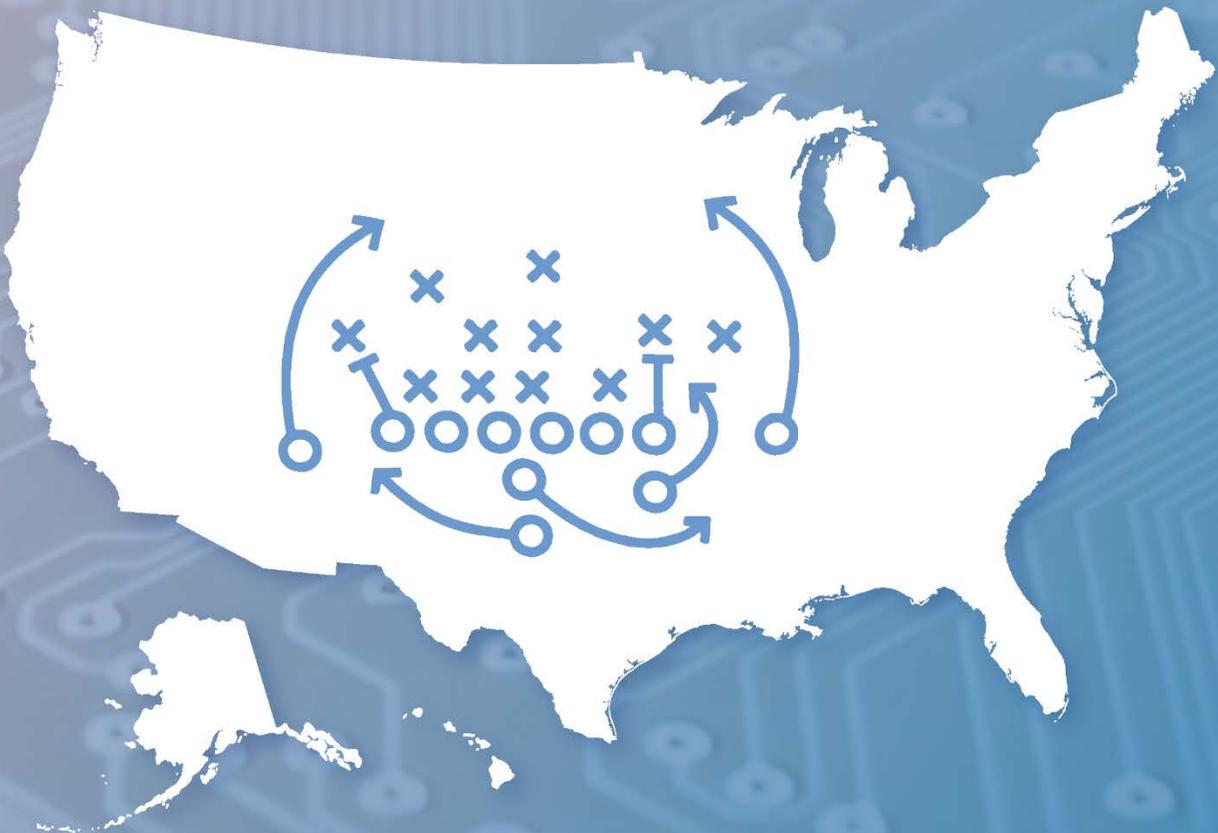The National 911 Program

NEXT GENERATION 911 INTERSTATE PLAYBOOK

Chapter 3

Implementing State-to-State 911 Connectivity: Lessons Learned, Challenges, and Opportunities

Collaboration, Coordination and Partnership Guidance to Enhance Next Generation 911 Migration and Implementation
Metropolitan Washington Council of Governments regional approach to joint system planning and implementation

911.gov

Chapter 3

Metropolitan Washington Council of Governments

REGIONAL COLLABORATION AND NG911 INTEROPERABILITY
PLAYBOOK

Prepared August 2020

National 911 Program Office

CHAPTER 3

NEXT GENERATION 911 INTERSTATE PLAYBOOK

The **Next Generation 911 Interstate Playbook, Chapter 3** focuses on a new region of the country, the Metropolitan Washington Council of Governments (MWCOG) region, and its collaboration and Next Generation 911 (NG911) Interoperability project. This chapter traces the steps and processes followed by some counties within the state of Maryland, the commonwealth of Virginia, and the District of Columbia (D.C.) to collectively plan and independently procure an integrated, interoperable regional solution for Next Generation Core Services (NGCS) and an Emergency Services Internet Protocol (IP) network (ESInet).

LESSONS LEARNED

By documenting and chronicling MWCOG's processes and challenges, the lessons learned can be replicated to assist other regional applications in advancing the transition to NG911. The challenges of the participants are a microcosm of what other states and local jurisdictions can expect to experience.

HOW DOES CHAPTER 3 OF THE INTERSTATE PLAYBOOK HELP YOUR STATE OR REGION?

The successes and lessons of the MWCOG region include perspectives, insights, knowledge, and wisdom that can provide guidance to other parts of the nation and can be useful in paving the way for smoother transitions and more effective implementations of NG911.

Chapter 3 provides valuable and replicable experiences, lessons learned, and best practices for progress in your state or your region.

WHAT CAN BE LEARNED ABOUT NG911 INTERCONNECTION IN YOUR STATE OR REGION?

Follow the experiences of participating 911 jurisdictions outlined in the Interstate Playbook to learn about effective procurement practices, lessons of collaborative decision-making, useful public-private partnerships, coordinated financial sharing models, and integrating federal and military installations into your NG911 solution.

WANT TO LEARN MORE?

Chapter 3 of the Interstate Playbook wouldn't have been possible without the leadership and assistance of regional 911 directors and coordinators from Maryland, Virginia, and D.C. and their support partners.

For more information on the Interstate Playbook, including Chapters 1 and 2, visit www.911.gov, or contact the National 911 Program at nhtsa.national911@dot.gov.

Table of Contents

1. Introduction

The Metropolitan Washington Council of Governments (MWCOG) Regional Collaboration and Next Generation 911 (NG911) Interoperability Playbook, Chapter 3 of the *Interstate Playbook*, traces the steps and processes followed by several counties within the state of Maryland, the commonwealth of Virginia, and the District of Columbia (D.C.) to collectively plan and independently procure an integrated, interoperable regional solution for Next Generation Core Services (NGCS) and an Emergency Services Internet Protocol (IP) network (ESInet).

By documenting and chronicling MWCOG's discussion, processes, and challenges, the lessons learned can be replicated to assist other regional applications across the 911 community to advance implementation of NG911. The challenges of the participants are a microcosm of what other states and local jurisdictions can expect to experience. The successes and lessons detailed in this chapter contain perspectives, insights, knowledge, and experience that can provide guidance to other parts of the nation and can be useful in paving the way for smoother transitions and more effective implementations of NG911.

1.1. Metropolitan Washington Council of Governments

Founded in 1957, MWCOG is an independent, nonprofit association with a membership of 300 elected officials from 24 local governments in the metropolitan area of Washington, D.C., the Maryland and Virginia state legislatures, and the United States (U.S.) Congress. MWCOG is supported by financial contributions from its member governments, federal and state grants and contracts, and donations from foundations and the private sector.

MWCOG brings 911 leaders, police chiefs, fire chiefs, emergency managers, and other leaders together as part of its work to strengthen regional public safety coordination, homeland security planning, and emergency communications. MWCOG is comprised of 24 jurisdictions and 18 emergency communications centers (ECCs).[1] MWCOG's structure and its working committees help the region address common issues in a coordinated manner.[2]

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[1] Also referred to as public safety answering points (PSAPs)
[2] https://www.mwcog.org/public-safety-and-homeland-security/program-areas/emergency-communication/

Figure 1: MWCOG Jurisdictions

The 24 government jurisdictions within MWCOG serve over 5.5 million citizens and hundreds of thousands of employees and visitors, who travel in and out of the area daily. The ability to obtain, communicate, and share information during emergencies is critical, especially in a region as large and complex as metropolitan Washington. Past incidents—most notably 9/11, which was the longest and largest mutual command incident recorded by the agencies in the region—highlighted the need for officials to receive rapidly changing information and quickly connect with each other to coordinate decisions across various local, state, and federal agencies.

Mutually, it was realized by MWCOG jurisdictions and some nearby outlying counties that being part of the same technical solution would be the most beneficial to all concerned from a cost and efficiency perspective—if all jurisdictions that share circuits transitioned together to NG911. Examples of this collaboration include Calvert and St. Mary's counties in Maryland being included in the NG911 effort because they share Enhanced 911 (E911) circuits with Charles, Prince George's, and Montgomery

counties.[3] Thus, these counties participate in the effort, expanding the footprint of NG911 transition beyond the jurisdictions within MWCOG proper.

Of further importance, as there are three different government structures (commonwealth, district, and state) represented within MWCOG and the National Capital Region (NCR) [4], there is a strong need for communicating emergency information within and across these distinct organizational structures as well as with neighboring jurisdictions.

1.2. Acknowledgements

The National 911 Program wishes to gratefully acknowledge the participation in this effort of the MWCOG 911 Directors Committee, including chair Tony Rose, Chief, Charles County Department of Emergency Services; and vice chairs Karima Holmes, Director, Office of Unified Communications, D.C.; and David Mulholland, Administrator, Arlington County Emergency Communications Center. They, along with all the members of the 911 Directors Committee, were essential in bringing various agencies and entities together to embrace a unified approach and collaborative endeavor. Appendix A lists members of the 911 Directors Committee.

> The need for immediacy and coordination is recognized and embraced in a manner that creates a team with a shared vision.

The efforts of these identified 911 professionals—who set a goal, patiently worked through the challenges, coordinated the effort of government decision-makers, fellow 911 authority directors, vendors, and service providers, and exhibited great diligence during endless meetings and conference calls—are much appreciated on behalf of the greater 911 community, which will benefit from the experiences and lessons learned documented in this chapter.

The participation of other leaders in the Metropolitan Washington region such as Steve Souder, former director, Department of Public Safety Communications, Fairfax, Virginia, and the first chair of the MWCOG 911 Directors Committee (retired), and Steve McMurrer, 911 System Administrator, Department of Public Safety Communications, Fairfax, Virginia, cannot be overlooked. Without their vision, passion, and perseverance for collaborative approaches, none of what has been accomplished in

[3] While not considered part of MWCOG, Fauquier County, Virginia, (like Calvert and St. Mary's counties) borders key MWCOG agencies, which is why it has been included in the NG911 effort.
[4] 32 CFR §724.120, National Capital Region (NCR), defines the NCR as "The District of Columbia; Prince Georges and Montgomery Counties in Maryland; Arlington, Fairfax, Loudoun, and Prince William Counties in Virginia; and all cities and towns included within the outer boundaries of the foregoing counties."
https://www.govregs.com/regulations/expand/title32_chapterVI_part724_subpartA_section724.120

the region would have happened. The support vendors and the 911 service providers—including Verizon and its representative, Tony Montani, who became an ally and helped work through the issues in a transparent and candid manner—also are acknowledged and appreciated for solidifying a public-private partnership that paved the way for other carriers to participate.

While this document contains the names of companies and agencies that participated in the MWCOG Regional Collaboration and NG911 Interoperability Playbook development, their inclusion does not represent an endorsement of any kind.

