

Florida SHMPoints

Providing insightful mitigation news and information from around the State of Florida.

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Natural Hazard Mitigation Saves: 2017 Interim Report

Summary By: Amy Peterson

In December 2017, The National Institute of Building Sciences released an Interim Report on the benefits of natural hazard mitigation. The Interim Study examined four specific natural hazards: riverine and coastal flooding, hurricanes, earthquakes, and fires at the wildland-urban interface (WUI). This Study updated and expanded on a 2005 study conducted by the National Institute of Building Sciences Multihazard Mitigation Council, which found that every \$1 of natural hazard mitigation funded by FEMA

between 1993 and 2003 saved the American people an average of \$4 in avoided future losses.

| | National Benefit-Cost Ratio Per Peril <small>*BCR numbers in this study have been rounded</small> | Federally Funded | Beyond Code Requirements |
|--|--|------------------|--------------------------|
| Overall Hazard Benefit-Cost Ratio | | 6:1 | 4:1 |
|  Riverine Flood | | 7:1 | 5:1 |
|  Hurricane Surge | | Too few grants | 7:1 |
|  Wind | | 5:1 | 5:1 |
|  Earthquake | | 3:1 | 4:1 |
|  Wildland-Urban Interface Fire | | 3:1 | 4:1 |

The 2017 Study provides an updated review of federal grant programs and utilizes a more advanced Hazus flood model and improvements of FEMA's Benefit-Cost Analysis Tool. The Study considered 23 years of public-sector mitigation of buildings funded through FEMA programs, including the Flood Mitigation Assistance Grant Program (FMA), Hazard Mitigation Grant Program (HMGP), Public Assistance

Program (PA), and Pre-Disaster Mitigation Grant Program (PDM), as well as the HUD Community Development Block Grant Program (CDBG) and several programs of the EDA.

The Study examined two sets of mitigation strategies and found that society saves \$6 for every \$1 spent through mitigation grants funded through federal agencies and a corresponding benefit-cost ratio (BCR) of 4:1 for investments to exceed select provisions of the 2015 model building codes. The Study found that just implementing the two sets of mitigation strategies examined would prevent 600 deaths, one million non-fatal injuries, and 4,000 cases of post-traumatic stress disorder (PTSD) in the long term.

Benefit: \$82 billion

65% – Property: \$53.0

12% – Additional living expenses & sheltering: \$10.0

11% – Insurance: \$9.0

6% – Casualties & PTSD: \$5.0

6% – Indirect business interruption: \$5.0

billions 2016 USD

Cost: \$11.5 billion

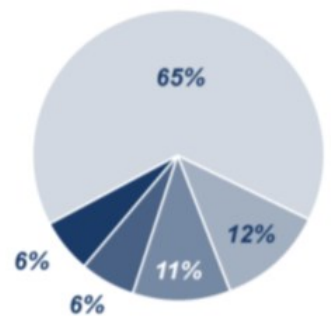


Figure: Contribution to benefit from federally funded riverine flood grants

The full Report, as well as the Summary of Findings and hazard specific fact sheets can be found on the National Institute of Building Sciences' website.

Mitigation Bureau: Employee Spotlight

By: Luz Bossanyi



David Ugrekhelidze is a Mitigation Planner within the Mitigation Technical Unit for the Florida Division of Emergency Management (FDEM). David has almost 20 years of experience in Mitigation. He received his Bachelor's Degree of Science in Engineering, Mining & Geology in his home country, the Republic of Georgia.

David joined the Division over eleven years ago, where he has been a part of the Mitigation Bureau during that time. His experience brought him to quickly become a valuable member of the Technical Unit, where he conducts technical

reviews, revision of applications, benefit cost analysis, project feasibility, site inspections that guarantee the quality of the projects applying for federal funds, as well as resolving any concerns during the process while assisting applicants directly.

He became a licensed Professional Engineer (PE) in the State of Florida, which, with his wealth of experience, allows him to promote mitigation funding resources and to effectively research new mitigation projects that could benefit communities and organizations statewide.

Congratulations to
Broward County
on your FEMA approved Local
Mitigation Strategy Update!

