

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

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

REPLY COMMENTS OF VERIZON¹ AND VERIZON WIRELESS

Verizon’s actions in the wake of the Derecho storm, together with the actions and recommendations of government and industry stakeholders, illustrate how the Commission’s flexible and iterative approach of promoting the development of best practices will continue to improve the reliability of communications networks. To achieve that objective the Commission should direct its Communications Security, Reliability and Interoperability Council (the “CSRIC”) to determine whether to supplement or modify existing best practices in the areas of network monitoring, backup power, 911 network redundancy and diversity, and PSAP communications. Commenting parties – including those supportive of regulatory action – overwhelmingly acknowledge the value of industry best practices in protecting and enhancing network reliability. The record thus supports the continued use of best practices to improve network reliability.

¹ In addition to Verizon Wireless, the Verizon companies participating in this filing are the regulated, wholly owned subsidiaries of Verizon Communications Inc. (together “Verizon”).

I. VERIZON HAS ACTED TO ADDRESS THE CONCERNS RAISED BY PUBLIC SAFETY STAKEHOLDERS.

Verizon understands the frustration and concern expressed in Fairfax County's comments. Its citizens – many of whom are also Verizon subscribers – were among those most directly affected by the 911 service outages caused by the storm. The difficulties Fairfax County faced in the day after the storm underscore the importance of 911 service for public safety. Because it too shares these concerns, Verizon worked diligently to analyze the storm's impact and provided that detailed analysis and related information to affected jurisdictions, including Fairfax County. Fairfax County's comments are constructive and its account of the event is largely consistent with Verizon's.² This is not surprising, given that Verizon has been candid with state, local and federal government stakeholders about what it has learned about the causes of – and potential fixes for – the 911 service outage and related problems in Northern Virginia and other areas affected by the storm.

The reasons for the problems Fairfax County experienced with 911 service disruptions, and with the communications it received from Verizon during the outage, are already explained in Verizon's comments and the Derecho 911 Service Analysis: the loss of visibility into Verizon's network contributed to both the sustained loss of power and to the communications difficulties that arose between Verizon and its PSAP customers.³ Verizon has already fixed the

² There are a few discrepancies. Once basic 911 capabilities were restored on the afternoon of June 30, approximately 98% of 911 calls were delivered over the next 24 hour period. *See* Fairfax County Comments at 11 (describing 911 service as only “sporadic”). Also, Fairfax County attributed problems with non-emergency telephone service to “additional power outages at other EO/CO locations ...” *Id.* at 16. This overstates the extent of central office (CO) outages, as the problems with local services were attributable to SS7 isolations resulting from failures in the transport network, not power failures at the COs themselves. Finally, full E911 service with ALI capability was restored on the afternoon of July 2, not the morning of July 3.

³ *See* Verizon Comments at Attachment 1 (the Derecho 911 Service Analysis).

specific problems that caused the Fairfax County outages. Moreover, Verizon is already taking corrective actions that will help remedy the issues Fairfax County identifies more broadly, including an audit of backup power resources and prompt remediation; redesign of the monitoring/telemetry system; additional redundancy in ALI and trunk transport; and enhancing the methods and procedures for communicating information to PSAPs and the public.⁴

Verizon supports and has already taken action to address Fairfax County's and other regional PSAPs' five recommendations to improve communications with PSAPs in the Washington, D.C. metropolitan area.⁵ As early as February 2011, Verizon had implemented significant changes in PSAP communications. While the loss of visibility into the network adversely affected these processes after the Derecho, Verizon had generally understood based on experience with PSAPs (including Fairfax County) that they have been largely effective. Verizon is "committed to taking the necessary steps to establish" improved communication with PSAPs during 911 events by building upon these earlier efforts.⁶ Verizon also will need to work with individual PSAP agencies on those matters; some will want Verizon to implement those recommendations differently than what Fairfax County proposed for its own operations. Not all of the 2000 PSAPs Verizon supports, for example, may desire or need a Verizon representative

⁴ *See id.* at 4-7.

⁵ *See* Fairfax County Comments at 23-28. Verizon's Derecho 911 Service Analysis already details how Verizon is addressing the PSAPs' recommendations, including for the areas of concern raised in Fairfax County's comments, such as joint drills. *See id.* at 26-27; Verizon Comments, Attachment 1 at 8.