2. MWCOG Regional Collaboration and NG911 Interoperability Playbook: What Can We Learn?

MWCOG became focused on working collaboratively on an NG911 technical solution for emergency communications in June 2012, when a derecho weather incident impacted the region severely. The progressive derecho storm tracked across a large section of the midwestern U.S. before it crossed the central Appalachian Mountains into the mid-Atlantic states on the afternoon and evening of June 29, 2012, and continued into the early morning of June 30, 2012. It resulted in 22 deaths, millions of power outages, and a damage total of $2.9 billion—damages exceeding all but that of the top 25 Atlantic tropical cyclones.

Seventy-seven 911 centers (also known as ECCs), serving more than 3.6 million people in six states, lost some degree of connectivity, including vital information on the location of 911 callers, mostly due to service provider network problems. Seventeen ECCs in three jurisdictions, including the Cities of Manassas and Manassas Park secondary ECCs, Prince William County, the City of Arlington, the City of Alexandria, and Loudoun County were impacted to varying degrees, affecting the ability of more than two million people to reach 911 at all.

According to a report of the Public Safety and Homeland Security Bureau, Federal Communications Commission (FCC), dated January 2013, 911 communications were disrupted in large part because of avoidable planning and system failures, including the lack of functional backup power, notably in the service providers' central offices.[5] Monitoring systems also failed, depriving communications providers of visibility into critical network functions. In most cases, these 911 issues and other problems could and

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[5] "Impact of the June 2012 Derecho on Communications Networks and Services," Public Safety and Homeland Security Bureau, Federal Communications Commission, January 2013. https://transition.fcc.gov/Daily_Releases/Daily_Business/2013/db0110/DOC-318331A1.pdf

would have been avoided if service providers had followed industry best practices and available guidance.

The derecho highlighted that 911 legacy systems currently in place within the MWCOG region were insufficient. The infrastructure that delivers 911 calls to ECCs failed. The legacy 911 systems were dated and timeworn, had gaps in service capabilities (e.g., inflexibility of network recovery systems), and presented unconsidered issues that clearly needed to be addressed sooner rather than later. NG911 migration was a necessity. The storm became a catalyst to change and advanced a regional migration effort to produce the best possible outcome for the communities of the region. While many of the ECCs coordinated public safety communications and response services on many levels prior to this event, the 911 Directors Committee was born out of the need to work collaboratively with infrastructure vendors to determine the root cause of the failures, identify vulnerabilities, and chart a course forward to reduce the possibility of a recurrence in the future.

Fairfax County, the most populous county in the MWCOG region, agreed to devote resources and expertise to the collaboration by developing a request for proposals (RFP) for Fairfax County that would be available for all to use. Any jurisdiction in the MWCOG region could use the Fairfax County RFP to purchase its own segment of the system, which allowed each entity to include its own requirements.

By employing a master RFP, the interconnectivity and interoperability of all systems would be assured and each jurisdiction could customize its portion of the system to meet the needs of its community and operational structure. Demarcation points for both technical connections and cost allocation easily are identified. In addition, because local 911 jurisdictions can design their own portion of the system, operations and community services are not compromised.

The objectives of this regional approach to planning and procuring an NG911 system were to engage in meaningful dialogue about the benefits of regional approaches and to discover opportunities that might improve the response to emergencies in the region. At the same time, becoming knowledgeable about the challenges of migration would help all 911 jurisdictions better prepare and provide a smooth transition process.

Our region is so big and so complex that no one entity can do this *[NG911 implementation]* alone; we had to do it together. Six million people were counting on us to get it right, and we had one shot to get it right."

-Tony Rose, Chief, Charles County Department of Emergency Services, 911, and Chair MWCOG 911 Directors Committee

The intent was to engage all members of the region—even if they were not ready to transition at the same time—in order to educate them as part of the effort; thus, when they were ready to begin migration planning, a path and various challenges had been identified. It also was important to

the group that they include counties that were not necessarily a part of the designated MWCOG, but were considered critical jurisdictions to be a part of the solution. These counties, which border (both by land and shared waterways) the identified regional jurisdictions, often transfer calls among each other and were included because of shared 911 infrastructure.

Providing lessons learned from this process to others would help accelerate NG911 implementation.

3. Starting from "WHY"

3.1. It's in Their Response DNA

States were formed initially to be autonomous. Boundaries were created long before it was envisioned that close collaboration would be essential to effective emergency response and event management. The MWCOG jurisdictions have a long and rich history of working together due to being an enormous, complex area. Their proximity to one another surrounding the seat of federal government, and the experiences they share because of this, requires close working relationships.

When an event, major or minor, happens in the region, each entity is impacted. The jurisdictions soon realized that NG911 is not just a technology project, but rather a tool that would provide an approach to collaborative and cohesive communication, preparedness, and incident response requiring new methods of doing things. These new perspectives and methods that are evolving out of MWCOG's NG911 transition are enriching its already extensive history of multiple different jurisdictions working together.

Prior to the 2012 storm, the jurisdictions in the MWCOG region experienced the benefits of traditional mutual aid between response agencies: police departments worked well together, and fire services and emergency medical services (EMS) cooperated readily. Communications centers collaborated much like fire, EMS, and law enforcement, but 911 was not a priority consideration until the derecho.

The biggest impact of the 2012 derecho storm was on 911 systems. Every governmental entity that is a part of MWCOG was affected by the storm. The resulting failure of communications systems they all relied on to answer and process millions of 911 calls annually led public-safety leadership to think about the necessity to do more at a regional level—at a council of governments (COG) level—for 911 network integration.

3.2. It's Part of Their Support System

The definition and purpose of a COG is to provide planning, coordination, and technical assistance on issues that are of mutual concern across jurisdictional boundaries in a productive and efficient manner: regional approaches to issues involving transportation, water management, coordinated public safety,

communications, environmental concerns, and community development. MWCOG encourages and supports collaboration among partner entities.

For mutual communications issues across the region, MWCOG has a 911 Directors Committee responsible for keeping the MWCOG jurisdictions, 911 stakeholders, and other associated stakeholders informed and aware of the issues and needs jointly shared by the 911 agencies in the region. By conducting regional-level discussions and planning for impact, the regional entities coordinated technical and operational solutions and discussed obstacles and challenges collectively. Passing that knowledge on to decision-makers helped to keep everyone engaged in the issues and working collectively toward solutions.

The level of confidence in the expertise of the 911 Directors Committee was enhanced through regular communication briefings with the Homeland Security Executive Committee (HSEC), the Chief Administrative Officer Committee of MWCOG, and interested NCR stakeholders regarding important issues, updates on progress toward goals, and demonstration of fiscally responsible projects. This knowledge and accountability have been instrumental in solidifying, for the 911 agencies, the accessibility and accountability needed to safeguard the communities they serve. The collaborative expertise developed between MWCOG and the 911 Directors Committee contributes greatly toward achieving support for new and ongoing efforts recommended by the 911 Directors Committee.

3.3.   It's About The Call

"At the end of the day," the focus is on the 911 caller and the service the caller receives. Service needs to be seamless—whether the call is answered in D.C., Virginia, or Maryland. While separate and autonomous in many aspects, when it comes to emergency call handling and response, MWCOG desires to operate as a cohesive unit. This vision supports the need for a consistent, standardized, and coordinated response to critical incidents.

Following discussion with the principal 911 leaders in MWCOG about how they came to achieve such great success in their coordinated efforts, several notable factors stood out. It must be stated in advance that this level of coordination did not happen overnight, it is not a static process, nor is it a "one-size-fits-all" approach. Indeed, on any given project, one regional entity may be more motivated than the others, or the need may be greater for its specific operation, thus causing one jurisdiction to take a lead role in the effort. Almost like a flock of geese flying south for the winter, the leadership on a project may switch from one leader to another throughout the project lifecycle as the need or passion for the outcome changes or becomes more focused.

Some motivating factors expressed by MWCOG include:

Cost Savings

- There is usually a potential for cost savings when projects are done collaboratively.

Access to Increased Funding

- Replicating previous success with regional grants has demonstrated that grantors are more willing to provide funding to collaborating entities with proven positive track records.

Shared Experiences and Lessons Learned

- What one entity experiences in the way of challenges or issues, they all experience eventually.

Shared Success

- Regional 911 leadership recognizes they "are all in this together" and where one entity succeeds, they all succeed.

Collaborative Efforts Equal the Best Outcome

- COGs, by nature of what they do and why they exist, encourage collaborative projects.

Figure 2: Motivating Factors

The experiences of MWCOG include not just a technology project that involves applying equipment or policy to an issue. It is a ***collaborative and cohesive response approach*** to addressing significant issues, requiring resolution in a highly visible region. The need for immediacy and coordination is recognized and embraced in a manner that creates a team with a shared vision.

3.4. It's Their History

MWCOG's 911 leaders report that part of the fabric of what brought them together is the historical work of public safety in the region.

Their long history of collaboration on a number of incidents resulted from two major events that occurred within 30 minutes of one another on January 13, 1982—the Air Florida Flight 90 crash into the 14th Street Bridge and the New Carrollton Metrorail crash. These two significant back-to-back incidents led to collaborative efforts such as desktop exercises, emergency management functions, training, and mutual-aid response to manmade and natural multiple-casualty incidents.

September 11, 2001 was another turning point for greater coordinated response, resource sharing, and increased collaboration related to technology and radio communication by many agencies across the country. MWCOG agencies were especially involved due to their proximity to the federal seat of power and the locations in their service area.

Collaboration over the years has cemented relationships between departments and demonstrated not only an ability but a desire to effectively plan, train, and respond in a coordinated manner—illustrating, yet again, that they are all in this together.

Collaboration does not mean that individual agencies' or departments' standards of care or internal policies are compromised. It sometimes means that the agencies share processes, protocols, and policies to realize a more common approach. However, while standardization is sought, any specific agency's methods and needs are never co-opted.

NG911 has moved the region closer to standardization through systems and operational policies. The regional ESInet processes, policies, and training standards are—at a high level— similar, and all MWCOG jurisdictions are working to standardize across the three state-level jurisdictions of D.C., Maryland, and Virginia. There is a strong desire on the part of 911 leadership in all three jurisdictions to not replicate the siloed systems of the past, but rather to view processes in a more collaborative approach.

Fairfax County

On June 3, 2020, the Fairfax County Department of Public Safety Communications completed its migration to a national ESInet, marking the first of more than a dozen jurisdictions across the NCR to complete this multi-year endeavor. The ESInet solution provides multiple layers of redundancy and enables new feature functionality, such as geospatial call routing, which was previously unattainable in the E911 environment. In its first days of operation, the ESInet service was able to obtain wireless caller location fast enough to route based on the latitude and longitude of the caller in approximately one out of every four calls. In the next nine months, this functionality will be deployed in a majority of the ECCs in the NCR, which will have a direct positive impact on the volume of call transfers occurring throughout the region—potentially preventing thousands of call transfers from having to occur, resulting in faster response times and more lives saved.

The major driver for the NCR's NG911 initiative—which includes jurisdictions from Maryland, Virginia, and D.C.—is the ability to interoperate 911 voice and data across state and district boundaries. This initiative first began in 2015 with a vision to share call-taking capability across jurisdictions when neighboring ECCs were incapacitated due to natural or manmade disasters. The ESInet provides the region with the functionality to utilize the policy routing function to distribute calls based on pre-configured call routing rules driven by a common, GIS dataset—a dataset the region has been collaborating on since early 2015.

Fairfax County, Virginia's most populous, was the first step in a $58 million statewide project.

