

**BEFORE THE  
NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION  
WASHINGTON, DC**

<b>In the Matter of</b>	)	
	)	
<b>Development of the Nationwide</b>	)	<b>Docket No. 120928505-2505-01</b>
<b>Interoperable Public Safety Broadband</b>	)	
<b>Network</b>	)	
	)	

**To: The National Telecommunications and Information Administration**

**COMMENTS OF UTILITIES TELECOM COUNCIL**

The Utilities Telecom Council (“UTC”) submits its comments in response to the Notice of Inquiry in the above-referenced matter. UTC urges FirstNet to consider utilizing utilities and other critical infrastructure industries (CII) when it develops the FirstNet Nationwide Network (FNN).

**Introduction and Background**

UTC is the international trade association for the telecom and information technology needs of electric, gas and water utilities, pipeline companies and other CII. Its members include large investor-owned utilities that serve millions of customers across multi-state service territories, municipal utilities that serve both large cities like Los Angeles and small towns across the country, and cooperative utilities that serve large parts of rural America. All these members have in common that they own, manage and operate extensive private internal communications networks, which they use to ensure the safe, reliable and efficient delivery of essential services to the public at large. Owing to the critical nature of the essential services that they support, these networks are designed, built and maintained to standards that often exceed those of public communications networks. They include wired and wireless networks for both fixed and mobile communications, and these networks have grown and evolved over decades, long before commercial wireless even existed and they reach many parts of the country where commercial

services are still not available today. As such, utilities and CII have extensive communications infrastructure, experience and other resources which could greatly contribute towards the FNN.

Since 1948, UTC has advocated for policies that promote critical infrastructure communications systems. Utilities and CII are undergoing their own spectrum crisis. They are under increasing demands to provide better services to their customers, while at the same time their existing spectrum is under increasing constraints due to congestion, interference and reallocation. They need access to spectrum that can provide greater capacity, coverage and interoperability in order to address their needs to support smart grid, mobile workforce applications, and mutual aid in the aftermath of natural disasters, such as hurricanes, tornados and ice storms. However, they do not have access to any of their own licensed broadband spectrum. As such, utilities and CII are considering sharing spectrum as a way to meet their communications needs, and the FNN could provide the coverage, capacity and reliability that utilities need to ensure the safe, reliable and efficient delivery of essential electric, gas and water services to the public at large.

The FCC has recognized the public interest benefits that would result from sharing the FNN with utilities. It recognized that utilities and public safety have similar communications needs, including the need for highly reliable communications during emergencies. It also recognized that utilities and public safety could share infrastructure and resources, thereby creating synergies that would accelerate the deployment of the FNN and keep costs down. Finally, it recognized that sharing the FNN would promote interoperability between and among utilities and public safety during emergency response. Thus, as part of its National Broadband Plan the FCC recommended that Congress amend the Communications Act to permit utilities to share 700 MHz spectrum with public safety.

Congress included provisions within the Spectrum Act that enable utilities to share the 700 MHz FNN pursuant to covered leasing agreements. These covered leasing agreements provide for public-private partnerships and shared access to capacity and infrastructure by secondary users, subject to

conditions and fees. Congress sought to promote public-private partnerships for the construction, operation and maintenance of the network, and it understood from the FCC's recommendations that utilities could play an important role in the process through sharing the FNN with public safety.

Congress also included provisions for the State and Local Implementation Grant Program to help fund planning and consultation by the states and localities with FirstNet for the build out, operation and maintenance of the network. As NTIA notes, these provisions also outline the issues that the program will help the states and localities address. Some of these issues are of particular importance to utilities and CII, as well as to public safety. Specifically, utilities and CII share with public safety a substantial interest in the coverage, hardening, security, reliability and resiliency of the network, as well as the assignment of priority to local users and entities seeking access to or use of the FNN. Utilities and CII want to be able to access the network and gain priority access, particularly for mission critical communications. Moreover, they have a larger interest in maintaining high standards for coverage, security, reliability and resiliency of the network. Therefore, UTC is pleased to provide its comments in response to the NOI in order to promote the interests of utilities and CII in these issues.

