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David G. Simpson
Rear Admiral, USN (Ret.)
Chief, Public Safety and Homeland Security Bureau
Federal Communications Commission
445 12th Street, S.W.
Washington, DC 20554

Re: PS Docket No. 11-153
Task Force on Optimal PSAP Architecture

Dear Admiral Simpson:

In the Commission's Second Report and Order and Third Notice of Proposed Rulemaking in PS Dockets No. 11-153 and 10-255, the Commission stated that it is "interested in determining whether additional consolidation of PSAP facilities and architecture would promote greater efficiency of operations, safety of life, and cost containment, while retaining needed integration with local first responder dispatch and support."[1] To that end, the Commission directed the Public Safety and Homeland Security Bureau ("Bureau"):

> "to convene a task force that includes representatives from state, local and tribal authorities and the currently constituted CSRIC to study and report findings and recommendations on the following issues by April 30, 2015: 1) optimal PSAP system and network configuration in terms of emergency communications efficiency, performance, and operations functionality; 2) cost projections for conversion to and annual operation of PSAPs that incorporate such optimal system design; 3) comparative cost projections for annual maintenance of all existing PSAPs annually and upgrading them to NG911; 4) recommendations on ways to prevent states from diverting E911 funding to other purposes; and 5) whether

[1] Framework for Next Generation 911 Deployment; Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications, *Second Report and Order and Third Further Notice of Proposed Rulemaking*, PS Docket Nos. 10-255 and 11-153, FCC 14-118, para. 79 at 36 (rel. Aug. 13, 2014).

states that divert E911 funds should be ineligible to participate on various FCC councils, committees, and working groups.[2]

The Boulder Regional Emergency Telephone Service Authority ("BRETSA") urges the Bureau to assure that officials with experience and authority for overall public safety agency operations and budgeting are included on the Task Force.[3] Public Safety Answering Points ("PSAPs") provide the primary means by which the public accesses their local emergency response system, and the primary interface between the public and that system. However PSAPs constitute only one part of the overall public safety response system, and must serve the overall goal of effective and efficient emergency response.

Emergency communications efficiency, performance and operational functionality are not ends unto themselves, but must serve and support the broader goal of effective and efficient end-to-end emergency response. Parties in PS Docket No. 11-153 have proposed solutions which would (i) actually delay emergency response, (ii) place unrealistic demands upon PSAP personnel and First Responders, and (iii) divert funds from their most effective use. Commenters generally overlook what many in the public safety community regard as the most important benefits of NG9-1-1. Officials with responsibility for overall public safety operations and budgeting have the perspective to assure that emergency communications continue to support effective and efficient overall emergency response.

Commenters Have Promoted Solutions Which Would Delay Adversely Impact Emergency Response.

In PS Docket 11-153 and related Dockets and forums, we have seen parties presume to propose "solutions" which would substantially impact emergency response and its cost, focus on solutions to issues which impact only a relatively small number of incidents while overlooking issues which impact a much higher percentage of incidents, propose wasteful one-size-fits-all solutions, or propose solutions in search of a problem.

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[2] *Id*, para. 80 at 36.

[3] BRETSA is a Colorado 9-1-1 Authority which establishes, collects and distributes the Colorado Emergency Telephone Surcharge to fund 9-1-1 Service in Boulder County, Colorado. The BRETSA Board includes the Boulder County Sheriff, the City of Boulder Police Chief, and representatives of the Boulder County Firefighters Association and the City of Longmont Division of Public Safety. The fifth seat of the Board is filled by representatives of the smaller cities and towns in Boulder County on a rotating basis. This letter is intended to represent the perspective of the entity responsible for funding 9-1-1 service, *and* of the authorities responsible for PSAP operations *and overall public safety operations and budgets*.

For example, the vision for NG9-1-1 initially under consideration in PS Docket No. 11-153 focused on the ability of end-users to send photographs and stream live video to PSAPs, in addition to sending text messages. BRETSA filed comments pointing out that the PSAP's primary responsibility in handling 9-1-1 calls is determining the nature and location of the emergency, and dispatching appropriate First Responders according to the business rules of the First Responder agency. Non-professionals reporting an emergency by sending photographs or videos to 9-1-1 would likely transmit sensational or graphic photographs of little practical use to the PSAP. The transmission of these photographs and videos would likely adversely impact PSAP personnel, while *delaying* the provision of the location and nature of the emergency to the PSAP. End users also might become secondary victims of an incident as they seek to obtain photographs or videos which may be of little or no use to the PSAP.

