

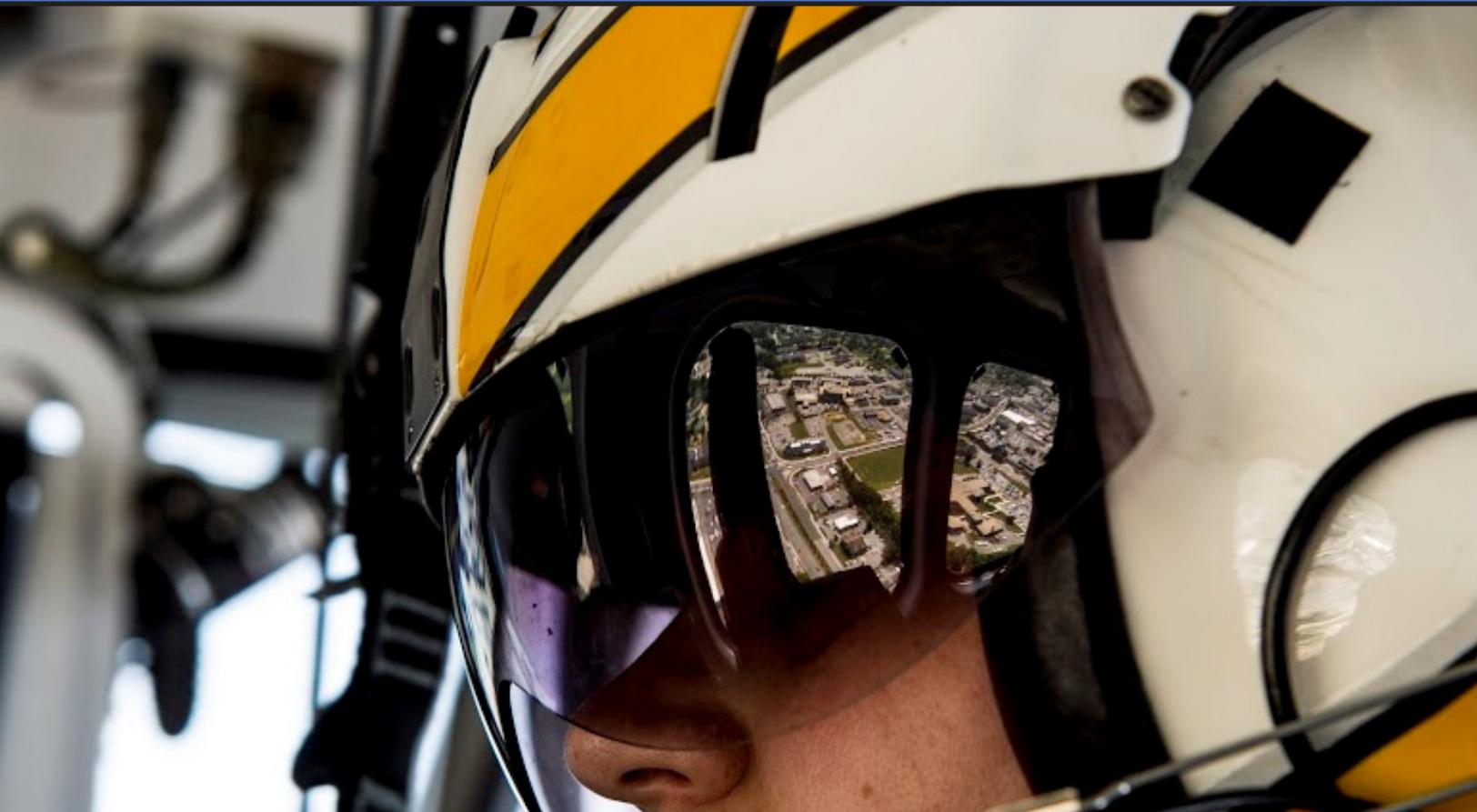


FirstNet[®]



FY 2015: ANNUAL REPORT TO CONGRESS

Submitted to the United States Senate Committee on Commerce, Science, and Transportation
and the United States House of Representatives Committee on Energy and Commerce





This Annual Report to Congress is issued pursuant to Section 6210 of the Middle Class Tax Relief and Job Creation Act of 2012 (P.L. 112-96) and reflects the **operations, activities, financial condition, and accomplishments** of the First Responder Network Authority¹ for fiscal year 2015.²



¹ The Middle Class Tax Relief and Job Creation Act of 2012 (P.L. 112-96) established the First Responder Network Authority as an independent authority within the Department of Commerce's National Telecommunications and Information Administration.

² fiscal year 2015 is the period from October 1, 2014, through September 30, 2015.

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LETTER TO CONGRESS

Mike Poth, Chief Executive Officer, February 2016



The First Responder Network Authority (FirstNet) remains committed to its mission—the successful deployment of the Nationwide Public Safety Broadband Network (NPSBN) for use by our nation’s public safety personnel.

Congress allocated FirstNet \$7 billion to stand up the organization and use to deploy the network. As a result of the successful H block and Advanced Wireless Services (AWS-3) auctions, FirstNet is now fully funded. FirstNet’s 20 MHz of 700 megahertz (MHz) broadband spectrum, however, is the organization’s most valuable asset and revenues obtained through leasing the network’s excess capacity is a critical resource to fund the deployment, operation, maintenance, and upgrades to the network

beyond the initial \$7 billion authorized by Congress. In fact, our spectrum has been called prime real estate due to its ability to effectively serve public safety’s communications needs. FirstNet has taken tremendous steps toward ensuring that public safety will soon experience the many benefits our spectrum offers.

FirstNet is run by an independent Board composed of public safety representatives, private sector experts, and Federal partners (See Appendix D). FirstNet has been a good steward of Federal dollars, leveraging only funding needed to develop the organization and our capabilities. In fiscal year (FY) 2015, FirstNet continued to mature our processes, procedures, and operations as we strive toward network deployment.

In this fourth Annual Report to Congress, FirstNet continues to demonstrate measurable progress. Recent major accomplishments include:

- Over 200 financial models and more than 100 take-up scenarios run;
- 13 Requests for Information (RFIs) processed and integrated into FirstNet technical and business planning;
- 3 Public Notices and 2 Special Notices, which generated hundreds of comments;
- 64 legal interpretations defining FirstNet’s legal authority on key operational and business aspects that were developed and approved by the Board and vetted through the Public Notice process;
- Over 500 separate business functions identified in the Operational Architecture;
- Over 725 comments and questions on the draft Request For Proposal (RFP) processed;
- 55 state and territory initial consultations completed, with almost 4,000 first responders attending in person;
- 54 state and territory and 7 Federal agency inputs on data collection from over 11,600 Public Safety Entities representing 16 million personnel;

- Outreach to more than 45,000 public safety and private partners in FY 2015 alone;
- More than 300 stakeholder engagements in FY 2015;
- Over 300 responses to RFIs and Public Notices considered.³

In addition, through our consultation and outreach efforts, FirstNet continues to obtain valuable insights from public safety personnel and other stakeholders. We have used these insights to progress with the development of our Comprehensive Network Solution RFP and overall network planning, all while we grow as an organization and work toward fulfilling both our congressional obligation and our obligation to America's public safety personnel.

I am honored to be FirstNet's CEO, and I look forward to deploying an NPSBN that meets public safety's needs.

Thank you for your continued support.

Sincerely,

A handwritten signature in black ink, appearing to read "M. S. Poth". The signature is fluid and cursive, with a large initial "M" and "S".

Mike Poth
Chief Executive Officer

³ Some accomplishments may have occurred outside of Fiscal Year 2015.

EXECUTIVE SUMMARY

The Middle Class Tax Relief and Job Creation Act of 2012 (P.L. 112-96)(Act) created the First Responder Network Authority (FirstNet) as an independent authority within the Department of Commerce’s National Telecommunications and Information Administration⁴ to empower America’s first responders with state-of-the-art communications tools.

This is the fourth Annual Report to Congress as required by Section 6210 of the Act. This report reflects the operations, activities, financial condition, and accomplishments of FirstNet for fiscal year (FY) 2015.

In FY 2015, FirstNet took tremendous strides toward deploying the Nationwide Public Safety Broadband Network (NPSBN), including the publication of its final legal interpretations; release of draft Request for Proposal (RFP) documents; publication of a Special Notice on Cybersecurity; and completion of initial state and territory consultations.

In September 2014, FirstNet published its First Public Notice on proposed interpretations of the Act. Subsequently, in March 2015, FirstNet published its Second Public Notice. Generally, both notices gave stakeholders—as well as the public—an opportunity to comment on certain proposed legal interpretations of FirstNet’s enabling legislation. After thoroughly evaluating every comment, FirstNet published its final legal interpretations of 64 questions raised in the First and Second Public Notices in October 2015.

In the third quarter of FY 2015, FirstNet released draft RFP documents in order to give stakeholders an opportunity to submit questions and comments to FirstNet prior to publication of the RFP and to inform stakeholders of FirstNet’s current thinking on its procurement. FirstNet responded to over 650 questions ranging from inquiries about FirstNet processes to complex technical questions. Where appropriate, FirstNet used commenter input to further develop the RFP prior to release.⁵

Recognizing the unique opportunity to implement security at the outset of network design, FirstNet published a Special Notice on Cybersecurity⁶ to solicit input from industry, public safety, and other interested parties to inform FirstNet’s RFP. In general, the document outlined key considerations and concerns with respect to how cybersecurity should be designed, established, and sustained as the foundation of the NPSBN.

In FY 2015, FirstNet continued its efforts to complete initial state and territory consultations. During each consultation, FirstNet strengthened relationships with the state or territory, provided updates on FirstNet, and learned about the unique needs of each state or territory. To date, FirstNet has completed 55 initial state and territory consultations and 100 engagements with a variety of Federal organizations. In addition, 54 states and territories and seven Federal agencies provided inputs to FirstNet’s formal data collection effort launched in March 2015, which aimed to better understand how the public safety community uses mobile data communications.

During FY 2015, FirstNet testified before both chambers of Congress. On March 11, 2015, FirstNet testified in front of the U.S. Senate Committee on Commerce, Science, and Transportation at a hearing entitled, “Three Years Later: Are We Any Closer to a

Nationwide Public Safety Wireless Broadband Network?” FirstNet was represented at the hearing by FirstNet Board Chairwoman Susan Swenson. On June 16, 2015, FirstNet testified before the U.S. House of Representatives Committee on Energy and Commerce’s Subcommittee on Communications and Technology. The hearing was entitled “Progress Toward a Nationwide Public Safety Broadband Network,” and FirstNet was represented by FirstNet President TJ Kennedy. Additionally, FirstNet staff met with congressional staff and Members in both chambers of Congress, providing updates on FirstNet’s actions throughout the year.

FirstNet has made significant progress in FY 2015 and will continue to carry out its mission in an open and transparent process in close coordination with stakeholders.

⁴ The Middle Class Tax Relief and Job Creation Act of 2012 (P.L. 112-96) established the First Responder Network Authority (FirstNet) as an independent authority within the Department of Commerce’s National Telecommunications and Information Administration.

⁵ FirstNet’s Board approved the Request for Proposal (RFP) during its December 2015 meeting. FirstNet will discuss the released RFP in its fiscal year (FY) 2016 report to Congress.

⁶ The Special Notice on Cybersecurity was published a few days after the conclusion of FY 2015.

VISION, MISSION, AND KEY OBJECTIVES

Shortly after Congress created the First Responder Network Authority (FirstNet), FirstNet’s leadership outlined the organization’s vision, mission, and key objectives to help guide the organization’s actions as it worked toward deployment of the Nationwide Public Safety Broadband Network (NPSBN). FirstNet’s vision is a forward-looking statement demonstrating the organization’s understanding of what it seeks to accomplish. In addition to illustrating the organization’s ultimate purpose, the mission statement shows how FirstNet intends to serve its stakeholders. FirstNet uses its key objectives to measure its overall progress and to create strategic goals that will facilitate the successful deployment of the NPSBN.

Vision	Mission
Empower America’s first responders with state-of-the-art communication tools.	To ensure the building, deployment, operation, and sustainability of public safety’s nationwide, interoperable, wireless broadband network, in accordance with laws and regulations.
Key Objectives	
<ul style="list-style-type: none"> • Provide FirstNet services with features—such as reliability, resiliency, coverage, functionality, interoperability, and network-based applications—that are critical to public safety users and differentiate FirstNet services from commercial broadband services; • Reduce costs for public safety entities by leveraging the value of excess network capacity with partners and generating pre-emptible demand from other, non-public safety users who place a high value on reliability and other FirstNet features; and • Provide mechanisms for public safety entities (directly or indirectly through states and territories) to benefit from the economies of scale created by FirstNet in terms of purchasing, partnering, and sharing information and data. 	

In fiscal year (FY) 2014, FirstNet released the organization’s strategic goals. These goals are FirstNet’s foundation, and are reflected in all activities. In the FY 2014 Annual Report to Congress, FirstNet provided a high-level description of its goals. Building on this effort in FY 2015, FirstNet further explored each goal’s impact on the deployment of the NPSBN, which is detailed below.

Ensure the acquisition, building, deployment, and operation of a reliable, interoperable nationwide Long Term Evolution (LTE) broadband network for public safety as required by the Middle Class Tax Relief and Job Creation Act of 2012 (Act).

The Act established FirstNet as an independent authority within the Department of Commerce’s National Telecommunications and Information Administration (NTIA) and required the Federal Communications Commission (FCC) to grant a license to FirstNet for 20 megahertz (MHz) of spectrum made up of both existing public safety broadband spectrum and adjacent commercial spectrum. FirstNet is charged with ensuring the establishment and oversight of a nationwide, interoperable public safety broadband network, while ensuring nationwide standards for use of and access to the network; issuing open, transparent, and competitive Requests for Proposals

(RFPs) to the private sector, encouraging use of existing wireless infrastructure; and managing the entities that deploy, operate, and maintain the network.

Explore and build strong partnerships with local, state, tribal, and Federal public safety agencies by leveraging consultation and communication opportunities.

