



The Antediluvian

Ohio's Floodplain Management Newsletter



{an · te · dā · lōō · vē · ən: Before the Flood}

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Ensuring the wise management of Ohio's floodplains

Summer 2016

Relative Risk

Christopher M. Thoms, CFM, Floodplain Management Program Manager - ODNR, Division of Water Resources

Risk is defined as probability multiplied by outcome. Often this is expressed in dollar-equivalences (gain vs. cost). As either or both factors increase, so too does the risk.



Some risks can hinder while others can kill. Usually, risk-avoidance is directly related to where a risk falls between those extremes. Flood risk is the probability of a flood multiplied by the losses it would cause. We all regularly explain that, in the high risk flood zone (Zone A / AE), the cost of the loss is more than that of flood insurance, so it is reasonable to buy the insurance. Yet we all know that many Zone A / AE property owners / renters do not do so. The obvious question is, Why?

A fool and his money are soon parted.

As the familiar ancient maxim above illustrates, not all decisions are wise; but it is unwise to assume all bad decisions are foolish, or that all foolish decisions are bad. Some good decisions may be based on foolish premises. The Bosnian man whose home was hit five times by meteorites in six months (November 2007 to April 2008) installed a steel girder reinforced roof because he says, *I am obviously being targeted by extra-terrestrials. I don't know what I have done to annoy them but there is no other explanation that makes sense. The chance of being hit by a meteorite is so small that getting hit five times has to be deliberate.*¹ Similarly, some foolish decisions may be based on sound premises, as the picture (at right) of an extremely elevated structure illustrates.



***A+* Accurate...plus**

Since how a question is phrased greatly influences how it is answered, it is helpful for us to consider how we say what we say. Accuracy, while required, is not sufficient if it is not persuasive. Though I greatly appreciate the well-turned phrase, eloquence isn't enough either. The prescient and pithy Winston Churchill, who many say was one of the greatest statesmen of the 20th century, was often ignored when he foresaw a looming danger, only to be turned to when that very danger was upon them. From 1933, Churchill repeatedly warned his countrymen about the perils of Nazism, but war-weary Britons --resistant to heed the accurate and eloquent warnings-- failed to prepare for the coming geo-political storm. Reasonable people do not want war, pestilence, famine, fire, or flood and will try to avoid them. But, to be reasonably effective, those avoidance efforts cannot merely be wishful thinking.

Certainly, we should strive to be accurate. Yet we also need to clarify our accurate information. Is the data we are providing being understood by our audience? We all battle some common misinformation and myths surrounding flood risk reduction and flood insurance.

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The problem is usually compounded following a disaster when rumors can exponentially outrun facts.

We need to continue (and improve) our efforts to clearly state:

1. The likely risk based upon the best information available.
2. The distinct need for, type, extent, limitations, and cost of flood insurance coverage.
3. The need for, type, extent, and limitations of flood disaster assistance.

As Dr. Jacqueline Meszaros instructs, we tend to be risk-averse in gains but risk-seeking in losses.ⁱⁱ Some of you may recall (or watch reruns of) Popeye's Whimpy as he successfully importuned his neighbors in hope that no one would ever remember to collect come Tuesday. Likewise, many seek to continue enjoying benefits without incurring costs. They are sufficiently satisfied that they have gotten by so far, so why bother about what isn't perceived as an imminent threat?



Nothing Ventured, Nothing Gained

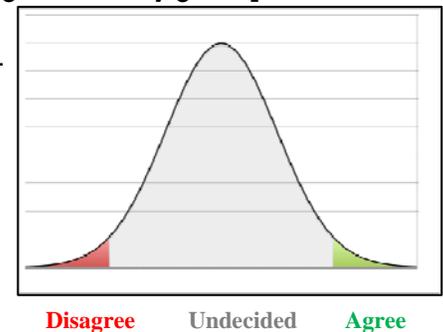
One must take risks to achieve most anything, and so, it is essential to effectively motivate people whose lives and property are at high flood risk that there are steps they should reasonably take. The level of satisfaction or utility we anticipate or obtain from an act (and with our overall situation), is based, in large part, upon our awareness of and desire for either fulfillment or threat avoidance. In turn, our level of satisfaction greatly influences our thinking and feeling (motivation) when considering and undertaking actions.

