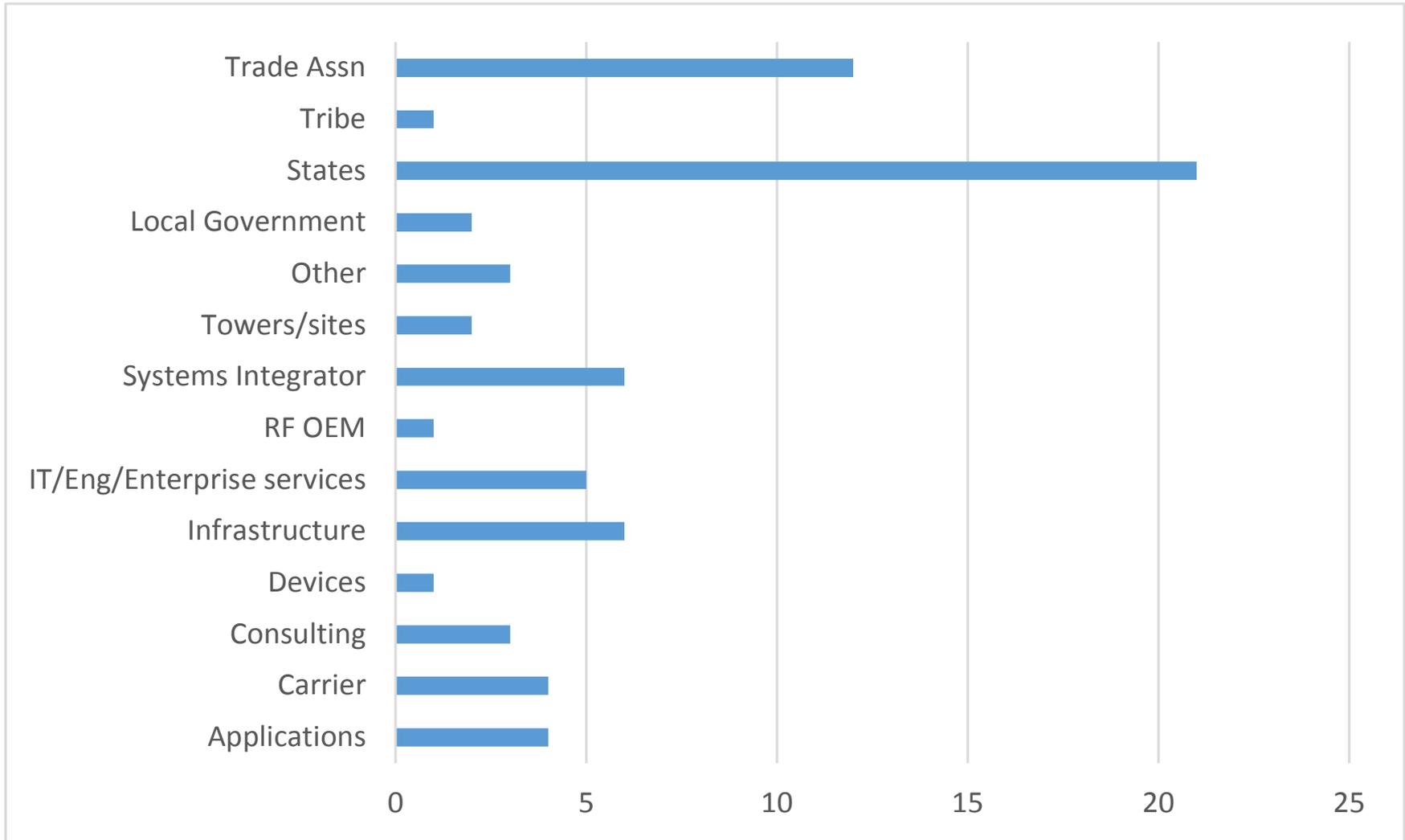
 **Capabilities Statements**
Internal Reference Document
Special Notice D15PS00295 - Nationwide Public Safety Broadband Network (NPSBN)
07/13/2015

 **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

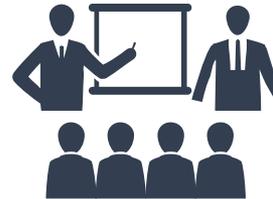
Objectives Translate into Offeror Authored Requirements



