

Effective Infrastructure Emergency Response Through Program Management

Interview With: Tory Jackson, PE, Project Manager/Disaster Recovery Specialist, HDR

SECURING FUNDING, PRIORITIZING PROJECTS, AND RESTORING COMMUNITIES AFTER NATURAL DISASTER

In 2020, the U.S. experienced 22 weather and climate disasters that cost \$1 billion or more. Disasters strike across the country, with these major events hitting every state and totaling about \$1.9 trillion between 1980 and 2020. When crises occur, many agencies and states are turning to program management as an effective, efficient strategy for recovery.

In this interview, Tory Jackson, PE, explains how this programmatic approach to natural disaster recovery can improve emergency response efforts, ensure agencies receive all the funding they're entitled to and maintain recovery efforts while continuing to deliver their regular programs. Jackson is a program manager with a decade of experience in engineering, construction and program management on emergency response and recovery projects across the U.S. She has helped public agencies and municipalities from Alaska to Florida manage their response and recovery programs to meet federal and state funding requirements for reimbursement after natural disasters, including hurricanes, wildfires, earthquakes, severe storms, landslides, and flooding.

Q. HOW DOES A PROGRAM MANAGEMENT APPROACH IMPROVE EMERGENCY RESPONSE?

A. By their nature, disasters are unexpected. Agencies often don't have the resources or capacity to effectively manage



an emergency on top of delivering their regular programs. We supplement our clients' staff to handle this unexpected, as-needed work for the months and years it takes to recover, allowing their agencies to focus on previously scheduled projects and ongoing work.

Program management also aids in the critical work of prioritizing repairs. Depending on the scale of the emergency, the response could mean hundreds of millions of dollars of needs, separated into tens or even hundreds of small projects across a huge geographical area. A program manager can help prioritize projects, making sure that critical infrastructure is rebuilt first, help with resource allocation, and ensure that efforts are focused on recovering quickly and efficiently. We logically bundle damage sites into appropriately sized projects that help streamline the federal funding processes

and get roads, bridges, railroads, water treatment plants, and other essential infrastructure back up and running for our communities.

Q. HOW DOES A PROGRAM MANAGEMENT APPROACH FIT INTO A TYPICAL EMERGENCY MANAGEMENT PROCESS?

A. Program management lends itself well to the big-picture management of an emergency. Rather than being hyper-focused on one element of the emergency at hand, our experts look at the dimensions of the impacts and the resulting entire life-cycle of the emergency response to create better outcomes. We tailor our program management approach to meet the specific needs of the program at each step. The four steps in the emergency management process are: prepare, respond, recover, and mitigate.

Prepare: This step starts with having strong preparedness plans in place, along with risk and vulnerability assessments to understand potential areas of greatest need. Many regions in the U.S. also use prepositioned on-call contracts to speed response time. Without a contract in place, it can take up to six months to hire a consultant, while at the same time navigating an emergency and understanding the strict procurement requirements of the Federal Emergency Management Agency – and continuing to handle normal operations as well.

Respond: This involves assessing damage after a disaster and quickly restoring critical functionality. Data collection and reporting, often to multiple audiences, are common initial steps. Other typical tasks include damage inspections, debris management, emergency repairs and public information assistance.

Recover: After the initial disaster response, longer-term recovery efforts begin to regain what was lost. Program management efforts can include coordinating engineering design on more complex repairs, continued public communication, construction administration, and expertise in navigating complex state and federal disaster aid funding programs.

Mitigation: Finally, mitigation efforts help communities rebuild stronger for the future. That can include assistance with grant writing, hazard mitigation plans, and applications to funding programs such as the FEMA Hazard Mitigation Grant Program

or FEMA's Building Resilient Infrastructure and Communities.

Q. WHAT ARE THE MOST COMMON COMPONENTS OF EMERGENCY PROGRAM MANAGEMENT?

A. The most critical piece that we handle with program management is funding, making sure that all the available state and federal funding is accessed and the agency eligible for those dollars is being reimbursed. We have subject matter experts in the state and federal funding programs like FEMA public assistance and Federal Highway Administration emergency relief to guide each step. These experts are familiar with the funding programs, project requirements and what is needed to access those funds. We've worked with clients in regions across the United States that have experienced many types of disasters. But the FEMA process is the same no matter where you are. The same rules apply if you are cleaning up debris after a hurricane, rebuilding a road after an earthquake, or getting a water treatment plant up and running after a flood.

The second important component is project controls. Our project controls group is often engaged in disaster response to help us take all the data, information, funding, and schedules, then bring them together so that we report where we are at with our projects and how our funding is being sliced and diced amongst all the different funding streams. Distilling this data to report out to different audiences is key in maintaining transparency with the stakeholders and the public throughout the process and recovery efforts.



