

STATEMENT OF RIVADA NETWORKS

Joint Hearing: “On FirstNet”

Pennsylvania General Assembly

Senate Veterans Affairs and Emergency Preparedness Committees

Senate Communications and Technology Committee

House Veterans Affairs and Emergency Preparedness Committees

October 19, 2017

**1. Opt for Pennsylvania
Opting Out gives PA 180 more days to decide Negotiate this 25 Year Commitment**

Thank you, Mr. Chairman, other Committee Chairs and members, of each Senate and House Committee here this morning.

On behalf of the Rivada team, we are pleased to present testimony this morning in support of Governor Tom Wolf choosing the Opt-Out FirstNet decision to maximize the FirstNet opportunity for Pennsylvania’s Commonwealth Public Safety Broadband Network (CPSBN).

The federal FirstNet law gives Governors the right to extend their review and decision-making time-period beyond December 28, 2017 for an additional 180 days. The additional time gives Governors the opportunity to get all facts and figures from FirstNet, NTIA and the FCC, and review all aspects of alternate plans submitted to the State.

We encourage Governor Tom Wolf to negotiate the best solution for Pennsylvania by extending the December 28, 2017 deadline an additional 180-days to thoroughly review all aspects, opportunities, risks and consequences for Pennsylvania’s CPSBN.

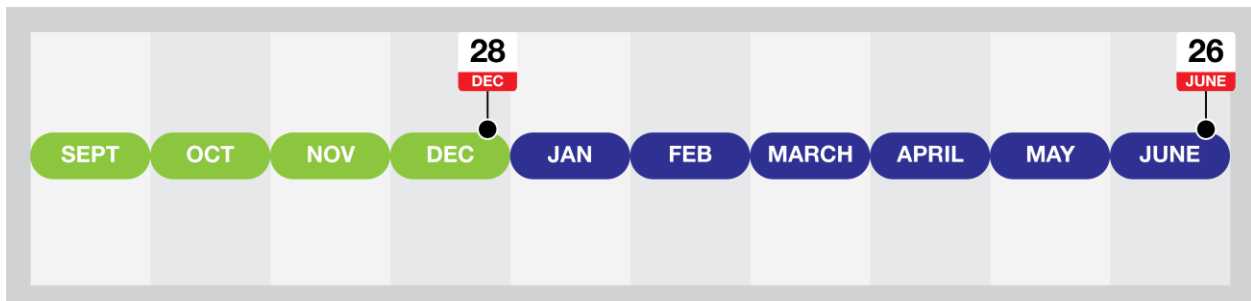


Figure 1: Timeline for final Governor’s decision if Commonwealth opts-out before December 28.

With so much at-stake for this 25-year commitment, the best first step is a thorough review of all available options and plans.

To get started, let’s clarify one urban legend. You’ve heard from AT&T that they will deploy FirstNet in Pennsylvania “at no cost to the state.” But, what you haven’t heard is that Pennsylvania’s first responders will have to pay a monthly fee to access the AT&T network! Around the country we’ve heard AT&T plans charge first responders between \$40 to \$50 dollars per month, and different rates for different states. So let’s be clear, Rivada proposes to charge: one cent.

Why one cent?

While we wanted to offer free service to first responders, FirstNet told us we had to charge something. So, we're charging one cent for 25-years because we don't want price to be an obstacle that prevents any first responder in Pennsylvania from getting on our much-safer Band-14 network.

The other reason we're charging one cent is that Rivada believes—has always believed—that after 9-11, this project should be public safety's network. Public safety needs, and deserves, a purpose-built wireless broadband network of their own, not a rate plan on a commercial carrier's system. The special Band-14 spectrum was allocated for public safety nationwide, not to a carrier for its commercial use. FirstNet holds the Band-14 spectrum in trust for public safety. We believe the Band-14 spectrum should be free or near-free for our nation's firefighters, police officers, emergency medical personnel and other first responders.

We believe the best way for Governor Wolf to maximize the revenues, infrastructures, and public safety is to Opt-Out and negotiate the strongest public private partnership (3P) in the nation with Rivada.

2. Opt for Pennsylvania Opt for a Balanced and Equal Relationship with Federal FirstNet

Under the federal FirstNet law, Governor Wolf has two sharply divergent options:

- "Opt-In" and surrender Pennsylvania's license of the 20MHz Band-14 spectrum to AT&T, and hope for the best as all available revenue, control and decision-making goes to Washington.
- Or, "Opt-Out," to negotiate the strongest PPP that retains all revenues, control, decision-making and cost-savings in Pennsylvania and purpose-builds 1,162 new towers with Band-14 spectrum.

