

State of the State

Mark Wrightstone, *Pennsylvania Statewide Interoperability Coordinator (SWIC)*

Mr. Wrightstone welcomed members to Pennsylvania and spoke to ongoing public safety communications initiatives in the state, including the Pennsylvania Statewide Radio Network (PA-STARNet), PA STARS Satellite Early Warning Network, the Next Generation 911 (NG911) project, and the state's upcoming Statewide Communication Interoperability Plan (SCIP) workshop. STARNet implementation involves transition from an OpenSky system to a statewide Project 25 (P25) Land Mobile Radio (LMR) system. The state's ongoing project already covers half the geographic area with projected completion on time and within budget, in two years. The new system requires fewer towers to provide the same coverage. Mr. Wrightstone noted VHF mobile coverage has performed well despite challenges, and county, local, and federal users have been integrated into the system. As counties join the P25 system, the number of available tower sites continue to grow. After Warren County joined, other counties followed suit and have benefitted from joining the state system, resulting in greater partnerships with the state, cost reductions, and access to the broader statewide infrastructure, including a 24/7 Network Operations Center. Equipment from multiple vendors now have access to the system, with Motorola providing an online store for purchase of authorized equipment. Authentication of all users, including a requirement to encrypt radios, ensures the network remains secure. Long Term Evolution (LTE) FirstNet coverage is also available, with about 25,000 current end users, and 25 additional sites being constructed across the state. Pennsylvania has the fifth largest number of current FirstNet subscribers, which is expected to grow exponentially over the next year. The majority of FirstNet tower sites were strategically placed in areas historically proven difficult to cover. The state developed the P25 and LTE networks concurrently, performing tests along the way to ensure optimal integration. The P25 network was successfully tested during various large-scale events in 2019.

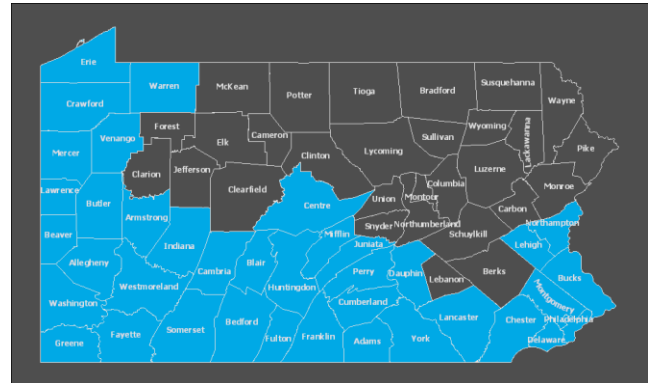


Figure 1: STARNet Coverage Map

Mr. Wrightstone touched on several communications projects within the Pennsylvania Emergency Management Agency (PEMA), including the PA STARS Satellite Early Warning Network and the NG911 project, which recently released a request for proposal (RFP) for improvements to the system. Pennsylvania's upcoming SCIP workshop is scheduled for June, when the state will update their plan, starting from scratch, to ensure it reflects the current emergency communications environment. To increase awareness and buy-in of the revised SCIP, local participants, as well as state-level decision makers, are invited to attend the workshop.

National Emergency Communications Plan Update

Eric Runnels, *Cybersecurity and Infrastructure Security Agency (CISA)*; **Michael Murphy**, *SAFECOM Vice-Chair (At-Large, Baker Police Department)*; **Chief Chris Lombard**, *SAFECOM Vice Chair (The Interagency Board for Emergency Preparedness & Response/At-Large, Seattle Fire Department)*

Mr. Runnels, Mr. Murphy, and Chief Lombard described the stakeholder-driven National Emergency Communications Plan (NECP) revision process (i.e., planning, writing, reviewing, and publishing). The revised NECP will be the document's third iteration, following initial development of the Plan in 2008 and an update in 2014. In accordance with the Homeland Security Act of 2002, as amended (6 U.S.C. § 573(a)), Congress directs the Department of Homeland Security (DHS) CISA to periodically conduct the Nationwide Communications Baseline Assessment (NCBA) and revise the NECP. The revised NECP incorporates feedback and outcomes from the 2018 SAFECOM Nationwide Survey—the data collection effort informing the NCBA—as well as participation from SAFECOM, the National Council of Statewide Interoperability Coordinators (NCSWIC), nationwide working groups and webinars, multiple stakeholder reviews, and a national feedback period.

