

THE LIGHTNING ROD

Spring 2014 The Official Newsletter of the Texas Floodplain Management Association

Volume 19, Issue 1

From the Desk of the Executive Director

It Was a Very Good Year

In my last message to you, I pointed out numerous successes for TFMA in 2013. Yes, it was a magical year, with the TFMA membership topping 2000 and two fantastic conferences that set records for participation. TFMA continued to build partnerships with various federal, state and local agencies and our valued Corporate Members really stepped up to the plate in 2013 with sponsorships and exciting exhibits. As we finish out the first two months of 2014, I wonder how the TFMA family will fare this year. Will we break more records? Will we see even bigger and better conferences? Only time will tell as you, our valued TFMA member really holds the key to success or failure.

Our membership has reached 2,115 and we ended up with 1,690 Certified Floodplain Managers. This makes TFMA the largest state floodplain management association in the country. However each year, we face a major challenge – Renewals. Most of you have already completed both your Membership and CFM renewals for 2014 and we greatly appreciate your support and dedication. But there are a substantial number, 150+ that have not renewed.

It is a very painful and stressful time when the TFMA Office must issue decertification letters for some of our CFMs. Often times, this loss could have been prevented if the individual had contacted the TFMA Office. We can help with finding CECs or we can help with your financial situation as well. Bottom line – don't let something so valued as your Certification slip through your fingers. You worked so hard to get it and to get recertified, would be like starting all over again. We can help!

Another challenge for 2014 is training. The TFMA Training Committee and the TFMA Regional Directors are working hard to develop another round of fantastic training and CFM exam opportunities, but we need your help. If you are in a community, agency, or company with numerous CFMs, you may want to consider hosting a training event for your area. If you can host an event, contact your Regional Director or the TFMA Office and let's discuss! As we develop new training events, you can track the schedule on the TFMA website.

Besides the training opportunities, we will be hosting two exciting conferences this year and they have the potential to set new participation records.

Other things on the horizon for TFMA include an annual update of our Higher Standards Survey and continued development of our Mentor Program. You will see and hear more about these in future emails, newsletters and on the website. TFMA will continue to grow our new Social Media Outreach efforts with a new Communications Committee utilizing FaceBook, LinkedIn, Twitter and Blogs. We continue to support FEMA's Community Rating System (CRS) and support the FAST group in the Houston/Galveston area. Through our new CRS Committee, we will work to develop similar CRS user groups across the State.

We will continue to utilize our very successful Flood Safety and Outreach program. With our popular TexAnna TADDpole and other Turn Around Don't Drown (TADD) materials, we are committed to take our message to more school kids as well as adults. Our revamped Outreach Committee is working on a new project – the Flood Zone which utilizes TFMA's Stormwater Models. We will also continue to support the Texas Flash Flood Coalition as we strive to reduce the loss of life from flash floods in Texas.

I could go on and on, but I must bring this message to an end. As stated, we are now writing the book on 2014. When we reach the end of the year, will it be another success or just a "so-so year?" Only time will tell. We have the power to make 2014 another huge success. Working together as the TFMA family, we are making a difference.

God Bless you and thanks for your support and dedication.



Roy D. Sedwick, CFM
TFMA Executive Director



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Diane Calhoun, CFM
TFMA President, 2013-2015

The President's Message

Happy New Year!

TFMA celebrated an amazing 25th Anniversary Year in 2013. We hit over 2,100 members and our TFMA Office has been incredibly busy getting all of the renewals finalized. If you haven't yet renewed, make sure you get it in ASAP. We don't want to lose any of our TFMA family members. We are so excited and looking forward to a great 2014! The TFMA Training Committee is hard at work getting courses scheduled throughout Texas. Be on the lookout for dates and more information coming soon on the TFMA website. You won't want to miss our TFMA Annual Spring Conference in Irving on May 27-30. This is going to be one of our largest conferences yet! Registration is now open.

Thank you to each of our fabulous TFMA members for being a part of this great organization. **Here's to a great 2014 for all!**

The *Lightning Rod*

Questions, items for publication and other editorial matters should be directed to:

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Cedar Park, TX 78630
(512) 260-1366
TFMA1@att.net



Deadline for The *Lightning Rod* Summer Issue is April 25, 2014.



Call for 2014 TFMA Annual Awards Recommendations

Every year at the Annual Spring Conference, TFMA recognizes outstanding contributions to floodplain management throughout Texas. Please consider recommending your colleagues, clients, or community for an award. The award categories are listed below and more details can be found on the website at <https://tfma.site-ym.com/?page=TypesofAwards> . Forms can also be downloaded from there.

The 2014 Awards will be presented at the TFMA Annual Spring Conference during the Awards and Membership Luncheon on Thursday, May 29 in Irving. The following awards will be announced:

- **Floodplain Manager of the Year**
- **Rod D. Sedwick Service Award**
- **Special Recognition Award**
- **John Patton Community Project Award**
- **Corporate Sponsor of the Year**
- **Agency Sponsor of the Year**
- **City Floodplain Management Excellence Award**
- **County Floodplain Management Excellence Award**

Submit your recommendation forms to the TFMA Executive Office via email at tfma1@att.net by **Monday, March 17th**. We look forward to celebrating the outstanding accomplishments of our TFMA members, communities and organizations. See you in Irving.