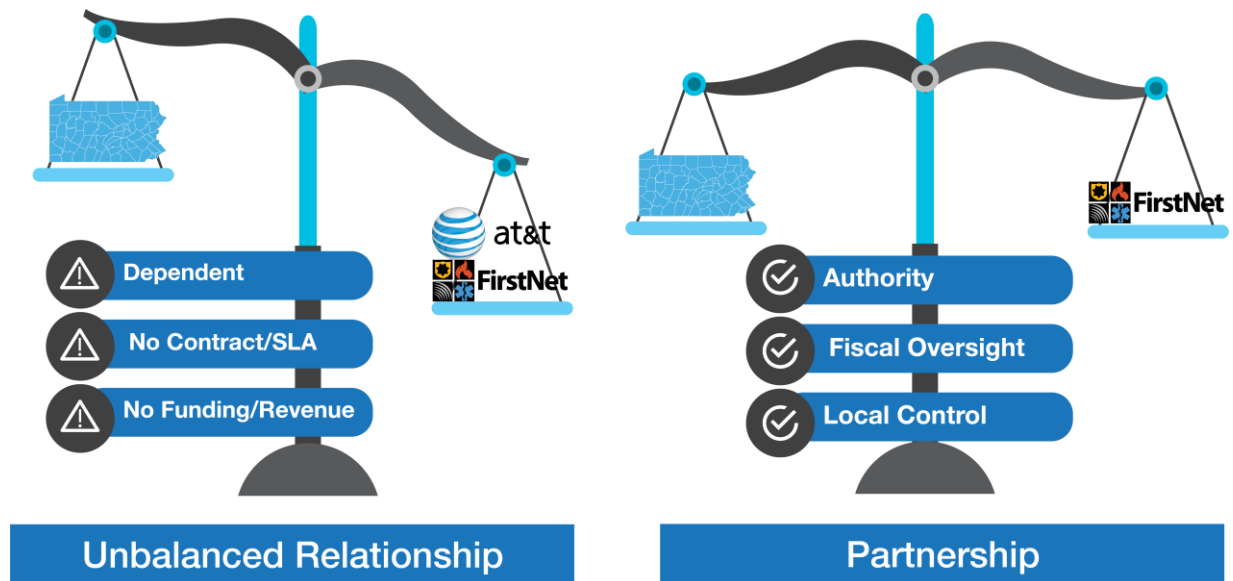








Figure 2: Opting-In to FirstNet & AT&T will create an unbalanced relationship. Choosing Rivada creates a true and balanced partnership between the Commonwealth, its Public Safety Stakeholders and FirstNet.

By Opting-Out, Governor Wolf keeps Pennsylvania's Public Safety Broadband Network, "Pennsylvania-centric." Simply put, Pennsylvania controls the network and establishes state committees, user and stakeholder groups that will regularly meet to develop and agree on a mutual Concept of Operations (CONOPs) for the Opt-Out Network, with full authority to implement the best solutions for Pennsylvania. Conversely, Opting-In, tips the scale and decision-making from Pennsylvania-centric to 49 other states and 7 territories. No matter how many meetings representatives from PA attend in Washington, every decision will be judged by a standard of "what's best for FirstNet and AT&T."

3. Opt for Pennsylvania Opt for Competition, Value and Infrastructure

Pennsylvania needs a PA-FirstNet partner to (1) maximize potential revenues and keep those revenues in state, (2) maintain control of its first responder and PSP communications, (3) invest in new communications infrastructure and economic development, (4) prevent the immediate devaluation of its multi-billion dollar investment in PA-STARNet and its County and Local Public Safety networks, and (5) uphold the Commonwealth’s constitutional responsibilities, including, the Governor’s role as commander-in-chief of the military forces of the Commonwealth.

The following table highlights the significant difference in value that the Rivada plan offers over the FirstNet AT&T plan. Consider that whether Pennsylvania opts in or out, AT&T’s investments in the Commonwealth are negligibly impacted. In other words, AT&T, to meet commercial demand alone, will continue to invest in Pennsylvania whether the Commonwealth opts in or out. As they told a public meeting in New Hampshire; “no matter whether you opt in or out, we are here to stay.” Opting in has no net gain or impact on Pennsylvania’s GDP whereas Opting Out will trigger significant investment, innovation, job creation and development.

Comparative Value to the State of Pennsylvania :					
	 Spectrum Value	 New Jobs	 Federal Grants	 Revenue Sharing	 PS* Local Savings
 RIVADA	\$520 MILLION	6,000 + MORE	\$168 MILLION	\$383 MILLION	\$1.14 BILLION
at&t	\$0	N/A	NO	NO	N/A

*public safety

Figure 3: Matrix comparison of key measureable financial benefits to the Commonwealth if opting out.

- Band 14 spectrum valued at **\$520 Million** has 7 times more power than LTE to increase rural broadband coverage and penetrate thick buildings, walls, stairways.
- The Rivada plan creates **6,000** more JOBS than AT&T, drives economic development across 67 counties.
- At least **\$168 Million** in Federal grants to Pennsylvania to construct purpose-built Band-14 across 67 counties with 1,162 new towers.
- **\$383 Million** stays in Pennsylvania instead of being sent to Washington. The \$383 Million is used to maintain, operate and improve the system.
- More than **\$1.14 Billion** in cost-savings to PA State Police, state agencies, county and local governments due to reduced subscription fees, (\$01/month for 25-years).

4. Opt for Pennsylvania

Keep the Spectrum – Serve and Protect PA Citizens Directly - National Priority Available Today

Originally recommended by the 9-11 Commission, the FirstNet national deployment is driving immediate competition and better results for public safety and first responders. This is clearly the result of competition that is best served if there is a balance between Opt-In and Opt-Out States!



RIVADA

verizon[✓]

In August, Verizon announced that they will deploy QPP services for first responders (Quality Priority and Preemption) starting immediately with 'priority' to match AT&T's offer. This action removes one of the major technical claim advanced by FirstNet and AT&T for Opting-In.

