

**The National Incident Management System and Communication:
Lessons from Hurricane Michael**

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Background & Educational Story

Bay County, in the panhandle of Florida, was once a vibrant county with a rich history in forest management and vast swaths of southern pine forests. The tourism industry in Panama City, Panama City Beach, and the surrounding area was equally as crucial as the timber in the county. Housing was affordable, and the county's population was a mix of local multi-generation homeowners, people from out-of-state, and people from other areas of Florida with second or third homes in the county. Over 186,000 people lived in this 1,000 square mile county in 2018. On October 10, 2018, Bay County became ground zero for Hurricane Michael - an unprecedented category-5 storm.

Hurricane Michael formed on October 7, 2018, as a tropical storm south of Cozumel, Mexico. Conditions of high wind shear and warm waters led Michael to intensify rapidly into a category-1 hurricane the next day. Within six hours, Michael strengthened into a category-2 storm with winds of 100 mph. The night of October 8, 2018, the eyewall of Hurricane Michael began to degrade, which indicated the rapid intensification had come to a halt. However, by noon the next day, the storm began building again as it left a cold-water area. By the evening of October 9, Michael had crossed the threshold to become a category-3 hurricane. At this point, Hurricane Michael was heading directly towards Bay County. The cyclone continued to grow over the following day. By 5:30 pm on October 10, it crashed into Bay County as a category-5 storm with sustained wind speeds of 160 mph. After four hours of devastating winds, Michael degraded into a category-3 hurricane before moving into southwestern Georgia, further weakening into a category-1 storm a couple hours later.

Frank (Frankie) Lumm was the Emergency Management Division Chief in Bay County during Hurricane Michael. Frankie is a short but stout man with a long military career, professional and volunteer experience in firefighting, and a master's degree in Emergency Management. After his retirement from the military, Frankie started to work in Florida emergency management in various positions across the state. He gathered skills and training through his military and firefighting background, which helped him become an outstanding leader and manager in emergencies. He accepted the Emergency Management Division Chief position for Bay County in May 2018, six months before hurricane Michael struck. While he may have been new to the area, Frankie's experience helped him quickly build rapport with the local agencies and emergency response volunteer groups. This effort ensured the county had a sound communication system. His focus on communication before, during, and after the hurricane immensely helped Bay County make it through this once-in-a-lifetime event with only 26 hurricane-related casualties.

Frankie uses the National Incident Management System (NIMS), a structure for multi-agency emergency response management. This system was borne out of wildfire responses in California in the 1970s. The 1970 wildfire season in California saw 16 deaths, 700 destroyed structures, and over 500,000 acres burned. These figures pale in comparison to current

California fire damages (2021 to date has seen 3,629 buildings destroyed, 2,487,887 acres burned, and three lives lost). Still, it sparked action for managers across multiple agencies, including the US Forest Service, as some of the critical failure points were poor communications and interagency workflow. A project known as FIRESCOPE (Firefighting Resources of Southern California Organized for Potential Emergencies) was developed due to this push for a defined multi-agency command, control, and communications system related to wildfire management, leading to the creation of the Incident Command System (ICS). In 1982, this work was expanded to create the National Interagency Incident Management System, which was consolidated into the National Incident Management System in 2003 under Homeland Security Presidential Directive #5. NIMS allows ICS to be applied to a broad range of incidents. Fourteen core concepts make up the foundation of this work and are in bold below.

When an event first begins, it is important to decide who is in charge, and under what conditions they will transfer that power to someone else. Generally, the first person on scene for an emergency is the Incident Commander, and they serve as such until someone with primary authority over the incident (due to jurisdiction or location) or higher qualifications and experience arrive. When command is transferred, it happens with a brief explanation of information necessary for continued safety and efficiency and notification of all personnel regarding the change.

If no one has both primary authority and/or enough resources to handle an incident on their own, Unified Command may be used. During a complex incident such as Hurricane Michael, multiple agencies and organizations with various jurisdictions, responsibilities, and resources needed to respond. In these situations, Unified Command allows for joint Incident Commander status for the various authorities represented. This helps ensure greater response efficacy by allowing the Unified Command to allocate resources regardless of which organization they belong to.