Q. WHAT OTHER SERVICES CAN BE INCLUDED IN AN EMERGENCY PROGRAM MANAGEMENT APPROACH?

A. While funding and project controls are the most common,

many other services fall under the umbrella. Program management is a great tool because we can use it to tailor the response to a community's specific needs. That could mean geographic information systems staff who gather data and document the response from day one, strategic communications professionals who help keep the public informed as the situation evolves, engineering design work for emergency and permanent repairs, construction administration or more.

Our work in Alaska in 2018 is a good example where we brought in as-needed services to supplement our work. There was a 7.1 magnitude earthquake that hit south-central Alaska in the dead of winter that year. Asked to help gather damage reports and data, we built a field application and desktop database that allowed our staff in the field to monitor and inspect the changing ground conditions through spring thaw the following year. Having photos and field logs organized in one place for more than 250 damage sites across three boroughs helped us quickly find the information to make informed decisions as we developed projects through the recovery efforts.

In emergency management we often say that we're building the airplane as we're flying it. And that's exactly what emergency response program management is; we're finding and solving problems day to day, month to month, and year to year as communities recover from these disasters. The power of this program management approach is that we can tweak it and tailor it as we go along to address those problems as they arise.

Q. HOW HAS EMERGENCY PROGRAM MANAGEMENT CHANGED IN THE LAST FEW YEARS?

A. Emergency response always begins with critical staff on the ground at the disaster site. But as we've learned in recent years, there are also lots of virtual tools available for remote collaboration and teamwork. And we've used those tools to pull in the right experts from across our global firm, without needing to fly a whole team to one spot. Dashboard tools like Microsoft Power BI and highly accurate GIS data allow a team to supplement the local office from wherever they are in the world.

In late 2020, we responded to severe storms and landslides

in southeast Alaska. While we had a core group on site, the entire HDR team was spread across thousands of miles and several time zones. It's been a great success story of how to run a program while leveraging the best experts in the Lower 48, with a hybrid of remote and in-person work. It has also reduced the burden on some of the small communities affected by these disasters, which may not have the capacity to host a large project team.

With the tools we now have available, we can quickly engage our clients and meet their needs in real time while responding to a disaster and build the tools they need to get their communities back up and running while tracking the data coming in. These tools have made collaboration with experts from across the U.S. quick and thorough.

The other big advance has been in dashboard tools, which have greatly streamlined information and improved its organization. Instead of managing a response with dozens of spreadsheets each owned by different people, we have one source of information that can be updated in real time and displayed in customized fashion depending on the audience and its needs. That lets us leverage our budget controls experts, check information quickly, and even make it interactive. Contractors or project managers or owner finance teams can access the information they want and they need quickly instead of a bunch of emails and a bunch of spreadsheets and back and forth. It's just one more example of the continued improvements in efficiency we're seeing as tools evolve.


Q. HOW DID YOU GET INVOLVED IN EMERGENCY MANAGEMENT?

A. After Hurricane Katrina hit the Gulf Coast in 2005, I found an opportunity for college students to spend their spring break doing hurricane relief. I spent the next two spring breaks in Mississippi and Alabama roofing houses and rebuilding damaged communities while trying to avoid alligators and bug bites. Standing on the abutment of the destroyed Biloxi Bay Bridge filled me with appreciation for the power of Mother Nature as I started my career path towards civil engineering. That experience first sparked a passion for connecting with new people to help communities in their time of greatest need.

In 2013, I was a transportation EIT in HDR's Denver office when devastating floods hit the Colorado Front Range. It was

the first opportunity where I could pair my passion for helping others after a natural disaster with my professional skills as a civil engineer, and I quickly spoke up that I wanted to be involved in any way possible with the response and recovery efforts for our clients in Colorado. I started out in a design role on the permanent repairs of a road in Estes Park that quickly blossomed into more responsibility with the federal funding reimbursement of the project through construction. I haven't slowed down since. I have grown my career over the past nine years from an EIT designing mitigation along a creek to a program manager helping a rural community seek tens of million dollars in reimbursement after a flood. With each project, I have poured my heart and passion into helping quickly rebuild communities and bring a sense of relief to both my peers at HDR and the agencies we work with.

Q. WHAT ADVICE DO YOU HAVE FOR SOMEBODY CONSIDERING A CAREER IN THE FIELD?

A. Every disaster is different, so flexibility is the key to success. In emergency management, new challenges arise daily. Adapting to ever-changing conditions and being able to solve problems on the fly makes it incredibly helpful for communities in need. But most of all, be willing to share your passion with others to make a difference. Everyone I have worked with in the realm of emergency management has been incredibly passionate about some piece of emergency management, so find what you are passionate about and fill in that need on a project or in a community affected by a disaster. It's that passion that helps power us through the toughest times as we help others recover. 



About the Article

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