Parties promoting deployment of NG9-1-1 then switched to arguing that photographs, videos, medical records and other information should bypass the PSAP and be transmitted directly to the First Responders en route to the incident. However as BRETSA has pointed out, at least one police department associated with BRETSA has invested in software to "blank-out" the Mobile Data Terminal ("MDT") screens in its units to avoid distracted-driving incidents involving officers. Firefighters dispatched by BRETSA have been known to complain that they cannot read their MDTs while en route to an incident because the fire trucks "bounce around too much."

Proponents of NG9-1-1 have suggested that a PSAP will (i) determine whether a vehicle has been involved in a "rollover" accident, and the number of people who have been ejected, based on crash telemetry data transmitted via NG9-1-1, and (ii) dispatch additional units based upon the number of people indicated to have been ejected. However public safety professionals have insisted that a PSAP will dispatch the standard complement of units under the business rules until a First Responder (public safety professional) is on scene and makes a determination that additional units are required. Initially dispatching additional units makes those units unavailable for other incidents and may require "move-ups" affecting response times throughout the jurisdiction.

Similarly, proponents of First Net as well as NG9-1-1 have suggested that building plans could be transmitted to the PSAP and Firefighters as they are en route to a building fire. Not only would Firefighters be unable to review the plans as they speed toward the fire, but the building plans themselves are useless because they contain *too much* information. Firefighters prepare "pre-plans" of significant structures in which they remove mechanical and other non-essential information from the building plans, and highlight the most important information

such as where to position their trucks, the external connections to the sprinkler system to boost pressure in the system, and similar information relevant to fighting a fire in the building. These pre-plans are loaded on their MDTs and do not need to be transmitted to them.

Commenters Place Unrealistic Demands On PSAP Personnel and First Responders.

Commenters have proposed to transmit medical records of individuals who are the subject of an incident, and crash telemetry data, to the PSAP over NG9-1-1. However PSAP personnel are not trained or otherwise qualified to interpret medical records or crash telemetry data. In the case of medical records, if they are relevant at all, it would make more sense to transmit such information to doctors at the emergency rooms which will receive the subjects. The doctors already have the training and qualifications to interpret the records, as may be necessary and appropriate to treating the subject.

Commenters have also suggested that the medical records or crash telemetry data should bypass the PSAP and be sent to the First Responders. However First Responders are no more qualified to interpret medical records than are dispatchers. BRETSA is aware of a single case in which paramedics were able to access medical records of a subject involved in an incident, and the incident illustrates the folly of providing medical records to First Responders. In that case paramedics responding to an incident in Florida, in which an individual was in medical distress and unable to communicate, were able to access the subjects electronic medical records "in the cloud." After reviewing the records they determined that because he had previously been treated for fluid around the heart, that must be the cause of his current distress and they transported him to the emergency room. At the emergency room, doctors diagnosed the subject with an aortic aneurism and operated, saving his life.

That is, the paramedics misdiagnosed the subject based on the medical records, and if the aneurism had burst while they were reviewing his medical records he may well have died. The patient survived because the paramedics eventually did exactly what they were supposed to do in the first place: transported him to a hospital with trained doctors and facilities to properly diagnose and treat the subject. Even if the paramedics had somehow correctly diagnosed the aortic aneurism, they had no greater ability to treat the condition in the field than if he was suffering from the condition they inaccurately diagnosed.

Commenters have suggested that PSAPs should have available a pool of American Sign Language ("ASL") -qualified personnel who can communicate via ASL over NG9-1-1 video connections with deaf and hard-of-hearing callers. BRETSA pointed out that the Commission has found that over 80% percent of

PSAPs have five or fewer positions, and BRETSA believes that the vast majority of these have two or fewer calltakers/dispatchers on duty at any time. At least one Colorado PSAP has reportedly not received a single TTY/TDD call in the last 15 years. Under these circumstances it is unreasonable to expect *all* PSAPs to employ personnel with sufficient ASL ability to accurately communicate via ASL with an excited deaf or hard-of-hearing "caller" in an emergency.