Statement of Objectives



Contractor Statement of Work



Contractor Work Breakdown Structure

Constitutes Offeror Proposal

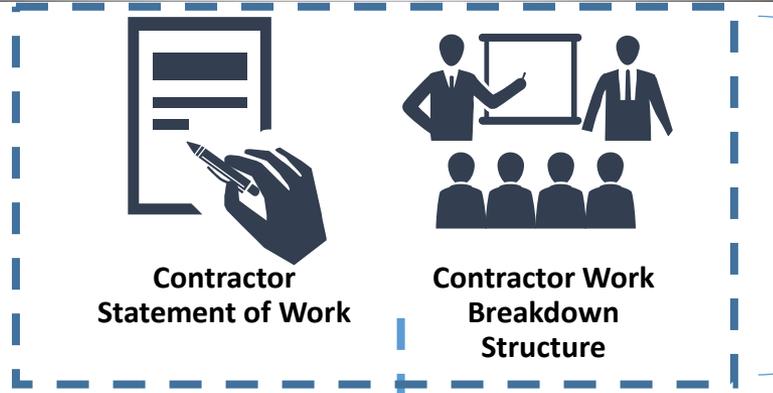


Potential Discussions with FirstNet And Offerors

Those Requirements are Negotiated to Become an Award



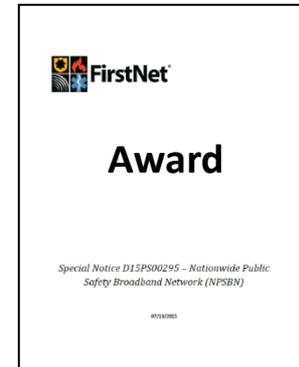
Statement of Objectives



