

E9-1-1 Sub-Panel Report to the Secure Commonwealth Panel

The State of E9-1-1 in Virginia

5/6/2013

Executive Summary

On the evening of June 29, 2012 a major storm unexpectedly hit Virginia. This storm brought powerful straight line winds of close to 90mph, thus it was given the name Derecho, Spanish for “straight forward.” According to the FCC, the storm had its origins in Iowa and traveled southeast eventually dissipating in the Atlantic Ocean. In its wake the storm left 22 people dead, millions without electrical power during a period of extreme high temperatures, and the important realization that our 9-1-1 systems are not as reliable as we believe and need them to be. Consequently, not for hours but for days, many of our fellow Virginians were left without the ability to communicate with their first responders at a time when they would need help the most.

Besides revealing weaknesses in the Commonwealth’s E9-1-1 network, the Derecho also exposed the complex relationships and the differing viewpoints between government and 9-1-1 providers. In July 2012 Governor McDonnell and Secretary Suit established the Secure Commonwealth 9-1-1 Sub Panel to evaluate the nature of those relationships and ascertain if they were adequate to ensure the safety and security of our citizens now and into the future and to determine if opportunities exist to strengthen the relationships to reflect advances in technology and leverage industry best practices. The 9-1-1 Sub Panel report is informed by, and supports, the findings of the other investigative bodies who have studied the technical aspects of the 9-1-1 network as it relates to the Derecho storm. The focus of the 9-1-1 Sub Panel inquiries was not to duplicate the efforts of the State Corporation Commission, the Federal Communications Commission, and the Metropolitan Washington Council of Governments, but to determine if the roles and responsibilities of the Commonwealth, the local jurisdictions, and the E9-1-1 providers were clearly defined, appropriate, adequate and relevant in maintaining a 9-1-1 system that was reliable in ensuring the safety and security of our citizens. The 9-1-1 Sub Panel began with a simple yet profound question: If it is the responsibility of the local jurisdiction to immediately respond to a citizen’s call for assistance with the proper equipment and personnel, then what responsibility does the Commonwealth bear in ensuring the call goes through?

These findings have revealed the following; first, within the Commonwealth the current fragmented governance structure involves a number of state agencies, none with the responsibility for or statutory authority over the entire E9-1-1 system, which results in a lack of oversight and accountability (*State Corporation Commission (SCC) Comment: “Our 911 rules and the exhaustive investigation following the June outages with the associated ongoing proactive monitoring, combined with the fact that our staff receives reports on, and monitors, 911 outages on a daily basis is evidence that there is a great deal of SCC oversight and governance.”*). Additionally, governance is further hampered by the legislatively mandated structure of the E-911 Services Board and the reactive operating philosophy of the State Corporation Commission, as well as a lack of defined, quantifiable, and enforceable performance standards between both agencies and E9-1-1 providers.

Secondly, and as significantly, the lack of strong, consolidated governance (*SCC Comment: “Our 911 rules and the exhaustive investigation following the June outages with the associated ongoing proactive monitoring, combined with the fact that our staff receives reports on, and monitors, 911 outages on a daily basis is evidence that there is a great deal of SCC oversight and governance.”*) created an

environment where communications providers failed to follow FCC recommended best practices, which led to the 9-1-1 service failures during the Derecho, which were avoidable.

Finally are the consequences of recently enacted legislation which has proven detrimental to E9-1-1. This includes;

1. Bifurcating, and thus limiting, the State's authority over wireline and wireless E9-1-1 services
2. Mandating a structure for the E-911 Services Board which makes effective oversight difficult, if not impossible
3. Detariffing retail telecommunications services, including E9-1-1, which amounts to the deregulation of these services since current SCC rules do not apply to detariffed telecommunications.

1. Introduction

Over the past decade the expectation for 9-1-1 emergency telephone service has evolved in the eyes of the public and public safety. Prior to the events on September 11, 2001 government operated under the concept that 9-1-1 providers were vendors whose services it purchased under specific terms and conditions. In Virginia this is clearly demonstrated in the terms and conditions of the documents (the Tariff and Billing Agreement) that outline the relationships between the Commonwealth, local government, and communications providers for 9-1-1 service. For the public, prior to September 11th, 9-1-1 was seen as just a telephone number that connected a citizen caller to local emergency services. It was a simpler, easier to remember number to replace the many previous 7 to 10 digit telephone numbers to police, fire and emergency medical services (EMS).

Now, 9-1-1 is the lifeline for safety and security for citizens and is seen by both citizens and all levels of government as a part of the critical infrastructure that supports public safety, which leads to the public's expectation that 9-1-1 calls will be answered and responded to rapidly. Currently, 9-1-1 is a system governed by legislation, regulations, technology, and administrative and operational procedures at the Local, State and Federal levels of government. However, in the Commonwealth of Virginia, the basis of the relationship between the government stakeholders and the phone company providing 9-1-1 services has not changed for over 15 years. This has created gaps in accountability and technology that have left the 9-1-1 system vulnerable to failures resulting in 9-1-1 outages often when the system is most vital to our citizens. All 9-1-1 partners must be held accountable to the necessity of providing a 9-1-1 system that ensures emergency services are available to Virginia callers when in need.

2. Background

As a result of the 9-1-1 outage related to the Derecho storm on June 29, 2012, Governor McDonnell recognized the importance of a reliable 9-1-1 system not only to the citizens of the Commonwealth but also the emergency responders who stand ready to provide assistance. Additionally the Governor saw an opportunity to work with 9-1-1 partners to ensure Virginia has a responsive system in place and is prepared to develop and implement Next Generation 9-1-1 (NG9-1-1). With advice from the Secretary of

Veterans Affairs and Homeland Security, Terrie Suit, and under the auspices of the Virginia Secure Commonwealth Panel, a 9-1-1 Sub Panel was established to evaluate the state of the Commonwealth's 9-1-1 Emergency Telephone Service.

Secretary Suit appointed Dario Marquez to Chair the Sub Panel. The 9-1-1 Sub Panel members represent the government, to include elected and public safety officials, and the 9-1-1 industry, to include Verizon, who is the predominant telephone company or Local Exchange Carrier (LEC) and 9-1-1 service provider in Virginia.

Members of the 9-1-1 Sub Panel are:

- Dario Marquez (Chair) – MVM, Inc.
- John J. Brown, Jr. - Arlington County
- Michael M. Cline - Virginia Department of Emergency Management
- Maureen Davis - Verizon Mid Atlantic Network Operations
- Jay Fisette - Arlington County
- Tim Hemstreet - Loudoun County
- Pat Herrity - Fairfax County
- Karen Jackson – Virginia Deputy Secretary of Technology
- Mike Melo - ITA International
- Sam Nixon—Virginia Information Technologies Agency
- Chris Peace - Member, Virginia House of Delegates
- Mark Penn - City of Alexandria
- Jim Redick - City of Norfolk
- Steve Souder - Fairfax County
- Terrie Suit – Virginia Secretary of Veterans Affairs and Homeland Security
- David Waldman - True North Consultants, LLC

The following report documents the efforts and findings of the 9-1-1 Sub Panel to be presented to the Governor through the process established by the Secure Commonwealth Panel.