This version of the NECP addresses the benefits and challenges of integrating new technologies into legacy systems, such as broadband and NG911, as well as cybersecurity threats and vulnerabilities. The revision also includes a new emergency

communications ecosystem graphic, which illustrates an expanded concept of public safety communications such as a broader set of technologies and organizations, and the citizens they serve. Mr. Murphy and Chief Lombard reviewed major outcomes from a stakeholder adjudication session held in early April at CISA headquarters that included the addition of a tribal-focused Success Indicator to Goal 1. Following the meeting, CISA will begin the internal DHS review process for NECP signature.

DHS Science & Technology Directorate Updates

Sridhar Kowdley, *DHS Science & Technology Directorate (S&T)*

Mr. Kowdley briefed participants on S&T's new organizational structure, ensuring SAFECOM members that the functions of the Office for Interoperability and Compatibility (OIC) will continue and now reside under the Office of Science and Engineering. Services will also include operations and requirements analysis, systems engineering, standards, technology scouting, test and evaluation, and transition. Mr. Kowdley also highlighted S&T's efforts to strengthen emergency communications interoperability and resiliency, such as specific initiatives related to voice, video, and data communications; resiliency; advanced networking services; and vulnerability and impact assessments.

Mr. Kowdley provided additional details on the December 2018 Next Generation First Responder (NGFR) – Harris County Operational Experimentation (OpEx) held in Houston, Texas, and other work through the P25 Compliance Assessment Program (CAP). He also discussed efforts to establish a test laboratory to ensure P25 standards compliance for communications equipment.

SAFECOM members discussed the benefits of OIC tools and resources and emphasized the importance of sustaining information-sharing assessment tools over the long-term. Mr. Kowdley specifically referenced the Alerts, Warnings, and Notifications guidance materials S&T is currently developing in conjunction with SAFECOM using the Interoperability Continuum as a framework. He also referenced the Social Media Emergency Management guidance tool, which provides direction to public safety personnel on how to engage, plan, and use social media during a disaster or emergency response. Lastly, Mr. Kowdley discussed plans to track completed products over a three-year period when they go to market to ensure the continued development of stakeholder accessible and usable products.

Impact of Emerging Technologies on Public Safety Communications: The California Experience

Budge Currier, *California SWIC*

Mr. Currier addressed California's recent deployment of statewide Supplemental Location Mapping and Analytics in the Cloud and NG911 capabilities, as illustrated in Figure 2. These efforts are aimed to better integrate emerging technologies, improve location accuracy, enhance access to geographic information system (GIS) data, and share information. This cloud-based model helps manage costs by moving away from per position costs to call volume pricing. Mr. Currier shared California's RFP process for Computer-Aided Dispatch (CAD) systems and the benefits of integrating functional requirements for native cloud-based solutions into RFPs. He explained how California contracts with several optional vendors, from which individual public safety answering points (PSAP) can choose. These vendors have been vetted to ensure they meet technological and interoperability

FirstNet in Practice:

Real-World Events and Adoption Update

Jacqueline Miller-Waring, FirstNet; Kenzie Capece, FirstNet; Paul Patrick, FirstNet Board Member; Jeff Carl, AT&T

Mr. Patrick provided an update on FirstNet implementation and capability development. Since its launch, FirstNet has positioned 72 Satellite Cell on Light Truck (SatCOLT) deployables nationwide, expedited buildout of state Radio Access Networks/Band 14, dedicated Security Operations Centers for FirstNet subscribers, and launched an application and device ecosystem for public safety. Mr. Carl walked SAFECOM members through the Quality of Service, priority, and preemption configuration for FirstNet service, and addressed issues associated with Band 14. The focus of the service provider is to optimize reach, public safety features, and ease of adoption. Panelists also discussed public outreach plans to continue to identify public safety priorities for the development of the network. FirstNet will continue to provide updates at SAFECOM and NCSWIC meetings moving forward.

requirements. California also has contracts with RapidDeploy and RapidSOS. The integrated solutions will provide fast, accurate location data of mobile phone callers on a geospatial map to improve location accuracy in PSAPs. The integrated solutions also provide map-based analysis of data captured by RapidSOS. The RapidLite service needed to capture location data from mobile phones is available to PSAPs at no cost.