For months prior, FirstNet and AT&T advanced an argument that its QPP offering was unique and superior to AT&T's commercial network. When Verizon, with 70% of the public safety market share, has announced it will build a dedicated Public Safety Core and offer QPP on a nationwide basis, it made AT&T's QPP moot. In fact, Verizon already offers, priority access to public safety customers, today. Regardless of whether AT&T offers QPP in Pennsylvania or not, Verizon already does!

With Verizon and AT&T both offering QPP and charging \$40 to \$50 per month for access, the major reason to Opt-In is effectively negated, and Governor Wolf should negotiate the strongest PPP for Pennsylvania with Rivada to maximize public safety, Band-14, revenues and decision-making. **Keep FirstNet Competitive**

5. Opt for Pennsylvania

Opt for Statewide Band 14

Band 14 was specifically set aside for public safety because it falls under a different set of rules and regulations in terms of power mobile and portable devices can transmit. Band 14 Public Safety Devices in the United States can operate in a very special "high power" mode. **High Power User Equipment (HPUE)**. Specifically, Band 14 devices can transmit at 6-7 times the power of the nearby commercial bands. Band-14 delivers more coverage range and better building penetration. It allows for different device configurations and facilitates future technologies such as direct mode over LTE. AT&T's commercial network is NOT Band-14. We believe public safety has earned and deserves a public safety grade, Band 14 network. The Rivada plan for its Statewide Band 14 network will be open and accessible all validated carriers including US Cellular, Verizon and AT&T.

We believe Band-14 is essential for public safety. We again express our concerns and reservations that in Pennsylvania, AT&T will not commit and in fact will not build out band-14 except where it needs *capacity* for its existing commercial operations.

Rivada's 1,162+ site statewide deployment of Band 14 means that Public Safety users will have 7x the operating power built into their mobile and portable radios.

¹ The use of the AT&T, Verizon and FirstNet logos do not imply an affiliation nor explicitly or implicitly endorse Rivada or its partners. The logos are trademarked to their respective owners. The logos are used purely for illustrative purposes only.

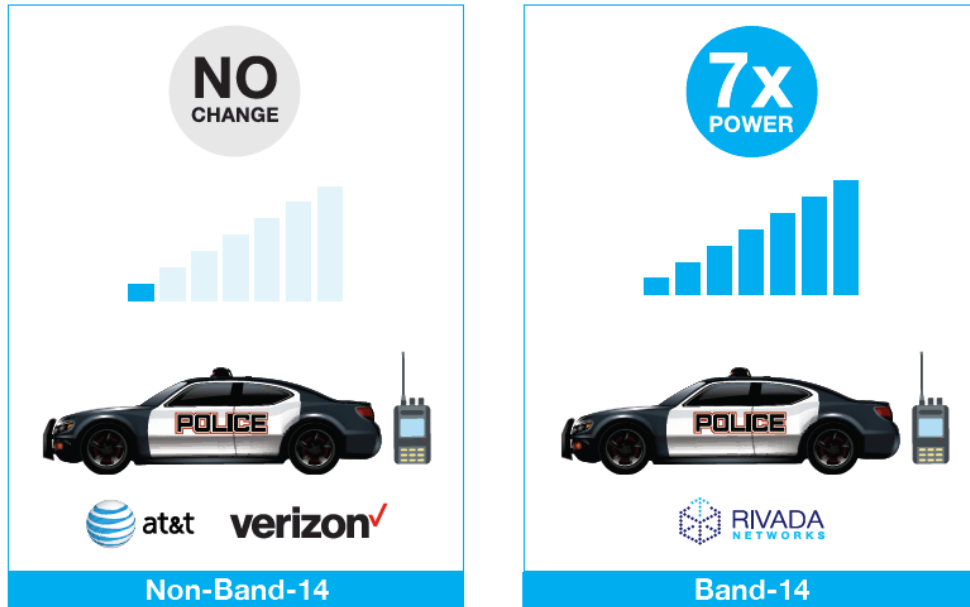


Figure 4: Power difference between offers from AT&T and Verizon’s and proposed Rivada solution.

As an example, coverage from PA-STARNET site [ELKC38](#) below demonstrates the difference in a rural area is one of life and death if a responder happens to be in a valley or shadow where his or her device cannot reach back out to a commercial LTE tower.

That very same call will be able to reach one of the 1162 Rivada Band 14 sites and perhaps save a life or protect property.

Commercial LTE return signal path is limited to the area indicated in **blue** in the figure below. **Red** shows the tremendously larger coverage provided to HPUA Public Safety Devices. Let’s not strand or abandon our first responders that are serving in remote environments because AT&T did not think such coverage was a worthy investment for their shareholders.

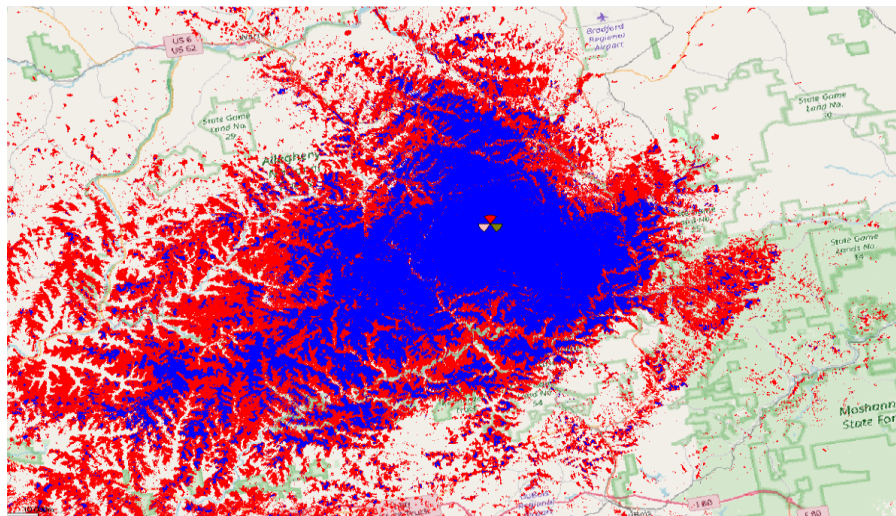


Figure 5: Commercial versus Band 14 coverage.