2.1. Secure Commonwealth Panel

In accordance with Virginia Code 2.2-233 ([Exhibit A](#)), the Secure Commonwealth Panel was established as an advisory board within the Governor's Office. The Panel is chaired by the Secretary of Veterans Affairs and Homeland Security and the Vice-Chair is the Lt. Governor. They are charged with monitoring and assessing the implementation of statewide prevention, preparedness, response, and recovery initiatives and to review, evaluate, and make recommendations relating to the emergency preparedness of government at all levels in the Commonwealth. The Panel facilitates cabinet-level coordination among the various agencies of state government related to emergency preparedness and facilitates private sector preparedness and communication. In addition, the Panel makes quarterly reports to the Governor concerning the state's emergency preparedness, response, recovery, and prevention efforts.

2.2. 9-1-1 Sub Panel

In the summer of 2012, Secretary Suit established the Secure Commonwealth Panel – 9-1-1 Sub Panel. The Sub Panel was mandated to research and receive testimony from government and industry officials on the condition and status of 9-1-1 emergency services in Virginia. Based on the observations from the research and testimony, the Sub Panel was charged to develop a report, with findings to be presented to the Governor.

The 9-1-1 Sub Panel met on 4 occasions (September 5, September 26, October 9, and November 15). During these meetings they received testimony and had discussions related to:

- Impact to 9-1-1 of the Derecho Storm on June 29, 2012
 - Verizon’s reports related to the 9-1-1 outage resulting from the Derecho
 - Fairfax County Filing with the FCC
 - Arlington County 9-1-1 Overview on Issues and Challenges
 - Virginia State Corporation Commission (SCC) Report related to Case No. PUC-2012-00042 - 9-1-1 Emergency Call Service Outages and Problems
 - Washington Metropolitan Council of Governments - Preliminary Report of 9-1-1 Service Gaps During and Following the Derecho Storm on June 29, 2012
- Other Telecommunications Providers 9-1-1 Overview and Challenges
- Current State of 9-1-1 in the Commonwealth
- Wireless E9-1-1 Billing Agreements between the Commonwealth and Local Exchange Carriers
- Verizon Tariff for 9-1-1 Service
 - Implications of Verizon detariffing 9-1-1 Service

These meetings and an analysis of these reports and other relevant material form the basis of the Sub-Panel’s findings.

3. History of 9-1-1 in the United States

In the United States, the push for the development of a nationwide emergency telephone number started in 1957. In 1967 the Federal Communications Commission (FCC), met with AT&T in order to establish a solution, rather than have government create a new emergency phone system. In 1968, a solution was agreed upon; AT&T chose to implement the concept with its unique emergency number, 9-1-1, which worked well with the phone systems in place at the time.

In the 1980s, wireline Enhanced 9-1-1 (E9-1-1) was implemented. E9-1-1 tied the wireline caller’s telephone number to their physical address, thus providing the public safety telecommunicator with vital data elements, to include automatic location information (ALI) and automatic telephone number information (ANI). The introduction of wireline E9-1-1 was a great improvement to the 9-1-1 system, but it would quickly be strained by the introduction and popularity of cellular phones.

Through the 1990s, a 9-1-1 call placed from a wireless telephone would simply be forwarded to a 10-digit telephone number that went to the local 9-1-1 call center (public safety answering point,

or PSAP) or to the State Police. Coming in on a 10-digit number meant that the location of the caller, call back number and other important data elements were not provided to the public safety telecommunicator, like they were for wireline E9-1-1. This increased response time, or prevented responders from locating the caller/event at all. In 1996 the FCC ordered wireless service providers to implement enhanced features and location technology for wireless 9-1-1 calls. The implementation was to occur in two phases. Phase I provided the PSAP with the caller's telephone number and the address of the cell site receiving the call. Phase II provided the PSAP with the actual location of the caller by longitude and latitude, within a defined margin of error depending on the location technology used by the provider; typically this is within 50 to 300 meters. Currently, over 99% of the population of the United States has access to 9-1-1 service.

3.1 9-1-1 in Virginia

In the Commonwealth E9-1-1 service is implemented by local government while the relationship between state government and the Local Exchange Carriers (LECs) is administered through three state agencies; the State Corporation Commission (SCC), the E-911 Services Board ("Board"), and the Virginia Information Technologies Agency (VITA) Public Safety Communications Division (PSC.)

Wireline E9-1-1 is administered through tariffs which the LECs submit to the SCC. The SCC staff has not only the authority to accept or reject the **Tariff** but, by Code, has the responsibility to establish and enforce regulations that set the standard for how LECs will deliver and be paid for 9-1-1 service. By accepting the current Verizon **Emergency 911 Service Tariff** the SCC staff approved the Verizon definition of E9-1-1 service, how the service would be delivered to the PSAPs, the responsibilities to be undertaken by the PSAPs, and the rates Verizon would charge.

Wireless E9-1-1 service and Next Generation 9-1-1 (NG9-1-1) are governed through the E-911 Services Board. The Board was established in 1998, when the Virginia General Assembly passed legislation which was codified in the Virginia Code 56-484.13 ([Exhibit B](#)). This legislation authorized the Board to negotiate contracts between the Commonwealth and wireless E9-1-1 providers. These contracts, entitled **Billing Agreements**, set forth the relationship between the parties to include definition of 9-1-1 service, limited authority of PSAPs, limited role of the Board (billing agent only), limitation of liability on the providers and protections provided by the Commonwealth, and the three year term of the agreement with two option years.

In addition, the same legislation that established the Board established the VITA Division of Public Safety Communications (PSC) with the intention to provide staff support to the Board, training and technical assistance to PSAPs and wireless carriers. It was envisioned that the Division of Public Safety Communication would act as a liaison between the LECs and the PSAPs.

Finally, the legislation also required all PSAPs to deploy wireline E9-1-1 technology, as well as begin taking the wireless calls directly (bypassing the state police, which, in most areas of the Commonwealth, had previously routed wireless 9-1-1 to the local PSAPs) by July 1, 2003, unless granted a Board extension. To date, one hundred twenty-nine (129) PSAPs have implemented wireless E9-1-1 Phase II with all wireless service providers, resulting 99% of Phase II deployments completed as of June 30, 2012. As soon as Lee County completes its wireline 9-1-1 implementation (scheduled for June 30, 2013), it can also deploy Phase II wireless.

4. Recent Precipitating Events in E9-1-1 in Virginia

In recent years there have been two major events that have impacted the public and government perception of the 9-1-1 system in Virginia; September 11, 2001 and June 29, 2012. While these events are very different, they have the shared result of heightening public awareness and prompting government action on issues of public safety, to include E9-1-1 systems. While there have been catastrophic events before and since these events, none has captured the attention and sense of urgency these two events have captured, resulting in the paradigm shift that E9-1-1 is not a service purchased by government; rather it is essential critical infrastructure for public safety and the first component in the public safety continuum.

4.1 September 11, 2001

On the morning of September 11, 2001, as documented in the 9/11 Commission Report ([Exhibit C](#)), the New York City 9-1-1 call system became overwhelmed, flooded with eyewitness accounts of the event. Many of the occupants of the Twin Towers dialed 9-1-1, but the system was not equipped to handle the enormous volume of calls it received.

As a result of the events of September 11, 2001 we were awakened to the reality of our vulnerability and began to question all systems of government, to include law enforcement, intelligence gathering, and E9-1-1. As a result, we became more aware that E9-1-1 was a critical link in our safety and security, which led to the expectation that the service would be available as part of the emergency response infrastructure.