Upon launching its NG911 project in 2018, funded by 911 surcharges, the Commonwealth set a deadline to migrate all call centers to NG911 by June 30, 2023. State officials observed and participated in the Fairfax County procurement as members of the technical advisory committee. This afforded Dorothy Spears-Dean, Virginia's interim Integrated Services Program (ISP) director, with great insights on procurement and collaboration between state and local government that enabled a jump-start for the commonwealth-wide project.

Jurisdictions across the commonwealth have been observing Fairfax County's migration process and learning from its deployment process. While other jurisdiction's migration to NG911 won't necessarily be easier, Fairfax County's lessons learned should enable more efficient services deployment for others.

4. Champion Advocates Create Energy and Motivate Others

A Champion Advocate is the influencer within an organization implementing a project who, informally, takes on the burden of ensuring everyone involved is on board; ultimately, they are behind the success of the project. They are responsible for:

- Identifying a project's strategic objectives

- Working with the project team to ensure the vision for the project is successfully translated into the requirements and solution design

- Critically analyzing and ensuring best practices and standards are adopted

- Identifying and eliminating obstacles that may threaten a project's viability

- Prioritizing project phases and advocating on structure and management

- Relaying timely updates to all key stakeholders

- Acting (often) as spokesperson or representative of the group mission, ideas, or requests

- Allocating and organizing (appropriately) internal resources to ensure the successful completion of an implementation or adoption of a project

A champion is the unfeigned, authoritative, and, at times, truth-telling supporter of a project.

A bona fide Champion Advocate is typically a member of senior management or critical expertise that strengthens a project's value by adding their formidable experience to the mix, accurately and efficiently delivering project success.[6]

The MWCOG region is fortunate to have a core group of people from each jurisdiction that have exhibited "champion" leadership qualities. It is through the passion and clear vision of the Champion Advocate that all members of the region gain inspiration and work together. This is not an assigned role, like a project manager or a group convener. In most cases, the champion emerges because of their history with other members of the group, or the respect or status they possess within the group. In the case of the MWCOG region, the de facto Champion Advocate is a

> "Start with the end in mind."
>
> -Steve McMurrer, ENP
>
> 911 System Administrator, Fairfax, VA

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[6] See also Chris Miles, "The Project Champion: A Management Best Practice" (December 18, 2013) https://smallbiztrends.com/2013/12/what-is-a-project-champion.html

member of the team that others turn to for guidance and perspective. They have the respect of their colleagues: when they speak or provide a viewpoint, others pay close attention because their wisdom is based on experience that all can benefit from.

Sometimes, as is the case in the MWCOG region, there is more than one champion or influencer. The collective experience of project leaders has been honed by frequently being at the center of issues at various levels in the region (e.g., ongoing high-level security needs related to federal government activity, the Pentagon attack on 9/11, the I-95 sniper, the Potomac River plane crash, and the 911 outages caused by the derecho storm).

Champion Advocates at various levels are important and significant to successful collaboration.

Local
- A person who understands the landscape and the interworkings of interoperability among the jurisdictions

Governmental
- A person who understands governmental workings and undestands the need for governance to ensure a smooth transition and maintenance of the programs

Technology
- A person who understands the technology each jurisdiction has and what upgrades need to occur

Geographic Information Systems (GIS)
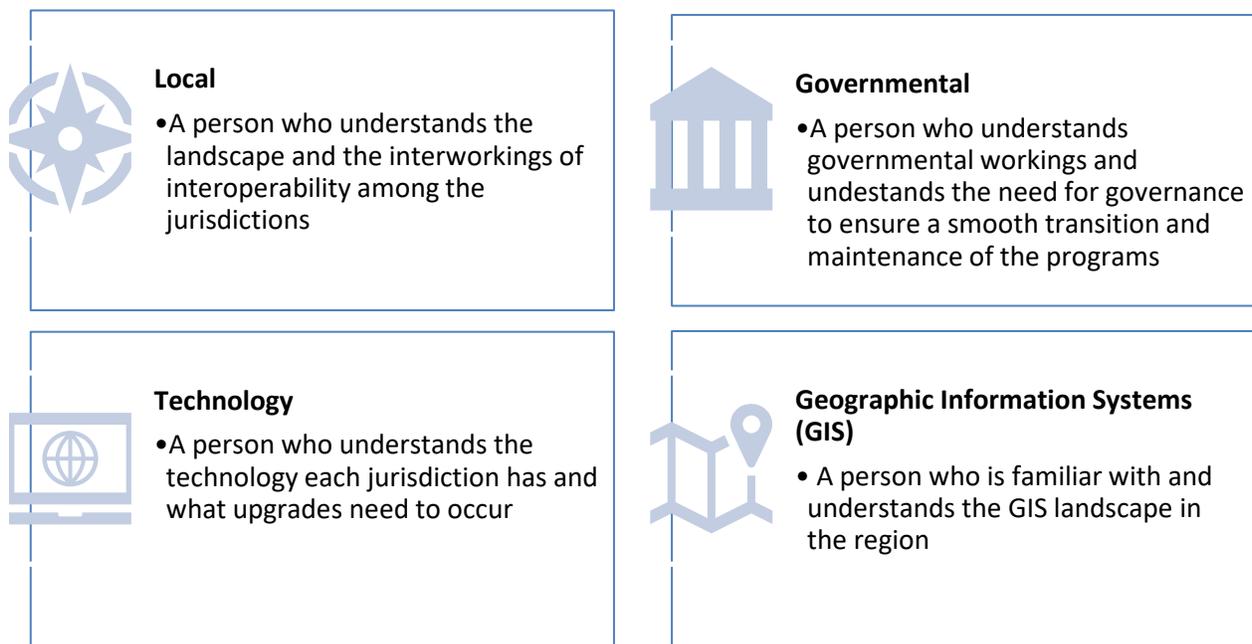- A person who is familiar with and understands the GIS landscape in the region

Figure 3: Champion Advocates at Many Levels

Considerations and Best Practices
- You need champions on many levels.
- Harness the passion and allow the champion to inspire others.
- The champion keeps everyone's eyes on the end goal.

Key Focus Points
- ➢ It is through the passion and vision of the champion(s) that all members of the region receive inspiration and work together.
- ➢ Do not underestimate the power of a champion to influence, motivate, and move people to action or participation.

5. Because "Failure is not an Option:" Maximizing Regional Coordination

Anyone in MWCOG who has been through this process will likely concur that regional coordination can be as complex as the people and organizations who comprise the project team. The MWCOG project was unique in that the team started with a blank slate. While they had ideas of what the end result would look like, there were numerous unanswered questions, as this was one of the first joint projects of this type in the region.

No one had done this type of NG911 project before, and no one had any pre-existing experience, so all ideas and concepts were valid until determined to be otherwise. On previous projects, such as implementation of a regional computer-aided dispatch (CAD) system or regional radio network, the people coming to the table had experience they brought with them. Not so with the transition to NG911. Clarity in defining the end goal was essential as new territory was being explored.

> "We have to do this . . . defeat is not an option."
>
> -Tony Rose, Chief, Charles County Department of Emergency Services, 911, and Chair MWCOG 911 Directors Committee

5.1. Regional Coordination

As a region, MWCOG brought key stakeholders and 911 leaders together to solicit ideas about what step one should be and to define their collective goals and desired result. Regional coordination efforts included:

- Executive stakeholder education

- Assessment of local/state policies and procedures

- Development of memoranda of understanding (MOUs)

- Development of talking-point papers and informative one-pagers

- NG911 presentations at the jurisdiction- and COG-level

Local and federal grants supported the NCR's efforts, with primary coordination facilitated by an NG911 subcommittee within the MWCOG 911 Directors Committee.

Grants, by their nature, have a certain administrative burden to consider. However, grants create incentive for jurisdictions to participate in a project if the funding can help jump-start needed activity.

Considerations and Best Practices
- Set expectations that the project is long-term and may take years to complete.
- Educate that achieving NG911 is a multi-phase effort.
- The balance between customization to individual agency needs and standardization for operational effectiveness will be important.
- Demonstrate progress along the way; celebrate successes.

Key Focus Points
- ➢ Regional coordination takes hard work and dedication.
- ➢ Funding the regional achievement requires an eye on the horizon: a long view (for what's coming) and a broad view (beyond a single agency).

6. Roles and Responsibilities

In any collaborative effort, clearly defined roles and responsibilities are essential to establish lines of reporting authority, jurisdictional autonomy, and task assignment, as well as to clarify levels of responsibility in the region.

To establish effective regional policy and governance for their interoperative system(s), the 911 Directors Committee formed an NG911 subcommittee. This subcommittee is composed of operations-level individuals from the region's ECCs. The role of the subcommittee is to lead the coordination effort on behalf of the 911 Directors Committee; it serves as a critical component of an effective regional oversight structure.

The NG911 subcommittee focuses on the advancement of public safety communications in the region and makes recommendations to the 911 Directors Committee. The subcommittee is specifically focused on implementing NG911 capabilities at the operations level and helping to establish a clear direction on decisions made and considerations taken along the path to NG911.

Committed to the concept that NG911 implementation should not be operated as a silo, the 911 directors continue to utilize their current governance structure to coordinate policies and procedures between and among agencies who rely on each other for call handling in overflow conditions; to address fair and equitable cost allocation for shared network elements and system access; to jointly develop standards for the benefit of operational effectiveness between agencies; and to ensure technology interoperability.

Considerations and Best Practices
- Coordinate policies and procedures.
- Cost allocation must be addressed honestly.

Key Focus Points
- ➢ Do not underestimate the importance of jurisdictional autonomy.
- ➢ Regional governance policy is critical.

7. Managing Stakeholder Expectations

Managing stakeholder expectations and developing the appropriate communication flow was a high priority goal of the 911 Directors Committee and MWCOG leadership. Consistent messaging and transparency are highly regarded.

To achieve the goal of consistent messaging and transparency, the 911 Directors Committee conducted regular work group meetings where attendance was open to interested parties, open discussion was encouraged, and vendors held presentations. Additionally, the 911 directors consistently circulated meeting minutes to all interested parties and provided regular project status briefings to the COG.

During the process, the transition to NG911 was the most discussed topic. Countless hours were spent researching and deliberating the best course of action. All opinions and questions were welcomed and treated as an opportunity to inform and explore options, as the group kept in mind the end goal of a regional, fully interoperable NG911 system that serves the individual needs of each community. This allowed the NG911 project to remain front and center in the NCR.

Although the intense information distribution was almost *ad nauseum* (as some noted), through this process, the 911 Directors Committee recognized the need for—and ability to—strengthen relationships with all stakeholders within the region. By engaging in discussions and understanding the genesis of questions and concerns, MWCOG members understood the significance of planning for the features and functionality they know are important and expected by their stakeholders.

Considerations and Best Practices
- Identify leaders to take on key tasks.
- Collaborate on developing MOUs that serve the entire region.
- Leverage grant funding to entice members to want to participate. This is how the NCR grew outside of its traditional boundaries.
- Be thorough and make it easy for jurisdictions to join a contract.

Key Focus Points
- ➢ Look for ways to continue the collaboration through all aspects of the project.
- ➢ Maintain two-way communication flow on agency needs and project progress to keep everyone engaged.