But it is not only rural coverage that is impacted. Band 14 affects coverage in buildings, schools, hospitals, homes, and factories. Because the 8dB is signal difference between Band 14 and all other LTE Bands is the difference of getting a signal out from a classroom, a stairwell, a basement, or an elevator.

After all the years we fought to get this very special channel, why now on the eve of finally achieving the vision of a dedicated purpose built broadband public safety network are we willing to compromise on a principal as fundamental as this one? This is exactly what the 9-11 Commission sought to achieve! We need Band-14 in Pennsylvania.

Just ask the family of Philadelphia Fire Capitan Taylor what “poor coverage” means to them. On Aug. 20, 2004, Capt. John Taylor and firefighter Rey Rubio found themselves trapped and low on oxygen in a smoldering Port Richmond, Philadelphia basement. Taylor tried to call for help on three occasions that night to no avail. They both died of asphyxiation. Had Taylor's radio been functioning properly, both men would likely be alive, according to a lawsuit filed in 2006 by relatives of Taylor and Rubio.

Rivada’s purpose-built statewide Band 14 coverage is exactly what first responders and citizens need.

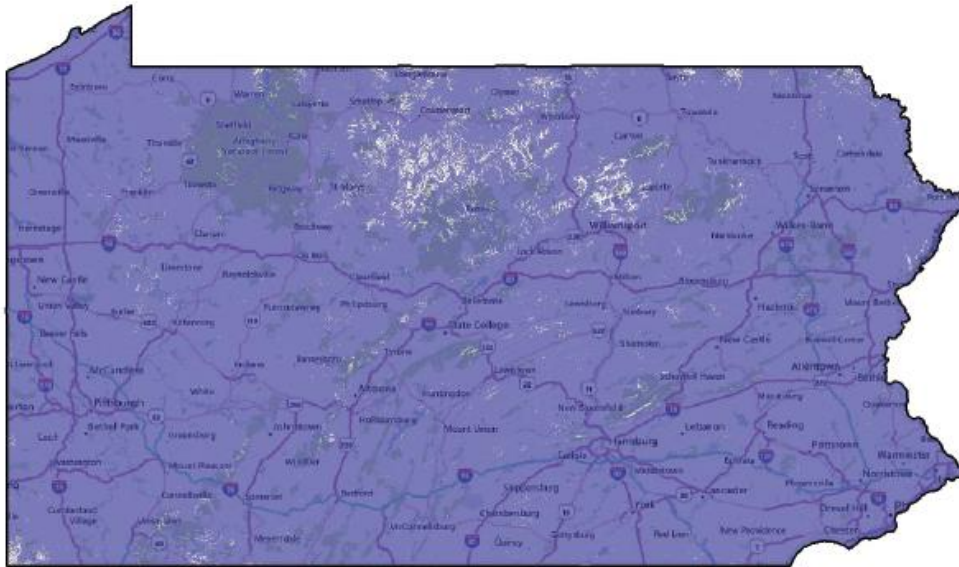


Figure 6: Rivada’s coverage solution to the Commonwealth.

Rivada’s Band-14 network will enable AT&T and Verizon first responder customers to operate on Band-14 across Pennsylvania even where they don’t have coverage.

The Rivada plan reduces risks and improves public safety.

6. Pennsylvania A Leader in FirstNet and Seeking a Viable OPT-OUT Approach



As one of only 8 States that commented on the NTIA's August 2016 Guidance on the State Alternative Plan Program (SAPP), Pennsylvania has already demonstrated leadership and a desire for a genuine alternative to the FirstNet Federal plan. Pennsylvania's comments, submitted by Major Diane Stackhouse of the Pennsylvania State Police and the State SPOC are thoughtful, thorough and presciently accurate in identifying the challenges a state would encounter, if the NTIA did not provide information on the grant demonstration process and other requirements in accordance a recommended timeline.

In Pennsylvania's comments to the NTIA (submitted as part of the record today); Pennsylvania identified a number of issues with the NTIA Guidance including:

- FirstNet requires a timeline from the states that they did not follow themselves.
- There is incomplete information for states to make a decision – A plan from FirstNet is not equivalent to a full RFP.
- NTIA can overrule the FCC but their process is opaque.
- The way a spectrum lease would be negotiated is unspecified and could be used to prevent a state from opting out.

The last item was especially prescient, since indeed, it appears that the draft spectrum lease terms, also known as the SMLA, that were recently released to governors are causing a lot of consternation and appear to be unreasonable, at best.

