

COVID-19 Case Study: Public-Private Partnerships in Maryland

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ABSTRACT

The COVID-19 pandemic has tested emergency management response operations. The rapid and irregular pace of the pandemic coupled with limited prior experience for this type of disaster made early response efforts especially challenging. As the months progressed, there was evidence across the country of spontaneous efforts to institute whole community approaches, which has been a FEMA priority over the last decade (FEMA, 2011). In Maryland, state-level emergency management officials leveraged and expanded relationships with the private sector to coordinate information, resources, and operational activities in order to make headway in the COVID-19 response throughout the State. This article presents a case-study of a successful public-private partnership and contains a call to action to reduce future disaster consequences through the integration and leveraging of partnerships between government and the private sector.

Keywords: Private-Public Partnerships, Emergency Management, Private Sector, COVID-19, Business Emergency Operations Center

Introduction

The Maryland Emergency Management Agency (MEMA) is the unit of Maryland government with a primary purpose of ensuring that the State will be adequately prepared to deal with emergencies beyond the capabilities of local authorities. MEMA improves emergency preparedness by augmenting the efforts and skills of multiple partners and providing resources and tools that residents, communities, businesses and other stakeholders need to prepare for, mitigate against, respond to, and recover from disasters. MEMA's strong commitment to collaboration is embodied in the Agency's Vision ("To shape a resilient Maryland where commu-

nities thrive”); Mission (“To proactively reduce disaster risks and reliably manage consequences through collaborative work with Maryland’s communities and partners; and Core Values” (“Vision | Collaboration | Reliability”).

Like emergency management agencies in other states, as reports of the COVID-19 pandemic emerged and grew, MEMA closely engaged with other Maryland agencies. In January 2020, MEMA, the Maryland Department of Health (MDH), and other agencies began emergency response coordination efforts (referred to as consequence management actions). The initial concern was to repatriate Maryland residents from China and other overseas locations. However, efforts quickly turned to identifying and planning for vulnerabilities and to implement initial priorities. Early on, officials anticipated that response coordination efforts would be complex and needed to be based on accurate information provided by both the public and private sectors. It was clear that robust private-sector coordination would be essential in terms of mounting critical infrastructure needs.

Although State agencies had been coordinating for nearly two months, the pandemic response dramatically increased on February 27, 2020, when Maryland Governor Hogan conducted the first COVID-19 press conference held at the State Emergency Operations Center (SEOC). He urged Marylanders to prepare and announced supplemental funding for the COVID-19 response (Maryland State Government 2020). Many states activated their emergency operations centers (EOC) at this time (Bouffard 2020). On March 4, MEMA raised the SEOC activation level to “Enhanced” and several local EOCs took similar action. This was also the start of MEMA’s active staffing of the SEOC, a move that would last deep into summer 2020.

The COVID-19 crisis in Maryland escalated quickly. On March 5, Governor Larry Hogan announced Maryland’s first presumptive positive case of COVID-19. That day, the Governor issued a Declaration of a State of Emergency, and the SEOC activation level moved to “Full.” This designation is reserved for incidents that require local, state, and federal resources to actively manage consequences. From that point forward, MEMA staff, and those of other State agencies, faced a continued barrage of new challenges, problems, and issues, many requiring multi-agency problem solving and coordination. It accelerated the response tempo, with the Governor appropriately supporting an aggressive, evidence-based stance on the pandemic. From March 5 through October 6, 2020, the Governor issued 12 Proclamations; re-affirmed 31 Orders in Effect; provided 14 Interpretive Guidance documents; and 21 Superseded Orders (not in effect) related to the pandemic.¹

In mid-2019, Governor Hogan had begun a one-year elected term as the Chairman of the National Governors Association (NGA). His impact on pandemic activities on the ground in Maryland continued to be pervasive. As the pan-

¹ Office of the Governor, October 6, 2020: <https://governor.maryland.gov/covid-19-pandemic-orders-and-guidance/>

demic evolved, he simultaneously assumed major leadership roles nationally as a pandemic spokesman for governors as well as pandemic best practices.

The next several months tested the limits of Maryland's and the country's emergency management systems and public health capabilities: developing strategies to share information; implementing public health mitigation efforts and countermeasures; addressing a succession of acute problems; developing hospital surge capacity; establishing testing sites; controlling outbreaks in nursing homes; and, eventually, a gradual reopening. More so than in other crises, State-level emergency management staff and stakeholders spent countless hours during workdays, nights, weekends and holidays, addressing challenges of the immediate problems.

The COVID-19 challenge continues to test the limits of government response efforts and traditional response mechanisms. Never before has the U.S. emergency management system experienced a global catastrophe in which all U.S. states were involved (Coleman 2020). Unlike regional disasters, during which states support one another through the Emergency Management Assistance Compact, in the COVID-19 response, there were unprecedented situations where states competed with one another for scarce resources (Kayyem 2020).