In the months and years following September 11, 2001 local and state officials began to analyze and evaluate the condition of 9-1-1 emergency telephone services within their jurisdiction. They began to look at the 9-1-1 telephone system as not just a service provided by a vendor but as part of their public safety critical infrastructure. There came the realization that the 9-1-1 system was not only essential for emergency communication from the public in their time of need, but also that the 9-1-1 telecommunicator was the critical communications link to the first responders in the field who might need assistance or additional information in order to protect the lives and property of citizens.

Within the Commonwealth the events of September 11th led to the creation of the Secure Commonwealth Panel and, in turn, the publication of the Commonwealth's Critical Infrastructure Protection and Resiliency Strategic Plan which identified telecommunications as a key resource and critical infrastructure.

4.2 Derecho Storm, June 29, 2012

On June 29th a storm with extremely powerful and destructive winds swept across Northern Virginia with little warning. This storm had its origins in central Iowa and worked its way southeast until it dissipated in the Atlantic Ocean. As noted in the report "Impact of the June 2012 Derecho on Communications Networks and Services", submitted by the Public Safety and Homeland Security Bureau of the Federal Communications Commission ([Exhibit D](#)), this storm left in its wake 22 people dead, wide spread damage and left millions without electrical power during a period of extreme

high temperatures. As a result of this storm, 77 PSAPs in six (6) states lost some degree of E9-1-1 connectivity while 17 PSAPs in three (3) states, including four (4) in Northern Virginia; Fairfax County, Prince William County, City of Manassas and City of Manassas Park, lost their entire E9-1-1 service.

In addition to the impact to infrastructure, the Derecho cemented our belief that 9-1-1 is a critical public safety communications system that must be redundant and resilient. In the wake of the storm we came to realize that while a call to “9-1-1” is answered by local government, 9-1-1 is a complex system of technologies that are mostly controlled by private telecommunications companies, governed by various state and federal agencies, and is considered by those partners to be a service the communications companies provide to the localities who purchase their services. The historic 9-1-1 outage clearly illustrated the paradigm shift from 9-1-1 being a purchased service to being considered critical infrastructure and the need to examine all aspects of the system, from technology to contracts, to ensure all partners understand and work together to ensure the system remains functional under emergency conditions in the future.

Investigations conducted by federal, state and local agencies on the effect of this storm and the resulting outages have been exhaustive and have resulted in numerous findings, recommendations, and proposed requirements to ensure LECs are better prepared to deal with such eventualities in the future. The Sub Panel concurs with all of the technical findings and recommendations found in the Metropolitan Washington Council of Governments Final Report of 9-1-1 Service Gaps During and Following the Derecho Storm on June 29, 2012 ([Exhibit E](#)), the State Corporation Commission Staff Report of Final Findings and Recommendations in the Matter of Investigating 911 Emergency Call Service Outages and Problems ([Exhibit F](#)), and the FCC report on the Impact of the June 2012 Derecho on Communications Networks and Services ([Exhibit D](#)). Additionally, the FCC has recently released a Notice of Proposed Rulemaking in the Matter of Improving 9-1-1 Reliability ([Exhibit G](#)) to implement key recommendations for strengthening 9-1-1 service made by the FCC’s Public Safety and Homeland Security Bureau after an in-depth inquiry of 9-1-1 service failures resulting from the Derecho.

5. Stakeholders in 9-1-1 Service in the Commonwealth of Virginia

There are four main types of stakeholders in the complex system of E9-1-1 service in Virginia: local governments, state government, federal government, and communications providers. E9-1-1 service is much more than the infrastructure of the system; it includes legislation, regulations, and administrative and operational procedures at all levels. Multiple agencies are involved in the governance of the system, funding comes from numerous sources, and responsibilities are not always clear as a result of documents not keeping pace with technology. Due to the interdependencies of the partners on each other, and the public expectation that the 9-1-1 system always functions, all aspects of the system must be designed and implemented to ensure it is available to citizens and first responders, even during emergencies. All partners must fulfill their responsibilities to the public, at all times, in spite of the complicated governance model.

5.1 Local Government

As local governments are responsible for implementing E9-1-1 there are multiple local government agencies that are included as stakeholders in 9-1-1. In Virginia the primary stakeholder is the PSAP, with stakeholders including public safety agencies such as law enforcement, fire services, emergency medical services and emergency management. In many cases, City and County Information Technology departments also provide support to 9-1-1.

An Application for Service (Exhibit H) is an agreement between local government and LEC that details the specific 9-1-1 products and services, as listed in the tariff, which the locality agrees to purchase from the LEC and the location where those services will be provided. Each locality determines its own needs and negotiates directly with the LEC for these service options.

The PSAP's primary responsibilities are to take emergency calls for assistance from the public and dispatch emergency responders. The 9-1-1 telecommunicator/dispatcher role is very stressful and requires a well-trained, focused individual who has the ability to be sympathetic and empathetic to the caller's needs in order to understand all aspects of the situation without being at the scene. They also have the responsibility to relay the information obtained from the caller to the emergency responders to ensure an efficient response to each individual incident and to ensure the safety and security of the responders. Dispatchers for law enforcement agencies must meet Commonwealth training standards, as set by the Department of Criminal Justice Services (DCJS); no other Commonwealth training standards exist, to include Fire, Rescue, or Emergency Medical Service (EMS.)

Local governments design their PSAPs to ensure they remain operational under all conditions. They work with the LECs so their PSAPs are supported with 9-1-1 service that meets their requirements and industry standards for redundancy and resiliency. For example, each PSAP is served by a minimum of two 9-1-1 tandems to prevent loss of service should one tandem fail for any reason, as may occur if the 9-1-1 circuit is accidentally cut. In the tariff the LEC describes requirements for PSAPs with regard to call handling, staffing, training, and equipment. PSAPs are designed and built to a "public safety grade" standard for power supply, which includes battery back-ups, on-site generators, and some may include connections for mobile generators. While the telecommunications industry lacks an accepted definition of "public safety grade" it is understood to represent a standard for greater reliability and resiliency to withstand disruptions than commercial networks. The SCC's rules (Virginia Administrative Code 20VAC5-425-40 ([Exhibit I](#))) specify a standard for service quality; a "P.01 grade of service" reflecting the probability that no more than one call out of 100 during the average busy hour will be blocked. Many localities also develop alternate PSAP facilities for use in circumstances when their PSAP may be disabled.

5.2 State Government

The Commonwealth is responsible for establishing the standard and rules by which the LEC and the PSAP are regulated and operated, however there is no single state agency with responsibility for, or

authority over, the entire E9-1-1 system in the Commonwealth of Virginia. No state agency has the authority to define, regulate, or authorize a PSAP since E9-1-1 service is considered a local service to be defined by the locality. This prevents the Commonwealth from having any requirements regarding specifics on how calls are handled, which are stipulated by many other states. Instead, three state agencies have leading roles in the governance of E9-1-1; the State Corporation Commission, the E-911 Services Board, and the Virginia Information Technologies Agency (VITA) Public Safety Communications Division (PSC). In addition, there are other state government agencies that are included as stakeholders in E9-1-1 to include Office of the Secretary of Veterans Affairs and Homeland Security, Department of Emergency Management, Office of the Comptroller, Office of Chief Information Officer, Department of Criminal Justice Services and the Virginia State Police, just to name a few.