A significant portion of the comments deal with when final NTIA demonstration criteria should be provided to the states. Pennsylvania makes a clear argument that it should have been at least three months before draft state plans are received (that date ended up being June 15th) and attached a suggested timeline which we include as a figure below. Pennsylvania contends that such time is reasonably required to develop a funding plan, consider costs, and evaluate operational considerations. Now a number of weeks past the FINAL STATE PLAN submission, the complete and final NTIA State Alternative Plan Rules and Grant Guidance and SAPP Notice of Funding Opportunity are still not available². It is not an exaggeration to say that these delays seriously jeopardize a state's right to Opt-Out.

Furthermore, Pennsylvania and Major Stackhouse raise further serious and important questions regarding the Opt-Out process after the FCC's approval and whether the NTIA can make determinations that have the effect of vetoing the FCC's approval? Rivada highly recommends that all parties interested in a fair and open process regarding Pennsylvania's right to Opt-Out familiarize themselves with Major Stackhouse's comments.

In the comments Pennsylvania makes a statement that is directly pertinent to today's hearing on the page 4: "We are also struck by the lack of time a state has under the Act to put out an RFP, secure a corporate partner to build the network, and submit a plan to the Commission: a state gets 180 days, yet FirstNet needed a year for this same process. For these reasons, the Commission and the NTIA must provide the aforementioned criteria three months before the **draft** state plans are delivered by FirstNet."

² NTIA on the SAPP web page states "Details regarding the grant program will be provided in the upcoming SAPP Notice of Funding Opportunity." <https://www.ntia.doc.gov/other-publication/2017/ntia-release-funding-level-determination-each-state>

Exhibit A State Alternative Plan Timeline

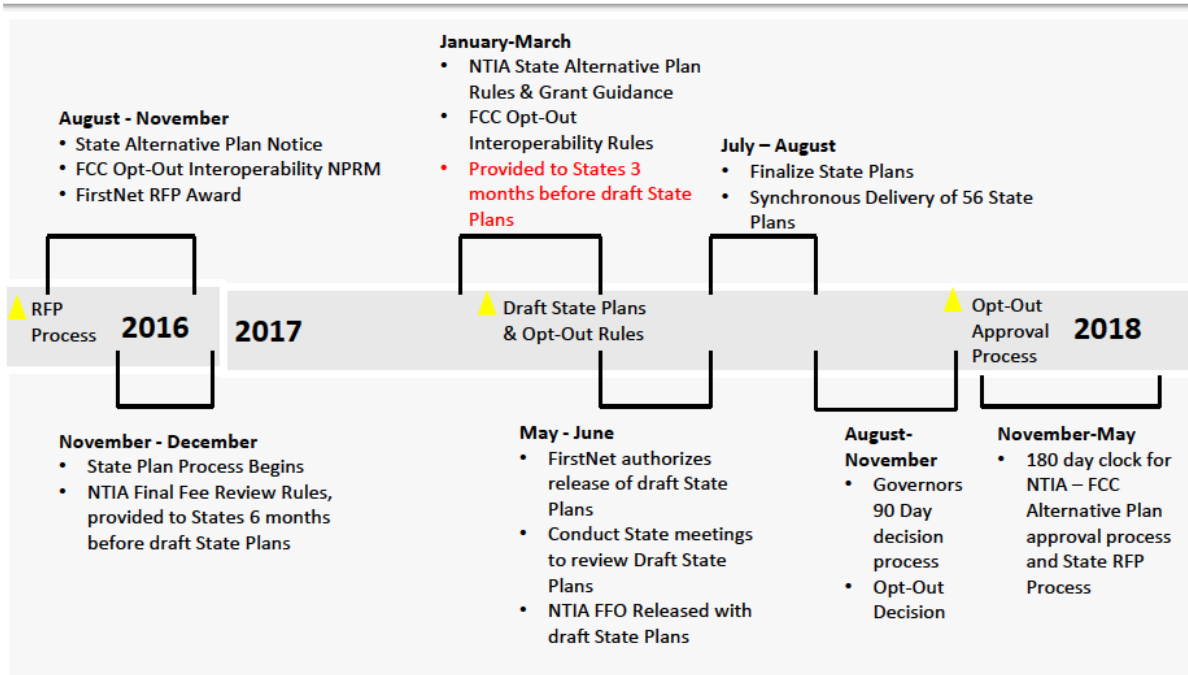


Figure 7: Alternative State Plan Timeline.

Source: Pennsylvania State Police – Major Diane Stackhouse Aug 2016 Comments on NTIA SAPP Guidance.

Pennsylvania is a Leader in FirstNet - Maintain the Course.