This article addresses a capability that proved essential in configuring a state-level pandemic response to confront the early months of the COVID-19 crisis. Eight years prior to the pandemic, MEMA began developing relationships with the private sector, bridging what had been a wide gap between government and businesses of all types. Leveraging these relationships and a host of newly formed partnerships, MEMA connected directly with critical infrastructure organizations and other leaders in the private sector throughout the state. This approach paid many dividends in formulating and implementing pandemic response measures.

The purpose of this article is to 1) provide the historical genesis of Maryland's Private Sector Integration Program (PSIP), 2) outline the operational role the Maryland Business Emergency Operations Center (MBEOC) during the COVID-19 pandemic, and 3) advocate for the continuing expansion of public private partnership disaster risk reduction throughout the nation.

Background

Maryland has approximately 6 million residents; the state capital, Annapolis, has a population of 39,000, and Baltimore, its largest city, has 590,500 residents. Local jurisdictions include 23 counties and the city of Baltimore. MEMA is the state agency with primary responsibility for emergency preparedness policy and coordinating state-level hazard mitigation, incident response, and disaster recovery. It is a unit of state government within the Maryland Military Department, which also oversees the Maryland Air National Guard, the Maryland Army National Guard, and the Maryland Defense Force. The Agency participates in the nation-

al Emergency Management Assistance Compact (EMAC), the regional National Capital Region Mutual Aid Agreement, and the in-state, inter-jurisdictional Maryland Emergency Management Assistance Compact (MEMAC). Maryland, Pennsylvania, Washington D.C., Delaware, Virginia, and West Virginia comprise FEMA Region 3.

To greater or lesser extent, state emergency management agencies across the country work collaboratively with a variety of stakeholders to prepare for, respond to, and recover from disasters. Agencies satisfy this mission by pursuing common interests and coordinating to resolve the consequences of disasters. However, the private sector's critical role in supporting the consequence management activities of emergency management agencies is often overlooked.

At the same time, the business emergency operations center concept is well established at the Federal level. FEMA's National Business Emergency Operations Center (NBEOC) is part of the Agency's Office of Response and Recovery, Private Sector Division. It is an operational information sharing structure set up to enhance communication and collaboration with private industry partners and ensure their integration into disaster operations at a strategic and tactical level. When there is an active disaster, NBEOC members have unique lines of communication into FEMA's National Response Coordination Center, activated Regional Response Coordination Centers, and the broader network of emergency management operations, including state partners.

At the state level and in selected local jurisdictions, public private partnerships (P3s) are crucial to ensuring community safety. Whether it is a lack of resources, capability limitations, or legal restrictions, government alone cannot meet the full range of community needs during most disasters. Where the government's ability to support community needs end, private sector agencies and other community organizations can fill critical gaps. In order to successfully deploy this "force multiplier," it is important that government agencies conduct pre-disaster outreach and build relationships with private sector entities in order to ensure that they can effectively work together under disaster conditions.

With this in mind, in 2012, MEMA launched the Private Sector Integration Program (PSIP) as a means to engage non-governmental partners in all aspects of emergency management activities. One of the first in the nation, this program enhanced information and resource sharing between emergency managers and businesses in Maryland.

The Maryland PSIP was perceived as an opportunity for Maryland private sector businesses to engage with the government in an effort to build relationships and to improve individual organizational resilience. As a result of the responses to September 11, 2001 and Hurricane Katrina, emergency managers determined that they needed to seek opportunities to cooperatively provide information, tools, and resources to businesses and critical infrastructure owners before, during, and

after disasters (Center for Health and Homeland Security 2012). The 2008 Regional Catastrophic Preparedness Grant Program (RCPGP) enabled state emergency management agencies across the nation to build statewide P3 programs that prepare businesses for all-hazard emergencies and catastrophic events (Regional Catastrophic Preparedness Grant Program 2012). This movement was bolstered by the issuance of a strategic framework for a Whole Community Approach broadly disseminated by FEMA in December 2011. Among other elements, the framework provided tools to empower local action and to leverage and strengthen social infrastructure, networks and assets (FEMA, 2011).

In alignment with MEMA's mission, officials formalized the PSIP Program under the agency's External Outreach Branch to support, coordinate, and collaborate with the private sector across the State. It was intended to ensure that public-private partnerships were established and maintained before a disaster, rather than just during disaster operations. MEMA staff firmly believed that operational actions could not be conducted without pre-established relationships.

At present, a Private Sector Liaison at MEMA leads the program and is the main point of contact for the relationship between the private and public sectors. The Private Sector Liaison coordinates and manages two distinct operating divisions of the program: 1) ongoing engagement, and 2) emergency response activation. Ongoing engagement responsibilities include outreach and active recruitment, stakeholder engagement, partnership development, information sharing, training and exercise coordination, planning and mitigation, and emergency alert notifications. Emergency response activation includes the operationalization of the responsibilities during engagement to respond to an immediate threat and recover from an emergency or disaster.