Constitutes Offeror Proposal



Potential Discussions with FirstNet And Offerors



The State Plans and Award are Developed Together



RFP Offeror
Questions Due



Offeror
Proposals
Due



Release RFP

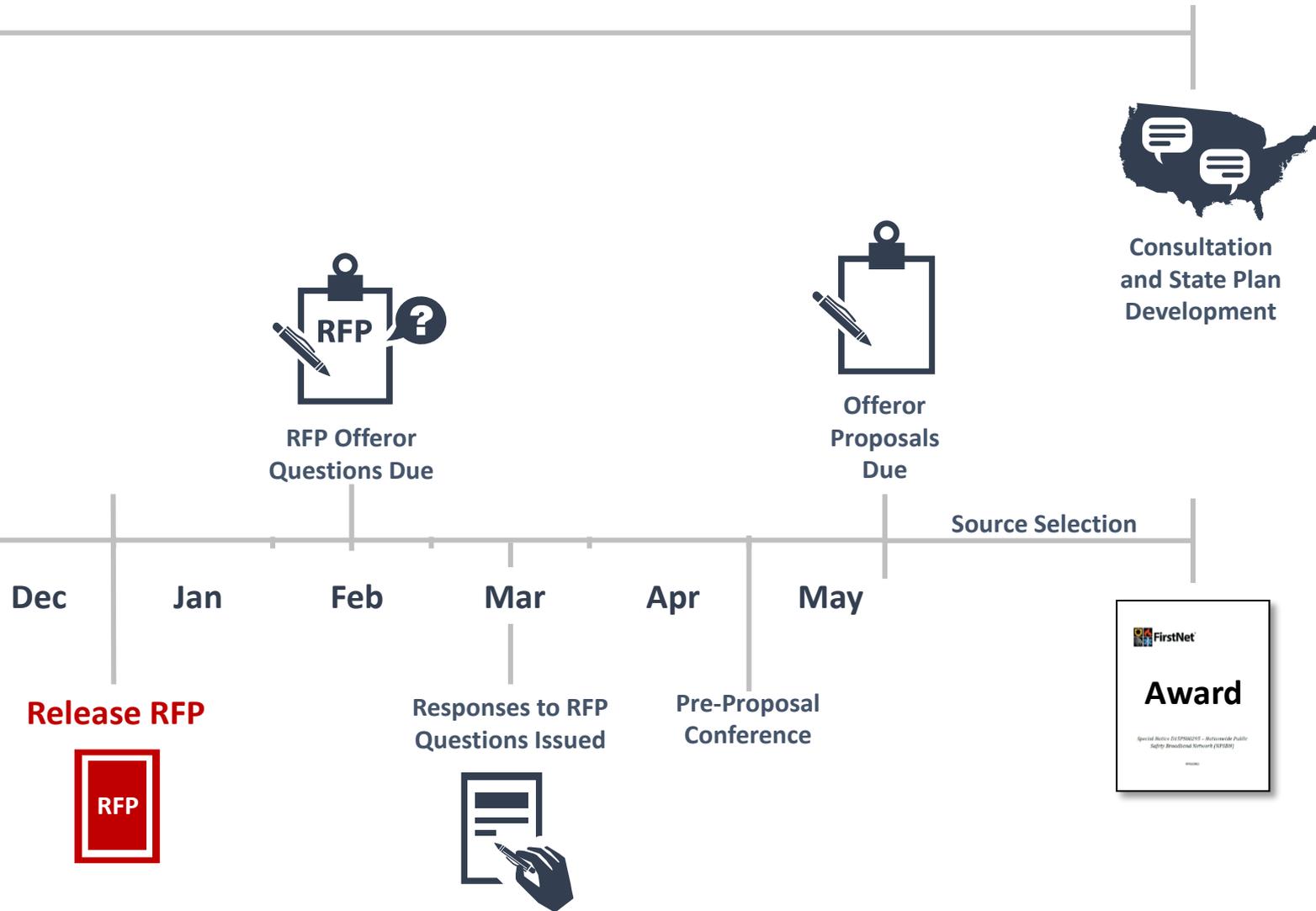


Responses to RFP
Questions Issued

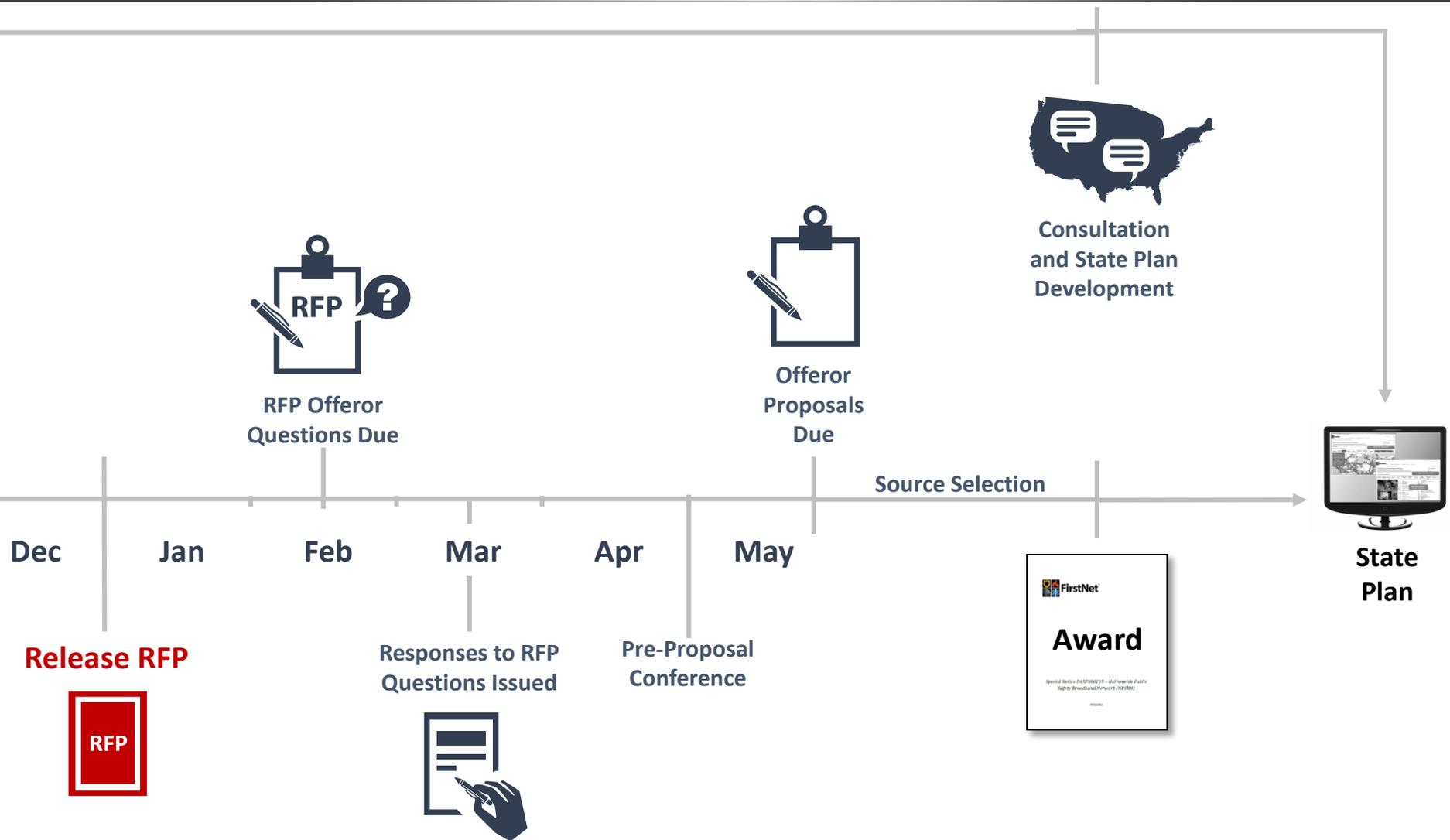


Pre-Proposal
Conference