⁶ Fairfax County Comments at 18. In addition to the communications mentioned in Fairfax County's comments, Verizon's customer care center communicated information to Fairfax County 911 personnel and Verizon management remained in frequent contact with those same personnel via telephone, email and text message throughout the period prior to restoration on June 30.

to be present at an Emergency Operations Center (EOC).⁷ Indeed, when there is an outage event with regional impact affecting multiple PSAPs, this is neither feasible nor optimal; a systemic, coordinated approach of conference bridge updates and broadcast voice and/or email communications is more appropriate in those circumstances. Similarly, not all PSAP customers will necessarily want to share their own outage-related information with other PSAPs.⁸ APCO has also provided a number of recommendations in this regard, most of which appear to be addressed by the measures recommended by the Northern Virginia region PSAPs.⁹

Verizon shares Fairfax County's desire for improvements in the Verizon backup power sources at issue. Verizon has taken the necessary steps to implement improvements, focusing on critical facilities for 911 services. Verizon has repaired the failures in the generator systems in question and, as stated in its comments, is conducting audits and will institute any necessary corrective measures (as it has done already at the Arlington CO).¹⁰ Verizon also agrees with Fairfax that a reassessment of best practices is warranted in light of Verizon's experience – not just internally to Verizon, but by the CSRIC generally, and by PSAPs as well.¹¹ Verizon already

⁷ See Fairfax County Comments at 27-28.

⁸ See Fairfax County Comments at 24 (“Verizon should communicate issues that cross jurisdictional boundaries”).

⁹ See APCO Comments at 3-5. While not raised in the *Notice*, the California PUC reiterates its request that state regulatory commissions be granted access to the NORS database. California PUC Comments at 15-16. Any such access should be limited to reports where the outage originated within a state's geographic boundary and conditioned on: (i) a showing that the state commission will provide at least the same level of confidentiality and protection as the Commission; (ii) the state commission restricting its use of the outage reports to promoting public health and safety; and (iii) any state outage reporting requirements being identical to the Commission's. See Reply Comments of Verizon and Verizon Wireless, ET Docket No. 04-35, filed Mar. 19, 2010, at 2-6.

¹⁰ See Verizon Comments at 5, and Attachment 1 at 5.

¹¹ See Fairfax County Comments at 21-28, 30. Verizon's experience underscores the need for PSAP involvement in any review of best practices. For example, of the 911-related outages

has initiated an internal review of its policies and practices for that purpose and identified many relevant best practices to compare against its own and that the CSRIC should review in light of the Derecho.¹²

Mandating that Verizon take particular action to implement specific best practices, however, would embroil the Commission in judgment calls about network configuration that are not amenable to a regulatory mandate. For example, Fairfax County would require that Verizon “demonstrate to the Commission and 9-1-1 providers that Verizon has sufficient functional redundancy and geographic routing diversity from its transport network to individual PSAPs.”¹³ This proposal would inappropriately shift resolution of local, PSAP-specific issues to the Commission. LECs employ a variety of 911 network configurations.¹⁴ Levels of redundancy and diversity depend on a number of variables at the state or local government level, including willingness to fund redundant routing through alternative wire centers. The Commission’s existing best practices approach to network reliability that enables Verizon and other carriers to work directly with PSAPs on specific configurations therefore is the appropriate means of addressing these questions – as explained further in Verizon’s comments and below.

Verizon initially reported to the Commission from the period of January 1, 2011 to July 31, 2012 as meeting the 30 minute/900,000 user minute reporting thresholds, 37% were later determined to be the direct result of the PSAP owned network equipment, *not* Verizon’s network.

¹² See Verizon Comments at 4-7. Thus, it is unnecessary for the Commission to direct Verizon to take action in that regard. See Fairfax County Comments at 30 (the Commission should require Verizon “to articulate what it considers best practices [for backup power] and explain how and when it will implement them”).

¹³ See Fairfax County Comments at 30-31.

¹⁴ For example, while many 911 calls in the Washington, D.C. metropolitan area are routed through Verizon’s 911 network, as Fairfax County states (Fairfax County Comments at 5 n.12), in fact the District of Columbia maintains its own selective routers for 911 calls, and many CLECs bring their calls directly to the District’s selective routers rather than Verizon’s.

II. THE RECORD SUPPORTS VERIZON'S RECOMMENDATION THAT THE COMMISSION DIRECT THE CSRIC TO CONSIDER NEW OR MODIFIED BEST PRACTICES.

The record supports Verizon's recommendation that the Commission direct the CSRIC to develop new or modified best practices through the CSRIC based on the lessons learned during the Derecho. While some public safety and other parties urge the Commission to re-impose backup power and other requirements on service providers, they also acknowledge the importance of best practices in protecting and improving network reliability.¹⁵ Industry commenters uniformly agree that the flexibility afforded by best practices is critical to enable carriers to account for local conditions, regulations and service requirements.¹⁶ Given the overwhelming acknowledgement of the value of best practices, the record supports expeditiously updating them in light of the lessons learned.

