

**Before the
Federal Communications Commission
Washington, DC 20554**

In the Matter of)	
)	
Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications)	PS Docket No. 11-153
)	
Framework for Next Generation 911 Deployment)	PS Docket No. 10-255
)	

COMMENTS OF BANDWIDTH.COM, INC.

Bandwidth.com, Inc. ("Bandwidth.com") submits these comments in response to the Federal Communications Commission's ("Commission") September 22, 2011, Notice of Proposed Rulemaking seeking public comment on accelerating the development and deployment of Next Generation 9-1-1 ("NG9-1-1") technology that will enable the public to deliver text, photos, videos, and other supplemental information to Public Safety Answering Points ("PSAPs").¹

Introduction and Summary

Bandwidth.com submits these comments as a company leading the effort to deploy NG9-1-1, including text-to-9-1-1 solutions. As an expert in IP networking and routing E9-1-1 calls to the appropriate PSAP on behalf of its IP-enabled service provider customers, Bandwidth.com is uniquely prepared to implement the wealth of 9-1-1 capabilities and features that will be unleashed by a transition to NG9-1-1. As a 9-1-1 solution provider, Bandwidth.com today manages a nationwide network that connects to almost all of the 650 selective routers in the country and virtually all of the automatic location identification ("ALI") databases operated by the 9-1-1 System Service Providers and by standalone jurisdictions. Bandwidth.com was selected by the State of Alabama to provide NG9-1-1 routing throughout the state-wide NG9-1-1 system. Bandwidth.com has also recently submitted bids for similar NG9-1-1 service contracts with the States of Maine and Connecticut.

¹ In the Matter of Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications; Framework for Next Generation 911 Deployment, PS Docket Nos. 11-153 and 10-255, *Notice of Proposed Rulemaking*, FCC 11-134 (rel. Sept. 22, 2011) ("*NG911 NPRM*").

Thus, Bandwidth.com is becoming increasingly familiar with the complexities and uncertainties 9-1-1 administrators confront in the transition to NG9-1-1.

Bandwidth.com also provides text-to-911 solutions and has valuable insights into specific real-world challenges that shape its recommendations for adding non-voice capabilities to the 9-1-1 system in the near term.² Once fully deployed, NG9-1-1 systems will elegantly enable text-to-911 capabilities. Already, however, NG9-1-1 components and architectures provide many ways to deliver text to 9-1-1 services. Text to TTY allows any and all PSAPs in the country to accept text to 9-1-1. Other trials are demonstrating alternative techniques. Thus, text-to-911 solutions are available now and, with an appropriate national regulatory framework in place, Bandwidth.com stands ready to provide this service to customers throughout the country. By establishing a framework for text-to-911 that uses standard NG9-1-1 functions at a national level, the Commission can enable 9-1-1 providers to give citizens the ability to text to 9-1-1 in a very short timeframe.

There is no question that a wide array of enhancements can be made to emergency services capabilities in a NG9-1-1 environment to improve both end-user access and responders' ability to assess and respond to emergencies more efficiently.³ Therefore, Bandwidth.com strongly supports the Commission's efforts to deploy NG9-1-1 as quickly as possible to take advantage of the breadth of functionality NG9-1-1 will create. While rapid deployment is critical, Bandwidth.com also applauds the Commission's efforts to avoid unnecessary mistakes to ensure that the deployment is as effective as possible. Accordingly, Bandwidth.com urges the Commission to refrain from attempting to establish regulations proposed to address each and every service, product or entity involved in the NG9-1-1 system. Instead, the Commission should establish a national framework that allocates rights and obligations among the NG9-1-1 participants and allows industry and 9-1-1 administrators to flesh out the details through a collaborative process.

² See Letter from Greg Rogers, Deputy General Counsel, Bandwidth.com, Inc., to Marlene H. Dortch, Secretary, Federal Communications Commission, PS Docket No. 11-153, *et al.*, dated November 9, 2011.

³ See *id.* 1, 2.

Specifically, Bandwidth.com recommends that the Commission implement a federal program that includes clear guidance to state and local 9-1-1 authorities as well as industry participants to achieve the most effective NG9-1-1 governing structure. As a part of this overarching guidance, the Commission should set a timeline for native NG9-1-1 support and establish clear transitional guidelines for established 9-1-1 system service providers. While Bandwidth.com recognizes that it is not a distributor of funds, the Commission should be cognizant of and seek to implement regulations that will lead to cost-effective state-level migration to NG9-1-1. NG9-1-1 will not only enable advanced features, but, under the right regulatory framework, can produce significant cost savings as well. Finally, Bandwidth.com encourages the Commission to require a public education program to prepare consumers for differing capabilities in an NG9-1-1 environment.

