



August 27, 2019

Barbara Neal
Executive Director
Vermont Enhanced 9-1-1 Board
100 State St., 4th Floor
Montpelier, VT 05620-6501

Dear Ms. Neal and the Board:

CTIA¹ appreciates the opportunity to provide feedback on the draft rule developed by the Vermont Enhanced 911 Board ("Board") in response to Act 79 ("Draft Rule"). CTIA and its members recognize the importance wireless consumers place on their devices and networks in emergency situations, including their reliance on their wireless device to reach emergency services. This is why the wireless industry is strongly committed to minimizing network downtime and focuses on restoring service quickly when outages do occur.

To meet the requirements of Act 79, rather than "reinvent the wheel" with a new and Vermont-specific set of standards, CTIA recommends the Board adopt a rule that allows carriers to provide the Board, subject to necessary confidentiality safeguards, copies of their reports filed under the Federal Communications Commission's ("FCC's") Network Outage Reporting System ("NORS").

¹ CTIA—The Wireless Association® ("CTIA") (www.ctia.org) represents the U.S. wireless communications industry and the companies throughout the mobile ecosystem that enable Americans to lead a 21st century connected life. The association's members include wireless carriers, device manufacturers, suppliers as well as apps and content companies. CTIA vigorously advocates at all levels of government for policies that foster continued wireless innovation and investment. The association also coordinates the industry's voluntary best practices, hosts educational events that promote the wireless industry and co-produces the industry's leading wireless tradeshow. CTIA was founded in 1984 and is based in Washington, D.C.



A state-by-state approach with different outage reporting obligations would create significant inefficiencies, as providers would have to contend with a “patchwork quilt” of obligations, many of which are potentially duplicative of FCC requirements. The simplest, most straightforward approach to avoid this outcome would be to have service providers supply the Board with copies of the outage reports they already file with the FCC, subject to the necessary confidentiality protections discussed below. This would ensure consistency with overarching FCC regulations and enable service providers to leverage their existing network monitoring and reporting systems, while protecting this critical infrastructure information that raises both security and competitive concerns. Importantly for the Board, it would enable service providers to begin providing this information in short order, whereas the Draft Rule would require substantial information technology and other changes, insofar as it is even possible for carriers to implement.

This approach would be effective even with Vermont’s low population density, alleviating concerns that the NORS reporting thresholds would not be applicable. The FCC imposes a robust outage reporting regime on wireless providers. Outages of wireless network switching centers lasting more than 30 minutes are reportable to the FCC within two hours of discovery, regardless of the customer impact. In the case of cell sites, outages lasting more than 30 minutes are subject to the same two-hour reporting period once they affect “900,000 user minutes” – *i.e.*, the number of potentially affected users multiplied by the duration of the outage. So, an outage that potentially affects 30,000 users will be reportable if it lasts 30 minutes.

For outages of fixed wireline networks, the calculation is straightforward: the number of active telephone numbers in the affected area multiplied by the duration of the outage in minutes. But because wireless numbers are not tied to a specific household or geographic area, the number of users potentially affected by an outage is necessarily a fluid, variable figure. To address this challenge, the FCC uses a proxy number based on the total number of users on a provider’s network and its total number of macro (coverage) cell sites. For example:



- If Wireless Carrier X has 100 million users on its network nationwide and 100,000 macro cell sites, it would allocate 1,000 potential users to every site, regardless of whether the site is located in an urban or rural area. Thus, as the arithmetic below illustrates, an outage affecting just 10 sites (*i.e.*, 10,000 users) would be reportable if it lasts just 90 minutes. Even an outage of a single cell site would be reportable in that same 24-hour period (not days or weeks) even if the area is being served by a nearby site, as is often the case with modern wireless networks.

$10,000 \text{ users} \times 90 \text{ minutes} = 900,000 \text{ user minutes.}$

$1,000 \text{ users} \times 900 \text{ minutes (15 hours)} = 900,000 \text{ user minutes.}$

- If Wireless Carrier Y has 15 million users nationwide and 10,000 cell sites, it would allocate 1,500 potential users to each site, even if it only has a few sites within a particular state. Thus, an outage affecting 10 sites (*i.e.*, 15,000 users) would be reportable in 60 minutes, and an extended outage affecting a single site would be reportable in 10 hours (600 minutes).