8. Public-Private Partnerships

The scope of the 911 Directors Committee is broad—its agenda includes all levels of partnership activities:

- Provider, vendor, and carrier questions

- Reports and updates

- Professional association reports

- Consultant and subject matter expert (SME) input

- Federal partners (such as the FCC and National 911 Program) status and activity reports

No other group is at the hub of national attention, and their proximity to key stakeholders at high levels of government is a unique benefit. In the regional NG911 transition efforts of MWCOG, the committee had quarterly meetings that averaged four hours in length, with participants from federal, state, and local agencies (e.g., authorities, enforcement, policy makers, and funding agencies); four of the largest ECCs in the region; Department of Defense (DoD) ECCs; nationally recognized industry association public policy representation from the National Emergency Number Association (NENA) and the Association of Public-Safety Communications Officials-International (APCO); and vendors common to most, if not all, ECCs (e.g., communications providers and wireless carrier representatives). Almost anyone that has an interest in or oversight of 911 has been in attendance.

Because 911 is the tip of the spear for emergency communications, the 911 directors have representatives attend various partner committee meetings as well (e.g., police chiefs, fire chiefs, Metrorail, and CAD-2-CAD). There is also a wireless carrier subcommittee that brings together the major carriers to discuss topics of mutual concern and to craft policy or guidance. This group is especially

important to the region's operations because of the level of cooperation with the wireless industry that is required to migrate to NG911.

The level of interaction with a multitude of partner agencies, associations, and vendors is unlike any other to date because these efforts are driven by the need to communicate, cooperate, coordinate, collaborate, and assure continuity of 911 services throughout the entire regional community.

The region's unique physical proximity to the nation's capital, and the service the committee provides to the region, underscores the importance of what they do and is not lost on federal partner agencies. Thus, the 911 directors can invite—and have confidence in their attendance—the many private and federal partners in the region.

While the MWCOG 911 directors may be in a unique position to encourage and count on participation by these significant adjunct players and services, there are lessons that can benefit all agencies nationwide.

The committee is a key platform to address the numerous tasks involved with the intense missions of answering 911 calls regionally and coordinating emergency communications between the public and MWCOG first responders. The ability of the committee to task leaders with those missions is key to achieving the region's goals.

A pertinent example is that the NCR leadership reports that encouraging public-private partnerships has significantly increased their presence in other work groups (such as those representing fire, EMS, and law enforcement entities). As NG911 approaches, these other work groups recognize that they need to understand operational impacts and how services might evolve, and the 911 directors serve as SMEs for these groups.

The 911 directors have discovered multiple actions and tools that support public-private partnerships to enhance successful collaboration, including mutual agreement on contract language, testing parameters, and success measurements, and jointly establishing consequences for not meeting these expectations. These actions have helped to clarify how the region defines success. Tracking and monitoring mechanisms, milestone identification and action item lists, punch lists, and regular progress reporting have been essential to inform and educate the participants at all levels and continually communicate progress, as well as identify risks early.

Considerations and Best Practices

- Ensure contract language is clear and performance is measurable.
- Keep track and monitor timelines, milestones, and progress; adjust as necessary.
- Mutually agree on testing and acceptance parameters.
- Tie metrics to system performance and demonstrable outcomes (such as outages, uptime, or other quantitative measurements).

- Establish consequences in contract for not meeting expectations. Damages can and should be assessed when there is failure to meet these metrics; the specific nature of these damages should be established in the contract.
- Expect and request regular progress updates, and continually communicate progress reports to stakeholders.
- Rely on tools such as punch lists, action items, outstanding issues, and progress reports to track noteworthy activities, events, or successes.
- Remember the importance of fiscal status reporting: report on funds expended to date, as well as percentage of funds expended, compared with percentage of tasks or timeline to educate stakeholders and keep them informed.

Key Focus Points
➢ Report issues that introduce risk for project success or completion; also report on mitigation strategies.
➢ Use regular reporting tools to inform and educate executive-level decision-makers, such as MWCOG representatives or local policy makers and funding authorities.
➢ Set high expectations, communicate those expectations, and hold all accountable.

9. Effective Procurement Practices

Joint procurement by several different governments can be complex and overwhelming. Each party's needs and contributions may vary. Each party often may have varying levels of funding available for the project, legal requirements, or procurement laws (which differ from state to state). These topics need to be navigated, and solutions found to these challenges.

To address this, MWCOG took a creative approach, developing a single contract procurement strategy. Taking a lesson from state procurements that allow many entities to purchase from a single contract, MWCOG tweaked the concept to make it work for them:

- One agency acted as the lead procurement agency.

- Next, all participating entities with an interest in joining collaborated on the general language to be used in the procurement document.

- Then, each agency was invited to procure off the general agreement as participant stakeholders by adding their own requirements and stipulation addendum.

Considerations and Best Practices

- Use a master contract so that other jurisdictions can purchase off the master contract (if desired), adding their own requirements as necessary.
- Identify support advocates to educate others on the process.
- Provide your legal team with a list of bullet points of what you want to accomplish in the agreement.
- Use an existing model if one exists.
- Each governance entity has its own procurement requirements, state-approved terms, and contract conditions.

Key Focus Points

- ➢ Coordinated procurement practices will best serve the region.
- ➢ Create a procurement methodology that remains flexible**.**

10. Collaborative Decision-Making

Fairfax County, Virginia, took the lead in developing a basic framework for NG911 implementation. In the case of MWCOG, the initial focus of common need was GIS data. Fairfax County understood that accurate GIS is the lynchpin of NG911. Geospatial location data drove early collaboration efforts that quickly grew to encompass other parts of the project.

Maximizing the use of grants and understanding that "free" encourages participation, Fairfax County pursued Urban Area Security Initiative (UASI) grants through the Federal Department of Homeland Security (DHS) as seed funds for the project. In addition to UASI grants, state grants from the Virginia 911 Authority—under the Virginia Information Technologies Agency (VITA)—also helped to sustain activities. This was an intense undertaking on behalf of the region, and Fairfax County committed extensive resources to the goal. This collaborative approach demonstrated MWCOG's desire to merge efforts to be both fiscally prudent stewards of funds and to jointly achieve goals.

In addition to the "lead agency" concept in pursuing grant funding and RFP development, Fairfax County (as an early adopter in the region and on its own path to implementing NG911 services), took the initiative in developing a contract and MOU template that any agency in the commonwealth of Virginia may use to procure from, and can employ as a model for adaptation to their own requirements and interactions with neighboring agencies. See Appendix B for sample MOUs.

Considerations and Best Practices

- Develop a workable framework and seed some small projects to get people working together and experiencing small wins.
- Continually collaborate, communicate, and coordinate.

Key Focus Points

- ➤ Find a lead agency.
- ➤ Focus on the common need.

11. Interagency Cooperative Agreements

Agencies may use a formal contract or a less formal agreement—an interagency cooperative agreement (ICA) or MOU—as the written documentation describing how they will work together in an agreed-upon manner on a project or objective. The main purpose of such a document is to establish a written understanding of the responsibilities and the clearly defined expectations of each party. The ICA or MOU should be a legal document that is binding and holds the parties responsible to their commitments. Jurisdictions and agencies are familiar with these types of agreements and often will have agreements in place for call-handling processes between counties or ECC jurisdictions.

There are two primary reasons why writing a formal agreement is important. First, it documents the understanding of all parties and their respective responsibilities and processes to follow. Second, a formal agreement provides historical information that will be useful as time goes by to codify what has been done, even if the principals currently involved are no longer in their present positions.

MWCOG participants were faced with a unique challenge: developing appropriate and acceptable language for an NG911 ICA or MOU. MWCOG used existing agreements similar in nature as a starting point; this proved useful in expediting the process and accelerating agreement among the parties.

Documenting each party's understanding of their commitments commemorates the agreements of the jurisdiction. In this dispassionate way, the existing understanding can be consulted, reviewed, and documented for future personnel when changes in leadership happen.

Considerations and Best Practices

- Start from an existing template or current agreement.
- Allow time for a comprehensive legal review.
- Carefully craft your dispute resolution process.
- Use third-party arbitration or mediation only if you must; try to work it out mutually first.
- Local custom or regulation may already dictate the use of escalation procedures for disputes.
- Understand the challenge of balancing responsibilities between the COG, state regulatory and legal requirements, and 911 authorities.

- Do not underestimate the time it will take to find language agreeable to multiple agencies and legal support teams.

Key Focus Points
- ➢ Understand the challenge of balancing responsibilities between the various governance structures, state regulatory and legal requirements, and 911 authorities.
- ➢ Engage legal teams early in the process.
- ➢ Find common objectives in existing agreements.

12.   Financial Considerations

The technology part of transitioning to an NG911 system is the easy part. The technology path is well defined by standards, procedures, and best practices. Breaking down the financial allocations fairly and equitably can be difficult, with many complex circumstances influencing the funding methodology.

MWCOG has found ways to minimize those difficulties, as detailed below.

12.1. Maximizing Grant Opportunities

If the region or agency is fortunate enough to have access to them, it is often helpful to work out details with non-local funds such as grants. Maximizing the use of grant funds not only can help encourage participation, but it allows the agencies to have candid discussions about cost allocation without constraint or concern over the use of their own local funds. Discussing fund distribution, demarcation points between jurisdictional systems for cost allocation commitments, shared services, and in-kind contributions (such as determining how the administrative management burden of interconnected systems will be shared) are especially important.

In the early timeframe, some Virginia MWCOG participants received state grants from VITA and federal grants from DHS UASI; these were leveraged to maintain the forward momentum of transitioning to NG911 services in the region. These early grants were used to engage consultants and prepare for a procurement. Later, the Maryland Emergency Number Systems Board (ENSB) provided funding for its ECCs. Granting agencies often like to see regional projects because they generally can demonstrate more impact to greater populations and have a more widespread effect.

12.2. Clarify and Document Cost Allocation Expectations

One of the most important lessons learned is to be clear in cost allocation expectations. Documenting these expectations in agreements (such as ICAs or MOUs) with participants is prudent. Failure to act—or just relying on "handshake" agreements—can not only leave parties feeling extremely unclear if their expectations have not been met, but also have a financial impact on the project.

12.3. In-kind Contributions

Do not underestimate the importance of in-kind contributions. For example, the management and administration of grants can be a significant workload. Administration of these grant management system(s) on behalf of the region has a cost but is also a benefit to all collaborating agencies. Acknowledging this as a real-value contribution by the agency supplying the services might be helpful— at the very least, should be considered a value added to the project and rewarded by mutual agreement.

12.4. Ongoing Costs

When regional partners have conversations, discussion of ongoing costs and criteria for upgrades is wise before these challenges become issues. MWCOG recommends having those discussions early, before there is any pressure for a decision. Making these decisions without other pressures helps to develop a fair and logical contribution platform.

12.5. Communicate Project Financial Status

Keep participants informed of project progress by preparing financial reports that include the percentage of funds expended compared to the percentage of tasks and/or timeline completed. These comparisons are just as important as technology progress updates.

Considerations and Best Practices
- Maximize the use of grant funds to encourage participation.
- Agree on demarcation points for cost allocation.
- Determine how administration management or in-kind contributions will be used and value ascertained.
- If an RFP is released, remember to include bid bonds or performance bonds for your potential vendors.
- Keep participants informed by preparing financial reports that include funds expended compared to tasks or timeline completed.

Key Focus Points
- ➢ Discuss ongoing costs and criteria for upgrades before they become issues.
- ➢ Be clear in cost allocation expectations and write it into participant agreements (ICA or MOU).

13.   Interoperability Standards

The region's broad commitment to interoperability standards is both valued and necessary. MWCOG views the necessity of standards as one of the most important endeavors the entities have embarked on from both an operational and technical perspective. The COG's shared commitment to standards has made procurement easier, made operations more seamless, helped to ensure the security of systems, and enhanced network management in equal measure.

