

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

In the Matter of	)	
	)	
Improving 911 Reliability	)	PS Docket No. 13-75
	)	
Reliability and Continuity of	)	PS Docket No. 11-60
Communications Networks, Including	)	
Broadband Technologies	)	
	)	

**COMMENTS OF VERIZON AND VERIZON WIRELESS**

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**COMMENTS OF VERIZON AND VERIZON WIRELESS**

Verizon and Verizon Wireless<sup>1</sup> (“Verizon”) have long taken steps to ensure the availability and reliability of their services. Verizon and other communications providers strive to offer 911 service to PSAPs and consumers that is available when the community needs it – even in the event of disasters or severe overloads. While Verizon spends billions of dollars each year to build, maintain, and protect the health of its networks, its networks were put to the test in 2012, first by the Derecho and then by Hurricane Sandy.

During the Derecho, there were 911 impacts experienced in certain locations, and Verizon has openly acknowledged that it can and should provide better service. To that end, Verizon promptly investigated the root causes of the impacts to 911 and launched an aggressive plan to improve its networks and practices in four key areas – i.e., central office (CO) power, network monitoring, 911 network redundancy and diversity, and the condition of its COs – throughout its service area. Verizon also instituted further improvements in its communications with PSAPs. These improved practices contributed

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<sup>1</sup> In addition to Verizon Wireless, the Verizon companies participating in this filing are the regulated, wholly owned subsidiaries of Verizon Communications Inc.

to a positive network experience during Hurricane Sandy, during which 911 problems were generally avoided in the New Jersey and New York areas affected most heavily.

Like Verizon, the Commission understandably wants to prevent similar 911 issues from recurring anywhere in the country. In the *Notice*,<sup>2</sup> the Commission is exploring how to increase the adoption of protective measures in the areas on which Verizon is focusing and to obtain visibility into the resiliency of 911 networks nationwide. One approach suggested by the Commission – a certification program for 911 service providers – would be an effective and reasonable way to accomplish this. In particular, the Commission could establish an annual certification program centered on a core set of practices that would be developed by industry and other stakeholders. Each year, 911 service providers could certify that they have implemented the practices or taken alternative measures to address the same risk. Alternatively, the provider could demonstrate why the practice is unnecessary or inappropriate in a particular instance. Such a program would obviate the need for prescriptive, one-size-fits-all regulation compelling the adoption of certain practices and thus give providers greater flexibility to adopt practices that make sense for their networks and PSAP operations and to take innovative approaches with its PSAP partners to counter new risks.

In addition, Verizon recognizes that communicating pertinent information to PSAPs when an outage occurs is important and has undertaken steps to address this issue, including by providing information of the types the Commission identifies in its proposed rule change. If the Commission decides here to amend its current rule to promote that

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<sup>2</sup> See *Improving 9-1-1 Reliability; Reliability and Continuity of Communications Networks, Including Broadband Technologies*, Notice of Proposed Rulemaking, 28 FCC Rcd 3414 (2013) (“*Notice*”).

communication, the Commission should slightly revise the proposed rule to provide clarity and flexibility to 911 service providers when multiple PSAPs are simultaneously impacted. The Commission should also ensure that the rule focuses on information the PSAP actually needs as the PSAP considers how best to react to the outage.

## **DISCUSSION**

### **I. Verizon Takes Network Reliability Seriously and Is Applying the Lessons Learned from the Derecho To Further Improve 911 Service.**

Verizon is using the lessons learned from the Derecho with respect to CO backup power, network monitoring, and 911 network redundancy and diversity to undertake a comprehensive look at its network throughout its entire service area. In doing so, Verizon is devoting substantial resources to make improvements that should help prevent similar impacts to 911 from occurring in the future.

#### **A. Central Office Power**

Almost all of Verizon's COs are engineered to have on-site, fixed generators with 72-hour fuel reserves as well as battery reserves. When a generator is present, the battery reserve is generally designed for at least three hours, and sometimes more, depending on state and local standards or needs. Otherwise, the battery reserve is designed for over eight hours to allow time for a Verizon technician to arrive on site and connect a portable generator.

Verizon maintains a thorough testing and maintenance practice for its backup power. For instance, Verizon runs both monthly and annual generator tests. Because these generator tests interrupt commercial power, Verizon can often test whether the battery backup is working at the same time. Verizon also visually examines each CO battery monthly, performs a full inspection and cleaning semi-annually, and runs a

discharge test annually. If the battery does not meet the length of charge requirements, Verizon will replace the battery or add new battery strings to support the load.