7. Pennsylvania
Among the States Committed to Due Diligence

State RFP / RFI Tracker

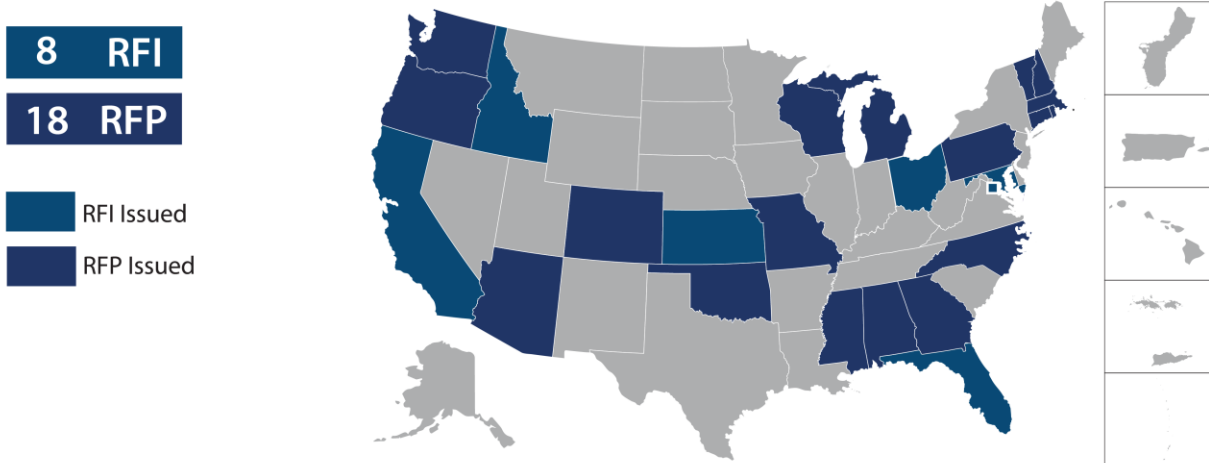


Figure 8: State RFP/RFI tracker as of October 17, 2017.

Pennsylvania has laid out a clear set of objectives, including: First Responder priority, population and expanded geographic coverage, utilization of Pennsylvania assets, guarantees of performance, network sustainability and performance, public safety grade hardening, resiliency, and design controlled public safety entity (PSE) priority access. These objectives are fully addressed and achieved by the Rivada solution. In addition, the Rivada solution provides monetization income that will sustain development and operational costs. Rivada's solution also provides users local control, and absolute priority and preemption.

This powerful and tailored solution surpasses the alternative FirstNet/AT&T offering and will benefit the Commonwealth of Pennsylvania and its principals.

8. Opt for Pennsylvania
Opt to Leverage Existing Investments in PA-STARNet, Local, and County Assets to Generate New Revenues



Pennsylvania has made and continues to make significant investments in [PA-STARNet](#) and its associated backbone network as detailed on the website:

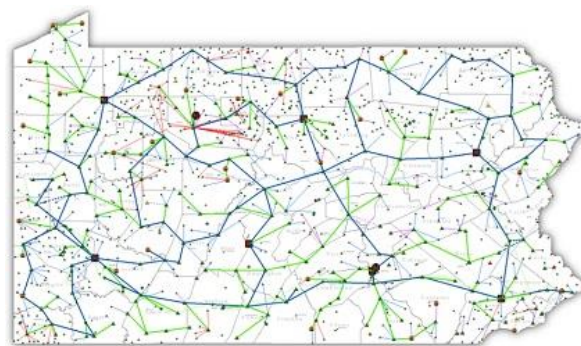


Figure 9: PA-STARNet.

- **Infrastructure:** 254 high-profile towers, 760 low-profile microcells.
- **Coverage:** Mobile radio coverage is greater than 95% signal strength in 65 of 67 counties
- **Users:** 25,756 subscriber devices are authorized for system use.
- **Traffic:** Users log an average of 141,640 calls (push-to-talks) daily.
- **Interoperability:** Gateways support data and voice communications among user groups, from state agencies to local first-responder dispatch centers, including all county 911 centers.

PA-STARNet - Broadband Communications Opportunities:

- System capacity increased, starting in 2012, funded by \$28.8 million federal broadband stimulus grant.
- An additional 150 Mbps capacity was added to the PA-STARNet digital microwave network, using Multi-Protocol Label Switching (MPLS).
- Connections are available to "last mile" providers (ISPs, telcos, cellular providers) and anchor institutions (schools, hospitals, public safety agencies).
- Available in 32 counties in northern Pennsylvania: MPLS Layer 2 Ethernet.
- Continuous network monitoring, 99.999% reliability and availability.

PA-STARNet Tower Space Opportunities:

- Tower space available for commercial rent at approximately 150 sites.
- Reciprocal agreements for public safety through county governments.

Rivada will lease space on PA-STARNet structures and capacity on the broadband communications network generating a significant return on investment for these systems. As the contracted operator of Pennsylvania FirstNet, Rivada as a matter of course and contract will take every necessary step to ensure that the addition of equipment on the towers in no way interferes with PA-STARNet's LMR system. In fact, Rivada will seamlessly and directly integrate into the existing systems for the benefit of both.

As revenues generated directly from PA-FirstNet subscribers is eligible to be reinvested in INFRASTRUCTURE in support of the Commonwealth Public Safety Broadband Network (CPSBN), enhancements made by Rivada to PA-STARNet sites and backbone will also benefit PA-STARNet while maintaining compliance with Federal Law.

9. Opt for Pennsylvania Opt for Fiscal Responsibility, Control and Oversight



Figure 10: Rivada means Investment into the Commonwealth.

Fiscally, the contrast between Opting-In and Opting-Out are considerable. An Opt-Out state has complete visibility into funding, capital investment, revenues (both from operations and state asset leases), and allocation of reinvestments back into Pennsylvania's CPSBN. Opting-In is ostensibly ceding fiscal authority, responsibility, and oversight to an opaque Federal Program that must distribute profits realized in a relatively populous state like Pennsylvania to what Federal bureaucrats have determined are more deserving states.

