

PS COMMITTEE #3
March 3, 2011

MEMORANDUM

March 1, 2011

TO: Public Safety Committee

FROM: Susan J. Farag, Legislative Analyst 
Costis Toregas, Council IT Adviser

SUBJECT: **Update: 911 System Outages**

Today, the Committee will be briefed on the recent technical problems that caused a large number of wireless callers to receive busy signals when calling 911 during the January 26 snowstorm.

Those who are expected to brief the Committee:

Chief Thomas Manger, Montgomery County Police Department
Chief Richard Bowers, Montgomery County Fire Department
Asst. Chief Betsy Davis, Police Department
Brian Melby, Director, Police 9-1-1 ECC
Bill Ferretti, Deputy Director, Police 9-1-1 ECC
Bob Blevins, Verizon Senior Account Executive
Bettina Clark, Verizon Assistant General Counsel for State Regulatory
Briana Gowing, Verizon Assistant Vice President for Government Affairs
Mike McRae, Verizon Assistant General Counsel for National Operations
Walt Puller, Verizon Technical Service Manager

BACKGROUND

On January 26, while our area experienced a large snowstorm with massive traffic jams and power outages, Montgomery County also experienced a partial failure of its ability to receive 911 calls from wireless phones during a five hour period and a total failure of its ability to receive 911 calls from wireless phones for two of those hours. In those five hours,

approximately 8,300 wireless callers got nothing but busy signals. The County's Emergency Communication Center (ECC), which handles all 911 calls, was unaware of the problem until it was alerted by Prince George's County and District of Columbia call centers of a "potential" problem. The neighboring jurisdictions were concerned that there may be a problem because they had heard from citizens who complained about not being able to get through to Montgomery County using cellular phones. At that time, our Police ECC staff contacted Verizon Customer Care Center to determine the problem. Verizon is the sole vendor who handles 911 calls for the entire State. Once notified, Verizon determined that all trunks that feed wireless 911 calls to our ECC had shut down. Verizon was able to bring them back online within minutes.

This was not the first time such 911 problems have occurred. A similar, although partial, outage of trunks occurred during the high wind and thunderstorms on July 25, 2010. According to media reports, Prince George's County also experienced wireless trunk outages on December 17, 2010. As discussed below, Police ECC staff has been working with Verizon to identify and correct the issues that occurred on January 26.

IDENTIFIED PROBLEMS AND PROPOSED SOLUTIONS

Verizon has identified two problems that led to this failure.

Technical System/Design Failure: The first issue was the automatic shut down of trunk lines into the ECC caused by a "mass call event." A mass call event occurs when there is an extremely large number of simultaneous calls to 911. While it is normal for some callers to experience busy signals during high peak times, the January 26 storm generated such a huge call volume that it caused transmitting switches to interpret the ECC as not able to process calls. When this happens, the system automatically takes the trunk line out of service.

The ECC has multiple dedicated trunk lines that handle only 911 calls made on wireless phones. It also has other, separate trunk lines that handle landline and Voice over Internet Protocol (VoIP) calls. Between 5:15pm and 11:15pm that evening, all trunks that are dedicated to wireless calls were overwhelmed by call volume, gradually shutting down one-by-one until the ECC was unable to receive any wireless calls at all.

Proposed Solution: Verizon has indicated that it will adjust the "automatic trunk busy percentage" setting for trunk lines.

Communications Failure: During this five hour period when trunks were gradually shutting down, the ECC was still receiving a massive number of calls on landline and VoIP trunks. Instead of the ECC's average 100 calls per hour, the numbers spiked to 340 calls per hour. The sheer volume of total calls during that time masked any indication that fewer and fewer wireless calls were coming into the center, and staff did not realize that any system failure was occurring. Verizon also did not inform the ECC that there were any line problems during that time.

Proposed Solution: ECC staff has advised Verizon that they need real time notification of such systems failures so that they can have a chance to triage the situation onsite, if possible. Verizon has indicated that it will “prioritize” notifying the ECC about a mass call event. Instead of trying to identify and remedy the situation first, Verizon will call the ECC first to inform them of the fact a problem exists, even when not all details are fully known. Verizon will then continue to assess the problem and repair it as soon as possible. Verizon has also indicated that it will implement another internal alert notification that should expedite the notification of a mass call event.

ACTION AT STATE AND FEDERAL LEVELS

Both the FCC and the Maryland Public Service Commission have begun investigations into the Verizon 911 outages.