As illustrated above, even if a threat is recognized, the response can be wise or foolish or somewhere in-between. If a risk is perceived as being unfair, unnatural, unlimited, uncontrollable, unintelligible, unfamiliar, uncertain, or unprecedented, people are more likely to worry about it and seek more protection from it. Emotional responses to significant threats may not only be understandable, at times they are the overwhelming motivator. We must offer the facts but, to be

effective, we must be considerate of those emotional reactions, not dismissive. Anger may provoke increased resistance or help motivate people to action. In turn, that action may be an ineffectually vague, we *have to do something* or an effectively specific risk reduction, *purchase flood insurance*. So how do we promote the constructively specific?

The Bell Curve focus

Using the classic bell curve, the premise is that, typically, there will be the two relatively small extreme groups and a large middle population. The extremes are comprised of those who firmly disagree and those who just as firmly agree with any given position. While it is possible to change either, usually it is a better use of resources to focus on reaching the larger middle, those who are undecided.



With flood risk reduction efforts, message techniques range from presenting the worst-case scenario. (e.g., unmatched or ever-escalating peril) to continuing what we have been doing (e.g., a mix of services, featuring success stories and cautionary tales) to broadening the burden. (e.g., communitywide or universal flood insurance requirements). While there are factual arguments that can and should be made for accommodating changing risks, societal obligations, and personal responsibility (whether existing or advocated), there are dangers inherent in over-reliance on any one-size-fits-all response. People more readily respond to responsive services and to threats that are informed by memory or message.ⁱⁱⁱ

Nostalgia or Déjà vu

They're rioting in Africa...They're starving in Spain...There's hurricanes in Florida and Texas needs rain

The whole world is festering with unhappy souls.

The French hate the Germans...The Germans hate the Poles...Italians hate Yugoslavs...South Africans hate the Dutch ...And I don't like anybody very much

Continued on page 4...

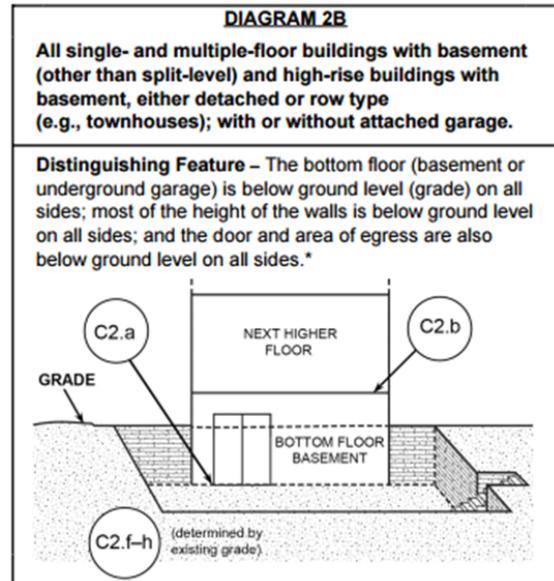
What's new with FEMA's Elevation Certificate?

Katherine Goepfner, EI, CFM, Environmental Specialist, Floodplain Management Program - ODNR, Division of Water Resources

In June 2016, FEMA released the 2015 Edition of the Elevation Certificate (EC) for use. The EC is a document that provides elevation information necessary to ensure compliance with community floodplain management regulations, determine the proper insurance premium rates, or support requests for a Letter of Map Amendment (LOMA) or a Letter of Map Amendment based on Fill (LOMR-F).

Changes to the revised EC include:

- Privacy Act Statement has been added to the cover page
- More space for comments in most sections
- Top of the first three pages have Building Address, Insurance Policy Number and Company NAIC Numbers reiterated
- Section A includes a new diagram named 2B
- Section C - the note for using meters in Puerto Rico has been relocated
- Specific type and location of equipment in Sections D and G
- Instructions include new diagram and web address updates
- The PDF form has been enabled to be filled and saved using Adobe Reader.



For insurance purposes, NFIP Underwriting will continue to accept properly completed and certified elevation information, submitted on a different format than the EC, through Dec. 31, 2016. After that date, all elevation information must be submitted using the current EC. Note that in the future, no further transition periods will be provided when a new FEMA EC is approved.