California also released an RFP for NG911 systems with cloud computing and integrated alerts and warnings. Mr. Carrier shared that integrating its functional requirements for native cloud-based solutions into the RFP process benefitted the state by enabling targeted messaging to communities. California hopes to improve situational awareness and capabilities to quickly notify surrounding jurisdictions when a community sends an alert. During recent wildfire response efforts, some communities were not aware if a neighboring community sent an alert. Lessons learned from these efforts are helping to improve messaging to communities.

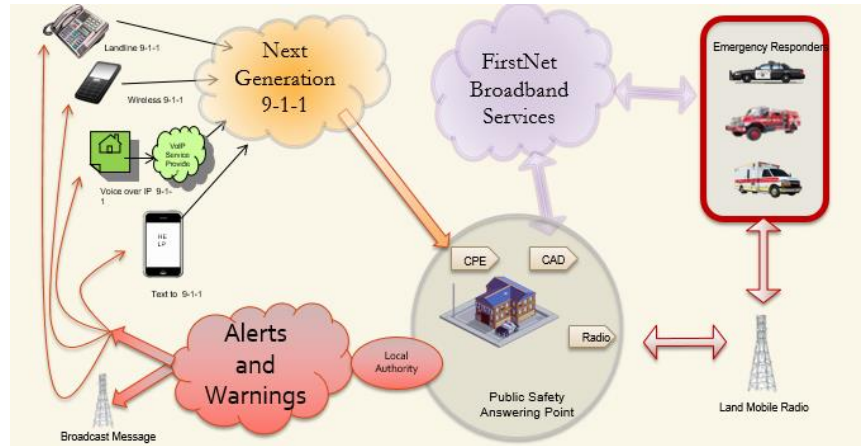


Figure 2: California's Process for Integrating Cloud-based Solutions for Emerging Technologies

Above and Beyond: Unmanned Aircraft Systems for Public Safety Communications

Chief Charles Werner, Chair, National Public Safety Council of Unmanned Aircraft Systems (UAS); National Information Sharing Consortium; Fire Chief Emeritus, Charlottesville, Virginia, Fire Department; **Anna Gomez**, Attorney, Wiley Rein LLP; **Sarah Ellis Peed**, CISA



Figure 3: Example of Drone Use for Overwatch of Technical Rescue

Chief Werner discussed the current small Unmanned Aircraft Systems (sUAS) used by public safety to gather situational and incident information from a variety of scenarios, including wildfires, lava flows, bridge collapses, search and rescue operations, and protest rallies. A new organization, the DRONERESPONDERS Public Safety Alliance, was recently formed and is dedicated to assisting public safety and other organizations implement and use UAS for public safety missions. Chief Werner will lead the group under AIRT, Inc., a 501(c)(3) non-profit organization formed in 2017, to execute three main objectives: 1) *learn* to more effectively adopt and use UAS through collaborative awareness building; 2) *train* to provide more detailed instruction to field operations teams; and 3) *test* UAS capabilities based on processes predicated on the Homeland Security Exercise and Evaluation Program.

Chief Werner discussed a wide application of drones in public safety, including structure firefighting, thermal imaging, major traffic accidents, combining types of digital imagery, artificial intelligence, shore patrol, overwatch of technical rescue (see Figure 3), locating poachers or lost persons, search and rescue operations, monitoring lava flows, traffic crash reconstruction, 3-D modeling, hazardous materials operations and sampling, and critical infrastructure monitoring.

Ms. Gomez provided an overview of rules, regulations, and requirements for operating sUAS, as Congress and the Federal Aviation Administration (FAA) continue to update regulations to provide oversight. She discussed the waiver process and types of waivers previously granted to public safety agencies, including operations from a moving vehicle or aircraft, daylight

operation, visual line of sight, visual observer, operation of multiple of sUAS, yielding the right of way, operation over people, authorization to conduct operation in certain airspace, and operating limitations for sUAS. As UAS technology continues to evolve, so do user laws and regulations. Ms. Gomez spoke about the FAA's proposed rules for sUAS, requirements for manufacturers to submit declarations of compliance, security concerns regarding UAS operations, and future UAS rulemakings (e.g., stand-off distances, payload restrictions, critical system design requirements, performance limitations, unmanned traffic management operations).