**I. FirstNet's Conceptual Network Architecture Should Leverage the Existing Infrastructure of and Include Partnerships with Utilities and Other Critical Infrastructure Industries in Consultation with State and Local Authorities.**

When Congress directed FirstNet to leverage existing infrastructure for the FNN, it broadly included commercial or other commercial infrastructure, as well as Federal, State, tribal, or local infrastructure.<sup>1</sup> It also recognized that partnerships under this provision of the Act would offer advantages to meet timetables for deployment, particularly in rural areas.<sup>2</sup> It also understood that the network would be expensive to construct, maintain and operate. Thus, in

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<sup>1</sup> See Section 6206(c)(3) of the Middle Class Tax Relief and Jobs Creation Act of 2012 (hereinafter, "the Act").

<sup>2</sup> See Section 6206(c)(1)(A)(i) of the Act (directing FirstNet to develop RFPs with appropriate timetables for construction, including by taking into consideration the time needed to build out to rural areas and the advantages offered through partnerships with existing commercial providers.)

order to reduce costs and still meet public safety requirements, it directed FirstNet to issue open, transparent, and competitive requests for proposals to private sector entities for the purposes of building, operating, and maintaining the network.<sup>3</sup> Moreover, it appropriated \$7 billion in funding, much of which must come from incentive auctions. Finally, it required FirstNet to consult with state and local authorities on the disbursement and expenditure of any amounts required to carry out the network policies, recognizing that state and local authorities have the greatest interest and expertise in deploying public safety networks in a manner that meets their needs cost-effectively.<sup>4</sup>

With that as backdrop, utilities can play a vital role in assisting FirstNet to fulfill the vision of Congress for the FNN. Utilities have extensive existing infrastructure, including towers and rights-of-way, equipment, and fiber for backhaul, which could be leveraged for the construction, maintenance and operation of the network.<sup>5</sup> Partnering with utilities could also greatly promote rural coverage, because their communications networks reach rural and isolated areas that are very often not served by commercial wireless service providers. In order to promote partnerships with utilities, FirstNet should issue open, transparent and competitive requests for proposals that consider other options besides one or even several commercial

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<sup>3</sup> See Section 6206(b)(1)(B)(directing FirstNet to issue open, transparent, and competitive requests for proposals to private sector entities for the purposes of building, operating, and maintaining the network that use, without materially changing, the minimum technical requirements developed under section 6203).

<sup>4</sup> See Section 6206(c)(2)(A), specifically listing the following issues for state and local consultation: (i) construction of a core network and any radio access network build out; (ii) placement of towers; (iii) coverage areas of the network, whether at the regional, State, tribal, or local level; (iv) adequacy of hardening, security, reliability, and resiliency requirements; (v) assignment of priority to local users; (vi) assignment of priority and selection of entities seeking access to or use of the nationwide public safety interoperable broadband network established under subsection (b); and (vii) training needs of local users.)

<sup>5</sup> See also Comment of Accenture at 12 (filed Nov. 1, 2012)(stating that “Accenture believes that alignment with the utilities industry would be particularly compelling,” in recognition that “in addition to capital investments, Utilities generally have a significant amount of network infrastructure already built that can be leveraged for a nationwide broadband network,” including “significant footprints of fiber and microwave backhaul, right-of-ways, and existing towers that could be ideal candidates for cell sites.”)

wireless service providers. Partnering with utilities can help reduce costs while promoting infrastructure hardening and coverage, and several utilities have successfully deployed shared radio systems with state and local authorities.<sup>6</sup> In sum, FirstNet must not overlook the tremendous benefits that utilities can bring as FirstNet develops its concept of the FNN, and it should consult with state and local authorities that have partnered with utilities on shared systems and understand how these partnerships are governed.<sup>7</sup>

### **A. Network Coverage and Timely Deployment**

Chairman Ginn got it right in his opening statement at the first meeting of FirstNet. “This is the most complicated telecom project in the nation’s history, without question. And when you look at [the] requirements, it becomes even more complicated because you don’t have to study this issue very deeply before you recognize that we need to cover every square meter of this nation and do it effectively.”<sup>8</sup> UTC supports FirstNet’s commitment to coverage. The network must cover both urban and rural areas and it must be able to provide in-building coverage, as well.