Much of FirstNet’s work with the states and territories will culminate in the delivery of a plan to each state and territory’s governor. This “State Plan” will be used to guide and inform the governor of each state and territory on FirstNet’s intended build-out of the Radio Access Network (RAN) in each state or territory. The Act requires the governor to decide whether the state or territory will assume responsibility for deploying a RAN that connects to FirstNet’s Core network, or have FirstNet deploy the RAN. Consultation is critical to establishing lasting partnerships with the states and territories, end-user community, and public safety customer base. Moreover, consultation helps ensure that FirstNet program staff has captured the desires of FirstNet’s future customers. Ultimately, FirstNet believes its consultation efforts will lead to its provision of better public safety services and products, and increase NPSBN adoption.

Establish an entrepreneurial culture of innovation with a 24/7/365 public safety dedication by recruiting, hiring, and retaining high-performing employees motivated to accomplish FirstNet’s mission while meeting public safety’s needs.

In FY 2015, FirstNet grew from 123 to 198 Federal employees and contractors. FirstNet’s Board supports a hiring strategy that focuses heavily on both acquiring partner(s) to assist with deploying the network and conducting FirstNet’s consultation efforts. In order for FirstNet to be successful, it must manage its growth and capitalize on its skills already within the organization. This level of efficiency requires an approach to human capital that reflects private sector best practices. Members of the public safety community across all disciplines are required to be responsive, efficient, and high performing. FirstNet’s culture exhibits these characteristics, and the organization looks to hire only those candidates it finds prepared to immediately tackle this challenging work.

Utilize financial best practices and measures to ensure fiscal responsibility while accomplishing FirstNet’s mission and demonstrate leadership toward self-sustainability to all external stakeholders.

FirstNet must build, deploy, and operate a NPSBN by creating a program that maximizes the value of its 700 MHz spectrum license granted by the FCC. However, FirstNet must operate within the Act’s funding constraints, including:

- Limited initial capital to conduct required state consultation; complete development of the RFP process for the construction, operation, maintenance, and recapitalization of the NPSBN; and deliver State Plans to all 56 states and territories leveraging the \$7 billion derived from NTIA borrowing and FCC spectrum auction proceeds;
- Administrative spending limited to no more than \$100 million over the first 10 years of operations; and
- Authority to establish network user fees and lease fees for network capacity and use of network equipment and infrastructure limited to no more than FirstNet’s total expenses.

Given these constraints, FirstNet must be extraordinarily vigilant in its administrative spending. In addition, FirstNet must ensure that the organization fully realizes the value of its spectrum license so that its total expenses allow for competitive pricing of any network user fees.

Following the release of the RFP, FirstNet anticipates a tremendous period of growth and development of both the organization and the NPSBN. Recognizing this, FirstNet has developed a five-year forward looking plan (Appendix A) that will shape the organization's strategy following the selection of network partner(s) and the deployment of the NPSBN.



FARGO POLICE

POLICE

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PARTNERSHIPS WITH STATE, TERRITORY, TRIBAL, AND FEDERAL AGENCIES

STATE AND TERRITORY CONSULTATION AND STATUS

FY 2015 was a landmark year for FirstNet's state consultation team, in terms of state and territory engagement and the number of stakeholders reached throughout the country. Building on the two early pilot state consultations in FY 2014, FirstNet worked to facilitate completion of initial visits to nearly every state and territory during FY 2015. By the end of FY 2015, FirstNet had scheduled consultation visits to 55 states and territories and completed initial state consultation meetings with 52 states and territories.⁷ To successfully execute the meetings, FirstNet added new members to its consultation team, which is organized regionally throughout the country. Soon, FirstNet consultation will be fully staffed, with a team of ten regional leads along with two area leads overseeing the eastern and western parts of the country. These staff will be available to interact regularly with state and territory single points of contact (SPOCs) and, being located across the country, will be able to support SPOCs as FirstNet and states and territories continue to plan for the deployment of the network.

FirstNet spent FY 2015 visiting states and territories to continue discussions about deploying a broadband network dedicated to public safety. In preparation, FirstNet worked with SPOCs to arrange visits, create a tailored agenda, and identify necessary participants. Generally, agendas focused on roles and responsibilities, users, and coverage needs. FirstNet also discussed expectations for data collection and other state-specific issues, such as use-case scenarios. These meetings have paved the way for ongoing collaboration that will assist in guiding FirstNet's development of 56 unique state and territory plans.



⁷ The number of meetings includes two meetings that occurred in FY2014. See Appendix B, which includes a chart that shows all consultations held.

FirstNet began each initial consultation meeting by announcing four goals:

1. **Strengthen the relationship with the state or territory.** From the process of planning the meeting through the event itself, the initial consultations allowed FirstNet to strengthen existing relationships and establish new ones.
2. **Provide FirstNet updates.** By working with the states and territories, the initial consultation meetings included nearly 4,000 attendees from a wide range of public safety disciplines and across all levels of government. The meetings provided an effective way for FirstNet to share information and increase awareness among stakeholders nationwide. Topics included FirstNet's mission and vision, evolving acquisition approach, and data collection efforts.
3. **Learn about the unique needs of the state or territory.** The consultations allowed each state and territory to share its unique inputs, needs, and desires. For example, FirstNet heard details about each state and territory's governance structure, demographics, and geography. In addition, states and territories shared valuable information concerning the types of events (e.g., natural disasters, special events, unplanned events) that can affect public safety operations within the state or territory. In many cases, FirstNet also captured how states and territories could have benefited from using the NPSBN during past events.
4. **Discuss next steps.** FirstNet reiterated the importance of collaboration with states and territories and discussed continuation efforts. In addition, FirstNet asked states and territories to begin collecting user and operations data as well as coverage objectives to identify priorities.

FirstNet worked with states and territories to facilitate a forum where public safety officials could discuss real-life examples and use cases to illustrate how the NPSBN could be used once deployed. The use cases provided several unique state-and territory-specific scenarios concerning:

- Large planned events;
- Natural disasters;
- Emergency incidents; and
- Day-to-day operations.

In each scenario, the existence of the NPSBN would have improved public safety personnel's ability to communicate information and maintain their own safety and the safety of those whom they protect and serve. The table in Appendix B summarizes details from the 55 initial consultations held thus far.

The findings from the consultation meetings were incredibly useful to FirstNet. They showed just how diverse and locally focused the network will have to be. While there are a number of similar themes that ran through the majority of the use cases, it was clear that local problems required local solutions. FirstNet expects that the NPSBN will allow for improved communication and coordination between local agencies. It was also clear in some of the use cases that agencies from other states and territories would assist in the recovery efforts, thereby further complicating the same issues. A single, nationwide network that all public safety agencies can utilize provides an

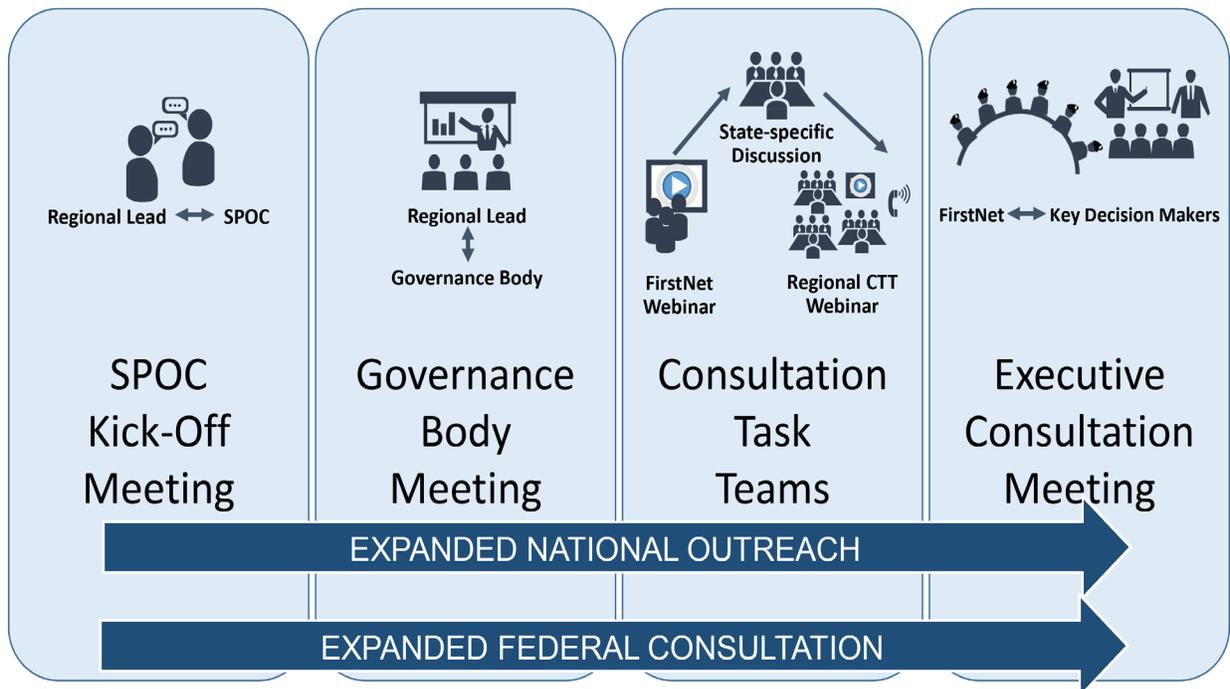
opportunity to solve many of the interoperability issues currently experienced by public safety. This is one of the key benefits of the network that was expressed by stakeholders at the FY 2015 consultation meetings.

FUTURE STATE AND TERRITORY CONSULTATION

In FY 2016, FirstNet will build on its work in the states and territories through the next stage of consultation. Taking lessons learned from ongoing dialogue throughout the country, FirstNet will continue to engage with the states and territories through an open, transparent, and coordinated effort to enhance the discussions with the states and territories as well as their public safety representatives. FirstNet plans to expand its outreach and focus in the next stage of consultation. FirstNet will seek to reach an even larger audience with its outreach team to further educate public safety on its goals, while FirstNet focuses its consultation with the states and territories to ensure that decision makers in the states and territories have the best information that FirstNet can provide.

FirstNet has developed three goals to guide its consultation activities in FY 2016:

1. Expanding outreach and education with state, territory, tribal, local, and public safety entities;
2. Obtaining state and territory input to inform State Plans and network deployment policies, processes, and procedures; and
3. Preparing key decision makers for State Plan delivery and network deployment.



To achieve these goals, FirstNet will work toward completing four major milestones with every state and territory:

- 1. Schedule FirstNet/SPOC Kick-Off Meetings:** FirstNet staff will meet with SPOCs to discuss the FY 2016 consultation approach and plan for outreach engagements.
- 2. Coordinate Participation in Governance Body Meetings:** FirstNet staff will attend and participate in state and territory communications governance body meetings in 2016. The purpose of these engagements will be to follow up on initial consultation meetings, share new information about FirstNet with the state and territory, continue to build relationships, and learn more about activities in each state and territory.
- 3. Establish Consultation Task Teams:** FirstNet will continue to consult with states and territories on critical policies and procedures for the NPSBN, including issues regarding Public Safety Grade (PSG) and Quality of Service, Priority and Preemption (QPP). The FirstNet Public Safety Advisory Committee (PSAC) assembled task teams of subject matter experts to provide initial advice and recommendations on these issues. FirstNet would like to explore further with the states and territories the critical factors to be considered regarding each issue at the state and regional levels.
- 4. Schedule Executive Consultation Meetings:** FirstNet plans to hold a consultation meeting with the key executives, public safety officials, and tribal leaders in each state and territory that will be involved in the State Plan decision and network deployment. The goals for this meeting are to provide states and territories with up to date information on State Plans, network deployment, FirstNet's value to public safety, FirstNet's business model, and the process to create a public-private partnership to achieve its mission.

FirstNet understands that not all states and territories have the same needs and some states and territories may choose not to schedule all four of these meetings in FY 2016 due to timing and other constraints. FirstNet aims to provide to states and territories the information and preparation that they require and we will continue to prioritize a close working relationship with stakeholders across the country to plan for the deployment of the NPSBN.

SINGLE POINT OF CONTACT SEMI-ANNUAL MEETINGS

FirstNet continued to conduct monthly SPOC conference calls by region and quarterly webinars to keep SPOCs apprised of the latest FirstNet updates, address questions, and allow states and territories to share their progress in outreach and consultation. One of FirstNet's new initiatives in FY 2015 was an in-person meeting held for all FirstNet SPOCs and up to two additional state and territory representatives to facilitate an open forum for sharing information and providing feedback on the program.

April 14-15, 2015, Reston, Virginia

FirstNet hosted its first two-day meeting for all state and territory SPOCs on April 14-15, 2015, in Reston, Virginia, with more than 125 public safety representatives from 52 states and territories and members of the PSAC Tribal Working Group (TWG) in attendance. During the meeting, FirstNet exchanged information with state, territory, tribal, and Federal representatives on a variety of topics related to the deployment of the NPSBN. These topics included FirstNet's Public Notice process, data collection efforts, governance models, tribal outreach, NTIA State and Local Implementation Grant Program (SLIGP) updates, and State Plan development.



In addition, FirstNet provided a forum and stressed the importance of gathering comments on its Second Public Notice from state, territory, and tribal representatives. FirstNet also emphasized data collection as an important part of preparing states and territories for their State Plan development.

Representatives from the states, territories, and tribes provided a range of feedback during the topic-specific and plenary sessions. There were questions about the roles that different stakeholders will play in FirstNet's consultation and deployment processes, including how tribal feedback will be included in the consultation process. In addition, attendees had questions about FirstNet service plans and pricing, coverage goals, and deployment timelines.

Following the success of this inaugural SPOC meeting, FirstNet planned and executed a second meeting in early FY 2016 and plans to conduct semi-annual meetings going forward.