Want to serve on a TFMA Committee?

Contact the TFMA Executive Office for more information on the various committees that need your time, talent and expertise. Call us at 512-260-1366 or email us at tfma1@att.net

Meet Your Director - Sandra Hernandez, P.E., CFM, Region 3

OUT IN THE WEST TEXAS TOWN OF EL PASO

Sandra Hernandez, lives and works in the city of El Paso and has with Parkhill, Smith & Cooper for almost 7 years. But, her floodplain career began in Dallas working for a small firm preparing hydraulic studies with the old DOS version of HEC 2 software. Sandra's boss and mentor was teaching her everything he could, as fast as he could, so he could retire. After working for him and other firms for 8 years preparing drainage reports and floodplain studies in the Metroplex area, the timing was right and a move to El Paso presented itself in 2007. The City of El Paso had just witnessed a major flooding event in 2006 that washed away roadways and businesses and flooded entire neighborhoods.

What drew Sandra to El Paso was making people aware of flooding, floodplains and Stormwater management. Sandra joined TFMA to gain more knowledge and help educate others on these issues. She became a CFM in 2009 traveling to San Antonio or Austin for training.

Sandra works in the private and community sectors of floodplain management. She is the Floodplain Administrator (FPA) for the Village of Vinton and the Town of Anthony. Much of her work is currently in the City of Midland., a community booming with oil and gas development. Although Midland is a four hour drive from El Paso, the work is exciting and rewarding. Sandra is part of the remodeling and expansion of Permian High School in Odessa. For everyone who watched "Friday Night Lights" this is the school in which the football stadium is featured in the TV show!

An interesting case Sandra has dealt with is learning about an owner who had built over an "arroyo" or river causing additional flooding. The owner considers the "arroyo" his property and greets "trespassers" with a shotgun. Even though her group is still working on this issue (and now wear flack vests!) it has brought to light a greater awareness of flooding problems and what to do to help prevent them.



As if being a FPA in two towns and working with Parkhill, Smith and Cooper as the only CFM in their El Paso office doesn't keep her busy enough, Sandra is blessed with five children: Isabel (11), Adrian (7), Angel (5) and Identical twin boys (Sebastian & Esteban - 2). Her husband, Eddie Hernandez is a civil engineer and both graduated from UTEP where they met. They have been married 14 years.

Sandra has one main goal for her region – Training and Education. With training, people become educated about flooding and the dangers. With education comes awareness. Her mission is to bring flooding awareness and the dangers of flooding to the communities in her Region. With two trainings already planned for Region 3, she has a great start in accomplishing her goal!

Thank you Sandra for sharing your vision and goal with Region 3!
Welcome to the TFMA Board!



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On Capitol Hill

By: Wes Birdwell, P.E.

TFMA Legislative Committee Chair

A few weeks ago, I spent all week in Washington DC. A sister association to TFMA, the Texas Water Conservation Association, goes to the nation's capital during the first week of February each year for "Texas Water Day". We meet with most of our Texas congressmen and both Senators regarding Texas' water issues, including floodplain management. It is a busy week.

Congress has been working hard to reduce the impact of BW-12. As many of you know, flood insurance rates for many have gone up by a factor of ten as FEMA implements "actuarial" flood insurance rates as directed by Congress in the Biggert-Waters Act of 2012. The local response has been overwhelmingly negative. Most people live near water, so many communities feel they have been adversely impacted by the implementation of higher rates. Congress has responded by asking if FEMA analyzed the "affordability" of the new rate structure as they were directed. FEMA responded that they were not given the budget to do an "affordability" study so did not do one. So it goes back and forth. In response, the Senate has passed S-1926, the Homeowner Flood Insurance Affordability Act. It would delay certain aspects of BW-12 for four years, including the new rates and grandfathering for certain categories of structures. The House may soon have a similar bill, though indications are it will not reach as far as the Senate Bill. If the House passes a bill, both bills will most certainly go to conference committee. If a conference bill emerges, the President has voiced opposition to delaying the new rates, but has not indicated that he would veto a bill. On it goes.

On another subject, there is also hope for a new Water Resources Development Act that would authorize the Corps of Engineers to construct new flood control projects for many states including Texas. The last one was in 2007. The Senate version is full of new regulations and funding for increased federal oversight of existing projects, while the House Bill avoids new regulation and focuses on new projects. The bills are locked down in a conference committee and there is little word on progress, though most everyone believes there will eventually be agreement and a new Bill for the President to sign, as he has indicated he will. We'll see.

At the State Capitol



By: Wes Birdwell, P.E.