Everyone must use the same jargon to understand each other, meaning incident personnel must use common terminology within an incident. This clear language is especially critical as operation complexity grows. Modular organization is used to accommodate for this growth. This is a process to ensure responsibilities always fall to someone. At the smallest level, the Incident Commander is responsible for everything. As an incident grows, responsibilities are delegated to subordinates with the knowledge that when the subordinate is no longer needed, that responsibility returns to their supervisor. These responsibilities do not come into existence without reason, though. Under NIMS, incidents are managed by the objectives central to successful control of the event. This is possible through stating specific measurable objectives, identifying what means can be used to achieve them, using plans, assigning steps to accomplish tasks, and documenting the results for future improvement.

This incident action planning should ideally happen before the event. Formal written plans are not always necessary, but as events grow in complexity and time length, it is a good idea to

have a written plan.

All these plans, objectives, and responsibilities hinge on keeping a manageable span of control. Working with many people does not mean they all report to you directly. In NIMS, the ideal “span of control” is five; ideally no more than five individuals should report directly to one person before another level of command hierarchy is added. Although, a span of as little as three or as many as seven subordinates is used. Within this span of control, there is a clear line of authority referred to as the chain of command and unity of command. This means with only one person to report to and take directions from, confusion and conflict with how tasks are handled is greatly reduced.

During Hurricane Michael, Frankie had a separate room available for the different levels of commanders to hold meetings in before they would brief him. The pre-designated incident facility was the Bay County Emergency Operation Center (EOC). The EOC is where leaders meet to support emergency response, continuity, and crisis communications. The center can be as simple as a conference room or a virtual meeting space or as complex as an entire building. For media briefings during Hurricane Michael, Bay County used a room with blinds that closed from outside the room within the EOC. This space was used because, while communication with the press happens, some information cannot be shared readily. Within this briefing room, blinds could be closed for discussion of possible casualty numbers and other forecasts deemed too sensitive or disturbing.

The theme of efficacy and success continues with comprehensive resource management. Resources are everything from people to equipment: anything that can be assigned or moved to get a job done. Dispatch and deployment of these resources is strictly controlled. They are only mobilized when the correct authorities do so through their established resource management systems. It is tempting to skip this and make judgement calls, but this introduces chaos back into the incident. Sometimes these maverick moves work out, but often they cause more problems than they solve. Part of this urge to self-deploy can be handled through trust in the information and intelligence management in an incident. A process is lined out to gather, process, and share information and intelligence, which is then captured as essential elements of information to be shared with the appropriate personnel to inform actions. The Administration/Finance section within the EOC is tasked with record-keeping on these resources to allow reimbursement claims from FEMA. They take pictures, store receipts, maintain daily time logs, and more. It is important to keep an excellent daily record of personnel and equipment use because this information on file makes it much easier to get money back. That is why Frankie utilized daily documentation of labor and equipment use.

Beyond bureaucratic structuring, Accountability is integral within incidents. Commitment to accountability includes ensuring personnel and resources check-in, check-out, and are responsible for their actions. As a final piece of ICS addressed in this case study, there is a pronounced focus on Integrated Communications.

Integrated communication relies on the use of a shared communication plan and processes that work together across redundant backup systems. This is to ensure contact is maintained among all involved organizations for the duration of the incident. Proactive planning is done to ensure these systems will be successful.

Frankie established good communication rapport with both the community and partner agencies before the hurricane. He proactively networked with various people, identifying his role and how they could help with emergency management. He worked with County Library staff, who instrumentally spread information on social media and maintained messaging for the community before and after Hurricane Michael's landfall and as the area transitioned into recovery. He additionally identified the local HAM radio operators as potential backup communicators; although, many evacuated before the storm to protect their families. After Hurricane Michael, Frankie acted upon the opportunity exposed by this weak link in communication redundancy. HAM radio operators are now more extensively embedded within the emergency management system in Bay County, as this was the only possible form of communication during the peak of Hurricane Michael and immediately after.

