

**Before the
Federal Communications Commission
Washington, D.C.**

In the Matter of)
)
Effects on Broadband Communications) PS Docket No. 10-92
Networks Of Damage to or Failure of Net-)
work Equipment Or Severe Overload)

**COMMENTS OF
THE NATIONAL ASSOCIATION OF STATE UTILITY CONSUMER ADVOCATES
ON NOTICE OF INQUIRY**

I. INTRODUCTION

On April 21, 2010, the Federal Communications Commission (“FCC” or “Commission”) adopted a Notice of Inquiry (“NOI”)

to enhance [the Commission’s] understanding of the present state of survivability in broadband communications networks and to explore potential measures to reduce network vulnerability to failures in network equipment or severe overload conditions, such as would occur in natural disasters, pandemics, and other disasters or events that would restrain our ability to communicate. We seek comment broadly on the ability of existing networks to withstand localized or distributed physical damage, including whether there is adequate network redundancy and the extent of survivability of physical enclosures in which network elements are located, and severe overloads.¹

The National Association of State Utility Consumer Advocates (“NASUCA”)² I submits these initial comments on the NOI.

¹ FCC 10-62 (rel. April 21, 2010), ¶ 3.

² NASUCA is a voluntary association of advocate offices in more than 40 states and the District of Columbia, incorporated in Florida as a non-profit corporation. NASUCA’s members are designated by the laws of their respective jurisdictions to represent the interests of utility consumers before state and federal regulators and in the courts. Members operate independently from state utility commissions as advocates primarily for residential ratepayers. Some NASUCA member offices are separately established advocate organizations while others are divisions of larger state agencies (e.g., the state Attorney General’s office). NASUCA’s associate and affiliate members also serve utility consumers but are not created by state law or do not have statewide authority.

II. POTS, THE PSTN AND BROADBAND UTILIZE THE SAME NETWORK

To begin, NASUCA notes that the Commission's focus on "broadband communications networks," while forward-looking, overlooks the persistence, the survivability, the necessity, and hence the value, of the traditional public switched network. Unfortunately, the Commission and much of the industry are far too ready to embrace exclusively the added value of broadband networks while setting aside the continuing value of plain old telephone service ("POTS").³

First and foremost, the public switched telephone network ("PSTN") and the Internet protocol ("IP")-enabled wireline broadband network in many cases are one and the same. Customers receiving POTS service may also receive Digital Line Subscriber ("DSL") service over the same line. According to the Commission's own information, by years-end 2008, the United States had 86 million residential high-speed connections, of which 70 million were fixed-technology connections. Of those 86 million connections, cable modem represented 46% (approximately 39.56 million), DSL represented 31% (approximately 26.67 million). In contrast, at the end of 2005, the FCC reported approximately half as many residential high-speed connections (44 million), of which cable modem represented 58% and DSL represented 40%.⁴ Because "naked" DSL is not prevalent, it can be assumed the majority of the DSL connections represented in this report are also PSTN connections. Additionally, it is not uncommon for customers subscribing to cable modem high-speed connections to also have access to the PSTN through that same modem connection.

NASUCA correctly pointed out in its comments on Net Neutrality that

discussion of telephone, cable, or broadband networks as *separate*, stand-alone networks is becoming ever less accurate and relevant.

³ See National Broadband Plan (recommending that support for the broadband network replace support for the traditional network); AT&T Comments and press regarding the "death" of the PSTN. Note NASUCA comments in opposition.

⁴ See High-Speed Services for Internet Access: Status as of December 31, 2008, FCC (February 2010) at 7.

IP is the commonality that allows many different services to ride on what is currently, and hopefully will remain, one interconnected public electronic network. A unitary, interconnected network is essential to consumers...because it is only this interconnection that makes real the prospect of ubiquitous, universal, and affordable telecommunications for all.⁵

The FCC itself has already acknowledged the joint usage of IP-enabled services and the PSTN, as stated by the Pennsylvania Public Utility Commission:

It is intuitively understood, and the FCC has already acknowledged, that broadband networks are *jointly* used for the provision of telecommunications and information services. For example, fiber optic broadband facilities are jointly used for the transmission of legacy PSTN voice traffic, the transmission of IP-based [voice over IP] VoIP calls, the interconnection function between telecommunications common carriers and information service providers, etc.⁶

III. UNIVERSAL BROADBAND IS NECESSARY

The United States can legitimately take credit for creation of the Internet as we know it today, but the U.S. can no longer lay claim to the lead in providing access to it. A significant number of countries not only recognize the benefits of high-speed broadband data services, but have significantly expanded availability and speed of the networks within their borders to consumers.

Universal access to high-speed broadband data services is imperative to our nation's economic prosperity in the same sense as universal access to electric power and telephone services was in the early 20th century. Broadband services offer telecommunication, educational opportunities (through distance learning), remote medical diagnosis and care, entertainment

⁵ NASUCA Net Neutrality Comments at 7-8 (footnotes omitted, emphasis in original).