Ms. Ellis Peed emphasized the need to mitigate risks and vulnerabilities associated with the use of UAS regarding payloads with a focus on operational safety and security. Ms. Ellis Peed emphasized that UAS are mobile computers, vulnerable to cyber intrusion similar to other mobile devices. In addition to public safety use, adversaries are interested in gaining access to UAS data and footage. Public safety UAS users need to consider best practices for storing, transferring, and securing information as well as issues related to supply chain risk. Ms. Ellis Peed also provided an update on new counter UAS authorities granted to DHS. Counter UAS technologies may include electronic mitigations, which have the potential to impact proximate communications and are, therefore, of interest to the communications community. Ms. Ellis Peed also noted security risks are not a reason to avoid drones entirely, but an invitation for collaboration to develop solutions addressing the risks. She urged SAFECOM members and their communities to participate in the DHS Critical Infrastructure Partnership Advisory Council (CIPAC) working groups, such as the Cross Sector Unmanned Aircraft Systems Security Working Group, that are providing input to DHS implementation of the new authorities.

Smarten Up: The Intersection of Public Safety Communications and Smart City Technologies

Karen Lightman, Executive Director, Metro21: Smart Cities Institute, Carnegie Mellon University (CMU); **Dr. Leonard Weiss**, Assistant Professor of Emergency Medicine, EMS Medical/Director, Assistant Medical Director, STAT MedEvac, University of Pittsburgh; **Dr. Jon Peha**, Professor of Engineering and Public Policy, CMU; **Chief Charles Werner**, National Information Sharing Consortium/Fire Chief Emeritus, Charlottesville, Virginia, Fire Department



Figure 4: Smart Cities and Interoperable Technology Graphic

encountered by Smart City efforts. Mr. Garces discussed recent flooding in South Bend, Indiana, where geo-mapping was used to support evacuations and UAS were used to support structural assessments. He described communications challenges between information technology and public safety when assisting regional coordination. Mr. Peha discussed his research at CMU and his work at the Federal Communications Commission and White House Office of Science and Technology Policy leading up to the creation of FirstNet. He also discussed his work integrating cameras and sensors for public safety with telecommunications to form a smart city infrastructure.

Ms. Lightman introduced the panelists and highlighted the need to connect those planning for Smart City technology integration and those planning new public safety communications capabilities. Dr. Weiss described real-world incidents and how geolocation plays an integral role in recent response efforts around the city of Pittsburgh, highlighting a specific incident in which geolocation challenges made it difficult to respond to a 911 call in front of a hospital. Chief Werner discussed the importance of public safety participation in Smart City projects to ensure data interoperability. He discussed specific opportunities—such as gathering new types of data and leveraging new communication tools to reach people at risk in an incident—and challenges—such as capability differences between agencies, cybersecurity risks, and bandwidth limitations—

SAFECOM EC Meeting

Meeting Highlights

- ☐ Received Committee updates focused on priorities for the upcoming months
- ☐ Reviewed and approved the Technology Policy Committee's *Public Safety Ten Keys to Improving Alerts, Warnings, and Notifications* document
- ☐ Approved new SAFECOM working groups under the Technology Policy Committee: the P25 User Needs Working Group and the P25 CAP Advisory Panel (AP) Working Group
- ☐ Announced date of the Fall Public Safety Strategic Collaboration in-person meetings, scheduled for November 4-8, 2019, in Atlanta, Georgia

Action Items

#	Description	Owner	Status
1	Approve two new SAFECOM working groups: the P25 User Needs Working Group and the P25 CAP AP Working Group	SAFECOM Executive Committee (EC)	Complete
2	Review and approve the <i>Public Safety Ten Keys to Improving Alerts, Warnings, and Notifications</i> document	SAFECOM EC	Complete
3	Reinvigorate effort to update the Cybersecurity Continuum document, developed jointly with SAFECOM and the InterAgency Board	SAFECOM	Not Started
4	Discuss the "strike team" concept and make recommendation to EC	SAFECOM Governance Committee	Not Started
5	Update SAFECOM Interoperability Continuum	SAFECOM Education & Outreach Committee	In Progress
5	Provide feedback on SAFECOM/NCSWIC Meetings, and request topics for upcoming meetings by emailing the SAFECOMGovernance inbox	SAFECOM Members	In Progress

SAFECOM Meeting Debrief

Ralph Barnett III, Cybersecurity and Infrastructure Security Agency (CISA), welcomed members to the meeting. Chief Gerald Reardon, SAFECOM Chair, thanked members for traveling to Pittsburgh and asked members to share their feedback on the SAFECOM meeting using the feedback forms or by emailing SAFECOM Leadership or CISA directly.

