20 Years After 9/11: Examining Emergency Communications

Statement of

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Good morning, Chairwoman Demings and Ranking Member Cammack. I am Chris Lombard, Deputy Fire Chief of the Seattle (Washington) Fire Department and Acting Chair of the International Association of Fire Chiefs' (IAFC) Communications Committee. I appreciate the opportunity today to discuss the progress that has been made in emergency communications since 9/11 and how Congress and first responders can build upon this progress going forward.

The IAFC represents the leadership of over 1.1 million firefighters and emergency responders. IAFC members are the world's leading experts in firefighting, emergency medical services, terrorism response, hazardous materials (hazmat) incidents, wildland fire suppression, natural disasters, search and rescue, and public-safety policy. Since 1873, the IAFC has provided a forum for its members to exchange ideas, develop best practices, participate in executive training, and discover diverse products and services available to first responders.

America's fire and emergency service is an all-hazards response force that is locally situated, staffed, trained, and equipped to respond to all types of emergencies. There are approximately 1.1 million men and women in the fire and emergency service – consisting of approximately 300,000 career firefighters and 800,000 volunteer firefighters – serving in over 30,000 fire departments around the nation. They are trained to respond to all hazards ranging from earthquakes, hurricanes, tornadoes, and floods to acts of terrorism, hazardous materials incidents, technical rescues, fires, and medical emergencies. We usually are the first on the scene of a disaster and the last to leave.

The State of Public Safety Communications During and Since 9/11

As a member of the fire service who responded to ground zero in Manhattan for two weeks as a member of Washington Task Force 1 with FEMA's Urban Search & Rescue system in the wake of the September 11th attacks, I am keenly aware of the challenges and issues facing public safety communications on September 11, 2001; the progress we have made since; and the work that remains to be done. During the first hours after the attacks, cell phone networks were jammed, and priority cellular access was not provided to emergency responders. Radio channels and phone lines to emergency communications centers also were jammed.

In addition, there were problems with interoperability between jurisdictions. Public safety radio systems operated on various frequencies and were not interoperable. Officials struggled to coordinate the multiagency response, and to maintain command and control of the numerous agencies and responders. Pagers and runners proved to be the most effective form of communication.

The Final Report of the National Commission on Terrorist Attacks Upon the United States (also known as "the 9/11 Commission Report") identified the need for improved interoperable communications between first responders and recommended a nationwide public safety wireless broadband network. In the 20 years since 9/11, Congress and the Administration have worked hard to bring these recommendations into fruition.

SAFECOM and the First Responder Network Authority (FirstNet) are two triumphs that have emerged from the 9/11 Commission Report's recommendations and have substantially improved

first responder communications and interoperability. FEMA preparedness grants like the State Homeland Security Program (SHSP), Urban Area Security Initiative (UASI), Staffing for Adequate Fire and Emergency Response (SAFER) and Assistance to Firefighters Grant (AFG) programs also have done a great deal to improve first responder communications through funding, training, information sharing efforts and equipment. I thank the Committee for all it has done in the years since 9/11 to bring about these improvements.

FirstNet

Interoperability involves the ability of public safety service and support providers – law enforcement, firefighters, EMS, emergency management, public utilities, transportation, and others – to communicate with staff from other responding agencies, and to exchange voice and/or data communications on demand, when authorized and in real time. To address the 9/11 Commission Report's recommendations to improve interoperability and establish a nationwide public safety wireless broadband network, Congress incorporated a key public safety communications provision in *The Middle Class Tax Relief and Job Creation Act of 2012* (P.L. 112-96). This legislation provided the necessary 20 MHz of spectrum in the 700 MHz band and $7 billion to build a nationwide broadband network dedicated to the mission requirements of public safety. It also created the First Responder Network Authority (FirstNet), as an independent agency in the U.S. Department of Commerce.

While mentioning P.L. 112-96, I would like to take an opportunity to thank this Subcommittee for their work to remove a provision of this bill that would have dealt a tremendous blow to public safety, the T-Band Auction mandate. This mandate would have required the auctioning of T-Band (470 MHz – 512 MHz) spectrum starting this year and would have required public safety to vacate this spectrum by 2023. The GAO report requested by Rep. Payne and former Reps. Donovan and King showed just how irreplaceable this spectrum is for the operations of public safety's land mobile radios in 11 metropolitan areas across the country, an area that covers 20% of the nation's population.