FEDERAL CONSULTATION

Entering into FY 2015, FirstNet continued to build upon the relationships formed with other Federal agencies throughout FY 2014 and, with the increasing resources and staffing within FirstNet, established specific plans and processes to conduct Federal consultation activities. FirstNet's Federal consultation efforts in FY 2015 were generally focused upon educating agencies on the promise of FirstNet, Federal data collection, and obtaining inputs from Federal agencies that would better inform the development of the Comprehensive Network Solutions RFP.

In January 2015, FirstNet held a kickoff summit for Federal departments and agencies in order to formally begin the Federal consultation process. FirstNet followed this summit with a request to the Emergency Communications Preparedness Centers (ECPC) 14 member agencies for designation of specific agency points of contact (POC) in order for FirstNet to have a consistent coordination point within the agency. That group of agency POCs has now established a direct relationship with FirstNet that has reduced the complexity of coordination and provided the agencies with mechanisms for more direct input and feedback to FirstNet. In order to limit

duplication of efforts, the consultation group within the ECPC was retired, and FirstNet continues to provide updates to the ECPC at its quarterly steering committee meetings.

Over the course of FY 2015, FirstNet staff conducted over 100 engagements with a variety of Federal organizations across the United States. FirstNet also worked closely with POCs to complete an initial data collection effort that was intentionally aligned with the data collection effort conducted with the states and territories. The data provided allowed FirstNet to gain a more detailed understanding of the public-safety presence at all levels of government and allowed the agencies to describe their unique mission and jurisdictional needs to FirstNet.

Moving into FY 2016, Federal consultation will continue to focus on gaining a more complete understanding of agency needs and operations while expanding the breadth of engagements within the agencies. FirstNet will focus on key regions of the country of particular interest to Federal public safety organizations, as well as those areas where the interaction between multiple jurisdictions results in a strong desire for information sharing and common data access.

NATIONAL ENVIRONMENTAL POLICY ACT ACTIVITIES

Along with its general outreach activities to states, territories, tribal nations, Federal agencies, and public safety entities, FirstNet is required to comply with all applicable environmental and historic preservation laws, regulations, treaties, conventions, agreements, and executive orders, and has established a robust National Environment Policy Act (NEPA) compliance program to understand and help mitigate the potential effects of constructing the NPSBN.

NEPA requires Federal agencies to undertake an assessment of the environmental effects of their proposed actions prior to making a final decision and implementing the action. Due to the geographic scope of FirstNet (all 50 states, the District of Columbia, and five territories) and the diversity of ecosystems potentially traversed by the program, FirstNet has elected to prepare a regional Programmatic Environmental Impact Statement (PEIS) for each of five regions—East, Central, West, South, and Non-Contiguous.

FirstNet anticipates the five regional PEISs will address most of the potential issues associated with NPSBN implementation and identify best management practices and mitigation measures to help reduce potential impacts.

Throughout FY 2015, FirstNet interacted with stakeholders and encouraged them to share feedback on the PEISs at regional town hall and public meetings, in public comment on the documents, and during tribal outreach. In FY 2015, FirstNet held an initial comment period after publishing its intent to establish PEISs in the Federal Register to determine what should be included in the documents, established a comment mailbox that will remain open through the development of the PEISs, and during FY 2016 intends to conduct public meetings shortly after the release of the draft PEISs.

TRIBAL OUTREACH

FirstNet is committed to continuing its engagement with sovereign tribal nations. Tribes have a great need for the NPSBN and FirstNet's tribal outreach team continued traveling throughout the country in FY 2015 to speak at tribal gatherings, meet with tribal nations regarding FirstNet, and support SPOC efforts to engage tribal communities.



In FY 2015, FirstNet's tribal outreach team participated in the primary national and regional tribal organizations' conferences and meetings and state-hosted tribal engagements in an effort to educate tribes about FirstNet and encourage tribal participation in the state and Federal consultation and data collection process.

In addition, through the PSAC TWG established in FY 2015, FirstNet has continued to conduct regular dialogue with delegates and representatives from numerous tribal organizations. The TWG, comprised of representatives from a broad cross-section of multi-tribal associations, was established to provide FirstNet advice on tribal outreach, education, and inclusive consultation strategies to ensure participation by tribal jurisdictions in planning for the NPSBN. The TWG provided and supported implementation of recommendations to: expand TWG membership to include a large, multi-state tribe; target tribal public events at which to offer presentations; undertake a culturally aligned multimedia outreach campaign; and engage with SPOCs during the semi-annual meetings. The TWG will continue its activities through the PSAC in FY 2016.

PUBLIC SAFETY OUTREACH

FirstNet primarily engaged with the public safety community through national public safety association events, state consultations, and state-hosted outreach meetings. FirstNet Board members met with most of the national public safety association boards in FY 2015 and participated in their major conferences along with FirstNet senior management and staff.

In FY 2015, FirstNet hired a dedicated staff member to serve as senior law enforcement advisor, solely focused on engaging with the law enforcement community through customized outreach. On the national level, FirstNet reached out to over 20 key national law enforcement associations and briefed their stakeholders and leadership at direct meetings and conferences. There was a focused effort to ensure that executive directors, elected sworn law enforcement leadership, and influential law enforcement committee chairs were informed about FirstNet, its progress, and how to interact with FirstNet and their respective governor-appointed SPOCs.

Additionally, working with local law enforcement leaders in the states and territories afforded FirstNet the ability to directly inform local, state, and tribal officials. Working through individual state sheriffs' associations and chiefs of police associations, FirstNet representatives conducted on-the-ground outreach in the communities that will benefit from FirstNet.

FirstNet also conducted outreach to key Federal law enforcement stakeholders in FY 2015 by briefing agency representatives and presenting to the Federal Law Enforcement Training Center's leadership who train the majority of law enforcement for Federal agencies.

FirstNet's importance to the law enforcement community and progress were recognized in the *Final Report of the President's Task Force on 21st Century Policing*. That report, led by the U.S Department of Justice and conducted in concert with American law enforcement, highlighted the NPSBN network in a stand-alone recommendation indicating that FirstNet should be one of the country's top priorities.



The success of this outreach strategy to law enforcement has served as the model for the fire, Emergency Medical Services (EMS), and 911 senior advisors FirstNet hired at the end of FY 2015. Each of these disciplines will be developing similar strategies that will be implemented in FY 2016.

Throughout FY 2015, FirstNet continued to engage its state, territory, tribal, and public safety stakeholders by participating in various national conferences and meetings, statewide events, and individual agency meetings. In FY 2015, FirstNet participated in just under 300 stakeholder events.

STATE AND LOCAL IMPLEMENTATION GRANT PROGRAM

The State and Local Implementation Grant Program (SLIGP) is a formula-based, matching grant program administered by NTIA, which awarded grants totaling \$116.56 million to 54 states and territories (recipients).⁸ The program is designed to assist local, regional, state, territorial, and tribal government entities as they plan for the NPSBN. SLIGP funding priorities include establishing a governance structure to consult with FirstNet, developing procedures to ensure local and tribal participation in the consultation process, creating a process for education and outreach regarding the network, identifying potential public safety users of the network, developing staffing plans that include local and tribal representation, and preparing a comprehensive plan describing the public safety needs that they expect FirstNet to address as part of their existing Statewide Communication Interoperability Plans (SCIPs). Appendix C shows the Federal funds awarded to each recipient.

SLIGP Phase 1 Activities

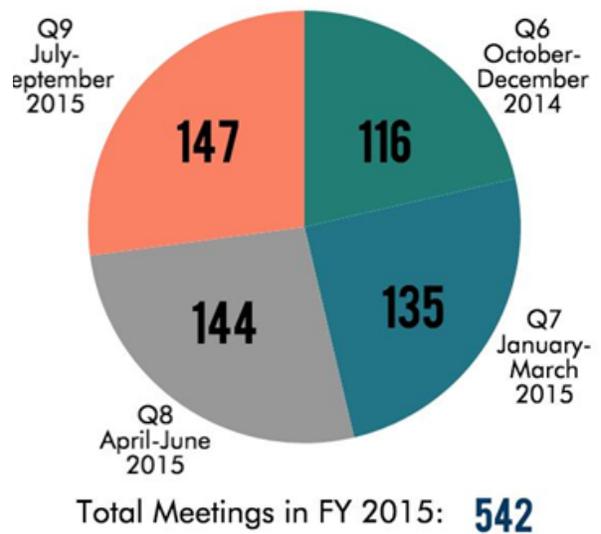
SLIGP Phase 1 provides funding for recipients to develop or enhance their governance, conduct education and outreach to all relevant stakeholders, prepare for consultation with FirstNet, identify potential users of the network, and update their SCIP.

⁸ The State of Mississippi chose to decline its SLIGP grant and is therefore not a beneficiary of the program.

Governance

SLIGP funding priorities for governance activities include establishing a governance structure or expanding existing structures to ensure local and tribal representation, and preparing to consult with FirstNet. Recipients have taken different approaches to governance, electing to use existing structures, add subcommittees or working groups, or create entirely new governance bodies. In FY 2015, encompassing quarters six through nine of the grant, recipients held a total of 542 governance meetings supported by SLIGP funds. This number corresponds to an average of ten governance meetings per recipient during the year. Recipients increased the number of governance meetings held each quarter during the fiscal year. This phenomenon could be due to the increased outreach and data collection activity surrounding FirstNet’s ramp-up and guidance from NTIA regarding allowable costs and activities for SLIGP Phase 2.

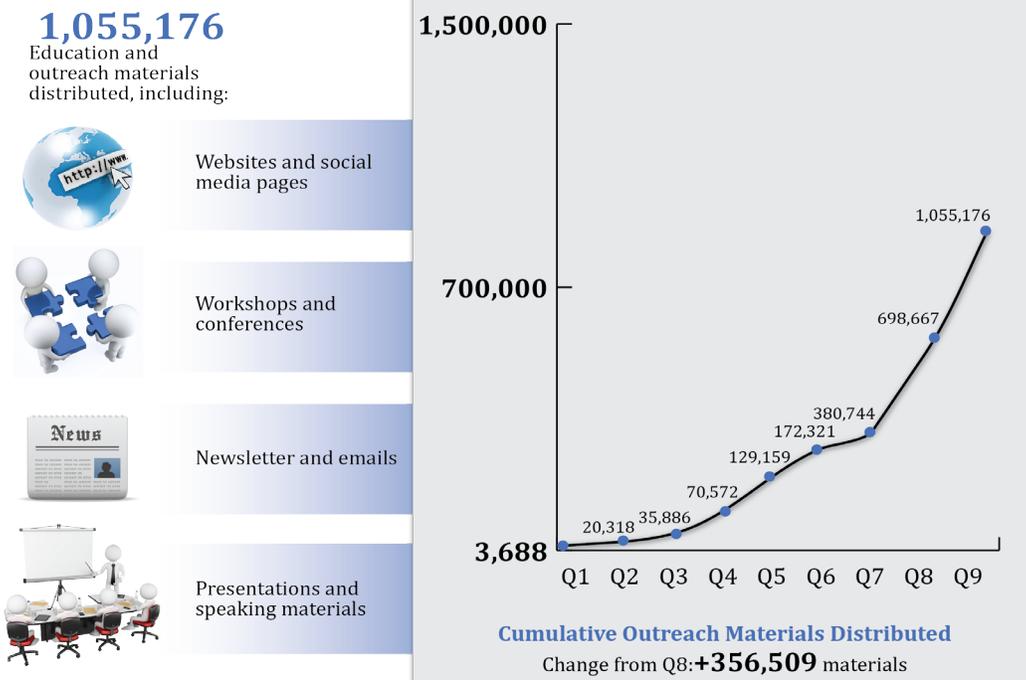
Governance Meetings Held with SLIGP Funds in FY 2015



Education and Outreach

SLIGP funding priorities for education and outreach include developing an outreach plan to engage critical stakeholders across recipient states and territories. Outreach activities may also support identifying potential network users. As of September 30, 2015, SLIGP recipients have developed

Recipients Conducting Education and Outreach with SLIGP Funds



and distributed almost 1.1 million outreach materials through websites, workshops, conferences, webinars, newsletters, emails, presentations, recipient-specific branding and logos, and handouts, as well as social media sites like Twitter, Facebook, and YouTube.

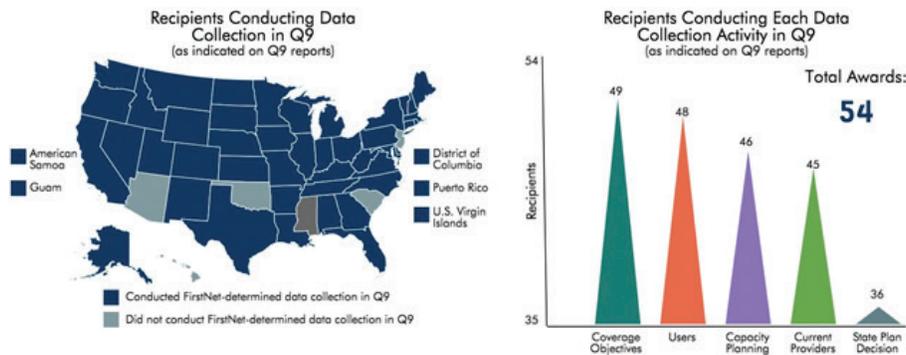
FirstNet Consultation

Preparing for consultation with FirstNet is another key activity under SLIGP Phase 1. Recipients have elected to use SLIGP funds to respond to FirstNet Public Notices and the Comprehensive Network Request for Information (RFI) released in September 2014, reserve meeting space for consultation engagements, cover travel expenses for stakeholders from across the state or territory, and develop meeting materials.

SLIGP Phase 2 Activities

In accordance with the Special Award Conditions (SAC) attached to the SLIGP awards, 50 percent of each award was held in reserve for FirstNet-determined data collection activities. On March 23, 2015, NTIA announced the opening of SLIGP Phase 2 consistent with FirstNet’s official request for states and territories to begin data collection activities. In order for states and territories to conduct Phase 2 data collection activities and meet FirstNet’s requested submission date of September 30, 2015, NTIA amended the SAC so that states and territories could begin data collection immediately provided that a revised budget package was submitted. This revised budget package would include the Phase 2 activities in order to access reserve funding. Since budget packages were due on June 23, 2015, the SLIGP Program Office has worked closely with the National Institute of Standards and Technology (NIST) Grants Management Division to expeditiously review and approve these budget modification packages so that recipients may access their full award funds.

