

# Regional Workshop Vision Presentation



Today is a very important day for FirstNet. It's the beginning of our state consultation process. And it's the first time we are presenting our vision for FirstNet and current thinking to state representatives who will have a hand in creating FirstNet. Craig Farrill, the Acting CTO for FirstNet, and I will share the podium for this presentation. What we are about to share with you will set the stage for working together over the next day and a half and from here on out.



Over the next hour we plan to cover six topics. We'll talk about the vision for FirstNet and principles that guide our thinking. And the ways that the public safety community has, and will continue to, shape our thinking. Craig will spend time on the research and analysis that's been underway for the last several months. He will give you an overview of the network elements and considerations for creating a public-safety grade network. He will also walk through steps on the process we expect to follow to design and build FirstNet. His section of the presentation is designed to get you thinking about your state requirements and priorities. I'll pick back up to discuss the consultation process and SLIGP activities. We want to preview the data request process to help states begin thinking about the resources you will need for SLGP Phase 2. We'll close this presentation with some perceptions, realities and commitments. Above all we want to create a common understanding of the way we will work together to set the stage for the workshop.



Without further ado....what is the vision for FirstNet?



Our vision is to serve the millions of public safety users in this country. We'll do that by providing the first, nationwide, high-speed, wireless broadband network dedicated to public safety. That's it. That's our focus.

And to pull it off, we need to harness the volunteer spirit I spoke about in my opening remarks. We need to keep the momentum set by the hundreds of public safety champions who led the way.

Our vision is really an extension of theirs. They recognized that a nationwide network can truly be a force multiplier. And at a time when so many cities and states have to do more with less, the ability to increase effectiveness is essential. So that's our vision.....and now I'd like to share several principles that guide us.



FirstNet will be the network that public safety can rely on. We'll build the network based on your needs and the needs of your first responders. We will blanket the 50 states and 6 commonwealths/territories with a coverage footprint designed based on what you tell us matters to you.



FirstNet is dedicated to public safety. Public safety will always have priority use of the spectrum.

And when there are emergencies where the first and second responders and other public safety personnel have to share the spectrum, FirstNet will have a method for ensuring dynamic

priority access. Local incident command will have the ability to manage who comes and goes on the network day-to-day and during peak use periods.

We will work with you and the FirstNet Public Safety Advisory Committee and organizations like SAFECOM to help define how that could work. We'll also work with public safety to define what it means to build a "public safety-grade" network. How we approach redundancy, security and hardening are just a few elements of that vision.

And when we launch FirstNet, we'll enable access to a pipe for sending high-speed data so users can send video and photos and access the web. Down the road, FirstNet will evolve from providing supplemental voice to delivering mission-critical voice.

**4G LTE: A Proven Next Generation Technology**

- Fastest data speeds
- A bigger pipe
- Field tested across the country
- Global technology standard
- Being adopted as a standard for public safety
- Non-mission-critical voice



*"First responders need a network they can rely on and trust to get the job done, even in the worst of circumstances. That's what FirstNet will build."*

Photo courtesy of AT&T Mobility

Our vision for FirstNet includes using the best technology available today, and that's 4G LTE. 4G evolved from 3G which came on the scene in its earliest forms in the 2000/2001 timeframe. 4G networks have been around for the last several years. The beauty of 4G is higher data speeds and a bigger pipe. It's like widening the four-lane highway to accommodate more traffic so it can go faster. 4G is well suited to today's smart devices. 4GLTE is a global standard and it's being adopted as a standard for public safety. In the future there will be standards for mission-critical voice over LTE. The 3GPP is working on this challenge and FirstNet is involved.

But for now, there are many essential applications that broadband technology will support like streaming video for surveillance, facial recognition, field fingerprinting, GIS/mapping tools and database queries.

Another important guiding principle for FirstNet is that it will augment existing Land Mobile Radio (LMR) networks.