TFMA Legislative Committee Chair

In Texas news, we have had two recent meetings at the new Texas Water Development Board regarding Texas' NFIP, restoration of state funding for the program, and implementation of a statewide mapping plan. We have met with Chairman Carlos Rubinstein and Commissioner Bech Bruun, the two new Board members and their Chiefs of Staff, and with Lisa Glenn, Deputy Executive Administrator, and Mike Segner, Director, Flood Mitigation Planning Division. We delivered a letter from our world famous Executive Director, Roy Sedwick, that welcomed the new Board Chairman. Rubinstein was appreciative of the TFMA letter and is very open to working with both TFMA and FEMA to rebuild the program.

The meetings included a brief history of SB 1436 moving the program from TCEQ to TWDB in 2007 and then the funds being taken away from the agency in the 2009 legislative session with the funds consolidation bill. TWDB wants to restore funding for the state NFIP program and welcomes TFMA's help. The agency has indicated that they will put this into their upcoming Strategic Plan and also into the Legislative Appropriations Request (LAR) for the next biennium.

We have also met with legislators and other officials who supported SB 1436 to see if there is still support in our Legislature. It appears that even though there are many new faces, there is still broad support. We have a long way to go, but all of this is very encouraging and we are very grateful for the friendly reception experienced at TWDB.

Have a question? Email it to me via the TFMA Executive Office at tfma1@att.net.

2014 TFMA Annual Spring Conference

TFMA has scheduled the Annual Spring Conference for May 27-30, 2014 in Irving. This very educational and informative conference will offer attendees the opportunity to choose from over 24 hours of continuing education with technical sessions carefully crafted to suit your needs in a variety of learning formats.

The TFMA Board of Directors will meet on Tuesday with Early Bird Workshops including "NFIP 201", "Your Role in Mitigation Planning", "Floodplain Management 101" and more. A field trip is also planned as one of the workshops on Tuesday whereby we'll get a better understanding of the Las Colinas Levees, Pump Station, Canals & Lakes.

The opening Plenary Session scheduled for Wednesday, May 28 will introduce what will become an annual tradition with the inaugural "Mike Howard Lectureship" to be presented by Samuel D. Brody, PhD who will be present "Should the Texas Water Code be Expanded to Mandate Floodplain Management by State Agencies and Communities?"

Thursday will be filled with concurrent sessions with topics to suit everybody's needs and interests and will include the Awards and Membership Luncheon.

The conference will also offer you plenty of opportunities to catch up with your colleagues and friends at the Annual Banquet on Wednesday night and the Networking Social and Silent Auction on Thursday evening. The exhibit hall will open on Wednesday morning through Thursday night. Exhibitors will be there to show you their products and services and introduce you to some new things too. The closing Plenary Session will be held on Friday morning through noon.

The headquarters hotel is the Omni Mandalay in the prestigious Las Colinas area. TFMA has negotiated a fantastic rate of \$125 single/double. The Irving Convention Center will host all the educational programming and is only a short distance away from the hotel. Parking at the hotel is complimentary and covered parking at the convention center is only \$5.00.

Online Registration is NOW OPEN AT
[http://www.tfma.org/events/
event_details.asp?id=407127&group=#](http://www.tfma.org/events/event_details.asp?id=407127&group=#)

ANNUAL SPRING CONFERENCE HIGHLIGHTS

- Up to 24 hours of accredited CECs to choose from
- Inaugural "Mike Howard Lectureship" opens the Wednesday Plenary Session
- Annual Banquet on Wednesday Night
- Awards and Membership Luncheon on Thursday
- 2nd Annual Silent Auction
- Exhibits full of information
- Networking Social
- And more!

REGISTRATION IS NOW OPEN



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TFMA 2014 North Texas Regional Luncheon

Over 265 attended the 8th TFMA North Texas Regional Luncheon in Grapevine on January 23, 2014. Held in the DFW area by TFMA's Region 4 and 10, this has become a very successful event for this region.

City of Austin's Matt Porcher and Tomas Rodriguez presented "ATXFloods: Real-Time Map Alerts Public to Flood Hazards" and the City of Austin's, Henry Price presented "Austin's Halloween Flood: Response and Recovery." FEMA Region VI's Diana Herrera presented an update on BW-12. TFMA Outreach Committee Member, Larissa Knapp-Scott highlighted the new TFMA Outreach Committee Goals. TFMA Regions 4 and 10 presented CRS Special Recognitions for the Cities of Dallas, Grand Prairie, and Plano – each city has achieved the CRS 5 Rating, which is currently the best rating in Texas that only 6 total communities have achieved. Seven local Floodplain Administrators participated in a panel following the luncheon with questions from the audience.

Congrats to event planners, TFMA Region 4 Director, Lynn Lovell and TFMA Region 10 Director, Tam Vu for orchestrating this great educational luncheon.

Many thanks to all our Event Sponsors. We could not have done it without you!