St. Petersburg College Public Safety Workshops

By: Chris Littlewood

These public safety workshops promote effective strategies for communicating with people who are deaf or hard of hearing and others with access and functional needs.

This 2-day, 16-hour workshop is an interactive presentation with hands-on activities led by two professional instructors who are deaf or hard of hearing, with extensive experience in public safety. Participants will be able to demonstrate effective strategies of communication with people who are deaf or hard of hearing by:

- Explaining how effective communication reduces trauma to victims during events, emergencies, or disasters;
- Outlining effective communication prior to, during, and after incidents of public safety involving people, including those with other access and functional needs;
- Comparing various sub-groups and their communication needs;
- Recognizing and avoiding legal and safety missteps;
- Demonstrating how to deal with stress from communication barriers when assisting people who are deaf or hard of hearing.

Who should attend?

Public safety professionals including: healthcare workers, fire and emergency medical services personnel, public health professionals, emergency managers, public information officers, law enforcement personnel and emergency planners.

Scheduled Workshops

Boynton Beach, Fire Rescue - March 14-15, 2018

Brevard County, FL – March 27-28, 2018

Miami, FL – April 26-27, 2018

Jacksonville, FL area – Planning – TBA

****NO COST****

For more information please contact:

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Floodplain Dangers in Plain Sight: Tanks and Toolsheds

By: Kristabel Moore



Picture above is a shed.

Floodplain regulations require structures such as tanks and toolsheds to be installed above the base flood elevation (BFE), as the potential threats to surrounding properties may be significant. Strong hydraulic forces have the ability to tear apart sheds and carry debris to areas outside of the immediate parcel. This debris can be swept downstream, and can also accumulate and clog drainage swales, culverts and low bridge crossings, making floods more severe. Propane tanks run the risk of exploding if the tank ruptures and the leaking gas ignites. Shallow waters can still impose strong buoyant forces, so the need for anchoring tanks and sheds is significant.

In V zones, sheds and other accessory structures must be small, low cost structures made of metal, plastic, or wood. Anchoring these structures ensures that the structure will not be subject to lateral forces that may cause movement during floods. The requirements for small accessory structures in Florida can be found in FEMA's Free-of-Obstruction Requirements. If size and value limits are exceeded, construction should be fully compliant with the National Flood Insurance Program (NFIP). Sheds must not be located under the footprint of elevated structures in V zones. Depending on local jurisdictions, non-conversion agreements may be required for any accessory structures placed on residential properties. It is important that sheds located below BFE are free of pollutants and hazardous materials. Accessory structures such as sheds are not intended for residential use, so they should not contain any electric or plumbing utilities.

In A/AE zones, tanks may be at grade, but must be anchored to resist hydraulic forces during floods. In coastal high hazard areas (V/VE zones), tanks below the BFE are prohibited unless below grade and protected against scour. In V zones, vent pipes, inlets, fill openings, and any other outlets must be extended above the BFE to prevent inflow or outflow from tanks. Covers can prevent damages and threaded fill caps can prevent outflow. Supply lines to equipment with associated risks must be shut off when flood or tidal surge warnings are issued. More information is located in the Florida Building Code (FBC) and in ASCE 24-14. Additional information regarding tank requirements can be found in Florida's Floodplain Management Performance Measures.



Picture above is an unanchored tank.

Heating, ventilation, and air conditioning (HVAC) equipment must also comply with regulations. The FBC and the NFIP require mechanical, electrical, and duct systems to be located at or above the design flood elevation in special flood hazard areas where a BFE is provided. If a BFE is not specified, the systems must be located at least 2 feet above the highest adjacent grade. Failure to elevate or flood proof these systems can result in additional hazards during recovery. HVAC systems must be elevated when structures experience substantial damage, but HVAC companies are strongly encouraged to elevate outdoor compressors when they need to be replaced. FEMA's Technical Bulletins offer useful guidance on a variety of NFIP standards, and can be found on FEMA's website. Specific codes adopted by local, state, and federal government may have higher standards that should be considered before structures are constructed or installed. The International Building Codes set minimum standards for these structures, which the Florida Building Code adopts as the base code. All local jurisdictions must enforce the base code. In short, residential and commercial property owners should ensure that their structures are elevated or anchored, are constructed with flood damage resistant materials, and contain flood openings to ensure that they remain flood resilient during flood events.