To effectively serve Maryland businesses and be aligned with MEMA's 2019 vision "*To Shape a Resilient Maryland Where Communities Thrive*" (Maryland Emergency Management Agency 2019), the current vision of the PSIP program is "*A more resilient Maryland with the private sector playing a more inclusive role in emergency management.*" Since 2019, the PSIP program has focused on providing the necessary tools and services to the Maryland private sector community to ensure their resilience. The Maryland Business Emergency Operations Center (MBEOC), the operational component of PSIP, planned and implemented strategic activities that were crucial to its ability to respond to the needs of the private sector during the COVID-19 pandemic. These included: 1) prioritizing resource allocations that ensure the PSIP is aligned with strategic agency and statewide missions; 2) revisiting the PSIP product offerings to be aligned with membership needs; and 3) growing the membership and partnerships with the private sector in Maryland.

Leading into 2020, the PSIP program's focus was to revise product offerings to align with membership needs. These goals included: 1) identifying the role of

the private sector program within MEMA; 2) establishing an operational role for the Private Sector Liaison and the PSIP (e.g., the MBEOC); 3) identifying private sector needs and creating products to answer those needs; and 4) recruiting private sector members through digital outreach, statewide outreach, and private-public partnership events.

In general, to achieve such goals, government-private sector engagement programs require dedicated resources and commitment both internally and across organizations. These four goals established a solid footing for the program and laid groundwork for the COVID-19 response. The achievement of these impacts made a difference not only to Maryland's private sector, but to the State as a whole. Most notably, operationalizing the PSIP through the MBEOC could bypass, when warranted, bureaucracy to provide immediate and transparent solutions while keeping stakeholders accountable.

Methods

A qualitative data collection and analysis approach was used to provide a context and information for Maryland's experience working with the private sector. The MBEOC operated for 127 days, from the beginning of the response in February until June.

The approach included leveraging a case-study research design and involved gathering data from a variety of sources throughout the duration of the COVID-19 pandemic. Post-incident interviews were conducted as part of an after action review process. To provide additional context, the authors also collected supporting data through unobtrusive measures, primarily consisting of open-access government documents, reports generated during the COVID-19 response, and other supporting data. Finally, both authors organized their first-hand accounts responding to the COVID-19 pandemic in Maryland through an integrated auto ethnography that complemented the study findings.

Results

Over the past decade, MEMA has striven to develop the relationships which would lead to successful operations. In 2020, the result of these collaborative strategic efforts, PSIP was available for deployment in the COVID-19 pandemic. For over 100 operational periods, MEMA coordinated the Maryland Business Emergency Operations Center (MBEOC), making a direct connection to critical infrastructure and private sector providers. In addition to other benefits, this coordination resulted in over two million donated units of personal protective equipment (PPE). These partnership actions reduced risk and suffering, while also improving overall response efforts across State. These actions fully engaged the pre-established relationships that are core to the PSIP program.

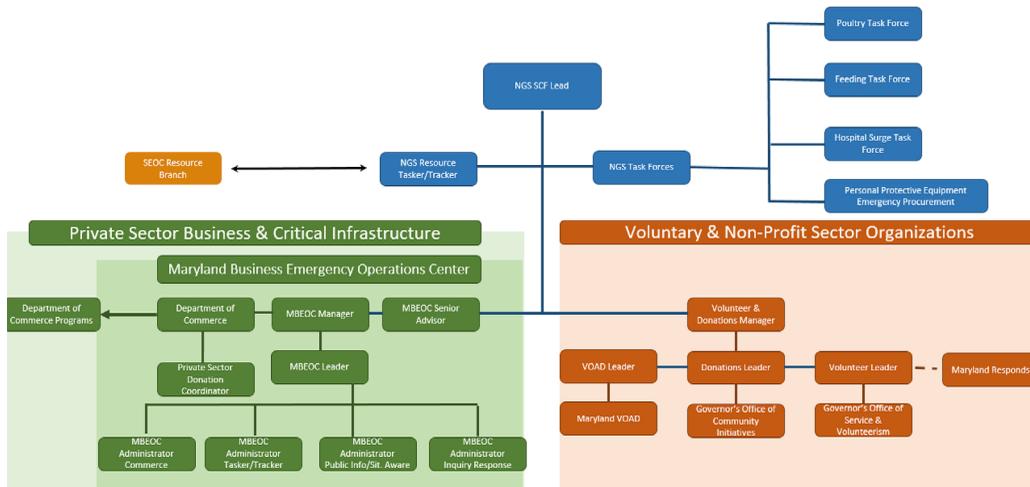
During activations of the SEOC, MEMA stands up the MBEOC, the operational component of PSIP. The MBEOC Unit Lead is responsible for establishing and supervising the MBEOC and its staff. The MBEOC may have a physical presence of businesses, non-governmental organizations, and trade associations within the SEOC itself. Supporting MBEOC operations communications is a digital platform that members access throughout the incident. It contains documents, videos, weather information, and additional information relevant to the situation. The platform works to share an array of content to provide shared situational reporting, conference call notes, and private sector communication.

