

FEMA and the value of pre-disaster mitigation

This month we sat down with [Eric Letvin](#), FEMA's Deputy Assistant Administrator of Mitigation and [John Ingargiola](#), Lead Physical Scientist of FEMA's Building Science Branch, to discuss pre-disaster mitigation, a timely topic following the 2017 hurricane and wildfire seasons.

Whitney Doll, ICC Vice President of Communications:

We've witnessed an overwhelming number of natural disasters in recent months including hurricanes that hit Texas, Florida, Puerto Rico and the U.S. Virgin Islands as well as repeated wildfires in California. Have the sheer number of people affected in the recent disasters required FEMA to change its approach to disaster response in any way?

Eric Letvin: Yes, in Puerto Rico we're using a sector-based approach for recovery and looking at power, transportation and education. Rather than doing a specific project worksheet on a separate section of a road that is damaged, we're looking at the whole system and our funding and asking, "What is our best approach using funding from across the federal government? How can we best utilize those monies to achieve a resilient result? How do we repair things and leave them in a better state so that the commonwealth is better prepared for the next natural disaster?"

John Ingargiola: Another element that we are making changes to involves acting much sooner with relation to building codes. Building codes really become a forefront of consideration in the recovery and mitigation strategies.

Today's codes are stronger and more disaster resistant than ever before. We are forging partnerships among code professionals, emergency managers and FEMA to enable our communities to utilize credentials, the International Code Council, inspectors, plan examiners and building officials from neighboring states. This is especially valuable when the search capacity and capability is not in place to meet those demands, related to permitting, repair and replacement of damaged buildings.

For example, after Irma and Maria, we helped the U.S. Virgin Islands obtain volunteer certified building code professionals to perform critical plan reviews and inspections and assist with code enforcement early in the recovery. This was done through the [Emergency Management Assistance Compact](#) (EMAC) system, which provides the reimbursement of expenses and liability coverage for performing this work on behalf of the territory. To sustain the critical role that building code officials have in the U.S. Virgin Islands, the [Hazard Mitigation Grant Program](#) will fund critical staff training, a modernized building permit system, equipment, supplies, computers and vehicles, as well as testing and certification programs for trainees to become certified building safety professionals.

Whitney: You mentioned that you were looking for volunteer building code officials in the Virgin Islands. Are you still looking for volunteers?

John: Yes. In fact, spread the word that this mission is extended through the end of May and that it's going to be timely with the efforts to start hiring trainees that can learn on the job through EMAC inspectors. We have a great partnership with the Code Council to spread that message. Listeners that know they want to or are considering volunteering in the Virgin Islands or Puerto Rico should get in touch with their [state emergency management agency](#) and their [EMAC official](#).

Whitney: FEMA is an organization that most people in the U.S. have heard of because of how you step in after a major disaster. Notwithstanding the past year, there must be long periods of time when the agency is not in crisis mode. What's a normal day like at FEMA's Federal Insurance and Mitigation Administration?

Eric: You're referring to the response part of the agency. We transition from response to recovery and we're certainly in recovery now in the areas affected by Harvey, Irma and Maria. We work towards reducing the future risk that goes on during the entire year, and some of the things that we are doing right now are helping prepare our employees to help in times of need when on-the-ground support is necessary. We hire, train and respond when asked. Just recently, FEMA released its [strategic plan](#). It has three main pillars: preparing the nation for catastrophic events; creating a culture of preparedness; and reducing the complexity of FEMA. We are working towards making sure our programs are aligned to help advance the objectives in our strategic plan.

Also, we do a lot of pre-disaster work and hazard pre-mitigation planning with states and local governments. We also have a grant program, that advances pre-disaster mitigation. Through the [Pre-Disaster Mitigation Grant Program](#) and the [Flood Mitigation Assistance Program](#), we give money to applicants, states, tribes and territories to help elevate homes or create tornado safe rooms. These activities take place throughout the calendar year. There's quite a bit of activity that goes on during a normal day at FEMA.