In addition, the incidents that Fairfax County cites as evidence of more significant problems with Verizon's regional 911 network in fact reveal the effectiveness of the Commission's best practices approach.¹⁷ The most significant of those incidents involved the operation of Centralized Automatic Message Accounting (CAMA) trunks used in some 911 configurations and so-called "double wink" failures.¹⁸ Verizon itself initiated an industry

¹⁵ See, e.g., APCO Comments at 2-3; Fairfax County Comments at 21-23.

¹⁶ See AT&T Comments at 6-11; CTIA Comments at 10-13; T-Mobile Comments at 8-12; Telecommunications Industry Association at 6, 10-11; see also Frontier Communications Comments at 6-7 (describing additional practices it is currently considering).

¹⁷ See Fairfax County Comments at 18-20.

¹⁸ 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. Thus, the selective router did not fail, but simply operated as designed in response to the PSAP CPE. See Fairfax County Comments at 19.

standards development effort to address this issue,¹⁹ and implemented an extensive mitigation plan for its own 911 network – which worked flawlessly during the Derecho. And in each of the other incidents described in Fairfax County’s comments, Verizon followed its service restoration processes and worked closely with PSAP personnel to resolve the problem expeditiously. Thus, rather than impose new rules, the Commission should instead help ensure that industry practices are modified or supplemented to reflect the lessons learned from Verizon’s and other stakeholders’ Derecho experience, by directing the CSRIC to consider these issues.

That same iterative process of learning from natural and man-made disasters and incorporating those lessons into individual and industry-wide network reliability best practices is already well under way with respect to backup power, to which the merits of maintaining the Commission’s successful best practices approach apply with equal force.²⁰ Verizon has already assessed the power-related causes of the 911 service outages, presented those findings to regulators and public safety stakeholders, and taken corrective actions based on those findings and discussions. Frontier, which faced similar challenges to backup power sources, network visibility, and communications with PSAPs,²¹ is similarly evaluating corrective actions based on its Derecho experience.²² For this reason as well, Verizon’s recommendation that the Commission direct the CSRIC to incorporate these lessons into industry-wide best practices is the right next step.

¹⁹ See ATIS Network Reliability Steering Committee, *NRSC 9-1-1 CAMA Trunk Throughput Optimization Analysis* (ATIS-010034), available at http://www.atis.org/legal/Docs/NRSC/CAMATrunk_Transmittal_Final.pdf.

²⁰ See Verizon Comments at 9-11, 14-18.

²¹ See Frontier Communications Comments at 4-5.

²² See *id.* at 6-7.

Verizon's experience, and that of other affected service providers, illustrates the shortcomings of imposing one-size-fits-all prescriptive regulations. The extensive backup power testing rules APCO recommends, for example, including weekly load testing of generators and uninterrupted power supplies and monthly load testing of all mission critical components, are appropriate best practice considerations for the CSRIC. As rules, however, they would impose one-size-fits-all operational and technical requirements that entail expansive regulation of network operations, without accounting for disparities in carrier resources, differences in service provider network configurations and localized PSAP concerns and resources. Nor would regulation be able to adapt to new technology or new industry developments as easily as best practices.

More fundamentally, as Verizon explained in its comments, the Commission's original backup power rules would not have prevented Verizon's 911 outages or Verizon Wireless's cell site outages.²³ Frontier also faced backup power challenges, but in some cases for *different* reasons than Verizon, including the theft of generators and loss of gasoline supplies due to commercial power outages – factors also not accounted for in the Commission's original backup power rule.²⁴ And AT&T and T-Mobile report a similar experience to Verizon Wireless: i.e., that existing policies and practices worked and that wireless service was restored promptly.²⁵ As industry commenters uniformly explain, service providers must balance a variety of factors in determining the need for and extent of backup power resources at a given site.²⁶

²³ Verizon Comments at 16.

²⁴ Frontier Comments at 4-5.

²⁵ See AT&T Comments at 5-9; T-Mobile Comments at 3-5.

²⁶ See AT&T Comments at 9-11; CTIA Comments at 9-13; T-Mobile Comments at 10-12; TIA Comments at 6.

CONCLUSION

For the foregoing reasons and those discussed in Verizon's comments, the Commission should direct the CSRIC to determine whether to supplement or modify existing best practices in the areas of network monitoring, backup power, 911 network redundancy and diversity, and PSAP communications.

Respectfully submitted,

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