The January 2013 Public Safety and Homeland Security Bureau (the Bureau) report *Impact of the June 2012 Derecho on Communications Networks and Services; Report and Recommendations (Derecho Report)* recommended that the Federal Communications Commission take actions to ensure (1) improved 9-1-1 circuit auditing; (2) adequate central office backup power; (3) diversity of monitor and control links; and (4) improved Public Safety Answering Point (PSAP) notification when outages may affect 9-1-1 service to the public. The proposed rulemaking by the Commission includes four possible methods to implementing the recommendations: (1) reporting, (2) certification, (3) reliability requirements, and (4) compliance inspections and reviews as well amendments to 47 C. F R. section 4.9, to require service providers to notify PSAP’s in the event of certain outages that could affect 9-1-1 facilities.

The City of Alexandria, Virginia, submits these comments as our local government’s response to the FCC Notice of Proposed Rulemaking and as a locality in the Northern Virginia region that was affected significantly by the Derecho.

During the Derecho on the night of June 29, 2012, the City of Alexandria, Virginia, Department of Emergency Communications lost the ability to use 8 wireline and 7 wireless 9-1-1 trunks out of 26 total 9-1-1 trunks, a 50% reduction in the capacity of the emergency communications center. Also lost was the full use of a number of administrative and direct telephone lines, which meant that emergency communications staff were unable to receive or make telephone calls to PSAP’s in adjoining jurisdictions or respond to citizens for a period of
time. Beginning on the day of the Derecho, Alexandria’s PSAP had no Verizon wireless service for approximately 36 hours. Since there were widespread power outages throughout the region due to high winds and falling trees, the loss of full 9-1-1 emergency communications was a serious concern.

The City of Alexandria was fortunate that it did not experience the total loss of Verizon 9-1-1 services that occurred in the PSAP’s operated by our Northern Virginia partners in Arlington, Fairfax and Loudoun Counties. Due to the design of the 9-1-1 system in the relatively new Alexandria Emergency Communications Center, the City’s emergency communications systems continued to function, (although limited by storm effects, power and system outages as noted above) as designed relying on two separate Verizon Central Offices as opposed to one. This meant that the PSAP was able to operate, although at times on a very limited basis. Due to these circumstances, at first the City was unaware that PSAP’s in our neighboring jurisdictions were not able to receive 9-1-1 calls.

Among the conclusions of the City’s Derecho after action analysis was that it was very fortunate that the City of Alexandria had implemented and reinforced resiliency and redundancy in the design of our emergency communications center in compliance with National Fire Protection Association (NFPA), National Emergency Number Association (NENA) and other national organizations best practice recommendations. However, it is our understanding that early reports on the Derecho Verizon outages revealed that the 911 service provider failures were due to non-compliance with any standards or best practices by Verizon.
In early July of 2012 the Metropolitan Washington Council of Government Board of Directors passed a resolution seeking information on service outage issues from Verizon during the Derecho.

Within weeks of the Derecho the Northern Virginia PSAP Directors from the National Capital Region (NCR) met and held an extensive discussion about the failures caused by the Derecho. Initial reports found that a number of PSAP’s had experienced system failure and PSAP employees were unable to answer 9-1-1 calls. Alternative 10 digit telephone numbers were being broadcast by the media for use by members of the community. Since then it has been determined that the actual failures were a result of Verizon’s systems network outages and not the 9-1-1 equipment. A number of PSAP’s in the NCR had failed completely or were limited in their capabilities as a result of Verizon network and infrastructure issues. Inaccurate reporting by some government agencies and media outlets caused significant confusion among the general public and within the 9-1-1 community itself as to the circumstances surrounding the outages. In part this was caused as a result of the limited communication flow between Verizon and the Northern Virginia PSAP community. These issues have been a cause for significant concern in the NCR, and there is agreement in the region that this situation should not be permitted to re-occur.

The NCR PSAP Directors continue to meet together and with Verizon and other Subject Matter Experts to develop long and short term solutions to ensure that these Verizon system failures do not reoccur. In the course of their discussions, the PSAP Directors group noted that there is not a clear understanding by Verizon of call routing, redundancy and configurations in the 9-1-1 centers in the region, which is important to determining how Verizon could meet the requirements of the PSAPs to provide continuous and reliable 9-1-1
The ongoing discussions with Verizon have produced some 9-1-1 system reconfiguration recommendations, as well as identification of the need for certain site upgrades, dissemination of alert notices to PSAP’s by Verizon and provision of additional communications system redundancy.

The City of Alexandria, Virginia, submits these comments in response to the Notice of Proposed Rulemaking to ensure the reliability and resiliency of the regional public safety emergency communications infrastructure necessary for continued availability during times of major natural or man-made disasters. As noted above, the NPRM proposed four possible approaches to implement the PS&HSB’s Derecho Report recommendations as well as amendments to 47 C.F.R. § 4.9, which requires service providers to notify PSAPs, among others, in the event of certain outages. The City of Alexandria supports these efforts by the Commission.

The impact of the Derecho on regional 9-1-1 services clearly demonstrated the high risk to public safety that is associated with relying on the 9-1-1 service providers like Verizon voluntarily complying with industry best practices. Therefore, the City of Alexandria supports the Commission in its call for imposing service provider mandates focused on improving 9-1-1 circuit auditing, ensuring telephone central offices are equipped with adequate backup power, diversifying the routing of all circuits to the Public Safety Answering Point (PSAP), and improving the timeliness of service provider notification to the PSAP when 9-1-1 outages occur.
The Bureau's *Derecho Report* clearly identified the risk to public safety associated with relying on the 9-1-1 service providers to voluntarily comply with industry best practices. In light of the prolonged outage and loss of public confidence in the regional emergency communication system, it is imperative that the Commission replace the current voluntary approach with mandates that will improve the reliability of 9-1-1 services. To this end and in the interest of restoring public confidence in the regional emergency communications systems, the City of Alexandria strongly supports the imposition of periodic, mandatory 9-1-1 circuit auditing by the service providers. At the conclusion of every audit the service provider should be required to provide the PSAP with a logical diagram of the audit.
Assuring adequate backup power for every telephone central office facilities supporting regional 9-1-1 services should be part of every service level of agreement between the PSAP and the emergency communication service providers. The public has an expectation for this level of contingency planning by the service providers and the Commission should adopt language articulating backup power equipment requirements and maintenance schedules as a contractual barrier to entry with periodic, mandatory fail-over testing to ensure no loss of service.

The Commission should also adopt such language as to require the service providers to design emergency communications network monitoring capabilities that are not linked to an electronic, structural or mechanical single point of failure and will continue to provide visibility into network status if any component of the network is operating on contingency power. This architecture should be mandatory for all public safety emergency communications and should be required in every 9-1-1 service contract.

The City of Alexandria supports the proposed amendments to 47 C.F.R. § 4.9 to require service providers to notify PSAPs immediately with all available information that may be useful to mitigate an outage and to deliver that information by telephone and in writing by electronic means in the event of a service disruption to the PSAP. It is our position that the term “immediately” lends itself to interpretation rather than a time table set for the initial notification period. Not one of the Northern Virginia PSAP Directors was aware of the effects of the outages on neighboring jurisdictions and they were left with no means of communications with our neighboring
jurisdictions, which forced us to eventually rely on the Police and Fire Mutual Aid Radio System (PMARS and FMARS) to communicate with neighboring jurisdictions. The emergency communications service provider should be required to maintain communications and provide recurring updates to the PSAP on the status of any outage to include their remediation efforts and estimated time to restoration of service.