P.L. 112-96, also authorized FirstNet to enter a public-private partnership to deploy the network. Through a competitive bidding process, FirstNet selected AT&T as its partner in March 2017. AT&T has been deploying the network as specified in its contract and in state-specific plans, with 80% of the network buildout completed. I personally think public-private partnerships are extremely valuable to public safety communications. Public safety has a very low turnover rate relative to the private sector, and as a result can be very slow to adopt new technologies. Public-private partnerships offer the opportunity to pair the adaptability of the private sector with the knowledge and resources of the public sector.

FirstNet became operational in March 2018 and is based on a single, national network architecture that evolves with technological advances and consists of a physically separate evolved packet core (EPC) network and radio access networks (RANs). This nationwide network enables first responders to communicate with one another within and across jurisdictions. FirstNet allows multiple agencies to be interoperable on-scene at an incident. It also provides redundancy which allows it to be more resilient than commercial networks and prevents the network being jammed by users during an emergency.

The FirstNet network supplements legacy voice systems by providing public safety entities with mission-critical advanced data and voice capabilities and services including, but not limited to messaging, image sharing, video streaming, group text, voice, data storage, application, location-based services, and preemption. It also provides applications, and deployable assets that can restore communications after disasters.

Agencies are subscribing to and using the network in emergencies, including the COVID-19 pandemic and wildland fires. In his testimony to the Senate Committee on Commerce, Science, and Transportation's Subcommittee on Communications, Media, and Broadband in June, Chief Jeffrey Johnson, Chief Executive of the IAFC's Western Division said:

> "Before FirstNet, field-based first responders, such as wildland firefighters, were hesitant to adopt new technology solutions because they couldn't count on it working when they needed it most. Now that we have FirstNet, first responders have priority and preemption, dedicated 700 MHz public safety spectrum that has been built out across the country (with aggressive rural coverage build benchmarks – an important priority for the WFCA), and the ability to request portable cell towers (Colts and Cows) to make sure first responders have connectivity, such as in the event infrastructure has been damaged by a fire or when a command post is staged in a remote mountainous area."

On behalf of the IAFC, I ask that Congress continue to support FirstNet in its mission to fulfill the 9/11 Commission Report's recommendation of a nationwide public safety wireless broadband network.

SAFECOM

Another entity that has been critical to fulfilling the 9/11 Commission Report's recommendation of improved interoperability is SAFECOM. SAFECOM was formed in 2001 after the September 11 terrorist attacks, as part of the Presidential E-Government Initiative to improve public safety interoperability, allowing emergency responders to communicate effectively before, during, and after emergencies and disasters. SAFECOM's mission is to improve designated emergency response providers' interjurisdictional and interdisciplinary emergency communications interoperability through collaboration with emergency responders and elected officials across federal, state, local, tribal, and territorial governments, and international borders.

As the First Vice Chairman of SAFECOM, I have seen firsthand the great work it has done to fulfill its mission. SAFECOM is one of the first organizations to bring together representatives from public safety associations as well as emergency responders in the field. Its membership includes more than 60 members representing federal, state, local, tribal, and territorial emergency responders, and major intergovernmental and national public safety associations. I serve on SAFECOM in my capacity as Deputy Chief of the Seattle Fire Department. The IAFC also has two representatives to SAFECOM's membership, including Greg Rubin, Assistant Chief of Miami-Dade (Florida) Fire Rescue.

SAFECOM is managed by the Cybersecurity and Infrastructure Security Agency (CISA) and works with existing federal communications programs and key emergency response stakeholders to address the need to develop better technologies and processes for the coordination of existing communications systems and future networks. SAFECOM focuses both on technology and the need for jurisdictions to develop an effective command interoperability plan. SAFECOM trains emergency responders to be communications unit leaders during all-hazards emergency operations, and coordinates grant guidance to use federal funding to encourage interoperability.

Through their partnerships, SAFECOM has created key documents such as the Interoperability Continuum, the Statement of Requirements (SoR) for baseline communications and interoperability standards, the Statewide Communication Interoperability Plan (SCIP) Methodology, and the National Emergency Communications Plan (NECP) to assist emergency responders nationwide with improving communications and interoperability.

