



PERFORMANCE AUDIT REPORT

**Office of Information Technology Services:
Reviewing the State's Options Related to the
FirstNet Public Safety Network**

**A Report to the Legislative Post Audit Committee
By the Legislative Division of Post Audit
State of Kansas
April 2017**

Legislative Division of Post Audit

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April 28, 2017

To: Members, Legislative Post Audit Committee

This report contains the findings, conclusions, and recommendations from our completed performance audit, *Office of Information Technology Services: Reviewing the State's Options Related to the FirstNet Public Safety Network*. The audit was requested by Senator Julia Lynn. The audit team included Brad Hoff, Daniel McCarville, and Josh Rueschhoff. Justin Stowe was the audit manager.

We would be happy to discuss the findings and conclusions presented in this report with any legislative committees, individual legislators, or other state officials.

Sincerely,

A handwritten signature in black ink, appearing to read 'S. Frank'. The signature is fluid and cursive, with a large, stylized 'S' and 'F'.

Scott Frank
Legislative Post Auditor

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Office of Information Technology Services: Reviewing the State's Options Related to the FirstNet Public Safety Network

Background Information

The First Responder Network Authority (FirstNet Authority) was created by Congress as part of the Middle Class Tax Relief and Job Creation Act of 2012. The law directs the FirstNet Authority to build, operate, and maintain a high-speed, nationwide wireless broadband network dedicated to public safety. Congress committed as much as \$7 billion in funding for development of the network. To help contain costs, the system is supposed to use existing telecommunications infrastructure and assets when possible. Additionally, the FirstNet Authority is required to generate sufficient funds to operate, maintain, and improve the network each year through user fees.

FirstNet Authority officials have consulted with public safety and technology officials in each state and are in the process of developing a deployment plan for the nationwide network. This plan will include details on how the FirstNet Authority will build, operate, and maintain the radio access networks that will be located in each state, and how those state networks will connect to the nationwide network. As of April 2017, states have not received their respective plans from the FirstNet Authority, and it is anticipated those plans will not be available until late summer or fall 2017.

Upon receiving the Kansas plan from the FirstNet Authority, the Governor will have 90 days to choose whether to “opt in” and accept the federal plan, or to “opt out” and build the radio access network at the state’s expense. Regardless of which decision is made, the law requires a radio access network to be built in each state. If the Governor decides to opt out, the state will have another 180 days to develop and complete an alternative plan to build, operate, and maintain its radio access network for Kansas. If the Governor does not make a choice or chooses to opt in, the FirstNet Authority will implement its plan for Kansas.

Legislators have expressed interest in knowing whether Kansas has any viable options for building its own radio access network should the Governor decide to opt out.

Objectives, Scope and Methodology

On April 26, 2016, the Legislative Post Audit Committee approved a request from Senator Julia Lynn for an audit examining the viable options the state has if it opts out of the federal FirstNet program.

This performance audit answers the following question:

1. What viable options does the state have to build an emergency telecommunication system if it opts out of the federal FirstNet program?

To answer this question, we interviewed various stakeholders in Kansas and other states, and reviewed numerous reports and documents including information on FirstNet Authority’s website. We interviewed Kansas officials from the Office of Information Technology Services, Adjutant General’s Department, and the Department of Transportation. Those interviews helped us determine what work had already been completed related to making a decision on whether to opt in or opt out, how the new FirstNet network relates to the state’s previously existing radio network, what state officials would need to consider before making a decision, and to identify the estimated costs of constructing a statewide radio access network that could integrate with FirstNet.

We also interviewed FirstNet Authority officials to understand the state’s responsibilities if it chooses to opt out. In addition, we reviewed the federal law, various technology journal articles, and reports from the U.S. Governmental Accountability Office and the U.S. Congressional Research Service to determine the advantages and disadvantages of opting out, as well as other considerations Kansas officials need to understand before making a decision. Finally, we interviewed officials in five other states (Colorado, Illinois, Mississippi, New Hampshire, and Texas) to identify what factors they will consider in deciding whether to opt in or opt out. We selected these states because they were all at different stages in deciding whether to opt in or opt out of FirstNet.

This audit did not include a review of internal controls because such a review was not relevant to our audit objectives.

***Compliance with
Generally Accepted
Government Auditing
Standards***

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Overview of the FirstNet Public Safety Network

Federal Legislation Established the FirstNet Authority to Develop and Manage a Nationwide Public Safety Broadband Network

The Middle Class Tax Relief and Job Creation Act of 2012 created a federal agency to build a nationwide public safety broadband network. The federal law established the First Responder Network Authority (FirstNet Authority), and made it responsible for ensuring the building, deployment, and operation of a new, nationwide public safety broadband network (FirstNet network). The FirstNet Authority is an independent authority within the U.S. Department of Commerce’s National Telecommunications and Information Administration. A 15-member board governs the FirstNet Authority. Board members include the U.S. Attorney General, Secretary of Homeland Security, and the Director of the Office of Management and Budget. Other members are representatives from the public safety community and telecommunications industry.