2014 TFMA Annual Spring Conference
May 27-30 * Irving Convention Center * Omni Mandalay
Irving, Texas

EXHIBITOR REGISTRATION INFORMATION

The Texas Floodplain Management Association's Conference is a gathering of the Floodplain Management communities. Maximize contact with your target market with opportunities to educate and inform potential clients in the public and private sector of the services, equipment, software/hardware products, project and data management services your company provides. Reinforce your existing relationships and meet a new, larger and more diverse customer base. Promote your emerging technologies and applications and discover what others are doing when you directly interact with the leaders in application, innovation, development, and execution of Floodplain Management.

Corporations, government agencies, and non-profit organizations involved in all facets of floodplain management are encouraged to exhibit. The exhibit show will be in a highly visible area in close proximity to the General Sessions with refreshment breaks taking place within the exhibit area. Plenty of exhibit breaks and social activities have been planned to maximize exposure to your organization and its products. Our attendees have said over and over again, that a big part of this conference is learning about your company and its products.

Who Attends?

Flood hazard specialists from local, state and federal governments, mortgage/insurance and research communities, associated individuals in flood zone determination, engineering, hydraulic forecasting, emergency response, water resources, geographic information systems and other Floodplain administrators, Floodplain engineers, and Stormwater Managers and their personnel. Over 450 attendees participated at the conference in Sugar Land last spring.

Benefits of Exhibiting:

- Meet new prospects and generate leads with experts in water resources, research and management.
- Promote your company image and maximize market exposure.
- Discuss the needs of your clients in a friendly yet professional environment.
- Build long-lasting business relationships all under one roof.

For more information contact the TFMA Executive Office at 512-260-1366 or via email at tfma1@att.net

Meet Your Director - John Johnston, CFM, Region 8

Region 8 Director John Johnston is no stranger to the floodplain field, although he credits Kevin Miller with his career path. John had been working in the private sector for about 6 years when a job came open as Assistant Director of Public Works with the City of North Richland Hills. And the rest is history.....

When John took the position, he had no background in the floodplain field. After taking the job with the City, and with training and encouragement from Kevin, John expanded his knowledge of floodplain management.

In 1992, John accepted the Director of Engineering position with the City of Victoria (his hometown), and grew the floodplain program there. John took and passed the CFM Exam in 1999, shortly after the flood of 1998! Prior to the '98 flood, John did not see the need to become certified. Times change and so did his thinking and desire to support the professional perception of floodplain managers! Not only does he see the benefits but he also encourages others to pursue the floodplain field and their CFM. Over the years in Victoria, John has encouraged and trained over nine (9) CFMs. Three CFMs currently work for the City of Victoria.

John is currently responsible for the engineering services for the Development Department with the City of Victoria. He admits to wearing many hats – plat and site plan review, meeting with the developers and citizens, explaining and applying codes, reviewing floodplain permit compliance and providing floodplain map information letters – only a few of the duties he could encounter in a day.

John also works with the Victoria City/County Office of Emergency Management, where he manages the Partners in Preparedness Program, an outreach to businesses, critical infrastructure partners, citizens, public agencies, and volunteer organizations preparing for disasters. During the response phase of a disaster he transitions into the Amateur Radio Liaison, working with the local operators to ensure continuity of communications, coordinating/participating in communication exercises and ensures the EOC amateur radios are maintained and operational. As the community moves into the recovery phase of a disaster, John works with the Voluntary Organizations Active in Disaster (VOAD) assisting with the coordination of donations and unmet needs, as the VOAD Liaison.

John calls himself an “observant teacher”. He believes in training others so no one is stretched thin. “Training is key.” You will often find John conducting lunch training sessions to assist those in his office and provide

instruction of floodplain management and permitting. All part of empowering those with whom he works and sharing his knowledge with others!

Kelly, John’s wife, is a dental hygienist and teaches Zumba classes at their Church in their hometown of Victoria. She and John have been married 33 years and have one dog, Charlie; they adopted from Adopt-a-Pet. John’s oldest son, Garrett, is an engineer with Freese and Nichols’ Fort Worth office doing flood studies, project design and project management. He is a graduate of Texas A&M, a CFM and recently obtained his PE license. Their youngest son, Conner, is a recent graduate from Texas A&M with a degree in International Studies and a minor in Japanese. Conner currently works in Victoria.



As Region 8 Director, John realizes his region spans coastal and rural regions as well as the Houston Metro area. One of his goals is to bring more training to his region that is specific to that section of the region. He is actively forming a relationship with Texas Department of Housing and Community Affairs, Manufactured Housing Division and making sure the lines of communication remain open in regard to the floodplain and manufactured housing rules. Realizing one person in a community could wear many different hats, being able to leave for training is a challenge and might not be a budget item. He would like to target the particular needs of the community and bring the training to them!

Interesting facts about John His first TFMA Conference was in San Angelo in 1989. In 2000-2001 John was selected as Floodplain Manager of the Year. He respectfully requested to share the award with Mary Pullin and Jeannie Turner, stating he would not be FPM of the year without their assistance. His request was granted and the award was shared! He is an avid golfer and holds a General Class Amateur Radio License.

Thank you, John, for sharing your experience and know-how in Region 8!

