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

In the Matter of Reliability and Continuity)
of Communications Networks, Including)
Broadband Technologies Effects on Broadband)
Communications Networks of Damage or Failure)
Equipment or Severe Overload)
) PS Docket No. 11-60
In the Matter of)
9-1-1 Resiliency and Reliability in Wake of)
June 29, 2012, Derecho Storm in Central,)
Mid-Atlantic, and Northeastern United States)

REPLY COMMENTS OF MONTGOMERY COUNTY, MARYLAND

I. SUMMARY

Montgomery County, Maryland (“County”¹) submits these Reply Comments in the above-captioned proceeding. While the performance of the Capital Region’s provider of 911 services was not perfect in the County during and after the June 29th storm, its support and response were measurably improved over past performances. Still, based on the County’s prior experiences, the County files in support of other local governments² in the National Capital

¹ Montgomery County, Maryland, has a population of 952,500, and comprises 497 square miles and 356,400 households. Montgomery County also manages cable franchise matters for approximately 18 municipalities within its borders. Montgomery County was one of the first jurisdictions in the country to introduce wireline competition for video service, with the grant of a cable franchise to Starpower Communications (now RCN) in 1999. In 2006, the County became one of the first large jurisdictions to grant Verizon a cable franchise. Today, Comcast, Verizon, and RCN are all providing voice, video, and Internet service to County residents. In addition, as explained more fully *infra*, the County has become a major broadband provider itself over the past several years with the deployment of the County's FiberNet.

² See e.g. Comments of Fairfax County, Virginia filed August 17, 2012 ("Fairfax Comments"); Comments of Tim Hemstreet filed August 28, 2012 ("Loudon Comments"); Comments of the Association of Public-Safety Communications Officials-International, Inc. filed August 17, 2012 ("APCO Comments").

Region that have recounted their experiences during the derecho³ and other storms of recent memory.⁴ Through these comments, the County seeks:

1. To endorse commenters' sentiments that while the scope, scale, and surprise of the June 29th storm were not anticipatable, the loss of power as a result of a major summer storm was an event⁵ that should have been anticipated and addressed in a timely manner, including timely communication with local officials;⁶
2. To demonstrate that through proper planning and ongoing maintenance of a public safety network, such as Montgomery County's FiberNet, one can maintain continuous service throughout a storm such as that experienced on June 29th. For while Montgomery County suffered comparable damage to that experienced elsewhere, the County's investments in redundancy and ongoing maintenance of the County's public safety network paid operational dividends during and after the storm;

³ Most specifically, Montgomery County seeks to endorse the insights shared with the Commission by our sister communities in the metropolitan area articulating the unacceptable response from the local 911 service provider. *See* Fairfax Comments at 16, Loudon Comments at 2, and APCO Comments at 3.

⁴ *See e.g.* Fairfax Comments at 17 ("Verizon's failure to communicate promptly and effectively with PSAPs in the National Capital Region is a chronic, systemic problem that urgently needs correction."). *See also* February 17, 2011 Letter from Admiral James Arden Barnett, Jr., Chief, Public Safety & Homeland Security Bureau, to Kathleen M. Grillo, Senior Vice President for Verizon Communications that is attached to Fairfax County's Comments as Exhibit 6. Admiral Barnett's words are echoed in a Washington Post editorial, *No answer at 911*, Washington Post Editorial, Jul. 22, 2012 available at <http://pqasb.pqarchiver.com/washingtonpost/access/2718226771.html?FMT=FT&FMTS=ABS:FT&date=Jul+22%2C+2012&author=&desc=No+answer+at+911&free=1> (last visited Aug. 9, 2012) ("The ability to call 9-1-1 is critical to public safety. This is especially true during extreme weather events. The public rightly expects they can use 9-1-1- to reach the appropriate first responders in an emergency.").

⁵ *See* APCO Comments at 3, ("A failure of power *and* backup power at a telephone central office should have resulted in an immediate alarm state at the NOC and should have generated an urgent response by carrier maintenance crews and technicians to resolve issues and restore generator power.").

⁶ *See* Fairfax Comments, *passim*, Loudon Comments, *passim*.

3. To remind the Commission and providers alike, as was done so eloquently by Montgomery County resident Robert F. Duffy,⁷ that the inability of a single consumer to reach 911 in an emergency due to the network's lack of resilience and reliability is equally important and must be addressed by this proceeding; and
4. To share with the Commission empirical data obtained from providers in Montgomery County following the derecho regarding residents' loss of services that was not associated with their loss of power.