The nationwide public safety network will be a single, integrated network dedicated for public safety communications. This type of network was one of many recommendations made by the 9/11 Commission—a taskforce that was created to understand how the 9/11 terrorist attack happened and how similar events might be avoided in the future. The FirstNet network will allow public safety officials across different jurisdictions to send voice messages, text messages, images, video, and location information across the network in real time. For example, firefighters will be able to download the blueprint of a building during a fire, or police officers will be able to quickly access photos and real-time video feeds.

According to FirstNet Authority officials, first responders nationwide use more than 10,000 separate, incompatible, and oftentimes proprietary networks which make communications across different agencies difficult. FirstNet Authority officials point to the 9/11 terrorist attack in 2001, Hurricane Katrina in 2005, and Hurricane Sandy in 2012 as major events where public safety personnel experienced problems communicating across agencies.

The FirstNet network will have a dedicated set of radio frequencies to ensure uninterrupted communications for public safety agencies. The radio spectrum is the range of frequencies that are used by television and radio broadcasters, as well as wireless carriers and others to transmit data. To prevent interference between different users, these radio frequencies are regulated by federal law and licensed through the Federal Communications Commission (FCC). Different types of users are

assigned different ranges of frequencies. For example, television broadcasts on channels 2 through 13 are assigned a range of frequencies between 54 megahertz (MHz) and 216 MHz. Similarly, FM radio stations are assigned their own range of frequencies from 88 MHz to 108 MHz.

The FirstNet network will occupy 20 MHz of radio spectrum along the 700 MHz band. This includes 10 MHz of spectrum that were already assigned to public safety agencies and 10 MHz that previously had been held in reserve. The 20 MHz of dedicated radio spectrum are designed to help ensure uninterrupted communications between public safety personnel during an emergency.

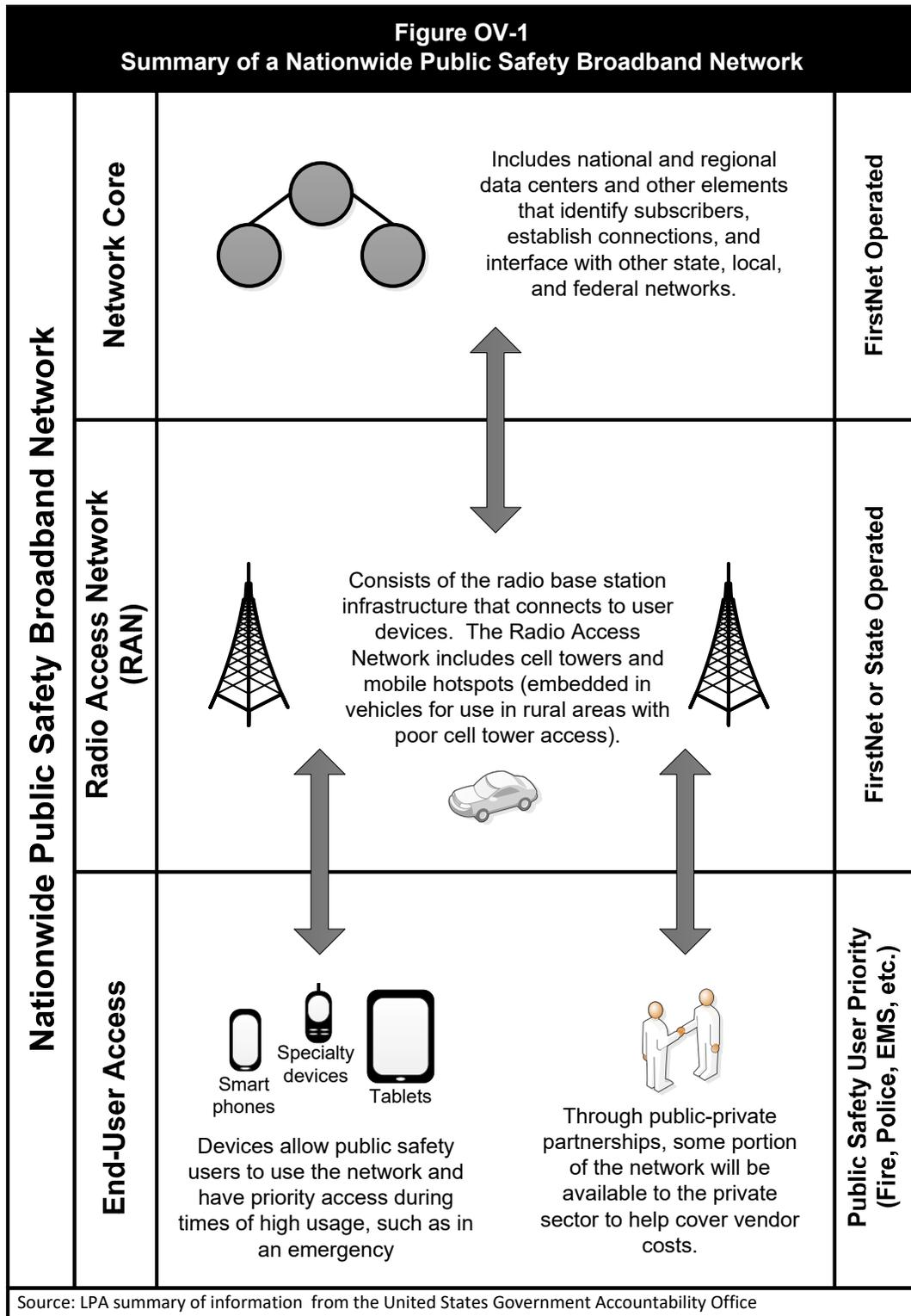
State and local public safety agencies will not be required to use the FirstNet network. The construction of a radio access network in each state is required. However, using the FirstNet network is optional. Once the FirstNet network has been built, FirstNet and its private vendor will act as a service provider similar to commercial cell phone carriers. Each public safety agency will choose whether to continue using their current carriers or to use the FirstNet network instead. FirstNet Authority officials told us they are confident the FirstNet network will be dependable and affordable, making it an attractive option for local public safety agencies. According to Kansas officials, AT&T officials told them the user fees will be below market value and competitive compared to what public safety agencies currently pay for cellular access. Public safety agencies that choose to use the FirstNet network will pay user fees in much the same way that they currently pay for provider services.