The Role of the States in Determining the Best Deployment Options for Their Constituents

In the *NG911 NPRM*, the Commission seeks comment on how it can create incentives for the states to alter their regulatory frameworks to encourage the development and deployment of NG9-1-1.⁴ It also asks whether it should implement an approach at the state, regional or individual PSAP level.⁵

Bandwidth.com recognizes the importance of consistent, uniform guidelines and principles to move regulators, the industry and consumers toward the shared goal of migrating to NG9-1-1 to “improve emergency response, save lives, and reduce property damage.”⁶ A number of states, including Alabama, Connecticut, Iowa, Maine, Minnesota, Tennessee, Texas and Washington have already started a migration to NG9-1-1. Kansas, Kentucky, Massachusetts, and New Jersey are conducting inquiries and may be the next to adopt NG9-1-1 plans. Given the rapidity with which state 9-1-1 administrators are advancing plans to migrate to NG9-1-1, national standards are necessary to ensure public safety goals are attained through uniformity, interoperability and

⁴ *NG911 NPRM*, at ¶¶ 99-100.

⁵ *NG911 NPRM*, at ¶ 92.

⁶ *NG911 NPRM*, at ¶ 1.

consistency across multiple systems and jurisdictions. A uniform structure will be most effective through the adoption of Commission rules. Nonetheless, Bandwidth.com recognizes that some responsibilities are best left at the state and local level.

The NG9-1-1 system defined in the NENA standard (08-003) implements a “system of systems” approach to a nationwide, tightly integrated, emergency call network. To accomplish this, the Commission must recognize the benefits of state-level deployment of a full NG9-1-1 system that takes into account the unique elements of each state, within the context of a national framework. Bandwidth.com therefore recommends that a NG9-1-1 system be deployed at a state level with interoperability between neighboring states, as well as cooperation and collaboration between the states and localities within the states.

This recommendation is based on three key factors. The first is cost. After migrating to NG9-1-1, costs to the 9-1-1 authorities will be reduced. This is because NG9-1-1 is fundamentally based upon the economic and technological advantages inherent to IP networking. NG9-1-1 networks will be designed to take advantage of commercially available, off-the-shelf computer and networking hardware components, which reduce the cost of the system components. Beyond the software that implements the NG9-1-1 functions along with networking, monitoring and maintenance, the most substantial costs of deploying NG9-1-1 will be associated with the legacy public switched telephone network (“PSTN”). For example, as states move off of the E9-1-1 infrastructure, those remaining will start to incur higher costs. Costs that are fixed and previously amortized across a large number of PSAPs will need to be spread over fewer PSAPs thus increasing the price.

9-1-1 administrators can reduce these costs by avoiding the unnecessary extension of PSTN concepts and centralizing core IP routing components at the state level, rather than utilizing multiple, distributed routing components, like today’s selective routers. Bandwidth.com is witnessing first hand the challenges associated with forcing established industry participants to revise their legacy approaches that are necessary to realizing the technologic and economic promise

of NG9-1-1. Within the status quo, there is a palpable risk of Incumbent providers acting primarily out of self interest to delay otherwise ongoing progress until they are certain of an outcome in line with their interests. Legacy E9-1-1 component obsolescence is starting to occur. The Commission must immediately address this danger head on to remove obstacles that, if allowed to stand, threaten the successful development and deployment of NG9-1-1.

The second factor supporting a systems-of-systems approach is the need to dedicate staff resources with a specialized skill set to oversee a NG9-1-1 system. Training staff and dedicating resources necessary to implement, oversee and operate a NG9-1-1 system at the local level will be a challenge both from a funding and operational standpoint. Replicating the specialized skill set needed for NG9-1-1 operation in dozens of emergency communications districts would be far less efficient than designating dedicated specialists at the state level to oversee and operate a statewide NG9-1-1 system.

The third factor relates to the position of state regulators in the current regulatory structure. States have the regulatory authority over many of the entities that will play a role in the migration to NG9-1-1. State public utility commissions have authority, for example, to implement rules governing the operation of wireless and VoIP providers and certification and oversight of ILECs and CLECs. States also often have a wireless 9-1-1 board or a unified 9-1-1 board in place to administer 9-1-1 services on a statewide basis. Depending on their authorizing statutes, some or all of these entities will have some various levels of authority related to the implementation of NG9-1-1, including making determination regarding the allocation of funding or other resources. State governing bodies will be in the best position to manage the participation in and deployment of state-level NG9-1-1 systems with clearly articulated Commission goals and mandates.