II. MONTGOMERY COUNTY SUFFERED SIMILAR DAMAGE TO NORTHERN VIRGINIA.

On June 29, 2012, a fast-moving storm that we would all come later to know as a derecho⁸ brought a wave of destruction across wide swaths of the United States including Montgomery County, Maryland.⁹ The Public Notice correctly states that the impact of the June

⁷ See e.g. Comments of Montgomery County Resident Robert F. Duffy filed August 7, 2012. ("Duffy Comments") Mr. Duffy, a 77 year old resident and his 70 year old wife were left with no phone service from Verizon as a result of a dead battery.

⁸ NOAA defines a derecho this way: "A derecho (pronounced similar to "deh-REY-cho" in English, or pronounced phonetically as "**deretjo**") is a widespread, long-lived wind storm that is associated with a band of rapidly moving showers or thunderstorms. Although a derecho can produce destruction similar to that of tornadoes, the damage typically is directed in one direction along a relatively straight swath." See *Derecho Fact Page* at <http://www.spc.noaa.gov/misc/AbtDerechos/derechofacts.htm#definition> (last visited Aug. 9, 2012).

⁹ Montgomery County Media ("MCM"), the public access stations in the County seek to encourage and sponsor television programming and broadband media that meet community needs and offers forums for education and free expression. As part of this mission, MCM developed a series of programs on the storm, the impact that the storm had on the County and its residents, and the responses in terms of hearings and actions. MCM is creating a video catalogue of their coverage of. The page will be located at <http://www.mymcmedia.org/power-to-the-people-video-collection/>. ("MCM Coverage") As mentioned, this webpage also will include all three of the public hearings held in the County, two by the County Council and one by the Maryland Public Service Commission. While this filing is being made in Public Safety docket, the County would call the Commission's attention to the vital role that community media plays in the lives of our residents, especially the public safety issues that impact their well being. Local

29th storm in Fairfax County was particularly severe,¹⁰ but Montgomery County concurs with Fairfax County that “nothing unique to the derecho caused the 9-1-1 failure. A power outage is not an uncommon event.”¹¹

While the numbers of consumers without wireline phone service is not available to the County, according to the Department of Energy,¹² there were over 950,000 customers without power in Maryland, of which 238,000 customers were located in Montgomery County.¹³ Approximately 72% of the County’s households subscribe to cable television services, and as the

coverage of the derecho event can currently be found at <http://www.mymcmmedia.org> by entering “Pepco” in the website’s search field.

¹⁰ Public Notice, DA 12-1153, Released: Jul. 18, 2012 at 1 (“Notice”). The consequences of such a failure were captured in story after story in the local press. See e.g. Sullivan, Patricia, *After storm, no one could reach 911 for dying man*, The Washington Post, Jul. 20, 2012 available at <http://pqasb.pqarchiver.com/washingtonpost/access/2715538841.html?FMT=ABS&FMTS=ABS:FT&date=Jul+20%2C+2012&author=Patricia+Sullivan&pub=The+Washington+Post&edition=&startpage=B.1&desc=After+storm%2C+no+one+could+reach+911+for+dying+man> (last visited Aug. 9, 2012). See also Sullivan, Patricia, *911 Failure Affected 2.3 Million in Northern Virginia*, The Washington Post, Jul. 11, 2012, available at http://www.washingtonpost.com/local/911-failure-cut-23-million-off-in-northern-virginia/2012/07/11/gJQAWGuedW_story.html (last visited Sept. 4, 2012), Sullivan, Patricia, *After Storm, 9-1-1, Phone Service Remains Spotty*, The Washington Post, Jul. 2, 2012, available at http://www.washingtonpost.com/local/after-storm-911-phone-service-remains-spotty/2012/07/02/gJQA33dHJW_story.html (last visited Sept. 4, 2012). For a video recount see MCM Coverage.

¹¹ Fairfax Comments at 18.

¹² Department of Energy, *A Review of Power Outages and Restoration Following the June 2012 Derecho*, Aug. 7, 2012, available at <http://energy.gov/oe/articles/review-power-outages-and-restoration-following-june-2012-derecho>.