The current version expires on November 30, 2018. The form can be downloaded from <http://www.fema.gov/media-library/assets/documents/160>

ASFPM Changes Continuing Education Credit (CEC) Policy

In October 2015, the Association of State Floodplain Managers (ASFPM) revised their policy concerning Continuing Education Credits (CEC) to support Certified Floodplain Manager (CFM) accreditation. The revised policy allows CFMs meet their requirement to obtain 16 CECs **anytime** during their two-year certification period. (Previously, CFMs were required to obtain 16 CECs over two years, but no more than 12 could be used toward certification in one year.)

To ensure that you are submitting only CEC-Eligible Activities, please visit <http://www.floods.org/index.asp?menuid=430> to access CEC guidance.

Please be advised that CECs must be verifiable. Credit may only be claimed once per certification period for each unique activity (e.g. CECs will only be given credit for the first time a CFM attends/teaches a course, even if a CFM attended/taught it multiple times during their certification period). All activities submitted for CECs are subject to ASFPM review and final approval.

Please direct any questions or concerns regarding your CFM or CECs to the ASFPM at: 608-828-3000 or cfm@floods.org.



"Relative Risk" Continued from Page 2...

*But we can be tranquil and thankful and proud for man's been
endowed with a mushroom shaped cloud*

*And we know for certain that some lovely day, someone will set
the spark off and we will all be blown away*

*They're rioting in Africa... There's strife in Iran. What nature
doesn't do to us will be done by our fellow man.*

Merry Minuet - Kingston Trio 1962

Though those dark and fatalistic lyrics were penned in 1962, yet sadly, they reflect a recurrent (albeit cynically presented) theme in human history. Natural and technological hazards are not new to this century or to your particular generation or to your current location. From statues to statements we commemorate (remind and recall together) to learn from and benefit by events of tragedy and triumph. Our memory and the lessons we draw from it, directly influences our actions. People who have not experienced a flood are less likely to consider it a real threat, but message (education) can strengthen or supplement our memory. Flood survivors will undoubtedly remember their experience, but may draw very different conclusions. Some undertake remediation or relocation saying, *I never want to suffer that again...* whereas others tout their survival as proof positive that they can readily endure whatever flood may come their way. By promoting mitigation efforts and then pointing to those success stories, we can simultaneously remind people of the danger (memory) while demonstrating a realistic, reproducible response that reduces their risk (memory reinforced by message). Those who have mitigated are more likely to continue doing so and be an ongoing example for others.

Jargon and Decoder Rings

Technical language and acronyms aid



specialists in efficient communication of complex matters. But sometimes (especially when out-of-context) jargon is just plain annoying...and ineffective. Sound floodplain management is founded upon and benefits from centuries of trial and error. Over the years, tragic loss of life and destruction of property has motivated innumerable scientists, technicians, policy makers, and citizens under the banner, *Never again!* While the extensive science and technology can be complex, ambiguity powerfully undercuts risk perception (message) and constructive action (memory). Efforts to simplify can lead to distortion. Factitious overstatement (*crying wolf or the sky is falling*) destroys credibility and understandably strengthens chronic resistance to risk reduction efforts. The obvious challenge remains; to communicate our message, respectful of that complexity while providing the clarity needed in order for the majority to make informed decisions. While there's a legitimate need for and use of technical terminology, we also need to be the decoder ring for the non-specialists.

Flooding remains a risk here in Ohio as nearly everywhere. Thankfully, in the past hundred years, Ohio has not experienced a disaster on the magnitude of the 1913 flood. Sadly, in that time, we have repeatedly suffered loss of life and destruction of property to floods. Effective flood risk reduction measures are founded upon awareness, accuracy, and accessibility. Our message must convey that. It need not be simplistic or saccharine but should simple and positive; effectively informing the cooperative efforts of citizens and officials to implement sound floodplain management.

¹<http://www.dailymail.co.uk/news/article-558478/Under-attack-The-owner-house-struck-times-meteorites-fears-aliens-targeting-him.html#ixzz40dCg5sE1>

²Risky Behavior, Jacqueline Meszaros Ph.D. see discussion of heuristics, The Antediluvian, Vol 12 Issue 2 Fall '05 p. ?