**FirstNet Will Augment LMR**



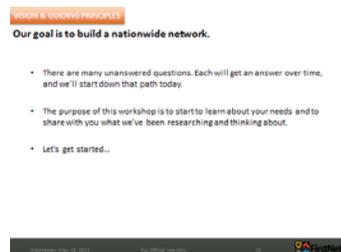
- Public safety will rely on LMR for mission-critical voice for many years
- FirstNet can be co-located on existing LMR infrastructure
- Sharing infrastructure will keep costs down and enhance coverage
- Our goal is to allow voice to pass between the two networks

Significant investments have been made in LMR and it is here to stay for the foreseeable future. FirstNet will be the go-to network for high-speed data and supplemental voice. We see the opportunity to co-locate with LMR as a win/win. It will enhance coverage and complement coverage that exists today. It will help keep network build costs down which will lower costs to users. And our goal is to allow voice to pass between the two networks.



Our vision when it comes to costs is to deliver a network and offer services at a fee that is attractive to users. If we build a network and users don't buy our services, we've failed. To minimize costs, we will work with states to leverage existing infrastructure. We will work to capture economies of scale for handsets and infrastructure. We will tailor hardening requirements to match geographic requirements, based on the likelihood of perils so our money is well spent.

How will the economics work if your state makes sites available? Who will pay for hardening? For backhaul? There are many money-related questions that we don't have answers for yet. But we will get answers. Our goal is to keep you informed so we can work together effectively.



Working together is what it will take to create FirstNet. There are literally thousands of stakeholders involved. And the FirstNet Board and general manager and future employees will continue to focus on working with all the key stakeholders to make FirstNet a success.

Now I'd like to spend a few minutes on one very important stakeholder group, public safety.



FirstNet wouldn't be here without public safety – literally!

Now we are working to fulfill the requirements of the law that we fought hard to pass.

LET HISTORY, AND THE PRESENT, REMIND US

- Public safety fought for D-Block.
- Legislation was a victory born of that effort.
- It established a path for a dedicated network.
- It set up its own governance board with public safety.
  - Board members
  - PSAC

**FirstNet was created by public safety, for public safety.**

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Public safety fought for the D Block and won, paving the way for FirstNet.

There is public safety representation on the FirstNet Board and we have a more than 40 member Public Safety Advisory Committee (PSAC) formed to advise FirstNet at the Board's request on public safety matters. The PSAC includes a five-member executive committee. The PSAC is made up of representatives from state and local government and public safety organizations. PSAC is not a direct extension of the federal government, which limits the information we can share with its members. We've chosen to share as much information with PSAC as we can. And we are working to tackle the legal obstacles.

What we've learned from PSAC activities

- Executive Committee had a two-day briefing with FirstNet technical team in March
- Executive committee will meet monthly for updates with the General Manager
- Outreach for conferences
- Handling specific projects

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In March we had a two-day briefing with the executive committee of the PSAC and the FirstNet technical team. We covered the gamut on LTE technology and shared some of the early research and analysis we are going to present today.

The committee will be meeting monthly with Bill D’Agostino, the new general manager for FirstNet. Members of the PSAC have been out speaking at conferences telling the FirstNet story. In addition, the PSAC has been asked to provide advice on a number of important projects including the human interoperability consideration that will need to be addressed when everyone is on a single network.



And we’ve learned a tremendous amount from public safety so far. Volunteers from the public safety community have given generously of their time to develop requirements for FirstNet. Our early research and analysis is rooted in their work. Collectively, they documented more than 1,300 requirements in a variety of categories. Minimum interoperability requirements were spelled out. National Public Safety Telecommunications Council (NPSTC) developed hundreds of requirements on everything from user services to policies and procedures. FirstNet is grateful to the individuals who dedicated themselves to this important task.

What we have learned so far, along with what we learn from your state today, when we visit and beyond, will be factored in to the network design. And we will continue to look for additional opportunities to learn.