Not only will Pennsylvania have little insight into how much revenue is generated within the Commonwealth's borders, but the fact is that FirstNet and AT&T have confirmed that they have no plans to deploy Band 14 except where AT&T needs capacity (not coverage). With the Federal plan, the potential for desperately needed revenue is unnecessarily and significantly limited. The Rivada Pennsylvania plan based on a complete statewide deployment of Band 14 delivers an economic benefit that surpasses AT&T by as much as \$1.6 billion.

Additionally, instead of benefiting a Federal monopoly, the Rivada plan by introducing new and needed infrastructure fosters robust market competition across local economies.

10. Opt for Pennsylvania
Add to Pennsylvania's Leadership in PPP's

Rapid Bridge Replacement Program demonstrates Pennsylvania's prowess at PPP's.



www.P3forPA.com

Opting-Out with Rivada offers comparable Statewide benefits:

It is a natural question: *How can Rivada deploy a Statewide LTE Network in less than 48 Months?* But the answer is simply that it is no big deal for Pennsylvania! Pennsylvania is already, as part of the [Nationally recognized](#) Rapid Bridge Replacement Project, removing and replacing 558 bridges throughout the State.

Rivada is proposing to build 1,162 sites in less than 48 months. For the vast majority of these sites, the work entails adding antennas and radio equipment to already existing towers with very few new towers. Most people would agree, that the [Rapid Bridge Replacement Project](#) (RBRP) is a much bigger lift!

If Pennsylvania can achieve the RBRP, it can certainly select and trust Rivada and its team of experienced operators, builders, and financiers to get a great statewide network for its First Responders that will also act as a spur for Technological Innovation, Rural Broadband, and Economic Development.

The Table below shows the clear comparisons between the two projects:

Program Criteria	Rapid Bridge	PA-FirstNet/Rivada
Term	25 Years	25 Years
Deployment	36 Months	48 Months
Units	558	1162
Funding	Public/Private	Grant/Private (Zero Cost)
Asset	Statewide New Bridges	Statewide LTE System
Revenues	Tolls/PennDOT Fees	Commercialization
Benefits	Transportation Infrastructure	Economic Development, Innovation
Jobs	1000's	6000
Value	1 Billion	2.1 Billion

Table 1: Comparison between Rapid Bridge and PA-FirstNet/Rivada.

Opting Out is the lowest risk, highest reward PPP available to States this Year.

- a. Pennsylvania is acquiring an asset (Spectrum Lease) they otherwise forgo without a PPP by Law (i.e. there is no risk like with a Toll Road that the public is hindered since the State is not capitalizing and privatizing an asset it already owns).
- b. Pennsylvania benefits from existing brownfield asset investments (i.e. existing towers, backhaul, PSAPs) through direct leases and indirect economic efficiencies.
- c. Pennsylvania will also get a significant greenfield build of desperately needed broadband infrastructure.
- d. Rivada's unique wholesale model unleashes new market opportunities for businesses of all sizes – from local ISPs, to Comcast, to Google.
- e. Pennsylvania has a proven capacity to set up and successfully administer PPP's like Rivada/Macquarie and in so doing will benefit from additional investment interest, opportunities and projects.
- f. Opting Out generates "revenues" not otherwise realized by Opting In.
- g. In addition to the direct wholesale market benefits, indirect investments and spending on service companies, applications development, deployables, in vehicle installations (Police, Fire, and EMS), cameras, IoT, transportation, energy (Marcellus shale projects and monitoring), utilities, education, etc.
- h. As a bonded no cost arrangement Pennsylvania's downside is negligible to nonexistent, upside is tremendous for the reasons outlined above.
- i. Competitive QPP on commercial networks (available today) has removed ALL risk to Public Safety, FirstNet, and Responders for Opting Out.

11. Opt for Pennsylvania

>90% of Public Safety Incidents are 100% Local

There is a lack of appreciation for what Interoperability entails. Whether a State opts in or out it will by Law be fully interoperable with the nationwide network. The FCC will be the independent body that verifies that opt-out states' networks conform to interoperability standards as part of the opt out process. Since FirstNet and its policies are based on the 3GPP standards for LTE, the FCC's verification process is a reasonable and achievable means of assuring system interoperability.

But the interoperability and operability of these First Responder Networks that matters most is not between two LTE networks that can and will be able to communicate across state lines. The interoperability that matters most is at the local level. It is at this level where Police, Fire, and EMS responders must regularly and consistently interoperate. And it is here that the FirstNet/AT&T approach fails so spectacularly. Charged with building an interoperable nationwide public-safety broadband network, FirstNet has opted for an approach that requires first responders to be AT&T subscribers if they want the benefits of the network. So if the EMS in some town in PA is on Verizon, and the fire company is on Verizon, AT&T wants to deny those firefighters the ability to use the Band 14 network and the FirstNet apps in an emergency. That's not interoperability. It's another stovepipe, like the ones public safety fought to get away from when it fought for Band 14 for first responders.

And having adopted this non-interoperable, stovepiped approach to emergency communications, FirstNet is now they're trying to force states to accept this approach, rather than opt out.

Pennsylvania must have the Network Operational Capability to support its own local, county and state responders unhindered by an outside entity. Only in specific and very rare cases does the governor cede responsibility to federal authorities. And even as an opt-out state that option will exist. But for day to day

operations within the Commonwealth, Pennsylvania must not be in a position of being deprioritized because it elected to opt in to a federal system. Maintain the means to respond and handle our own incidents. It is the Commonwealth's solemn duty to its citizens.