13.1. Commitment to Standards

Jurisdictions in the region are committed to making the most of their proximity to each other and their shared need to work together to create the most useful system for everyone.

Keeping the end goal of interoperable systems in mind illustrates the need for interface requirements to ensure seamless operations and call routing flexibility when considering the practical operational requirements to move calls between jurisdictions under extenuating workload surges, as well as the ability to assist neighboring communities when unplanned increases in call volumes overwhelm current operations.

Engaging all jurisdictions in the region—not just those who are currently moving forward with migration to NG911, but also those who are making decisions more slowly—was important. First, these slower jurisdictions may someday be part of the regional interoperable system and need to feel a part of its formation and operational standards. Second, they must be relied on to assist in times of surges in call volume: neighboring communities will help to share the load when one ECC becomes overwhelmed.

Four significant areas pointed to the immediate need to address standards:

1. GIS

2. Network and system(s) security

3. Network management and integrity

4. Technical and operational standards

13.2. GIS Standards and Data Sharing

GIS standards have been essential to the success of the collaborative effort in the region. Understanding each contributing entity's roles and responsibilities has helped to keep the process efficient and effective and minimized complications, and standardization has preempted a duplication of effort. Clearly defined roles assure that the entities understand the tasks, priority order of completion, and duties that each role contributes to the whole. Standardized processes are essential for the smooth interconnectedness of data and increase sharing opportunities for improved response in the region.

Collaboration between and among jurisdictions is a vital component of success for developing GIS data for use in the region's NG911 system.

- **Response Area**: Response area boundaries often cross jurisdictional boundaries, necessitating ongoing collaboration between jurisdictions for agreement on response boundaries to ensure appropriate resources are dispatched from the appropriate ECC.

- **Mutual Aid**: Also, the response to an emergency event often crosses jurisdictional boundaries, and/or requires resources from surrounding jurisdictions for support through mutual aid.

Both scenarios strengthen the need for cross-jurisdictional collaboration. Prior to NG911, collaboration of GIS organizations between and among jurisdictions in the region had not received a priority level of importance. Due to the requirements of GIS data in an NG911 system, the lack of collaboration could no longer be overlooked; it was encouraged and strengthened to create contiguous geospatial datasets.

Particularly in the coordination required on a regional level to implement GIS data for NG911, the region has been fortunate to have leadership and vision that has moved it forward. Each jurisdiction doing its own part, in a standardized and cohesive manner, has helped to create GIS databases that make the sum of the parts a greater unified application for the whole region.

Geographic data and systems will be relied on heavily to support 911 call routing to the correct ECC. GIS creates maps and graphics from the information contained in an individual entity's databases as a foundational element of NG911. But it is far more than just a mapping program.

More specifically, GIS is a complex mix of database management, display technology, and analysis tools used to create maps and solve problems that have a spatial context in order to enhance processes such as emergency call routing to leverage the location tools and call processing functionality.

All information in GIS is referenced to a location on the Earth's surface. GIS can contain images of aerial photography, photographs of homes, floor plans of buildings, and large amounts of text and attribute information, all tied into databases by their location. GIS enables every feature on a map to be represented by points, lines, or polygons.

- Lines can be streets, pipelines, creeks, and railroads.
- Points can be fire hydrants, cell tower locations, building structures, or mileposts.
- Polygons represent areas in GIS and can be city boundaries, county boundaries, Emergency Service Zone (ESZ) areas, lakes, and others.

This graphically visualized data on a map enables quick analysis of information, making GIS an invaluable tool for public safety by supporting the ability to rapidly assess situations and make decisions.

Appendix C contains additional considerations for GIS regional approaches to NG911 migration.

Considerations and Best Practices

- An agreed-upon frequency of data updates, agreement on an established process and timeline for updates, and identifying the responsible parties for carrying out the updates were "lessons learned" in the region.
- Communication between GIS jurisdictional authorities should be frequent, and adherence to policy should be documented.
- The 911 authority must identify the data steward for each dataset.
- Automated GIS quality assurance processes should improve upon human limitations regarding data integrity.
- The 911 authority and data steward should work together to ensure that, as this data is updated, affected ECCs have access to the most current data possible, and all data stewards are appropriately notified of updates.

Key Focus Points

- ➢ It is imperative that the data available to the NG911 system is as accurate as possible and mirrors the real world as precisely as possible.

13.3. Network and System Security Standards

Standards also keep systems secure and operating consistently. The interoperability of systems is treated as a whole, with standardized application related to cybersecurity, network and technology interfaces, and data sharing. The more consistent the attention is to the requirements of security, the better all connected systems are. When a system is interoperable, cybersecurity standards protect all connected systems from the weakest link.

Critical infrastructure is defined in the National Institute of Standards and Technology (NIST) cybersecurity framework document as "systems and assets, whether physical or virtual, so vital to the United States that the incapacity or destruction of such systems and assets would have a debilitating impact on security, national economic security, national public health or safety, or any combination of those matters."[7]

Due to increasing pressures from external and internal threats, organizations responsible for critical infrastructure—such as the MWCOG partners—are working collaboratively to have a consistent and iterative approach to identifying, assessing, and managing vulnerabilities and security risks in the region. Today, this consideration is necessary, regardless of an organization's size, threat exposure, or security sophistication; in the wider region, it becomes increasingly critical as formerly closed and independent 911 systems begin to use elements of the public network for call and data transport.

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[7] NIST, *Framework for Improving Critical Infrastructure Cybersecurity*, Version 1.1. https://nvlpubs.nist.gov/nistpubs/CSWP/NIST.CSWP.04162018.pdf

Assessing what is best for MWCOG is only part of the consideration. What states and ECCs bordering Virginia and Maryland do to manage vulnerabilities also will impact the entire region. Consequently, the partners understand what is critically important and necessary: the development of a security plan to ensure each interconnected state performs due diligence and follows accepted best practices essential to the health and reliability of the systems.

The NENA NG911 security standard provides a basis for evaluating and assessing security levels and risk.[8] The standard identifies the basic requirements, procedures, and practices for achieving the minimum level of security applicable to NG911 entities. This standard should be consulted and used to audit each interconnecting state's level of risk and to establish an understanding by each state of the security practices that will be necessary for it to follow. A review of each participating network's security policy is an important step in assessing risk.

Considerations and Best Practices
- Engage all jurisdictions in standards development.
- Development of a security plan is time well spent.
- Audit each interconnecting system's level of risk.

Key Focus Points
- ➢ Attention must be paid to the security of networks and systems.
- ➢ Standards keep systems secure and operating consistently.
- ➢ Threat exposure becomes increasingly critical as systems interconnect.

13.4. Network Management Standards

No project is ever complete: projects just transition from an initial building and implementation stage to the continual "care and feeding" stage of the new system(s). Ongoing administration and maintenance of the NG911 network and integration with neighboring states' systems are equally as important as building it.

ICAs or MOUs will need to be reviewed and renewed, maintenance and upgrades to each system will need to be managed and coordinated with other entities, testing of new applications will need to be synchronized, and GIS systems will need to be refreshed and integrated with neighboring systems. The integration of NG911 ESInets is not a "one and done" event. Jurisdictions will need to pay attention to system changes made in one network and their impact—or at least the consideration of any impact—on the interconnected network or system. Systems are no longer solely independent of one another.

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[8] NENA 75-001, *Security for Next-Generation 9-1-1 Standard (NG-SEC)*.
https://www.nena.org/page/NG911_Security

Positive and reliable working relationships with support staff of other entities, like the ones that MWCOG participants enjoy, are essential. Regular and periodic communication between vendor support staff is encouraged. The regular meetings that are held, the communications discussed in this *Playbook*, and the coordinated approaches to almost everything in the MWCOG region can and should be emulated in other areas of the country.

When all systems are monitored, managed, and maintained in a standardized and collaborative approach, all systems benefit from the coordination.

Considerations and Best Practices
- ICAs or MOUs will need to be reviewed and renewed.
- Develop a mutually agreed upon network monitoring and management plan.

Key Focus Points
- Network management and integrity must be an equally shared concern.
- Ongoing administration and maintenance of the NG911 network is equally as important as building the network.
- Systems are no longer independent of one another.
- A positive working relationship with vendor support staff is essential.
- When all systems are monitored, managed, and maintained in a standardized manner, all systems benefit from the coordination.

13.5. Technical and Operational Standards

The technical aspects of an NG911 system are well-documented in the NENA i3 standards; therefore, a commitment to follow standards in the region includes following NENA i3. As such, the MWCOG NG911 RFP included the requirements of NENA i3.[9] Vendor responses to the issued RFP were scrutinized for compliance with the standard during due diligence hearings and response evaluations.

Call routing policy, abandonment call routing, backup procedures, and other operational considerations are still under discussion. Practices are shared, and the region—through the 911 Directors Committee and the NG911 subcommittee—looks for commonality in procedures, coordination of response practices, and methods that are complimentary to all partners' operations. In the MWCOG region, this is done through facilitated workshops and discussion sessions to explore common methods and procedures.

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[9] NENA 08-751, *NENA i3 Technical Requirements Document,* National Emergency Number Association. https://www.nena.org/page/i3_Requirements_LTD

Considerations and Best Practices
- Ensure vendors commit to true interoperability of systems when evaluating system(s) proposals.
- Require interfaces to provide for seamless operations.
- Rely on nationally accepted technical and operational standards.
- Share practices and procedures.

Key Focus Points
- ➢ All parties must make a commitment to standards.
- ➢ Find ways to coordinate response practices and methods.
- ➢ Technical interoperability is a worthy goal and should be pursued.
- ➢ The NENA i3 standard is the basis but not the end.
- ➢ Seek commonality in operational protocols to ease overflow routing operability.

14.   Federal Partners and Military Stakeholders

Almost every state in the country has a military base or installation that falls under the auspices of the DoD and is serviced by its own ECC. Sometimes the integration between the military and the local 911 jurisdiction is robust and high-level; in other situations, the interaction between local 911 and the base or military installation is non-existent.

MWCOG ECCs enjoy a good relationship with military installations within their jurisdictions, but recognize that the technology currently utilized by federal ECCs may not be sufficiently upgraded to interoperate with local civilian 911 operations. Local ECCs that serve these installations often are familiar with how they operate and frequently provide fire and EMS response when requested, pursuant to mutual-aid agreements.

While there is work in progress to continue discussions with the military, the constant changeover in DoD leadership creates challenges for planning continuity. With every change in personnel, which generally is a planned action within the military every two to three years, new leadership needs to be informed of past activities and be convinced that they should continue the efforts of their predecessors. Local 911 authorities report they must often start at square one with each change in leadership, so progress and change are slow.

While some broad national guidance has been issued by the DoD to collaborate with local 911 authorities and to plan for the federal installations' migration from legacy to NG911 systems, no national policy—to give specific guidance or direction, set timelines, or to establish the necessary funding stream—has been issued as of the date of publication of this document.

The MWCOG region includes numerous military facilities (buildings) and installations (bases), within their jurisdictional borders. A list can be found in Appendix E. The list is by no means exhaustive but

illustrates the unique situation MWCOG is in with so many high-level federal or military facilities within its borders. Coordination is essential, and the high level of experience the region has with these operations provides a reservoir of experience that can be drawn from by many other states.

The issues encountered are not unique to military partners. In fact, the challenges raised can be applied to any 911 system (operated by federal, state or local government) that has not made the transition to a digital, IP-based infrastructure. Examining the experience of MWCOG and its successful collaboration between federal and local 911 authorities highlights the successes and challenges to providing a rationale for all civilian 911 agencies to collaborate with federally operated 911 systems within their borders.