A Nationwide Core Network and Individual State Radio Access Networks are the Key Components of the FirstNet Public Safety Broadband Network

The FirstNet Authority is responsible for building and managing a core network that ensures users nationwide will have a single, integrated telecommunications platform. The primary functions of the core network will be to process information, store and maintain data, and keep data secure. **Figure OV-1** on page 5 shows the core network may include national and regional data centers that will communicate with federal, state, and local networks.

Each state will have a radio access network to connect devices such as smartphones and laptops to the core network. Each state is responsible for deciding who builds the radio access network in each state. As **Figure OV-1** shows, radio access networks include cell towers and mobile hotspots. According to FirstNet Authority documents we reviewed, the radio access

networks are critical to ensure optimal coverage, capacity, and performance for a nationwide network.



The FirstNet Radio Access Network Would Supplement Kansas' Existing Land Mobile Radio Network

Kansas public safety agencies currently use a land mobile radio network to communicate during emergency events. In 1992, the Kansas Department of Transportation (KDOT) was authorized to create a statewide conventional 800 MHz radio system. Both KDOT and the Kansas Highway Patrol initially used the system, which was expanded to include statewide emergency medical services in 1996. In total, 76 tower sites were placed throughout the state to support the land mobile radio network. In 2005, KDOT officials began to upgrade the radio system so that it could use additional frequencies and allow access for more public safety agencies. These upgrades, which were paid for with federal grant money, were completed in 2012 and the resulting system was named the Kansas State Interoperability Communication System.

The FirstNet radio access network will supplement the state's existing land mobile radio network. According to FirstNet documents and KDOT officials we talked with, states will continue to need and use their existing land mobile radio networks even after the FirstNet network is completed. That is because, at least initially, the FirstNet network is not designed to support mission-critical voice communications. Instead, the FirstNet network will supplement radio broadcasts by allowing public safety personnel to transmit data, video, and other high-speed features such as GIS location information through one-on-one communications on wireless devices such as smartphones and tablets.

The state's existing land mobile network cannot simply be upgraded to provide the radio access network required by FirstNet. That is because the state's land mobile radio network uses a fundamentally different technology than is required for the FirstNet network. The state's land mobile radio network is a system used primarily for voice communications, while the FirstNet network will be a broadband system primarily used to transmit data and video. KDOT officials told us the technology differences will require the use of both systems, even after the FirstNet network is completed.

The Governor in Each State Will Determine Who Builds the State's Radio Access Network

The FirstNet Authority and AT&T will provide plans to each state's governor to show how they would deploy that state's radio access network. In March 2017, the FirstNet Authority awarded AT&T the federal contract to build the nationwide network. The FirstNet Authority and AT&T will have up to 180 days from this award date to prepare and finalize a state plan for each state. Kansas officials told us they anticipate receiving this finalized plan by the end of fiscal year 2017.