¹³ According to Pepco, the electric provider in Montgomery County and the District of Columbia 443,000 of Pepco's 788,000 were without power and some 238,000 of those customers were in Montgomery County. *Pepco Completes Full Restoration of Customers Impacted by Derecho*, Press Release, Jul. 08, 2012 available at <http://www.pepco.com/welcome/news/releases/archives/2012/article.aspx?cid=2088> (last visited Aug. 30, 2012). See also, *Violent Wind Storm Leaves 443,000 Pepco Customers Without Power*, Press Release, Jun. 30, 2012 available at <http://www.pepco.com/welcome/news/releases/archives/2012/article.aspx?cid=2048> (last visited Aug. 30, 2012).

County has discussed in previous proceedings¹⁴ operators offer significant bundled pricing incentives when customers also purchase cable modem Internet access and digital phone service. The County is uncertain what percentage of these 255,000 customers also have non-POTS telephony service, but estimates based on proprietary and confidential information, that more than 17 percent of the cable subscribers lost bundled services either because of loss of power at their residence or loss of power suffered by the cable service provider. The Department of Energy's research reveals that only a small percentage of customers had their power restored within the eight hour window¹⁵ that backup batteries offer most IP phone users. Thus there were likely a significant number of Montgomery County households that lost telephone service as the power outage extended beyond 8 hours.¹⁶

Montgomery County did not suffer the power losses at any 9-1-1 centers as was experienced in Northern Virginia. The system did suffer from the large volumes of calls, in fact four 9-1-1 trunks were busied out (1 Wireline, 1 Wireless, 2 VoIP), but these were within the

¹⁴ See e.g. *In re Annual Assessment of the Status of Competition in the market for the Delivery of Video Programming*, (MB Docket No. 07-269), Reply Comments of Montgomery County filed July 8, 2011.

¹⁵ The eight (8) hour threshold is vitally important to the instant discussion as that is the battery life most broadband providers in the County offer their voice customers. See e.g. Verizon's support page on batteries <http://www22.verizon.com/Support/Residential/Internet/fiosinternet/general+support/getting+started/questionsone/121498.htm#> which explains "In case your ONT Power Supply Unit is accidentally unplugged - or in the event of a commercial power failure - a BBU is installed to provide you with backup power for standard voice service (but not Voice-Over-IP services) for approximately eight hours." Comcast's literature (<http://customer.comcast.com/help-and-support/phone/>) makes a similar claim for battery life. "Comcast provides battery back-up to ensure that your XFINITY Voice service remains available for up to eight hours in the event of an electrical power outage."

¹⁶ One lesson learned from the derecho is that the County needs to work with IP phone service providers to educate (re-educate) consumers as to the availability of non POTs telephone service in the event of a power loss extending beyond eight hours. Many consumers were unaware, had forgotten or misunderstood that eight hours after power is lost, so too is their phone service even if they have not used the phone. See e.g. Duffy Comments.

acceptable operational parameters for the Verizon 9-1-1 Network as designed and had a minimal impact on 9-1-1 operations. The County does have issues with the fact that while Verizon did send a "Mass Call Notification," it did not notify the PSAP of the trunk outages. The County is also not satisfied that Verizon acted in a timely fashion to restore the 9-1-1 trunks. There was not an appreciable impact on 9-1-1 operations in the County.

Montgomery County believes that the best summary of the performance by the local exchange carrier during and following the storm was provided by the carrier itself. In a letter to the region published in the July 30th edition of the WASHINGTON POST, Anthony Lewis, Verizon's Communications Vice President of the Atlantic region, revealed that the scale of loss of 911 service was dramatic.¹⁸ Mr. Lewis's letter reveals among other facts:

- "[T]he failure of ...backup generators to start at each of our Arlington and Fairfax central offices was a primary contributor to the Northern Virginia disruptions."¹⁹
- "We also understand the importance of communicating with 911 centers and the public during extraordinary events such as the derecho, and — while we did communicate with both — we can and will do better."²⁰

¹⁸ Letter to the Editor by Anthony Lewis, *Verizon vows to do better*, The Washington Post, Jul. 30, 2012 available at http://www.washingtonpost.com/opinions/verizon-vows-to-do-better/2012/07/30/gJQAf10ELX_print.html (last visited Aug. 11, 2012) ("Lewis letter").