Committee Product Review and Approval

Governance Committee, Captain George Perera, Chair

The Governance Committee recently focused on creating a response to the Government Accountability Office (GAO) Report outlining SAFECOM's membership process. The GAO requested SAFECOM clearly document the process to increase SAFECOM's membership. The Committee plans to include the documented process in the updated *SAFECOM Governance Charter*. The Committee also continued conversations to update the SAFECOM Product Approval Process to ensure every SAFECOM member has an opportunity to review a product before going to the EC. The Committee is in the process of confirming a date for an in-person meeting where the main priority will be updating the *SAFECOM Governance Charter* and by-laws.

Education and Outreach (E&O) Committee, Chief Chris Lombard, Chair

During the recent E&O Committee meeting in Denver, Colorado, on March 27, 2019, members continued to develop the *Public Safety Communications Succession Guide* and discussed a new outreach and engagement tracking form to collect information on SAFECOM's presence in the public safety field. Filming took place during the Pittsburgh meetings for the *SAFECOM Interoperability Video* and Chief Lombard thanked members who agreed to be interviewed.

Chief Lombard also discussed a new idea for a "strike team" concept to help SAFECOM respond faster as time-sensitive issues arise in public safety communications. Members engaged in a discussion on the concept and determined the SAFECOM Governance Committee should explore it and make a recommendation to the SAFECOM EC. Chief Lombard also requested feedback from the SAFECOM EC on whether the SAFECOM Interoperability Continuum should be updated. He noted this is a key product for SAFECOM but some states have developed their own versions of it. Members agreed the E&O Committee should look into potential updates and make recommendations to the SAFECOM EC.

Communications Section Task Force (CSTF), Chief Chris Lombard, Chair

The Incident Communications Advisory Council (ICAC) recently met in San Diego, California, March 19-21, 2019. The Task Force began to weigh three options for changing the organizational structure of the National Incident Management System (NIMS) Incident Command System (ICS). The three options include: 1) adding an Information Technology (IT) Unit to the Service Branch, 2) adding a Communications Branch under the Logistics Sections, and 3) creating a Communications Section. The Task Force has also been engaging with the Federal Emergency Management Agency (FEMA) National Integration Center (NIC) to identify mechanisms for providing feedback on NIMS ICS. During the CSTF Meeting on Wednesday, April 24, 2019, the Task Force reviewed the Auxiliary Communications (AUXCOMM) Position Task Book (PTB), a recommended baseline of standard common training goals for all AUXCOMM personnel.

Funding and Sustainment (F&S) Committee, Lloyd Mitchell, Chair

The F&S Committee held an in-person meeting on March 28, 2019, in Lakewood, Colorado. During the meeting, the Committee focused on prioritizing Committee work products and activities, and held a facilitated discussion on the Emergency Communications Landscape from a funding and sustainment perspective. The Committee continues to work on the *Value Analysis Guide*, which describes common system components, including considerations and features required by public safety agencies that are unique to specific roles of the agency or individuals who will use the equipment. The Committee plans to develop a supplemental factsheet to accompany the *Value Analysis Guide*.

Following the completion of the *Value Analysis Guide*, the F&S Committee plans to update *Funding Mechanism Guide*, originally published in November 2015. This Guide will list funding mechanisms that have been used by states, territories, and localities to support initial capital investments in public safety communications projects, as well as ongoing sustainment and operational costs. In 2020, the Committee plans to focus on best practices and recommendations for Continuity of Operations (COOP), and advocate for public safety agencies to develop and implement COOP plans.