A. State Corporation Commission (SCC)

The Virginia State Corporation Commission (SCC) plays a major role in the relationship between the Commonwealth and the LECs by reviewing and accepting or denying the Services Tariff submitted by the LEC and regulating the wireline E9-1-1 services provided by the LECs. In addition to 911 tariffs, the SCC has overall broad statutory authority over ensuring telephone companies provide “reasonably adequate” service pursuant to Virginia Code Section 56-234 ([Exhibit J](#)). However, “reasonably adequate” is not defined in the Code of Virginia and is left to the SCC to interpret and apply.

The SCC has no jurisdiction over wireless telecommunications, which is considered an interstate telecommunications service and therefore is regulated by the FCC. The SCC could have jurisdiction over wireless service quality, and presumably E9-1-1 service--currently, 75% of all 911 calls made in the Commonwealth are made from wireless devices. Legislation was passed in 1995 that removed wireless telecommunication from SCC jurisdiction (Virginia Code 56-508.8 through 14, ([Exhibit K](#)). Legislation to return this authority to the SCC was introduced in 2006 (HB 944 ([Exhibit L](#))), but did not pass.

The tariff is a list of rates and charges for various components or services that is written by the communications provider and filed with the SCC. CenturyLink and Verizon are the predominant providers of E9-1-1 service to PSAPs in Virginia. Wireline E9-1-1 services are included in Section 14A of the Verizon Miscellaneous Service Arrangements Tariff – Emergency 9-1-1 Services ([Exhibit M](#)). This tariff not only determines the pricing for the various components of 9-1-1 service options provided to the PSAPs, but also includes rules and regulations, customer obligations, liability, and description of service rate elements as it relates to both the LEC and the customer (PSAP).

The tariff in effect today between the Commonwealth and Verizon for wireline E9-1-1 service is defined as a Business Exchange Service and explicitly states,

“The Company (Verizon) does not answer and or forward 9-1-1 calls, but furnishes the use of its facilities to enable the Customer’s (the Government’s) personnel to receive such calls.”

However the Tariff does place certain very specific responsibilities on the PSAP to include,

1. Provide personnel for 24 hour coverage of incoming 911calls.
2. Receive all 9-1-1 calls routed to the public safety answering point.
3. Subscribe to a sufficient number of lines to adequately handle all incoming 911 calls.
4. The responsibility for dispatching or having other dispatch law enforcement, fire, EMS or other emergency services required.
5. Developing an appropriate method of responding to calls for non-participating agencies which may be directed to the PSAP by calling parties.
6. Use all reasonable and lawful means to secure on an initial and ongoing basis the appropriate funds sufficient to pay billed for services provided.
7. When the selective routing feature is provided, the customer is responsible for identifying primary and secondary PSAP locations.
8. The customer must procure PSAP equipment with a capacity adequate to handle the number of incoming enhanced 9-1-1 lines to meet network compatibility requirements, receive voice and ANI from 9-1-1 callers, provide the ability to retrieve information on a per call basis from an ALI system and provide ANI and ALI display and control.
9. It is the customer's responsibility to procure, install and maintain its PSAP equipment to be compatible with the company's E9-1-1 service.
10. The customer will conduct training of its personnel.

Under current law (Code of Virginia 56-236 ([Exhibit N](#))) Verizon may detariff E9-1-1 starting July 1, 2013. The tariff provides limitations of liability, which would have to be negotiated with each local government in individual customer agreements should Verizon choose to detariff E9-1-1. To date, Verizon has indicated they have no intention to detariff E9-1-1; however Virginia legislation leaves this decision solely at the discretion of Verizon.

In addition to accepting the tariff from the LEC, the SCC also promulgates rules and regulations governing tariffed wireline 9-1-1 services provided in the Commonwealth (Virginia Administrative Code 20VAC5-425-10 ([Exhibit O](#))). These rules and regulations were established to "bring additional reliability and accountability to the provisioning of E9-1-1 service by addressing E-9-1-1 database reliability issues and requiring a Local Exchange Carrier (LEC) to: provide adequate and accurate customer information to the Public Safety Access Point (PSAP)."

In addition to addressing the issue of E9-1-1 database accuracy, the regulations also include the requirement that an LEC providing E9-1-1 services shall:

- Design, construct, maintain, and operate its facilities to minimize interruptions to E-911 services;
- Determine E-911 service requirements in consultation with the relevant PSAP. These requirements shall be communicated to the PSAP prior to implementation and shall include detail sufficient to allow the PSAP to order E-911 service consistent with a minimum of a P.01 grade of service (P.01 is the grade of service reflecting the probability that one call out of one hundred during the average busy hour will be

blocked. P.01 is the minimum recommended Grade of Service for 9-1-1 trunk groups); and

- Provide E-911 service consistent with the level of service ordered by a PSAP.

The SCC rules and regulations, as currently written, apply solely to tariffed wireline E9-1-1. Should Verizon—or any other LEC—elect to detariff E9-1-1 the SCC rules would no longer be applicable and would need to be modified or new rules would need to be promulgated.

B. E-911 Services Board

The role of the **E-911 Services Board** is to support the development of E9-1-1 capabilities in Virginia. Specifically, under Section 56-484.13 of the Code of Virginia ([Exhibit B](#)), the E-911 Services Board has the responsibility to “promote and offer assistance”:

- 1) In the statewide development, deployment, and maintenance of enhanced wireless emergency telecommunications services and technologies; and
- 2) In the development and deployment of enhanced wireline emergency telecommunications services and technologies only in specific local jurisdictions that were not wireline E-911 capable by July 1, 2000.
- 3) In the statewide development, deployment, and maintenance of VoIP E-911 and any other future communications technologies accessing E-911 for emergency purposes;
- 4) To the Virginia Information Technologies Agency (VITA), and other stakeholder agencies, in the development and deployment of a statewide public safety network that will support future E-911 1 and other public safety applications.

The financial responsibilities of the Board include managing the Wireless E-911 Fund, which is funded by a \$0.75 monthly tax per device on wireless customers in Virginia. The Board chooses to allocate up to 30% of the Fund to make payments to the wireless carriers. PSAPs receive 60% of the Fund, and the PSAP Grant Program receives a minimum 10% of the Fund. Additionally, in recent years, approximately \$8 million of the E-911 Fund was transferred the Virginia Compensation Board to “support sheriffs” dispatchers” and \$3.7 million was appropriated for the Virginia State Police to “support wireless call taking” annually even though State Police no longer answer 911 calls. PSAP funding detail from the E-911 Services Board FY2012 Annual Report is available for FY2009 to FY2012 ([Exhibit P](#)).

The Board is a signatory to the Billing Agreement for 9-1-1 wireless trunks with Verizon and CenturyLink on behalf of the local PSAPs who have decided to participate in the agreement. The agreement is for billing only and is not a service or purchase agreement; it does not establish any performance standards to which the Commonwealth can hold the LEC and rates for services are determined in the tariffs. The Board acts as a billing agent for the local PSAPs in order to reduce the administrative burden on the PSAPs. The current agreement, negotiated in 2010 may be modified by either the LEC or the E-911 Services Board and is effective until July 1, 2013. The PSAPs have the option of participating for an additional two years.

The Board is responsible for the Virginia Statewide Comprehensive Plan for 9-1-1 ([Exhibit Q](#)), which defines key strategic initiatives for improving 9-1-1 services and functionality across Virginia and includes the following initiatives:

- 1) Conduct baseline assessment of 9-1-1 capabilities and services
- 2) Develop and apply statewide guidelines to foster a minimum level of 9-1-1 emergency response service across Virginia
- 3) Implement a dispatcher recruitment and retention program
- 4) Enable Next Generation services by connecting 9-1-1 centers to the statewide IP backbone.