³ibid p. ?

ODNR Division of Water Resources

In December 2015, legislative changes relocated several programs from ODNR's Division of Soil and Water Resources to the Ohio Department of Agriculture. The Floodplain Management, Dam Safety, Groundwater, and Water Withdrawal Programs all remain at ODNR in the newly formed Division of Water Resources (DOWR).

Contact information for Floodplain Management Program Staff remains the same.

Exceeding Minimum Standards in Licking County, Ohio

Gerald Brems, CFM - Retired Licking County Planning Commission/Ohio Floodplain Management Association

Licking County, Ohio, is a growing county located adjacent to and east of Columbus, Ohio. While generally rural in nature, it is undergoing rapid suburbanization pressure. A new interstate-style highway bisects the County, potentially increasing these growth pressures.

When the initial FIRMs were presented to the County in the early 1980s, the attitude of the elected Board of County Commissioners was to adopt only the basic and minimal requirements of the NFIP. This was itself a struggle, as the Board felt they were under a federal mandate and were not happy in their belief they had no real choice in the matter.

Over the course of the next ten years or so, the number of subdivision proposals grew exponentially and there were a series of small localized (mostly stormwater) flood events. Unlike in previous years, these many new developments were being proposed and built by large developers from the "big city" with no local roots or political connections; not the smaller local developers. At the same time, the local residents became increasingly vocal at Planning Commission hearings, over their concern of downstream flooding being exacerbated by the new developments upstream.

In response to these twin pressures, the decision was made to review and update the County's Subdivision Regulations and to adopt some level of storm water regulations. It was within this context that the notion of protecting existing and new residents from harm took hold. It was, in fact, No Adverse Impact (NAI)¹, before its time! The ensuing process encompassed two years of tumultuous hearings, debates and public hearings. The end result was a series of new standards and regulations which were adopted by the Licking County Planning Commission and ratified by a vote of the Board of County Commissioners.

The crux of the new requirements was an understanding that the FIRMs were, to some degree inaccurate, and more importantly, were extremely limited in their coverage. The obvious answer to this dilemma was to require that studies be done by the developer, for all streams on land proposed for development, to deter-

mine the 100-year flood elevation. This new knowledge then led to a slippery slope for policy and decision makers: What to do with this information?

As mentioned earlier, Licking County was primarily a rural county undergoing development pressure. In this context, it had a considerable amount of developable land. The logical answer to the above raised question was: stay out of flood prone areas! The agricultural interests and realtors were not particularly enamored with this proposal! The response however was clear: to the farmers the response turned on the fact they were in fact acting as developers, not farmers, when selling their land for development (or developing the land themselves); for realtors the response was made in the form of a question: "How many of you want to advertise you are selling a home that we know will be flooded some day?" Their silence was deafening.

In a somewhat ironic twist, it was frequently residents of new developments who voiced their strong opposition to additional new developments and pushed the notion of greater protection and the idea that the County needed to consider what would happen in the future if development continued unabated. This led to the decision to require developers to consider future conditions when undertaking their engineering analysis of unstudied streams on, or adjacent to, their proposed developments. Because predicting the future is fraught with uncertainty, it was decided that the most legally defensible way of "determining" future conditions was to utilize current zoning and assume full buildout at the allowed densities.

With the codification of requiring detailed studies for unstudied streams and intermittent waterways according to future conditions, the stage was set for adopting requirements that utilized this new and best available data. The overriding principle which guided the discussions and eventual adoption of regulations was that any new development should not increase hazards upstream or downstream of the site to be developed and that any new development should not put it's residents or public safety officials in harm's way. With this

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Ohio Committee for Severe Weather Awareness Poster Contest

Melissa Menerey, CFM, Environmental Specialist, Floodplain Management Program - ODNR, Division of Water Resources

The Ohio Committee for Severe Weather Awareness (OCSWA) Annual Poster Award Ceremony was held on August 6, 2016 at the Ohio State Fair in the new Cardinal Hall. A total of 38 Regional winners were recognized at the ceremony representing grades 1-6 from 24 schools. As regional winners, each student artist received a certificate from the National Weather Service and sling backpacks full of prizes from the offices that make up OCSWA (and their partners).