Another point for integrated communication improvement became apparent after Hurricane Michael made landfall. One by one, cellular services failed, until only one AT&T cell phone was still operational. The command staff had to huddle in the front corner of the EOC building, giving their updates and information in rotation to the State Emergency Response Team (SERT) outside the immediate impact area via this single phone. During this phone call, a fire broke out at a hotel on the beach, which was inaccessible due to high winds. The last thing the SERT heard before the Bay County EOC lost all cell reception was, "We're on fire!" leading them to believe everyone in the Bay County EOC died. The SERT mustered multiple teams and various resources to send after this but operated under the assumption that everyone in the EOC was dead. Multiple days passed before the SERT re-established communications with the Bay County EOC and Frankie. During these days, the dispatched SERT teams conducted search and rescue operations independent of Bay County's efforts. These teams set up operations in various big-box retail parking lots and ultimately connected with Bay County after uncertainty about how their meals would be provided. At that point, a dispatched cooperative agency team member contacted Frankie asking: "...When are you going to feed us?" His response was along the lines of who are you, where are you, and who is in charge of you? Clearly, SERT did not try to contact Frankie and the EOC again after the interrupted phone call.

These muddled miscommunications represent opportunities for improvement that are sometimes found during the emergency management process and addressed through after-action reviews. These are frequently conducted after emergency mobilizations and natural disasters, and capture what happened, how the event was handled, and what lessons can be drawn to improve future responses. Interested readers can find more information about the State of Florida's response to Hurricane Michael in the Florida SERT Hurricane Michael After Action Report and Improvement Plan.

Management/Leadership Considerations

Natural disasters like Hurricane Michael devastate communities. Communication before, during, and after such an event is crucial. Emergency Management personnel such as Frankie Lumm are essential individuals that plan and lead communication efforts well before a natural disaster occurs. In this case study, you will see and hear about the importance of communication in its many different forms, from social media to the internal reporting structure. A good leader relies on their experience and considers the knowledge and expertise of their staff and volunteer leaders in the community, as well. A leader does not work alone. Instead, they communicate with many individuals to efficiently manage recovery efforts, resource availability, and ensure adequate documentation of efforts exist. To learn about leadership and the broad impact of decisions made, you can use the four leadership frames outlined by Bolman and Deal (2013) and summarized by Sowcik et al. (2017).

- The structural frame focuses on organizational structure. It considers whether the current system is the best for the current environment the organization operates within. Included in this frame are the roles and responsibilities of individuals in organizations.
- The human resources frame focuses on the human capital in an organization – the employees and other connected individuals. This frame considers the skills and knowledge of individuals to assess whether they have the necessary background to complete their assigned tasks.
- The political frame focuses on networks and power dynamics between the organization and local/regional/national organizations and institutions. It also considers the distribution of resources between organizations. It explores the connections between different networks and the impact that formal and informal power and influence have on the organization.
- Lastly, the symbolic frame focuses on the culture of the organization. It includes information such as the history, vision, mission, and values of an organization. It assesses how these items hold the organization together. This case study provides the perfect opportunity to examine Frankie's structural, human resource, political, and symbolic leadership choices when dealing with Hurricane Michael.

Structural Frame

Incident response structures have undergone a variety of changes over time in the United States. While NIMS was initially authorized by Homeland Security Presidential Directive #5 in 2003, it was built from various pre-existing best practices. NIMS serves as a consistent way for all levels of government to work together regarding domestic incidents, with emphasis on interagency compatibility and balance between flexibility and standardization. The Incident Command System is a core component of this system. When we consider the structural frame of leadership, think about how NIMS command concepts build into problem-solving and management decisions for an organization.

Human Resources Frame

NIMS uses the National Qualification System (NQS) to ensure credentialed emergency management personnel are aware of and can conduct the duties of their assigned roles, regardless of where they are operating. Although this is applied to incidents with federal personnel and funding, it is not a requirement for anyone using NIMS as a best management practices guide. Within the human resources frame, leadership means ensuring the right people are in the right places (whether a physical location or organizational position) to get the job done and make the most of the structure they operate within.