14.1. Consequences of an Uncoordinated Transition to NG911 Between State/District and U.S. Military Partners

The nation's 911 entire emergency communications system requires a transition from obsolete analog technologies to modern digital technologies, including the NG911 systems that will support the myriad ways in which the public and military communicate. If the DoD (or other federally operated 911 system) delays its NG911 transition due to limited resources or policy challenges, such systems likely will develop in a piecemeal fashion.

- Lack of coordination prolongs NG911 implementation and leaves the DoD vulnerable to obsolescence and potential loss of 911 service

An uncoordinated, underfunded NG911 transition likely will be delayed or prolonged, as many military public safety units defer implementation. The result will be inconsistent service and underutilized capabilities until all DoD 911 operations have deployed NG911. As local and state civilian jurisdictions migrate to NG911 and no longer use old legacy equipment, military installations could lose 911 service, or may be the only remaining service on equipment too costly to maintain, unless they coordinate efforts with local/state 911 agencies, or the DoD assumes the cost of operating the legacy system.

- Lack of coordination results in patchwork implementation with limited interoperability

Without a unified, focused effort and adequate funding, NG911 deployment within the DoD largely is more likely to be deployed in an uncoordinated manner. Some bases may undertake collaborative efforts, but many will not. The result will be a patchwork system with individual installations having widely varied capabilities and limited interoperability with neighboring local 911 agencies or state systems, reducing the benefits of integrated and interconnected systems.

Failure to act in a timely and coordinated manner will cost lives, money, and erode trust.

- Lack of coordination results in missed opportunities for improved emergency response on and off the base

The emergence of advanced broadband communications puts much more powerful capabilities and functionality in the hands of military emergency responders. Without NG911, however, base emergency responders will not be able to receive the enhanced information available through text, video, and data generated by these broadband systems. The result will be a less effective communications system and less-than-optimal response to emergency calls for help on the DoD installation, or as military personnel respond to local requests for mutual aid.

- Lack of coordination may increase risk

As the state and local public safety ecosystem moves toward NG911, operational procedures and protocols for fire, EMS and law enforcement will adapt to the expanded communications capabilities and situational awareness provided by multimedia NG911 systems. In an uncoordinated transition, crossing jurisdictional boundaries between civilian and military can mean loss of NG911 features and/or interoperability between ECCs, reducing situational awareness to a voice-only environment, and eliminating possible use of multimedia to provide a more effective, efficient, and safe response.

- Lack of coordination undermines trust in the 911 system and creates disparate service levels in the community

A delayed transition will create uneven and glaring disparities in 911 features, functionality, and service levels between local civilian communities and their military partners, which will confuse and frustrate consumers, diminishing public trust in the entire 911 system. The result will be lack of confidence in a system the public relies on to ensure their safety or to report crime or damage to life and property, whether they use a base landline phone or wireless device.

- Inaction creates technological obsolescence

The commercial marketplace already has largely completed the technology transition now facing the 911 community, migrating from outdated technologies to the advanced IP-based technologies that drive today's communications services and save costs. As this happens, network providers seek to retire high maintenance and costly infrastructure as quickly as possible.

Continued reliance on obsolete infrastructure will render military 911 systems that have not transitioned obsolete and isolated. The result will be increased costs to states, 911 authorities, and especially the DoD—which will be required to continue to support obsolete systems, resulting in greater risk of service outages and system failures. This clearly puts the DoD behind local services that are progressing more rapidly to NG911.

- Inaction increases the costs of operating obsolete DoD 911 systems

During the transition to NG911, state and local public safety agencies will have to pay the implementation and initial operational costs of NG911, while also paying for the continued support of legacy systems. In addition, funding the NG911 transition as a series of uncoordinated programs will drive cost inefficiencies and increase the overall cost burden on 911 authorities, whether they are state, local, or military.

Considerations and Best Practices

- Be diligent: frequent changeover of DoD personnel means you need to stay consistent with the message.
- Engage military installation leadership early in the planning process.
- Integrate systems where possible.
- Keep cybersecurity in the forefront during the planning process.

Key Focus Points

- ➢ Federal level governance requires different approaches.
- ➢ Lack of coordination prolongs NG911 implementation and leaves the DoD vulnerable to obsolescence and potential loss of 911 service.
- ➢ Lack of coordination results in missed opportunities for improved emergency response on and off the base.
- ➢ Lack of coordination underserves the population on military installations.
- ➢ Lack of coordination undermines trust in the 911 system and creates disparate service levels in the community.
- ➢ Inaction creates technological obsolescence.
- ➢ Inaction increases the costs of operating obsolete DoD 911 systems.

NG911 services will bring improved functionality, enhanced network resiliency, seamless interoperability, improved system integration and compatibility, equal accessibility, and greater capacity for innovation. Federal partners will have to be involved and engaged in planning to ensure their commitment to the outcomes.

This will not always be easy. Due to revolving leadership, there is sometimes a misalignment of mission and goals.

15.   Key Takeaways: We Haven't Learned All The Lessons Yet

This project traces the steps and processes followed by MWCOG partners to plan, procure, implement, operate, manage, and maintain a regional solution for NG911. By documenting and chronicling their activities, discussion, decisions, processes, and challenges, we trust that the lessons learned can be replicated—at least in part—in other regional applications across the U.S. 911 community.

There are significant lessons to be discovered as a result of MWCOG's experience.

Table 1: Key Takeaways

Collaborate, Communicate, Coordinate (endlessly)	Be thorough: make it easy for jurisdictions to join your contract.	Active participation is key.
	NG911 presentations made at the state and COG level.	Seek champions at different levels within the organizations, and for different parts of the project.
	Develop talking point papers and informative one-pagers.	Build a working relationship with your legal support team.
	Don't underestimate the GIS and mapping issues to be resolved.	Jurisdictions will need individual requirements, so allow for customization (within limits).
	Collaboration can escalate more rapid migration to NG911.	Collaboration improves cohesive regional continuity of operations (COOP) plans and enhanced regional readiness.
Allow for Local Control	Build on previous successes.	Project management methodology should be mutually agreed upon.
	Assess similarities between policies and practices of the parties.	Utilize MOUs as formal agreements to collaborate on call handling and backup.
Keep Communicating	You can never have too much communication with the parties involved.	Communicate progress and action items to all stakeholders.

Measure Performance	Tie metrics to system performance, such as outages, uptime, or other quantitative measurements. Damages can and should be assessed when there is failure to meet these metrics, and the specific nature of these damages should be established in the contract.	Contracting jurisdiction should request regular progress reports and keep participants informed and aware.
	Stay on top of issues that introduce risk for project success or completion, and seek mitigation strategies.	
Look for Shortcuts	Save time and resources.	Develop a mutually acceptable change management process to track and update.
	Maintain an action items registry to stay on top of "to do's" and timelines.	Improved business relationships with vendor management teams increase collaboration and smooth processes.
Financial Considerations	Maximize use of grant funds.	Determine demarcation points and financial cost sharing.
	Do not forget ongoing maintenance costs.	Vendor bid bonds and performance bonds are helpful tools.
	Keep track of the costs. Financial statements of funds expended to date, as well as percentage of funds expended compared with percentage of tasks or timeline remaining in the project, will keep everyone informed.	Leverage interagency collaboration from grant process to other areas of the project.
Interoperability	Commit to standards.	Make interoperability of systems a condition of any contract.

	Pay attention to security and access to systems for better integration and coordination.	Make sure all parties are equally concerned and paying attention to network management.
	Interoperability provides greater opportunity for robust contingency call routing for overflow.	Interoperability enhances unified response for active mass incidents and cross-jurisdictional response readiness.
GIS	Consult the NENA template for interpreting the standard.	Establish best practices for sharing of GIS data and mapping.
	Enhanced data sharing enriches everyone's data and improves mapping location accuracy for improved response tools.	
Federal Partners and Military Stakeholders	Frequent leadership changes will be challenging—be diligent.	Lack of coordination prolongs NG911 implementation, obsolescence, and potentially higher costs for the DoD.
	Inaction creates technological obsolescence and increases the costs of operating outmoded DoD 911 systems.	Patchwork NG911 implementation leaves the DoD vulnerable to potential loss of 911 service and limited interoperability.
	Adjust approaches when dealing with federal partners.	

Support References and Recommended Reading

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https://www.ida.org/research-and-publications/publications/all/d/da/department-of-the-army_closing-the-next-generation-9-1-1-capability-gap

DoD's PSAP Pilot Project Aims to Improve Communication During Military Incidents.
https://www.911.gov/911connects/issue-4/DoDs-PSAP-Pilot-Project-Aims-to-Improve-Communication-During-Military-Incidents.html

DoD Digital Modernization Strategy, DoD Information Resource Management Strategic Plan FY19-23.
https://media.defense.gov/2019/Jul/12/2002156622/-1/-1/1/DOD-DIGITAL-MODERNIZATION-STRATEGY-2019.PDF

Military and Civilian Collaborations in Deploying Next-Generation 9-1-1, Institute for Defense Analyses, Serena Chan, Project Leader and Michael T. Hernon, July 2019.
https://www.ida.org/research-and-publications/publications/all/m/mi/military-and-civilian-collaborations-in-deploying-next-generation-9-1-1

16.   Summary

Most key stakeholders in the region will readily admit that they are still learning and all the lessons have not yet been realized. Each day, as migration to full NENA i3 implementation and progress toward end-state NG911 continues, new challenges are being identified and addressed.

Ensuring interoperability is challenging, and multiple agencies with disparate timelines and systems require significant conversation at a technical, policy, and operational level. While most entities in the MWCOG region were able to use one vendor for ESInet and NGCS, there are other major jurisdictions that went with a different vendor that better suits their needs and the communities they serve. Integrating these variations and disparate systems requires significant collaboration at both the vendor and public safety management level to ensure interoperability.

One lesson is certain: collaboration is not only necessary; it is *essential* for successful outcomes.

ACRONYMS

Acronyms	
APCO	Association of Public-Safety Communications Officials-International
CAD	Computer-aided Dispatch
CAO	Chief Administrative Officer
CIA	Central Intelligence Agency
CIO	Chief Information Officer
CISO	Chief Information Security Officer
COG	Council of Governments
COOP	Continuity of Operations
D.C.	District of Columbia
DHS	Department of Homeland Security
DoD	Department of Defense
E911	Enhanced 911
ECC	Emergency Communications Center
EMS	Emergency Medical Services
ENSB	Emergency Number Systems Board
ESInet	Emergency Services IP network
ESZ	Emergency Service Zone
FBI	Federal Bureau of Investigation
FCC	Federal Communications Commission
GIS	Geographic Information System
HSEC	Homeland Security Executive Committee
ICA	Interagency Cooperative Agreement
IP	Internet Protocol
MOU	Memorandum of Understanding
MWAA	Metropolitan Washington Airport Authority

Acronyms	
MWCOG	Metropolitan Washington Council of Governments
NAB	Naval Amphibious Base
NAS	Naval Air Station
NCR	National Capital Region
NENA	National Emergency Number Association
NG911	Next Generation 911
NGCS	Next Generation Core Services
NIST	National Institute of Standards and Technology
NRL	Naval Research Laboratory
NS	Naval Station
NSA	Naval Support Activity
NSF	Naval Support Facility
NSWC	Naval Surface Warfare Center
NWS	Naval Weapons Station
pANI	Pseudo Automatic Number Identification
PSAP	Public Safety Answering Point
RFP	Request for Proposals
SCSC	Surface Combat Systems Center
SLA	Service Level Agreement
SME	Subject Matter Expert
U.S.	United States
UASI	Urban Area Security Initiative
VITA	Virginia Information Technologies Agency

APPENDIX A – MWCOG MEMBER JURISDICTION AND THE 911 DIRECTORS COMMITTEE

MWCOG Member Jurisdiction	NCR	PSAP & 911 Directors Committee Member
District of Columbia	X	X
Town of Bladensburg	X	
City of Bowie	X	
City of College Park	X	
Charles County		X
City of Frederick		
Frederick County		X
City of Gaithersburg	X	
City of Greenbelt	X	
City of Hyattsville	X	
City of Laurel	X	
Montgomery County	X	X
Prince George's County	X	X
City of Rockville	X	
City of Takoma Park	X	
City of Alexandria	X	X
Arlington County	X	X
City of Fairfax	X	
Fairfax County	X	X
City of Falls Church	X	
Loudoun County	X	X
City of Manassas	X	X
City of Manassas Park	X	X
Prince William County	X	X
Metropolitan Washington Airport Authority (MWAA)		X

APPENDIX B – MEMORANDUM OF UNDERSTANDING EXAMPLES

Examples of Alternate Routing and Information Sharing MOUs are included for reference.