We expect to learn from the public safety projects that emerge from the Broadband Technology Opportunities Program (BTOP). As they work through their spectrum leases, they will have the earliest opportunities to use FirstNet spectrum. FirstNet is currently negotiating lease agreements with the seven public safety BTOP projects and Texas for Harris County.



Early projects will teach us about operational issues, applications and cross-border communications. We plan to share what we learn with other participants and the public safety community. So I've given you an overview of the FirstNet vision and guiding principles and shared what we have learned and will learn from public safety. Now, I'd like to introduce fellow Board member and acting CTO, Craig Farrill who will take us through the early research and analysis.



I'm very excited to be here today. I've been a wireless engineer for 38 years and I love solving problems. I've had the chance to build commercial wireless networks in 30 countries. When it comes to what public safety needs, I know where commercial networks fall short. With input from public safety I know we can build a network that is clearly superior to those of the carriers for public safety. What we are about to do has never been done before. No one has ever built a nationwide network in the United States. Those networks were created through acquisitions. And no one has ever built a public-safety grade network. I am eager to work with all of you to make that happen.

What I'm about to cover is our current thinking. It's what we have been investigating and modeling to help us understand what is possible, technically and financially. It is a set of concepts and analysis, **not** decisions. It's analysis that can't be completed until we get input from you. To do it right starts with listening to our customers. No successful architect would design a building without getting

requirements from the tenants. That’s what this workshop is designed to do — to start the process of understanding your requirements.



There’s been an amazing amount of investment in LMR and commercial networks — nearly \$800 billion worth of infrastructure. We plan to build a Band 14 network across the country leveraging existing investment in towers, switching locations, E911 centers and more. FirstNet is about bringing powerful communications tools to you to make your jobs easier and more efficient.

We want to make the most of the 255,000 commercial radio site and the 155,000 public safety and government sites. We want to work with all of you to define “public safety-grade”. No standard exists today so we need to pave the way. It’s a higher standard than the one that commercial operators use. Our work will be about maximizing geographic coverage and minimizing costs to operate. It will be based on the more than 1,300 requirements we received from public safety organizations made up of volunteers who committed hundreds of hours to help get our thinking started.

Working with the public safety community, we will define what “public safety grade” means.

Public Safety	Defined (Public Safety) Needs
Coverage	“Where Public Safety Needs It” Group needs
Reliability	“You can rely on it” “You can rely on it”
Levels of Backup	“Multiple/Redundant” “Multiple/Redundant”
Emergency Communications	“First responder” “First responder”
Group Communications	“Essential services” “Essential services”

We need to build a reliable network that you can count on — always! We have to create a five-lane highway instead of a one-lane road. With five lanes, you have back-up options if a hurricane or a terrorist takes out a lane or two.

This network has to be there when public safety needs it to save lives and protect property. That means we’ll have battery and backhaul back-up that goes beyond what carrier networks have today. Ninety percent of commercial carrier system failure is due to insufficient or non-existent back-up. We can address that.

FirstNet will need to support group communications. More than 90 percent of communications with public safety is group versus commercial networks where conversations and transmissions are typically one to one.



I know that some of you here today are technical and some are not so I wanted to step through a diagram of the components of an LTE network.

The core has six primary functions. It switches data, processes and reformats information, stores and maintains data and keeps it secure. FirstNet has to build the core to ensure we provide a single platform to all users nationwide. It needs to interface to other state, local and federal networks and the Internet, which has never been done before. It essentially has to serve as a giant umbrella covering all of the United States including the commonwealths and territories, allowing all radios to plug in.

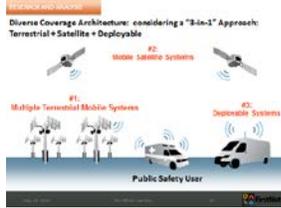
It has a transport component. These are the links that connect the signal or other kinds of traffic. This is what's also known as backhaul.

Then there is the Radio Access Network, which is all the radios that are spread everywhere to connect to user devices. With the potential for millions of users on FirstNet, we will have the scale leverage to drive development of devices at the best possible prices.