In light of the power challenges Verizon experienced during and after the Derecho, Verizon is taking additional steps to mitigate the potential impact of commercial power loss on its networks and services, with an estimated cost of around \$30 million just for DC, Maryland, and Virginia. These measures include reviews of backup power systems for its facilities supporting 911 service and taking necessary corrective actions to address issues identified in those reviews. By November 2012, Verizon had completed the reviews for the mission critical facilities that support 911 services in DC, Maryland, and Virginia and already has completed most of the corrective actions identified. For the rest of its service area, Verizon is endeavoring to complete these reviews by July and to complete any remedial efforts by the end of the year. Verizon plans to conduct similar assessments every three years or whenever it performs major electrical or mechanical upgrades at the CO.

Moreover, Verizon has instituted new processes for its technicians to communicate any issues identified in monthly generator tests immediately through management so that corrective actions can be taken promptly. Verizon has also enhanced its “Black Out” testing procedures of its backup power systems, which includes tests for “failed automated controls” and “prioritized system load transfer” scenarios.

In addition, Verizon is enhancing its emergency practices and procedures to improve service restoration, including development of site-specific procedures to: (1) enable any employee to determine if there is a loss of power to an area of the building so that outages can be recognized earlier; and (2) improve manual generator start and

transfer procedures, including prioritized systems loads, so that more employees are familiar with emergency procedures and generator system design and can help facilitate manually starting generators if they do not start automatically.

**B. Network Monitoring**

The Derecho helped demonstrate the need for improvements in Verizon's telemetry network. The loss of power in certain COs following the Derecho caused Verizon to lose the telemetry systems that enable it to receive alarms, monitor its network, identify the cause and location of problems, and repair them rapidly for certain locations. Even though the loss of power was limited to a handful of COs, a few of these COs were critical links in Verizon's telemetry systems in the areas, and Verizon lost visibility into more than the COs without power. Verizon has since launched an extensive effort to improve the diversity of its telemetry system throughout its footprint.

Specifically, Verizon is rebuilding its telemetry system to provide more diverse connections and alternate (backup) locations, in the event of a problem at a location where telemetry information is aggregated. As part of that effort, Verizon is redesigning its telemetry edge routers to connect to a core router that has generator and battery backup. After it completes that rebuild, Verizon will implement a lockdown feature designed to prevent designated circuits from being rearranged in the network. Verizon is also instituting automated controls to give higher priority to maintaining or restoring the telemetry functions when generator problems arise so that monitoring can continue in those circumstances.

Furthermore, Verizon has begun remediation at each CO that supports 911 service to upgrade its edge routers. For other COs, depending on condition, Verizon may

perform hardware upgrades, including replacing the routers and switches. Verizon will also move all telemetry traffic across Verizon's service area to the IP network, which provides a more robust environment with many alternative paths for telemetry information to flow.

**C. 911 Network Redundancy and Diversity**

In addition, Verizon is considering measures to incorporate even more redundancy into its 911 network. Verizon already maintains highly redundant and diverse 911 facilities to mitigate the impact of any loss of service. Nonetheless, Verizon's analysis of the network impacts of the Derecho identified areas for improvement on diversity, notably for ALI and trunk diversity in some PSAP configurations.

Verizon has begun working directly with its individual PSAP partners on potential improvements in that regard. In particular, last year, Verizon conducted network design reviews of PSAP trunking and ALI links for diversity for all Maryland and Virginia PSAPs. Verizon is now working towards implementation of the recommendations from those reviews. And Verizon has almost completed similar reviews of PSAP trunking throughout its footprint.

Moreover, Verizon is working on a means to store network information in a new inventory system to better facilitate response and restoration.

**D. Central Office Condition**

In addition to its close examination of its COs for power issues, Verizon is undertaking more fulsome reviews of each CO that supports 911 in its service area. Specifically, Verizon will examine and verify proper operation of the site's cooling

(HVAC) systems; ensure preventative maintenance has been performed; and confirm that its maintenance records are up-to-date. Additionally, critical alarm operation and reporting to the appropriate network surveillance center will be verified. Verizon has completed its inspections of COs in Virginia and a number of other states and has already completed many of the recommendations from those reviews. Verizon intends to repeat these assessments every three years.

## **II. Verizon Supports Sharing 911 Resiliency Information with the Commission.**

Verizon has openly shared the results of its post-Derecho investigation and its plans to devote substantial resources to improving its 911 resiliency with the Commission, state PUCs, and the public. The Commission may want to encourage providers to adopt equivalent measures if they have not already done so. The *Notice* suggests a variety of approaches to accomplish this, ranging from mandating reporting or certifications of compliance with best practices to adopting certain practices as rules and enforcing them through inspections of providers' sites.<sup>3</sup> The most effective approach would be for the Commission to collaborate with industry and other stakeholders to create an annual certification program.