SLIGP Phase 2 allows recipients to continue their Phase 1 activities, as well as to conduct activities that support the FirstNet-determined data collection categories of coverage objectives, users and their operational areas, capacity planning, current providers and procurement, and the State Plan decision process. Quarter nine of the grant period, encompassing July through September, 2015, was the second reporting period during which recipients conducted data collection. SLIGP recipients conducted data collection activities, including process development, data collection and



analysis, and submission of data to FirstNet, between July and September of 2015. The data collection efforts were directly tied to FirstNet's data collection and consultation requirements. The amount of data captured by FirstNet was significant:

- 54 states and territories responded;
- 7 Federal agencies submitted data (representing over 60 percent of Federal Public Safety);
- 5,400 files or 15.1 gigabits of data were received by FirstNet;
- 11,600 public safety entities were surveyed; and
- Over 1.6 million public safety personnel were represented.

Quarterly Reporting and Progress Calls

Each quarter, SLIGP recipients are required to submit a Performance Progress Report (PPR) to the Program Office detailing their progress against program milestones (including Phase 2 data collection activities), staffing and contractual support, and expenditures. NTIA reviews recipients' PPRs, provides requests for clarification, and assists with any revisions. In conjunction with the PPR review process, NTIA conducts quarterly progress calls with each recipient to follow up on items reported in the PPR, answer any grants management questions, and discuss program successes and challenges that occurred during the quarter.

Site Visits

Through site visits, NTIA meets with recipient staff face-to-face to monitor for grant compliance, address any grants management concerns, and discuss progress relating to program priorities in greater detail than during the quarterly progress calls. NTIA conducted 17 site visits to recipients in FY 2015 and plans to conduct approximately 20-22 in FY 2016.

RESOURCES, DEPLOYMENT, AND OPERATIONS

NETWORK AND DEPLOYMENT STRATEGY

On April 27, 2015, FirstNet posted a Special Notice on the Federal Business Opportunities (FBO) website.⁹ The notice provided draft sections for potential inclusion in an RFP for FirstNet to competitively procure a comprehensive solution meeting its stated objectives.

FirstNet built on and incorporated the public and private feedback received from 13 RFIs, multiple vendor meetings, and state consultations, among other sources, in the development of the Special Notice. FirstNet utilized the input received through these processes to better understand industry's capabilities, and analyzed how to best leverage existing capabilities and best practices in order to meet public safety's needs.

FirstNet implemented a Program Management Office (PMO) to carry out the operations of the organization, including the development of the Statement of Objective (SOO) contained in the Special Notice. The SOO listed high-level objectives with minimum requirements, allowing latitude for contractors to define implementation details. This comprehensive approach allows contractors to propose highly innovative solutions that ensure nationwide interoperability with both opt-

⁹ The Special Notice with draft RFP documents was released on April 27, 2015, on the Federal Business Opportunities website www.fbo.gov

in and opt-out states. The SOO will translate into potential Offeror-authored requirements outlined in their submitted Statement of Work and Work Breakdown Structure, which constitute the potential Offeror’s proposal. The requirements will potentially be negotiated between the Offeror(s) and FirstNet to become an award.

FirstNet Acquisition Approach

In the SOO, FirstNet proposed critical tenets of an approach that would have provided for either:

1. A single entity responsible for providing all functions on a nationwide level (the nationwide entity); or
2. A regional entity providing RAN, and Covered Leasing Agreement (CLA) applicable functions for a state, territory, or region.

Upon disseminating the comments from our Public Notices and comparing various models, the FirstNet Board adopted the single nationwide approach whereby an Offeror would be responsible for the provision of all necessary high-level functions needed to deploy and operate a nationwide solution in accordance with FirstNet’s objectives. This category was intended to allow potential Offerors to submit a comprehensive offer for all in-scope functions for all 56 states and territories, including all high-level functions consisting of Core, applications ecosystem, RAN, CLA, deployables, satellite, devices, subscriber adoption, and customer lifecycle management.

Pricing

In addition to the \$6.5 billion available to FirstNet to expend to potential Offerors to deploy, operate, and maintain the NPSBN, FirstNet has the authority to require potential Offerors to make payments to FirstNet in exchange for the use of Band 14 excess network capacity and from revenues derived from public safety entities. FirstNet proposed a pricing structure outlined in the Special Notice Appendix entitled “Pricing Concepts.”

To help ensure favorable price points for public safety subscribers, FirstNet expects potential Offerors to agree to a most favored nation customer pricing arrangement to ensure public safety subscribers to the NPSBN pay no more than the lowest price available for any type of customer receiving broadband LTE services on Band 14 or other bands.

Quality Assurance

FirstNet proposed a Quality Assurance Surveillance Plan (QASP) for the NPSBN in Appendix C-6 of the Special Notice. This document is a proposed plan for monitoring and evaluating performance throughout the life of a subsequent award. The draft QASP provides the anticipated process for continuous oversight.

Operational Architecture

Appendix C-7 of the Special Notice, Operational Architecture Functional Description, identified required detailed functions and architectural relationships along with primary responsibilities for each. FirstNet sought comment on and revisions to the overall approach regarding ownership of the functions identified, including which functions should be Offeror-owned, FirstNet-owned, or shared functions as well as those that are to be the responsibility of a public safety entity and out of scope functions.

Period of Performance

In the draft RFP documents, FirstNet preliminarily determined that the overall period of performance should extend to 2032 (including base and all option periods if exercised). FirstNet anticipates a base period of performance of award through 2022, with an option to extend through 2027 and a subsequent option to extend through 2032.

This longer period of performance would allow for the ability to maximize value to FirstNet and its public safety subscribers. FirstNet reached this conclusion based on information illustrating that a longer period of performance would allow the Offeror to recoup, over a longer period of time, the significant investments needed to deploy and operate the NPSBN. In particular, FirstNet intends to utilize excess network capacity to at least partially offset the costs of the NPSBN. This excess network capacity may require a longer period of time to be monetized and thus provide value to FirstNet.

Partnering and Teaming Approach

FirstNet has been encouraging interested Offerors and potential subcontractors to enter into teaming arrangements to maximize the value of their potential offer. This approach will maximize the use of existing infrastructure, commercial technologies, and rural coverage. FirstNet has received positive feedback with respect to this approach at Board Meetings and industry days. To further facilitate such teaming arrangements, FirstNet published a teaming list on its website, which consists of dozens of organizations interested in subcontracting and partnering opportunities with other potential Offerors.

Public Notices and Requests for Comment

During FY 2015, FirstNet took major steps in the legal interpretation of the Act. In September 2014, FirstNet published its First Public Notice that sought comment on key provisions of the Act, including those related to network elements, eligible users, the definition of “rural,” and fees. In March 2015, FirstNet published its Second Public Notice and sought comment on additional key interpretations of the Act, including the equipment for use on the NPSBN, the nature and application of required network policies, FirstNet’s presentation of a State Plan and its implications for the rights and duties of other stakeholders, and the rights and obligations of states or territories choosing to assume responsibility to build and operate a RAN in their respective states or territories.

On October 2, 2015, after an extensive comment and response period, the FirstNet Board approved a resolution authorizing the publication of two separate Public Notices setting forth responses to comments and 64 final legal interpretations on certain of the preliminary interpretations presented in the First Public Notice and Second Public Notice. The Board’s approval of the final legal interpretations was a key step towards RFP development, and the interpretations will be used to inform network implementation, operations, and policies.

Two key determinations included:

- The definition of “rural,” which sets the baseline for determining and measuring rural coverage milestones in each phase of network deployment as required by the Act; and
- Reinvestment of revenues back into the NPSBN, which, as discussed in the Second Public

Notice, requires any revenue generated in a state assuming RAN responsibilities that exceeds the reasonable costs of deploying and maintaining the RAN in that state to be provided to FirstNet to help fund the nationwide deployment of the network.

TECHNICAL SUPPORT AND RESEARCH

The FirstNet Office of the Chief Technology Officer (OCTO) has played a vital role in supporting all aspects of developing the Comprehensive Network Solution RFP.

Technical Market Research and Outreach

FirstNet has been careful to adhere to the openness and fairness required of Federal acquisitions while also valuing the importance of staying current in a rapidly changing marketplace of wireless and mobile broadband technologies. While the total number of FirstNet's direct vendor meetings in FY 2015 decreased in support of its early work in drafting the RFP, the frequency of such meetings increased near the end of FY 2015.

In addition, FirstNet made great strides during FY 2015 to increase technical outreach to other potential Federal, state, and local partners who may address similar technology, deployment, and policy challenges. The following is just one example of this increased emphasis on technical outreach.

In October 2014, an Identity, Credential, and Access Management (ICAM) National Strategy Summit brought together leaders from the public safety community with ICAM subject matter experts from industry, academia, and government. The summit was co-sponsored by the program manager for the Information Sharing Environment (ISE), the Department of Homeland Security's (DHS's) Science & Technology Directorate, and the International Association of Chiefs of Police (IACP). While challenges with ICAM can be prevalent in any cross-organizational or mass market information-sharing environment, the summit focused on the challenges expected to be faced by FirstNet as a model that could be leveraged by other commercial and government networks. The final report from the summit was released in January 2015 with ten recommended principles for FirstNet to consider as it develops its ICAM strategy. Moreover, to build upon this initiative, prior to the end of FY 2015, FirstNet actively contributed in a forum with many organizations that participated in the Summit to charter a working group tasked with exploring ICAM technical details.

Support for the Early Builder Projects

FirstNet has executed five spectrum management lease agreements (SMLAs), with the:

1. Los Angeles Regional Interoperable Communications System (LA-RICS) Authority
2. State of New Mexico;
3. Adams County in Colorado;
4. State of New Jersey; and
5. State of Texas.

These agreements allow each “early builder” to deploy LTE on FirstNet’s licensed Band 14 spectrum and offer public safety broadband network service. In return for the use of our spectrum, each project provides FirstNet with valuable insights on the specific needs and challenges of providing wireless broadband service to first responders. FirstNet continues to work closely with each project to gather key lessons learned that will help drive efficiencies and better understanding of key factors important to the design and operation of the NPSBN. Four of the five early builder projects are funded through the NTIA Broadband Technology Opportunities Program (BTOP). The Texas project, led by Harris County, was initially funded through a DHS Port Security Grant and received further funding from the Harris County general fund.

During FY 2015, FirstNet also focused on implementing Government Accountability Office (GAO) recommendations related to the evaluation of the early builder projects. FirstNet implemented enhanced processes and procedures in response to the recommendations. Over the course of FY 2016, FirstNet expects each project to commence (or continue) operational status and move aggressively to add public safety users. The majority of Key Learning Conditions (KLCs), as defined in each project’s SMLA, will be implemented and documented over the course of this coming fiscal year.

FirstNet is also using these projects to gather informal key lessons learned that will benefit the development of the NPSBN. These informal key learning opportunities continue to directly benefit our consultation and outreach teams, our RFP development teams, as well as other FirstNet offices.

Device Ecosystem

Throughout FY 2015, the devices group within the OCTO engaged in outreach activities to gain an understanding of the expectations of potential FirstNet customers. These efforts included meeting with different Federal agencies, meeting with the PSAC Executive Committee, and engaging with state and local personnel to understand each agency’s use cases for Band 14 devices. Stakeholder inputs were carefully considered during the development of the Comprehensive Network Solution RFP.

Another important area of consideration for the devices group during FY 2015 was furthering the development of the FirstNet device ecosystem. The devices group met with several key chipset and device vendors to gain an understanding of the current state of the industry with regard to public-safety-specific feature support. The devices group used these inputs to inform the development of its FirstNet device portfolio approach. At a high level, FirstNet’s portfolio includes major device categories such as portables, mobile data, machine to machine (M2M)/specialized, and accessories. FirstNet presented the device portfolio at its industry day in August 2015.

Perhaps one of the device group’s most important efforts in FY 2015 was its work on the device approval process. In line with commercially accepted practices and based on feedback from the PSAC Executive Committee, a device manufacturer will be required to follow FirstNet’s device approval process before declaring a Band 14-enabled device is approved for use on the NPSBN. Major components of the approval process include:

- FCC Type Certification;
- PCS Type Certification Review Board (PTCRB) certification;
- Commercial carrier acceptance testing; and
- FirstNet Device Independent Verification and Validation (DIV&V).

The DIV&V is FirstNet's version of a device carrier acceptance process. Although FirstNet's approval process is still being developed, its purpose is to ensure that public safety has 3rd Generation Partnership Project (3GPP) LTE-compliant, high-quality, reliable, and user-friendly devices.

Laboratory Development

FirstNet's technical team is designing and building FirstNet's Technical Headquarters Laboratory in Boulder, Colorado. FirstNet and industry will use the lab to cooperatively perform quality of service and surveillance testing of critical service-differentiation features. The lab will contribute to FirstNet's ability to effectively perform and maintain control of its mission and operations in monitoring both contractor performance and agency contract management, and will also allow the team to work closely with the Public Safety Communications Research (PSCR) laboratories located nearby.

Standards Development

FirstNet remains an active participant in developing global standards that will support the NPSBN launch. In order to take advantage of economies of scale and to support interoperability, FirstNet's technical solutions will be based on a global set of commercially available standards.

In the past, FirstNet's standards work was led by the PSCR group in collaboration with FirstNet. FirstNet, both recognizing and understanding the importance of standards, hired a full time Director of Standards in July 2015. FirstNet's Director of Standards is working closely with the PSCR standards team to leverage many of its resources and is beginning to staff a small FirstNet standards group that will continue to work with the PSCR team.

