

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)
)
Facilitating Implementation of Next Generation) PS Docket No. 21-479
911 Services (NG911))

**COMMENTS
OF
WTA – ADVOCATES FOR RURAL BROADBAND**

WTA – Advocates for Rural Broadband (“WTA”) submits its comments in response to the Commission’s *Notice of Proposed Rulemaking* (Facilitating Implementation of Next Generation 911 Services (NG911)), PS Docket No. 21-479, FCC 23-47, released June 9, 2023 (“*NPRM*”).

WTA’s rural local exchange carrier (“RLEC”) members have long partnered efficiently and effectively with state and local public safety agencies to provide and improve the 911 and Enhanced 911 (“E911”) police, fire and ambulance response services that protect their rural service areas and customers. They look forward to working with the Commission and these same state and local public safety agencies to deploy Next Generation 911 (“NG911”) services. However, they have some questions and concerns with regard to NG911 deployment, including: (a) the nature of the lines and network facilities to be used to transport and deliver NG911 calls to Emergency Services IP Networks (“ESInets”) and/or Public Safety Answering Points (“PSAPs”); (b) what processes and entities will determine the numbers and locations of ESInets in each state; and (c) how demarcation points will be positioned and how the costs of transporting and delivering NG911 calls will be allocated between service providers and public safety agencies. These public safety issues are interrelated in that the nature of transport/delivery facilities and the numbers and locations of ESInets affect costs and the allocations of such costs between service providers and government public safety agencies.

WTA

WTA is a national trade association that represents more than 370 rural local exchange carriers (“RLECs”) that provide voice and broadband services to some of the most rural, remote, rugged, sparsely populated and expensive-to-serve areas of the United States.

WTA members have long been compliant with the Commission’s 911 and E911 requirements, and have established and utilized the requisite connections to selective routers and PSAPs. In virtually all instances, the existing federal, state and local 911 and E911 arrangements have not required RLECs to bear the costs of transporting 911 and E911 calls beyond the boundaries of their local exchange service areas.

WTA members are in the midst of the transition from the former voice-centric telephone network to the evolving Internet Protocol (“IP”)-based broadband services network. Many WTA members have deployed fiber-optic trunks and high-speed broadband services far into their networks, with more and more reaching the ultimate goal of scalable fiber-to-the-home (“FTTH”) facilities that can readily meet growing customer demands for high-speed voice, data and video services. WTA members are increasingly offering the Consumer Broadband-Only Loop (“CBOL”) services desired by many customers, and are replacing older Time-Division Multiplexing (“TDM”) voice offerings with Voice over IP (“VoIP”) services in growing portions of their service areas. However, a substantial complication and disincentive with respect to these VoIP conversions is the fact that price cap carriers have thus far not been converting their access tandem switches from TDM to IP technology, such that certain IP enhancements (for example, STIR/SHAKEN data) are stripped from RLEC-originated VoIP calls at the price cap tandems.

NG911 Transport Facilities

It is not clear from the *NPRM* whether the Commission and/or state and local authorities will: (a) require NG911 calls to be transported to ESInets and PSAPs over dedicated Session Initiation Protocol (“SIP”) lines; or (b) permit NG911 calls to be transported over dedicated SIP lines or standard Internet facilities and routes. This determination entails a significant trade-off between the technical advantages of dedicated SIP lines for speed, reliability, liability and cybersecurity purposes and the generally lower costs of standard Internet delivery.

Dedicated SIP lines avoid the Internet potential for congestion and re-routing, and therefore can normally be relied upon to deliver emergency calls expeditiously. In contrast, whereas communications over the regular Internet have become more reliable, there still remain the potentials for congestion and re-routing that can slow the delivery of emergency calls. This is particularly a danger to safety in rural areas where congestion and re-routing are likely to result in longer delays in contacting emergency responders, and where time is particularly of the essence because police, fire and ambulance facilities are often located substantial distances from the sites of many emergencies. Given the greater distances and response times after a 911 call is received by rural emergency services, the 911 calls themselves should be delivered as rapidly as possible to rural first responders in order to minimize adverse impacts upon life, health and property.