When MEMA determines that a threat or hazard will likely impact Maryland, the Private Sector Liaison notifies PSIP members to report on the incident, providing hard information and situational awareness of potential or limited impact/damage and other pertinent information such as the SEOC status and the MBEOC activation status. PSIP members are also encouraged to review their readiness and continuity of operations plans in preparation for impacts. Throughout the duration of specific incidents, information flow is two-way and continuous.

On January 27, 2020, the MBEOC implemented mission-ready plans including virtual platform activation to share resources and amplify messaging to the private sector community. Taking into consideration the longevity of COVID-19's impact, officials increased MBEOC staffing to ten individuals. Four staff from the Department of Commerce were designated to answer requests and inquiries, identify manufacturers that could produce and procure PPE, and manage the coordination of both national and international corporate donations. Six MEMA staff assumed the remaining roles of MBEOC Administrators, Lead, and Manager.

The MBEOC Manager supervised the functions of MBEOC staff. The position provides guidance to the MBEOC Leader while also receiving input to coordinate with other key positions in the SEOC and across multiple operational stakeholders. This role included working closely with the Non-Governmental Services State Coordinating Function (SCF) Lead (Maryland's version of Emergency Support Functions) who supported private and also non-profit coordination efforts during the pandemic. The MBEOC Manager also coordinated directly with other leaders through the SEOC structure and with the staff of other state agencies. Figure 1 illustrates the organizational structure of the MBEOC during the pandemic response.

Throughout the pandemic's initial months, MBEOC bridged the gap between public and private organizations. The team accomplished this through a combination of partnership, information management, and resource management. The following sections outlines the role of the MBEOC in each of these areas.



Acronyms: NGS- Non-Governmental Services; SCF- State Coordinating Function; MBEEOC- Maryland Business Emergency Operation Center; List source and spell out various acronyms; SEOC- State Emergency Operation Center; VOAD- Voluntary Organizations Active in Disaster

Figure 1. Maryland Business Emergency Operations Center Organizational Structure
 Source: Maryland Emergency Management Disaster Risk Reduction Directorate.

Partnerships

The MBEEOC’s goal was to ensure open and transparent information to assist with effective coordination between the private and public actors and promote an operational response with PSIP members. Inputs included MBEEOC’s responsibility for collecting information, coordinating operational processes, and mediating incoming requests from private sector organizations. MBEEOC coordinated private sector donations, answered inquiries related to state and county executive orders/actions, accepted offers to provide services through the Maryland Department of Commerce’s emergency vendor list, coordinated private sector PPE requests, and organized the public-private partnerships information sharing call. The MBEEOC matched the needs of the public sector with the capabilities of the private sector through an ongoing information exchange.

On the output side, a critical role of the MBEEOC was to push information to partners and to relay operational needs to them. These responsibilities involved disseminating resource needs, capabilities, and information to MEMA’s PSIP members. The MBEEOC accomplished this information exchange and dialogue through constant updates from its virtual platform, daily situation reports, and bi-weekly conference calls with the private sector.

State Agency Partners

MBEEOC assembled numerous partners across Maryland State government during the response. These included: the Departments of Commerce, General Services,

Human Services, Health, the Maryland Governor’s Office of Community Initiatives, and as well as other agencies representing various sectors.

The Department of Commerce and MBEOC partners were critical in assisting private sector entities in obtaining government resources, procurement, and donations during the emergency response to COVID-19. Commerce also provided MBEOC with four members of their staff at the Business Development Branch and the Strategic Industries & Entrepreneurship Team. These staff created a process to oversee and facilitate crisis management fielding, donation coordination tracking, emergency vendor database tracking, and manufacturing innovations guidance for manufacturers transitioning to producing PPE products. The successes of the MBEOC were due in large part to support across the entirety of government throughout the response.

Private Sector Partners

MBEOC leveraged private sector partners including representatives of essential privately-run critical infrastructures and businesses as well as with industry (Table 2). Collaborative problem solving associated with MBEOC activation has been extremely valuable throughout the pandemic. From coordinating the bulk donation of goods, providing guidance on government regulations, partnering with the Maryland Food Bank for feeding missions, and other operational activities, these joint problem-solving ventures would not have been possible without the partnership established by the PSIP as well as the MBEOC.