Technology Policy (TP) Committee, Chief Gerald Reardon, Chair

The TP Committee continues to support the Identity, Credential, and Access Management (ICAM) and Next Generation 911 (NG911) working groups. ICAM has four documents related to the adoption of the Trustmark Framework, which the Committee reviewed during their in-person meeting on April 24, 2019. These documents illustrate the value proposition of the adoption of ICAM into public safety communications programs. The

Committee will also continue efforts to support the NG911 Working Group as they finalize the *NG911 Maturity State Self-Assessment Tool*.

The TP Committee will continue to look at various topics within data interoperability and data management and will also continue to follow T-Band as it makes its way through Congress. The Committee will also focus on Inter Sub-System Interface (ISSI)/Console Sub-System Interface (CSSI) efforts and other Land Mobile Radio topics.

Chief Reardon presented the EC with the *Public Safety Ten Keys to Improving Alerts, Warnings, and Notifications* document for SAFECOM EC review and approval. This document was developed by SAFECOM, National Council of Statewide Interoperability Coordinators (NCSWIC), and CISA in collaboration with the Alerts, Warnings, and Notifications (AWN) community to help organizations, Alert Originators, partners, and stakeholders enhance critical information sharing. The *Ten Keys* document provides best practices for enhancing AWN structures by establishing governance; identifying and coordinating with others; developing plans, policies, and procedures; accounting for diverse populations through a whole community approach; maintaining security and resiliency; incorporating internal safeguards to protect against system misuse and prevent false messaging; training, exercises, and systems testing; eliminating issuance and dissemination delays; delivering actionable messaging; and monitoring and correcting misinformation. After brief discussion, Jay Kopstein, SAFECOM EC At-Large, provided the motion to approve the document, with Joe Galvin, NCSWIC, providing the second. The motion passed unopposed.

Dusty Rhoads, CISA, provided updates on the creation of two new working groups under the TP Committee: the P25 CAP AP Working Group and the P25 User Needs Working Group. He noted these two working groups have been previously discussed and will be brought under SAFECOM to ensure appropriate stakeholder input into product and recommendation development. Jim Downes, CISA, stressed the importance of creating these working groups to involve more SAFECOM members and increase the user base. Both working groups would invite subject matter experts (SME) and vendor participation. After brief discussion, Jay Kopstein, provided the motion to approve both working groups, with Jonathan Lewin, Major Cities Chiefs Association (MCCA), providing the second. Kevin McGinnis, National Association of EMS Officials (NASEMSO), abstained; however the motion passed.

Joint SAFECOM/NCSWIC Executive Committee

Wednesday, April 24, 2019

The Joint SAFECOM/NCSWIC Executive Committee had a productive meeting in Pittsburgh! Chief Gerald Reardon, SAFECOM Chair, and Joe Galvin, NCSWIC Chair, both noted their appreciation for the thoughtful agenda and excellent presentations during the meetings. Members discussed the ongoing challenges in improving interoperability, including funding and personnel, and the ways SAFECOM and NCSWIC can continue to help the community overcome those challenges. Assistant Director Ron Hewitt, CISA, provided an update on the NECP revision which received significant input from SAFECOM and NCSWIC members. A motion was made, seconded, and unanimously passed for SAFECOM and NCSWIC to endorse the current draft NECP. Joe Galvin read a letter of endorsement which was then signed by him and Chief Reardon. Members then discussed the SAFECOM Interoperability Continuum and the need to consider updating it as one of the program's legacy products. Finally, members offered feedback on scheduling for the next Joint SAFECOM/NCSWIC In-Person Meeting scheduled for November 4-9, 2019, in Atlanta, Georgia.

SAFECOM Community Updates

Chief Reardon shared his recent experience working on the Boston Marathon and how he saw the positive influence of SAFECOM in their communications process. He noted the process still has room for improvement but has improved tremendously in the last five years.

Kevin McGinnis discussed recent developments in the emergency medical services (EMS) field with telemedicine and emergency treatment triage and transport. Several pilot programs have been established for emergency medical dispatch centers which allow ambulances to transport people to care centers rather than hospitals. Jon Olson, National EMS Management Association (NEMSMA), noted the positive impact the pilot has had in his county on both budget and personnel.

John Miller, NCSWIC, thanked SAFECOM for its efforts to support Statewide Interoperability Coordinators (SWIC) in recent grant guidance.

Jay Kopstein mentioned recent communications failures in New York and the lessons learned about including vendors in communication operations plans. Sridhar Kowdley, DHS Science and Technology Directorate, noted many people do not fully understand what they are getting when they buy FirstNet. Members agreed additional education is needed in the field as more agencies transition to FirstNet.