Political Frame

To operate within the NIMS framework is a tremendous boost to reduce strains within the political leadership frame. At its core, this frame is about working successfully in the face of scarcity - whether it be time, energy, resources, or any other critical component of emergency response. Political power can be informal or formal; in this case, NIMS can serve as a conduit for formal power flow, while community leaders and core community spaces are hubs for informal power flow. With this in mind, Frankie's focus to build connections within the community and with resources such as public libraries was an essential capture of these often under-appreciated informal political networks.

Symbolic Frame

Hurricane Michael was the strongest storm to hit the Florida panhandle since Hurricane Andrew in 1992. While 61 deaths were attributed to Hurricane Andrew, Hurricane Michael has only been considered responsible for 26 deaths in Bay County. From a symbolic frame vantage point, Frankie's emphasis on community engagement and communication has been critical to hold both Bay County Emergency Management and the Bay County community together. Beyond this, one wastewater utility worker exemplified additional moral support by willingly wading chest-deep in raw sewage to restore function to the central waste system when the backup had inundated homes. After he succeeded in freeing the blockage, he was promptly dunked in the Gulf as there was no running water available to clean him. Even though he was alone in his messy crusade, he exemplified the togetherness this emergency fostered both in Bay County Emergency Management and the community as a whole.

Questions

You must think about the event itself for this case study and then focus on Frankie's decisions about communication before, during, and after the hurricane. Consider their implications based on the four leadership frames by going through the following questions:

Content

- Why is the National Incident Management System vital to emergency management operations?
- What can happen when communications fail with no backup?
- How did the wastewater utility worker embody the “right person at the right time”?
- From a political viewpoint, what is the value of a formal political network vs. an informal one? What are examples of each form that Frankie relied upon?
- *Leadership Frames*

Structural Frame

- Why are emergency operations handled in a standardized way?
- What are the risks of favoring standardization of procedures over flexibility, or vice versa?
- What benefit does the NIMS structure provide for collaboration between agencies?
- What communications strategies were most successful to reduce downtime after Hurricane Michael made landfall?
- What did Frankie’s informal communication efforts entail? Why was this helpful?
- Why did Frankie only have five direct reports? Was this helpful to him? Why or why not?

Human Resources Frame

- Do you believe the EOC had adequate training for a hurricane response?
- What measures were taken to prepare for this event?
- Do you think Frankie successfully filled the role of emergency response coordinator? Why or why not?
- In your opinion, what other training measures could have helped with the disaster response?
- Frankie utilized volunteers to address his tasks; what skills and access were necessary for these volunteers to succeed?
- Did the wastewater utility worker take unnecessary risks to restore operations quickly?
- How should individuals that go above and beyond be rewarded, recognized, or reprimanded?

Political Frame

- How much power and influence does Frankie hold as the Bay County Emergency Management Division Chief?
- Does Frankie have more formal or informal power? Why?
- What led Frankie to build proactive relationships with the county library system?
- What other informal relationship networks would prove similarly valuable?

- Did the decision to reach out to the county library system affect evacuation response times for specific populations more than others?

Symbolic Frame

- What did the public see when the EOC provided information through various channels?
- From a symbolic standpoint, what impact did the wastewater utility worker's actions have on public perception of public servant dedication?
- Is it essential to have specific values and missions established before a hurricane? If so, why?
- By utilizing NIMS, did Frankie instill trust in his community as an emergency management leader? Why or why not?

Integrated

- What could have happened to the local population if the county library system had not joined Bay County Emergency Management to provide Hurricane Michael information before landfall?
- How could post-landfall support be improved for the future?
- How can the structural components of the National Incident Management System be applied to your future career field?
- What formal and informal communication pathways exist in the system you currently work, learn, or reside within? Where could pathways be added to improve your security in case of an emergency?

Summative Assessment

The summative assessment has two parts: (a) a group assignment and (b) an individual assignment. Your group will be assigned one leadership frame (structural, human resources, political, or symbolic) to discuss and answer the leadership frame questions provided above. Each group will develop a presentation to outline their answers and reasoning (see group presentation rubric) and present their answers to the class. The presentation should start with a brief overview of the leadership frame your group was assigned and should be 8 to 10 minutes in length. For the individual assignment, you will submit a written response to the *Integrated* questions above (see integrated questions rubric). Your instructor will provide additional instructions for both assignments.

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