Table 1. Private-Sector Partners

Industry / Business Sector	Private Sector Partners
Organizations Supporting Small Businesses	<ul style="list-style-type: none"> ▪ Maryland Chamber of Commerce ▪ NFIB America’s Small and Independent Businesses
Communications	<ul style="list-style-type: none"> ▪ AT&T ▪ Comcast ▪ Verizon
Energy and Fuel	<ul style="list-style-type: none"> ▪ Baltimore Gas and Electric (BGE) ▪ Exelon Corporation Continuity & Crisis Management ▪ Mid-Atlantic Petroleum Distributors
Food and Beverages	<ul style="list-style-type: none"> ▪ C&S Wholesale Grocers ▪ Delmarva Poultry ▪ Maryland Beverage Association ▪ Maryland Farm Bureau ▪ Maryland Restaurant Association
Other Organizations	<ul style="list-style-type: none"> ▪ American Logistics Aid Network (ALAN) ▪ Maryland Bankers Association ▪ Maryland Motor Truck Association ▪ Maryland Retailers Association

Communication, Information Management & Coordination

Public-Private Partnership Call

The MBEOC organized a twice-a-week call with the private sector beginning on April 14. This communication was designed to encourage information exchange and to provide private sector partners the opportunity to brief out operational information on industry, success stories, issues at hand, and future supply chain concerns. The calls also collected information to assist with state operations and potential supply chain interruptions. Stakeholders appreciated the opportunity to engage the public sector with their questions and concerns in real-time.

Virtual Private Sector Support

As noted, the MBEOC maintained a virtual clearinghouse accessible information for the Maryland business community. It was also a channel allowing private sector entities to learn about emergency operations and offer supporting operational capabilities to MBEOC. The MBEOC staff directed private sector members to this resource, which proved vital in managing the deluge of rapidly changing information that characterized the ongoing COVID-19 pandemic response.

Daily Situation Reports (SitRep)

MBEOC distributed a daily SitRep aimed at disseminating timely and accurate information and resources to stakeholders. While the information on the virtual platform had to be truncated due to platform space constraints, the information found on the SitRep was pulled from more sources and delivered more detailed information. The SitRep allowed the convenience of clickable links. Since it was sent out at the end of the day, it was able to summarize the previous operational period in a succinct manner. The daily SitRep proved to be a useful tool to provide targeted information to private sector partners during response efforts.

Resource Management

MBEOC coordinated resource management and sharing activities between private sector donations and identified resource gaps. This included coordinating the flow and receipt of donations, connecting private organizations wishing to provide services, and coordinating PPE resource needs. The following section outlines the MBEOC outcomes in these areas.

Private Sector Donations

The MBEOC fielded and processed offers from private sector entities that could bulk-donate goods and services to the State. A donation database was maintained to identify potential private sector donors who were willing to provide capabilities during future emergencies. Through the private sector donations program, the

MBEOC assisted the Maryland Department of Health in answering each critical needs request and providing personal protective equipment to the front lines. The figure below represents the process that officials used to coordinate these types of donations.

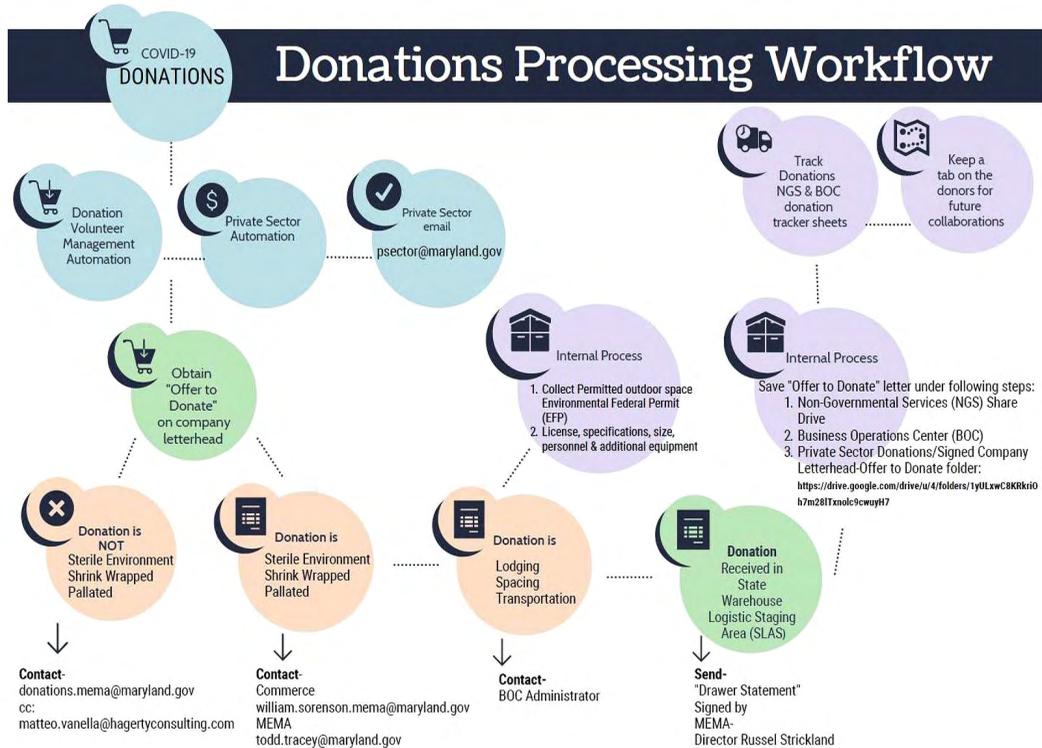


Figure 2. Donations Process Workflow

MBEOC coordinated over fifty private sector donations with an estimate of 1,500,000 face masks, 400,000 gloves, 100,000 gallons of hand sanitizer, 100,000 medical level masks, and 50,000 face shields. These donations filled critical resource gaps that were integral to the needs of Maryland residents. These operations would not have been possible without the strong partnerships the PSIP program established before the pandemic.