Future Meetings

- *ICAC In-Person Meeting: June 11-12, 2019; Sacramento, California*
- *SAFECOM Governance Committee In-Person Meeting: July 17-18, 2019; Miami, FL*
- *ICAM Pilot Demonstration: August 7, 2019; Chattanooga, TN*
- *SAFECOM EC Conference Call: August 8, 2019; 2:00-3:00 PM ET*
- *Information Sharing Framework Task Force In-Person Meeting: August 11, 2019; Baltimore, MD (Tentative)*
- *Fall Public Safety Strategic Collaboration Meeting: November 4-8, 2019; Atlanta, Georgia*

Participants

SAFECOM Members	
Darryl Anderson	SAFECOM At-Large, Stark County Sherriff's Office
Bill Bamattre	Metropolitan Fire Chiefs Association (Metro Chiefs)
Sean Britton	National Association of Emergency Medical Technicians (NAEMT)
Mark Buchholz	SAFECOM At-Large, Willamette Valley 9-1-1
Chris Carney	SAFECOM At-Large, Orange County (NY) Department of Emergency Services
Steve Cassano	National Association of Regional Councils (NARC)
Anthony Catalanotto	SAFECOM At-Large, Fire Department of New York
Rick Comerford	International Association of Emergency Managers (IAEM)
Anton Damm	Forestry Conservation Communications Association (FCCA)
Michael Davis	SAFECOM At-Large, Ulster County 9-1-1 Emergency Communications
Jeremy DeMar	SAFECOM At-Large, Springfield Emergency Communications Department
Len Edling	SAFECOM At-Large, Merrionette Park Fire Department
Sean Fensterwald	SAFECOM At-Large, Fairfax County Fire and Rescue
Paul Fitzgerald	National Sheriffs' Association (NSA)
Joe Galvin	National Council of Statewide Interoperability Coordinators (NCSWIC)
Ashley Gonzalez	SAFECOM At-Large, City of Houston- Public Safety Radio

Dan Henry	National Emergency Number Association (NENA)
Tracey Hilburn	Association of Public-Safety Communications Officials International (APCO)
Mark Hogan	SAFECOM At-Large, City of Tulsa
Michael Jacobson	SEARCH The National Consortium for Justice Information and Statistics
Jay Kopstein	SAFECOM At-Large, NYS Division of Homeland Security & Emergency Services
Jonathan Lewin	Major Cities Chiefs Association (MCCA)
Tom Ling	SAFECOM At-Large, Kalispel Tribal Public Safety Department
Chris Lombard	The InterAgency Board for Emergency Preparedness & Response (IAB)/SAFECOM At-Large, Seattle Fire Department
Walt Magnussen	SAFECOM At-Large, Texas A&M University
Philip Mann	American Public Works Association (APWA)
Kevin McGinnis	National Association of State EMS Officials (NASEMSO)
Ferdinand Milanes	American Association of State Highway and Transportation Officials (AASHTO)
John Miller	NCSWIC
Lloyd Mitchell	FCCA
Michael Murphy	SAFECOM At-Large, Baker, Louisiana Police Department
Jon Olson	National EMS Management Association (NEMSMA)
Paul Patrick	SAFECOM At-Large, Utah Department of Health/NASEMSO
George Perera	SAFECOM At-Large, Miami-Dade Police Department
Gerald Reardon	SAFECOM At-Large, City of Cambridge (MA) Fire Department
Colin Rizzo	SAFECOM At-Large, Port of Houston Authority
Patrick Rollins	National League of Cities (NLC)
J.M. Rowe	SAFECOM At-Large, Arkansas Department of Emergency Management
Penny Rubow	SAFECOM At-Large, Arkansas Wireless Information Network
Theron Rutyna	National Congress of American Indians (NCAI)
Charlie Sasser	National Association of State Technology Directors (NASTD)
Steve Staffier	SAFECOM At-Large, Massachusetts Port Authority
Chad Steffen	SAFECOM At-Large, City of Red Wing & Lower Sioux Indian Community
John Stevens	SAFECOM At-Large, New Hampshire Department of Safety
John Sweeney	National Criminal Justice Association (NCJA)
Adam Thiel	Metro Chiefs
John Vallarelli	SAFECOM At-Large, Metropolitan Transportation Authority Police Department
Steve Verbil	SAFECOM At-Large, Division of Statewide Emergency Telecommunications
Keith Victor	SAFECOM At-Large, Town of West Hartford, CT
Dana Wahlberg	National Association of State 911 Administrators (NASNA)
Holly Wayt	APCO
Karen White	National Association of Telecommunications Officers and Advisors (NATOA)
Absent Members	
Douglas Aiken*	National Public Safety Telecommunications Council (NPSTC)
Brandon Allen	International Association of Fire Chiefs (IAFC)
Larry Amerson	National Sheriffs' Association (NSA)
Evelyn Bailey	National Association of State 9-1-1 Administrators (NASNA)
Eric Boyette	National Association of State Chief Information Officers (NASCIO)
Paul Downing	SAFECOM At-Large, Passamaquoddy Tribe at Indian Township
Andrea Eales	American Public Works Association (APWA)
Michael Garcia	National Governors Association (NGA)
Terry Hall	National Association of Counties (NACo)
John Holiday*	National Governors Association (NGA)