The current Plan is an update on the original Plan from 2008. Progress has been limited and the Plan acknowledges a statewide IP backbone is not possible at this time and NG9-1-1 requires a dedicated funding stream in order to be realized. The initial intent of the Plan was to complete the initiatives by December 31, 2011.

C. Virginia Information Technologies Agency Public Safety Communications Division (PSC)

The intended role of VITA PSC is to support the E-911 Services Board and assist localities and wireless and wireline providers in the development and deployment of E9-1-1 systems. Though the delivery of E9-1-1 services is a local responsibility, the division supports local PSAPs with regional coordinators, development of a training program and providing training to PSAP personnel, supporting projects that work toward the goal of deployment of NG9-1-1, and developing hosted PSAP services in the future.

The PSC is responsible for the Virginia E-911 Services Board Annual Report and supports the Board. In 2011 the PSC was tasked by the Board to develop a Virginia's NG9-1-1 Implementation Plan ([Exhibit R](#)).

5.3 Federal Government

A. Federal Communications Commission (FCC)- Public Safety and Homeland Security Bureau

The FCC, through its Public Safety and Homeland Security Bureau (PSHSB), is responsible for developing, recommending, and administering the agency's policies pertaining to public safety communications issues. These policies include 9-1-1 and E9-1-1; operability and interoperability of public safety communications; communications infrastructure protection and disaster response; and network security and reliability. PSHSB also serves as a clearinghouse for public safety communications information and emergency response issues. A primary goal of PSHSB is to support and advance initiatives that further strengthen and enhance the security and reliability of the nation's communications infrastructure and public safety and emergency response capabilities that will better enable the FCC to assist the public, first responders, law enforcement, hospitals, the communications industry and all levels of government in the event of a natural disaster, pandemic, or terrorist attack.

Within the PSHSB the FCC has created the Communications Security, Reliability and Interoperability Council (CSRIC), with a mission to provide recommendations to the FCC to ensure, among other things, optimal security and reliability of communications systems, including E9-1-1. The recommendations take the form of thousands of best practices which they recommend the implementation of to all 9-1-1 partners.

In addition, FCC Rules require communications providers to file reports on 9-1-1 outages through the Network Outage Reporting System (NORS) when they meet the FCC threshold of 30 minutes duration that potentially affects 9-1-1. Obtaining information on communications service disruptions is essential to the FCC's goal of ensuring the reliability and security of the nation's communications infrastructure.

The FCC only has jurisdiction over interstate communications services, to include wireless telephone service. Although local telephone service is the responsibility of the states, the FCC has a public safety role and has recently issued a Notice of Proposed Rulemaking in the Matter of Improving 9-1-1 Reliability ([Exhibit G](#)) seeking input on 9-1-1 issues following the Derecho.

B. Department of Transportation – National Highway Traffic Safety Administration

Within the Department of Transportation (DOT) is the National Highway Traffic Safety Administration (NHTSA) which was established in 1970 to carry out public safety programs. The ENHANCE 9-1-1 Act of 2004 authorized NHTSA and the National Telecommunications and Information Administration to establish a national 9-1-1 Implementation Coordination Office to administer a grant program for Public Safety Answering Points (PSAPs). The Office reports implementation progress, makes recommendations to Congress on E9-1-1 needs, and administers new federal cost-share grants to state and local E9-1-1 agencies for implementation and operations.

5.4 Communications Providers

E9-1-1 service in Virginia is provided through several different types of communications providers; traditional phone companies offering wireline service like Verizon and Centurylink, providers using more modern technology by cable service providers like COX, or Voice over Internet Protocol (VoIP) like Comcast and Verizon, and wireless carriers. Independent of the provider, all 9-1-1 calls must be seamlessly routed across the LEC's network to the E9-1-1 network, regardless of infrastructure ownership, to the correct PSAP, with correct call data attached or concurrently received by the PSAP.

A. Local Exchange Carrier

The Local Exchange Carrier (LEC) is a prominent stakeholder in 9-1-1 services. The LEC is the communications provider that provides local wireline telephone service to residential and commercial customers, from whom 9-1-1 calls originate. In Virginia, the two largest are Verizon and CenturyLink. Verizon is the 9-1-1 provider in 73 localities in Virginia, while CenturyLink is the provider in 22. As the 9-1-1 service provider they are the entity that provides the 9-1-1 network

infrastructure, PSAP 9-1-1 telephone equipment, and database services like Automatic Location Information (ALI) and Automatic Number Identification (ANI.) All other communications providers' 9-1-1 networks interconnect with the 9-1-1 service provider to route 9-1-1 calls and maintain 9-1-1 ALI information in the service provider's 9-1-1 database.

B. Competitive Local Exchange Carriers

Competitive Local Exchange Carriers (CLECs) are a group of communications providers which compete with the LEC to provide local telephone service. In some cases, CLECs use alternative sources for their network to include VoIP, Cable or third party network providers. Just like the LEC and wireless carrier, 9-1-1 calls can originate from a CLEC customer and the CLEC's 9-1-1 network interconnects with the 9-1-1 service provider network so 9-1-1 calls are seamlessly routed to the correct PSAP.

C. Wireless Carriers

With the majority of 9-1-1 calls originating from wireless devices (approximately 75% and increasing), wireless carriers play a significant role in 9-1-1 service. Under the FCC Rules and Regulations wireless carriers have the requirement to ensure 9-1-1 calls originating on their network are delivered to the PSAP closest to where the call originated. In addition, they have a requirement to deliver to the PSAP the location (ALI) and telephone number of the device (ANI) from which a 9-1-1 call is made. For E9-1-1 service, the wireless carrier's 9-1-1 network interconnects with the 9-1-1 service provider that routes the wireless 9-1-1 call to the PSAP.

D. Other 9-1-1 Service Providers

In recent years, there have been other companies that have entered the 9-1-1 market as 9-1-1 services providers, and either compete or partner with the LEC to provide various components of 9-1-1 service such as network or database services. This is becoming more prominent in the deployment of Next Generation 9-1-1 (NG9-1-1) which will be discussed later in this report. As with all 9-1-1 partners, they are required to ensure 9-1-1 calls are transmitted to the nearest PSAP along with ALI and ANI data.

6. Best Practices

In the Commonwealth of Virginia the absence of an efficient governance model leads to an E9-1-1 environment that does not support the development or implementation of performance standards or best practices. A failure of E9-1-1 stakeholders indicates a failure of leadership to foster a requirement for excellence.

The FCC provides an exhaustive list of recommended best practices to stakeholders, but does not enforce their adoption and implementation. Industry has accepted these recommendations, but is free to implement them or not, as participation is voluntary. The FCC does not determine how states oversee E9-1-1 so each state has the authority to govern through contracts with the communications providers and develop their own governance model.

While instructing telephone companies to provide “reasonably adequate” service (Virginia Administrative Code Section 56-234 ([Exhibit J](#))) and LECs “minimize interruptions to E-9-1-1” (SCC Rules and Regulations, Virginia Administrative Code 20VAC5-425-10 [Exhibit O](#))) the various state agencies active in E9-1-1 in the Commonwealth do not impose defined, measurable performance standards on PSAPs or communications providers. The Tariff and Billing Agreement are not performance contracts and the SCC Rules and Regulations address only the most basic of provisions. DCJS has developed minimum training standards for law enforcement dispatchers, but does not regulate other aspects of 9-1-1 implementation, including fire and EMS dispatchers. Various state agencies have the authority to offer certification over limited aspects of PSAP operations, but no single agency has authority over PSAP operations.