Emergency Vendor List

The purpose of the emergency vendor list was to centralize and coordinate offers from private sector entities interested in providing goods and services. This process was adopted as part of a Department of Commerce initiative to streamline the vetting and ordering process and acquire company resources and information. Officials provided a streamlined basis for companies to complete emergency vendor database requests for information from the Department of General Services (DGS). From there, officials collected data and included the company information

in a database that MBEOC staff used to match the product or service they were offering to priority missions or needs. MBEOC staff vetted the companies for financial stability and legitimacy. Companies that met required criteria were entered into a qualified vendor list that resource managers used when filling the thousands of unmet needs during the pandemic.

Personal Protective Equipment (PPE) Requests

MBEOC provided resource management support through integrating private sector requests for PPE. Utilizing its business community relationships, the MBEOC assisted with coordination and distribution of PPE to private sector partners deemed essential by the Cybersecurity and Infrastructure Security Agency (CISA). Fulfilling these needs ensured that workers tasked with performing essential duties could do so safely and effectively. Critical infrastructure organizations and private sector frontline workers from the PSIP program were able to submit their PPE needs to the MBEOC Unit, which collected and broke down the data to assist the Department of Health with the fulfillment and distribution of items, including federally donated cloth masks.

Discussion

The MBEOC operated for 127 days, from the beginning of the response in February until June. The “emergency” response to COVID-19 had concluded and the State had entered its recovery phase giving the MBEOC the opportunity to deactivate the unit and return to normal operations. Any COVID-19 related needs were addressed through MEMA’s steady-state PSIP program. On-going services that continued after the deactivation of the MBEOC were corporate donations and assistance with testing, vaccine distributions plans, and public announcements campaigns. In addition, PSIP staff continued to work with private sector members to prepare for additional waves of the pandemic and eventual vaccine distribution. The MBEOC staff combined partnerships, information management, and resource management to improve coordination and integration between the various sector partners and public organizations. The lessons learned through MBEOC’s COVID-19 response demonstrate that to resolve complex problems associated with disasters, it is necessary to develop an integrated approach across government and the private sector.

MEMA deployed its partnerships to surge resources into Maryland, communicate critical messages, and address capability gaps. As a result of earlier collaborations, the private sector has sought additional involvement in government not only during disasters but also in reducing disaster risk and building more resilient communities. Without jointly investing in both consequence management and disaster risk reduction actions with the private sector, communities will never break the cycle of disaster.

Strengthening Future Consequence Management Activities

In the aftermath of any major incident, emergency managers evaluate their response and recovery efforts through a comprehensive after-action review process. The goal of both formal and informal reviews is to identify areas for improvement and develop a pathway for more effective responses in the future. A common theme throughout the response was the power of partnerships and the need to develop and refine workable processes.

Agencies must focus on building partnerships with businesses, trade associations, non-governmental organizations, and other representatives across critical infrastructure sectors. Exercise hot washes and other after-action assessments typically verify that stronger and deeper relationships with these critical emergency management partners translate into better responses.

One lesson learned from the COVID-19 response was the importance of reaching out to community trade associations. Associations have the ability to rapidly share crisis communications, resource needs, and other important emergency management information with their broad membership bases. As noted, MEMA successfully leveraged trade associations throughout the COVID-19 pandemic, a model which emergency managers throughout the nation could leverage. Organizations with limited resources should start with trade associations, rather than individual businesses given the associations' broad reach.

While successful public-private-partnerships enhance the ability to respond to disasters, the cycle of disaster will not be broken by response alone. True integration between government and the private sector must incorporate joint disaster risk reduction activities in an attempt to reduce the impacts of future disasters. Emergency management agencies should evaluate how their private sector partners fold into existing emergency management systems, and how to maintain accountability during response operations. Actions such as tracking offers for assistance and donations can quickly become overwhelming without the proper infrastructure in place. Thus, investing not only in process development, but also system requirements prior to disasters is essential in integrating activities with the private sector.

Many emergency management agencies utilize an electronic resource management system, which should consider the role of the private sector in response coordination activities. It is fundamentally important to understand the private sector's information requirements and how they prefer to integrate with public sector agencies. Private sector organizations need a simple, straightforward integration into these systems. Creating additional user accounts, logins, etc. will not lead to successful private sector integration with public systems. Unless these and other accommodations are made, the consequence management role will be limited.