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<sup>6</sup> See Comments of Minnesota at 2 (stating that “[t]here are numerous options available to FirstNet to make a business case. For example, FirstNet could reduce its expenses by reusing existing public safety or utility infrastructure which should be available to it at little or no cost depending on arrangements made with user agencies.”)

<sup>7</sup> UTC supports the comments of the Mid-Atlantic Consortium for Interoperable Nationwide Advanced Communications (MACINAC), which support consultation with state and local public safety in developing network architecture requirements and which advocates “leveraging of sites and infrastructure from all manner of entities, [including] ... utilities ... that possess such assets and are willing to negotiate advantageous terms with FirstNet.” Comments of MACINAC at 6 (filed Nov. 1, 2012). UTC agrees with MACINAC that FirstNet should consider other potential sources of NPSBN sites besides commercial service providers, and that while “looking to carrier sites first may seem a quicker and less complex approach, it will not in all cases (perhaps not even in most cases) be a better approach for the public safety network.”) Using carrier sites exclusively or even predominately could lead to monopolistic behavior in terms of pricing and competition, because FirstNet will be locked into those sites. *Id.* at 7. See also Comments of Minnesota at 2 (stating FirstNet should allow direct use of the network by non-first responders entities, such as critical infrastructure utility entities, educational institutions, public transit, and general government .”)

<sup>8</sup> See Transcript of the United States Department Of Commerce National Telecommunications & Information Administration (NTIA) Meeting Of The First Responder Network Authority (FirstNet), at 6 (Sept. 25, 2012), visited at [http://www.ntia.doc.gov/files/ntia/publications/firstnet\\_board\\_9-25-2012\\_transcript.pdf](http://www.ntia.doc.gov/files/ntia/publications/firstnet_board_9-25-2012_transcript.pdf) (hereinafter “Transcript”).

Utilities are uniquely positioned to assist FirstNet in providing near ubiquitous coverage. As Craig Farrill recognized in his presentation, FirstNet can partner with rural electric cooperative utilities, as well as others to leverage existing infrastructure to provide coverage in rural areas.<sup>9</sup> As Tim Bryan emphasized in reply during the meeting, there is a direction [in the legislation and otherwise] to look at the rural communities as well as the urban communities,” and FirstNet should apply the “80-20 rule” using the rural electrics and the rural telecom [that] cover 80 percent of the nation’s geography and have 15, 20 percent of the nation’s customers and population.”<sup>10</sup>

UTC applauds FirstNet for recognizing the role that rural electrics can play in promoting coverage, but there are also investor-owned utilities and municipal utilities as well as other CII that can help FirstNet promote coverage by leveraging their existing infrastructure in rural and urban areas.<sup>11</sup> Moreover, as Chairman Ginn recognized in his opening remarks, coverage means in-building coverage as well, and the network is much more complicated and will require far more transmitter sites than the radio networks that public safety is currently using. Utilities and other CII have extensive rights-of-way and communications infrastructure, including towers and backhaul facilities (e.g. fiber and microwave) that could be critical for providing coverage all across the network, including rural areas.

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<sup>9</sup> Conceptual Network Architecture Presentation at slide 10 (stating that the “FNN can also partner with ... Rural Electric” to provide coverage.) *See also* Comments of APCO International at 1 (filed Nov. 1, 2012)(stating “As acknowledged in Board Member Craig Farrill’s presentation, FirstNet needs to also leverage deployable “micro” networks as well as the infrastructure owned by rural telecom companies, rural electric cooperatives, electric utilities, and federal, Tribal, state and local governments.”)