With FirstNet you won't have the congestion you've experienced in the past when you are trying to access the network so it will make it easier for multiple public safety entities to have access to the network. Unlike with 1G, 2G and 3G, 4G has a powerful scheduler that allows us to control requests for capacity. Requests are short burst that convey how much data a user wants to send and the desired speed. The system can handle thousands of requests so it should be easier to gain access, even in emergencies.

Security for FirstNet will be rock solid. This network needs to be resilient so it goes the distance in emergency situations.



As we engineer the network we'll look at how many people will be in a sector at the peak of an emergency situation.

Band 14 would be the first choice. If a mobile satellite was locked out, there would be a deployable that would be driven in or flown in. These elements are all part of the back-up planning that we are exploring. And I know public safety networks have not relied on satellite in the past due to cost and performance limitations. I can tell you that satellite technology has improved over the past few years. We are exploring satellite and the notion of what we call "SkyBridge" as an option for open rural spaces. The idea is to take the base station with you wherever you go and use the satellite to link to the microwave transport. This kind of a device is under development. The law that created FirstNet gave us very explicit direction to provide rural coverage; so we will work with you to make sure we serve these areas in a manner that meets your needs.

**RESEARCH AND ANALYSIS**

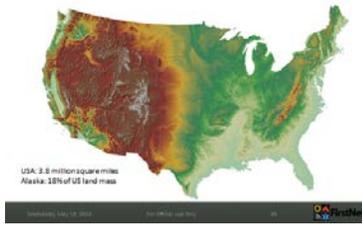
**Radio Access Network Analysis Components**

- **RAN Planning:** Analysis consists of radio planning assumptions and engineering rules to optimize coverage, capacity and performance for a nationwide deployment.
- **Cell Count Reference Point:** Initial modeling has shown that approximately 35,000 sites could cover 99.6% of the population and the nation's highway system.
  - *This is an initial model and estimate and subject to change.*
  - *Requirements and data from each of you will adjust the model and improve it.*
- **Cell Range:** Several techniques for extending rural coverage are under evaluation.
- **Radio Planning Tools:** Planning tools will be used to provide a consistent prediction of radio coverage and for comparison of RAN alternatives.

Based on our early research we estimate we will need 35,000 sites to cover 96 percent of the population and national highways. So what about the other 30 percent? That's where satellite has a role.

RESEARCH AND ANALYSIS

Terrain Ruggedness: a major impact on radio propagation



When it comes to radio propagation, there are big differences in terrain that we need to consider. Every state needs to be reviewed in terms of soil, terrain and foliage

RESEARCH AND ANALYSIS

Population is a starting point, but public safety events don't always happen where people live.

Population Density: 85% of US Population Lives Within 9% of Land Mass



Commercial wireless networks are designed based on population coverage. Eighty-five percent of the population occupies 9 percent of the land mass. The FirstNet design will be driven by geographic coverage needs, as well as population.

RESEARCH AND ANALYSIS

Our nation's highways are assets to leverage.



We need to pay special attention to highways because that's where people and public safety drive.

#### RESEARCH AND ANALYSIS

FirstNet coverage considerations go far beyond those of commercial networks.



We have to take into account a myriad of other considerations that commercial carriers don't think about when they design a network. We'll need to understand—at the local and jurisdictional level—things like underserved areas, high risk venues and critical infrastructure, to name a few. This is the kind of information that will be collected through our data request process. And this is what we absolutely need to understand before we can design a network that fits the needs of every state.