The State Plans and Award are Developed Together



The State Plans and Award are Developed Together



Operational Architecture

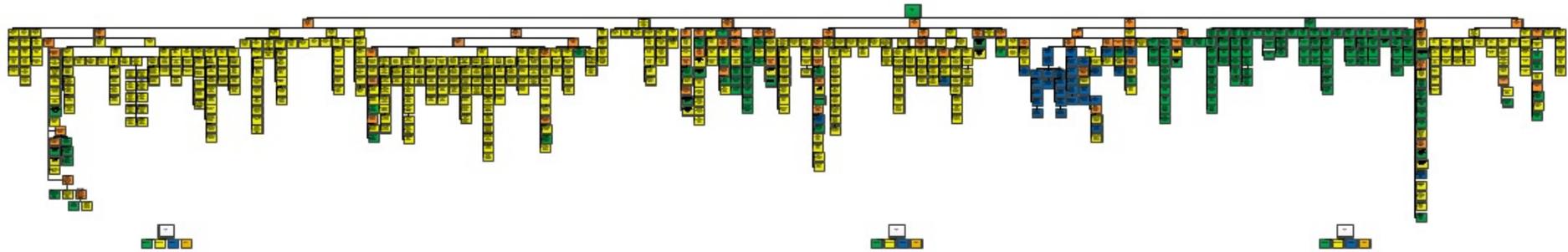
Zachary Smith
Emergency Management Specialist

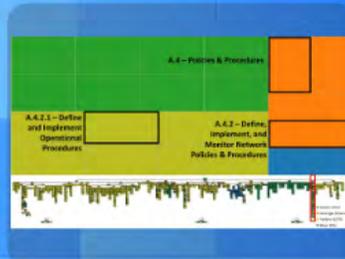
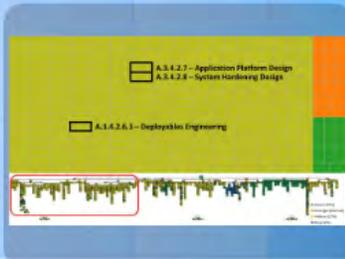
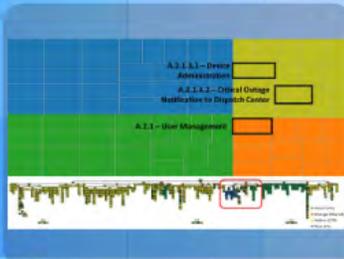
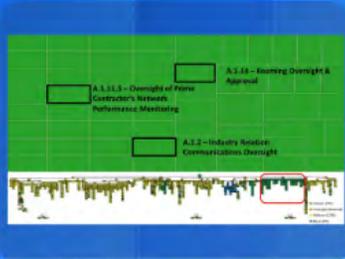