ICA considerations are listed in Appendix D. The NENA standard on ICAs, NENA-INF-012.2-2015, *NENA Inter-Agency Agreements Model Recommendations Information Document,* can be found at: https://www.nena.org/page/InterAgencyAgreemnts

MEMORANDUM OF AGREEMENT

BY AND BETWEEN

<Jurisdiction A> Emergency Communications Center

AND

< Jurisdiction B> County Department of Public Safety Communications

This Memorandum of Agreement (hereinafter "Agreement") is made and entered into on [Month Day], 20XX, by and between **< Jurisdiction A > Emergency Communications Center** (<name PSAP>) and **< Jurisdiction B> County Department of Public Safety Communications (name PSAP>).**

WHEREAS, the parties to this Agreement provide 9-1-1 call taking and dispatch services, and;

WHEREAS, the parties to this Agreement desire to provide contingency and/or overflow support to one another, and;

WHEREAS, the parties desire to formalize their decisions regarding said contingency and/or overflow support;

THEREFORE, Pursuant to [list relevant state and/or local laws], and in consideration of the mutual covenants contained herein, the parties agree as follows:

< Jurisdiction B > County Department of Public Safety Communications and < Jurisdiction A > Emergency Communications Center mutually agree to accept contingency diverted 9-1-1 calls from each other's PSAP. Contingency diverted 9-1-1 calls may not be supported if the receiving PSAP is experiencing its own emergency or has its own need for overflow call handling support. The conditions under which a contingency diversion route may occur shall be as follows, but not limited to: the need for PSAP evacuation, network or customer premise equipment failure, no workstation logged on, or other condition.

Condition 1: Call overflow due to busy condition or ring, no-answer

The receiving PSAP will accept overflow calls from the diverting PSAP when its call queue is full, or a call goes unanswered for a period of [sixty (60)] seconds. The receiving PSAP will make best efforts to deliver any answered calls under this provision back to the diverting PSAP's jurisdiction by the following manner and in the following priority order:

> 1st Priority Method: Radio transmission on XXXX PSAP
> 2nd Priority Method: Teletype

Condition 2: Call diversion due to PSAP evacuation (also known as abandonment)

The receiving PSAP will accept calls from the diverting PSAP when it has invoked its abandonment state in the NG911 Core Services (NGCS) policy routing rules and the receiving PSAP is next in the rules queue. The diverting PSAP may have multiple alternate destinations provisioned ahead of the receiving PSAP which may assist in limiting the volume of calls diverted to its call queue.

The receiving PSAP will make best efforts to deliver any answered calls under this provision back to the diverting PSAP by:

> 1st Priority Method: Radio transmission on XXXX PSAP
> 2nd Priority Method: Voice transmission to designated cell phone

Both <Jurisdiction A> and <Jurisdiction B> agree to place an overflow queue for each other on their call handling screens to manage inbound diverted 9-1-1 calls within [180] days of execution of this Agreement. Both parties understand that diverted calls are answered with a lower priority than the answering jurisdiction's [choose from or add to the following: [**9-1-1, text-to-911, 10-digit emergency, 10-digit non-emergency calls, administrative and alarm calls**].

RECORDS MAINTENANCE

Both parties will share call handling and call documentation procedures to inform one another of the specifics of each other's operation. Both parties will make an effort to align with the call documentation procedures when handling calls from the other's jurisdiction.

<Jurisdiction A> County PSAP will follow up radio or voice transmission/teletype with the delivery of a fax to (xxx)xxx-xxxx of the Computer-Aided Dispatch (CAD) record for the call to **<Jurisdiction B> PSAP name**.

< Jurisdiction B > Emergency Communications will follow up radio or voice transmission/teletype with the delivery of a fax to (xxx)xxx-xxxx of the CAD record for the call to **<Jurisdiction A> County <name PSAP>**.

CALL RECORDS

This section of the Agreement should identify what the two jurisdcitions are agreeing to regardingcall handling procedures and what is to be entered into the call record; at a minimum, the two parties should share their call handling and call documentation procedures to see if they are agreeable to each other. For example, Jurisdiction A may not include some information in a call record that Jurisdiction B is used to seeing; OR terminology may differ-maybe Jurisdiction A calls units "UNITS" and Jurisdiction B calls them "CARS." Such nuances might cause confusion and terms should be agreed to or at least understood by both parties and be made part of the training curriculum.

AGREEMENT MAINTENANCE

The Parties agree to review this Agreement on an annual basis to update any processes or understandings. The parties entering into this Agreement acknowledge that any modifications to this agreement must be by mutual consent, in writing, and will be treated as an amendment to this Agreement.

TRAINING

Within [60] days of the execution of this Agreement, the Parties agree to conduct and document the appropriate training of their respective staff on these processes and procedures agreed to by the Parties.

NOTIFICATION OF RETURN TO NORMAL CONDITIONS

The Parties agree to notify the other Party of a return to normal conditions (such as the re-occupation of an evacuated PSAP) at the earliest possible opportunity.

COMMITMENT

The Parties agree to provide this support to each other without expectation of financial reimbursement.

> *The parties may want to consider if the requirement to take calls extends beyond a modest amount of time that compensation might be considered....for example, if tere is a flood that disables the PSAP for 30 days, might the PSAP taking on the extra work be allowed to charge for the additional staff that would be required for that condition?*

TERMINATION.
The terms of this agreement, as modified with the consent of the parties will remain in effect until _____. This Agreement may be terminated by either party with [XX] days written notice of withdrawal (or termination) by certified mail with return receipt requested. If withdrawal is due to a conflict between the parties relating to the terms of this Agreement, the Parties shall first attempt to resolve the conflict in accordance with Exhibit X, Dispute Resolution.

IN WITNESS WHEREOF, the parties hereto agree to the terms of the Memorandum of Agreement.

EFFECTIVE DATE. The terms of this Agreement will become effective on the date of the last signature of the Parties.

ASSIGNMENT. Neither <Jurisdiction A> County PSAP nor <Jurisdiction B PSAP> shall assign or transfer any interest or right(s) under this agreement to any person or entity without prior written approval of the other Party.

XXXXX XXXXX	Date	XXXXX XXXXX	Date
<Jurisdiction A>		<Jurisdiction B>	

Approved on behalf of <Jurisdiction A> on_____,
by_____, XXXX XXXXX, <Title> and on behalf of <Jurisdiction B >
on_____, by,_____

_____, XXXXX XXXXXX, Chair, <Name> County Board of Supervisors.

MEMORANDUM OF UNDERSTANDING REGARDING INFORMATION SHARING
AMONG JURISDICTIONS

We, the undersigned Chief Administrative Officers (CAOs) of our respective localities and other public entities (Jurisdictions), make this National Capital Region (NCR Region) Memorandum of Understanding (MOU) to facilitate the overall sharing of information amongst our Jurisdictions in order to enable and enhance homeland security and public safety within our respective jurisdictions and the NCR:

WHEREAS, Jurisdictions frequently interact to ensure the provision of timely public services, and the ability to provide such services readily and effectively often depends upon the timely exchange of relevant information; and

WHEREAS, this MOU is intended to be an umbrella agreement to augment and support mutual aid agreements and other memoranda of understanding between and amongst the Jurisdictions regarding information sharing; and

WHEREAS, our Jurisdictions, subject to the constraints of relevant local, state or federal laws, are willing to exchange information requested by other Jurisdictions or voluntarily share information which may be relevant to the provision of public services by other Jurisdictions and important to the Region;

NOW, THEREFORE, each signatory Jurisdiction to this MOU represents that their Jurisdiction will provide information requested by another signatory Jurisdiction or voluntarily share relevant information with other Jurisdiction(s), subject to applicable legal constraints, in accordance with the protocols set forth herein, and supplemented by agreed-to procedures as the result of this MOU:

I.   **Definitions**

    A.   *NCR Jurisdictions* is defined in this document as the following Jurisdictions and public entities within the Jurisdictions:

- District of Columbia
- Maryland
  - Charles County, Maryland
  - Frederick County, Maryland
  - Montgomery County, Maryland
  - Prince George's County, Maryland
  - City of Laurel, Maryland
- Virginia
  - City of Alexandria, Virginia
  - Arlington County, Virginia
- Fairfax County, Virginia
- City of Falls Church, Virginia
- Fauquier, Virginia
- Loudoun County, Virginia
- City of Manassas, Virginia
- City of Manassas Park, Virginia
- Prince William County, Virginia
- Stafford County, Virginia
- Metropolitan Washington Airports Authority (MWAA)

As authorized in Section IV, additional participating Jurisdictions may be added.

1. *Sending/Sharing Jurisdiction* means the Jurisdiction which provides information pursuant to this MOU.

2. *Receiving Jurisdiction* means the Jurisdiction which receives information pursuant to this MOU.

B. *Information* means all information in the possession of a Jurisdiction to include, but not limited to: public safety incident, resource, and status information that could impact another jurisdiction(s) or the Region regarding units of resources available, including but not limited to personnel, equipment, and specialized teams.

1. For credibility purposes, information shall be from a primary source. For purposes of this MOU, "primary source" is deemed to be the system of record.

2. Sending Jurisdictions shall only share information that they own or that they have the authority to share, either without the need for the consent of the original owner or after having obtained the required consent.

3. Importantly, information which is protected by law from being disseminated or which can only be disseminated subject to certain requirements is not the subject of this MOU if those requirements cannot be met.

II.   Jurisdiction Information Sharing

The Jurisdictions agree to:

A. Commit to share information with other Jurisdictions upon request in near real time based on agreed-upon parameters to be set forth in procedures and protocols developed pursuant to subsection G. below.

B. Not preclude the signatory Jurisdictions from sharing information with other Jurisdictions, entities, or third parties pursuant to other arrangements.

C. Advise all Receiving Jurisdictions of any material changes in the information after it has been shared.

D. The Sending Jurisdiction shall make its best efforts to only share information which is accurate and which it is legally authorized to share with another Jurisdiction; however, the Sending Jurisdiction will endeavor to ensure that the information is accurate but not guarantee it or its legal authority to share it. Therefore, the Receiving Jurisdiction(s) should use its own due diligence with respect to the information or sharing with any other entities under this MOU.