Over the past year, FirstNet's standards efforts continued to focus primarily on driving standards in the 3GPP standards development organization. 3GPP creates the standards and specifications for the LTE technology that FirstNet will deploy as mandated by Congress. FirstNet's goal in its standards work has been to drive standards in 3GPP to support the public safety Mission-Critical Voice (MCV) requirements that have been defined by the U.S. public safety community. MCV elements include:

- Direct Mode/Talk Around (unit to unit communications on and off network);
- Push-To-Talk;
- Full Duplex Voice;
- Group Call;
- Talker Identification;
- Emergency Alerting (Man Down); and
- Audio Quality.

To date, FirstNet’s standards activities have led to the creation of a 3GPP working group to address public safety application architecture requirements and to develop associated supporting LTE standards specifications. Work continues in 3GPP to complete the development of LTE standards supporting the initial definition of MCV. FirstNet expects the bulk of these requirements to be supported by 3GPP LTE standards when work is completed on 3GPP LTE Release 13 in early to mid-2016. Planning activities have already begun in 3GPP to define new public safety standards related to mission-critical data and mission-critical video, with initial work targeted for completion in 2017.

Streamlining of Acquisition and Procurement

One major hurdle in the deployment of the network will likely be acquiring equipment and services. FirstNet has followed the Federal Acquisition Regulation (FAR) to comply with the Act’s “open and transparent” requirements. The FAR process for acquiring goods and services, compared to private sector acquisition and procurement, is generally more cumbersome, costly, and time-consuming, and often provides less flexibility for complex negotiations and future modifications of existing awards.

PUBLIC SAFETY ADVISORY COMMITTEE

The PSAC was extremely active in FY 2015, working through critical network functions from the public safety practitioner point of view. Through its working groups, task teams, and the PSAC Executive Committee, the full PSAC, representing 42 public safety organizations, provided key recommendations and advice, outlined below, to the FirstNet Board and staff through in-person meetings, webinars, and conference calls. FirstNet also hosted two public safety association engagements in May and September 2015 to provide Washington, DC-based association staff with the latest updates on FirstNet. These briefings will continue in the coming year.

Tribal and Early Builder Working Groups

The TWG and the Early Builder Working Group (EBWG) continued their work through FY 2015. The TWG is tasked with providing advice on tribal outreach, education, and inclusive consultation strategies to encourage full participation by tribal entities in the network. The EBWG is tasked with providing advice on early builder strategies and lessons learned to assist in planning efforts for the network. The Working Groups met monthly via conference call, and occasionally in person, to share and discuss their lessons learned and best practices. The Working Groups update the full PSAC at PSAC meetings and webinars.

PSAC Task Teams

Through its three task teams, and by working with members of the FirstNet technical staff, the PSAC provided advice and recommendations on the following operational topics to FirstNet in FY 2015:

Public Safety Grade

The PSAC provided advice and recommendations on an initial methodology and framework for implementing public safety grade hardening elements in the NPSBN with respect to priority needs, critical infrastructure protection, and geographic and human threats to the NPSBN. During this project, titled “A Methodology for FirstNet Availability Hardening Objectives based on Critical Infrastructure Density and Geographic and Localized Threat Categories,” the PSAC identified

critical infrastructure layers that require increased hardening and provided advice on how to filter these asset layers. In addition, the PSAC determined geographic hazards and threats. The PSAC's efforts gave FirstNet an opportunity to identify important geographic areas, request state and territory comment, and evaluate Offerors' methodology for providing increased hardening and availability in areas that are hazard-prone and dense with critical infrastructure during incidents.

Quality of Service, Priority, and Preemption Framework

In November of 2014, FirstNet requested that the PSAC help FirstNet develop a QPP Framework. QPP is a very complex subject and is often considered a specialty within LTE. This Framework would enable FirstNet to consult with public safety for the dual purpose of understanding public safety needs and explaining how QPP works.

The PSAC, the PSCR program, and FirstNet staff worked together to create the Framework. The PSAC was asked to develop incident usage scenarios that describe basic situations in which public safety would use the NPSBN for a majority of their incidents or planned events (e.g., sending Short Message Service, using Containment Warning Systems, facial recognition software). The PSAC was then asked to develop a set of use cases that detailed the jurisdictions and disciplines engaged in a potential situation involving public safety, the applications required, and application usage projections for these incidents. The usage scenarios and use cases were utilized to develop a basic framework that defines how QPP would work on the NPSBN.

The Framework describes:

1. Three states of QPP usage on the network (i.e., static, dynamic, and controlled);
2. How secondary users under a CLA would be treated;
3. How static and dynamic user and incident data can be used to move the network between the states; and
4. How applications and usage of the network can be managed for QPP.

User Equipment

The PSAC provided advice and recommendations on functional objectives for and ergonomic considerations of Band 14 broadband user equipment that will meet the operational needs of first responders. Issues discussed included vehicular network systems (VNS), mobile security, voice assistants, and various other topics.

PUBLIC SAFETY COMMUNICATIONS RESEARCH

During FY 2015, FirstNet's technical staff continued to leverage the research, development, testing, and evaluation expertise of the PSCR program to support LTE standards development, testing and evaluation of LTE features, and network planning simulation and modeling. The close proximity of the PSCR labs in Boulder, Colorado, has fostered a unique partnership between the PSCR team and the FirstNet OCTO team. This partnership exemplifies FirstNet's strategic goal of establishing an entrepreneurial culture of innovation, tapping into DOC's leading-edge joint efforts between the NIST Communication Technology Lab and the NTIA Institute for Telecommunication Sciences.

Building upon the inter-agency agreement between FirstNet and PSCR that provided funding for three key research areas, PSCR achieved significant progress in FY 2015 and is looking forward to the planned efforts in FY 2016 outlined below:

1. Representing FirstNet in international standards development bodies, such as the 3GPP and the Alliance for Telecommunications Industry Solutions (ATIS) to ensure future FirstNet network requirements will be developed in the appropriate open standards processes:
 - **FY 2015 Achievements:** Working directly with PSCR, FirstNet has made major progress in 3GPP in the development of standards to address gaps in public safety's requirements for MCV. In FY 2015, FirstNet participated in the creation of a new working group within 3GPP to specifically and initially address the creation of application architecture standards for public safety and completed the service definition for mission-critical Push-to-Talk over LTE.
 - **FY 2016 Outlook:** In FY 2016, PSCR and FirstNet expect to complete the standards for the first iteration of mission-critical Push-To-Talk over LTE, define new services for mission-critical video, and develop a definition of another service for more generic mission-critical data.

2. Testing and Evaluation of key LTE features critical to FirstNet service offerings (i.e., quality of service, priority usage, and pre-emption of secondary users in times of network congestion and overload):
 - **FY 2015 Achievements:** Through testing and evaluation in FY 2015, the PSCR team was able to take advantage of the Broadband Consortium and Cooperative Research and Development agreements to establish a baseline for industry capabilities in the area of QPP. This work provided key inputs with respect to the activities being conducted by the PSAC and the development of FirstNet's QPP Framework. PSCR also worked closely with FirstNet to provide a series of technical updates, primers, and breakout sessions to help educate public safety stakeholders on the QPP concepts.
 - **FY 2016 Outlook:** PSCR's testing and evaluation of key LTE features and capabilities critical to FirstNet service offerings has expanded. The PSCR test and evaluation team is engaged in tasks related to network operation (e.g., local control, QPP, inter-network roaming, device and application security, identity management, deployable systems). PSCR will also work closely with FirstNet to establish the process by which devices will be certified to operate on the NPSBN.

3. Conducting simulation and modeling efforts in support of developing approaches for network planning:
 - **FY 2015 Achievements:** PSCR completed modeling efforts for FirstNet related to cell site network planning and excess network capacity analysis for secondary users.

- FY 2016 Outlook: PSCR will perform analysis in support of improving network resiliency and maintaining coverage and network quality of service or public safety communications during incidents and in the event of infrastructure loss or equipment failures.

Next Steps for PSCR and PSAC Collaboration

FirstNet will continue to work with PSCR and the PSAC throughout the development of the network. We have already realized tremendous benefits from our cooperative relationship with PSCR, and we look forward to achieving additional successes through the inter-agency agreement. We will also be working very closely with the PSAC in order to help define the framework for priority and preemption on the network. Leveraging our public safety experts for this important task is crucial if we are to successfully reach a solution to these challenging undertakings.

FINANCIAL CONDITION

FirstNet's financial position and conditions for a successful future contract award materially changed in FY 2015 with the successful completion of the FCC's H Block and Advanced Wireless Services (AWS-3) auction that raised sufficient funds to fully fund the government's \$7 billion commitment to the building of the NPSBN. Prior to receipt of the auction funds, FirstNet's start-up operations were funded by the limited resources made available through NTIA from its borrowing from the U.S. Treasury. To date, no operating revenues have been realized while spending has been focused on building the organization and implementing the Strategic Roadmap. Key spending priorities included building staffing levels—both Federal and contracted experts—critical to supporting the various consultation and outreach efforts that took place across the country, performing market research, technical drafting of acquisition documents, reviewing RFI responses, and establishing the internal capabilities required to support the FirstNet mission.

With the successful AWS-3 auction, in FY 2015 the initial capital start-up borrowing from the U.S. Treasury was re-paid and a net \$6.84 billion was received by FirstNet to support operations and implement the NPSBN. As of September 30, 2015, FirstNet had a cash balance of \$6.78 billion.

Limitation on Administrative Expenses

Within our General and Administrative Expenses, through aggressive cost management, FirstNet was able to reduce its administrative spending subject to its statutory limitation compared to last year by 8 percent, from \$7.3 million in FY 2014 to \$6.7 million in FY 2015.

Changes in Assets, Liabilities and Equity

Total assets for FY 2015 were \$6.80 billion as of September 30, 2015, compared to \$9.8 million for FY 2014, an increase of \$6.79 billion or 69,322 percent, reflecting the large increase in cash (available and restricted). Cash was received as a capital contribution from proceeds of the FCC AWS-3 auction. A portion of the proceeds were sequestered during the year by the Federal government and are reflected as Restricted Cash on the balance sheet. The sequestered cash will become available in future periods. With the receipt of the auction proceeds, NTIA re-paid its borrowing from the U.S. Treasury. Further, the Capital Contributions Receivable due from NTIA from the borrowing to finance FirstNet liabilities in FY2014 was eliminated.

Property, Plant, and Equipment increased \$4.7 million as the renovation of the FirstNet headquarters office space in Reston, Virginia was completed; investments were made in the information technology (IT) backbone that will support critical office functions; a robust customer relationship management system was implemented; and cybersecurity requirements were fulfilled. Other assets increased \$500 thousand as additional geo-data was acquired to improve the ability to develop the 56 state and territory plans and to evaluate Offeror proposals post RFP release.

Current liabilities increased \$3.5 million primarily due to increases in accounts payable and capital lease liabilities associated with IT infrastructure investments. With the capital contribution derived from the auction proceeds, FirstNet's equity increased \$6.78 billion. Retained Deficit increased \$50.4 million reflecting continuing operating deficits until the NPSBN award is made and operating revenues commence.

CONCLUSION

In FY 2015, significant steps were taken by FirstNet toward the deployment of the NPSBN. From the consultation efforts with the states and territories, the Public Notices, the Special Notice with draft RFP documents, numerous industry days, and general outreach efforts to public safety, tribes, Federal partners, associations, and other stakeholder groups, FirstNet has illustrated that it is dedicated to developing and deploying the NPSBN in an open and transparent manner. In June 2015 the Chairwoman of the Board, Susan Swenson, told public safety that FirstNet would focus on four key areas:

- Execution;
- Engagement;
- Communication; and
- Collaboration.

On execution, FirstNet can and will do more. Through the release of a final RFP in FY 2016 it will be the goal of the organization to find a partner(s) with whom FirstNet can develop State Plans and ultimately deploy the NPSBN.

On engagement, the outreach and consultation efforts of the organization have led to greater trust and cooperation with states and local jurisdictions. The organization is striving to become better every day at distributing information and listening to our stakeholders, whether it be through the new FirstNet website, stakeholder meetings, conferences, or consultation meetings with the states and territories.

On communication to our stakeholders much was accomplished in FY 2015 through continued efforts to engage and listen to public safety's needs and concerns. As new challenges await the organization in FY 2016 FirstNet will need to redouble its efforts to make the NPSBN the reality that FirstNet has pledged it to be.

Finally, and most important, is the collaboration with the public safety community. The NPSBN will be public safety's network. All the meetings, speeches, Public Notices, and events that have been conducted in FY 2015 are the result of a collaboration with public safety, the states, territories, tribes, Federal partners, industry, and other groups. As FirstNet works toward the release of a final RFP in FY 2016, this collaboration will need to be deepened to ensure that FirstNet conducts a successful procurement in 2016.

While the task FirstNet faces is monumental, FirstNet's FY 2015 accomplishments indicate a commitment to fulfilling its mission. The public safety community fought tirelessly for a network of its own, and Congress entrusted FirstNet with this incredible responsibility. FirstNet's employees are dedicated to the job at hand as the organization strives toward the deployment of the NPSBN.



APPENDICES

APPENDIX A: 2016-2020 STRATEGIC GOALS

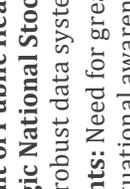
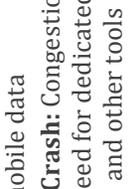
2016 - 2020 Strategic Goals			
Partnerships	Stakeholder Engagement	Innovation	People and Organization
Effectively manage resources and partners to acquire, build, deploy, and operate a reliable, self-sustaining, and interoperable nationwide public safety LTE broadband network.	Leverage consultation and communication opportunities to build and maintain strong partnerships with local, state, tribal, and Federal public safety agencies and industry.	Serve the 24 by 7/365 needs of public safety and be the leader in emerging communication technologies by establishing and sustaining an entrepreneurial culture of innovation and excellence.	Meet the needs of public safety by recruiting, hiring, and retaining the best talent and maintaining a high-performance organization dedicated to the achievement of the FirstNet mission.