In contrast, what follows are examples from across the country where E9-1-1 stakeholders have designed and implemented aspects of the system that serve as examples of best practices to other 9-1-1 practitioners, including the Commonwealth of Virginia, Virginia localities, and telecommunications providers in Virginia.

6.1 Local Government

A. Network Redundancy— Boulder County, CO

The Boulder County, Colorado 9-1-1 System has designed and implemented a fully redundant, geo-diverse system to serve 7 PSAPs. The servers typically found in each PSAP are instead located in a centralized location, allowing for seamless backup and redundancy between PSAPs. At the same time a second facility, in a different location, hosts another set of servers that are integrated with the first set. Both sets function at all times, however only one is necessary and the system is fully operational should either location stop functioning, ensuring continuity and reliability of the 9-1-1 system.

B. Power Redundancy—Fairfax County, VA

The Fairfax County Public Safety and Transportation Operations Center (PSTOC), which provides E9-1-1 service in Fairfax County, was designed and implemented with uninterrupted power supply (UPS) and backup generator that will sustain the power supply for extended periods of time (indefinitely if fuel for the generator is available). In addition, it is supplied with commercial power from 2 different power lines fed from different power generating locations. This arrangement reduces the likelihood of commercial power interruptions and allows the PSAP to remain fully operational should one happen.

C. Staffing—APCO Project RETAINS (<http://www.apcointl.org/resources/retains.html>)

In response to the challenge PSAPs have in maintaining staffing levels, the Association of Public-Safety Communications Officials (APCO) Project RETAINS developed the industry standard for staffing of PSAPs based on guidelines developed by the US Department of Justice. Participation in the program is designed to increase employee retention rates. Some PSAPs in Virginia have voluntarily chosen to adopt this standard; however it is not a requirement in Virginia.

D. Training—APCO (<http://psc.apcointl.org/2010/09/01/state-training-certification-survey/>)

In the absence of national minimum training standards for 9-1-1 telecommunicators, and inconsistent state requirements, the Association of Public-Safety Communications Officials (APCO) Training and Certification Program is used by many agencies throughout the country and is considered as one of the best training programs for emergency communications and 9-1-1. Some PSAPs in Virginia have voluntarily chosen to adopt this standard. Virginia requires 40 hours of instruction and 40 hours of on-the-job training to be completed within a year of hire for only law enforcement telecommunicator, no continuing education is required.

6.2 State Government

A. Rules and Regulations— Illinois (<http://www.icc.illinois.gov/911/>)

It is widely accepted by 9-1-1 practitioners that the State of Illinois has established the most comprehensive rules and regulations (Standards of Service Applicable to 9-1-1) governing 9-1-1 service in the country. They cover all aspects of E9-1-1 service to include LECs, communications providers, wireline, wireless, VoIP and telephone systems used by business, hotels and apartment complexes. These all-inclusive rules and regulations allow Illinois to have oversight over 9-1-1 service, resulting in consistent and reliable service being provided to all PSAPs.

B. Governance— Texas (<http://www.csec.texas.gov/>)

The Texas 9-1-1 program gives the 9-1-1 commission (Commission on State Emergency Communications) the authority to establish rules governing the deployment, operation, funding and administration of 9-1-1 service in the state. The benefit of governing 9-1-1 with a single state agency is that it allows that agency to actively manage all aspects of 9-1-1, including LECs, communications providers, PSAPs, and development of NG9-1-1.

C. Legislation – Massachusetts (<http://www.mass.gov/eopss/agencies/state-911/>)

The legislation that established the Commonwealth of Massachusetts 9-1-1 program allows the Statewide Emergency Telecommunications Board (SETB) to establish and adopt minimum standards for the deployment, operation and administration of 9-1-1 service that all of the PSAPs and communications providers must adhere to. This guarantees consistent, high standards of 9-1-1 are implemented across the state. This is especially relevant to the design and implementation of a statewide NG9-1-1 system.

7. A Word about Next Generation 9-1-1 (NG9-1-1)

Next Generation 9-1-1 is an Internet Protocol (IP)--based system designed to provide access to emergency services from all connected communications sources, and provide multimedia data capabilities for PSAPs and other emergency service organizations.

Today, consumers continue to drive the telecommunications market, bringing new technologies and new ways of communicating into practice. For example, Voice over Internet Protocol (VoIP) phones, smart phones, text messaging, picture messaging, and video are popular communications mechanisms. The architecture of the legacy 9-1-1 system is based on circuit switched technology designed to enable voice telephone calls to 9-1-1, not data transmission like in text messages. Consumers expect the 9-1-1 network to keep pace with technology and allow the public to communicate with “9-1-1” through all communications devices and methods. As with many other states, this has not happened in the Commonwealth with the exception of experimental pilot programs that have only been implemented in four Virginia localities. In Virginia the E-911 Services Board has the responsibility for development of the plan to deploy NG9-1-1 as described in Virginia’s Next Generation 9-1-1 Implementation Plan ([Exhibit R](#)).

Transitioning from the current 9-1-1 system to one capable of handling the increasing demands of modern technology (NG9-1-1) is a complex but realizable goal to meet the expectations of citizens and public safety. For the Commonwealth of Virginia, this will require strong leadership, clear governance, coordination, an updated funding model, and thoughtful strategic planning by all stakeholders. At the same time the existing E9-1-1 system, infrastructure, and relationships need ongoing support and attention to ensure reliable and continuous E9-1-1 service for those in need.

8. Findings and Observations

Events like September 11th and the Derecho storm have illustrated the public paradigm shift from 9-1-1 being considered a phone service to it being considered a system of critical infrastructure jointly owned by industry and local government. Of the three main partners in E9-1-1 service in Virginia; state government, local government, and communications providers, typically only local governments have had this perspective. Many local governments have voluntarily adopted industry best practices for staff training, PSAP design, and power redundancy and have shown a willingness to partner with state government and communications providers to collaboratively develop a robust system of E9-1-1 infrastructure and relationships in the Commonwealth. All partners in Virginia’s E9-1-1 system, at all levels of government and including private partners, must work together to ensure 9-1-1 is available to callers in need, both today and in the future.

8.1 Ineffective Governance

State governance of E9-1-1 is currently fractured between multiple agencies with no single state agency having statutory authority over all elements of E9-1-1. The SCC has authority over wireline E9-1-1, the Board has authority over wireless E9-1-1, and no state agency has authority over PSAPs. By placing all authority into one agency the Commonwealth could reduce cost and develop a more effective and proactive governance model leading to greater oversight to ensure partner accountability and to facilitate coordination with other communications programs governed by the Commonwealth.