Emergency managers must also adapt their resource management processes to account for non-governmental resources. A fully developed system that allows officials to request assistance, gather offers, and track the distribution of assets creates a level of situational awareness which operators use to inform decisions. Private sector organizations play a critical role in supply chain management during disasters. Thus, their systems must integrate those used by emergency managers.

Regardless of how a community prepares for disasters, these efforts should carefully evaluate potential roles for the private sector. As a start, emergency managers can take small steps towards integrating the private sector. Speaking to a chamber of commerce about the importance of disaster preparedness, engaging trade associations, and even building a private sector integration program all improve future operations. Partnering to improve response operations, however, is only the first step. Emergency managers must leverage private sector relationships to implement transformational disaster risk reduction and mitigation projects.

Utilizing Relationships to Build Resilient Communities

Although building capacity to respond to and recover from disasters is a core function of emergency management agencies, the only way to break the cycle of disaster is to implement effective disaster risk reduction projects. Federal priorities encourage participation at all levels and among a variety of stakeholders. This is an area where emergency managers must leverage their relationships with the private sector to effectuate meaningful change.

While grants and funding are available to implement mitigation and risk reduction measures, grantors typically restrict these funds to publicly owned infrastructure and specific non-profit organizations. Since the majority of critical infrastructure systems are not owned by the government (Department of Homeland Security, 2020), fully integrating risk reduction efforts between public and private organizations makes sense.

Across the nation, communities have embraced the concept of public-private partnerships. For example, the Blue Lake Rancheria Tribe (California) combined several funding sources to install a microgrid that not only insulates the community from power outages, but also eliminates 150 tons of carbon dioxide emissions annually (Blue Rancheria Microgrid 2020). In Galveston, Texas, a combination of public and private funding sources led to the restoration of 10,000 feet of the Virginia Point shoreline and twenty-five acres of marshland in Galveston Bay. Also, the City of Cuyahoga Falls, Ohio, combined private donations and federal hazard mitigation fund sources to install a rain garden reserve. This project removed impervious surfaces, thus leading to a reduction in flash flooding in the city (Federal Emergency Management Agency 2020). These examples demonstrate the breadth of activities that effective public-private partnerships can undertake.

In Montgomery County, Maryland, communities worked with private sector agencies to install microgrids. The first project involved installing a microgrid at the County's public safety headquarters. The facility, which houses transportation resources, county emergency management, and a police station, is now more resilient and insulated from power grid disruptions. In addition, the project limited greenhouse gas emissions by 5,900 metric tons annually. For this project, the County partnered with Duke Energy renewables, which will own and operate the system for twenty-five years (Montgomery County Government, 2020). This illustrates the importance of public sector organizations working closely with the private sector not only during disasters, but in increasing community resilience.

Federal policy development can incentivize communities to pursue innovative collaborative projects. The Federal Emergency Management Agency (FEMA) funds a variety of hazard mitigation assistance programs aimed at reducing disaster risk. Originally funded in 1997, then codified through the Disaster Mitigation Act of 2000, FEMA provides assistance to governmental and non-profit organizations for mitigation activities. Funding levels fluctuate annually based on congressional appropriations, and the effectiveness of these FEMA's programs have been called into question (Congressional Research Service 2009). Although these programs were narrow in scope, in 2018, with the passage of the Disaster Recovery Reform Act, FEMA significantly expanded the scope of its mitigation programs through the Building Resilient Infrastructure in Communities (BRIC) program (Holdeman 2019).

The BRIC program is the most significant opportunity in decades to invest in disaster mitigation, thereby reducing the impacts of future disasters (FEMA 2019). Rather than basing program funding on Congressional appropriations, a mandated six percent set aside from the previous year's disaster losses provides program financing (Holdeman 2019). These changes signify FEMA's commitment to support mitigation and risk reduction. It also ensures funding for the program on a continuing, stable basis. In FY2020, FEMA made \$500 million available for competitive nationwide funding. The program emphasizes the importance of community partnerships and encourages innovative risk reduction projects (FEMA 2020). Through this financing, communities have an opportunity to engage and partner with the private sector more so than in the past. It represents a significant opportunity for emergency managers to leverage their private sector consequence management relationships in ways previously not possible.

BRIC and other nationwide programs provide building blocks to transform communities into places that resist disaster and have a lower carbon footprint. Governments cannot achieve this objective alone; rather, communities must band together to solve these complex vulnerability issues.

Conclusions

The MEMA case illustrates the importance of leveraging relationships between a state emergency management agency and private sector stakeholders. The Agency's experience during the pandemic highlights the ways in which organizations with different needs and capacities can partner to collaboratively solve problems in pursuit of a common goal.

Maryland Business Emergency Operations Center activities over five months of the pandemic was integral to the State's overall response. It provides a model for the future. In support of consequence management operations these efforts included conducting regular outreach, coordinating conference calls, arranging bulk donations of resources, and developing a common understanding of incident priorities across stakeholder groups. The result of these and other accomplishments was effective integration of public and private sector organizations throughout the initial months of the pandemic.