Physical diversity generally requires two separate routes from an RLEC to the appropriate ESInet(s) or PSAP(s). While this applies to both dedicated SIP lines and standard Internet delivery, it significantly exacerbates the cost differences between the two transport approaches. As discussed in the next section, the number and locations of the ESInets in each state will impact the lengths and costs of the transport facilities needed by each RLEC, including whether and in

what amounts RLECs will incur costs to transport NG911 calls beyond their existing meet points and service area boundaries.

Dedicated SIP lines minimize liability and insurance issues and controversies. With a dedicated SIP line, it is clear what carrier or carriers control the line and much easier to identify the location(s) and cause(s) of problems which may prevent emergency calls from reaching the appropriate ESInet or PSAP at all or within a reasonable time. If the NG911 calls go over the Internet and pass through the facilities of multiple unrelated entities, it will be much more difficult, if not impossible, to determine the location(s) and cause(s) of delayed, misdirected or dropped NG911 calls. Originating RLECs and their insurance carriers should not be held responsible for locating or dealing with problems on the general Internet with respect to unaffiliated third-party transit carriers over which the RLECs have no control. Meanwhile, the various intermediate transiting Internet carriers and their insurers are not likely to be willing to accept and carry NG911 calls originated by non-customers on unaffiliated networks if carrying such calls entails the possibility of lawsuits and substantial damages in the event of technical problems or excess congestion. Finally, it will be difficult for end users to have meaningful recourse if they cannot identify the source and reason for a delayed, misdirected or dropped NG911 call because such call was carried by multiple unrelated Internet service providers over a variety of possible routes.

Given that the Commission is requiring service providers to provide access to NG911 and other 911 services, the Commission (as well as the states) should provide service providers with legal immunity from lawsuits and liability for delays, mis-routing or other delivery problems with respect to NG911 calls, whether they employ dedicated SIP lines or standard Internet delivery, unless the injury is directly caused by willful and wanton misconduct or gross negligence. For example, Section 16-9-108 of the Wyoming Code provides, in relevant part:

A governmental entity, public safety entity, local exchange access company, telephone exchange access company or wireless carrier that provides access to an emergency system or any officers, agents or employees thereof is not liable as a result of any act or omission except willful and wanton misconduct or gross negligence in connection with developing, adopting, operating or implementing emergency telephone service, enhanced wireless 911 service, text to 911 service or any 911 system.

Dedicated SIP line delivery is also more secure than standard Internet delivery from a cybersecurity standpoint. It is much easier for hackers and others to intercept general Internet traffic and to use standard Internet delivery to subject ESInets and PSAPs to denial-of-service (“DoS”) and other malicious attacks that disrupt their operations and endanger lives and property.

In sum, dedicated SIP lines are the most rapid and reliable NG911 delivery solution from a public safety and cybersecurity standpoint as well as the most straightforward and efficient way to determine the location(s) and cause(s) of delayed, misdirected and dropped NG911 calls. On the other hand, the superior performance of dedicated SIP lines entails greater cost than standard Internet facilities and routes.

Numbers and Locations of ESINets

WTA members presently have established facilities and arrangements for the transport of E911 and 911 calls to selective routers and/or PSAPs. In some cases, these facilities connect to a selective router or PSAP within the RLEC’s service area. In other cases, the RLEC facilities connect with those of another carrier at a meet point on or near the boundary of the RLEC’s service area and the other carrier transports the RLEC’s 911 and E911 calls to a selective router or PSAP outside the RLEC’s service territory. In the latter cases, these multi-carrier arrangements are generally part of a state or regional 911 network, and the RLECs are not responsible for the costs of transporting E911 and 911 calls beyond the boundaries of their service territories.

