



## SUBMISSION FORM

All submission forms must include the following information. Separate submission forms must be turned in for each eligible program. **Deadline: July 1, 2021.** Please include this submission form with the electronic entry. If you do not receive an email confirming receipt of your entry within 3 days of submission, please contact Gage Harter.

### PROGRAM INFORMATION

County: Arlington County  
Program Title: Emergency Communications Center Remote Call-Taking & Dispatch  
Program Category: Criminal Justice & Public Safety

### CONTACT INFORMATION

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### SIGNATURE OF COUNTY ADMINISTRATOR OR DEPUTY/ASSISTANT COUNTY ADMINISTRATOR

Name: Mark J. Schwartz  
Title: County Manager  
Signature: *Mark J. Schwartz*

### OVERVIEW

The COVID-19 pandemic has challenged the public safety sector like no other disaster. Many agencies and departments have had to reimagine standard operations to ensure the safety of personnel while providing critical public safety services for citizens in the Arlington area. During the early onset of the pandemic, the Arlington County, VA Emergency Communications Center (ECC) developed comprehensive, innovative solutions to address unprecedented operational challenges as they arose. To ensure the safety of personnel while in the Center, ECC leadership exceeded guidelines by the Centers for Disease Control and Prevention (CDC) and Cybersecurity and Infrastructure Security Agency (CISA) by immediately instituting precautions. The protective measures adopted by the ECC were some of the first in the region, such as restricted access, specialized equipment to facilitate decontamination, no-contact temperature scanning, etc.

While establishing thorough precautions for those onsite, the ECC challenged traditional operational and infrastructure processes to become one of the first Public Safety Answering Points (PSAPs) to adopt remote call-taking operations in the summer of 2020. Then in January of 2021, the ECC became one of the first 9-1-1 Centers in the nation to implement capabilities that allow fire and emergency medical services (EMS) dispatchers and supervisors to deliver critical emergency communication services remotely.

Led by Administrator David Mulholland, the ECC pioneered the remote call-taking and dispatching efforts to combat persistent and potential significant staffing shortages during the pandemic. While discussions conceptualizing remote operations had been suggested to address chronic staffing shortages and strengthen the continuity of operations, the plausible and realistic threat of losing an already strained workforce during the pandemic was the catalyst to making remote operations a reality.

Since the summer of 2020 Arlington's ECC has established 12 remote call-taking units in homes throughout the National Capital Region to serve 15 Emergency Communications Technicians (ECTs). This operational adjustment has proven to be a best practice in providing supplemental and redundant call-taking options during a surge incident, such as the insurrection on January 6, 2021. When an influx of calls presents itself, the ECC is able to quickly have additional ECTs log in remotely to support the processing of 9-1-1 and non-emergency calls.

An upgrade in capabilities to the 9-1-1 system decentralize and distribute public safety emergency communications. These upgrades, supported by FirstNet, Microsoft, and Motorola, provide redundancy and resiliency to continue operations regardless of whether personnel can physically report to a traditional 9-1-1 center. These new capabilities also build upon the combined Arlington County/Alexandria City Next Generation 9-1-1 (NG9-1-1) system that was deployed in the fall 2019 to provide additional resiliency and continuity. Delivery of emergency communications services to the public and to first responders is critical to the health and safety of communities and demands innovative approaches to ensure continuity of operations.

### PROBLEM STATEMENT

With the advent of the COVID-19 pandemic, ECC managers have been concerned about their operational systems becoming overwhelmed by record numbers of calls, but this operational demand is

compounded by the inability to ensure a safe operational environment mitigating the spread of the virus amongst the essential staff providing critical response services for the community.

Prior to the pandemic, the ECC was fielding approximately 315,000 of emergency and non-emergency calls, with over 100,000 of those calls received through 9-1-1, on average annually. While calls didn't increase during the pandemic due to the County's efforts to divert or redirect non-emergency calls to targeted call centers (e.g., COVID-19 Hotline), the ECC still saw an expansion in the variety of individual emergency and non-emergency calls received. Typically, 9-1-1 call-takers are trained to support people in crisis. Arlington ECC ECTs are not only trained to take emergency 9-1-1 calls but also must be capable of navigating residents to appropriate departmental services when answering the administrative non-emergency calls that come into the ECC. The pandemic caused an influx of calls with a new and unfamiliar set of emergencies to be addressed and appropriately handled by ECTs, such as complaints of individuals refusing to wear a mask or social distance, groups exceeding mandated limitations congregating in public settings (e.g., park), individuals coughing, or even running out of supplies at home constituting an emergency for that individual resident. While those calls may seem mundane in context, they still take the mental fortitude and discipline that Arlington County ECTs demonstrate during domestic violence calls, child abuse, home accidents, etc., which all saw a significant increase over the duration of the pandemic.