¹⁹ *Id.*

²⁰ *Id.* Loudon County offers a differing view on the level of communications offered by Verizon. According to Loudon County, "It took 39 days, following the Derecho storm, for Verizon to provide the information on how many calls were not processed, before Loudoun County's PSAP Director could calculate the percentage of missed calls." (Loudon Comments at 2.) Also, according to the Loudon Comments at 2, they were notified by email of what appears to have been 10 hours after the first problems were sited of the potential loss of 911 calls and then were given an update every eight hours of so, also by email.

Verizon's concludes that it "failed to meet the expectations of the region's residents and public safety community after the derecho."

The County agrees with Verizon's conclusion, but it also sought to establish its own baseline. Following the June 29th storm, it has held two hearings in the County: the first on energy reliability and resilience (July 19th) in the County, the second on the County's response to the challenge (July 24th). In addition, on August 7, 2012, the County hosted a Maryland Public Service Commission²¹ which held a hearing regarding the impact on consumers of the local power company's performance during and following the derecho storms. The record from all three of these hearings, along with community media coverage of the storm and its aftermath on both the County and its residents, has been collected by Montgomery County Media, community media center at <http://www.mymcmedia.org/power-to-the-people-video-collection/> and video recordings with closed captioning of all three hearings are also available at www.montgomerycountymd.gov/ccm. County staff and counsel are reviewing the proceedings for universally-applicable messages that we will share with the Commission in video form as this proceeding moves forward.

III. POWER OUTAGES MAY BE THE REASON FOR LOSS OF 911 SERVICES, BUT SUCH LOSSES AND THEIR DURATION SHOULD BE ANTICIPATED; STANDARDS REQUIRE ALARMS AND BACKUP PLANS.

Many of the communications challenges consumers and public safety operations faced following the derecho were power-related. All of these challenges, however, should have been anticipated and addressed in planning: a power outage is not an uncommon event.²² In fact,

²¹See MCM Coverage. Dozens of Montgomery County residents packed the Montgomery County Council chambers to testify at the Public Service Commission's August 7, 2012 public hearing to offer feedback regarding the June 29 derecho and power outages and to share how the power outages impacted their lives.

²² Fairfax Comments at 18.

outages are so common, the Association of Public-Safety Communications Officials-International, Inc., has a national standard that requires providers to address them. APCO's comments explain that public safety has long called for power outage contingency planning: "The APCO/NENA Public Safety Answering Point Service Capability Rating Scale is an American National Standard that addresses many of areas that governing authorities and PSAP managers must consider when assessing their level of preparedness and survivability against a wide range of natural and man-made events.... Section 3.2.10.2.1 of the APCO/NENA PSAP Service Capability Rating Scale [requires] that 'Network paths are monitored and alarmed 24x7 by the network element providers.'" ²³ APCO states that interviews with its members in the National Capital Region reveal that the monitoring and alarms did not operate effectively following the storm. ²⁴

Montgomery County agrees with Fairfax County ²⁵ that nothing unique about the derecho caused the 911 failures, and it congratulates the Commission ²⁶ for refusing to be blinded by the

²³ APCO Comments at 2.

²⁴ *Id.* at 2.

²⁵ Fairfax Comments at 17-18 states "[N]othing unique to the derecho caused the 9-1-1 failure. A power outage is not an uncommon event. To be sure, power outages are more common during bad weather or other emergency events – in other words, those times when 9-1-1 service is especially important."

²⁶ The County commends the Commission and individual Commission professionals for their post-storm efforts to support the return of emergency services around the county as outlined in the Notice at pgs 2 and 3. These efforts are especially commendable given that many of the Commission staff's family were located in the area impacted by the storm. The County would also like to highlight the leadership of Public Safety and Homeland Security Bureau Chief David Turetsky. Mr. Turetsky is quoted to have stated "We intend to get at the facts," he said. "This is not idle curiosity. We intend to use the results to make the public safer." See Sullivan, Patricia, *Extent of 911 failure shown*, The Washington Post, Jul. 15, 2012 available at <http://pqasb.pqarchiver.com/washingtonpost/access/2711294381.html?FMT=FT&FMTS=CITE:FT&date=Jul+15%2C+2012&author=Patricia+Sullivan&desc=Extent+of+911+failure+shown&frec=1> (last visited Aug. 9, 2012). This docket proves that Mr. Turetsky has taken the first logical step to "getting the facts" and more importantly making the public safer.