Essentially, we are always busy. We're always looking for good people to help us advance our mission.

John: We also perform a lot of risk duties under the risk management director. When we're not in crisis mode, there is always critical work going on that includes updating, mapping and communicating the nation's flood hazards and working on the [National Earthquake Hazard Reduction Program](#).

In the Building Science Department, we incorporate research and lessons learned to make building codes and standards stronger against natural hazards. We also work to keep our building science curriculum, library of publications and technical bulletins as the archetype for our various stakeholders in the design community and the building community. We started a [National Building Code Losses Avoided](#) project to raise consumer awareness, engagement and demand for disaster-resistant building codes where people live and work.

Eric: Also, contained within our strategic plan are two "moonshots" that FEMA is working to advance. The first is to double the amount of insurance coverage by 2023, and the second is to quadruple the amount of dollars spent on hazard mitigation by 2023. FEMA is taking the money spent collectively in the U.S. last year and creating a baseline for leveraging our future mitigation programs and dollars. We'd like to look to the private sector work with non-governmental organizations and look for opportunities to partner to try to break the cycle of loss. We strive to advance mitigation before a disaster strikes to protect our property and lives.

John: There are a lot of building safety professionals and Code Council members that can help FEMA achieve these "moonshots." It all goes back to the building codes. Every time a building code is adopted and enforced in terms of flood insurance, buildings for flood plains, etc., the buildings are a little bit higher and a little bit stronger than the minimum, which yields tremendous savings each year. For the first twelve inches above that minimum, the flood insurance premium is cut in half. Who doesn't like to save every year? And wouldn't that make insurance more affordable?

In terms of investment, the building codes contribute to that savings. As mentioned, we have the national building code project that will allow us to measure what the nation saves annually when

stronger codes are adopted and enforced. Each time the codes are adopted, it is just a matter of normal community practice – normal business. It's not taking some huge outlay of taxpayer funds, it's just normal practice, which is exciting because it shows that all of our communities can contribute to investing and engaging more time in making our buildings safer.

Whitney: Have you ever been in the location of a natural disaster either when or closely after it hit? What was that like?

Eric: We have employees who we do pre-position ahead of disasters, but generally most of our employees come in after disasters. We've worked together during many disasters over the last 20 plus years. They've been all different type of natural hazards.

Every disaster has its theme. Whether it's a tornado or wildfire or flood, there are always different: different people, different ways and different communities. I worked the Oklahoma City bombing and the World Trade Center disaster. There are certainly commonalities, but it affects everybody differently. We must approach each event considering its own set of unique qualities.

Whitney: It is a job, but does it affect you differently personally at all or does it feel different when your there than just being in the office?

Eric: It certainly affects you differently when you're in the field working long hours and just driving through neighborhoods. Seeing all sorts of debris and all the belongings of that disaster survivor in a debris pile just waiting to be picked up is a lot to take in and it's very challenging to deal with.

John: I've had some personal experiences that I'd like to share. After touring many areas impacted by disasters as part of our building performance and building investigation studies, there are couple of images that have stuck with me over the years.

During Hurricane Katrina on a residential street in coastal Mississippi right after the storm, maybe a week or two after we got on the ground, the area was completely deserted and filled with debris. In a pile of debris where a house once stood sat an elderly man in a folding chair, just sitting there in the hot sun. Knowing that everything he had was destroyed, he looked shell-shocked. Of course, we called the proper services to tend to him, but this moment truly touched me.

I also think about Hurricane Sandy and my visit to the South Shore of Long Island. I was struck by what was happening. I saw two homes just a couple houses apart. In one home there was an elderly couple trying to repair their damaged walls and interior just enough to get back inside and try to get back to normal as quickly as possible. A few houses away, the same type of home was being elevated 8-feet above the ground. In this home, the owner was a young married man with two children, who decided to elevate the house to prevent his family from ever having to experience the damage and despair they dealt with during Hurricane Sandy. One the same street, I witnessed two perspectives: two different people at two different times of their life with their unique priorities.