⁶ Comments of the Pennsylvania PUC in Transition from Circuit-Switched Network at 2-3 (emphasis in original). Available at https://portal.neca.org/portal/server.pt/gateway/PTARGS_0_0_307_206_0_43/http%3B/product.www.neca.org/publicationsdocs/wwwpdf/1221pa.pdf.

options and a host of additional opportunities. Ever-increasing numbers and varieties of applications, user-generated content, video networking, and entertainment opportunities continue to drive increasingly higher data rates to deliver product to consumers – satisfying demand and generating economic and social gains which potentially exceed the investment in the required infrastructure. But the investment in infrastructure cannot be independent of the investment in the infrastructure providing voice traffic. Rather, it must be an investment in one and the same. In truth, to achieve the speeds the National Broadband Plan (“NBP”) envisions, it will require a fiber-optic wireline network connecting every citizen in the country coupled with a robust wireless overlay to accommodate the myriad of wireless devices. This type of nationwide network not only accomplishes all requirements of the NBP now and for the long-term future, it builds on existing fiber-optic networks already in place (providing economic benefit and transparent, quicker adoption by all consumers), preserves the PSTN and enables the United States to move ahead with generational technology improvements in the delivery of new services and applications.

IV. CURRENT BROADBAND NETWORKS ARE NOT ROBUST

The persistence of the traditional network is almost legendary, in particular in the face of electrical outages. Unless extenuating circumstances exist, during most power outages, the PSTN’s independent low-power source and other backup capabilities ensure that the traditional network continues to hum along, providing emergency and other communications capabilities for millions of Americans. Unfortunately the same cannot be said for broadband-based networks. During a typical power outage, because broadband services are based on the individual’s

computer system and household power, the consumer is left without broadband access.

Wireline-based broadband service is typically lost during a power outage,⁷ as is wireless service (including broadband) unless the cell towers also have robust back-up power systems in place. Consumers with laptop computer systems are no better off, despite the advantage of having the capability to access the system during an outage (if battery power is available). Yet, they too, may be unable to access the internet if the provider is without power or have a limited ability to access, due to battery-power constraints.

The use of a fiber optic network to satisfy the requirements of the NBP is also not without issue. Because fiber-optic service does not carry power from the exchange as copper service does, the customer's power is used instead. Consequently, if there is an electrical outage at the premises, service will be interrupted, unless, as in some cases, the provider has installed a robust battery backup system with the installation of fiber-optic systems.

And, when broadband service goes out, telephone service provided over that network – voice over Internet protocol (“VoIP”) – also goes out. So the consumer dependent on the broadband network for voice communication is out of luck.

Of course, even the traditional network is vulnerable to natural disaster. But such disasters ruin virtually all generally available communications capability. Short of supplying all consumers with “sat-phones” – which currently have insufficient network capacity to serve the needs of a small fraction of the mass market – a true disaster inevitably constrains the availability of telecommunications services – much less broadband service – for most consumers.

⁷ In the absence of battery back-up, with that limitation, and assuming that both ends of the communications have such backups.

V. THE PSTN AND PSAPS ARE INEXORABLY CONNECTED

The NBP does not sufficiently address how the transition to a broadband network will be accomplished relative to upgrading the 9-1-1 system – something of grave concern to NASUCA and the consumers this organization represents. The PSTN has been and remains today the backbone for ensuring direct and immediate access to emergency fire, police, and medical services. The problems posed by the introduction of broadband-based telecommunications technologies have never been so obvious as with the issues faced by the FCC regarding the enabling of IP-enabled relay service to facilitate calls to 9-1-1, as well as the issues regarding enabling VoIP users to reach 9-1-1 – something which remains unresolved in a number of areas in the country to this day.

Even accepting the accomplishments in getting 9-1-1 access for IP-enabled relay and VoIP-based calls to PSAPs, there remain significant barriers to the goal of achieving any type of universal broadband-based network access to 9-1-1 services at the same levels achieved by today's PSTN – funding limitations, jurisdictional issues and cyber-security⁸ are only three of the host of issues faced by the Commission in solving this Gordian Knot. Even taking the simplest first step – ensuring the ability to identify broadband-based locations (terminals, devices, etc.), including wireless devices, to PSAPs – remains a daunting challenge. Mapping technology – the same employed by PSAPs today to identify PSTN locations, offers a solution, but the mobility-capability of broadband access makes such a solution complex. Additionally, text and video must be given equal consideration in call-handling at the PSAPs, yet effective use of real-time text/video by PSAPs is limited by a lack of specific formats all carriers and equipment manufacturers must support when connecting to systems and equipment. An

⁸ See http://www.dhs.gov/xoig/assets/mgmttrpts/OIG_10-94_Jun10.pdf.

emergency call cannot be routed from a device (VoIP phone, computer, etc.) across any network and into a broadband-supported 9-1-1 center unless each link in the chain supports a common format where the systems interconnect – something the existing PSTN is not burdened with. Unfortunately, there are no FCC-established (or any other agency-established) standard to which any and all parties must abide by and support where interconnected.

NASUCA acknowledges that the current 9-1-1 system must eventually be made capable of communicating and providing information using 21st Century technology. This fact has been made known many times in many forms to the Commission, through consultants' reports on wireless technologies,⁹ federal advisory committee recommendations regarding next-generation networks,¹⁰ and comments in various proceedings of this Commission. The FCC must establish such an interoperability standard as a critical first step before downplaying the PSTN and POTS to implement broadband system capability into the 9-1-1 network while upgrading the voice network call handling by broadband PSAPs.

VI. CONCLUSION

NASUCA urges the Commission not to ignore the traditional network in its inquiries into survivability. Focusing only on broadband would ignore a vital resource that is of continuing value to the Nation and its citizens.

⁹ Hatfield, D. (2002). *Report on Technical and Operational Issues Impacting the Provision of Wireless Enhanced 911 Services*.

¹⁰ National Reliability and Interoperability Council VII, Focus Group 1B; *Long-term Issues for Emergency/E911 Services: Report 4*. Available at http://www.nric.org/meetings/docs/meeting_20051019/NRICVII_FG1B_Report_September_2005.pdf

Respectfully submitted,

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