It is estimated that only two percent or fewer people have the combination of communications, multi-tasking and computer skills, and the emotional disposition, to make a good dispatcher. BRETSA-affiliated PSAPs generally find that one percent or fewer applicants for PSAP positions make it through the screening process, and half of the individuals hired quit during training. There is also high turnover in call-takers/dispatchers, and PSAPs are consistently seeking to hire additional personnel.[4] BRETSA understands this experience is comparable with national statistics. Adding ASL-fluency, the ability to interpret medical records or crash telemetry data, or other such skills to the requirements for a calltaker/dispatcher position would both limit the ability of PSAPs to locate qualified candidates, and push compensation requirements to a level that would require cuts in other areas of public safety budgets.

Similarly, adding the ability to interpret medical records and treat subjects on-scene (rather than providing First-Aid and transporting them to an emergency room), to the current requirements for paramedics would make it much more difficult to locate qualified candidates for paramedic positions and increase compensation levels. There is already a shortage of doctors without placing them in paramedic units.[5]

Unlike the federal government; states, counties and municipalities must balance their budget each year. Colorado, like many states, has state constitutional limitations on governmental borrowing of funds. If there is an increase in the expense of providing public safety services in one area (such as PSAP operations), then the public safety budget must be cut in another area, such as First Responders, their equipment or training. It may even be necessary to cut other pub-

[4] In larger PSAPs, some of the personnel on any shift are designated "calltakers," answer 9-1-1 calls, and enter information provided by the caller into a CAD incident file. Other PSAP personnel are designated "dispatchers," dispatch First Responders based upon information in the CAD incident files, and communicate with the First Responders over radio channels as necessary. This lessens the multi-tasking burden on PSAP personnel, avoids callers overhearing the dispatchers communication with the First Responders, and is generally deemed more efficient. However in smaller PSAPs there is no distinction between calltaker and dispatcher and personnel both answer 9-1-1 calls and dispatch First Responders.

[5] BRETSA understands that some jurisdictions are experimenting with placing physicians in paramedic units, which is similar to the French system of emergency response. However this is the rare exception rather than the rule in the United States.

lic budgets, such as for schools or public health services, to meet the increase. State and local governments are already struggling with reduced tax revenues as a result of the current economy.[6] Thus, public safety authorities must allocate funds where they will have the greatest impact or favorably impact the greatest number of incidents. These budgeting decisions are made at the state, county, city, and agency level, *not* at the PSAP level.

Finally, with respect to expectations of greater capabilities of dispatchers than is realistic; undersigned counsel, in the role of consultant to an investment banking firm, has attended a number of presentations by entrepreneurs wishing to market new services or new smartphone "apps" to consumers to provide customer specified-information to PSAPs. While unable to discuss specific proposals, these services and apps would deliver a variety of data directly to the PSAP to be presented in a unique format, or would provide the PSAP with a URL for the PSAP to access the data over the Internet, also in a unique format. Previously, PSAPs generally would have had to have an application running in the PSAP to receive and/or display the data, or would have to take some affirmative steps to receive and/or display the data. With text messaging to the PSAP it will now be possible for these apps to transmit information to the PSAP in text format, or to transmit URLs to the PSAP for PSAP personnel to access data on the provider's website.

Apps being developed would even transmit data to a PSAP *automatically*, upon some triggering alarm or condition or the passage of a certain amount of time without the user cancelling the transmission. Some of the app developers anticipate simply transmitting such data to a PSAP once NG9-1-1 is available, without ever communicating with the PSAPs regarding their apps. Indeed, there may not even be any means for a PSAP to identify that a message has been transmitted by an App, or transmitted automatically, rather than by an end-user creating an SMS text message immediately before sending it to "9-1-1."

We will leave aside for the present the creation of expectations in consumers purchasing the services or apps that PSAPs and First Responders will in fact receive and act upon such data. We will also presume that the developers' motives are entirely altruistic rather than to leverage revenues upon PSAP operations they do not fund. Regardless of motives or expectations, *it is unrealistic to expect that dispatchers will be able to expeditiously identify reasonably useful information regarding incidents when provided by any of the thousands of apps which will be distributed for a fee or free, each of which will present the information in a distinct format with a distinct look and feel.*

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[6] BRETSA believes this is the reason some legislatures have applied 9-1-1 funds to non-9-1-1 purposes, in an attempt to "spread the pain" equally among different governmental services; not out of disregard for the importance of 9-1-1 funding.