1 0 1 0 1 0 1 0 1 0 1
1 1 0 1 0 1 0 1 1 0 1

Operational Architecture

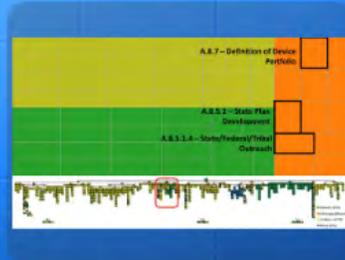
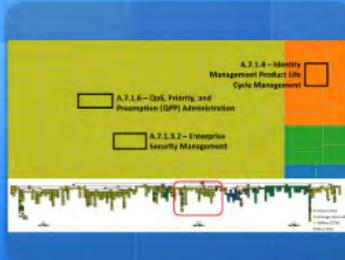
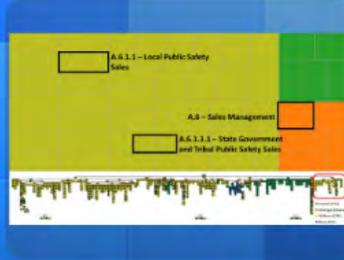
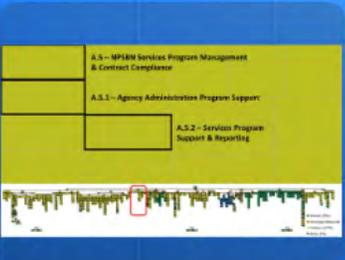
Inputs and Analysis





FirstNet[®]

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

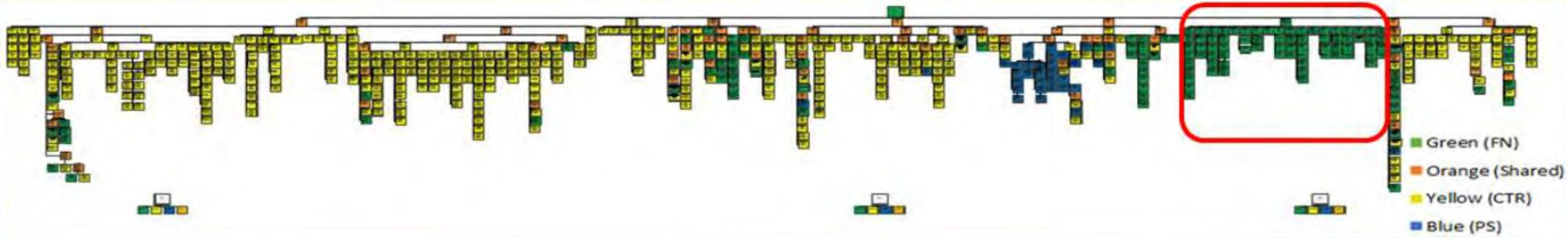
A.1.11.3 – Oversight of Prime Contractor's Network Performance Monitoring



A.1.14 – Roaming Oversight & Approval



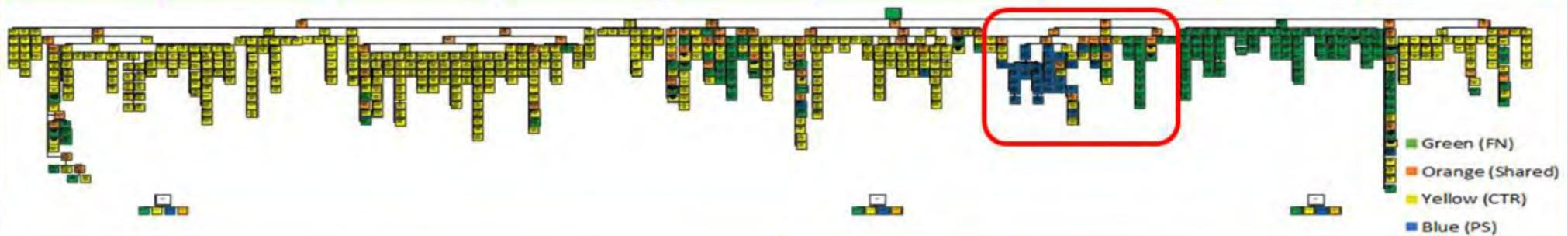
A.1.2 – Industry Relation Communications Oversight