The SCC and the E-911 Services Board are hampered by their agency design and/or operating philosophies, which serve to impede the execution of their roles in E9-1-1 governance. The SCC is a large agency with extensive responsibilities. By design, its operating philosophy is reactive which means it responds to reported infractions of established rules and regulations by conducting inquiries or investigations, holding hearings and making a final adjudication wherein the

investigation, “Docket”, is closed. In order to be effective in governing E9-1-1 the SCC needs to be proactively and consistently engaged in the establishment of performance standards as well as in the receiving, monitoring, evaluating, and responding to audits provided from both the E9-1-1 providers and PSAPs. This change in operating philosophy will ensure the SCC is actively working with E9-1-1 participants in preventing problems before they occur rather than responding to them afterwards. (SCC Feedback: The SCC takes issue with this paragraph because, as stated in their letter to the Panel, their docket in response to the June 29, 2012 911 outages was established on July 3, 2012 (Docket PUC-2012-00042) is currently open and “will remain open to monitor and evaluate proactively the past and continuing corrective action taken by Verizon to ensure that all identified deficiencies are addressed...” etc.

Additionally, the SCC expressed surprise at the February 22, 2013 Order (a copy was attached in the letter to the Panel) not being included in the Sub Panel report.)

The E-911 Services Board, as currently legislatively composed, is unable to actively govern or provide adequate oversight. The Board is overseen by a small number of volunteers who give of their time at quarterly meetings. This operating structure precludes the Board from addressing issues in a timely and in-depth manner. The Board is staffed by the VITA PSC, which must work on Board priorities and initiatives without the day-to-day input and guidance of the Board.

In addition to proactive oversight, an effective governance model includes defined, quantifiable, and enforceable performance standards for all partners, including local governments and communications providers. For example, while the standard of “reasonably adequate” allows the SCC the latitude to define performance problems, it is difficult to quantify, enforce, and require from partners (SCC Feedback: The SCC mentions the fact that they proactively promulgated 911 Rules in 2004 (20VAC5-425) that have performance standards in several areas, as noted on page 11 of the report. Some of the standards the SCC highlighted demonstrate quantifiable standards (e.g. “provide ALL record information such that the E-911 database error rate for a given PSAP is no greater than 1 %”)). Documents already exist that could be strengthened to make them more effective; tariffs, billing agreements, and rules/regulations.

Centralized governance would also allow for development of a strategic approach to sustain the current infrastructure while designing and implementing a transition to Next Generation 9-1-1 in close coordination with other Commonwealth communications programs and initiatives. In order to be successful a statewide system for Next Generation 9-1-1 must be planned, funded, and implemented by the Commonwealth with the support and collaboration of all partners.

8.2 Best Practices not Implemented

In Virginia there is insufficient oversight of communications providers to ensure they implement industry standards or meet defined/measurable performance standards. Instead, the FCC recommends they voluntarily implement industry best practices with regard to power redundancy, network redundancy and resilience, maintenance, and communicating with PSAPs, to name a few. Inquiries by the SCC and FCC indicated these best practices are not fully implemented in Virginia and could have prevented loss of E9-1-1 service during the Derecho if they had been implemented.

SCC Feedback: The SCC claims to have made no such pronouncement, and instead say they “found the primary cause of the Derecho 911 outages was Verizon’s failure to follow its own internal practices (for example, routine testing, maintenance and repair of generators).”

The SCC Staff Report of Final Findings and Recommendations ([Exhibit E](#)) notes relative to Central Offices:

“We cannot forget that the 911 service outages following the June 29 Derecho would likely have been avoided if the generators in the Fairfax and Arlington offices had been maintained and operated as they were designed.

We recognize that there are no “absolutes” to prevent another 911 service outage. However, the 911 outage following the June 29 Derecho in Northern Virginia should not have occurred and was avoidable if Verizon had properly maintained the generators in the Arlington and Fairfax offices.”

The FCC Report and Recommendations on the Impact of the June 2012 Derecho on Communications Networks and Services ([Exhibit D](#)) notes:

“The Bureau found that above and beyond any physical destruction by the derecho, 9-1-1 communications were disrupted in large part because of avoidable planning and system failures, including the lack of functional backup power, notably in central offices. Monitoring systems also failed, depriving communications providers of visibility into critical network functions. In most cases, the 9-1-1 and other problems could and would have been avoided if providers had followed industry best practices and available guidance.”

As the FCC noted in its March 20, 2013 Federal Notice of Proposed Rulemaking in the Matter of Improving 9-1-1 Reliability ([Exhibit G](#)) seeking input on a variety of 9-1-1-related issues which will impact the actions Virginia takes in the future, including industry best practices:

“It is axiomatic within the telecommunications industry that network operators should periodically audit the physical and logical diversity called for by sound network design and take appropriate measures as needed. Since 2010, the Bureau has twice reminded service providers of the importance of physical diversity in 9-1-1 networks. The inquiry that led to the *Derecho Report* demonstrated that a number of telecommunications providers and network operators have either not considered, or not properly and consistently implemented, this vital maintenance action.”

8.3 Unintended Consequences of Previous Legislation

Prior to 1995 the SCC had oversight of wireline and wireless telecommunications (to include E9-1-1). In 1995 legislation was passed removing wireless communication from their jurisdiction (Virginia Code 56-508.8 through 14, ([Exhibit K](#))). Legislative efforts to return said authority to the SCC was introduced in 2006 (HB 944 ([Exhibit L](#))), but did not pass. As a result, the SCC has a very limited role in wireless telecommunications oversight, including E9-1-1, which hinders the ability of the SCC to govern E9-1-1 for the Commonwealth of Virginia.

In 2011 legislation was passed forcing the SCC to allow telecommunications providers to detariff retail services, including E9-1-1 (Virginia Code 56-236 ([Exhibit N](#))) Sole discretion to detariff, or not, resides with the LEC. The SCC rules, as currently written, do not apply to detariffed wireline E9-1-1 and will no longer be applicable should Verizon-or any other LEC—decide to detariff E9-1-1. As a result, unless the SCC modifies their rules and regulations or promulgates new ones, detariffing amounts to deregulating E9-1-1 (*SCC Feedback: The SCC provides that this statement is inaccurate. “Even with no 911 rules, as was the case prior to 2004, and with no tariffs, wireline 911 service remains squarely under the regulatory jurisdiction of the SCC.”*).

Glossary

Application for Service - an agreement between local government and Local Exchange Carrier (LEC) that details the specific 9-1-1 products and services, as listed in the tariff, which the locality agrees to purchase from the LEC and the location where those services will be provided.

Automatic Location Identification (ALI) - An electronic system that automatically relays a caller's location when that call is placed to a 9-1-1.

Automatic Number Identification (ANI) - is a service that provides the 9-1-1 center with the telephone number of the calling phone.

Billing Agreement – Contracts negotiated between the Wireless E-911 Board and Local Exchange Carriers that define 9-1-1 service and determine roles, responsibilities, and limit liability and term.

Competitive Local Exchange Carrier (CLEC) - an entity, other than a locality, authorized to provide local exchange telecommunications services in Virginia pursuant to § [56-265.4:4](#) of the Code of Virginia and [20VAC5-417](#).

Derecho - (from Spanish: "meaning "straight") - A line of intense, widespread, and fast-moving windstorms and sometimes thunderstorms that moves across a great distance and is characterized by damaging winds.

E9-1-1 services - the tariffed services purchased by a jurisdiction for the purpose of processing E9-1-1 calls.

E-911 Services Board – legislatively mandated body tasked with planning, promoting, and offering assistance in the statewide development, deployment, and maintenance of enhanced wireless emergency telecommunications services and technologies.

Federal Communications Commission (FCC) - Independent US government agency, directly responsible to Congress, and charged with regulating interstate and international communications by radio, television, wire, satellite and cable.

Local Exchange Carrier (LEC) - Any company or person authorized to provide local exchange services whether incumbent or a new entrant.