### **A. The Commission Should Promote a Public-Private Partnership To Develop a Core Set of Practices.**

As a starting point, the Commission should convene meetings of subject matter experts from industry and other stakeholders. The Commission could leverage the expertise of existing groups, such as the Commission's Communications Security,

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<sup>3</sup> See *Notice*, ¶¶ 24-31.

Reliability, and Interoperability Council (CSRIC)<sup>4</sup> or ATIS’s Network Reliability Steering Committee (NRSC), or form a new group. The group could be tasked with examining the applicable standards and best practices that have already been developed and voluntarily put into practice by many service providers related to the areas of focus in the Public Safety and Homeland Security Bureau’s (“Bureau”) Derecho Report<sup>5</sup> – i.e., CO backup power, diversity of monitoring and control links, and circuit diversity. These standards and practices reflect a significant investment in time and resources by the private sector to not only develop them, but implement them, where appropriate. Verizon’s and other providers’ post-Derecho efforts to address these very topics should also be examined.

After undertaking this analysis, the collaborative group could then agree upon a core set of practices limited to service providers’ networks and other assets directly supporting 911 service.<sup>6</sup> The core set of practices developed by the collaborative group would establish a baseline for 911 service providers – they would not be intended to address every conceivable risk that could adversely impact 911 service. In some cases, the group may conclude that an existing best practice continues to make sense for 911

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<sup>4</sup> Indeed, CSRIC’s Working Group 10 prepared a report released in March 2013 following its review of existing 911 practices. *See* CSRIC, Working Group 10 Final Report, *9-1-1 Prioritization*, (Feb. 13, 2013), [http://transition.fcc.gov/bureaus/pshs/advisory/csric3/CSRIC\\_III\\_WG10\\_Report\\_March%202013.pdf](http://transition.fcc.gov/bureaus/pshs/advisory/csric3/CSRIC_III_WG10_Report_March%202013.pdf).

<sup>5</sup> *See* FCC Pub. Safety & Homeland Sec. Bureau, *Impact of the June 2012 Derecho on Communications Networks and Services: Report and Recommendations*, (rel. Jan. 10, 2013), <http://www.fcc.gov/document/derecho-report-and-recommendations> (“*Derecho Report*”).

<sup>6</sup> As the *Notice* makes clear, the Commission is limiting its focus to ensuring the “availability of the Nation’s 9-1-1 system.” *Notice* ¶ 1; *see also id.* ¶ 16 (“Our overarching goal in this portion of the docketed Reliability and Continuity proceeding is to ensure the reliability and resiliency of the 9-1-1 system . . .”).

service providers and their PSAP partners, and thus should be included in the core set of practices. In others, the existing best practice may not. For example, the risks to 911 may have changed or providers may have learned of new risks since the best practice was developed. For instance, the risk that multiple “double wink” failures would cause numerous PSAP trunks to be taken out of service was not fully recognized until the January 2011 snowstorm in the Washington DC area.<sup>7</sup>

There may also be situations where best practices could be more precise in referencing prevailing standards. For example, the existing best practices do not offer much in the way of specifics regarding backup power for COs or how frequently providers should review 911 diversity.<sup>8</sup> By contrast, other best practices may need fewer specifics and more flexibility to take into account new technologies or practices that effectively address the same risk.

Public-private collaborative efforts have proven successful in the past with developing a standardized approach for complex, technical issues. For example, in 2012, Verizon collaborated with industry in CSRIC to establish approaches to address three

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<sup>7</sup> A comprehensive industry analysis determined that a “double wink” failure would occur when the time between the disconnect of a 911 call and the selective router’s offering a new call to the PSAP trunk is too short for the PSAP’s PBX or other CPE to recognize the disconnect and be able to respond to the new 911 call. The trunk would then be taken out of service.

<sup>8</sup> NRIC Best Practice 7-7-5204 simply says that providers “should ensure availability of emergency/backup power.” Final Report, NRIC VII Focus Group 1C, *Analysis of the Effectiveness of Best Practices Aimed at E9-1-1 and Public Safety*, at 59, (Dec. 2005), [http://www.nric.org/meetings/docs/meeting\\_20051216/FG1C\\_Dec%2005\\_Final%20Report.pdf](http://www.nric.org/meetings/docs/meeting_20051216/FG1C_Dec%2005_Final%20Report.pdf). Likewise, CSRIC Best Practice 8-7-0532 recommends that providers perform diversity audits “periodically.” See CSRIC Best Practice 8-7-0532, (last viewed May 10, 2013), <https://www.fcc.gov/nors/outage/bestpractice/DetailedBestPractice.cfm?number=8-7-0532>.

important cybersecurity issues – i.e., botnets, DNSSEC, and Border Gateway Protocol (BGP) routing.<sup>9</sup> Like many other ISPs, Verizon has committed to following these voluntary practices.