#### RESEARCH AND ANALYSIS

##### Core Network Analysis Components

- **Nationwide Core Network Architecture:** Most public safety traffic is local. To optimize routing, ensure latency requirements and implement local control, a distributed nationwide architecture is being conceptualized.
  - **National Core Network Hubs:** FirstNet is analyzing multiple regional locations with redundant transmission systems to be located in or near existing hardened, fiber backbone networks.
  - **National Data Centers:** Based on Department of Commerce direction, FirstNet is analyzing "leasing from approved" 3<sup>rd</sup> party providers which meet FISMA and CIA security requirements.
  - **Network Services and LTE / Public Safety Standards:** NISTC requirements will be supported through FirstNet will incorporate critical public safety functionality into the next LTE standards releases.
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- We're looking at building multiple regional cores with redundant transmission and rock-solid security that couldn't be matched by the states. FirstNet is responsible for building the core. States can choose who will build and operate the Radio Access Network (RAN) component of the network. States will control services. States will control how much you pay. And states will be part of FirstNet, even if they opt to build the RAN. We plan to have 24 x 7 technical support staffed by people who understand public safety. We plan to support you with the resources to operate and maintain the network and perform software updates. FirstNet will handle all of that for you so you don't need to staff up. And by opting in, we will build the radio access portion of the network for you and operate and maintain it. So all you have to do is partner with us and work with us to define your unique needs so we can deliver a plan that meets them.

#### RESEARCH AND ANALYSIS

Network resilience, fault tolerance, redundancy, diversity in all aspects of the network and its operations.

RESILIENCY	REDUNDANCY
<b>PHYSICAL</b> Building to sustain network in adverse conditions	<b>PHYSICAL</b> Avoiding single points of failure across the network (power, backhaul, sites, coverage)
<b>OPERATIONAL</b> Maintaining the network to ensure resiliency (operations management and preventative maintenance, primary assets/recovery after outages)	<b>OPERATIONAL</b> Providing backup equipment (Operational and technology (commercial carrier roaming/direct mode) that facilitate operations during primary network failure)

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FirstNet will have public safety-grade resiliency and redundancy at both a physical and operational level. That comes from building diversity into our approach.



We need to look at hardening based on geography and peril. Since Hurricane Sandy we now have to increase our protection for winds to 185 miles per hour.



When it comes to seismic activity, we will focus on the West Coast and other areas in orange where the ground is more likely to shake. There is no universal solution to site design. Sites need to be selected and adapted uniquely to meet your needs. And we need your help to make it easier and less costly.

- During emergencies, some public safety users, applications and situations require elevated access levels depending on various factors and authorizations.
- FirstNet needs a prioritization scheme that can be enacted at the local level. This is especially true in large-scale events where established hierarchy with role-based levels of priority will be key to maintain services to first responders.
- Need to define a nationwide process for dynamic priority alerts
- Solutions for prioritization will be tested and evaluated

FirstNet is dedicated to public safety. First responders will share the network with the broad public safety community but when emergencies arise, the local incident command will have control over who uses the network.

Local control has many dimensions. It's the ability to see the health of the system — which sites are on air, which data links are running, where there is an alarm, the type and severity of the alarm. You'll also have the ability to see the location of public safety users on the network. You will have control over the activation of your user population to bring on a new shift and hand over devices to new users. You define levels of service and capacity and access to applications. You can shift capacity to different parts of the network if needed. Software will make it possible to designate different arrangements by jurisdiction, agency or tribe for example. You will be able to follow incident management protocols, just like you do today.

Testing and evaluating solutions that enable local control is definitely part of the plan for FirstNet.



We're focused on creating a nationwide architecture and standards along with the ability to adapt the network and manage locally. We're not going to have operators standing by when shifts change to assign devices or grant network access. These things have to happen locally.

We do plan to look for every opportunity to optimize the use of existing wireless facilities to reduce network spend. That means we will consider LMR assets where there is space to co-locate and look at utilities and transportation infrastructure to help reduce cost and speed deployment.

We are committed to getting to know you and to building relationships with all 56 states and commonwealths and territories. We'll working together based on your requirements to fulfill the FirstNet vision and deliver a public safety-grade nationwide wireless broadband network that will serve first responders and public safety for decades to come.



What I am about to walk through is our current thinking on the major activities we will undertake to create FirstNet.

Over the past few months we have been mapping out the steps in the process and gearing up. We have been exploring what is possible, but we have not designed the network. Before we do, we need to work with you to gather data and understand the unique needs of every state.