$15,000 \text{ users} \times 60 \text{ minutes} = 900,000 \text{ user minutes}$

$1,500 \text{ users} \times 600 \text{ minutes (10 hours)} = 900,000 \text{ user minutes.}$

In addition to cell sites, these same thresholds apply to outages of wireless providers' 911-specific facilities that create a failure in communication to PSAPs or provision of automatic associated number and location information.

Because of the nationwide averaging used, the FCC's reporting thresholds ensure that significant outages are reported in both urban and rural areas. In fact, CTIA members have filed several FCC reports of outages affecting Vermont in recent years, including some only affecting just one or a few cell sites. From July 31, 2014 through July 31, 2019, the facilities-based carriers doing business in Vermont (AT&T, Sprint, T-Mobile, U.S. Cellular, and Verizon) reported 39 national/regional outages that affected E-911



service in Vermont and 12 Vermont-specific outages. This demonstrates that a NORS-based approach to informing of the Board of outages that impact 911 service can meet Vermont's needs.

Importantly, these reports provide meaningful information about an outage, including: its time and duration; the affected services; known blocked calls; the affected geographic area, including the city or county (if known); a description of the incident and its cause; and contact information. Because this information could be helpful to terrorists or other bad actors seeking to create or exacerbate service disruptions, the Department of Homeland Security ("DHS"), communications carriers, state public utility commissions and the Commission agree these reports must remain confidential.² The Board should therefore ensure that any rules implementing Act 79 appropriately designate confidential treatment for all outage information submitted by carriers, NORS or otherwise, including protection from any applicable public records act requests.

The NORS approach is tested, workable, and could be implemented in Vermont right away. By contrast, the feasibility of implementing the Draft Rule's proposed requirements is suspect at best. In particular, the Draft Rule fails to account for the mobility of wireless customers, which makes it extremely difficult if not impossible for wireless providers to comply with much of the Rule. For example, the failure of a cell tower will affect service in a specific geographic area, but that has no relation to NPA/NXX codes of affected wireless customers. Moreover, customers may enter and leave that geographic area during the course of the outage, making the exercise of determining just which customers were affected by the outage problematic both as a technical matter and from a customer privacy perspective. And a requirement to notify registered wireless customers of outages would essentially require notification to every registered customer of every outage in Vermont, since the wireless provider would have no way of determining with any certainty which customers might be affected by

² See, e.g., Report and Order, Further Notice of Proposed Rulemaking, and Order on Reconsideration, 31 FCC Rcd 5817 (May 26, 2016) at paras. 84-85.



which outage. That is impractical at best and would needlessly alarm, not to mention annoy, a great many customers.

Additionally, the Draft Rule raises several issues related to confidentiality and competition. Granular, carrier-specific outage information like that asked for in the Draft Rule relates to critical infrastructure, the disclosure of which raises national security sensitivities. Sharing of carrier-specific outage information with the Board and other providers, as apparently required by Section 4.4 of the Draft Rule, creates potential competitive concerns. Of course, these issues would apply to NORS data as well if not adequately protected, which is why it is important that confidentiality protections be included no matter which approach the Board takes.

Further, certain information the Board has requested, such as a list of “call back numbers of any subscribers that attempted to reach 911, but were unable to do so, due to the outage,” may constitute Customer Proprietary Network Information, which has an associated confidentiality regime that restricts providers from disseminating such information, or raise other privacy considerations.

Beyond that, it may be impossible to share any of this information directly with consumers, or notify them directly of outages which could impact them, due to the inherent technical difficulty of identifying such consumers, as discussed above. And even if it were possible, the controlling section of Act 79 does not authorize the Board to mandate such notifications.

Accordingly, instead of the Draft Rule, the Board should implement an approach in which carriers submit to the Board copies of their FCC NORS reports that involve Vermont outages, under necessary confidentiality protections. CTIA appreciates the Board’s willingness to consider feedback on its approach to implementing Act 79, and looks forward to continuing to work collaboratively with the Board to ensure that the Board receives appropriate notification of outages that impact the 911 system in Vermont.



Sincerely,

/s/ Benjamin Aron
Benjamin Aron

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