12. Opt for Pennsylvania Pennsylvania Innovates

All of us here are familiar with Pittsburgh's continuous improvement process starting with investments and policies that promoted the City as a Hub for Medicine, Computer Science, Education and particularly Technology. It is Now Becoming the Innovative Hub of the Autonomous Vehicle. And as the original American frontier - Pennsylvania never sits still – its people and institutions are constantly adapting and changing in innovative ways to increase productivity, quality of life, and opportunity in the state.

For example in discussions with Carnegie Mellon's Stan Caldwell the Director of Carnegie Mellon's [Traffic21 Institute](#) and the Technologies for Safe and Efficient Transportation [University Transportation Center](#). Stan expressed interest and understands the advantages of our model which opens up spectrum for many more applications. The Rivada statewide 4G (that will be upgraded to 5G as features of 5G are made available) LTE network offers a unique wholesale access model that will unleash economic opportunity throughout the state. The network will be fully bonded and built at no cost to the state with funding coming from the wholesale commercialization of the bandwidth (actually using what are considered 5G techniques). A network that is ideally suited to cost effectively and competitively address the long range terrestrial communications needs of Autonomous Vehicles. Today's feudal spectrum system (where 4 operators control almost all the real estate), services like [a basic](#) On-board diagnostics (OBD) monitor for the connected car, cost a prohibitive \$10 a month. The wholesale open spectrum market as proposed uniquely by Rivada for FirstNet can drive those costs down to a dollar or less per month within Pennsylvania.

Future meetings are in the planning to discuss longer term goals with the Traffic 21 team and work on more specifics on how wide area communications play into the Autonomous Vehicle and Intelligent Highway Future.

Rivada's Wholesale Network Unleashes Innovation and Opportunity.

13. Opt for Pennsylvania Opt for No Technological Risk



There is no technological risk to Opting-Out. Whether a state opts in or out; the technology must be exactly the same by law. The networks are based on the worldwide 4G LTE standard and if Pennsylvania selects Rivada; we will source the equipment from the same vendors that predominantly supply Sprint, T-Mobile, Verizon, and yes AT&T's networks.

**14. Opt for Pennsylvania
Conclusion**

In the next 70 days Pennsylvania Governor Tom Wolf will make the FirstNet decision for Pennsylvania. An opt-in decision shortchanges Pennsylvania for 25 years. We believe the best decision for Pennsylvania and Governor Wolf is to opt-out and partner with Rivada to optimize every FirstNet opportunity for Pennsylvania.

As the table below demonstrates Rivada offers the most complete deal for Pennsylvania, makes FirstNet Competitive which enhances innovation and interoperability, and provides AT&T and Verizon Public Safety Customers with Statewide Band 14... **Making 100% Pennsylvania User Adoption Truly Achievable!**





			
Local Authority	X	X	✓
Contract / SLA	X	X	✓
Revenues	X	X	✓
Band 14	?	X	✓
New Job Creation	?	?	✓
PS Local Savings	?	?	✓
Purpose Built Network	X	X	✓
Bonding	X	X	✓

Figure 11: PSBN Offers Key Network Features matrix.

State of New Hampshire

JOHN J. BARTHELMES
COMMISSIONER OF SAFETY



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March 8, 2017

To whom it may concern,

In July 2015, the New Hampshire Statewide Interoperability Executive Committee, through its Data Communications Working Group, began discussions to develop a Request for Proposal (RFP) regarding an Alternative Plan to the FirstNet initiative. It was clear that FirstNet would eventually provide a State Plan regarding deployment, but our concern based on pure economics was that there would be many areas of the country that would be underserved. New Hampshire being a small northern New England State, it was obviously apparent and it became a significant issue to the principals involved in the process. Secondly, we would be remiss in our responsibility to the State if we did not pursue whatever options may be available. The purpose was to provide to the Governor & Council comparison data to ensure that the decisions regarding FirstNet were in the best interest of the State.

On September 7th, 2016, the Governor & Council approved a no-cost, no-obligation Agreement between the State of New Hampshire and Rivada Networks to produce a FirstNet Alternative Plan that would satisfy the prerequisites and requisite needs as identified by FirstNet. The Alternative Plan, which is still in development as of this writing, will provide options available to New Hampshire that would have never been made available, if we didn't pursue this opportunity. Considering the time elements that have been promoted by FirstNet and considering that we have been in the process of developing this Alternative Plan since July of 2015, there is no conceivable way that if States aren't proactive in this endeavor, an Alternative Plan prepared and approved would be impossible.

The above information is outlined specifically to address the commitment made by Rivada Networks to the State of New Hampshire over this time span. Since this partnership was created, Rivada Networks and a host of their sub-contractors have devoted countless hours and energy to make New Hampshire successful in this

endeavor. At every juncture, they have brought industry leaders to the table with the experience and background that are unquestionably the finest in their field. Their proposal to New Hampshire could not be ignored and their dedication and commitment to showcase this effort's positive outcome cannot be denied. Rivada Networks is a partner to New Hampshire in its truest sense. Their assurances to the State of New Hampshire have been no less than their pledge and obligation in achieving success throughout this undertaking. The challenges that will be placed before New Hampshire, or any State, that wishes to represent their own State's interest regarding FirstNet will be many, but it is our opinion that there is no more valued vendor than Rivada Networks, which has worked tirelessly in partnership with the State of New Hampshire to make this venture a success.

Sincerely,

John T. Stevens, SWIC/SPOC
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