NEWS UPDATE: CO-2013 Qualify for Regionals



In the last newsletter you were introduced to this group of young people who compete in FLL (First Lego League) meets in Texas. Their director, Ruben Campos, contacted TFMA for advice and information. Roy and Markie were honored to sit in on their presentation before the last meet. Roy was able to give some pointers and the students took his words to heart! This is an amazing group of students who have a firm grasp on, not only technology, but also the importance of flood safety. We will continue to follow them throughout the competition and wish them

well in seeking a national championship! The Change Makers of 2013 (CO-2013) are getting ready for their participation at the FLL Central Texas Invitational at Connally High School on Saturday, March 8th where they will compete with the 60 best FLL teams in Central Texas. The challenge and attention is on mainly two areas: share their results and app ("Safesky") with groups related to Flood Management and Disaster relief and obtain additional ideas that could improve their app design and develop new app screens to improve their design. TFMA has played a big role in supporting these kids and we wish them the best as they prepare for Regionals.

An advertisement for AECOM. The background is a photograph of a sunset over a body of water with reeds. The AECOM logo is in the top right corner. The text "Creating a better tomorrow." is in the middle. Below that, it says "Creating, enhancing and sustaining the world's built, natural and social environments." and the website "www.aecom.com" is at the bottom.

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TFMA Committee Corner - Stormwater Technical Committee

As of the February Board meeting, the Stormwater Technical Committee has been formally approved as a standing committee of TFMA. We want to thank all who attended the initial meeting as a task force at last fall's TFMA conference or who have since expressed interest in participating. I want to re-cap the main issues from our kickoff meeting:

There are numerous issues with urban stormwater that can be addressed by this Committee. Urban flooding is a major issue in many cities in areas not mapped as FEMA floodplains, primarily due to small urban streams and undersized storm drains. Over the years, cities and consultants have presented a number of technical papers regarding hydraulic modeling methods and software which help to define urban drainage problems. Several members have expressed a desire for this committee to serve as a forum for exchanging ideas and challenges faced when dealing with these types of problems. Other topics of interest include urban stream restoration, flood warning systems, erosion protection challenges, drainage improvement projects, and managing urban water quality, among others.

The first specific task will be to support the effort by Texas A&M Kingsville (TAMUK) to develop a certification for stormwater managers similar to the CFM®. TFMA began due to a need for training for Floodplain Administrators charged with carrying out the NFIP in their communities. Although many members come from large urban areas, it is important that TFMA continue to serve the needs of small towns and rural counties which have fewer resources. TFMA was approached by the Lower Rio Grande Valley TPDES Stormwater Task Force to develop training and voluntary certification to help local officials deal with TPDES permitting and enforcement. Although there are other organizations around the country that offer similar certifications, the costs and educational requirements are geared toward those who work in larger cities or in areas with stricter regulatory requirements. TFMA has agreed to partner with TAMUK as they seek a grant to develop a suitable TPDES certification parallel to the CFM® which would support our smaller communities in dealing with these issues, many handled by the same personnel who also manage the NFIP. David Zwerner, CFM, CPESC of Williamson County has volunteered to head the subcommittee working through this effort. We are at this time waiting for TAMUK to secure the grant which will allow them to develop this certification.



If you are interested in serving on this committee or on one of its subcommittees, please contact Steve Eubanks, Chair (steven.eubanks@fortworthtexas.gov), David Zwerner, (dzwerner@wilco.org), or Jill Trevino, (Jill.Trevino@freese.com).

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News from FEMA

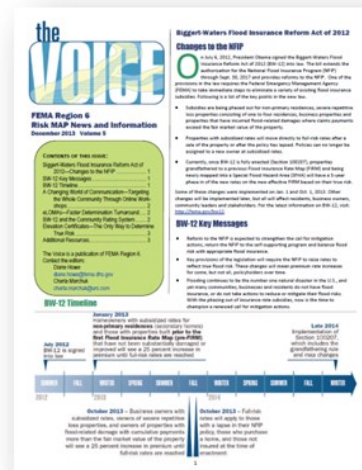
Learning and Sharing Risk Information through a Digital Platform

FEMA Region 6 has just released the latest issue of its newsletter, *The Voice*, and it is available on the website: http://www.riskmap6.com/documents/resource/Voice_Dec2013.pdf

In it you will find updated project schedule information as well as information on Biggert-Waters Flood Insurance Reform Act of 2012 (BW-12). Some of these changes were implemented on January 1 and October 1, 2013. Others changes will be implemented later, but all will affect residents, business owners, community leaders, and stakeholders. We've also added the BW-12 implementation timeline to help you understand the next steps as well as several links to online training and additional information.

Local officials looking for ways to easily and effectively share this and other flood risk information with their community are invited to look through the Risk Communications Guidebook for Local Official, available online at <http://www.riskmap6.com/guidebook.aspx>.