With the start of our state consultations, we are now getting underway.



We've divided the project into four phases: 1) requirements planning, 2) stakeholder decisions, 3) contracts and core network completion and 4) deployment and operations.



We started our formal state consultation process on May 15 with the first of six regional meetings. Your state point of contact will be contacted by Kristi Wilde or Jeff Clark from the FirstNet outreach team to set up individual state meetings. Consultation will be ongoing. By the time we are ready to submit your state RAN build-out plan you should already know what to expect. We'll be working closely together to develop the requirements for the plan.

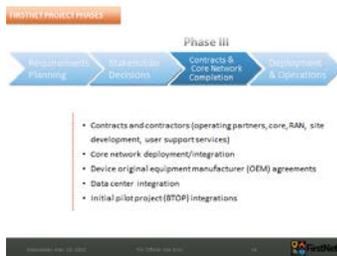
During the requirements planning phase we plan to gather user and network requirements and expect to issue more than a dozen additional RFIs. The first RFI covered user devices and was issued on April 14. Once we have progressed through State and Local Implementation Grant Program (SLIGP) Phase I requirements gathering, we'll get initial design concepts documented.



We'll continue to refine our initial design concepts as we move into Phase II and begin collecting the data we need to design the network. We need a very detailed understanding of your requirements at the state and local level. We know states won't have funding to take on

data collection until SLIGP Phase II. We intend to preview our data request to get your feedback and enable you to scope the level of effort for this project so you can develop and submit your budget. In this phase we will develop core and RAN network specifications that we'll need so we can issue the RFPs. We also anticipate that some of the BTOP recipients will be ready to connect to FirstNet for pilot projects during this phase so we will be working on network integration and device planning. At the end of Phase II, we will have all the information we need to issue the state RAN build-out plans.

So we'll be working together closely during these first two phases. Our goal is to support you every way we can and fit the network design to the needs of your state. So now you can appreciate what it will take to create the RAN build-out plans. We literally can't do it without you.



In Phase III we will select vendors and establish contracts following the FAR process that governs FirstNet procurement activities. We expect to enter into agreements for core, RAN, sites development, operating partners and user support services. We will begin core network deployment and integration. At this stage we will integrate the data centers and pilot projects from the BTOPS using FirstNet spectrum.



In Phase IV we will need to ensure T-Band users have moved to new spectrum. Our focus will be on getting network operations set up and tested so we are ready to go live. We will test drive our operational processes to make sure billing, user support and the network all work as intended. All of this will keep FirstNet busy over the next few years. And as you can appreciate, we will continue to support you and need your support as we build and launch FirstNet.

I touched on the state and local consultation process and the timeline, but I'd like to invite Jeff to get into more detail on it since it's a topic that's very relevant to all of us here today.



The law that created FirstNet also established a state and local consultation requirement and a grant program to support the states and enable them to fund activities related to building the nationwide broadband network. We are addressing the consultation requirements by engaging with states through regional workshops and individual meetings.



The first step in our formal consultation efforts is six workshops. We chose to bring together groups of states to start the conversation about the work we need to do together. We are also planning to visit you back in your state at meetings where you can invite as many stakeholders as you wish. That will be our opportunity to get a more detailed view of your state, local and tribal requirements, priorities and concerns.



When it comes to gathering data, we want to make this as efficient as possible. If you can only grant FirstNet access to 20 of your existing LMR sites for potential co-location, we won't waste time collecting data on the other 40. If we ask for it, we'll use it. And we will prioritize our request so you know which elements to focus on first. We will pour your data into the network design as soon as we get it. There's no need to wait until you have a complete data set.

The statute specifies that FirstNet is to collect a variety of data elements including requirements for coverage, hardening and security as well as training and the availability of assets that could be utilized. We have been working closely with NTIA to ensure that we use a consistent and efficient methodology for collecting data.