In a less formal – but equally effective – collaboration, Verizon and other ISPs worked closely with Commission staff to determine a methodology to fairly measure wireline broadband performance across different broadband technologies. These extensive efforts resulted in the Commission issuing public reports of the ISPs’ results to allow consumers to compare broadband providers.<sup>10</sup> Notably, the Commission attributes improved broadband performance to these reports: “We believe that the August 2011 Report was a significant factor in improvements in ISP delivery of advertised speeds.”<sup>11</sup> Some providers with below-average performance in the earlier reports appear to have invested significant resources to improve their standing in the subsequent reports.<sup>12</sup> To the extent the Commission is correct, this illustrates how the Commission can effectively partner with industry to resolve concerns about performance (which in the case of ISPs were largely unfounded) and create “a flight to quality”<sup>13</sup> without prescriptive regulation.

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<sup>9</sup> See News Release, “FCC Advisory Committee Adopts Recommendations To Minimize Three Major Cyber Threats, Including an Anti-Bot Code of Conduct, IP Route Hijacking Industry Framework and Secure DNS Best Practices,” (Mar. 22, 2012) [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/DOC-313158A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-313158A1.pdf).

<sup>10</sup> See Measuring Broadband America, <http://www.fcc.gov/measuring-broadband-america> (last visited May 10, 2013). The Commission has released reports in August 2011, July 2012, and February 2013.

<sup>11</sup> See Office of Engineering & Technology and Consumer & Governmental Affairs Bureau, *Measuring Broadband America: A Report on Consumer Wireline Broadband Performance in the U.S.*, at 5, (July 19, 2012) <http://transition.fcc.gov/cgb/measuringbroadbandreport/2012/Measuring-Broadband-America.pdf>.

<sup>12</sup> See, e.g., *id.* at 5.

<sup>13</sup> *Id.*

As in those contexts, industry input into each 911 practice is essential here. The collaborative group must carefully consider the potential cost of each practice and the corresponding enhancement to 911 resiliency that will result from the implementation of such measure. In this regard, 911 service providers best know their own networks and facilities and can articulate (i) what a particular measure will cost in particular contexts; (ii) what the impact will be to their business; (iii) how long it will take to implement; and (iv) what it will take to comply with any validation activities, such as testing or audits.

As the *Notice* illustrates, industry participation is necessary to accurately assess the costs of certain measures because the estimated costs included therein are unrealistic. For example, the *Notice* posits that diversity audits for a PSAP would be \$1,280 per audit (16 hours \* \$80/hour) and that audits would be unnecessary for half of the PSAPs because they are served by a single selective router.<sup>14</sup> In Verizon's experience, both of these assumptions are wrong. The actual costs are nearly *triple* the Commission's estimate. Verizon's PSAP diversity reviews require around 40 hours of engineering time – not 16 hours. Verizon's review is comprehensive and includes auditing the facilities serving each PSAP for vulnerabilities, finding alternative routes for remediation, designing engineering jobs, tracking those jobs to completion, and reviewing the PSAP links to confirm its status is diverse. And less than 20% of the PSAPs Verizon serves have only a single selective router. Even so, Verizon still performs a diversity review on the PSAP's mated pairs to ensure the PSAP is as diverse as its network will allow. The Commission's cost figure also fails to take into account the cost of making improvements

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<sup>14</sup> See *Notice* ¶ 41.

that would be recommended in the audit, which may far exceed the cost of the audit itself.

Likewise, the estimates in the *Notice* pertaining to the costs of providing backup power to COs are severely understated. For instance, the *Notice* suggests that \$100,000 would be sufficient to install permanent generators and fuel tanks at each CO.<sup>15</sup> In Verizon’s experience, this projection is off by a factor of *ten*. A generator that can produce sufficient power for an average Verizon CO costs around \$1 million if purchased or around \$50,000 per month if leased. The cost of portable generators is also significantly understated in the *Notice*.<sup>16</sup> Rather than \$30,000 each, portable generators that can produce adequate power for the average CO (i.e., at least 800 kW) typically run around \$300,000.