For example, the Commission should establish strong interoperability and interconnection requirements to ensure that the NG9-1-1 solutions are effectively implemented in different states or different localities within a state without being subjected to “ransom taking” tactics by legacy interests. The Commission should establish roles and responsibilities for originating communications

service providers and the NG9-1-1 System Service providers with a special emphasis on the interconnection rights and obligations for each on a national level. The existing E9-1-1 System Service Providers cannot be allowed to negatively influence the migration to NG9-1-1. Legacy providers should not be allowed to use their current monopoly position of providing the call aggregation point, or selective routers, in any way that would impede the migration. This includes introducing any unwarranted technical or financial hurdles.⁷ In sum, states and local authorities will make implementation decisions, but they must be made within a federal structure that is narrowly tailored to achieve the fundamental promises of NG9-1-1.

The Timeline for NG9-1-1 Support

The Commission seeks comment on the necessary steps for providers and PSAPs to support integrated “native” IP communications and the time that the process is likely to take.⁸ With respect to the timeline under which new mandates may be required to be implemented by covered providers, Bandwidth.com believes that regulatory mandates inserted into an evolving marketplace will be most successfully implemented through a phased-in approach. The Commission should avoid a “hurry-up-and-wait” implementation schedule. Regulations that impose a short timeline on one aspect of NG9-1-1 or on one group of providers, when other elements of the NG9-1-1 system may not keep pace will create inconsistent implementation and misplaced customer expectations. For example, flash-cut mandates for a new class of IP-enabled services are unlikely to be fully effective because the roll-out of NG9-1-1 networks themselves will occur over time and in phases across the

⁷ For example, the Illinois Commerce Commission’s (“ICC”) rules governing how LECs are required to interconnect with the E9-1-1 SSP contain a requirement for a “direct and dedicated trunk” between the LEC’s switch and the E9-1-1 SSP’s selective router. Illinois staff unfortunately interprets its rules to require LECs to have individualized trunking to PSAPs such that LECs subject to ICC jurisdiction would not be allowed to use a turn-key E9-1-1 solution from an underlying VoIP Provisioning Center service like that offered by Bandwidth.com to its customers around the country. This regulatory interpretation can thus spill over into interconnection agreements that require such trunking, thereby imposing unnecessary costs since a LEC desiring a VPC service offering would not otherwise utilize the trunking. The result is an undesirable regulatory barrier to innovation and competition since the regulations in effect mandate an exclusive preference for a legacy solution. See Letter from Michael P. Donahue, Counsel for Bandwidth.com, to Ms. Marlene H. Dortch, Secretary, Federal Communications Commission, PS Docket 10-255 (filed April 6, 2011).

⁸ *Id.* ¶ 8.

country. State and local governments are beginning to contemplate the implementation of NG9-1-1 for rapidly evolving services, but there is an extremely wide range of readiness at this point in time.

At the same time, providing a timetable for deployment across the country establishes and legitimizes the market for these offerings and will encourage and support investment in companies offering solutions. A set of deadlines will create more certainty for the investors, the industry and for 9-1-1 authorities. Therefore, Bandwidth.com encourages the Commission to establish an appropriate transition timetable to enable providers to make any modifications deemed necessary in this proceeding to move to an NG9-1-1 world. The Commission should enlist the involvement of industry organizations, and link any timeline to the ability of PSAPs to accept NG9-1-1.

Bandwidth.com believes the transition of carriers to state NG9-1-1 systems should proceed through several phases. An initial, relatively short phase could allow for the initial deployment of NG9-1-1 elements but allow carriers to continue to use current Time Division Multiplexing ("TDM") network technology. Legacy Network Gateways can be deployed to convert the TDM signal to SIP, the standard protocol within the NG9-1-1 System. An intermediate phase of the transition would initiate the delivery of emergency calls to the NG9-1-1 system via session initiation protocol ("SIP"). The instigation of this phase eliminates both the need to convert traffic from TDM to IP as well as the TDM equipment. In this phase, Location information should be delivered to the PSAP using the Location Information Server ("LIS"). The final phase of the evolution would be direct and full interface to the NG9-1-1 system. This final phase requires the carriers to query the Emergency Call Routing Function of the NG9-1-1 system for routing instructions and the delivery of the call to the Emergency Services Routing Proxy for delivery to the appropriate PSAP. Location information is delivered with the call as part of the header information in a NG9-1-1 system.

Note that the network and equipment costs are reduced at each phase. Jumping over phases can materially reduce the cost of deploying a NG9-1-1 system. States adopting NG9-1-1 in the near-term cannot realistically expect the carriers to jump to direct and full interface to the NG9-

1-1 system. However, as carriers migrate to this interface in states that adopt NG9-1-1 early, they will be prepared to go directly to this interface in states that adopt NG9-1-1 later.