<sup>10</sup> Transcript at 35 (emphasizing that “particularly in the legislation and otherwise, I’m thinking, you know there is a direction to look at the rural communities as well as the urban communities. And I think that, you know it’s the 80-20 rule, the rural electrics and the rural telecoms, for example, cover 80 percent of the nation’s geography and have 15, 20 percent of the nation’s customers and population.”) *Id.* (adding that “I think it’s good to have a balanced approach here on the slide and in our thinking, because covering every square meter is a tough thing to do without thinking about the rural aspects of that job.)

<sup>11</sup> *See generally* Comments of Great River Energy (filed Nov. 1, 2012); Comments of Tri-County Electric Cooperative (filed Nov. 1, 2012).

In fact, utilities and other CII already provide wireless collocation and pole attachments for commercial service providers, because utilities and other CII have these existing infrastructures and rights of way that enable commercial service providers to expand coverage or increase capacity into existing service areas. This is a reflection of the fact that utility and other CII rights-of-way and infrastructure cover areas where commercial networks don't, due in large part because electric, gas, and water networks are ubiquitous and reach into unpopulated and isolated areas. As such, FirstNet should be considering utilities and other CII to an increasing extent to promote coverage in urban as well as rural areas.

Leveraging utility infrastructure will not only promote coverage, but it will also accelerate the deployment of the network. As FirstNet is well aware, the process of permitting and constructing new towers can be expensive and time consuming, particularly when additional rights-of-way or environmental or historic preservation assessments are required. As noted above, utilities and other CII have extensive rights-of-way and their infrastructure can support wireless collocation in areas that are difficult to serve. That can help to reduce the time and expense of having to deploy new towers and associated infrastructure, such as fiber and powerlines (which utilities already have at many of their sites).

## **B. Infrastructure Hardening and Interoperability**

FirstNet must remain mindful that this is a public safety network, and must meet high standards for communications reliability and resiliency. It makes little sense to build another commercial grade communications network. Public safety could buy service from a commercial service provider today if it wanted to. Instead, the FNN must provide reliable communications that continue to operate during emergencies when the power goes out or when commercial networks tend to become congested. Public safety also needs communications that are not

subject to delays or dropped calls. Building another commercial grade network would represent a zero sum gain in that respect, and it would be prohibitively expensive because it wouldn't have the same customer base to support it.<sup>12</sup>

Utilities share similar communications needs with public safety.<sup>13</sup> They both require exceptionally reliable communications, particularly during emergencies. Hence, utilities own, manage and operate their own private internal communications networks, and they have done so for decades – far longer than commercial service providers. These private internal networks are distinguished by extended and uninterrupted back-up power and very low latencies. As noted above, they also cover remote as well as populated areas. They cover these areas because utilities and other CII have key assets in remote areas and because reliability is a matter of worker safety and public safety. Any failure in the communications network could have a potentially catastrophic impact on the underlying electric, gas and water systems and services that the communications networks help to support.

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<sup>12</sup> See also Comments of General Dynamics C4 Systems at 10 (stating that “[s]ome perceive aspects of the Proposed FNN as contravening commonly held constructions of the intent of the Act regarding services and infrastructure. Perpetuating the carrier service model in the NPSBN contradicts views of the Act’s intent that a new physical network be created using a combination of new and existing assets, not by re-leasing existing capacity in a pure services play. New physical assets are especially needed in underserved rural areas. Further, ‘existing assets’ is construed as not exclusive to carrier-owned assets, as the Proposed FNN appears to intend, but to include other infrastructure owned by jurisdictions, tower companies, utilities, and the like. Finally, the Proposed FNN provisions that continue carrier services on a leased basis leaves unsatisfied the need of some States to enter into secondary leases as a source of revenue and service provision for other public uses (e.g. education and utility grids) as permitted by the Act.”)