Commenters Would Divert Funds From Their Most Effective Use.

As stated, public safety officials must allocate funds where they will be most effective. A key rationale initially provided for PSAPs to transition to NG9-1-1 was to allow for receipt of text-to-911 messages, even while PSAPs experimenting with text-to-911 were reporting that PSAPs need *not* fear being overwhelmed by text messages because they were receiving only a few such messages per year. At the same time, the Basic Emergency Service Provider ("BESP," an "SSP" as termed by the FCC) in Colorado was stating that the cost of NG9-1-1 Service would be three-times the cost of the existing, analog, 9-1-1 Service.[7] Thus the Colorado public safety community was presented with the scenario of paying triple the cost of extant 9-1-1 service to receive over digital facilities the same phone calls currently received over analog facilities, plus a small number of text messages, and perhaps incurring costs for equipment changes or improvements in GIS data to accommodate NG9-1-1.[8] To meet these increased costs could require reductions in funding for First Responder personnel, training or equipment, or even shifting of funds from non-public safety categories of local budgets.[9]

In many areas, urban and rural, PSAP personnel also monitor jail inmates or perform other non-dispatch functions. Female PSAP personnel may serve as jail matrons to search female arrestees and prisoners. These dispatch positions may be funded in part through 9-1-1 fees and in part through the jurisdiction's general public safety budget. Consolidation of PSAPs eliminating the ability of dispatchers to provide other services on a shared-cost basis would work a hardship for some of these jurisdictions.

Local Authorities Are In The Best Position To Configure Services To Best Meet The Needs Of Their Jurisdictions and Constituents.

PSAP managers in urban areas of Colorado have suggested that a single PSAP could serve the entire state, or a region of the state. However rural PSAP managers and managers of PSAPs serving jurisdictions with a high level of tourism have spoken of the importance of "local knowledge" in locating and assisting callers. This illustrates that local authorities are in the best position to determine how best to meet the public safety needs of their communities and constituents.

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[7] More recent estimates of the cost of NG9-1-1 service have been in the range of 1.5 to 2 times extant 9-1-1 service costs.

[8] BRETSA does not know how the total cost of implementation of NG9-1-1 in Colorado would compare to that in other states, but believes it would be similar.

[9] Emergencies cannot be handled "by remote control" from the PSAP. In the discussion of how 9-1-1 service can be improved, it must be remembered that emergencies are addressed by First Responders who go to the scene and go "hands-on" to resolve the situation, often at personal peril.

BRETSA funds four PSAPs which share a hosted telephone system and hosted CAD system, with redundant systems and paths. In the event of an outage affecting any of the BRETSA PSAPs, calls can be rerouted to any other PSAP and the personnel in that PSAP can handle the calls and dispatch First Responders until personnel from the first PSAP can relocate to the second. In one case when a wildfire occurred while personnel from the different PSAPs were meeting at the PSAP with responsibility for the area in which the fire occurred, the personnel from the different PSAPs were able to man the spare PSAP positions until additional personnel could be called in, because of their familiarity with the telephone and CAD systems in use. BRETSA is aware that smaller jurisdictions in Colorado have been working together to develop hosted services and mutual support between their PSAPs similar to that enjoyed by BRETSA. This will be more feasible in an NG9-1-1 environment with its call-routing capabilities (discussed in more detail below). However consolidation of the PSAPs would eliminate the benefit of local knowledge in handling most 9-1-1 calls, and *also* eliminate the benefit of redundant and diverse facilities enabled by such arrangements.

While many commenters have focused on the capability of NG9-1-1 of providing additional message formats to the PSAP, such as photographs and videos, public safety officials have focused on more practical capabilities of NG9-1-1. For smaller, less well-funded PSAPs, the broadband connections will enable them to subscribe to hosted 9-1-1 telephone, CAD and call logging services for a budget-friendly per-seat, per-month fee, rather than having to make a significant capital outlay to obtain stand-alone systems for their PSAPs. This should also allow them to avoid the need to engage IT professionals to maintain such stand-alone systems. The hosting provider installs the terminals at the PSAPs, remotely applies updates, provides a help-desk, and maintains the phone, CAD or logging system servers at its premises. The cost of the host system and its support is spread across the PSAPs subscribing to the hosted service.