“post-derecho uproar²⁷” regarding power utilities’ failure and for demanding that carriers explain the “equally serious infrastructure meltdown: the collapse of emergency 911 service.”²⁸ As the Washington Post notes, this breakdown lead to “...some 2.3 million people ..., for at least seven hours, [not having access] to the nation's most widely recognized telephone number....”²⁹

A review of the press accounts on the extent and breadth of the loss of 911 services as a result of the storm, as well as Mr. Lewis’ letter, tells us that in Northern Virginia subscribers lost 911 services because back-up generators at 911 centers (public safety answering points or “PSAPs”) failed to engage. The real question that the Commission must ask, and Verizon must answer is why it did not anticipate this or have emergency contingency plans and personnel in place.

A. Verizon’s indifference to its obligations to inform local government officials should be a cause for alarm at the Commission.

As reflected in the comments of APCO³⁰, Fairfax County³¹ and Loudon County³² among others, the Commission must address the communications breakdown of June 29th and the days

²⁷ *No answer at 911*, Washington Post Editorial, Jul 22, 2012 available at <http://pqasb.pqarchiver.com/washingtonpost/access/2718226771.html?FMT=FT&FMTS=ABS:FT&date=Jul+22%2C+2012&author=&desc=No+answer+at+911&free=1> (last visited Aug. 9, 2012).

²⁸ *Id.*

²⁹ *Id.*

³⁰ APCO Comments at 3, (“A major issue for PSAPs on June 29 was the lack of outage reports and related communications from their local carriers. In critical times of outages when systems fail, it is imperative that there be direct contact with an on-call representative of the LEC.”).

³¹ Fairfax Comments at 16, (“It is no small irony that the County’s ability to react to the 9-1-1 outage was delayed by the failure of one of the largest communications companies in America to communicate promptly and effectively with the County about the problems that caused the outage. Nine-one- one service is a service in which responsiveness is measured in seconds, not minutes or hours.”).

³² Loudon Comments at 2, (“It took 39 days, following the Derecho storm, for Verizon to provide ... information”).

following between Verizon and the local public safety community. Montgomery County points out that, “Verizon’s record of accountability, in Northern Virginia and elsewhere, is not encouraging. Last year, authorities in Maryland, where Verizon is the sole 911 service provider, said that the company had failed to notify emergency call centers in Montgomery and Prince George’s counties four times when service failed. In the worst instance, during a snowstorm in January 2011 that left commuters stranded for hours, some 10,000 calls to 911 failed to go through.”³³

Montgomery County asks the Commission to note that the 911 failures following the June 29th storm are not an isolated or unique event. *See, e.g.*, Fairfax Comments at 17 (“Verizon’s failure to communicate promptly and effectively with PSAPs in the National Capital Region is a chronic, systemic problem that urgently needs correction.”). Evidence of this pattern can also be seen in the February 17, 2011 Letter Admiral James Arden Barnett, Jr., Chief, Public Safety & Homeland Security Bureau, to Kathleen M. Grillo, Senior Vice President for Verizon Communications that is attached to Fairfax County’s Comments as Exhibit 6. The primary reason for Admiral Barnett’s letter was that Fairfax, Montgomery, and Prince George’s Counties experienced significant 911 disruptions during the snowstorm that hit the National Capital Region on January 26, 2011. The storm resulted in a spike in calls to 911 calls from wireless phones that the Verizon switching/routing equipment misinterpreted as a trunk/equipment failure in the PSAPs and automatically shut down the trunks for repair.³⁴ Admiral Barnett’s words are echoed in a Washington Post editorial, “The ability to call 9-1-1 is critical to public safety. This

³³ *No answer at 911*, The Washington Post, Jul. 22, 2012 available at <http://pqasb.pqarchiver.com/washingtonpost/access/2718226771.html?FMT=FT&FMTS=ABS:FT&date=Jul+22%2C+2012&author=&desc=No+answer+at+911&free=1> (last visited Aug. 9, 2012).