Given that RLECs and other wireline service providers have established connections to selective routers and PSAPs, the deployment of the new ESINets at existing selective router

locations would entail minimal changes, disruptions and costs with respect to transport and delivery arrangements and facilities.¹ However, some states or ESInet operators may be consolidating or planning to consolidate multiple selective router locations into a single statewide ESInet location or a small number of regional ESInet locations. Such consolidations are intended to generate cost savings for the state (and ESInet operator) but will significantly increase the distances and resulting costs incurred by some RLECs and other wireline service providers to transport NG911 calls to the new statewide or regional ESInet(s).

Until a state's proposed NG911 plan and network are finalized and disclosed, it is not possible for RLECs and other wireline service providers to determine the additional facility and cost impacts, if any, that they will incur as a result of the ultimate location and configuration of ESInets within each state or region.² To date, WTA has seen a variety of approaches from those states that have been developing NG911 plans. In some states, ESInets are being situated in relatively close proximity to most or all wireline service providers or placed at existing selective router sites such that there is likely to be minimal or no adverse impact upon transport costs. In other states, proposed ESInet consolidations or re-locations are resulting in new and large NG911 transport distance increases (often well beyond RLEC service area boundaries) that trigger substantial resulting cost increases for originating service providers. In the latter instances, some states are treating NG911 as a governmental public safety function and are reimbursing carriers for their transport costs; other states are declining to provide any cost reimbursement (with some encouraging or permitting the use of standard Internet delivery).

¹ Other required changes are not minimal. For example, service providers without Ethernet Network-to-Network Interfaces will need to change their technology to provide SIP trunking. There also has been discussion about equipping ESInets to translate TDM traffic to SIP, but that would entail the transfer of less geolocation information from the service provider to the PSAP.

² WTA notes that there may be some complications when a carrier serves multiple states, and when ESInets serve locations across a state boundary.

Also, until a state's proposed NG911 plan and network are finalized and disclosed, it is impossible to know whether six (6) months is a reasonable and sufficient time period for service providers to make the network upgrades and transport arrangements needed to establish NG911 connectivity. One way to help to make the connectivity process somewhat more efficient and effective is to require ESInets and PSAPs to place circuit and other service orders directly with service providers. Many RLECs and other small service providers do not have large enough staffs to frequently monitor national or regional registries. Direct and specific service orders to service providers will enable connectivity requests to be received, noted and acted upon without significant delay and help to offset somewhat the other potential implementation delays.

The Commission should establish one or more mechanisms that will encourage and enable the negotiation of and dispute resolution for more efficient and equitable ESInet location arrangements and/or more equitable distribution of or compensation for the additional costs of the ultimate NG911 configuration. For example, the Commission could establish a process whereby a state's voice service providers could request and obtain Commission oversight and mediation of negotiations regarding proposed revisions to a state or regional ESInet location plan. Such a mediation process would not impinge on state or local government rights, for the Commission has full jurisdiction over the broadband facilities and services that must be used to access ESInets, as well as shared jurisdiction with states and localities over a variety of public safety matters. The contemplated mediation process could be limited to situations where carriers serving a threshold number of customer locations were unable to reach a satisfactory agreement with state or local authorities by a specified date or during a specified negotiation period. The subject matter of such mediations could be limited to revised or additional ESInet locations and/or to more equitable distribution of, or compensation for, NG911 transport costs.

Allocation and Recovery of Increased NG911 Costs

Obtaining the full benefits of NG911 service will not be possible unless 911 calls originate in IP format. Whereas it appears possible to collect TDM calls at an intermediate gateway and convert them to IP, such converted calls are not likely to include many of the advanced features that NG911 is intended to provide. Hence, while many WTA members and other RLECs have been transitioning from TDM to IP voice service in portions of their service areas, the *NPRM's* proposed deployment of NG911 would require the acceleration of these conversions to encompass many more RLEC exchanges and customers.