E. Refrain from sharing information received from a Sending Jurisdiction without the express consent of the Sending Jurisdiction, and shall not share the information with any unauthorized third party. (The protocols to be adopted pursuant to Section II. G. will address how to obtain authorization for third party use.)

F. Identify in writing to the other signatory Jurisdictions a person or persons within the Jurisdiction who shall be the contact person(s) with respect to this MOU and any requests for information, which person(s) shall keep apprised of the procedures and protocols adopted pursuant to this MOU.

G. Develop procedures and protocols for implementation of this MOU, informed primarily by the Jurisdictions' Chief Information Officer (CIO), Chief Information Security Officer (CISO), and other Jurisdiction personnel charged with the retention of information. Said procedures and protocols shall be submitted to the CAOs for approval prior to implementation.

III.   Assumptions

Jurisdictions assume and acknowledge:

A. The information shared pursuant to this MOU is owned by the Sending Jurisdiction(s) or the Sending Jurisdiction otherwise has the authority to share such information.

B. Each Jurisdiction shares information solely on its own volition and can choose to not share information.

C. Prior to sharing information, the Sending Jurisdiction shall ensure that the information is from a primary source and can be legally shared.

D. Information that may otherwise be protected from disclosure by freedom of information or public records acts may lose its protection by dissemination to another Jurisdiction(s).

E. Receiving Jurisdictions will protect the information provided by a Sending Jurisdiction to the extent legally possible and will notify the Sending Jurisdiction in a timely manner of any efforts by third party(ies) to obtain such information so that the Sending Jurisdiction can take any steps to protect the information from dissemination to the third party(ies).

IV.   Additional Participants

Other Jurisdictions or public entities in the NCR may choose to sign this MOU upon approval by the CAOs.

V.   Termination

The Jurisdictions agree to provide 60 days advance written notice to the other participating Jurisdictions if a Jurisdiction decides to terminate its participation in this MOU. Notice should be sent to MWCOG which shall advise the other Jurisdictions:

Managing Director, Homeland Security and Public Safety
MWCOG
777 North Capitol St, NE #300
Washington, DC 20002

This MOU becomes effective once all of the undersigned Chief Administrative Officers sign this MOU.

<u>MOU SIGNATORIES</u>

DISTRICT OF COLUMBIA

_____
<Name>   Date
City Administrator

CHARLES COUNTY, MD

_____
<Name>   Date
County Administrator

FREDERICK COUNTY, MD

_____

<Name>   Date
Chief Administrative Officer

CITY OF LAUREL, MD

_____

<Name>   Date
City Administrator

MONTGOMERY COUNTY, MD

_____

<Name>   Date
Chief Administrative Officer

PRINCE GEORGE'S COUNTY, MD

_____

<Name>   Date
Chief Administrative Officer

CITY OF ALEXANDRIA, VA

_____

<Name>   Date
City Manager

ARLINGTON COUNTY, VA

_____

<Name>   Date
County Manager

FAIRFAX COUNTY, VA

_____

<Name>   Date
County Executive

FAUQUIER COUNTY, VA

_____

<Name>   Date
County Administrator

LOUDOUN COUNTY, VA

_____

<Name>   Date

Chief Administrative Officer

CITY OF FALLS CHURCH, VA

_____

<Name>   Date

City Manager

CITY OF MANASSAS, VA

_____

<Name>   Date

City Manager

CITY OF MANASSAS PARK, VA

_____

<Name>   Date

City Manager

PRINCE WILLIAM COUNTY, VA

_____

<Name>   Date

County Executive

STAFFORD COUNTY, VA

_____

<Name>   Date

County Administrator

METROPOLITAN WASHINGTON AIRPORTS AUTHORITY (MWAA)

_____

<Name>   Date

President and CEO

APPENDIX C – GIS CONSIDERATIONS FOR A REGIONAL APPROACH TO NG911 MIGRATION

Alignment of GIS-related processes and data became a priority as part of the planning to transition to NG911. The National 911 Program *Interstate Playbook*, Chapter 2,[10] contains information and considerations that are helpful to regional GIS activities, policy, and maintenance that will benefit and facilitate a regional approach.

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[10] https://www.911.gov/pdf/National_911_Program_NG911_Interstate_Playbook_Chapter_2.pdf

APPENDIX D – ICA AND MOU CONSIDERATIONS

ICA/MOU Considerations	
Clarify terminology.	Identify authorized representatives.
Effective date of the agreement and any reference to renewal, review, or expiration dates, if desired.	State audit requirements.
Contact information, including but not limited to escalation point of contact for reporting issues 24 hours a day, 7 days a week, 365 days a year (24 x 7 x 365).	State data practices considerations.
Change notification process (i.e., how each party will keep others informed of any changes they will be making to their systems that may have impact on other parts of the system or network).	Provisioning, testing, and verification process responsibilities.
Change management processes that the parties will agree to follow when any changes to systems or networks are implemented.	Mutual agreement of database reconciliation to ensure database compatibility within participating systems (e.g., pseudo-automatic number identification [pANI]).
Commitments to provide prompt notification to other parties regarding service interruptions or problems, regular system maintenance, system security, aligning operational procedures, or any other processes that are employed by the jurisdiction.	Vendor(s) commitment for testing.
Dispute resolution process (i.e., how issues will be identified, tracked, addressed, and escalated if not resolved): • Who will manage or maintain the records, administer the system, or act as system integrator? • What will be the venue for any litigation? Whose laws will govern? • What are the responsibilities/actions of the disputed party?	Entrance criteria for adding new partners to the ICA/MOU.

ICA/MOU Considerations	
State sovereign immunity conflicts.	Termination/withdrawal of partners (i.e., the conditions, notification criteria, and technical issues under which a jurisdiction may withdraw from the agreement): • What are the circumstances or conditions for withdrawal? • What notification to the other parties to the agreement is necessary? • What is the process for exiting the agreement? • Is there any financial implication, either to the exiting jurisdiction or to the remaining parties?
Cost-allocation (i.e., if there are any shared elements, how will costs be shared): • How will the responsibilities of each jurisdiction be identified and clarified? • How will upgrades and ongoing maintenance be funded? • What are the financial obligations of the parties?	Assignment: • Can the agreement be assigned or transferred to another entity? • Is there any approval needed or required?
Mutually agreed-upon policies and procedures will make it much easier to manage situations when things go awry, so invest time into developing those policies and procedures up front.	Annual review of agreement(s): • What circumstances will require a change to the agreement? • What is an appropriate timeline for review? • What will be the process for amending the agreement?
	Other possible agreements that may be necessary or important to the successful implementation and ongoing operation of the networks: • Intercontinental (cross border) agreements (if applicable) • Tribal agreements (if applicable) • Service level agreements (SLA)

ICA/MOU Annual Review

An annual review should be conducted of all ICAs and or MOUs. The review should consider all requirements listed to ensure that the process is functional, responsibilities are well-defined and understood, and commitments to the agreed-upon requirements are accepted and adopted into processes.

This annual check among entities to the ICA helps to renew commitments and refresh everyone's understanding of their responsibilities.

APPENDIX E – FEDERAL AND MILITARY INSTALLATIONS

NCR military and governmental facilities (federal buildings and historical structures) and installations (forts or bases) within the jurisdictional borders of D.C., the state of Maryland, and the commonwealth of Virginia are listed below.

Maryland[11]

- Carderock Division of the Naval Surface Warfare Center, Potomac

- Naval Support Facility Thurmont/Camp David, Thurmont

- Surface Forces Logistics Coast Guard, Baltimore

- Coast Guard Yard, Baltimore

- NRL Blossom Point Tracking Facility, Welcome

- NSF Indian Head Navy Base, Indian Head

- NSA Annapolis Navy Base, Annapolis

- NAS Patuxent River Navy Base, Lexington Park

- Naval Medical Center Navy Base, Bethesda

- Naval Academy Navy Base, Annapolis

- Joint Base Andrews Air Force Base, Camp Springs

- Fort Meade Army Base, Odenton

- Fort Detrick Army Base, Frederick

- Walter Reed Medical Center, Bethesda

- Aberdeen Proving Ground Army Base, Aberdeen

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[11] https://militarybases.com/maryland/

Virginia[12]

- [Naval Support Activity, Hampton Roads](#)

- [Marine Corps Air Facility, Quantico](#)

- [Warrenton Training Center Army Base, Alexandria](#)

- [Radford Army Ammunition Plant Army Base, Radford](#)

- [Fort Pickett Army Base, Blackstone](#)

- [Training Center Yorktown Coast Guard Base, Yorktown](#)

- [Telecommunication and Information Systems Command Coast Guard, Alexandria](#)

- [Sector Hampton Roads Coast Guard Base, Portsmouth](#)

- [Navigation Center Coast Guard Base, Alexandria](#)

- [National Pollution Center Coast Guard, Arlington](#)

- [National Maritime Center Coast Guard, Arlington](#)

- [Finance Center Coast Guard Base, Chesapeake](#)

- [SCSC Wallops Island Navy Base, Wallops Island](#)

- [NSA Northwest Annex Navy Base, Chesapeake](#)

- [NSA Norfolk Navy Base, Norfolk](#)

- [Medical Center Portsmouth Navy Base, Portsmouth](#)

- [Joint Expeditionary Fort Story Naval Base, Little Creek](#)

- [Fort AP Hill Army Base, Bowling Green](#)

- [NWS Yorktown Navy Base, Yorktown](#)

- [NAS Oceana Naval Base, Virginia Beach](#)

- [Norfolk Naval Shipyard Navy Base, Portsmouth](#)

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[12] https://militarybases.com/virginia/

- [NS Norfolk Naval Base, Norfolk](#)

- [NSWC Dahlgren Naval Base, Dahlgren](#)

- [NAB Little Creek Navy Base, Norfolk](#)

- [Quantico Military Reservation Marine Corps, Triangle](#)

- [Henderson Hall Marine Corps Base, Arlington](#)

- [Langley Air Force Base, Hampton](#)

- [Fort Myer Army Base, Arlington](#)

- [Fort Monroe Army Base, Hampton](#)

- [Fort Lee Army Base, Prince George](#)

- [Fort Eustis Army Base, Newport News](#)

- [Fort Belvoir Army Base, Fairfax](#)

Washington, D.C.[13]

- [Naval Research Laboratory Navy Base](#)

- [National Response Center Coast Guard](#)

- [Marine Safety Center Coast Guard Base](#)

- [Coast Guard Headquarters](#)

- [Navy Yard Navy Base](#)

- [The Pentagon](#)

- [Marine Barracks Marine Corps Base](#)

- [Bolling Air Force Base](#)

- [Fort Lesley J. McNair Army Base](#)

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[13] https://militarybases.com/washington-dc/

In addition, other federal institutions and quasi-military operations are within the borders of the MWCOG region and require specific attention due to their importance to the nation.

- Maryland-National Capital Park Police, Hyattsville, Maryland, and Silver Spring, Maryland

- Federal buildings including:

    o Federal Bureau of Investigations (FBI) Headquarters, Washington, D.C.

    o Central Intelligence Agency (CIA) Headquarters, McLean, Virginia

    o The White House, Washington, D.C.

    o The United States Capitol, Washington, D.C.

    o Department of the Treasury, Washington, D.C.

    o National Institutes of Health, Bethesda, Maryland

- MWAA (serving Reagan National Airport, Dulles International Airport, and the Dulles Toll Road), Washington, D.C.