**Resources and help**

- **Funding:** State and local implementation Grant Program (SLIGP) funds will enable states to plan and collect data for the nationwide public safety broadband network.
- **Ability to provide the data elements:** FirstNet will share primary data needs with workshop participants for your feedback. The FirstNet team will use those consultations to finalize a full data request supporting the formal SLIGP effort.
- **Time to prepare:** FirstNet anticipates releasing the full data specification sometime during the summer of 2013.
- **Additional tools and support:** DHS Office of Emergency Communications has planning tools and some previously collected data that states can choose to use upon request.

There are resources and support to help with data collection. As you know, states can receive funding through the NTIA SLIGP program. One of our break-out sessions tomorrow will give you a preview of the data elements and a chance to provide comments about the request. We are working closely with Laura Pettus, Mike Dame and the NTIA team to design the data request and get it approved to bring to you this summer to help you prepare your request for SLIGP Phase II funding.

I also want to acknowledge and thank the great folks at Department of Homeland Security Office of Emergency Communications — Rich Reed, Keil Green and Brian Hobson who have been paving the way for a nationwide broadband network for years. They have some time-saving tools and if you make a request they can help you with your data gathering. There is no point reinventing the wheel. They have been terrific to work with and we encourage you to take full advantage of their expertise.

**SLIGP Timeline (tentative)**

• The SLIGP program runs for three years. Further subgrants a significant amount of data to the emergency responders.

• SLIGP Phase 2 timeline is scheduled to start shortly after Phase 1.

Here's a more detailed view of the SLIGP timeline. As you can see, SLIGP Phase 2 is tentatively scheduled to start shortly after SLIGP Phase 1. In a perfect world, the SLIGP timeline and the FirstNet timeline would be better aligned. We're going to do the best we can with the requirements that were set forth in the law. Once you have funds to support data gathering, we expect that the majority of data will be collected early in the three-year process. Network design is an iterative process. We will pour your data into our modeling and planning tools as soon as it's available. And we'll refine our plans as you deliver more data.



So we've talked about FirstNet project phases and taken a closer look at the state consultation process and SLIGP. Before I wrap up I want to spend a few minutes on perceptions, realities and our commitments.

**PERCEPTIONS, REALITIES AND THE FUTURE**  
**FirstNet exists to serve public safety.**

PERCEPTION	REALITY	FirstNet
Public safety may have to give up autonomy and control.	➡	FirstNet will be a nationwide platform. Public safety sets rules locally.
Public safety will lose management of devices, users and talk groups.	➡	Public safety will maintain local management.
FirstNet will cost too much to build and operate.	➡	FirstNet has substantial opportunities to partner to lower construction and operating costs.
States can use FirstNet spectrum to generate revenue.	➡	Fees from the use of FirstNet spectrum must, by law, be reinvested to build, operate, maintain, and improve the network.
FirstNet will replace LMR networks.	➡	FirstNet will augment LMR for many years.
FirstNet has already begun designing the network.	➡	FirstNet is in the research and analysis phase and must have input from states and territories to design the network...let the workshop begin.

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Many FirstNet Board members, myself and Craig included, have been out talking with a variety of audiences at conferences and meetings about FirstNet. We've heard a number of perceptions and I want to address several of them now.

The public safety community has been under the impression that FirstNet would take control of the network. It's true that FirstNet will control the nationwide core network, but when it comes to who gets access, what applications they can use or who has priority during incidents with multiple responders, control is at the local level. Public safety will still manage devices and

talk groups. It has to work that way. And the software-based LTE technology makes that possible.

Another question is whether there is ample funding to build and operate FirstNet. Will the auction proceeds generate the additional \$5 billion envisioned for the FirstNet build-out? FirstNet has to create a business model that ensures the network is self-sustaining. We will charge fees to users to lease our spectrum and use our services. We are also looking at what we can build if we don't get anything more than the \$2 billion we have currently. And, we plan to leverage as many existing assets as we can. There are thousands of commercial and LMR sites as well as infrastructure from power companies and transportation networks that can potentially help keep costs down.