This issue of *The Voice* focused on the Biggert-Waters Flood Insurance Reform Act of 2012 (BW-12) for you to use and share. FEMA Region 6 also offers online training on this topic and on Communicating Risk. Upcoming online training opportunities are announced through our State Association partners and through GovDelivery email notifications. Signup to receive email updates on future FEMA Region 6 webinars through GovDelivery at <http://govdelivery.com/resources/events-webinars>. Contact Diane Howe (diane.howe@fema.dhs.gov) for assistance with our digital risk communication tools.



RiskMAP6.com

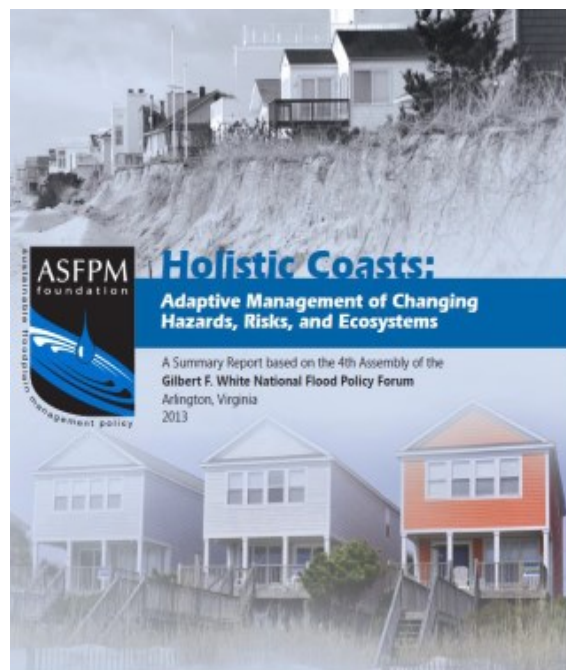
“Helping communities understand a complete picture of their natural hazard risk”

ASFPM News

Holistic Coasts Report Released by ASFPM Foundation

A vision for partnerships that will help secure a sustainable future for our nation.

“Holistic Coasts: Adaptive Management of Changing Hazards, Risks, and Ecosystems” is a bold vision – an integrated management approach and philosophy that breaks stove pipes, promotes individual and collective accountability and responsibility, and balances human use, environment, and economy into a resilient system. It is a compilation of 4th ASFPM Foundation Forum, conducted over two days at George Mason University in February 2013, which carefully considered coastal issues as they relate to flood and other hazard management. One hundred invited experts engaged in brainstorming, small group discussions, and group feedback to define major coastal problems and concerns, identify management opportunities and impediments, and develop key action agenda items for broader discussion. The plenary speakers addressed human use and human adjustment, natural resources, international perspectives, and domestic perspectives, and coastal challenges today and into the future. Readers of this report will not find all answers regarding how to achieve Holistic Coasts, but will see a starting point for a vision and partnership that, if undertaken successfully, will help secure a sustainable future for our nation.



This report can be found on the [ASFPM Foundation 2013 Forum](#) page, along with the Forum's agenda, background papers by participants, speakers' PowerPoint presentations, and assembly participants. This event was generously sponsored by AECOM, Atkins, Baker, Black & Veatch, CDM Smith, Dewberry, ESP Associates, H2O Partners, Stantec Consulting, and URS.



Floodplain Manager's Notebook

Reprinted from ASFPM's *The Insider*, January, 2014

By Rebecca Quinn, CFM

Everywhere you look you can find something about changes to the National Flood Insurance Program triggered by the Biggert Waters Act (BW-12). I'm not going to comment on the matter of increasing rates so that every insured property eventually pays for flood insurance based on actual risk.

Today I want to talk about reducing risk. It's past time for us all to take a good look at what can be done to reduce exposure to flood damage. BW-12 just reinforces the merits of doing that. Actually, prior to BW-12 there was little incentive to simply "reduce" risk, because the best insurance rates are reserved for buildings that meet or exceed the NFIP minimum requirements. But now that rates are going up, and more older buildings will eventually be actuarially rated, it makes sense to look at reducing risk, especially if doing so can lower the cost of flood insurance.

Floodplain managers know that buildings that were built before a community's first Flood Insurance Rate Maps were issued, got policies written with "discounted" rates (sometimes referred to as subsidized rates). What a lot of us didn't know is that any older building that just happened to be elevated high enough, and just happened to have the right type of foundation, can have a policy written with actuarial rates if the owner submits an Elevation Certificate that documents the building conforms to the minimum requirements. Conform to the whole shebang: first floor at or above BFE, equipment and utilities elevated, flood-damage resistant materials, and walls of enclosures have flood openings (or are breakaway walls in Zone V). Turns out if older homes conform to all of the minimum requirements, then actuarially rated policies can cost less than "discounted" policies.

There's been a small but growing effort by some community officials, homeowners associations, and knowledgeable consultants and contractors to modify older homes so that they qualify for actuarial rates, or even just lower rates. Just as important as that objective is that modified or retrofitted buildings are much less likely to sustain damage the next time Mother Nature comes calling! I wonder, with all the attention on BW-12 and rising rates, if we have forgotten about a myriad of benefits in reducing exposure to flooding?