Federal: The recent problems with trunks shutting down is not unique to Montgomery County. Both Prince George’s and Fairfax counties experienced similar system failures on January 26. The FCC Public Safety & Homeland Security Bureau will hold a hearing with Verizon on March 3 (Closed Meeting).

State: The Maryland Emergency Numbers system Board (ENSB) held a special meeting on February 10 about the outages. It also held a closed meeting on February 24 with Verizon and Maryland 911 center representatives.

The Maryland Public Service Commission hearing with Verizon is scheduled for March 2, 2011.

DISCUSSION ISSUES:

- 1) ECC staff advises that Verizon’s proposals are a good short-term solution to ensure that wireless callers can reach 911. However, a better, longer-term solution would be an internal alarm system that allows ECC staff to monitor the system for failures as well. Committee members may wish to ask ECC staff what such a system would entail and what the current barriers are to implementation.
- 2) While the Verizon proposal to ensure trunks stay in service during a mass call event will help manage periods with high call volumes, does the proposal have any potential drawbacks on the daily use of the 911 system?
- 3) In order to better manage outages of such critical nature, the Executive branch may want to consider the vehicle of Service Level Agreements (or SLAs) which could be put in place with Verizon. SLAs are routinely used in Public/Private Partnerships and define acceptable levels of performance for the party who provides service to the other. For example in the County’s Desktop Management contract with L3, there are SLAs relating to the number of minutes for a technician to respond to a repair call. Anything beyond a prescribed level raises a flag and

repeated occurrences causes management review meetings, and ultimately reconsideration of the financial terms of the agreement.

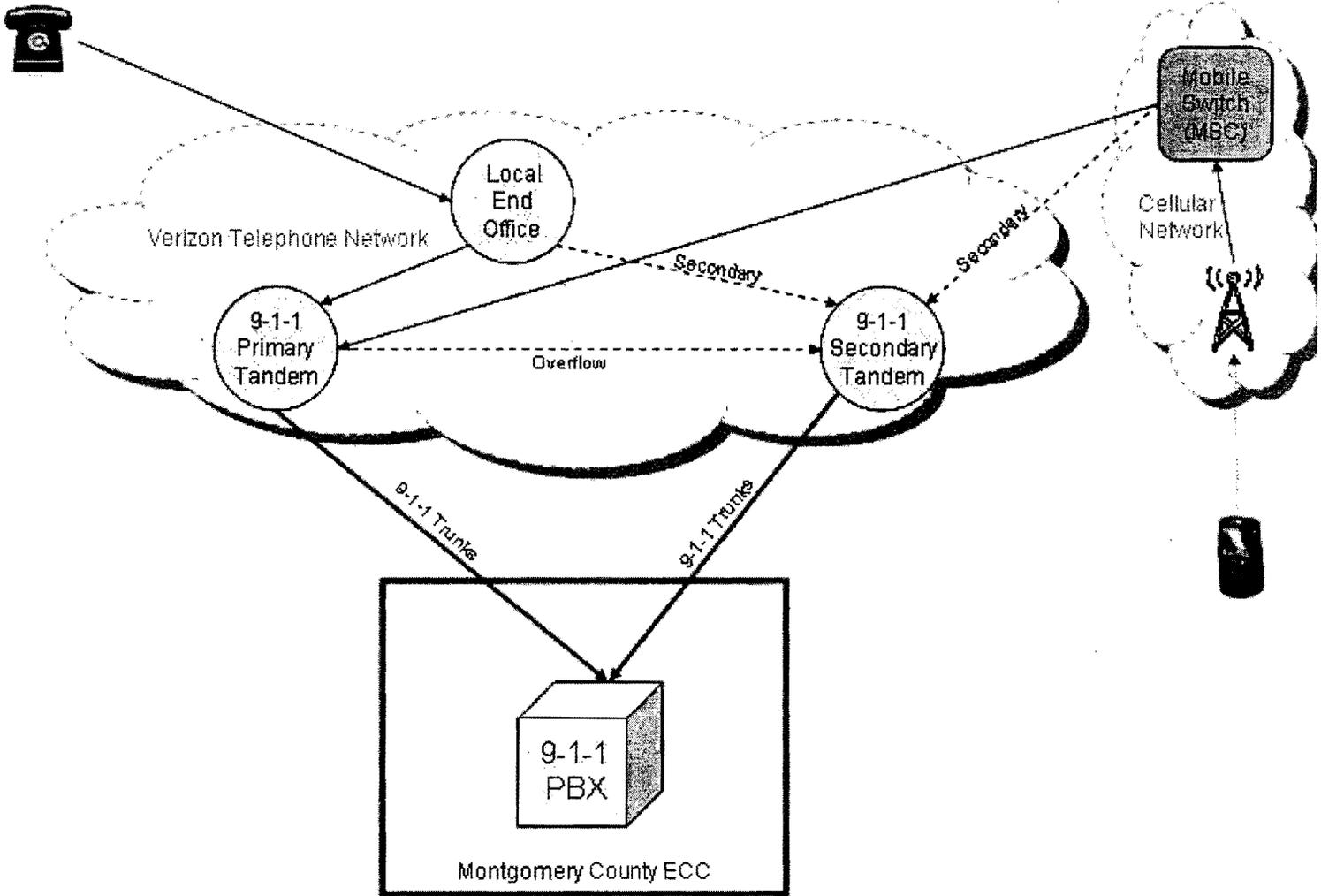
Even though the Verizon service is prescribed by State tariff, it is possible to conceptualize a County/Verizon SLA simply as a vehicle to improve quality. Alternately, all MD counties could develop a uniform SLA and ask the relevant State authority to incorporate it in the tariff to be used.