Finally, industry involvement in devising the core set of practices can help ensure that a practice has a corresponding benefit that is appropriately proportionate to its implementation cost. For example, the *Notice* inquires about the costs and benefits of physical diversity for both 911 circuits and network monitoring.<sup>17</sup> Physical diversity can be expensive to implement in certain facilities, and other approaches may be available that protect against many of the same risks. Indeed, the Bureau explicitly recognized that physical diversity is not always practical: “Nor would auditing necessarily encompass a requirement that providers diversify all circuits in areas that are particularly expensive.”<sup>18</sup>

Moreover, recordkeeping for its own sake will not help 911 resiliency. For example, the Commission concedes in the *Notice* that its prior 911 resiliency reporting

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<sup>15</sup> *Id.* ¶ 52.

<sup>16</sup> *Id.*

<sup>17</sup> *See id.* ¶¶ 34, 62.

<sup>18</sup> *Derecho Report* at 40.

mandate did not provide a material benefit that outweighed its costs. In 2009, the Commission previously required providers “to conduct an analysis of the resiliency and reliability of their 911 networks or systems and to submit a report to the Commission.”<sup>19</sup> Yet despite significant industry efforts to compile this information, the Commission found these reports to be “of limited use.”<sup>20</sup> With more industry involvement in the development stage of the process and a focus on relevant core practices, the agreed-upon core set of practices would not only improve 911 resiliency, but they also could form the basis for 911 service providers furnishing the Commission with targeted and meaningful information.

**B. The Commission Could Require Annual Certifications Based on Such Practices.**

Once the collaborative group determines the core set of practices, the Commission could adopt an annual certification requirement for 911 service providers. The Commission could take a similar approach as its requirement that voice providers file a CPNI annual certification.<sup>21</sup> Section 64.2009(e) requires both a certification that the company “has established operating procedures that are adequate to ensure compliance” with the CPNI rules and a report explaining how its operating procedures ensure compliance. In the same way, each 911 service provider could provide a report

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<sup>19</sup> *Recommendations of the Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks*, Order, 22 FCC Rcd 10541, ¶ 99 (2007).

<sup>20</sup> *Notice* ¶ 27.

<sup>21</sup> One notable exception would be with respect to the confidential nature of the filing. While the CPNI certification is filed in a public docket, a 911 resiliency certification should be afforded full confidentiality protection in light of the sensitive nature of the information disclosed. The Commission has long acknowledged the sensitive nature of this information and the need to prevent public disclosure. *See* 47 C.F.R. § 4.2; *see also New Part 4 of the Commission’s Rules Concerning Disruptions to Communications*, Report and Order and Further Notice of Proposed Rulemaking, 19 FCC Rcd 16830, ¶¶ 40, 45 (2004).

describing how it is complying with each of the developed practices. If the provider is not complying with a particular practice, the provider could explain in the report why not and, if applicable, describe the actions it is taking that would mitigate the relevant risk the practice is intended to address.

The certification could be signed by an appropriate officer of the 911 service provider. This would demonstrate senior level engagement and support for the provider's 911 resiliency efforts. A certification would also likely compel an ongoing assessment of internal compliance with practices and procedures in a manner that meaningfully improves compliance and accountability.

A certification from each 911 service provider would give the Commission a clear view of 911 resiliency nationwide, without the Commission incurring the considerable costs that would be associated with site inspections of 911 service providers.<sup>22</sup> In particular, the Commission would be able to see the adoption rate for specific practices and better understand alternative approaches that are in use. To the extent the Commission or the Bureau may become concerned that a specific risk is not being adequately addressed, they can raise widespread issues with industry – either through a reconvened collaborative group or through existing industry groups like ATIS – or address specific questions directly to individual 911 providers.

The Bureau has extensive experience with such an informal process in the outage reporting context. Typically on an annual basis, the Bureau meets with individual voice

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<sup>22</sup> Even assuming that Commission inspectors could distinguish at a site visit whether that site complies with specific practices, as former Commission McDowell pointed out, such inspections “could be unduly burdensome on the Commission’s limited resources.” *See Notice* at Appendix B, Statement of Commissioner Robert M. McDowell (“McDowell Statement”).

providers to discuss trends the Bureau identifies in the outage reports filed by the provider in the Commission's Network Outage Reporting System (NORS) as compared to those reports filed by the rest of the industry. In such meetings, the Bureau and provider discuss potential improvements regarding negative outage trends or preemptive action the provider can take to avoid issues that other providers have experienced. For example, in February 2012, the Bureau and Verizon discussed various outage reporting issues, including the number of outages caused by failed optical amplifiers – both on Verizon's and other providers' networks – and ways in which Verizon could help address the issue with the vendor. Verizon is always willing to carefully consider any recommendation from the Bureau to improve resiliency, and the Commission should not adopt rules that discourage such ongoing collaboration.