2016 - 2020 Strategic Objectives			
<ul style="list-style-type: none"> • Successfully complete the public/private partnership agreement in a timely manner. • Evolve NPSBN policies, requirements, technical designs, standards, and operations. • Advocate for public safety to ensure the network is built according to public safety needs. 	<ul style="list-style-type: none"> • Maximize value to public safety subscribers through the establishment, refinement, and achievement of robust engagement goals. • Meet all legislative mandates as required by the Act. • Provide timely, open, transparent, and consistent communication. • Conduct ongoing consultation to ensure customer needs are being met. • Identify, inform, and influence key decision makers to achieve FirstNet's programmatic and financial goals. • Build, maintain, and expand ongoing industry partnerships. 	<ul style="list-style-type: none"> • Establish and deploy rewards that promote and recognize innovation and excellence. • Establish and sustain an environment that promotes learning and collaboration. • Identify and leverage emerging technologies to deliver ever-improving public safety features and capabilities. • Utilize tools to ensure that innovation is commensurate with public safety needs. 	<ul style="list-style-type: none"> • Utilize all hiring flexibilities and authorities strategically to acquire and retain the best talent. • Evolve a strategic organizational plan to meet FirstNet's mission. • Institute programs and practices to promote optimal employee performance, engagement, and satisfaction. • Be responsible stewards of Government resources.

APPENDIX B: STATE AND TERRITORY CONSULTATION

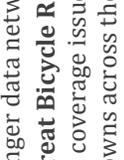
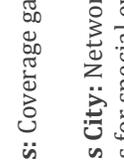
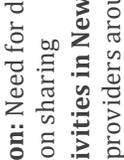
State	Meeting	Location	State Attendees	Shared Use Case
<p>Alabama</p> 	<p>July 15, 2015</p>	<p>Huntsville, Alabama</p>	<p>60</p>	<ul style="list-style-type: none"> • Next Generation (NG) 9-1-1: The need for partnerships on an end-to-end solution for public safety • Alabama Fire Service: Current use of mobile data for mapping, records management, and computer aided dispatch • Alabama Fusion Center: Need for additional capacity to gather and disseminate intelligence at large-scale events • Alabama Emergency Management Agency: Need for broadband to improve situational awareness during emergency and large planned events • Emergency Management: Importance of mobile data in emergency management • Emergency Medical Services: Need for increased coverage and capacity to support streaming video, telemedicine, and high-quality mapping • Tribal Coverage: Needs of tribal nations
<p>Alaska</p> 	<p>September 9, 2015</p>	<p>Anchorage, Alaska</p>	<p>60</p>	<ul style="list-style-type: none"> • The Funny River Fire: Need for broadband to improve situational awareness • Fairbanks Police Department: Current use of mobile data applications for automated vehicle location, field report submissions, and access to crime databases
<p>American Samoa</p> 	<p>August 13, 2015</p>	<p>Village of Utulei</p>	<p>90</p>	<ul style="list-style-type: none"> • Day-to-day use and current communications challenges: Need for data network to help improve interoperability • Coordination with port authorities: Need for coordination with port authorities on a regular basis • Reconstitute Communications: Need for data network to provide communications after a catastrophic disaster when the island is self-reliant before outside aid arrives

State	Meeting	Location	State Attendees	Shared Use Case
<p>Arizona</p> 	<p>September 29, 2015</p>	<p>Phoenix, Arizona</p>	<p>65</p>	<ul style="list-style-type: none"> • Wild Land Fires: Potential for the national public safety broadband network to increase safety and situational awareness • Super Bowl 49: Use of data by public safety during a large, multi-jurisdictional event
<p>Arkansas</p> 	<p>May 14, 2015</p>	<p>Little Rock, Arkansas</p>	<p>74</p>	<ul style="list-style-type: none"> • Bikers, Blues and BBQ Annual Rally: Need for additional capacity for large event • Arkansas Delta Flooding 2011: Need for geographic positioning system (GPS) and geographic information system (GIS) information to help predict flood areas and evacuation zones • Albert Pike Recreational Area Flash Flood: Coverage gaps in remote recreational areas
<p>California</p> 	<p>July 28-30, 2015</p>	<p>Sacramento, California</p>	<p>175</p>	<ul style="list-style-type: none"> • Orland Tour Bus Crash: Need for data services and telemedicine to aid EMS and emergency management • Large Events in San Francisco: Need for additional capacity in an urban area that hosts special events • Rim Fire: Need for data to improve situational awareness and communications with residents, utilities, and transportation agencies
<p>Colorado</p> 	<p>January 14, 2015</p>	<p>Denver, Colorado</p>	<p>120</p>	<ul style="list-style-type: none"> • USA Pro Challenge Bicycle Race: Need for improved coverage, communications, and coordination for an event covering a large area • Aurora Theater Mass Shooting: Need for data applications, including GPS and vehicle location services to improve situational awareness and emergency response • Waldo Canyon Fire: Need for a data network to improve coverage and situational awareness

State	Meeting	Location	State Attendees	Shared Use Case
<p>Commonwealth of the Northern Mariana Islands</p> 	<p>October 21, 2015</p>	<p>Hagåtña, Guam</p>	<p>5</p>	<ul style="list-style-type: none"> • Weather Events: Network congestion during tsunami warnings and flooding events • Bridgeport Train Derailment: Need for improved capacity and connectivity • Department of Public Health – Points of Distribution System for Strategic National Stockpile: Current use of data and the need for a more robust data system • Large Events: Need for greater capacity and access to data to improve situational awareness during Sailfest and the Durham Fair
<p>Connecticut</p> 	<p>May 27, 2015</p>	<p>Hartford, Connecticut</p>	<p>36</p>	<ul style="list-style-type: none"> • Large Events: Congestion on commercial networks during NASCAR races and Firefly Music Festival. Need for dedicated bandwidth to allow continuous public safety communication and access to mobile data • Dover C-5 Crash: Congestion when news media saturated the network. Need for dedicated network to allow public safety to access CAD and other tools • New Castle County Court House Shooting: Need for a data network to provide improved interoperability and situational awareness • Boater Search and Rescue: Data network would have improved situational awareness during search efforts
<p>Delaware</p> 	<p>February 19, 2015</p>	<p>New Castle, Delaware</p>	<p>34</p>	<ul style="list-style-type: none"> • Large Events: Congestion on commercial networks during NASCAR races and Firefly Music Festival. Need for dedicated bandwidth to allow continuous public safety communication and access to mobile data • Dover C-5 Crash: Congestion when news media saturated the network. Need for dedicated network to allow public safety to access CAD and other tools • New Castle County Court House Shooting: Need for a data network to provide improved interoperability and situational awareness • Boater Search and Rescue: Data network would have improved situational awareness during search efforts

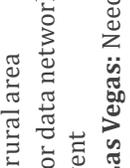
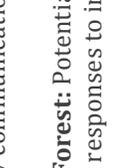
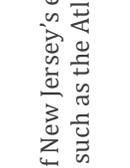
State	Meeting	Location	State Attendees	Shared Use Case
<p>District of Columbia</p> 	<p>March 26, 2015</p>	<p>Washington, DC</p>	<p>46</p>	<ul style="list-style-type: none"> • Presidential Inauguration: Current use of mobile data and the need for priority and additional capacity • Navy Yard Shooting: Dedicated data network could have allowed access to building plans, provided in-building coverage, and relieved network congestion • Earthquake: Need for additional capacity through a dedicated network during an emergency event
<p>Florida</p> 	<p>December 12, 2014</p>	<p>Tallahassee, Florida</p>	<p>60</p>	<ul style="list-style-type: none"> • SparrowNet: Current use of regional network that allows trauma centers to share data • Hazardous Materials Crash: Highlighted need for mobile data access to identify the hazardous material and how to handle it
<p>Georgia</p> 	<p>July 21, 2015</p>	<p>Atlanta, Georgia</p>	<p>62</p>	<ul style="list-style-type: none"> • Georgia State Patrol: Current use of mobile data; need for dedicated network to avoid congestion • Georgia Association of Fire Chiefs: Highlighted a need for data networks to improve interoperability and access to information onsite • Georgia Association of EMS: Need for data to improve situational awareness and provide data on locations, known hazards, patient load at hospitals, etc. • Georgia Association of Chiefs of Police: Current use of data for large events and public health missions. Day-to-day operations, too, are requiring more devices and more data
<p>Guam</p> 	<p>October 22, 2015</p>	<p>Tamuning, Guam</p>	<p>66</p>	<ul style="list-style-type: none"> • Current Use of Mobile Data: Use of data applications by EMS and fire and the need for a more robust and reliable network

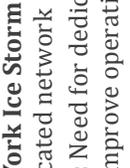
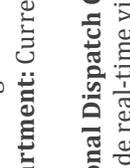
State	Meeting	Location	State Attendees	Shared Use Case
 <p>Hawaii</p>	August 11-12, 2015	Honolulu, Hawaii	90	<ul style="list-style-type: none"> • Hurricane Iselle: Need for data services, especially around restoring crucial port operations
 <p>Idaho</p>	May 21, 2015	Boise, Idaho	104	<ul style="list-style-type: none"> • Boise Fire Department: Current use of mobile data and future needs • Tribal Communications: Unique needs and considerations on tribal lands • Communications in Bonneville County: Current use of mobile data and future needs • Hannah Anderson Abduction and Rescue: Highlighted coverage gaps in remote areas
 <p>Illinois</p>	July 14, 2015	Springfield, Illinois	60	<ul style="list-style-type: none"> • Current Use of Mobile Data: Highlighted current public safety applications and the limitations of mobile data in Chicago and statewide for law enforcement, fire, EMS, emergency management, transportation and 9-1-1
 <p>Indiana</p>	August 26, 2015	Indianapolis, Indiana	40	<ul style="list-style-type: none"> • Indianapolis: Use of mobile data during large events • I-65 Bridge Closure: Potential of mobile data to improve situational awareness, especially around traffic

State	Meeting	Location	State Attendees	Shared Use Case
<p>Iowa</p> 	<p>November 18, 2014</p>	<p>Des Moines, Iowa</p>	<p>64</p>	<ul style="list-style-type: none"> • Iowa State Patrol on Trauma Hawk: Current use of a mobile data application that connects first responder teams with trauma teams in hospitals. Need for stronger data network to enable wider use • The Register's Annual Great Bicycle Ride Across Iowa (RAGBRAI): Capacity and coverage issues around six-day bike race that runs through small towns across the state • Parkersburg Tornado and Floods in Cedar Rapids: Need for data services, especially for search and rescue and recovery efforts
<p>Kansas</p> 	<p>June 17, 2015</p>	<p>Topeka, Kansas</p>	<p>60</p>	<ul style="list-style-type: none"> • Bear Creek Fire: Communications gaps in rural area and lack of situational awareness • Coverage on Tribal Lands: Coverage gaps and congestion around casino operations • Special Events in Kansas City: Network capacity issues around regional population swings for special events and daily commuters
<p>Kentucky</p> 	<p>January 28, 2015</p>	<p>Frankfort, Kentucky</p>	<p>45</p>	<ul style="list-style-type: none"> • Lexington Fire Department: Current use of mobile data and future needs • Louisville Large Events: Current use of mobile data and future needs • 2009 Ice Storm: Communications gaps during response
<p>Louisiana</p> 	<p>May 13, 2015</p>	<p>Baton Rouge, Louisiana</p>	<p>90</p>	<ul style="list-style-type: none"> • Calcasieu Parish: Using a hurricane response, highlighted the ways data could play a role in communications • Railroad Tanker Explosion: Need for data to improve access to information and information sharing • Mardi Gras/Carnival Activities in New Orleans: Use of data and limitations of commercial providers around capacity and congestion • Explosion at Camp Minden: Need for data services to improve situational awareness and improve interoperability among local, state, and Federal responders

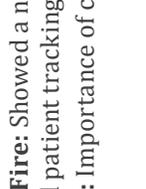
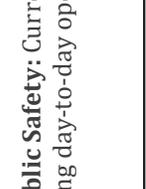
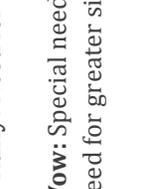
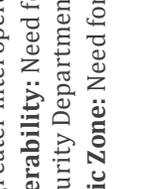
State	Meeting	Location	State Attendees	Shared Use Case
<p>Maine</p> 	<p>May 20, 2015</p>	<p>Augusta, Maine</p>	<p>23</p>	<ul style="list-style-type: none"> • 102-Car Pile Up on Interstate 95: Need for data to improve situational awareness and resource tracking • Fire Aboard the USS Miami: Need for data to improve situational awareness • Ski Lift Accident at Sugarloaf Mountain Resort: Coverage gaps
<p>Maryland</p> 	<p>January 29, 2014</p>	<p>Annapolis, Maryland</p>	<p>28</p>	<ul style="list-style-type: none"> • Preakness Horse Race: Limitations of current data services • Hopkins Hospital shooting: Limitations of current data networks
<p>Massachusetts</p> 	<p>March 12, 2015</p>	<p>Waltham, Massachusetts</p>	<p>45</p>	<ul style="list-style-type: none"> • Boston Marathon Bombing: Limitations of commercial broadband. Congestion on networks. Need for data to improve communications, coordination, and information sharing
<p>Michigan</p> 	<p>September 1, 2015</p>	<p>East Lansing, Michigan</p>	<p>109</p>	<ul style="list-style-type: none"> • Great Lakes Response and Enforcement: Need for data to enhance marine enforcement capabilities and officer safety • 2013 Ice Storm: Need for hardening and more robust network to improve communications, efficiency, and interoperability across utilities, public safety, and transportation • Blue Water Bridge: Potential for data networks to improve communications at a major international transportation corridor • Emergency Management and Response: Need for a public safety broadband network to enhance emergency management and response