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Montgomery County E9-1-1 Network Configuration



Friday, Feb. 25, 2011

Verizon needs to make itself available

Governmental agencies seek answers to 911 glitches

It has been a bad year for a couple of Maryland's public utilities. On second thought, it's been a bad year for customers of the utilities — which covers a lot of residents.

Electric utility Pepco's travails have been well documented. Now, it comes to light that Verizon, which runs 911 service in a number of jurisdictions, dropped about 8,300 emergency calls in Montgomery County and another 1,700 calls in Prince George's County during a Jan. 26 snowstorm that hit the region.

To their credit, the Federal Communications Commission, the state Public Service Commission and the Montgomery County Council all want answers as to what went wrong. In fact, James Arden Barnett Jr., who is in charge of public safety and security for the FCC, told Verizon in a letter dated Feb. 17 that the large number of missed calls was "truly alarming."

For its part, Verizon has attributed the outages to the sheer volume of calls during the storm.

A day after the FCC's letter was sent, the company was saying all the right things when spokeswoman Sandra Arnette told Gazette reporter Erin Cunningham in an e-mail that Verizon "understands the critical function that 911 service provides to our customers and communities, and we take any 911 service disruption seriously."

Still, there were a couple of disturbing aspects to the Jan. 26 incident. The problems that day, it turns out, weren't the first time calls have been dropped. On Dec. 17, Prince George's had a similar outage, and on July 25, an outage in Montgomery resulted in delayed medical attention for a caller who couldn't reach 911.

Also, Verizon experienced outages last week in Northern Virginia that the company said were the result of faulty equipment and were unrelated to the Maryland problems.

The letter from Barnett describes what transpired Jan. 26. It says Verizon's system automatically took down one of 14 trunk lines that handle wireless calls in Montgomery County at 5:15 p.m. The system then proceeded to take down each of the 14 trunks by 8:45 p.m. A similar problem in Prince George's County took down nine of 10 trunks by shortly after 8:30 p.m.

More disturbing, perhaps, was that after the trunks' working alarms went off, signaling that the lines were down, Verizon did not notify the Public Safety Answering Point, or PSAP, in either county, according to Barnett's letter. The same was the case in the prior outages.

Instead, Barnett wrote, the PSAPs became aware of the outages "only when they received complaints from callers or were notified by another PSAP." Assistant Chief of Police Wayne M. Jerman told the Montgomery County Council on Feb. 8 that the 911 glitch was discovered when dispatchers in Prince George's and Washington, D.C., reported they were receiving emergency calls from Montgomery.

On top of this, Montgomery council members remain angry with Verizon, which hasn't responded to the county's request for information about the Jan. 26 incident.

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Council President Valerie Ervin of Silver Spring made the obvious connection in people's minds. "Here's another utility we're having problems with," she said, linking Verizon with the aforementioned electricity provider Pepco.

Of the failure to answer questions about the glitches, council Vice President Roger Berliner of Potomac said: "That's just totally unacceptable. This is life and death, and we need answers now."

Verizon now must show that there's substance behind its claim that it takes 911 service disruptions seriously. Its full cooperation with all governmental inquiries is essential.