The Bureau has also had success in spurring industry-wide action through ATIS to improve public safety. In 2011, the NRSC analyzed the impact of the January 2011 Washington DC snowstorm on 911 and recommended certain actions that all 911 service providers should take.<sup>23</sup> Industry undertook a significant amount of technical work to produce the NRSC analysis, which the Bureau reviewed and requested be presented at the September 23, 2011 CSRIC meeting.<sup>24</sup> The Bureau also participated in an ATIS Webinar on November 3, 2011 to further publicize the NRSC's recommended actions.

A key advantage of a certification process is that it could begin relatively quickly following a Commission order and OMB approval. As discussed above, in some cases, Verizon's extensive efforts to improve its 911 resiliency will take time. Unlike a

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<sup>23</sup> See Analysis, NRSC 9-1-1 CAMA Trunk Throughput Optimization (ATIS-0100034), (Aug. 12, 2011), [http://www.atis.org/legal/Docs/NRSC/CAMATrunk\\_Transmittal\\_Final.pdf](http://www.atis.org/legal/Docs/NRSC/CAMATrunk_Transmittal_Final.pdf).

<sup>24</sup> See *Derecho Report* at 11.

Commission order requiring 911 service providers to adopt certain practices and therefore requiring a reasonable implementation period, annual certifications could begin well before providers complete their 911 improvements. Providers could disclose to the Commission the status of their improvements in their annual certifications. This would allow the Commission to have a clear view of what has been done already and the progress the industry is making.

**C. The Commission Should Not Mandate Specific 911 Practices.**

The Commission should avoid any prescriptive rules that would require 911 service providers to make specific improvements or adopt certain practices and open their facilities for Commission-led periodic site inspections. A one-size-fits-all approach does not work for 911 resiliency, particularly when 911 providers have a variety of network configurations, assets, and established protective practices.

Moreover, mandating specific practices would impede 911 providers' necessary flexibility in preparing for and responding to disasters, thus interfering with the Commission's policy of ensuring the resiliency of 911 service. Providers must retain the flexibility to take rapid, decisive action, without being subject to regulatory second-guessing, prior consultation, or a potential enforcement action. Agility is necessary because technology and the associated service-disrupting threats change too quickly for mandated practices to keep up. Experience has shown that different lessons have been learned from different extreme weather events, and companies need flexibility to respond to such conditions as they develop. The technology Verizon deploys and the highly competitive marketplace in which Verizon competes is evolving so fast that regulatory

requirements would be outdated shortly after they have been mandated, thus stranding capital in areas that do not achieve the Commission’s resiliency objectives.

Mandated practices would also be an impediment to the development and deployment of innovative measures to enhance network resiliency. Providers may be likely to focus their resources on compliance, rather than innovation. As former Commissioner McDowell observed, “if the Commission decides to follow a path towards reliability requirements based on a set of standards or best practices, the Commission could unintentionally stifle technological innovation and 9-1-1 communications improvements.”<sup>25</sup>

Along the same lines, the Commission should not recast existing industry best practices as regulatory mandates. Mandates may discourage open participation and collaboration in future industry best practice development, whether at CSRIC or other venues. Broad stakeholder participation in best practice development tends to yield more effective practices. Moreover, mandated implementation of best practices is inconsistent with their intent. Best practices were designed to be voluntary such that providers could consider relevant factors to decide whether adoption made sense for their networks in particular instances.

Finally, an annual certification approach – rather than mandated practices – would be more consistent with the President’s and the Chairman’s commitment to regulatory humility and to limiting the burdens associated with unnecessary regulation. As President Obama first recognized in January and reaffirmed last month, and Chairman Genachowski echoed, the regulatory system should “promot[e] economic growth,

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<sup>25</sup> McDowell Statement.

innovation, competitiveness, and job creation . . . [and] use the best, most innovative, and least burdensome tools for achieving regulatory ends.”<sup>26</sup> To further those interests, the Commission and other federal agencies must “adopt a regulation only upon a reasoned determination that its benefits justify its costs” and “tailor its regulations to impose the least burden on society, consistent with obtaining regulatory objectives, taking into account, among other things, and to the extent practicable, the costs of cumulative regulation.”<sup>27</sup>

### **III. Verizon Supports Improving Communications with PSAPs During Outages.**

In the *Notice*, the Commission proposes a rule that would require two forms of notification to PSAPs when an outage occurs – both telephonic and electronic – and would delineate the information 911 service providers are required to share “immediately” if “available.”<sup>28</sup> In particular, the Commission would add the following sentence to the existing notification requirements:

This information shall include, at a minimum, the nature of the outage, the estimated number of users affected or potentially affected, the location of those users, the actions being taken by provider to address the outage, the estimated time at which service will be restored, recommended actions the impacted 911 special facility should take to minimize disruption of