<sup>13</sup> Utilities and public safety share many of the same end user needs with regards to devices. These include ruggedized, MIL-SPEC (military specifications) devices and phones with a dedicated PTT button and high quality speakers that allow calls to be heard in noisy environments. Utilities' needs for voice communications are very similar to those of public safety, particularly with regards to push-to-talk (PTT). With PTT, both parties need the ability to reach simultaneously large groups of users with voice communications, as well as the capability to support one-to-one private communications. For group calls, both parties value the ability to pre-provision talk groups in order to facilitate communications during emergency operations. They also value spectrally-efficient large group calls so that a single, large call does not overwhelm a cell site. All of these issues are ones that would be addressed in the standards setting process, an area where utility technical expertise in partnership with public safety would strengthen the process.



Partnering with utilities could create synergies between utilities and public safety far beyond shared infrastructure. Together they could deploy hardened networks that meet their similar communications needs cost effectively. They could also deploy interoperable networks that enable them to seamlessly communicate with each other during emergency response. Finally, utilities and public safety can work together to meet their common needs to upgrade communications to support homeland security applications, such as video surveillance. Moreover, partnering with utilities provides a secure environment for deployment, including substations with perimeter fencing and limited access to authorized personnel only.

In fact, utilities and public safety have partnered with each other to deploy shared radio systems in many parts of the country. By combining resources and sharing costs, utilities and public safety have been able to upgrade their communications networks affordably. Moreover, this has provided additional benefits to both public safety and utilities, such as greater coverage and interoperability with each other during emergency response. Finally, utilities and public safety have developed governance models for these shared radio systems, including priority access and security, which could serve as models for sharing the FNN.

While UTC agrees with FirstNet that there are important cost savings that can be achieved by partnering with commercial wireless providers, FirstNet should also be considering the benefits that can be achieved by partnering with utilities and other CII as well.<sup>14</sup> That said, UTC believes that slide 7, entitled “the FNN Concept”, should be amended to include utilities,

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<sup>14</sup> See Comments of the National Ass’n of Telecom’s Officers and Advisors, the National League of Cities, the United States Conference of Mayors, and the National Ass’n of Counties at 3 (filed Nov. 1, 2012)(hereinafter “Comments of NATOA et al”)(stating that “[w]hile encouraging commercial carrier participation to speed deployment is a worthy goal, we urge FirstNet to explore multiple build-out models, including those that seek to leverage the infrastructure assets of state, local, and tribal governments and other non-commercial entities, such as utilities. These assets have already been financed by tax- and rate- payers and may be available for use at low cost. In addition, the use of existing facilities may negate the necessity for or, at a minimum, streamline environmental review, zoning, and permitting processes.”)

along with public safety, wireless operators, network and handset providers, and application developers. Also, slide 8, entitled “Network Implementation Options” should be amended to include working with utilities, and some pro’s would be lower construction costs, faster buildout, and better rural area coverage. In addition, slide 11, entitled “Multiple Network Diversity Increases Reliability”, should also be amended to reflect the option of a terrestrial utility network as one of a number of systems that could be supported by the FNN. Including utilities would truly help the FNN concept to meet key nationwide network objectives for a ubiquitous, reliable, redundant, and interoperable network that lowers cost by leveraging existing multi-billion dollar wireless networks and open-standards devices of utilities and accelerates availability by driving economies of scale via smart grid devices.<sup>15</sup>

### **C. Cost**

UTC agrees with FirstNet that building a standalone network is unworkable.<sup>16</sup> The cost of the FNN is going to be orders of magnitude greater than existing public safety radio networks, and there are serious questions about whether the network can be sustained by public safety based on the cost-per-unit device. In that context, utilities also make good partners because they can help drive economies of scale that will promote sustainability of the network. By partnering with utilities for the FNN, public safety would benefit from the creation of a larger customer base for devices, in turn, reducing the cost of phones and other devices for public safety end-users. In addition to various mobile data applications, utilities need access to the network to

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<sup>15</sup>See Conceptual Network Architecture presentation at Slide 12 , and 20 (stating that the FNN meets key nationwide network objectives and solves several critical issues, including “[l]ower cost subscriber equipment based on LTE and other international standards.”)