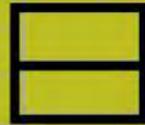


A.2.1.3.1 – Device Administration

A.2.1.4.2 – Critical Outage Notification to Dispatch Center

A.2.1 – User Management



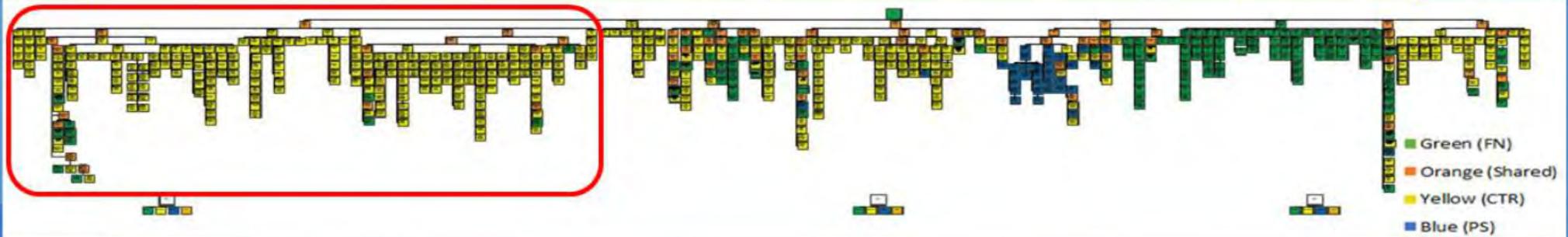


A.3.4.2.7 – Application Platform Design

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

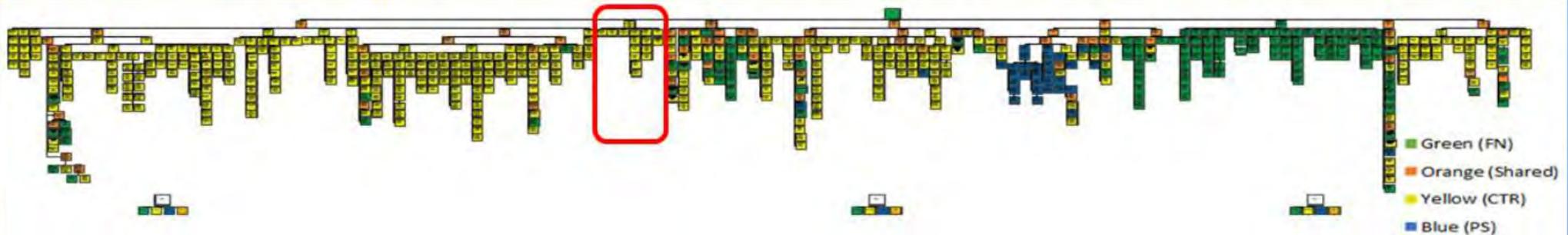
A.4.2 – Define, Implement, and Monitor Network Policies & Procedures



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

A.5.1 – Agency Administration Program Support

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



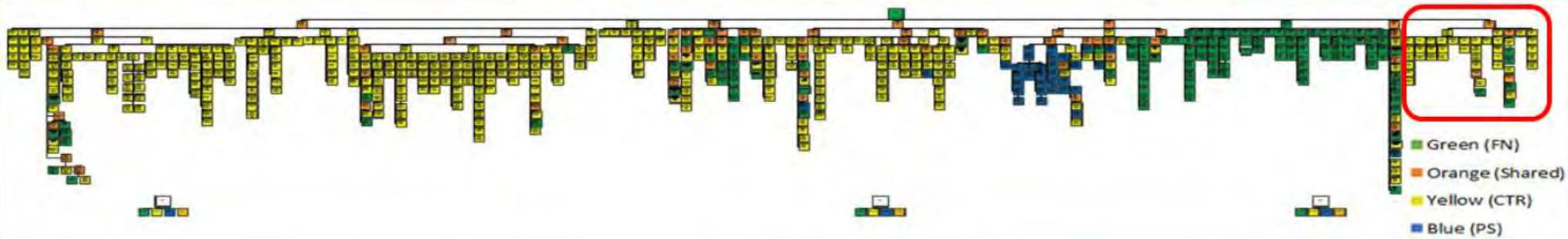


A.6.1.1 – Local Public Safety Sales

A.6 – Sales Management



A.6.1.3.1 – State Government and Tribal Public Safety Sales



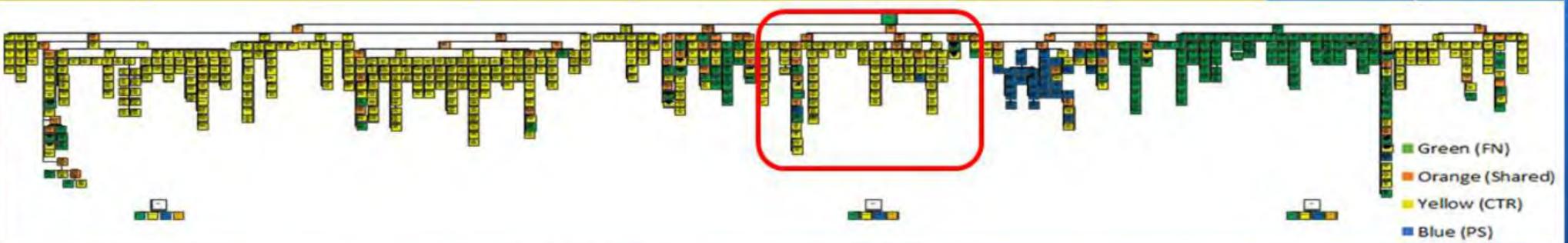
A.7.1.4 – Identity Management Product Life Cycle Management