The overall state winner was Grace Draeger, with her poster *When the Tornado Siren Whines*. The text reads:

When the tornado sirens whines, listen for a loud roan or rumble that doesn't fade... watch for quick wind shifts or stark calm after heavy rain...

look for swirling clouds...eyes to the sky and look for signs!



Grace received a check to go toward a \$100 U.S. Treasury Direct savings bond, a letter of congratulations from Governor John R. Kasich, a National Oceanic and Atmospheric Administration (NOAA) Weather Radio, a smoke detector, a personalized trophy, a Community Emergency Response Team (CERT) backpack and disaster supply kit, and a host of other prizes. Later in the fall, her school will receive an engraved "traveling" trophy to showcase for the remainder of the school year. In an effort to promote severe weather preparedness, the committee will feature Grace's poster throughout the year.

Stay tuned to <http://www.weathersafety.ohio.gov/> for more information about weather safety and details for the 2017 poster contest!



Pictured with Grace from left to right: Robert Denhard, Ohio Department of Insurance; Sarah Jamison, NWS-Cleveland; Pete Tamburro (at podium), Ohio Department of Aging; Tim Boyer, Ohio Department of Transportation; Jay Carey, Ohio EMA; Melissa Menerey, Ohio Department of Natural Resources; Dean Fadel, Ohio Insurance Institute; Russ Decker, Ohio EMA; Brad Gilbert, Wood County EMA; Lisa Kuelling, Sandusky County EMA

Upcoming Weather Safety Week Events



Winter Safety Awareness Week.....	November 13-19, 2016
Spring Severe Weather Awareness Week.....	March 19-25, 2017
Statewide Tornado Drill.....	Wednesday, March 22nd at 9:50 am

“Licking County” Continued from Page 5...

fundamental concept rooted in the minds of the Planning Commission and County Commissioners, it was a natural progression to require the following higher standards:

- All streets within platted subdivisions must be elevated one foot above BFE (with minimal exception for flood routing).
- In platted subdivisions, no area subject to the 100-year flood shall be used for building sites, well or septic fields.
- All platted subdivision and major development proposals, including manufactured home subdivisions and/or parks, shall not include any area identified as special flood hazard area upon a lot within said plat, unless that lot contains more than 2 acres of record. Special flood hazard areas shall be designated as permanent open space unless otherwise specified by Licking County.
- Permanent markers shall be placed on lots indicating the extent of flooding during the 100-year flood event.
- Stream bank buffers were established; the extent of which were dependent upon the upstream drainage area.
- The stream bank buffer areas shall be kept in a natural or scenic condition with the exception of allowing for passive recreational uses such as hiking, biking, horseback riding, hunting or fishing, etc.
- Essentially no development (including fill) was permitted in the floodplain on newly created lots.
- Easements of access were required to be placed

along all streams allowing for . . . but not requiring . . . the maintenance (such as clearing of log jams) of such streams.

- On lots of record at the time of adoption of these regulations, development could occur, but a free-board of two feet was required and compensatory storage was required if fill was to be placed in the 100-year floodplain.
- Prohibit dredging, mining, excavation or similar activities in a floodplain unless a technical evaluation by a registered professional engineer certifies there will be no increase in erosion, sedimentation, or turbidity upstream or downstream of the site.

Once the proposition of “Do No Harm” took root, these standards and regulations were deemed to be common sense. In the politically conservative environment in which they were ultimately adopted, it became difficult or impossible to rationally oppose. They have withstood the test of time. As a Post Script, they have also allowed the County to participate in the CRS program achieving a Class 7. The flood insurance rate discounts provided by taking part in the CRS have created a “special interest group” which would make walking back these rules contentious at best.

The members of the Planning Commission, its staff and the Board of County Commissioners chose to put the interests of its residents before the short term interests of the development community and, in the process, have reaped a more profitable environment for the developers and a more economically sound, safe and sustainable community.

¹NAI floodplain management takes place when the actions of one property owner are not allowed to adversely affect the rights of other property owners. This is an initiative developed and promoted by the Association of State Floodplain Managers (ASFPM). <http://www.floods.org/index.asp?menuid=%20349>

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