Will it be possible for states to use FirstNet spectrum to generate revenue? No. The law that created FirstNet makes it clear that all fees collected from the use of FirstNet spectrum must be reinvested to build, operate, maintain and improve the network.

We've already talked about the relationship between your existing land mobile radio network and FirstNet. I know this subject has budget and planning implications. We will do our best to help you anticipate the arrival of mission-critical voice but for starters, FirstNet won't replace LMR, it will augment your existing public safety networks and deliver much needed high-speed data capability, coverage, capacity, security and reliability that you can't get from commercial wireless networks.

And I want to reiterate that the 400-page document referenced by Sheriff Fitzgerald was not a business plan or a network design plan, it was the compilation of research and analysis we've done to date in preparation for having meaningful conversations with all of you. We can't design the network without hearing about the places where you host special events and have enormous yet temporary capacity needs or where you are most likely to experience wind, ice and seismic activities. We can't design the network until you tell us which LMR sites have room for LTE radios. We can't design the network until we know which sites are sufficiently hardened and where we need to fortify to ensure reliability. We can't design the network until we talk with you about the right mix of satellite and deployable solutions to give you the coverage you need in rural areas. So you can see that our first responders need all of us to come to the table and work together to get their network designed.

## FUNCTIONAL, SECURE AND THE FUTURE

### FirstNet is committed to:

#### Balancing the need for input with the desire to make progress.

- We have to invest time listening to all of our stakeholders up front. We need to understand state and local requirements, supplier capabilities and potential operating partner arrangements.

#### Following the requirements mandated by law that govern how we operate.

- We will leverage existing public safety, wireless operator and utility infrastructure.
- All fees from the use of FirstNet spectrum will be reinvested to build, operate, maintain and improve the network.
- We will operate with transparency but will not make public information that could jeopardize our ability to negotiate the best arrangements for network equipment, devices and services.

#### Offering public safety-grade services at a cost that's compelling and attractive to users.

- We will build a network that will be tailored to meet the needs of public safety. We will seek out all economy advantages. We will report to the states millions of dollars by building, managing and maintaining FirstNet on their behalf.

We're committed to listening to you and what your state needs.



We are committed to working with you to get the job done right. We are committed to the right pace of progress, taking time up front to gather input, spending time meeting and communicating with our key stakeholders, doing our homework and working within the SLIGP timeline. Our internal goal is to complete our individual meetings with states by August but it may run into late summer. We'll see how it goes but we want to keep our pace up because we are eager to move ahead and want to give you ample time to plan.

We will continue to operate in accordance with the requirements spelled out in the law. FirstNet is an unusual entity. It is required to follow government practices for procurement and hiring. It is required to work through the state point of contact and deliver a proposal for the RAN network buildout to state governors. We are open to working with regional consortia but still need to do that by submitting plans to each state.

We are committed to operating with transparency that no commercial business has to meet. Our Board meetings are open, broadcast and transcribed. We will continue to share information unless it jeopardizes our ability to negotiate the best possible arrangements for network equipment, devices or services. We can't let that happen. This will be especially important in the procurement process. We will be negotiating all kinds of contracts and have to preserve our leverage. Of course we won't disclose information we receive under NDA either. That continues to limit what we can share with our Public Safety Advisory Committee, but we are trying to find ways to make it possible to share more information with them.

Above all, we are committed to public safety and to delivering FirstNet to you at a price that is attractive and compelling. We won't know cost until we choose a network approach and put pen to paper. We want to enlist the support of vendors to bring this public safety-grade network to millions of users at the lowest possible fees. As you will experience today and tomorrow, we are committed to listen to you and to what your state needs.



We want millions of users to benefit from high-speed data so they can save more lives, solve more crimes, protect more property and make our communities safer. We are building a nationwide wireless broadband network to make this possible, to help public safety meet their mission. That's what we are united here to accomplish. I am so pleased to have you here, in the spirit of partnership to be part of a journey that will make history. Thank you.