SAFECOM serves as a tremendous resource to first responders in providing key guidance to attain grant funding, improve interagency communications, and develop interjurisdictional and interagency relationships. On the behalf of the IAFC, I ask Congress to continue support CISA in its management of SAFECOM.

The Need for Investment in Next Generation 9-1-1 (NG 9-1-1)

Public safety fought hard to establish FirstNet because we knew that we were being left behind compared to the technologies available for personal-use communications. The same holds true for NG 9-1-1. First responders handle over 240 million emergency 9-1-1 calls per year. Unfortunately, 9-1-1 networks across the United States have not kept up with advances in communications technology and, in large part, are based upon technology dating back to the 1960s.

Even though 9-1-1 systems are critical infrastructure in every community, they are underfunded and technologically inadequate to address the needs and expectations of the American people in the 21st Century. While 9-1-1 operations are state and local functions, the investment of federal resources in this critical infrastructure will ensure that all communities in the United States will have a secure, resilient, interoperable, and reliable way of receiving, processing, and responding to requests for emergency assistance.

IAFC member and Philadelphia Fire Commissioner, Adam Thiel equates the upgrading of our nation's 9-1-1 infrastructure to NG 9-1-1 to shifting from a rotary phone to a smart phone. When discussing issues concerning the current state of 9-1-1 infrastructure, Commissioner Thiel often speaks about how 9-1-1 calls coming from his jurisdiction in Philadelphia are often routed across the river to Camden, New Jersey. This results in significant delays due to having the call re-routed to the 9-1-1 center in Philadelphia. IAFC members around the country have spoken of similar issues and delays. This is unacceptable in an emergency situation where every second counts.

The focus on improving our nation's infrastructure provides a unique opportunity for Congress to make a once-in-a-generation investment to modernize our 9-1-1 systems to NG 9-1-1. NG 9-

1-1 will enable Emergency Communications Centers (ECCs) to receive a variety of multimedia (photos, videos) and other data from 9-1-1 callers and seamlessly share this information with other ECCs and responding fire, EMS, and law enforcement officials in the field. This will make emergency responses faster and more efficient and make public safety professionals and the communities they serve safer. Simply put, NG 9-1-1 will save lives.

The IAFC is a member of the Public Safety Next Generation 9-1-1 Coalition, which consists of the Metropolitan Fire Chiefs Association, the Major County Sheriffs of America, the Major Cities Chiefs Association, the National Association of State EMS Officials, the National Sheriffs' Association, the International Association of Chiefs of Police, and the Association of Public-Safety Communications Officials International. This coalition is advocating for a one-time $15 billion NG 9-1-1 upgrade to be part of the reconciliation package Congress is currently considering.

A 2018 study requested by Congress and conducted by the National Highway Traffic Safety Administration determined that $9.5-12.7 billion was required to achieve NG 9-1-1 nationwide. In the time since this study was completed, our 9-1-1 infrastructure has faced additional challenges like increased cybersecurity threats. To adequately meet these challenges and cybersecurity concerns, $15 billion is needed to upgrade our nation's 9-1-1 infrastructure most effectively.

Additionally, the IAFC and the Public Safety Next Generation 9-1-1 Coalition are requesting that the following NG 9-1-1-related priorities be included in the reconciliation package along with $15 billion in funding for the NG 9-1-1 upgrade:

1) Ensure that NG 9-1-1 is interoperable by requiring the use of standards that are commonplace in the consumer marketplace.
2) Funding for training, so that an on-scene incident commander can properly prioritize the data they receive.
3) Establish a Next Generation 9-1-1 Advisory Board to ensure NG 9-1-1 grants meet the needs of public safety professionals and the public they serve.
4) Establish a Nationwide Next Generation 9-1-1 Security Operations Center to meet the vital 9-1-1-related cybersecurity needs of local public safety agencies.

All the priorities listed above are in the House's reconciliation proposal (H.R. 5376). H.R. 5376 only provides $10 billion in funding for NG 9-1-1. The IAFC and Public Safety NG 9-1-1 Coalition hope the Senate will include our NG 9-1-1 priorities in their reconciliation proposal along with $15 billion in funding, and that the House will support this funding as well.