Upon receiving FirstNet’s plan for Kansas, the Governor will have up to 90 days to decide whether to opt in or opt out. To opt out, the Governor must give formal notice of the state’s decision to the FirstNet Authority, the National Telecommunications and Information Administration, and the Federal Communications Commission. No action is required to opt in. If the Governor does not make a decision within the 90 days, Kansas will opt in by default.

- **States that opt in will defer responsibility for building, operating, and maintaining the state’s radio access network to the FirstNet Authority.** The FirstNet Authority will be responsible for securing funds to build, operate, and upgrade the state’s network. According to FirstNet officials, states that opt in will not incur any costs to build or maintain the radio access network.
- **States that opt out will assume responsibility for building, operating, and maintaining the state’s radio access network.** States that opt out will take on significant responsibilities to develop an alternative plan and secure the financing required to build and maintain their radio access network. FirstNet officials told us that states that opt out assume the responsibility and associated costs and risks with the radio access network. In addition, Kansas officials told us and technology journals have reported opt out states will be responsible for all future network upgrades for the next 25 years.

Several Kansas agencies are stakeholders in the FirstNet network, regardless of whether the Governor chooses to opt in or opt out. These agencies include:

- The Office of Information Technology Services’ Chief Information and Technology Officer has been designated by the Governor to serve as the single point of contact for the FirstNet Authority.
- The Adjutant General’s Department maintains the statewide communications interoperability plan (a plan to ensure various public safety agencies can communicate with each other) and provides training over current state radio and communication systems. The department has two grant-funded public safety broadband outreach coordinators as well as the state interoperability coordinator, who has facilitated the majority of the FirstNet Authority’s efforts in the state.
- The Kansas Department of Transportation (KDOT) has helped develop previous estimates of how much it might cost to develop a radio access network for FirstNet because of its expertise in the state’s existing land mobile radio network.

In addition, several other state and local entities have an interest in a nationwide, public safety system because they either develop policies and procedures related to emergency communications throughout Kansas or are potential users of the new system. These

include the Statewide Interoperability Executive Committee, the 911 Coordinating Council, the Kansas Highway Patrol, and other public safety agencies such as police and fire departments.

Cost Estimates to Build and Operate the Nationwide Network Vary Substantially Depending on Analysts' Assumptions

The 2012 Act that established the FirstNet Authority appropriated about \$7 billion in start-up funds through the sale of some of the radio frequency spectrum to help build the FirstNet network. Federal law requires the FirstNet network to be financially independent from Congress beyond this initial \$7 billion appropriation.

The estimated cost to build and operate the nationwide FirstNet network for its first 10 years vary widely—from \$12 billion to \$47 billion. In April 2015, the U.S. Governmental Accountability Office compiled estimates from a number of sources including the Federal Communications Commission and Congressional Budget Office to construct and operate a public safety broadband network. These 10-year cost estimates varied from \$12 billion and \$47 billion, depending on the assumptions used. Those assumptions include how many cell tower sites would be necessary, the extent of the network's coverage, and the structure of public-private partnerships. For example, the Federal Communications Commission estimated 10-year cost projections ranged between \$34 billion to \$47 billion without a public-private partnership and between \$12 billion to \$16 billion with one.

The FirstNet Authority will work with AT&T to build and manage the nationwide broadband network. In March 2017, the FirstNet Authority formally awarded the contract to AT&T. AT&T is now responsible for building the core network nationwide and radio access networks in each state that chooses to opt in. Due to the timing of the award, we were unable to review the contract and understand the details of how the financing will work. However, it appears AT&T will spend about \$40 billion in the next 25 years to build, deploy, and operate and maintain the network. In exchange, AT&T will be allowed to sell access to the excess capacity of the FirstNet network in the private market (first responders will have priority access during emergencies).

Question 1: What Viable Options Does the State Have to Build an Emergency Telecommunication System if it Opts Out of the Federal FirstNet Program?

Although the state could face some potential risks by opting in to FirstNet, it would have to overcome several significant challenges in order to successfully opt out. Opting in and allowing the FirstNet Authority to build and manage the state's radio access network requires little effort, but some concerns were raised (p. 9). Conversely, opting out would require the state to develop an alternative plan in about 6-9 months, which is a deadline the state is unlikely to meet (p. 10). In addition, opting out would require Kansas to navigate an extensive approval process with multiple points of potential failure (p. 13). Finally, opting out would require Kansas to develop a financing plan and negotiate with a private vendor to operate the state's radio access network (p. 15).

Opting In and Allowing the FirstNet Authority to Build and Manage the State's Radio Access Network Requires Little Effort, But Some Concerns Were Raised

As discussed on page 7 of the Overview, each state's governor will decide whether the FirstNet Authority (opt in) or its state (opt out) will be responsible for building, operating, and maintaining the state's radio access network. We talked to officials in five other states (Colorado, Illinois, Mississippi, New Hampshire, and Texas) to understand the factors they will consider when making their decision. We selected these states because they were all at different stages in deciding whether to opt in or opt out of FirstNet.