For the past two decades a great deal of time, attention, and funding has gone into buying out or elevating flood-prone homes. I've always been a strong proponent of these projects, having managed Maryland's mitigation grant program long before the current FEMA grant programs were authorized. There haven't been many times in my career when I knew my job had more positive impact than in the late 1980s. After yet another flood in Baltimore County prompted the owner of a house in the floodplain to call me early one Monday morning. "On Friday I still wasn't happy about having sold my house to the county, but on Sunday when I drove by and water was halfway up the wall again, I changed my mind." We can bandy about theory and benefit-cost analyses all we want, but that's a true measure of the good work we do. But I digress ...

Yes, we all know that acquisition is the only way to completely eliminate flood risk, and that elevating homes on fully compliant, new foundations is a great idea to reduce exposure to flooding. The last time I saw FEMA's numbers, thousands of homes had been acquired or elevated using federal grant funds, and thousands more have been elevated or demolished using Increased Cost of Compliance (coverage that's part of NFIP policies on buildings in mapped special flood hazard areas). But let's be realistic: given the millions of buildings in the nation's floodplain, there's no way that reliance on those funding sources will significantly reduce the nation's overall exposure to flood risk any time soon. Similarly, decades of experience has shown that the expectation behind the Substantial Improvement and Substantial Damage requirements hasn't played out – there are millions of older buildings that just haven't had improvements or repairs that hit the 50 percent trigger, and millions more that are unlikely to sustain Substantial Damage by flooding.

That's a long-winded lead-up to today's topic. Let's talk about just one way that risk of flood damage can be reduced for some homes and, along the way, the cost of flood premiums might also be reduced.

Let's talk about modifying crawlspaces to reduce vulnerability to flood damage to buildings located in Zone A (Zones A, AE, A1-30, AO, and AH). The way to do this is to modify crawlspaces so that they conform to the minimum requirements. Please remember that each building needs to be examined to determine exactly what needs to be done, and that this summary is just that – a summary. I hope this column is enough to get you thinking.

Elevated Home, Noncompliant Crawlspace (or enclosure). Several years ago, a study for FEMA documented the results of field surveys of buildings that were supposedly built to meet the minimum requirements. One of the most important conclusions was that for the most part, local officials and builders had been getting lowest floors properly elevated. The not-so-good news was that plenty of enclosures below those elevated buildings failed to comply, often because of insufficient flood openings. And a large number of those noncompliant enclosures were crawlspaces.

A significant consequence of that noncompliance is risk of damage, which is reflected in the fact that flood insurance policies on those buildings are rated with the floor of the crawlspace (or enclosure) as the lowest floor. This makes policies much more expensive than they would have been, had the crawlspaces and enclosures fully complied with the requirements. My guess is many builders and local officials are unaware that if they don't pay attention to the details, owners will bear the burden of having to pay much more for insurance.

The solution? Easy – identify the noncompliance and fix it. If the problem is insufficient flood openings, either remove non-engineered openings and replace them with engineered openings, or add more openings. Of course, other aspects of the crawlspace or enclosure may also be noncompliant. The discussion below covers those aspects. The final step is to submit documentation to the insurance company so that the policy can be rewritten to reflect the compliant enclosure.



Older Home, Nonconforming Crawlspace. For this discussion, I'm not talking about raising existing buildings on new or extended foundation walls, so let's not worry about how high the floor is above the crawlspace. The whole point is that risk of damage is reduced if crawlspaces are modified, even if the floor above the crawlspace just happens to be below the base flood elevation. And, under BW-12 if the building is going to be rated actuarially anyway, if the crawlspace is modified and an Elevation Certificate provided to the insurance company, an actuarially-rated policy based on the elevation of the floor, even if it is below the BFE, is likely to cost less than if the owner does nothing. First, a quick look at the NFIP requirements for enclosures below elevated buildings in Zone A (including crawlspaces), also found in the International Code Series and thus in virtually all state and local building codes:

- The foundation walls must have flood openings to allow floodwater to automatically flow in and out so that unequal hydrostatic pressure does not cause structural damage to the walls.
- The interior grade must be at or above the exterior grade along one side, otherwise the crawlspace meets the definition for a basement, which is "any area of the building having its floor subgrade (below ground level) on all sides." The reasoning behind this requirement is also related to hydrostatic pressure, as well as minimizing the amount of water that can't readily drain away. □ Equipment must be moved to be at least as high as the level of the floor above the crawlspace.

Install New Flood Openings, or Install Proper Openings, in Crawlspace Walls. Flood openings are required so that floodwaters can automatically flow in and out in order to minimize unequal hydrostatic pressure that can lead to structural damage. The number and location of flood openings is specified in regulations and codes, along with the amount of net open area required for non-engineered openings and certification requirements for engineered openings. Rather than attempt to summarize all the guidance on openings, I'll just refer you to FEMA's Technical Bulletin 1, *Openings in Foundation Walls and Walls of Enclosures*.