³⁴ *See also* Fairfax Comments at 19.

is especially true during extreme weather events. The public rightly expects they can use 9-1-1- to reach the appropriate first responders in an emergency.”³⁵

The lesson of the June 29th derecho and the “snow-maggedon” storm of 2011 cannot be limited to adding new words to the weather lexicon in the Capital Region. The Commission, and its colleagues at the state public utility commissions, must ensure that consumers can rely on emergency 911 services – especially in a widespread emergency, when those services are most needed.³⁶ The County notes that communications companies *can and do learn* from these types of incidents. Following the severe 2011 snow storms, Verizon implemented a remediation plan of action for 911 circuits. The impact of those change were visible during the 2012 derecho storm and it is the reason why only 4 trunks failed. Verizon’s automated communications procedures still need improvement so that local officials are made aware of the effect of an event not just the fact that an event has occurred. Nonetheless, receiving any communication is an improvement over 2011 when no communication was sent.

IV. THE COUNTY UNDERSTANDS NETWORK RESILIENCE AS RELATED TO POWER AS IT IS BOTH A SIGNIFICANT PROVIDER AND CONSUMER OF WIRELINE AND WIRELESS BROADBAND SERVICES.

The County understands the challenges associated with network resilience as it relates to power as the County is both a significant provider and consumer of broadband services. In both capacities, we demand that the network address power outages with redundant means to ensure uninterrupted power. Because of these investments, Fibernet, the County’s fiber optic network,

³⁵ *No answer at 911*, The Washington Post, Jul. 22, 2012 available at <http://pqasb.pqarchiver.com/washingtonpost/access/2718226771.html?FMT=FT&FMTS=ABS:FT&date=Jul+22%2C+2012&author=&desc=No+answer+at+911&free=1> (last visited Aug. 9, 2012).

³⁶ As part of the County’s storm response protocol, the County conducts conference calls of emergency response teams. Currently, Verizon does not participate in these calls. Future participation by Verizon and other communications providers is something that the County is investigating.

never lost power or functionality for public safety needs during or following the events of June 29th.

The County began deploying its own fiber optic network, which would come to be known as FiberNet, in 1995 as part of an Advanced Traffic Management System. Since then, the County has invested millions of dollars in constructing its own infrastructure to expand this network.³⁷ Today, the County's current generation FiberNet provides voice, video, and data communications services including broadband to 319 government and community buildings and 106 public schools, at speeds no less than 100 Mbps and as high as 10 Gbps.³⁸ Telephony, e-mail, Internet access and web-based government services are provided by FiberNet to all Montgomery County Government Departments, including public safety, Montgomery College, Montgomery County Public Schools, the Maryland-National Park and Planning Commission, Washington Suburban Sanitary Commission, and the Housing Opportunities Commission (the non-profit agency that owns and operates public housing in the County).

The County has worked very hard to serve the public as cost-effectively as possible using the most advanced technology available, but it could never have achieved these results if it had to rely solely on services purchased from commercial providers. The providers' current rates for

³⁷ Some of FiberNet's fiber was provided by the cable operator in the form of an institutional network.

³⁸ Over the next two years, the County will use funding from right-of-way franchise fees and the American Recovery and Reinvestment Act (ARRA) to add 139 sites to FiberNet, including 109 elementary schools and 19 low income public housing sites, bringing the total number of FiberNet sites to 562 by August 2013. The County is a member of the One Maryland Broadband Network – the public-private consortium formed by the State of Maryland Department of Information Technology, Maryland Broadband Cooperative and the Inter-County Broadband Network (consortium of ten central Maryland counties and cities) – which was awarded \$115,240,581 to deploy the One Maryland Broadband Network to bring affordable and abundant broadband to each of Maryland's twenty-four counties. A fact sheet summary of the One Maryland project is available on the NTIA website: http://www2.ntia.doc.gov/files/grantees/fact_sheet_-_maryland.pdf (July 11, 2011).

the bandwidth needed to provide state-of-the-art Web functionalities at more than 300 locations in a county of nearly a million residents are cost-prohibitive. FiberNet serves the Montgomery County government and its agencies at a fraction of the cost. For example, and as discussed in the County's reply comments in the Commission's most recent e-rate proceeding, the County provides service to schools for the annual fee of \$71 per megabit for 100 Mbps broadband service. In contrast, it would cost the schools \$1,826 per megabit for 1.54 Mbps T-1 services at its elementary schools, even after factoring in the e-Rate discount.³⁹

A. Addressing the Power Needs of FiberNet

Most importantly to the current discussion, FiberNet is an integral component of the County's Public Safety Communications Network. As the County's technical description of the network explains:

FiberNet is the name of the County's network. Based on economics and public safety concerns, the County can choose between FiberNet and the Local Exchange Carrier for telecommunications services and solutions. Telephony, public safety radio, data, secure Internet access, and video application services ride over FiberNet. From the County's perspective, FiberNet is a self-owned and operated electro-optical wide, campus, and local area network infrastructure, supplemented, when necessary, with ILEC frame-relay and TDM services.⁴⁰

The County's public safety voice communications network uses FiberNet as a fiber backbone to connect 11 radio communications transmission sites within the County, and the County has engaged the Washington Metropolitan Area Transit Authority to consider sharing assets and facility access to improve network reliability and availability for the County's Public

³⁹ *In The Matter of Schools and Libraries Universal Service Support Mechanism; A National Broadband Plan for Our Future*, CC Docket No. 02-6, GN Docket No. 09-51, Reply Comments of Montgomery County, Maryland (July 26, 2010) at 5.

⁴⁰ *Montgomery County Government Enterprise Architecture Technical Architecture*, Mar. 16, 2011, at p. 58 available at <http://www6.montgomerycountymd.gov/content/dts/architecture/docs/technicalarchitecture.pdf> (last visited Aug. 31, 2012) ("FiberNet Plan").

Safety Radio System. Fire and rescue service vehicles use mobile terminal access points to update in-vehicle mapping data. FiberNet will also be an important component of any future transition to public safety broadband wireless communications and public safety multi-jurisdictional broadband interoperable systems.⁴¹

Because of the County's, and increasingly our neighbors', reliance on FiberNet, it must be available to meet emergency contingencies on a 24x7x365 basis.⁴² To meet this standard, FiberNet employs a partially meshed backbone design so that a single point of failure does not disable the network. Every FiberNet Hub has at least two diverse links (east-west) attaching to its nearest neighbor. In most cases, there are three links. At the next layer in the OSI model, reliability has been engineered into the electro-optical network core with the use of multiple technologies so that there is circuit protection in the form of multiple paths to every destination.

From a power standpoint, each of the 12 operating hubs⁴³ around the County was built with a power distribution and protection system to maintain services under extreme operational conditions. Each hub has a utility power feed into a power distribution system (PDS) that protects against transient under/over voltages conditions so that a "clean" power source is presented to the hub. The PDS further protects the hub in the event of a utility power failure by providing an alternate source of power supplied by a diesel powered generator. Because the generator may take as long as ten minutes to become operational there is an "Uninterruptable

⁴¹ Presently, FiberNet is interconnected to 24 other Maryland, Virginia and District of Columbia jurisdictions as part of Washington DC Metropolitan Council of Governments' NCRNet (National Capital Region Network) project.

⁴² The County notes in FiberNet Plan at 66, "At the physical layer, reliability has been achieved with redundant components like multiple switches and power supplies, multiple and diverse fiber paths, and uninterruptible power supplies (including dedicated generators) within the supporting infrastructure."

⁴³ While the County did suffer loss of power to 150 nodes and there was a fiber break, the County's plans resulted in there not being a loss of power at any Hub, or public safety node.

Power Supply” (UPS) in the current-path to bridge the transition from utility to generator power. The UPS will drop out of the current-path when the generator takes over the power load. The entire system is maintained and tested under realistic power outage conditions on a regular basis. Between County staff and an outside contractor, batteries and generators are tested on a monthly basis, with a biannual maintenance check on all power system components. Components are replaced proactively as these age or are determined to be underperforming against their operational specification. In the event that the generators are engaged for a multi-day period, the County has its own fuel trucks and fuel supply that would be dedicated to supplying the generators. The County believes that if critical systems are not rigorously maintained in a disciplined way, they will fail when needed the most. This is not an inexpensive endeavor, but on June 29th and the days following, the investment in a resilient network provided a strong return in the form of confidence in and performance of the network.

The County cannot emphasize enough the importance of testing these critical facilities under real life power outage conditions. It is difficult to literally cut commercial power to emergency facilities to test whether or not back-up systems will function properly, but the County in fact does test its own PSAPs in these types of conditions and local exchange carriers need to do the same. Verizon and others will likely argue that they are following current industry standards for back-up power supply. What the Commission should investigate is whether higher standards need to be developed for facilities that handle critical 911 and emergency communications services.