State	Meeting	Location	State Attendees	Shared Use Case
<p>Minnesota</p> 	<p>September 24, 2014</p>	<p>St. Paul, Minnesota</p>	<p>49</p>	<ul style="list-style-type: none"> • Red River Flooding: Need for data network to improve information sharing and situational awareness • I-35 Bridge Collapse: Highlighted the need for a dedicated network and additional applications to improve situational awareness and response • Pagami Creek Wildfire: Limitations of commercial carriers • Ramsey County Fugitive Search: Need for data services to improve search efforts, especially for mapping and personnel tracking • St. Louis County: Current use of mobile data and future needs • Verso Paper Mill Fire: Need for data services during emergency event
<p>Missouri</p> 	<p>April 7, 2015</p>	<p>Jefferson City, Missouri</p>	<p>45</p>	<ul style="list-style-type: none"> • Sikeston Department of Public Safety: Desire to use data networks to link to and send footage from cameras already positioned throughout the county • Missouri State Fair: Need for additional coverage and capacity at large events • Missouri State Highway Patrol: Current use of deployables and need for a network with greater capacity, flexibility, and security
<p>Montana</p> 	<p>October 29, 2014</p>	<p>Helena, Montana</p>	<p>46</p>	<ul style="list-style-type: none"> • Rainbow Festival: Coverage gaps in remote location during large event
<p>Nebraska</p> 	<p>March 18-19, 2015</p>	<p>Kearney, Nebraska</p>	<p>108</p>	<ul style="list-style-type: none"> • Cruise Nite Kearney: Network congestion during antique car show • College World Series: Need for dedicated public safety network • Bailey Yard: Need for data services around rail yard safety and hazardous materials response • University of Nebraska Football Games: Need for dedicated public safety network during large stadium events

State	Meeting	Location	State Attendees	Shared Use Case
<p>Nevada</p> 	<p>January 7, 2015</p>	<p>Carson City, Nevada</p>	<p>60</p>	<ul style="list-style-type: none"> • Reno Championship Air Race Crash: Need for data network to improve communications in rural area • Burning Man Event: Need for data network to improve communications for large event • New Year Celebrations in Las Vegas: Need for data network to enhance communications and operations
<p>New Hampshire</p> 	<p>June 9, 2015</p>	<p>Concord, New Hampshire</p>	<p>51</p>	<ul style="list-style-type: none"> • Greenland Incident: Need for improved situational awareness after an officer was killed during a drug raid • Riots During Keene Pumpkin Festival: Need for dedicated data network to free public safety communications from network congestion • White Mountain National Forest: Potential of data network to aid in search and rescue and responses to injuries and accidents in remote area • New Hampshire Motor Speedway: Communications concerns during large events that impact traffic
<p>New Jersey</p> 	<p>September 3, 2015</p>	<p>Atlantic City, New Jersey</p>	<p>100</p>	<ul style="list-style-type: none"> • JerseyNet: Demonstration of New Jersey's early builder project during high capacity events, such as the Atlantic City Air Show and Miss America Pageant
<p>New Mexico</p> 	<p>June 10, 2015</p>	<p>Santa Fe, New Mexico</p>	<p>91</p>	<ul style="list-style-type: none"> • Ruidoso Little Bear Fire: Communications challenges and need for a hardened network • Albuquerque International Balloon Fiesta: Need for additional capacity during large events

State	Meeting	Location	State Attendees	Shared Use Case
<p>New York</p> 	<p>April 20, 2015</p>	<p>Albany, New York</p>	<p>44</p>	<ul style="list-style-type: none"> • New York State Police: Coverage gaps • City of Corning Fire: Need for data network to improve situational awareness • Northern New York Ice Storm: Highlighted need for hardened system and dedicated network • Music Festivals: Need for dedicated data network to relieve congestion and improve operations and situational awareness • New York EMS: Current use of mobile data and future needs • New York City: Use of data within large department and urban setting
<p>North Carolina</p> 	<p>April 23, 2015</p>	<p>Raleigh, North Carolina</p>	<p>90</p>	<ul style="list-style-type: none"> • Large Events in Charlotte: Need for greater capacity during large events. Desire for more robust data access and network
<p>North Dakota</p> 	<p>July 9, 2015</p>	<p>Bismarck, North Dakota</p>	<p>41</p>	<ul style="list-style-type: none"> • Coverage on the Border With Canada: Network and communication challenges along international border • Fargo Fire Department: Current use of mobile data and future needs • Red River Regional Dispatch Center: Need for more robust data network to provide real-time video of flood waters • North Dakota Highway Patrol: Need for additional capacity and dedicated network to support current and future data applications • North Dakota Department of Emergency Services: Potential of data network to improve situation awareness and response efforts

State	Meeting	Location	State Attendees	Shared Use Case
Ohio 	June 11, 2015	Columbus, Ohio	60	<ul style="list-style-type: none"> • Akron Ohio Ebola Incident: Use of data during incident and potential for improved response through further data use • Utility Telecommunications Systems: Opportunities for partnership with utility providers • Rural Law Enforcement: Current use of mobile data and need for increased coverage
Oklahoma 	October 28, 2015	Oklahoma City, Oklahoma	212	<ul style="list-style-type: none"> • City of Moore Tornado: Limits of commercial broadband services • Chickasaw Nation: Current use of mobile data on tribal lands and vision for future use • Wildland Fires: Need for a dedicated public safety broadband network to enhance and support the forestry service's capabilities • Cleveland County Law Enforcement: Current use of mobile data and need for priority and additional coverage
Oregon 	October 8, 2014	Salem, Oregon	69	<ul style="list-style-type: none"> • Tualatin Valley Fire and Rescue: Vision for mobile data use through FirstNet • Clackamas Shopping Mall Shooting: Use of data and social media during emergency incident • Jackson County Tactical Operations Center: Current use of data and vision for future use
Pennsylvania 	August 4, 2015	Harrisburg, Pennsylvania	60	<ul style="list-style-type: none"> • 2007 Blizzard: Need for public safety grade voice and data communications network • Allentown Gas Explosion: Highlighted the inability to share data in mutual aid situation • Pennsylvania State Police: Use and need for mobile data during planned and emergency events
Puerto Rico 	November 13, 2014	San Juan, Puerto Rico	120	<ul style="list-style-type: none"> • Vision and Current Use: Highlighted the current data use and coverage on the island and discussed needs and vision for a public safety broadband network

State	Meeting	Location	State Attendees	Shared Use Case
Rhode Island 	May 6, 2015	Warwick, Rhode Island	25	<ul style="list-style-type: none"> • Station Night Club Fire: Showed a need for improved interoperability and patient tracking methods • Marine Task Force: Importance of coverage on waterways
South Carolina 	April 30, 2015	Columbia, South Carolina	44	<ul style="list-style-type: none"> • State and Local Public Safety: Current use of mobile data and network needs during day-to-day operations and emergency events
South Dakota 	April 1, 2015	Ft. Pierre, South Dakota	56	<ul style="list-style-type: none"> • Sturgis Motorcycle Rally: Need for data services during large event • Crow Creek Pow-Wow: Special needs of event on tribal lands • Missing Woman: Need for greater situational awareness during search operation
Tennessee 	July 23, 2015	Nashville, Tennessee	36	<ul style="list-style-type: none"> • State Parks and Wilderness Rescue: Coverage gaps in remote areas and need for greater interoperability across agencies • Oak Ridge Interoperability: Need for coordination with Federal partners at high security Department of Energy facilities • New Madrid Seismic Zone: Need for data network in event of large earthquake • Cave Rescue: Need for data applications and coverage in remote areas

State	Meeting	Location	State Attendees	Shared Use Case
<p>Texas</p> 	<p>February 11-12, 2015</p>	<p>Austin, Texas</p>	<p>137</p>	<ul style="list-style-type: none"> • Bastrop County Complex Wildfire: Use of data during event and vision for public safety broadband network • Explosion at West Fertilizer Company: Need for data network to enhance situational awareness and improve first responders safety • Harris County: Use of data network in day-to-day operations • Operation Strong Safety: Need for mobile data network to improve interoperability in around the clock multi-agency operations • Brazos County LTE in Action: Need for data network to enhance data application use (e.g., live stream body camera video, interactive video)
<p>Utah</p> 	<p>November 6, 2014</p>	<p>Salt Lake City, Utah</p>	<p>36</p>	<ul style="list-style-type: none"> • 2012 Windstorm: Need for hardened and dedicated data network • Truck Explosion: Need for mobile data network to improve interoperability and situational awareness
<p>Vermont</p> 	<p>June 16, 2015</p>	<p>Burlington, Vermont</p>	<p>76</p>	<ul style="list-style-type: none"> • Vermont Department of Health: Use of data-driven applications in day-to-day activities and disaster-specific responses • Vermont State Police: Use of data applications in search and rescue operations and need for improved coverage • Hartford Fire Department: Use of mobile data and need for a strong network to support applications • Hurricane Irene: Need for hardened data network and the role of data in recovery efforts
<p>Virginia</p> 	<p>September 30, 2015</p>	<p>Richmond, Virginia</p>	<p>107</p>	<ul style="list-style-type: none"> • Henrico County Division of Fire: Current use of data in daily operations and incident response • Virginia Communications Cache: Use of data in asset tracking • Virginia State Police: Need for data during emergency and planned events • 2014 Oil Train Derailment: Role of data in boosting situational awareness and information sharing

State	Meeting	Location	State Attendees	Shared Use Case
Virgin Islands 	May 19, 2015	St. Thomas, U.S. Virgin Islands	52	<ul style="list-style-type: none"> • Hurricane Hugo: Communications during devastating storm • 2011 Ferry Accident: Importance of communications to incident response • Royal Caribbean Cruise Ship Outbreak: Need for interoperability among territory and Federal agencies • Bovoni Gas Works Explosion: Communications issues and need for data services to support situational awareness
Washington 	October 16, 2014	Lacey, Washington	107	<ul style="list-style-type: none"> • Carlton Complex Fire: Need for hardened network • Oso Mudslide: Need for hardening and additional data services to improve situational awareness • 2014 Seahawks Super Bowl Parade: Congestion on commercial networks
West Virginia 	October 16, 2014	Charleston, West Virginia	65	<ul style="list-style-type: none"> • Yeager Airport Landslide: Highlighted the need for law enforcement to be able to use data applications to contact citizens about evacuations • 2012 Severe Storms (Derecho): Need for hardened assets and mobile data to improve situational awareness • Gas Pipeline Emergency: Use of mobile data and social media to share updates and key information • Boy Scout Jamboree: Use of mobile data during a large planned event • Greenbrier Classic: Network congestion during large planned events
Wisconsin 	June 18, 2015	Madison, Wisconsin	61	<ul style="list-style-type: none"> • Sikh Temple Shooting: Need for data network to improve interoperability and situational awareness • Communications in Marathon County: Current use of data and need for more robust services • Special Events at Alpine Valley: Congestion and capacity issues during large events

APPENDIX C: SLIGP Federal Funds Awarded by Recipient

Recipient	Federal Funds Awarded	Recipient	Federal Funds Awarded
Alabama	\$2,044,932	Montana	\$1,816,415
Alaska	\$2,005,869	Nebraska	\$1,510,750
American Samoa	\$502,930	Nevada	\$1,972,666
Arizona	\$2,911,147	New Hampshire	\$879,887
Arkansas	\$1,595,711	New Jersey	\$2,711,928
California	\$5,676,786	New Mexico	\$1,899,423
Colorado	\$2,500,989	New York	\$4,867,212
Connecticut	\$1,406,257	North Carolina	\$3,203,088
Delaware	\$724,613	North Dakota	\$1,167,975
District of Columbia	\$636,722	Ohio	\$3,638,690
Florida	\$4,916,040	Oklahoma	\$1,924,814
Georgia	\$3,306,657	Oregon	\$2,148,448
Guam	\$529,300	Pennsylvania	\$3,955,098
Hawaii	\$872,075	Puerto Rico	\$1,432,624
Idaho	\$1,490,242	Rhode Island	\$755,863
Illinois	\$4,067,403	South Carolina	\$1,853,522
Indiana	\$2,354,504	South Dakota	\$1,238,103
Iowa	\$1,656,258	Tennessee	\$2,361,340
Kansas	\$1,800,790	Texas	\$5,859,404
Kentucky	\$1,852,548	U.S. Virgin Islands	\$515,628
Louisiana	\$1,928,721	Utah	\$1,782,235
Maine	\$1,045,904	Vermont	\$710,941
Maryland	\$1,985,361	Virginia	\$2,756,850
Massachusetts	\$2,162,120	Washington	\$2,642,591
Michigan	\$3,347,017	West Virginia	\$1,121,498
Minnesota	\$2,389,660	Wisconsin	\$2,294,933
Missouri	\$2,477,551	Wyoming	\$1,350,593
		Total Awarded	\$116,560,626

APPENDIX D: Organizational Structure and Culture of Excellence

ORGANIZATION AND CULTURE OF EXCELLENCE

FirstNet continues to reach critical milestones due in large part to its dedicated team members. FirstNet strives to attract individuals who share FirstNet's commitment to public safety and understand the importance of deploying the NPSBN. As a result of team member efforts, FirstNet set in motion operational practices and structures critical to propelling the network forward. FirstNet's culture of excellence is derived from the training many FirstNet employees and Board members received as members of the first responder community.

Moreover, FirstNet's team recognizes that its efforts may serve as a benchmark for future public-private partnerships. As a result, FirstNet's culture encourages critical thinking about the broader implications of FirstNet's actions on future projects.

FIRSTNET BOARD

Under Chairwoman Susan Swenson's leadership, FirstNet's Board continues to include public safety and communications industry experts with diverse experiences. In 2015, Neil Cox and Edward Horowitz were appointed to the Board. Mr. Cox has decades of experience with telecommunications, Information Technology, and security monitoring services. Mr. Horowitz has extensive leadership experience in the telecommunications, media, and financial services sectors. Separately, retired Fire Chief Jeff Johnson was named Vice Chair, and Chief Kevin McGinnis and Mayor Annise Parker were reappointed to the Board.