Arlington County ECC, like many 9-1-1 Centers in the country, has historically suffered from a staffing shortage of qualified/certified ECTs. While the causes of the shortages vary, a consistent impact is the inability to provide staff opportunity to establish a work-life balance, creating an increased level of exhaustion that has reached extremes over the duration of pandemic response and recovery.

Unfortunately, neither public safety personnel nor their family members are immune to COVID-19, and ECTs are no exception. Early in the pandemic, one of the Center's staff had been showing symptoms of COVID-19 while at work and had contact with about 75% of staff. The employee turned out not to have the virus, but if they had been infected during the time the employee had been at work, it could have been very problematic.

In an April 2020 survey of 9-1-1 PSAPs entitled "Initial Impacts of COVID-19 on 9-1-1 Centers," members of the National Emergency Number Association (NENA) wrote: "Despite the technical feasibility of a work-from-home telecommunicator or dispatcher in the modern era of cloud services, remote desktop, and broadband internet, few Public Safety Answering Points (PSAPs) responding to the survey have the ability to operate PSAP functions remotely at all, let alone from a telecommunicator's home. 64% of respondents reported that their PSAP had no capability for remote PSAP operations, only 30% reported they can work remotely from a separate public-safety or government facility, and only 7% indicated the ability to do so from home."<sup>1</sup>

Administrator Mulholland and his leadership team wanted to create the same experience for employees at the center for those at home, with fewer screens. Intentionally allowing remote personnel to provide the same services and capabilities as those within the Center provides a holistic solution to the multitude of problems currently plaguing the Center. That would require the combination of five computing devices, multiple monitors and laptop screens, as well as redundant operational foundations such as power and network communications. The customized solution was costly, but necessary. The

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<sup>1</sup> [Remote Dispatch gives Arlington ECC an edge in operations, staffing](#)

ECC worked with the Director of the Department of Public Safety Communications and Emergency Management (DPSCEM), Dr. Aaron Miller, to source emergency funding from emergency protective measures under Public Assistance Category B and the CARES funding Arlington County received.

Regardless of the cost, the compounding factors of increased demand, staff exhaustion, and risk based on the operational structure prompted ECC leadership to quickly adopt the concept of remote call-taking; becoming one of the first (if not the first) to deploy remote dispatch and supervision, giving a significant edge to telecommunicator staffing, safety, supervision and stability during these unprecedented times.

### PROGRAM DESCRIPTION

The Arlington County ECC was one of the first PSAPs to adopt remote call-taking and to activate remote dispatching, allowing staff to work from a remote location, including from home. This allows the ECC to maintain operations during large-scale emergencies that could compromise its ability to maintain operational readiness, even when employees are unable to report to the 9-1-1 center.

ECC management began considering a remote call center concept during table-top exercises that involved multiple simultaneous major events coupled with staffing shortages. But it was the pandemic and compounding factors of consistent staffing shortages, safety, and availability of emergency funding that forced the implementation of a remote solution.

In November 2019, Arlington County's PSAP implemented a shared Motorola Solutions VESTA 9-1-1 call handling system with its sister city of Alexandria. Though it hadn't been put into operation at that time, the system included a remote desktop product called VESTA CommandPOST. This allowed Administrator Mulholland and team to later conceptualize how the remote desktop units could be used in the event ECC's staffing was significantly reduced by the pandemic.

In the early stages of COVID-19, the true impacts to operations were unknown. ECC leadership was preparing for the worst-case scenario of not being able to operate the primary or backup ECC. Within two weeks, they were able to deploy technology and solutions to enable remote call-taking from home.

The structuring of the end solution would typically have taken months to determine under normal circumstances, but because the ECC leadership had established relationships with County and Public Safety Information Technology (IT), vendors, and stakeholders they were able to quickly implement an effective option. They are now collaborating further to streamline the remote programs and improve efficiencies overall. The primary goals are:

- 1) Maximize the redundancy, diversity, and resiliency as much as possible;
- 2) Centralize equipment and resources;
- 3) Reduce the technology footprint in homes; and,
- 4) Simplify the end user experience.