NG9-1-1 - An initiative aimed at updating the 9-1-1 service infrastructure to improve public emergency communications services in a wireless mobile society that enables the public to transmit text, images, video, and data to the 9-1-1 center.

P.01 grade of service – standard for service quality that reflects the probability that no more than one call out of 100 during the average busy hour will be blocked.

Public Safety Answering Point (PSAP) – 9-1-1 Call Center that receives emergency calls from the public.

State Corporation Commission (SCC) – The Virginia commission that provides oversight and regulations of the Commonwealth’s telecommunications industry.

Tariff – a public document that a regulated utility files with the SCC that details rates, terms, and conditions under which a utility service is offered to the public.

Voice over Internet Protocol (VoIP) - A communications protocol that allows for telephonic communication via the Internet.

Virginia Information Technologies Agency (VITA) – Virginia state agency reporting to the Secretary of Technology that provides information technology and services.

Virginia Information Technologies Agency Public Safety Communications Division (VITA PSC) – Division within VITA that was created to provide staff support to the E-911 Services Board and support localities and telecommunications providers in the development and deployment of E9-1-1 systems.

Wireless communication – phone calls made using a cellular telephone.

Wireline communication – phone calls made using a landline telephone. Service may be provided by traditional service, cable, or VoIP.

Exhibits

- A: Secure Commonwealth Panel established VA Code § 2.2-233 <http://leg1.state.va.us/cgi-bin/legp504.exe?000+cod+2.2-233>
- B: E-911 Services Board VA Code § 56-484.13 <http://leg1.state.va.us/cgi-bin/legp504.exe?000+cod+56-484.13>
- C: 911 Commission Report <http://www.9-11commission.gov/report/911Report.pdf>
- D: FCC Impact of the June 2012 Derecho on Communications Networks and Services http://transition.fcc.gov/Daily_Releases/Daily_Business/2013/db0125/DOC-318331A1.pdf
- E: CoG FINAL REPORT of 9-1-1 SERVICE GAPS DURING and FOLLOWING the DERECHO STORM on JUNE 29, 2012 <http://www.mwcog.org/uploads/pub-documents/oV5dV1w20130314085220.pdf>
- F: SCC Staff Report of Final Findings and Recommendations in the Patter of Investigating 911 Emergency Call Service Outages and Problems http://www.scc.virginia.gov/newsrel/c_911out_13.pdf
- G: Notice of Proposed Rulemaking in the Matter of Improving 9-1-1 Reliability http://transition.fcc.gov/Daily_Releases/Daily_Business/2013/db0320/FCC-13-33A1.pdf
- H: Verizon Application for Service
- I: SCC Rule P0.1, 20 VAC 5-425-40 <http://leg1.state.va.us/cgi-bin/legp504.exe?000+reg+20VAC5-425-40>
- J: “Reasonably Adequate” code Reference VAC 56-234
<http://leg1.state.va.us/cgi-bin/legp504.exe?000+cod+56-234>
- K: Code Section 56-508.8 through 14 removing wireless from SCC authority <http://leg1.state.va.us/cgi-bin/legp504.exe?951+ful+CHAP0281>
- L: House Bill 944 legislation to return wireless authority to SCC
<http://leg1.state.va.us/cgi-bin/legp504.exe?061+sum+HB944>
- M: Section 14A of the Verizon Miscellaneous Service Arrangements Tariff – Emergency 9-1-1 Services <http://www22.verizon.com/tariffs/PDFViewer.aspx?doc=161159>
- N: Code of Virginia 56-236, Verizon may detariff
<http://leg1.state.va.us/cgi-bin/legp504.exe?000+cod+56-236>
- O: Virginia Administrative Code 20VAC5-425-10 SCC Rules and Regulations
<http://leg1.state.va.us/cgi-bin/legp504.exe?000+reg+20VAC5-425-10>

P: E-911 Services Board FY2012 Annual Report

http://vita.virginia.gov/uploadedFiles/VITA_Main_Public/ISP/E-911/2012/FY2012_AR.pdf

Q: Virginia Statewide Comprehensive Plan for 9-1-1

http://www.vita.virginia.gov/uploadedfiles/VITA_Main_Public/2011_Comp_Plan_Refresh.docx

R: Virginia's NG9-1-1 Implementation Plan

http://vita.virginia.gov/uploadedFiles/VITA_Main_Public/ISP/E-911/2012/NG911ImpPlan022312.pdf

Exhibit H

Routing Code: 5V



APPLICATION FOR SERVICE

Customer Name: [type full corporate name here]	Main Billing Tel. No: [type BTN here]
Address: [type address here] [type city, state, zip here]	VSA No. (if applicable) [type VSA # here] Amendment No. (if applicable) [type VSA Amend # here]

Customer applies for and agrees to purchase from {Select Verizon Company from pulldown menu} ("Verizon") the services identified below and as further described in Verizon's applicable tariffs (the "Services"), for a minimum period of _____ (____) consecutive months following execution of this Application and commencement of Services hereunder (the "Service Period"). The Services will be provided subject to the terms and conditions of Verizon's applicable tariffs in effect during the Service Period (the "Tariffs"), which are incorporated by this reference, and subject to the availability of suitable facilities.

If Customer terminates this Application or any Services prior to expiration of the Service Period, Customer will promptly pay to Verizon any termination and cancellation charges specified in the Tariffs. The rates for the Services shall be as set forth in the Tariffs, which rates are summarized below. Customer shall also pay all applicable charges, fees, taxes and tariff surcharges, including federal End User Common Line Charges, charged pursuant to applicable law, regulations or Tariffs.

Quantity	Service Provided pursuant to (check one): <input type="checkbox"/> State Tariff <input type="checkbox"/> FCC Tariff	Monthly Unit Rate	Non-recurring Charges / Unit
	[Insert service as it appears in tariff]		

Note: Any mileage quantities listed in the table above shall be deemed initial estimates, and billing will be based on actual mileage.

The Services will be provided at the following Customer locations:

[Insert locations]

The provision of any additional locations and/or quantities of Services will be subject to Verizon's applicable Tariffs. Additional charges may also be required if suitable facilities are not available to provide the Service at any locations.

Verizon may assign or transfer part or all of this Application to any of its affiliates. Upon reasonable prior written notice to Verizon and consistent with applicable Tariff supersedure or other regulatory requirements, Customer may assign or transfer this Application to any company that is the successor to substantially all of its assets. All other attempted assignments shall be void without the prior written consent of the other party.

This Application and the Tariffs constitute the entire agreement between Customer and Verizon regarding the Services, and supersede all prior oral or written quotations, communications, understandings or agreements. In the event of a conflict between the Tariffs and this Application, the Tariffs shall control. Customer represents that its execution of this Application is based solely on its independent assessment of the rights and obligations set forth herein and not on any other oral or written quotations, communications, understandings or agreements.

In the event any of the Services are hereafter detariffed, the terms of the Tariffs in effect immediately prior to such detariffing shall be deemed to be incorporated by reference in this Application and shall create a binding agreement with Customer for the Services. This agreement shall apply to the provision of the Services to the same extent as such Tariffs applied hereunder prior to such detariffing and shall remain in effect until the Services are terminated or until replaced by another agreement.

Agreed and accepted:

[insert Customer's full corporate name] (Customer)

{Select Verizon Company from pulldown menu}

By _____

By _____

Name/title _____

Name/title _____

Date _____

Date _____