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<sup>26</sup> See President Barack Obama, Executive Order 13563 (Jan. 18, 2011), 76 FR 3821 (2011) (“*January Executive Order*”); and President Barack Obama, Executive Order 13579 (July 11, 2011), 76 FR 41857 (2011) (“*July Executive Order*”); see also Speeches, “Prepared Remarks of Chairman Julius Genachowski at the Broadband Acceleration Conference,” at 4, (Feb. 9, 2011), [http://www.fcc.gov/Daily\\_Releases/Daily\\_Business/2011/db0209/DOC-304571A1.pdf](http://www.fcc.gov/Daily_Releases/Daily_Business/2011/db0209/DOC-304571A1.pdf). The *July Executive Order* extended the terms of the *January Executive Order* to independent regulatory agencies.

<sup>27</sup> *January Executive Order* § 1(b); see *July Executive Order* § 1(c).

<sup>28</sup> See *Notice*, Appendix B.

service, and the sender's name, telephone number and email address at which the sender can be reached.<sup>29</sup>

Without a doubt, the communication of relevant information between the 911 service provider and the impacted PSAP is essential during an outage so that both parties can quickly take whatever steps may be appropriate to remediate the problem or mitigate the impact of the event.

As an initial matter, it is Verizon's practice to be in contact with a PSAP customer to discuss the situation as soon as Verizon is aware of an abnormal condition. Depending on the type of issue, the PSAP may become aware of it before Verizon and initiate the contact with Verizon. Regardless of who makes the initial call, the communication should be timely and include any pertinent information that is available.

After the Derecho, once the telemetry capabilities were lost, Verizon and, thus, the PSAPs lost access to outage-specific information they needed, including access to automatic notifications that ceased when alarms stopped working. Verizon understands the frustration that some PSAPs have expressed with the amount of information that they received during the event, and Verizon's PSAP communication during and after Hurricane Sandy was much improved.

As a result of the Derecho, Verizon has initiated efforts to supplement its already extensive methods of communicating with PSAPs during outage events. As discussed above, Verizon is working to improve its systems and procedures to maintain its visibility into the network, which will improve the usefulness of communications to PSAPs in the face of catastrophic failures. This, in turn, will enable PSAPs to accurately and timely report the status of 911 services to their constituents. Verizon has adopted additional

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<sup>29</sup> *Id.*

communications-focused measures, including: applying the National Incident Management System (NIMS) processes for incidents affecting 911 service; broadcasting voice, email, and text based transmissions of incident-specific information to designated PSAP personnel; conducting periodic drills and exercises with PSAPs; distributing quarterly Verizon contact information, including executive level personnel; and participating in Emergency Operations Center activities during emergencies.

As a result of such efforts, the Commission’s amending its PSAP notification rule to require the immediate communication of pertinent information should be consistent with Verizon’s voluntary communications practices. Nonetheless, if the Commission decides to move forward with revising its rule, the Commission should make some modest modifications to the proposed text of the rule to provide clarity and flexibility to service providers and to prevent providers from spending valuable time compiling information that may be of little use to the PSAP.

1. In its proposed rules, the Commission revises the timeframe for contacting PSAPs from “as soon as possible” to “immediately.”<sup>30</sup> Verizon agrees that PSAPs should be contacted “immediately” to start a dialogue about the event, even if the facts surrounding the event are unclear. However, the Commission should modify the proposed rules to clarify what is required of providers.

While the Commission acknowledged in the *Notice* that “conditions often change rapidly in disaster situations,”<sup>31</sup> it is important that the Commission also recognize that by narrowing the timeframe for the PSAP communication to “immediately,” there may be a tradeoff with respect to the extent of the information that is “available” to the provider.

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<sup>30</sup> *See id.*

<sup>31</sup> *Notice* ¶ 67.

Verizon attempts to contact the PSAP when an alarm notifies it of an issue not only to inform the PSAP of an issue, but to obtain information from the PSAP that can help Verizon remediate the issue as soon as possible. When Verizon makes the initial contact, many of the categories of information listed in the proposed rule, such as recommended actions for the PSAP to take or an estimated time of restoration, may not be known. Moreover, the employees who are responsible for contacting the PSAP may not have *immediate* access to information that may be available to other business units.

To help clarify its proposed rules, the Commission should amend the sentence that it proposes adding to the rules as follows: “This information shall include, at a minimum and to the extent it is reasonably available to the provider, . . .” This added text, along with an explanation in the Order, would give providers some certainty that they will not be subject to enforcement actions for failing to convey information that was not reasonably known when they immediately contacted the PSAP. At the same time, the entire sentence would put providers on notice with respect to the extent of information they should attempt to convey.