Project Eligibility Spotlight: Shelters and Safe Rooms

By: Jared Jaworski

Colloquially, these two terms are similar enough that it does not warrant a discussion. However, with the extra weight of regulations, the communication of numerous agencies across numerous sectors, and a possible funding source, a discussion is necessary. To begin, the distinction between a 'shelter' and a 'safe room' is greatly important to the Hazard Mitigation Grant Program (HMGP).

FEMA defines a safe room as, "a space within a building, usually an interior room, that is designed and constructed to provide near absolute life-safety protection for its occupants from tornadoes or hurricanes" (FEMA P-361). On the other hand, public or community safe rooms are defined as, "any safe room not defined as a residential safe room. These include not only public buildings such as schools or hospitals, but also private safe rooms for businesses and other types of organizations" (FEMA P-361).

General population shelters are opened in the event persons must evacuate their homes. The HMGP will fund the construction of a residential, non-residential, or community (tornado or hurricane) safe room. It is one of the very few exceptions to the "no new construction" rule. It will not fund the construction of, what is referred to in the guidance as, a "general population shelter."

Below is an excerpt from the Hazard Mitigation Assistance Guidance (Addendum C.1 pg. 40).

"PDM and HMGP funds are not available for general population shelters, including evacuation and recovery shelters. Safe rooms and general population shelters are different in two ways. First, shelters are generally not intended to withstand extreme wind events and are, therefore, not required to satisfy the higher design criteria of near-absolute protection consistent with hazard mitigation residential, non-residential, and community safe rooms as established in FEMA P-320 and P-361. Second, shelters are intended to provide longer term services and housing for people who have left the anticipated impact area of an extreme wind event or because their homes have been damaged or destroyed by extreme wind, wildfire, flooding, or other disaster event; safe rooms are intended to provide protection for only approximately 2 hours in tornado events and 24 hours in hurricane events."

The guidance describes two points of distinction that separate shelters from safe rooms: level of protection, and duration of use. For counties looking to fund the construction of a shelter, know that there is a terminology difference with the HMGP and with it comes some important distinctions. Failing to know this ahead of time could result in time and effort being lost in an ineligible project.

For the most part, applying the two standards above should help weed out those projects that are more shelter than safe room. If you still have questions, or have a situation that is too vague to make a determination, please contact the Hazard Mitigation Grant Program office and we can help resolve any issue before it gets too far into the application period.

Please remember to ask questions early and often.

For more information or questions regarding the HMGP, contact Jared Jaworski at Jared.Jaworski@em.myflorida.com.

Need More Information?

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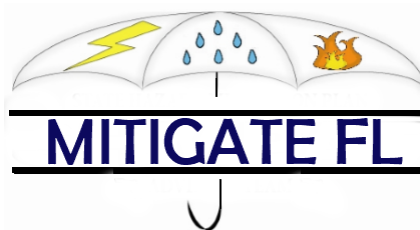
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The Bureau of Mitigation

Mitigation is an integral part of the Florida Division of Emergency Management (FDEM). Mitigation actions reduce or eliminate the loss of life and property by lessening the impact of disasters. Due to Florida's weather, geography, and miles of coastline the state is highly vulnerable to disasters. Disasters can be very costly to both the citizens and government.

Under the direction of Division Director Wes Maul and State Hazard Mitigation Officer, Miles E. Anderson, the Bureau of Mitigation administers several federal mitigation grant programs including the Hazard Mitigation Grant Program, the Pre-Disaster Mitigation Program, and the Flood Mitigation Assistance Program. The Bureau also administers a state funded mitigation program called the Hurricane Loss Mitigation Program. If you would like to know more about mitigation in Florida please visit: www.floridadisaster.org/mitigation.



2018 SHMP UPDATE

The 2018 Enhanced State Hazard Mitigation Plan has been submitted to FEMA!