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From the Washington Business Journal:

<http://www.bizjournals.com/washington/news/2011/02/18/fcc-questions-verizon-over-911-outages.html>

FCC questions Verizon over 911 outages

Washington Business Journal - by Jeff Clabaugh

Date: Friday, February 18, 2011, 1:50pm EST

The Federal Communications Commission is asking **Verizon Communications Inc.** to explain why thousands of 911 calls were blocked or dropped during the Washington area's Jan. 26 snowstorm.

In a letter to Verizon from **James Barnett Jr.**, head of the FCC's public safety and homeland security bureau, the agency cites a total of 10,000 wireless calls to 911 in Montgomery and Prince George's counties that were routed over Verizon's network but not connected.

The letter also mentions other Washington-area incidents in July and December 2010 when 911 calls routed over Verizon equipment were dropped.

"I know that you will agree that any 911 call which is not connected can have serious consequences, but the large number of missed 911 calls on January 26 is truly alarming," Barnett's letter said.

The FCC wants Verizon to investigate the extent of the problem across its network and explain what steps it is taking to address the problems by March 10.

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FCC: Verizon Dropped Thousands of 911 Calls During Snowstorm

By Maisie Ramsay Tuesday, February 22, 2011

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The FCC is asking Verizon to explain why it dropped thousands of wireless 911 calls placed over its trunks in Maryland during a snowstorm in late January.

According to [a letter](#) from FCC public safety and security chief James Arden Barnett, about 8,300 wireless 911 calls to the Montgomery County Public Safety Answering Point routed over the Verizon network were not connected and an additional 1,700 wireless calls to the Prince George's County PSAP were not connected during a Jan. 26 blizzard in Maryland, where both counties are located.

"The large number of missed 9-1-1 calls on January 26 is truly alarming," Barnett wrote. "I therefore request that Verizon provide an explanation of the causes of this and similar failures, provide Verizon's assessment of the possibility of occurrence in other locations and describe what actions Verizon is taking to prevent recurrence of these problems."

Barnett said that reports filed with the FCC indicated that Verizon's system automatically took one of its wireless 911 trunks out of service at 5:15 p.m. on Jan. 26. In a little over three hours, the system took out each of the 14 trunks handling wireless calls so that all the trunks handling wireless 911 traffic in Montgomery County were taken out of service by 8:45 p.m.

The trunks have working alarms, but Verizon did not notify the PSAPs of the failure after the alarms went off, according to the letter. The Montgomery County PSAP recognized the problem just prior to 11 p.m. and notified Verizon. By 11:15 p.m., Verizon had placed all the trunks back into service.

"It is our understanding that this was not an overload. We understand that it is normal in large-scale emergencies for the call volume to exceed the trunk capacity, in which case calls will be blocked until another trunk opens up," Barnett wrote. "In this instance, however, the Verizon system took each of the fourteen trunks handling wireless calls out of service sequentially so that they could not receive any more calls."

A similar problem happened that same evening with Prince George's County PSAP, where eight of the 10 trunks that serve wireless calls were taken out of service automatically by Verizon's system on Jan. 26 by 8:30 p.m., with a ninth trunk taken out shortly afterwards. Four were restored by 10:30 p.m.; all trunks were finally restored by approximately 11 p.m.

The outages on Jan. 26 were "not unique," wrote Barnett. Both counties had experienced prior outages similar to the problems that occurred during the late January snowstorm, including a July 25 incident that resulted in delayed urgent medical attention for a caller who was unable to reach 911.

In all cases, Verizon did not notify the PSAPs when the outages occurred, Barnett said.

Instead, the PSAPs became aware of the outages only when they received complaints from callers or were notified by another PSAP. The PSAPs then notified Verizon.

"We are particularly concerned that this problem may be widespread across Verizon's footprint," Barnett wrote.

The FCC is asking Verizon to provide information by March 10 about whether the problem is localized to certain routers, if it has happened in other states, and what solutions there are to the outages.

Verizon Communications said it is taking the matter seriously and is "working cooperatively" to answer the FCC's questions.

"Our objective is to provide the best service to our customers, and we will continue to work with 911 centers and others to ensure that callers receive the level of service they deserve and expect when they call 911," said Harry Mitchell, director of

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public relations for Verizon Communications, in a statement.

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1 COMMENTS

GianCarlo

2/23/2011 1:47:03 PM

Managers and supervisors responsible in the PSTN and MTSO are responsible in alerting/ notifying Verizon wireless are directors and alert the local PSAP of the failures. Integrate comes into play with the job at Verizon Wireless, I expect someone(s) to get demoted for such an oversight.

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