Finally, the County would note that some commenters addressed the location of PSAPS. Montgomery County supports the comments that PSAPs should be located in facilities that are built to withstand storms such as disaster recovery sites or high-end data centers with

undergrounded utilities and 3 to 4 days of power. However, the County believes that local exchange carriers' critical 911 facilities should also be upgraded to meet the same standards. The County's FiberNet Plan includes a robust discussion of the steps the County has taken to protect mission-critical servers, and mainframe and main network hubs.⁴⁴ Montgomery County believes local exchange carrier facilities should be afforded no less protection.

V. FAILURE OF BACKUP GENERATORS WAS NOT THE ONLY WAY THE MANY LOST ACCESS TO 911 SERVICES IN THE DAYS FOLLOWING THE STORM

Although the loss of back-up power at a local exchange carrier's facility that contains 911 service equipment 911 call center is inexcusable, the County notes that it is equally troubling that consumers also lost access 911 services when their battery back ups drained after eight hours.⁴⁵

A 911 provider should reasonably anticipate both types of power-related challenges, yet on and after June 29th, Verizon had not appeared to do so. Because such a loss of power is so capable of being anticipated, the County does not accept Verizon's claim that "[Verizon has] begun a region-wide review of the entire 911 design infrastructure to identify and protect against areas of vulnerability." The County is encouraged that Verizon is now studying the impact of potential power outages, but power outages following weather events, even short summer storms, are not a new phenomenon.⁴⁶ The Commission must demand these contingency responses to, in the words of Mr. Turetsky, "make the public safer."

⁴⁴ FiberNet Plan at 87.

⁴⁵ Letter to the Editor by Anthony Lewis, *Verizon vows to do better*, The Washington Post, Jul. 30, 2012 available at http://www.washingtonpost.com/opinions/verizon-vows-to-do-better/2012/07/30/gJQAf10ELX_print.html (last visited Aug. 11, 2012).

⁴⁶ Since the majority of Commission readers of this document reside in the Washington Metropolitan area, the County will not burden the document with a string of cites to the challenges our power utilities have recently experienced. You all have lived through the challenges.

VI. LOCAL RESPONSE

As referenced above, Montgomery County and the Maryland PSC held a series of hearings following the June 29th storm to evaluate the performance of the local utilities and the County. These hearings are archived at: <http://www.mymcmedia.org/?s=derecho>.

Following the storm, the County also received complaints from residents whose power had returned, but whose communications systems had not. These complaints could be divided into two categories: those that simply wanted to know when they might have their communications services restored and where they could find that information, and those that wanted to know how to obtain a credit for lost service. The former group greatly outnumbered the latter.

The County did its best to share these concerns with the operators and obtain answers for its residents. One lesson that the County hopes to share with the Commission and operators alike is that reliance on Internet-based information and updates has limited benefit when consumers have no access to the Internet or must rely upon mobile wireless access to the Internet from smart phones. If the update information is located on a front page with energy and data consuming graphics, or worse, multiple click-through pages, consumers will be frustrated at best, and be unable to obtain information at worse. Guidance from the Commission on a best practices basis for addressing this issue could well serve consumers in the future.

In addition to these verbal communications, on July 24, 2012, the Montgomery County Cable & Broadband Office, on behalf of the Montgomery County Government Operations and Fiscal Management Committee, sent a letter to each of the County's cable providers. The primary purpose of these letters was to request information from the operators to provide insights into the number of subscribers that lost services directly or indirectly as a result of the loss of

power, customer outage and repair notification procedures, and for information regarding the company's back-up power procedures and performance.

A. Complaints and rebates

The County is in the process of collecting data from its cable service providers about the performance of emergency back up batteries and generators that each had in place at their headends and throughout their system. The County is unable to provide a response at this time, and will provide the Commission this information when it becomes available.

The County has been informed that there were seventy-four cases in which a subscriber's home had power, but no service and a complaint was made. Of these seventy-four complaints, some sixty-one were addressed with a credit adjustment and all but three of the matters have been resolved.

CONCLUSION

Montgomery County agrees with Verizon's assessment of its post derecho performance: "[Verizon] failed to meet the expectations of the region's residents and public safety community after the derecho."⁴⁸ The question the County has for itself, the FCC, and the Maryland State

⁴⁸ Lewis letter, available at http://www.washingtonpost.com/opinions/verizon-vows-to-do-better/2012/07/30/gJQAf10ELX_print.html (last visited Aug. 11, 2012).