Contrary to the assumptions of some, conversion from TDM to IP voice service is not a minimal technical or economic undertaking. Rather, it encompasses not only significant network and customer equipment changes and reconfigurations, but also substantial customer service and education costs. Additional complications arise from the substantial financial and technical requirements of the ongoing accelerated deployment and costs of broadband network facilities and services, and the continuing problems with the stripping of STIR/SHAKEN and other information from IP voice calls as they pass through the still predominantly TDM access tandems operated by many larger carriers.

Whereas TDM-to-IP conversion costs impact services in addition to NG911, the major NG911-only cost will be the cost of transporting NG911 traffic to ESInets, particularly if they are located far outside a wireline carrier's service territory. Two dedicated SIP lines to an ESInet for diverse routing purposes can constitute a considerable expense, particularly if they extend tens or hundreds of miles beyond an RLEC's service area boundary. Even Internet transport is becoming increasingly expensive as some of the large providers will accept traffic only at a few distant urban locations and require smaller providers to pay the cost of getting their traffic to such locations.

WTA opposes the *NPRM's* proposal for a default demarcation point for NG911 cost allocation purposes and the placement of the responsibility for the costs of delivery of NG911 traffic from call origination to such demarcation point upon the service provider unless service providers and states and localities agree to a different arrangement. This default proposal gives states and localities (and some ESInet operators³) an unreasonable and unfair negotiating advantage while stripping service providers of meaningful negotiating power. In the extreme, it would permit some governmental entities to designate ESInets as the default demarcation points, thereby requiring large and small service providers to bear the full costs of transporting and delivering NG911 calls to such ESInets. This would effectively impose upon the affected private service providers the costs of public safety functions that have long been the tax-supported responsibilities of government. Whereas not all state and local governments would use the default provision in an extreme manner, it would give states and localities (and ESInet operators) an unfair negotiating advantage that is very likely to result in sub-optimal and inequitable cost allocations.

Rather than imposing substantial additional NG911 costs upon carriers that are expending major financial and technical resources to deploy broadband networks and services, the Commission should establish a support mechanism like the Telecommunications Relay Service (“TRS”) fund, North American Numbering Plan Administration (“NANPA”) fund, and Local Number Portability (“LNP”) fund to help carriers recover substantial additional NG911 transport and associated costs. This mechanism could be funded via the FCC Form 499 process and relatively small interstate telecommunications service contributions used to finance the foregoing programs. If a sufficient NG911 cost recovery mechanism is established, the Commission may

³ The *NPRM* does not appear to address the role and status of private ESInet operators. Some may be mere agents of state and local governments. But others may exercise substantial influence over NG911 network designs and cost allocation negotiations.

not need to implement the ESInet location mediation process discussed in the previous section, although an efficient and equitable state ESInet configuration would reduce the NG911 costs that would need to be recovered from the proposed NG911 fund.

Conclusion

Whereas WTA finds dedicated SIP lines to be the better NG911 delivery solution for speed, reliability, liability, cybersecurity and related public safety reasons, it recognizes that SIP lines are substantially more expensive than a standard Internet delivery option. Some of these expense issues will be reduced or exacerbated by the NG911 networks and compensation plans adopted by individual states. WTA proposes that the Commission establish a mediation process to address situations where a threshold number of service providers cannot reach agreement with their state and local authorities regarding the number or placement of ESInet locations and/or the responsibility for bearing the burden of NG911 transport costs. Finally, WTA opposes the *NPRM* proposals for a default demarcation point for NG911 cost allocation purposes and the placement of the responsibility for NG911 call delivery costs upon service providers unless states and localities agree to different arrangements. WTA proposes that the Commission create and implement a support mechanism like the TRS, NANPA and LNP funds to help carriers recover substantial additional NG911 transport and associated costs.

Respectfully submitted,
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