For states that opt in, the FirstNet Authority will assume responsibility for building, operating, and maintaining the state's radio access network. The FirstNet Authority and its private vendor will pay for all costs associated with building, operating, and maintaining the state's radio access network. Specifically, these include capital and operating expenditures, and other associated costs such as staffing, satisfying environmental requirements, and program management.

However, for states that opt in, there are some concerns the radio access network may not adequately serve all the needs of every state especially in rural areas. A January 2017 Congressional Research Service report noted opting in may limit a state's ability to develop services that meet their state's specific needs. According to the report, although these specific needs and services might be of value to an individual state, it might not be of value to FirstNet's customers for nationwide service.

Officials from other states expressed concerns that the FirstNet Authority's state plans may not include sufficient coverage in rural areas. However, Kansas officials told us they do not have these concerns because AT&T won the nationwide contract and has significant coverage levels in Kansas. In addition, recent technology journal articles stated AT&T's proposal for the nationwide network exceeds FirstNet Authority's rural coverage goals. As of April 2017, FirstNet has not released the final state plans. These plans will show how the radio access network will be deployed in each state. Until state officials receive the plan, it is impossible to know the quality of coverage Kansas will receive under an opt in scenario.

Although opting in is supposed to create no financial obligations for states, there are some concerns that Kansas could incur unexpected costs in future years if network funding is insufficient. According to FirstNet Authority officials, there will be no cost to states that opt in. Based on interviews and documents we reviewed, the FirstNet Authority and the private vendor will be responsible for all expenditures for the states' radio networks. These expenditures would include capital assets, staffing, training, operating, environmental related expenses, and other costs.

According to a 2017 Congressional Research Service report, the FirstNet Authority has not conducted an analysis of costs that states could be responsible for. Kansas officials, as well as officials in the other states we talked to, expressed concerns about hidden costs associated with opting in to FirstNet. For example, Colorado officials told us they think the FirstNet Authority has overestimated the amount of funding that will be raised through user access fees and made available to support the network. As a result, the FirstNet network may not expand as quickly or states may be asked to cover some of these ongoing costs. However, these details will not be known until the FirstNet Authority submits the state plan to the Governor, possibly in the fall 2017.

Opting Out Would Require Kansas to Develop an Alternative Plan Within About 6-9 Months, a Deadline the State is Unlikely to Meet

States that choose to opt out must complete several tasks in a relatively short period of time. The tight timelines are specified in the federal law that established FirstNet and in rules proposed by the Federal Communications Commission.

After receiving its plan from the FirstNet Authority, the state has 90 days to opt out and another 180 days to develop its alternative plan. Both federal law and rules proposed by the Federal Communications Commission specify deadlines a state must meet if it chooses to opt out. In combination, federal law and

the proposed rules will require states that opt out to complete numerous tasks within a total 270-day (approximately 9-month) period. Many of these tasks will require input and involvement from numerous federal, state, and local agencies, as well as other stakeholders. Those tasks include:

- Review FirstNet's proposed plan on building out the nationwide network in the state
- Make a decision to opt out
- Develop and issue the initial request for proposal to develop an alternative plan through a private vendor
- Evaluate and select the winning private vendor bid
- Work with the selected private vendor to develop an alternative plan for building the state's radio access network
- Review the alternative plan to ensure it meets the needs of Kansas public safety agencies and conforms to the FirstNet Authority's requirements
- Submit the alternative plan to the Federal Communications Commission for initial review and approval

Federal law specifies state governors will have no more than 90 days after receiving the FirstNet proposed state plan to choose whether to opt in or opt out. In addition, federal law requires states who choose to opt out will have no more than 180 days after notifying the FirstNet Authority to develop and complete requests for proposals to build their own radio access network. Federal law does not include a deadline for when states must have completed and submitted their alternate state plans. However, rules proposed by the Federal Communications Commission would require these alternative state plans be submitted within the same 180-day period that states have been given to develop their request for proposals. However, as of April 2017, the Federal Communications Commission's proposed rules have not been approved or finalized.

Officials in Kansas and several other states are skeptical about whether the timeframe to develop an alternative plan is achievable. Given the size and complexity of this type of information technology project, procurement staff at the Department of Administration estimated it would likely take at least 180 days to develop the request for proposal and select the vendor. This would leave no time for that vendor to create an alternative state plan for Kansas.

If Kansas made its decision to opt out immediately, it would effectively have a total of 270 days (nine months) available to develop an alternative plan. Doing so would give the state extra time, but it would still be difficult to meet the FirstNet deadlines. Officials from several other states we talked to echoed these concerns about the tight federal deadlines. For example, officials from New Hampshire told us their request for proposal process

alone took 15 months. On the other hand, officials from Texas were slightly more optimistic that alternative plan could be provided within 180 days, but described the deadline as “not ideal.”