Jeffrey Knight	International Municipal Signal Association (IMSA)
Gary McCarraher*	International Association of Fire Chiefs (IAFC)
Yucel Ors	National League of Cities (NLC)
Eddie Reyes	International Association of Chiefs of Police (IACP)
Brad Richy	National Emergency Management Association (NEMA)
Paul Szoc	International Municipal Signal Association (IMSA)
Marilyn Ward	National Public Safety Telecommunications Council (NPSTC)
Laura Waxman	US Conference of Mayors (USCM)
Danae Wilson*	NCAI

* Excused

Guests and Speakers

Nicole Artisst	Loudon County Fire and Rescue Department
Wynn Brannin	New Mexico SWIC
Kenzie Capece	FirstNet
Jeff Carl	AT&T
John Contestabile	John's Hopkins University, Applied Physics Laboratory
Thomas Crabbs	Virginia SWIC
Budge Currier	California SWIC
Dan Czaja	Connecticut Department of Emergency Services and Public Protection
Santiago Garces	City of Pittsburgh
Anna Gomez	Wiley Rein LLP
Chuck Grindle	National Governors Association (NGA)
Richard Jackson	City of Tulsa
Karen Lightman	Carnegie Mellon University
Michael Ogata	National Institute of Standards and Technology
Mike Sprague	New York SWIC
Ed Tinsley	Montana SWIC
Jacque Miller-Waring	FirstNet
John Peha	Carnegie Mellon University
Leonard Weiss	University of Pittsburgh
Charles Werner	National Public Safety Council of Unmanned Aircraft Systems
Mark Wrightstone	Pennsylvania SWIC

Federal Members

Ralph Barnett, III	Cybersecurity and Infrastructure Security Agency (CISA)
Robin Beatty	CISA
Don Bowers	CISA
Ken Bradley	CISA
Billy Bob Brown	CISA
Rob Dew	CISA
Jim Downes	CISA
Laurie Flaherty	Department of Transportation
Mark Grubb	CISA
Ron Hewitt	CISA
Jerry Jaskulski	CISA
Ted Lawson	CISA
Sridhar Kowdley	Department of Homeland Security Science & Technology Directorate
Alan Massie	Federal Bureau of Investigation (FBI)
Brenda McMahon	CISA

Sarah Ellis-Peed	CISA
Dusty Rhoads	CISA
Wes Rogers	CISA
Adrienne Roughgarden	CISA
Gleason Rowe	CISA
Eric Runnels	CISA
Lauren Strange	CISA
Deante Tolliver	CISA
Linda Ward	CISA
Breanna Bock-Nielsen	CISA Support
Julie Brunelle	CISA Support
Tom Febrey	CISA Support
Ryan Felts	CISA Support
Kameron Gonzalez	CISA Support
Britany Higdon	CISA Support
Ali Jordan	CISA Support
Mollie Leinson	CISA Support
Vernon Mosley	CISA Support
Marie Risser	CISA Support
Ian Ross	CISA Support
Tara Shone	CISA Support
Nicole Ugarte Swanson	CISA Support
Steve Young	CISA Support