Since the ECC's roll out of remote call-taking during summer 2020, the program has deployed in 12 locations with 15 dispatchers who are capable of taking calls remotely. The remote call-taking system has already proven to be a best practice for surge support for emerging or no-notice incidents, such as the insurrection at the US Capitol on January 6, 2021. The incident caused a massive influx of calls from

concerned residents and the ECC was able to immediately supplement the ECTs on shift with six (6) additional remote call-takers to process 9-1-1 and non-emergency calls without delay.

Following the successful establishment of remote call-taking, the next logical step was to include radio dispatch in the process. Arlington's remote dispatch for fire and emergency medical services (EMS), along with remote supervision, was launched in early January 2021.

"Dispatch has a lot more challenges, primarily because it's more interactive, so when we rolled it out, we had many safety nets in place," said Mulholland. "We chose fire dispatch because there are too many inherent issues on the law enforcement side, the primary one being Criminal Justice Information Services (CJIS) security requirements; our criminal information network in Virginia is very stringent about what can be done and where it can be done from so that toolset is not completely available to us from home."

When remote dispatch went live, Arlington's fire dispatcher at home had another fire dispatcher sitting in the ECC – just in case there was a disconnect, the ECC dispatcher could instantaneously take over. Likewise, the person supervising from home had a counterpart sitting in the center. These safety nets will be removed after the programs are stabilized.

The remote dispatcher works off a home network connected to the ECC's radio system via a Virtual Private Network (VPN). For backup, cellular hot-spots are also utilized at their home – either AT&T/FirstNet, Verizon, or T-Mobile-Sprint depending on their coverage area – and can contact the ECC in the event of a connection problem.

"When we did the roll-out last month (January 2021) the dispatcher began on his home network, and then we switched over to the AT&T/FirstNet hot spot, and both systems worked flawlessly with no issues and no disconnects whatsoever," Mulholland said.

The launch was supervised and communicated through a Microsoft Teams viewing session, which allowed for face-to-face interaction. The session was recorded, giving Mulholland and his technical team plenty of suggestions to further enhance the operation.

"This was not a cheap venture," admitted Mulholland. "But what we want to do with both remote call-taking and remote dispatch and then supervision, is to create the same experience for employees as when they're sitting in the center, minus a few screens. That requires a lot of equipment. They're sitting in their houses with five computing devices right now, so we had to figure out where they're putting either five monitors or a combination of monitors and laptop screens."

The team is now looking at how they can streamline the number of screens. Options like replacing several separate screens with a single 42" curved screen that can "sense" where the user is looking and activate that particular process on the screen and other modernizations to optimize space are being evaluated.

Administrator Mulholland and his leadership team continue to improve and advance the remote capabilities of the ECC. Arlington ECC personnel lead and participate in regional and industry working groups, such as the Integrated Justice Information Systems (IJIS) Institute's Emergency Communications Response and Advisory Committee, focusing on new and emerging technologies to ensure that Arlington leads the region and the industry in adopting efficiencies and capabilities that provide better service to

residents. Arlington ECC will continue to challenge common or typical operational architectures and systems to address the needs and better the lives of ECC personnel while meeting the demand and expectations of Arlington residents.

### RESULTS

The implementation of the ECC remote call-taking program, in particular, has provided widespread operational benefits for the Center and for the Arlington Community. It has augmented ECC staffing shortages on numerous occasions, along with providing critical support and dependable customer service during weather events and spontaneous occurrences that cause an influx of calls from the public.

In addition, employees in the remote programs have become more familiar with the configuration and components of the technology and resources they have at home, which helps them with first-level troubleshooting when physically present in ECC making the ECC more self-sufficient in problem resolution, technical or beyond.

As of February 23, 2021, remote ECTs have answered 9,922 phone calls, 3,022 emergency and 6,900 non-emergency, and logged over 1,436 hours during 248 shifts. Benefits of the remote call-taking and dispatching program will continue to reveal themselves as operations continue and technology advances. This program demonstrates the ECC, and DPSCEM's, continued commitment to pioneering technological advances within the industry to provide exceptional services tailored to the Arlington community.