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



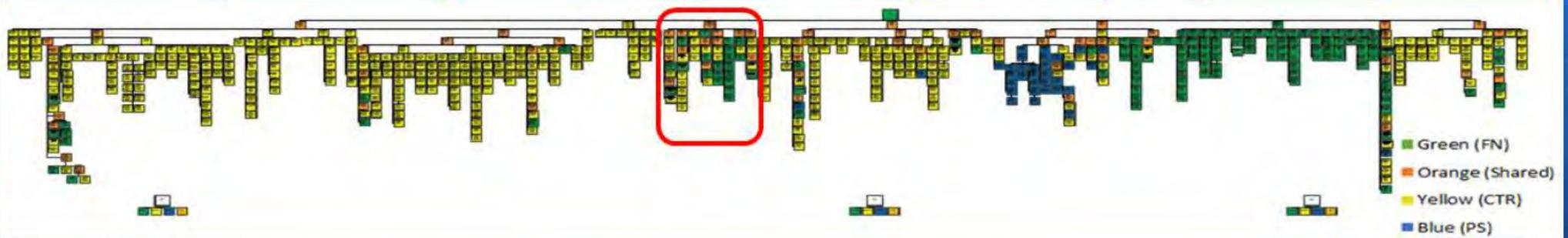
A.7.1.3.2 – Enterprise Security Management



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



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



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



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



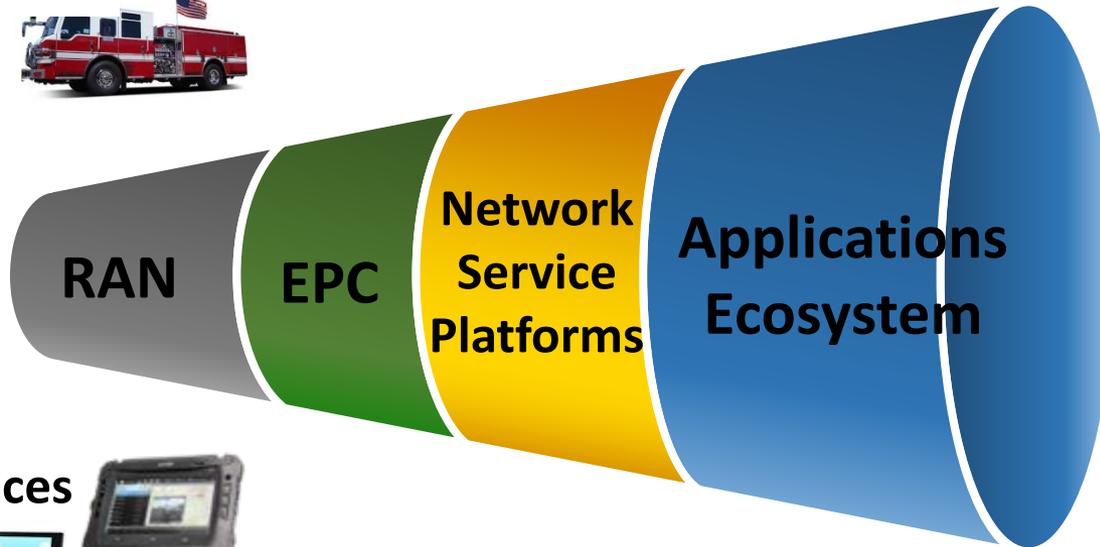
Provide Lifecycle Management of Applications

- 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)

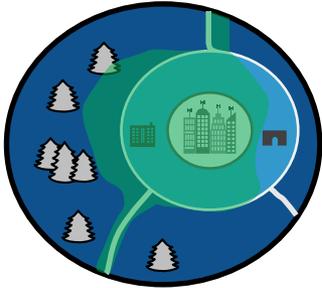


- The RFP will ensure an impartial and consistent evaluation

- 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



www.firstnet.gov

FirstNet[®]



Thank You



www.firstnet.gov

FirstNet[®]



Q&A