<sup>16</sup> Conceptual Network Architecture presentation at slide 9.

support smart grid, which they are already deploying and will continue to deploy into the future.<sup>17</sup>

The level of investment that utilities are making in smart grid is significant, including \$4.5 billion in matching grants from the Department of Energy. The FNN could leverage those investments, and utilities would stand to gain as well by leveraging the synergies and cost savings available by sharing the network with public safety. Moreover, to the extent that utilities are able to access the network for smart grid, it would drive economies of scale because potentially millions of smart grid devices could be supported using the FNN. These devices could be accommodated without impacting public safety communications, using priority access mechanisms enabled through LTE and mutually negotiated network policies.

In its comments, the State of Minnesota illustrates one potential use case that demonstrates how utilities and public safety could share the network and ensure priority access for mission critical communications during emergencies.

Local control of dynamic priority is important to facilitate network sharing agreements. For example, consider the use case of a utility partnership. Under a utility partnership, Supervisory Control and Data Acquisition (SCADA) messages would have high traffic priority during day-to-day use, while metering and administrative multimedia communications for field users would not require high priority. During a major weather event, field users for the utility would be elevated to high priority to support their lifesaving emergency work, because they are acting as first response entities through the duration of that incident. The PSAP controlling communications for that incident would be able to make a reasoned, intelligent decision about how to assign priority at which sites during that incident and could do so on the fly. Without high priority for SCADA and incident traffic, a utility might not be interested in using the FirstNet National Network (FNN); while without the ability to meter and control traffic, a public

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<sup>17</sup> See Comments of NATOA, et al at 3 (“Considering the fact that the Act provides only \$7 billion to construct the nationwide network, it is imperative that FirstNet maximize all available infrastructure – both public and private. It would be a mistake at this point in time to settle on a single nationwide model without examining other potential models that make creative use of public-private partnerships. Indeed, such models could have a positive effect on network costs. Since there is general agreement that \$7 billion in funding is inadequate, we need to find ways to inject more private sector money into the project while, at the same time, making sure what ever model is selected ensures the network will be affordable – both in terms of equipment and user fees - to local governments.”)

safety agency might not want to allow utility traffic on a public safety network. In this case, the ability for a local entity to dynamically control priority is foundational to the viability of the partnership.<sup>18</sup>

In addition to describing the importance of priority access mechanisms to accommodate both utility and public safety communications, Minnesota also recognizes that providing priority access for utility communications will promote investment by utilities in the FNN.

Many estimates question whether \$7 billion will cover the total cost of the network, assuming that incentive auctions even raise this much money. This is a particular concern considering infrastructure hardening and coverage requirements for public safety, which may further increase the cost of the network. As noted above, utilities have incentives to develop networks that meet the network hardening and other requirements for public safety communications. By partnering with utilities and providing priority access, public safety can take advantage of the synergies that can be gained both in terms of shared infrastructure and shared communications requirements, thereby controlling the costs and still deploying a network that will meet its needs.

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<sup>18</sup> See Comments of the State of Minnesota at 2 (filed Nov. 1, 2012).

## **Conclusion**

For all of these reasons, FirstNet should consider leveraging existing infrastructure and partnering with utilities as part of the FNN concept. UTC looks forward to working with FirstNet to promote opportunities for increased sharing between utilities and public safety. Utilities have a long history of successful partnerships with public safety and regularly coordinate with public safety during emergency response. The FNN represents the next step in the development of public-private partnerships between utilities and public safety.

Respectfully submitted,

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