Current board members include:

Susan Swenson (Chairwoman)
Telecommunications/technology executive
Term expires: August 2016

Jeffrey Johnson (Vice Chairman)
Fire Chief, (retired); CEO Western Fire Chiefs Association
Former Chair, State Interoperability Council, State of Oregon
Term expires: August 2016

Jeh Johnson - Secretary of the United States Department of Homeland Security
Term: Ex-Officio
(Designee - Suzanne Spaulding)

Barry Boniface - Private equity investor and telecommunications executive
Term expires: August 2016

Loretta E. Lynch - Attorney General of the United States

Term: Ex-Officio

(Designee – Ron Davis)

Chris Burbank - Chief of Police, Salt Lake City, Utah (retired)

Term expires: August 2017

Kevin McGinnis - Chief/CEO, North East Mobile Health Services

Term Expires: August 2018

Neil E. Cox - Telecommunications/technology executive

Term Expires: August 2018

Annise D. Parker - Mayor, City of Houston, Texas

Term Expires: August 2018

Shaun Donovan - Director of the Office of Management and Budget

Term: Ex-Officio

(Designee – David Mader)

Ed Reynolds - Telecommunications executive (retired)

Term expires: August 2017

James H. Douglas - Former Governor, Vermont

Term Expires: August 2017

Richard W. Stanek - Sheriff, Hennepin County, Minnesota

Term expires: August 2017

Edward Horowitz - Venture capital/technology executive

Term Expires: August 2018

Teri Takai - Government information technology expert; former CIO,
States of Michigan and California

Term Expires: August 2016

APPENDIX E: EARLY BUILDER PROJECT DETAILS

The five early builder projects continue to make progress and provide key lessons that support and influence the First Responder Network Authority's (FirstNet's) efforts towards deployment of the Nationwide Public Safety Broadband Network (NPSBN). This section summarizes progress made in each project both towards their Key Learning Conditions (KLCs) as defined in their respective Spectrum Management Lease Agreement (SMLAs) and select Informal Key Lessons (IKLs) that have been observed by FirstNet and also used to influence our operational vision and progress toward a nationwide deployment. These IKLs continue to directly benefit our consultation and outreach teams, our RFP development teams, as well as other FirstNet offices. Although many IKLs have been observed, many are considered confidential due to their influence on the RFP and are not highlighted in this report. The following sections summarize each project.

CALIFORNIA LA-RICS

Construction of the project was largely completed by September 30, 2015, and is currently being tested and optimized with a goal of operationalizing the project by January 2016. The BTOP grant period ended on September 30, 2015, and the LA-RICS project team had completed 62 LTE sites with one site still under construction. In addition, seven Cell on Wheels (COW) sites have been fully deployed to date, and the other six COWs are under construction. NTIA approved an administrative extension of the Broadband Technology Opportunity Program (BTOP) grant performance period for LA-RICS, allowing them to complete construction on the current project plan by December 31, 2015. LA-RICS's primary focus during the three-month extension period was to complete remaining construction, complete backhaul and permanent power connections, and test, optimize, and turn-up the project to full operational status. Once the project goes operational, FirstNet will be able to begin testing the key elements of the project contemplated in its SMLA with LA-RICS. In fiscal year (FY) 2016, FirstNet expects the project to be fully operational and to add a significant number of public safety users from LA-RICS member agencies. Additionally, FirstNet anticipates significant progress toward satisfying SMLA-defined KLCs, which will serve to inform FirstNet's operational and procedural planning.

Formal Key Learning Conditions	Highlights of Progress Made
1. Establishing partnerships with utilities and secondary responders	Potential secondary use partnership identified.
2. Quality of service, and priority and preemption (QPP) techniques to ensure the network properly serves public safety.	Limited QPP functionality in LA-RICS network; FirstNet working with LA-RICS to identify capability to test relevant QPP methods.
3. Evaluation of network monitoring tools used to alert operators of congestion.	Alternate network testing areas being defined by FirstNet and LA-RICS

Select Informal Key Lessons
1. Complex governmental agency approvals for existing public safety assets can slow network deployment.
2. Direct outreach to public safety user communities accelerates adoption rates of LTE technology.
3. Public Safety users are anticipating significant uplink and downlink video capability.
4. Transition for public safety agencies to LTE network management structure is a challenge.
5. Complex governmental agency approvals for existing public safety assets can slow network deployment.

NEW MEXICO

New Mexico completed the build-out of its project, and is currently working to operationalize and optimize project service. New Mexico completed the build-out of sites adjacent to the Mexican border, and its efforts to address cross-border interference challenges will be a key learning opportunity for FirstNet. The state is working with the Department of Homeland Security (DHS), the Department of Interior (DOI), and the U.S. Army at the White Sands Missile Range to establish necessary agreements for these groups to utilize the Band 14 network. In addition, the project successfully completed integration of their Radio Access Network (RAN) to a remote Core located in Adams County, Colorado.

Formal Key Learning Conditions	Highlights of Progress Made
1. Build-out of sites adjacent to the Mexican border to understand the impacts of shared international spectrum use.	Network build-out along US-Mexico border complete. Ongoing evaluation and testing in process of implementation.
2. Federal and local partner use of their network.	User outreach continues and various agencies in process of procuring devices.
3. Integration of the RAN to a remote core located outside of the state.	RAN to remote core (Adams County, CO) integration complete. Ongoing performance evaluation in progress.

Select Informal Key Lessons
1. Disparate rules prevent pricing agreements for smartphones and other products to be used across Federal, State and local agencies
2. Security policies and requirements vary widely across Federal, state and local agencies.
3. Remote operations and management by state and local personnel complicated by interstate travel limitations.
4. Federal grant rules on asset ownership can complicate use of state and local assets for use in the network.

NEW JERSEY

As documented in the FY 2014 Annual Report to Congress, deployable assets will likely be a key element of the FirstNet network, and FirstNet continues to leverage the collaborative work with the State of New Jersey and NTIA to support planning and implementation of these deployable capabilities. In FY 2015, substantial progress was made by the project team, highlighted by successful procurement, design, engineering, and deployment of multiple classes of deployable assets. The New Jersey project team successfully closed out their BTOP grant requirements with NTIA by the September 30, 2015, deadline. The JerseyNet deployable assets have already been successfully deployed to support many in-state communications initiatives; of special note, the project successfully supported the September 2015 Papal visit to Philadelphia using their System on Wheels (SOW) trailers and van and Sports Utility Vehicle (SUV) based Vehicular Network Systems (VNS). In FY 2016, we expect JerseyNet to attract a substantial population of public safety users and further exercise the KLCs defined in their SMLA.

Formal Key Learning Conditions	Highlights of Progress Made
1. Demonstration and documentation of the use and capabilities of rapidly deployable assets	Project defined unique specifications for deployable assets, successfully procured, and demonstrated use of these assets.
2. Conducting emergency management exercises and training activities with these deployable assets	Successful live exercise with FEMA completed along with both end-user and internal operations and maintenance training.
3. Documenting best practice Network Operations Center (NOC) notification approaches, including trouble ticketing, prioritization, reporting, and ticket close-out.	Processes defined and currently under development and implementation with project support staff and vendor partners.

Select Informal Key Lessons
1. Consistent outreach to agencies is core to understanding and acceptance.
2. Application integration requires agency -specific focus.
3. Device and application- based training for First Responders is essential.
4. Automatic pan/tilt brackets on LTE RAN antenna benefit service deployment and restoral.
5. Use of multiple sources for transport will require strong Service Level Agreements (SLAs) and integration.

TEXAS (HARRIS COUNTY)

Funded with a 2011 DHS Port Security grant, nineteen Band 14 LTE sites, provide LTE coverage over a large area of Harris and Brazos Counties and are currently supporting some police and fire capabilities. The network has over 85 activated devices, with an average of over 60 devices in active daily use. At the end of FY 2015, Harris County was evaluating proposals from equipment vendors in preparation for their network expansion from the funds provided by the County General Fund. Additionally, the project team finished work to configure automatic logging of performance statistics from their LTE core and is now providing daily data feeds to FirstNet for our analysis that will further inform our acquisition planning and evaluation. FirstNet is excited to provide technical support to a variety of scheduled events and testing during FY 2016, with execution planned on data analytics, network usage during special events.

Formal Key Learning Conditions	Highlights of Progress Made
1. Development of operational training materials	Training will leverage significant operational lessons learned and documentation from the March 2016 Houston Rodeo.
2. Identifying and demonstrating operational advantages the PSBN provides public safety during special events when commercial networks sometimes reach capacity limits	Harris County is leveraging the three-week Houston Rodeo event to implement various devices, applications and use cases for evaluation.
3. Data analytics using user and network usage statistics	Various network and user performance dashboards created and used for ongoing network management.
4. Operational planning necessary to transition users off of a local core network to the nationwide network	Initial planning underway but contingent on the outcome of the FirstNet RFP and partnership(s).
5. Evaluating the technical performance and operational benefit of extended LTE coverage for rural areas	Texas A&M University is supporting the planning and testing of extended range capabilities.

Select Informal Key Lessons
1. Ability to remotely reconfigure devices and user profiles is critical for agency device management
2. Interference between Land Mobile Radios (LMR) and LTE devices possible without proper engineering and installation.
3. Network and device performance management requires several detailed outputs from networks and billing systems.
4. Interference from international shipping in the public safety LTE spectrum requires unique interference monitoring and management.

COLORADO (ADAMS COUNTY)

The Band 14 LTE network covering Adams County, Colorado (AdCom) was BTOP-funded and has 16 of 20 LTE sites on air. The project team is currently working to identify and add public safety users to the project. As of time of this Report’s publication, there are currently 164 activated devices on the network, with over 25 devices in active daily use. Additionally, the project team is working to complete three Denver International Airport sites and finalizing project configuration. The FirstNet CTO team and the PSCR program continue to leverage their close proximity to the AdCom project to facilitate real-world testing and hands-on experience with new devices and services.

Formal Key Learning Conditions	Informal Key Learnings
<p>1. Real-World Test System includes the use case of a hosted and redundant core node for the State of New Mexico. Once this redundant core is fully operational, KLCs will examine the complexity of remotely hosted deployments and intersystem operations.</p>	<p>Analysis performed on Adams County public safety events spanning a year to determine adequate coverage of incidents. Results based on coverage prediction showed a 99% coverage of county incidents.</p>
<p>2. Device testing includes the processes needed to adequately test and certify devices before adding to a public safety network. An additional component of rolling out devices is adequate user training and understanding what is recommended from a user standpoint before deploying devices to users.</p>	<p>Requests made to device vendors for depth and results of device certifications.</p>
<p>3. Live LTE Operations includes the necessary operational processes around managing and maintaining a public safety broadband network. This includes ensuring effective visibility of end user performances as well as effective management of user service issues.</p>	<p>Reporting defined to capture daily network usage between agencies and monitoring of key LTE performance indicators for managing performance.</p>

Select Informal Key Lessons
<p>1. Multiple Operational Support Systems (OSS) and platforms increase integration efforts for effective and comprehensive system monitoring.</p>
<p>2. Understanding the inherent security features of LTE technology is key in working through agencies concerns of securing traffic.</p>
<p>3. Public Safety network maintenance times can differ from commercial standards.</p>
<p>4. Agency staffing for network architecture and integration support is key in keeping project schedules.</p>

APPENDIX F: GLOSSARY OF TERMS

Acronym	Term
3GPP	3rd Generation Partnership Project
Act	Middle Class Tax Relief and Job Creation Act of 2012 (P.L. 112-96)
AdCom	Adams County
ATIS	Alliance for Telecommunications Industry Solutions
AWS	Advanced Wireless Services
BTOP	Broadband Technology Opportunities Program
CEO	Chief Executive Officer
CLA	Covered Leasing Agreement
COW	Cell on Wheels
CTO	Chief Technology Officer
DHS	Department of Homeland Security
DIV&V	Device Independent Verification and Validation
DOC	Department of Commerce
DOI	Department of Interior
EBWG	Early Builder Working Group
ECPC	Emergency Communications Preparedness Center
EMS	Emergency Medical Services
FBO	Federal Business Opportunities
FCC	Federal Communications Commission
FirstNet	First Responder Network Authority
FY 2014	fiscal year 2014 (October 1, 2013 – September 30, 2014)
FY 2015	fiscal year 2015 (October 1, 2014 – September 30, 2015)
GAO	Government Accountability Office
GIS	geographic information system
GPS	geographic positioning system
IACP	International Association of Chiefs of Police
ICAM	Identity, Credential, and Access Management
IKL	Informal Key Lesson
ISE	Information Sharing Environment
IT	information technology
KLC	Key Learning Condition
LA-RICS	Los Angeles Regional Interoperable Communications System
LMR	Land Mobile Radio
LTE	Long Term Evolution

Acronym	Term
M2M	machine to machine
MHz	Megahertz
MCV	Mission-Critical Voice
NG 9-1-1	Next Generation 9-1-1
NIST	National Institute of Standards and Technology
NOC	Network Operations Center
NPSBN	Nationwide Public Safety Broadband Network
NTIA	National Telecommunications and Information Administration
PCSTCRB	PCS Type Certification Review Board
PEIS	Programmatic Environmental Impact Statement
PMO	Program Management Office
POC	point of contact
PPR	Performance Progress Report
PSAC	Public Safety Advisory Committee
PSCR	Public Safety Communications Research
PSG	public safety grade
QASP	Quality Assurance Surveillance Plan
QPP	Quality of Service, Priority and Preemption
RAN	Radio Access Network
RFI	Request for Information
RFP	Request for Proposal
SAC	Special Award Conditions
SCIP	Statewide Communication Interoperability Plan
SLA	Service Level Agreement
SLIGP	State and Local Implementation Grant Program
SMLA	spectrum management lease agreement
SOO	Statement of Objectives
SOW	System on Wheels
SPOC	single point of contact
SUV	Sports Utility Vehicle
TWG	Tribal Working Group
VNS	vehicular network systems

ADDITIONAL INFORMATION

Please visit our website for additional resources,
Board presentations and vendor communication contact forms at
www.firstnet.gov

For further information or questions,
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