Rather than continuing to confront a perpetual cycle of disasters, public and private sector agencies need to apply the vigor and focus exhibited in the pandemic to other disaster risk reduction priorities. Emergency managers are well suited to address complex interrelated issues, leveraging their consensus building and networking skills. But resilience is a shared responsibility across all sectors of the community. Emergency managers should capitalize on their relationships with private sector organizations in an effort to make significant progress in breaking the cycle of disaster.

Today's complex hazards require an approach rooted in innovation and partnerships. Beyond that, in alignment with BRIC's guiding principles, it would be productive for the private and public sectors to propose forward thinking solutions that can encourage and enable innovation, maintain flexibility, and scaling these initiatives in a manner that permits goal attainment.

Improving consequence management activities will require identifying and selecting immediate actions. Depending on the nature of these needs, community groups can be engaged to assist the determination of priorities. The successes realized by Maryland stakeholders transcend jurisdictional boundaries. Beneficial ideas and processes developed in one community can be applicable to other locations or a broad spectrum of communities. Improving connections between public and private stakeholders also acclimates local participants to their counterparts, which can prove useful in regional disasters.

Public organizations can capitalize on their relationships with the private sector to implement transformative disaster risk reduction projects. Approaches can include leveraging P3s, packaging multiple funding sources together, and making difficult choices about how and where we live. Engaging the emergency management system in disaster risk reduction and leveraging relationships with

critical infrastructure providers position communities to be more resistant to the next disaster, thereby increasing the consequence management capacity of state emergency response agencies.

MEMA's experience of enlisting a high degree of community involvement in the COVID-19 response and related consequence management objectives confirms the desirability of this approach as a high impact state-level force extender. We recommend that emergency management agencies at the state and other levels review opportunities to expand and systematize their own community engagement efforts. While the MBEOC requires consistent engagement with multiple partners over time, there are clear dividends during a major disaster such as the pandemic.

It is essential that state emergency management agencies share best practices within their borders as well as with their agency counterparts nationally. For example, states with larger land areas than Maryland may face greater opportunities as well as more challenges in their P3 mobilization efforts. The benefits and costs of business emergency operations centers should be carefully considered as they reach maturity as well as in the context of specific events. At best, they provide a basis to expand the capacity of state emergency management agencies to address high consequence challenges while building community resilience.

Acronyms and Abbreviations

ALAN - American Logistics Aid Network

BRIC - Building Resilient Infrastructure Communities

BGE - Baltimore Gas & Electric

CISA - Cybersecurity and Infrastructure Security Agency

COVID-19 - 2020 Pandemic name

EOC - Emergency Operations Center

DGS - Maryland Department of General Services

FEMA - Federal Emergency Management Agency

MBEOC - Maryland Business Emergency Operations Center

MEMA - Maryland Emergency Management Agency

NBEOC - National Business Emergency Operations Center

PPE - Personal Protective Equipment

PSIP - Private Sector Integration Program

P3 - Private Public Partnerships

SCF - State Coordinating Function

SEOC - Maryland State Emergency Operation Center

SitRep - Situation Report

RCPGP - Regional Catastrophic Preparedness Grant Program

RFI - Request for Information

Author Capsule Bios

Allegra A Tartaglia, MID is an experienced stakeholder engagement practitioner who is currently the Private Sector Liaison and Preparedness Specialist at the Maryland Emergency Management Agency (MEMA). In this capacity she is responsible for leading the private and public partnership Private Sector Integration Program (PSIP) within the Communications & Outreach Branch. As MEMA's liaison to the private sector, she ensures that the Maryland private sector businesses are prepared in emergency planning, response, and recovery at the local, regional, and national level. Ms. Tartaglia led the Maryland Business Emergency Operation Center at the Maryland State Emergency Management Agency for the emergency response of the COVID-19 pandemic. She holds a Master of Arts in International Development & Governance International Public Management from the University of Pittsburgh Graduate School of Public and International Affairs.

Kyle R. Overly MS, CEM is an accomplished emergency management practitioner and educator who is the Director of Disaster Risk Reduction with the Maryland Emergency Management Agency (MEMA). He is a member of MEMA's senior leadership team and provides executive-level oversight to the agency's Disaster Risk Reduction Directorate. With over 10 years of experience, he has responded to major disasters including Hurricane Irene, Hurricane Sandy, the Baltimore City Civil Unrest, Ellicott City Flash Flooding (2016 & 2018), and the COVID-19 Global Pandemic. Mr. Overly is also an educator, with over 10 years of teaching experience, primarily at the University of Maryland Global Campus. He is a graduate of Oklahoma State University's Fire & Emergency Management Master's Program and is a Doctor of Public Administration student at West Chester University of Pennsylvania. He is also a graduate of the National Emergency Management Executive Academy and is currently completing the Center for Homeland Defense & Security Executive Leadership Program.

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