Importance of SHSP and UASI Grants

The SHSP grants assist state, local, tribal, and territorial efforts to build, sustain, and deliver the capabilities necessary to prevent, prepare for, protect against, and respond to acts of terrorism. The UASI program assists high-threat, high-density urban areas' efforts to build, sustain, and deliver the capabilities necessary to prevent, prepare for, protect against, and respond to acts of terrorism. In the wake of the terrorist attacks on 9/11, both grant programs have been crucial in

assisting public safety to be better prepared and trained to address a terror attack or any major incident that may occur in their communities.

The great success of SHSP and UASI is that they provide an incentive for federal, tribal, state, territorial, and local jurisdictions to collaborate before, during and after an incident. By planning, training, and conducting exercises together, local fire chiefs, police chiefs, sheriffs, public health officials, emergency managers, and state and federal officials are prepared to work together in the event of an emergency. This preplanning and coordination prevent confusion during an incident and directly saves lives.

The IAFC's members and the communities they serve have strongly benefited from SHSP and UASI grant funding. Many of our members have utilized this funding to strengthen their information sharing and communications abilities. Our members in the National Capitol Region (NCR) have utilized funding from these programs to develop several emergency communications functions to aid in providing information during an emergency. Through these systems, residents in every jurisdiction throughout the NCR can sign up for free text messaging alert systems from local governments that provide real-time emergency alerts and notifications to cell phones, pagers, email accounts.

The NCR has also utilized this funding to interconnect the fiber optic networks built and funded by the local jurisdictions to form the "NCR Net." This system enables the seamless transmission of critical data such as that used by computer aided dispatch systems throughout the region thus elevating situational awareness and reducing emergency call processing time. IAFC members in California have utilized this funding to improve regional radio interoperability, develop resilient internal communications, improve fire station security, and train chiefs and company officers to lead in large-scale and complex incidents.

IAFC members in Clark County Nevada have used these funds to support fusion center activities within the Southern Nevada Counterterrorism Center. These activities include suspicious activity analysis and reporting; evaluation and support of special events; multi-agency intelligence and information-sharing; and the hardware and software to support these programs. They also have utilized this funding to support community outreach and education programs like "See Something, Say Something" campaigns; training and exercises; and the development of public/private partnerships to help protect the region.

The IAFC is pleased that the *Department of Homeland Security Appropriations Act, 2022* (H.R.4431) contains $705 million for UASI and $610 million for SHSP. We urge Congress to continue to support strong funding for these important grant programs.

Importance of AFG and SAFER Grants

The AFG and SAFER grant programs are critical to the fire and EMS service. The AFG program is one of the few grant programs dedicated to all-hazards preparedness and response. The AFG grant program was created in 2000 as part of the Fiscal Year (FY) 2001 National Defense Authorization Act (P.L. 106-398) to improve the baseline operational capability of America's fire service through improved equipment, training, and staffing.

The SAFER grant program was created in 2003 as part of the FY 2004 National Defense Authorization Act (P.L. 108-136) to specifically address the staffing shortages in career, volunteer, and combination fire departments. SAFER grants are especially important in today's environment where volunteer fire recruitment and retention are suffering.

AFG grants are helpful in improving public safety communications by enabling fire departments to purchase much needed radios and communications equipment. The National Fire Protection Association's Fourth Needs Assessment of the U.S. Fire Service showed that 50% of all departments still do not have enough portable radios to equip all emergency responders on a shift.

The IAFC is grateful for the extra $200 million provided to each the AFG and SAFER programs during the COVID-19 pandemic and ask that Congress fully fund these programs.

4.9 GHz Spectrum

In 2002, the Federal Communications Commission (FCC) designated the 4.9 GHz spectrum for public safety operations. This spectrum is used by public safety mostly for fixed point-to-point and secure Wi-Fi operations. Other public safety uses of 4.9 GHz spectrum include hosting broadband intranet networks, video camera networks, in-building communications, bomb disposal robot operations, and airborne public safety video operations. Public safety has increasingly relied upon 4.9 GHz spectrum as new technologies emerge and become more widely used. In a 2018 filing with the FCC, the National Public Safety Telecommunications Council reported that the number of fixed point-to-point sites on the 4.9 GHz band increased by 31% between 2015 and 2018.