If foundations walls don't have any openings, or doesn't have enough openings, holes can be cut and flood opening devices installed. It isn't that complicated for a contractor with the right tools to remove several concrete blocks or cut holes in poured concrete foundation walls. The best reason to consider engineered openings, especially for retrofit projects, is because fewer holes need to be cut in the walls. Our colleagues at SmartVent have been able to help many homeowners do just that, sometimes lowering the annual cost of flood insurance by thousands of dollars: <http://smartvent.com/pdfs/flood-vent-retrofit.pdf>. It's not a big leap to realize that this also makes homes much more marketable.

Modify the Interior Grade of the Crawlspace. Under normal conditions, the soil on the inside of a foundation wall balances the soil pressure on the outside of the wall. Under flood conditions, we assume the soil inside continues to balance the soil outside (ignoring what are probably minor differences as the outside soil gets saturated a little sooner than the inside soil, and thus is heavier until floodwaters begin to spill through the flood openings). But if the soil inside is below grade along the lowest side, then as water rises against the outside of the wall, it is unbalanced until water begins to spill in through the flood opening.

To raise the ground surface of the soil on the inside of a foundation wall so that it is at or above the ground surface all along one wall, enough soil needs to be added so that the surface of the newly placed soil is somewhat above the exterior soil level, to account for settling (otherwise it could settle enough to still be below the exterior grade). Should it be compacted? Ideally, yes, but that can be difficult in crawlspaces with little headroom. But if the newly-placed soil is only a foot or so deep, then adding a couple extra inches to account for settling should suffice. Also, if the trench excavated for the footing was not backfilled when the building was constructed (thus the grade adjacent to the inside of the foundation wall is well below-grade), then the trench should be backfilled with at least an attempt at compaction – and then add some extra soil to account for settling.

Now, can gravel be used instead of soil to raise the interior grade? Sure, the weight of the gravel will balance the weight of the exterior soil. Plus, it'll likely be a lot easier to place sand or gravel, especially if there's not much headroom.

We should add a caution that backfilling a below-grade crawlspace may not work if the surface inside the foundation wall has a non-structural concrete slab (often called a "rat slab"). If there is a slab, then drainage as flooding recedes needs to be considered. More than likely the presence of the non-structural slab won't trap water and floodwaters will drain anyway, avoiding unbalanced pressure against the inside foundation wall. But in these circumstances, owners should consult with an engineer or experienced contractor. Drainage holes can be provided in the slab before gravel or soil is placed.





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I've had people question whether just a few inches below grade really is that much of a problem. While it may be a valid point when considering flood loads (just how much load is associated with only a few inches of water?), that misses two important points. The first point is compliance – if the inside of a crawlspace is below grade on all sides, it's a basement and basements are not permitted, period. It's very difficult to regulate grey areas, and much easier to say "below grade area not permitted" than to say "a little below is OK because the loads aren't that much different." The second point is insurance – if the Elevation Certificate shows the interior of a crawlspace to be below grade on all sides, the flood insurance will be rated higher.

Move Equipment. If equipment is left in the crawlspace, not only is it exposed to flood damage, but its presence means the best flood insurance rates won't apply. The solution, moving it to an elevation at least as high as the floor above the crawlspace, isn't always easy because there may not be enough area inside the home, and adding a small addition to house the equipment might take some work. But it can be done and has been done many times.

In Closing. The typical objection to even considering retrofits is concern about costs. Compared to elevation-in-place, modifying crawlspaces isn't likely to be a big-dollar investment. I appreciate that owners have to come up with the money to do the work. But when you consider the likely annual savings on flood insurance, the balance can quickly tip towards action. And remember, making homes safer and eligible for lower insurance premiums can be positive factors when it comes time to sell.

Other options for retrofitting buildings without crawlspaces can get complicated fast, but are still worth examining. Consulting with someone who really knows the rules is a good idea. Here are a few resources that might help with the deliberations:

- *Homeowner's Guide to Retrofitting*, FEMA P-312, <http://www.fema.gov/media-library/assets/documents/480>
- *Reducing Flood Risk and Flood Insurance Premiums for Existing Residential Buildings in Zone A*, Hurricane Sandy Recovery Advisory 7, http://www.fema.gov/media-library-data/1385402350525-0854e30dc59e2567554b87bc3cc94e36/SandyRA7ReducingFloodRisk_111913-508.pdf
- *Selecting Appropriate Mitigation Measures for Floodprone Structures*, FEMA 551, <http://www.fema.gov/media-library/assets/documents/10618?id=2737>
- *Floodproofing Non-Residential Buildings*, FEMA P-936, <http://www.fema.gov/media-library/assets/documents/34270>
- FEMA Technical Bulletins: <http://www.fema.gov/plan/prevent/floodplain/techbul.shtml>

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Date and time to be announced.

July 2014 – Houston

Date and time to be announced.

August 2014 - Austin

Date and time to be announced.

November/December 2014 - Arlington

Date and time to be announced.

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