Kansas may not have the staff or expertise to develop its alternative plan within the given timeframe. Because the Adjutant General’s Department provides administrative support and oversees deployment of the state’s emergency communications systems, as well as ensuring interoperability, the department may be responsible for developing the state’s request for proposal for an alternative plan. Although the Department of Administration oversees the request for proposal process, the Adjutant General’s Department could likely be tasked to provide the technical specifications and other required documents for the request for proposal.

Officials from the Adjutant General’s Department told us they do not possess the in-house expertise to write and administer the request for proposal to identify a private vendor if the state opted out. Officials told us they could hire or contract with additional staff to write and manage the request for proposal, but doing so would take more time. In addition, they told us they do not currently have experience with the wireless technology the FirstNet radio access network will use. Although the Department of Transportation previously estimated the cost of a similar kind of network, they used a private contractor to assist them. Transportation officials told us they lack sufficient experience with wireless technology to develop a request for proposal for FirstNet. This could further delay the state’s development of a request for proposal and alternative plan.

Unlike Kansas, at least five other states have already issued a request for proposal from private vendors to develop an alternative state plan. To provide an alternative state plan within the federal deadline, Kansas would likely need to have already started collecting information from private vendors to explore its opt out options. We identified several states that have already started this process. For example, Alabama, Arizona, Colorado, and Michigan have all released a request for proposal, while New Hampshire awarded a contract to Rivada Mercury (a private vendor for telecommunication services) in 2016 to develop the state’s alternative plan because they did not think they could do so themselves under current federal deadlines.

As of April 2017, none of the five states that have released a request for proposal or awarded a contract have decided to opt out or opt in to FirstNet. The reason for issuing a request for proposal

early is to collect as much information as possible before the FirstNet Authority releases the state plans. These states intend to compare FirstNet's plan for their state with the alternative plan developed through the request for proposal process before making a formal decision. As of April 2017, Kansas officials told us they have not issued a request for proposal and have no immediate plans to do so. Instead, they intend to review FirstNet's plan for Kansas before making a decision on whether or not they need to seek additional information.

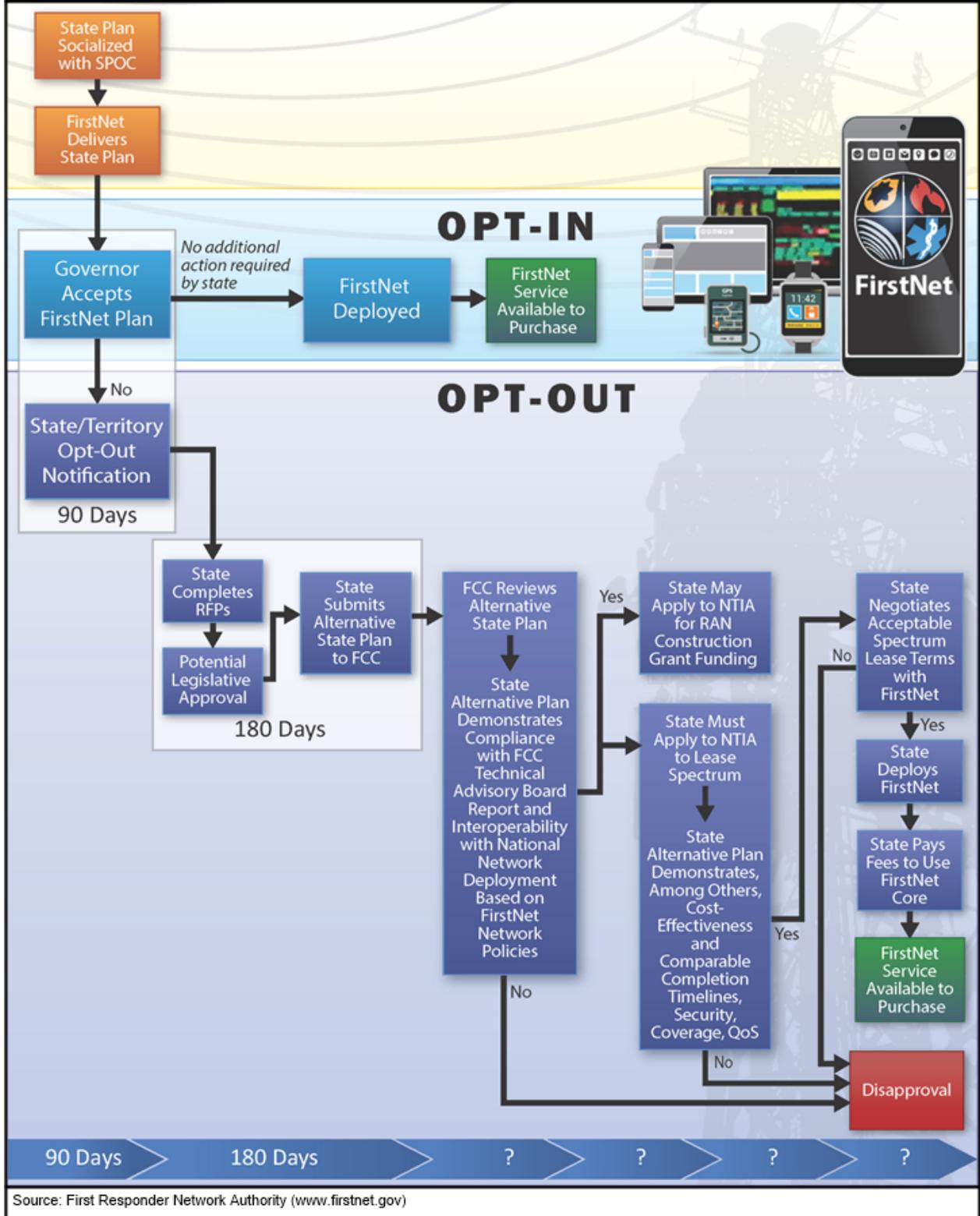
Opting Out Would Require Kansas to Navigate an Extensive Approval Process with Multiple Points of Potential Failure