In recent years, national public safety organizations, like the IAFC, and the FCC have disagreed about public safety's level of usage of 4.9 GHz spectrum. The FCC under Chairman Pai believed that public safety was not adequately using the 4.9 GHz band. Public safety contended that the FCC was not adequately accounting and tracking 4.9 GHz licenses. Seattle has both a single area-license and 58 licensed hops of 4.9 GHz. Seattle uses the 4.9 GHz spectrum primarily for communications backhaul to support data network connectivity as well as voice services. The network also supports the Seattle Police Department's mobile command center and is deployed on Seattle Fire Department fire boats.

Citing lack of utilization, the FCC moved to open 4.9 GHz spectrum to commercial users. Last October, the FCC issued an order adopting a state-by-state leasing framework that would have set up a patchwork regulation of state-run auctions of 4.9 GHz spectrum to commercial entities. The IAFC and multiple public safety organizations submitted comments and petitions opposing this move. After public safety organizations filed petitions for reconsideration of the FCC's order, the FCC placed a stay on last October's order in May and on September 30 the FCC unanimously rescinded the state-by-state leasing rules, finding that they risked fragmenting the band. The FCC also partially lifted a freeze on applications in this band to allow existing public safety licensees to modify their licenses and to license new permanent fixed sites.

Additionally, on September 30 the FCC adopted a Further Notice of Proposed Rulemaking that explores options to ensure public safety use of the band, including protecting public safety users from harmful interference, collecting more granular licensing data, and adopting technical standards to promote interoperability. The Further Notice also seeks comment on ways to encourage use of new technologies, including 5G, and dynamic spectrum access systems to facilitate coexistence between public safety and non-public safety uses of the band.

The IAFC is pleased with FCC's decision to rescind the state-by-state auction framework and views it as a step in the right direction. The IAFC will remain engaged with the notice of proposed rulemaking regarding 4.9 GHz spectrum that was approved by the FCC on September 30 and urges Congress to monitor these proceedings to ensure public safety interests on the 4.9 GHz band are preserved.

6 GHz Spectrum

Public safety uses 6 GHz spectrum to support backhaul for communications systems and radio communications in rural areas across the United States. This spectrum is heavily utilized by public safety with approximately 30,000 active licenses. In April 2020 the FCC voted to allow unlicensed users to operate on the 6 GHz spectrum. As a part of this rule, incumbents and new entrants in the 6 GHz band have established a multi-stakeholder group (MSG) to discuss concerns and find mutually agreeable solutions to sharing the spectrum. The IAFC is a member of the MSG. The MSG continues to operate three focus groups to address issues of particular concern relating to the FCC's vote on 6 GHz band. The IAFC is a member of focus group on Harmful Interference.

The IAFC has filed comments with the FCC, critical of its move to open the 6 GHz spectrum to unlicensed users. In February IAFC, Utilities Technology Council (UTC), and other organizations submitted comments to the FCC opposing a January Public Notice opening the 6 GHz band to unlicensed client-to-client operations. The IAFC opposes this proposal because it would exponentially increase the potential for interference to licensed 6 GHz microwave systems and would make it more difficult to resolve interference complaints. The IAFC, UTC and others followed-up with reply comments in March.

The IAFC supported the inclusion of language in P.L. 116-20 directing the FCC to provide a report to Congress within 90 days on its progress in ensuring rigorous testing related to unlicensed use of the 6 GHz band. The IAFC continues to monitor the FCC's proceedings related to 6 GHz spectrum. The IAFC also urges Congress to monitor these proceedings to ensure public safety interests on the 6 GHz band are preserved.

Conclusion

I thank you for the opportunity to address the Subcommittee on the landscape of public safety communications in the 20 years since 9/11. Through FirstNet, SAFECOM and strong funding for SHSP, UASI, AFG and SAFER grants, we have come a long way in 20 years. However, there is still work to be done to protect these efforts and grants, along with ensuring full implementation of NG 9-1-1 and the protection of public safety spectrum. I thank the Subcommittee for all it has

done to bring about the progress that has been made in public safety communications in the years since 9/11. The IAFC looks forward to continuing to work with the Subcommittee to address the continued communications needs of public safety.