The Need for Consumer Education

The Commission seeks comment on “how to educate and prepare consumers for disparate PSAP capabilities in an NG911 environment.”⁹ Bandwidth.com agrees that variations in the capabilities of handsets and PSAP capabilities and other issues necessitate broad public education efforts. It is vital to ensure that consumers have complete, accurate information about NG9-1-1. Ensuring that consumers are fully informed about the capabilities and limitations of NG9-1-1 is a critical component of the transition from legacy 9-1-1 to NG9-1-1. The Commission’s NPRM recognizes that there may be instances where consumer perception and the reality of service limitations do not meet.¹⁰ Many, but not all, of the public education efforts are required because certain services will be phased in within different states at different times. The Commission’s final rules should reflect a similar recognition.

The need for information about NG9-1-1 deployment, limitations and capabilities might extend beyond consumers to PSAPs, 9-1-1 providers or other entities. Many of these entities will not have been regulated before and therefore will be unfamiliar with operating in a regulated environment. The Commission should, working with industry groups, develop an appropriate education program for all participants in NG9-1-1.

The Commission notes in the NPRM that “variations in the capabilities of different caller handsets may lead to non-uniform access.”¹¹ Bandwidth.com supports a certification and labeling program as part of the public education process.¹² Under the approach recommended by Bandwidth.com, phones or other devices that fit squarely within a Commission-defined standard set

⁹ *NG911 NPRM*, at ¶ 104 et seq.

¹⁰ *Id.* ¶ 106.

¹¹ *Id.* ¶ 105.

¹² See Comments of Bandwidth.com, Inc., In the Matter of Amending the Definition of Interconnected VoIP Service in Section 9.3 of the Commission’s rules; Wireless E911 Location Accuracy Requirements; E911 Requirements for IP-Enabled Service Providers, GN Docket No. 11-117, PS docket No. 07-114, WC Docket No. 05-196 (filed Oct. 3, 2011).

of reasonable end-user expectations would be required to provide full 9-1-1 services and NG9-1-1 capabilities. Devices or services that deviate from the “standard” would be subject to an alternative determination or certification process based on criteria established by a third-party such as NENA, the Association of Public-Safety Communications Officials (“APCO”) or the National Institute of Standards and Technology (“NIST”). Then, results of testing or an audit of some sort would establish the label that a device or service would be able or required to display, clearly communicating the level of emergency services available to the subscriber. This approach would be technology neutral and unencumbered by technological change while promoting competition. If the program includes clear, easily identifiable criteria for various types of certification, such that a particular certification or label would mean a certain level of NG9-1-1 capability, it would be possible for consumers to know exactly what capabilities a particular device or service provides. Such a process would enable consumers to make educated decisions when shopping for a service.

This is especially true with respect to supplemental information, such as text messages, photos, or full motion video that could potentially be delivered to a PSAP. As NG9-1-1 networks add media beyond voice that can be provided to PSAPs, new devices must be compatible with the NG9-1-1 system. In addition, the NG9-1-1 system must be deployed in the subscriber’s area, and the PSAP and PSAP staff must have the training and technical ability to accept such data and use it effectively. With Commission rules that provide clear guidance as to the content and format of information that is provided to subscribers regarding the capabilities of particular devices and the NG9-1-1 system, consumer expectations and behaviors will adjust accordingly.

Conclusion

Bandwidth.com urges the Commission to develop a regulatory regime that furthers its goal of accelerating the move toward NG9-1-1 networks throughout the country, including facilitating the deployment of text-to-9-1-1 and other next generation 9-1-1 applications. An appropriate regulatory regime for NG9-1-1 must ensure that IP-enabled services and applications are allowed to develop in a competitively and technologically neutral marketplace even while achieving critical public safety

goals of improving PSAPs' and first responders' ability to assess and respond to an emergency situation. Bandwidth.com recommends that the Commission allow for states, in cooperation with local level 9-1-1 authorities, to determine the best deployment options for their state, in keeping with an obligation to interoperate with neighboring states.

Respectfully submitted,

/s/

Michael P. Donahue
Linda McReynolds
Marashlian & Donahue, LLC
The *CommLaw* Group
1420 Spring Hill Road
Suite 205
McLean, VA 22102
Tel: (703) 714-1300
Fax: (703) 714-1330

Greg Rogers
Deputy General Counsel
Bandwidth.com, Inc.
4001 Weston Parkway
Cary, NC 27513

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