Other PSAPs have focused on the flexible call-routing capabilities of NG9-1-1. When all calltakers in a PSAP are already answering calls, and an additional 9-1-1 call is placed in the PSAP's jurisdiction, the NG9-1-1 system can route the calls to an alternative location based on the rules established by the PSAP. Calls can be routed to another PSAP, to any 10-digit telephone number (wireline or wireless), to any 56 kbps internet connection, or even to a First Responder over an interconnected public safety radio system. Thus, in a PSAP outage or overflow situation, 9-1-1 calls could be routed to a nearby PSAP, to PSAP personnel over an alternative PSTN or internet connection (in the case of an outage situation), to ordinary phones or back-up positions in a Sheriff's office or police department, to off-duty dispatchers at their homes, etc. It has been suggested that

small PSAPs might route all calls to a nearby jurisdiction's PSAP during periods of very low call activity, such as weeknights, and shut the local PSAP down for that period. Alternatively, the calls might be routed directly to an on-duty law officer in his patrol unit, and he would dispatch himself, other on-duty law units and fire units.[10]

Flexible call routing is not generally ripe for implementation, however. The issue at this time is how the other PSAP or location to which the call is routed ("Remote PSAP") is to handle the call. A Remote PSAP cannot dispatch the call unless it has access to (i) the incidents to which First Responders are already responding, (ii) the units on duty and available to respond to a new incident, and their location, (iii) the local agency's business rules for what complement of units is to be dispatched to a specific type of incident, and (iv) the radio frequencies or tone-out systems to dispatch the First Responders.

A remote dispatcher would generally need to access the PSAP's CAD system to determine what incidents are already in queue, and what units are on duty and available. Different CAD systems and even different installations of the same brand and version of a CAD system may use different data fields, and customized interfaces as well as secure network connections will be required to exchange data even between the same versions of CAD systems as implemented in adjacent jurisdictions. Additional licenses may also be required for additional users to access the CAD system, even in an outage or overflow situation. Moreover, some CAD vendors use tiered pricing, such that increasing the number of CAD licenses beyond a certain threshold could increase the price of *each* license. Additional issues include the chain of custody of the incident records, security and privacy issues, and in some cases governmental immunity issues where a dispatcher handles a call for a jurisdiction other than that by which he or she is employed. BRETSA understands that solutions to some of these issues are currently under development. Until solutions to these issues are available, and with text-to-911 message delivery now available at no cost via TTY interface and browser; many PSAPs will continue to see NG9-1-1 as simply a more expensive method of delivering the same calls they currently receive over legacy 9-1-1 systems. It is rational for PSAPs to decline to transition to more expensive NG9-1-1 service until such time as the requisite ancillary services and technical solutions are available to provide additional, useful, functionalities.

The methods and capabilities of providing (reciprocal) redundant overflow 9-1-1 call handling systems and services may be different for each jurisdiction and PSAP. BRETSA provides hosted services for its PSAPs, with redundancy and

[10] In some rural counties, the Sheriff and five or fewer deputies are the only law officers serving the county and the cities and towns in the county.

physical diversity among its PSAPs. As mentioned above, a number of less-populated counties are working together to form a system among themselves similar to the BRETSA system. In another area, two adjacent jurisdictions may enter into a "mutual aid" type arrangement between their PSAPs, and this patchwork of solutions will be repeated all across the country. A one-sized-fits-all solution would be a bad compromise for all, not effectively meeting the needs of any.

Undersigned counsel has also noticed that firefighters tend to be much more comfortable with the idea of PSAP consolidation than do law officers. This may be because firefighters and paramedics are dispatched and function as teams with little interaction with the dispatcher once they are dispatched. Law officers, however, are typically on patrol alone, are in frequent contact with the dispatcher, and rely on the dispatchers as their lifeline.

The scope of the issue of PSAP consolidation goes far beyond the question of efficiency in communications systems, and may have different impacts in different jurisdictions. The public safety officers who are in the best position to speak to the issues are those with responsibility for overall public safety agency operations and budgeting. BRETSA accordingly urges the Bureau to assure that officials responsible for overall public safety operations and budgets are included on the Task Force. Such officials should be drawn from large, medium and small jurisdictions, and from both law enforcement and fire agencies.

Very truly yours,

Joseph P. Benkert

Attorney for the Boulder Regional
Emergency Telephone Service Authority