Lastly, I'd like to share about my personal experience in Howard Beach, New York. I grew up and lived there for 27 years before leaving in the 90s. Nothing like Hurricane Sandy had ever happened in that time period, nor did I ever think that it could happen. So, going back and seeing my old neighborhood destroyed in that fashion was surreal for me. But, it was a stark reminder that disasters can literally happen anywhere. It's a force and destruction that you never thought possible.

Whitney: This is a heavy topic, so let's lighten things up a little bit. In Hollywood there are many movies that are based on natural disasters. I have two films that come to mind that I'd like for you to help unpack: the first is *San Andreas* with The Rock; and the second is *Into the Storm*.

San Andreas is about a massive California earthquake and its aftermath. The Rock plays a helicopter rescue pilot for the Los Angeles Fire Department who is trying to find his daughter in San Francisco amidst the chaos.

Into the Storm is a film about an unprecedented onslaught of tornadoes touching down in the town of Silverton, Oklahoma.

Now, I want you to apply your FEMA lens to the storylines. What advice would you give these movie characters as they deal with major earthquake or tornadoes? What should people do in these situations?

Eric: I was working in the White House in the National Security Council when *San Andreas* came out. I remember writing a memo for senior leaders about *San Andreas* regarding what kind of reaction people may have or questions they may have about that movie. I love disaster movies. They are kind of fun, but sometimes I must take off my FEMA hat because of the way they show the federal government responding. It is not the way that we do things. The piece of advice that I have for people in that movie is that buildings don't topple over. Buildings typically fall in to themselves. Watching the movie and seeing all these tall buildings toppling over felt quite silly.

Overall, I think disaster movies actually play a good role in educating the public. Sometimes they may take it a little bit too far, but it raises people's awareness that earthquakes can happen, tornadoes can happen, etc. It gets them thinking, "Hey, maybe I need to think about my risk and how my building would perform."

John: I haven't seen *San Andreas* nor have I seen *Into the Storm*. But, there are other tornado movies that I'm familiar with like *Twister*. The idea that people can use technology and impart small devices into the funnel cloud, which somehow disperses it, is amazing. If that could be the vision in the future to stop tornadoes that'd be really something!

As a former building code official, if public safety as a silent defender was a part of these movies, I would spark the audience's attention with all this destruction and make the whole town look like it's gone. People would ask, 'where's everybody?' because there is no one to be found. But, there's one building that we see, maybe the town hall or the community gymnasium, that holds all the survivors inside. Everyone inside survived because they constructed a tornado safe room beforehand and everyone was trained, instructed, prepared and exercised for the one day they might need to use that saferoom.

Whitney: Before we sign off, I have one more question. We ask all our guests this one! If you could choose a favorite building, maybe due to style of architecture, type of materials used, fun story or connection you have to the building, what would it be and why?

John: What comes to mind are the Greek temple ruins in Castelvetro, Sicily, which is where my father was born. These temples are 2,500 years old and they have stood the test of time. They can be seen for miles and miles from where they are perched on a hilltop with a commanding view of the Mediterranean. The temples are Doric style, and their columns present a remarkable optical illusion

because the columns appear to be bulging by the weight of the massive roof of the temple. Not only is it visually appealing, but it's in the countryside of my ancestors. This is where my ancestors farmed and grew grapes and olives. The ancient vineyards are still there, and it's simply breathtaking to know that these ancient marvels have been in the back drop of daily life for centuries.

Eric: I think my favorite building is the [National Building Museum](#). We've been there so many times, but every time I take a tour, I learn something new about that building. It's an architectural engineering wonder. Many people visit D.C. to see the Smithsonian museums and monuments, but I think the National Building Museum is one of the most special buildings in this entire area.