Once a state has developed an alternative plan within the initial six to nine-month window, it then must follow a series of steps to receive approval from three different federal agencies before it can successfully opt out.

States that opt out must have their alternative plan for a radio access network approved by three different federal agencies. The flowchart in *Figure 1-1* on page 14 lays out these steps. As *Figure 1-1* shows, states that choose to opt out must navigate an extensive approval process which includes several points where their alternative plan can be rejected.

- **First, the Federal Communications Commission (FCC) must review and approve a state's alternative plan to ensure it meets FirstNet's technical requirements and will integrate into the nationwide core network.** According to the FCC's proposed rules which have not yet been approved, states must submit an alternative plan to the FCC within 180 days of their decision to opt out. The alternative plan must meet minimum technical requirements and show how the state's network will be integrated with the FirstNet network.
- **Next, the National Telecommunications and Information Administration (NTIA) must review and approve a state's alternative plan to ensure it is comparable to the original plan proposed by FirstNet.** Within 60 days of receiving approval from the FCC, the state must submit its alternative plan to the NTIA. This agency's review is designed to ensure the state's proposed radio access network is as cost-effective, has comparable coverage, and has comparable service quality as FirstNet's plan for the state.
- **Finally, the state will have to negotiate a lease agreement with the FirstNet Authority to gain access to the radio frequencies reserved for FirstNet.** As discussed on page 4 of the Overview, 20 MHz of the available radio spectrum has been set aside for the FirstNet public safety network. The FirstNet Authority controls that piece of the radio spectrum, but can lease it to states that develop their own alternative plans. However, without a lease agreement, the state's radio access network would lack the needed wireless capacity and be unable to operate and serve either public safety users or secondary commercial users.

Figure 1-1
Comparison of Opt in and Opt out Process States Must Follow for the FirstNet Network



Any of the three federal agencies could reject the state's alternative plan, forcing it to opt back in and have the FirstNet Authority assume responsibility for the radio access network.

If the state fails to demonstrate the adequacy of its plan to the FCC, NTIA, or the FirstNet Authority, the state's radio access network will be built according to FirstNet's plan. The 2012 federal law does not specifically address whether an adverse decision can be appealed. However, even if a state is able to appeal a decision by any of the three agencies, a rejection by any one of them could require the state to revise its plan or spend more time resolving issues identified by the federal agencies.

Not all of FirstNet Authority's guidelines have been finalized on how to successfully navigate the opt out approval process.

If a state wanted to opt out and already had an alternative plan prepared, there is currently no way to know whether the alternative plan would be approved. Officials from Kansas and the other states we talked to told us they do not know all of the specific requirements the alternative plan would have to meet to successfully opt out. FirstNet Authority officials told us there is some preliminary guidance that discusses the opt out process. These will be finalized when the state plans are released.

Opting Out Would Require Kansas to Develop a Financing Plan and Negotiate with a Private Vendor to Operate the State's Radio Access Network

Federal law requires any state that opts out of FirstNet's plan be able to demonstrate it has adequate funding to successfully deploy and maintain its own radio access network. Although several opportunities are available to help offset these costs, it is currently unknown whether those funding streams will be sufficient to cover the entire cost of developing a state radio access network.