2. The Commission’s proposed rule would require providers to notify PSAPs both “by telephone and in writing via electronic means.” The Commission should modify this aspect of the rule to provide flexibility for providers in certain situations.

For example, many outages impact multiple PSAPs at the same time. When this occurs, Verizon would attempt to contact each PSAP to provide them information, but the most effective and timely method may be via an email/text to establish a bridge for a conference call that all impacted PSAPs could join to learn more about the event. A speedy email/text to all impacted PSAPs may not be consistent with a customized email

populated with the specific information listed in the proposed rule. Nor would an individual telephone call to each PSAP be as efficient. This type of communication has proven effective in the past with keeping PSAPs informed.

In fact, this alternative method of communication is a specific commitment that Verizon has made to the Maryland PSC and PSAP community.<sup>32</sup> During a July 2010 outage that impacted three PSAPs, Verizon faced challenges to communicate consistent information as Verizon was speaking to differing PSAPs with different personnel. As a result of input from the Maryland PSC, the Emergency Number Systems Board, and affected PSAPs, Verizon committed to providing coordinated information through a single point of contact if multiple PSAPs are affected by a single outage. Verizon pledged to set up a bridge line so that all affected PSAPs can be updated simultaneously and receive the same status reports.

As such, the proposed rule should allow providers the flexibility to use this or similar methods of communication. The Commission should add the following text to the proposed rule: “in which case they also shall notify immediately by telephone and in writing via electronic means, except where there is more than one affected 911 facility, providers shall use any reasonable form of communication, including a single email/text to multiple 911 facilities to invite them to a conference call, that omits the information required in the following sentence, . . . .”

Moreover, not all PSAPs give 911 service providers both types of contact information. In particular, some PSAPs do not provide email addresses to Verizon

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<sup>32</sup> See Letter from Gregory M. Romano, Verizon, to Jacqueline K. Vaughan, Calvert County Emergency Services; William D. Stephens, Charles County Department of Emergency Services; David Zylak, St. Mary’s County Public Safety, *Outages in Calvert, Charles, and St. Mary’s Counties*, Md. Pub. Serv. Comm’n #ML 126077 (Oct. 10, 2010).

because they do not favor that means of communication. Accordingly, the rule should reflect PSAP preferences, and the dual communication requirement should only apply when the 911 facility has provided both telephone and electronic contact information to the 911 service provider.

3. The proposed rule should be scrutinized to include only that information that would be directly relevant to the PSAP's potential responses to minimize the impact of the outage. Otherwise, gathering the information to provide to the PSAP could distract the service provider from its remediation efforts.

For example, the proposed requirement to provide the "estimated number of users affected or potentially affected" is not likely to be necessary and should be deleted from the final rule. The number of impacted users may not significantly influence the PSAP's response to the event. Other information that the rule would require 911 service providers to convey to the PSAP, such as the location(s) of the impacted users, is much more relevant to the PSAP. Knowing the location of impacted users would allow the PSAP to inform the public in that location of alternatives to 911 for getting help.

In addition, the number of impacted users is difficult to estimate with any precision. A PSAP's 911 service provider typically has no ability to estimate the number of wireless users in the PSAP's serving area. As such, any estimate would likely be too low and thus would have even less value to the PSAP.

Finally, the proposed rule specifies that providers should convey "recommended actions the impacted 911 special facility should take to minimize disruption of services." Providing information to our PSAP partners to facilitate actions to minimize service impacts is indeed an important component of communications during an outage.

However, the 911 service provider may not always be in a position to “recommend” particular options to the PSAP. The ultimate decision on such actions is and should be in the hands of the PSAPs, who are emergency response professionals. Most PSAPs have developed their own disaster plans, based on their particular capabilities and constituents, that delineate the most effective ways to respond to a specific event. For example, many PSAPs decline to reroute their calls when ALI/ANI is impacted, even though a 911 service provider might have a different viewpoint.

What’s more, the proposed rule should identify the type of information required to be conveyed by the service provider. For the most part, 911 service providers would be able to relay information about potential reroutes, but they are in no position to convey to the PSAP other information pertaining to actions the PSAP might take, such as whether the PSAP should notify the public of ways other than 911 to obtain assistance. As a result, the Commission should replace the text of the proposed rule with “potential rerouting options, if any, that could minimize disruption of service.”

## **CONCLUSION**

Verizon has publicly committed to improving its 911 service footprint-wide in the areas of most interest to the Commission, regardless of what transpires in this proceeding. Nevertheless, Verizon is willing to work with the Commission and other stakeholders to devise a core set of practices that would form the basis for an annual certification to the Commission.

Respectfully submitted,

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