The state may incur some costs to develop the request for proposal for an alternative plan. Officials from the Adjutant General's Department told us if Kansas opted out, they would likely need to contract with a consulting firm to assist in writing the request for proposal because they lack the necessary expertise. We interviewed Kansas officials and representatives from a consulting firm that has assisted other states in developing similar requests for proposals to determine a cost estimate for creating a request for proposal. Those estimates ranged from \$50,000 to \$200,000, depending on the complexity of the request and the time needed to prepare and finalize it. In addition, it is possible the state could incur other costs related to the procurement process that we were unable to quantify. This includes time spent by state officials to initiate the bidding process and to review the request for proposal once it is developed. According to New Hampshire officials, Rivada Mercury wrote its request for proposal for free.

States that opt out will need to develop a request for proposal that specifies how the costs of the state’s radio access network would be covered. In 2012, the Kansas Department of Transportation (KDOT) estimated a statewide public safety broadband network would have cost about \$200 million. While it was accurate for its time, KDOT officials told us the cost estimate would now likely be greater than \$200 million for a number of reasons, including inflation, the need to build or update more tower sites, and changes to meet FirstNet’s specifications. To defray or eliminate these costs, the state would need to write a request for proposal that addresses what and how these costs would be covered.

The state would likely need to obtain financing for its radio access network through a combination of a public-private partnership, federal grants, and user fees. Potential sources of funding are detailed below.

- **The state might be able to get a private vendor to build the radio access network in exchange for commercial use of the FirstNet spectrum.** Federal law requires states that opt out and build their own radio access network use public-private partnerships rather than a commercial service model. In essence, those states may choose to follow the same business model FirstNet will use to build out the nationwide system: partner with a private vendor to offset the cost of building and maintaining the radio access network. Under this scenario, the private vendor is responsible for building and operating the network, but can also sell some of the unused radio frequency to private businesses to generate its own revenue. As of April 2017, it is unknown whether the state would be able to locate a private vendor and whether the terms of that arrangement would sufficiently offset the state’s expected costs.

In addition, it is possible a private vendor might offer the state additional benefits as part of the negotiation process (e.g. free cell phones or other equipment). Although those types of incentives may confer some additional advantages to the state, we were unable to evaluate either the likelihood that they would be offered, or how they would compare to the state plans that will be proposed by FirstNet and AT&T.

- **The state will be allowed to apply for federal grant funding to cover other costs associated with building a radio access network.** The federal law establishing FirstNet includes grant assistance to states that choose to opt out. However, as of April 2017, it is unknown how much federal grant money will be available and how many states may apply for those funds.
- **The state will be allowed to charge public safety agencies a user fee to help recoup radio access network costs.** Similar to the federal model, the state could charge public safety agencies a subscriber fee for using the radio access network. What these fees would be, who they would be remitted to, or whether they could raise enough funding to sufficiently offset the state’s costs would depend

largely on the state's contract terms. However, because use of the state's radio access network would be strictly optional, excessive fees are likely to reduce participation in the state's network and reduced revenues. Federal law requires all revenues from the radio access network must be re-invested and none of the revenues can be transferred to other funds or used for other purposes.

Despite these potential funding sources, the state may still incur costs to build, operate, and maintain a statewide radio access network. Although it is possible the state will be able to fund all costs associated with radio access network through the sources described above, it is also possible that it will not. In addition to being responsible for building and operating the radio access network, Kansas officials told us and technology journals have reported an opt out state would be required to fund all future network upgrades for the next 25 years. We cannot accurately estimate how significant these costs might be because of the numerous decisions yet to be made, the immense complexity inherent in building such a network, and a host of other unknowns.

Conclusion and Recommendations

Conclusion

Federal laws gives states the choice to opt out of FirstNet’s plan to build their state-level radio access networks. However, the risks associated with that choice—a very tight timeline to develop an alternative plan, a multi-step approval process with multiple points of potential failure, and general uncertainty about what the terms of state-run radio access network will look like—lead us to conclude that successfully opting out would be extremely challenging for the state. It is likely the state would need to be much further along in its development of an alternative plan to have a realistic chance of meeting the federal government’s deadlines. Even if it were successful in meeting these deadlines, it is possible Kansas’ plan could still be denied if it fails to satisfy FirstNet’s technical and business requirements. Finally, although it is clear the state would need to negotiate with a private vendor if it chooses to opt out, it is unclear at this time what the specific terms of that negotiation might include and how those terms might compare to FirstNet’s plan for the state.

Recommendations

None. Although it is our conclusion that successfully opting out of FirstNet would be challenging, we see this as a policy decision for the Governor and therefore it is not appropriate for us to make a formal recommendation.

APPENDIX A
Agency Response

On April 5, 2017 we provided copies of the draft audit report to the Kansas Office of Information Technology Services and the Kansas Adjutant General's Department. We made a few minor changes and clarifications to the report based on their feedback, but agency officials concurred with our audit findings. These agencies were not required to submit a formal response because this audit did not have any agency recommendations. Neither agency chose to submit a formal response.