

# FLOODPLAIN MANAGEMENT TODAY

Floodplain Management Section  
September 2018

## Avoiding Flood Losses in the American Heartland: A Tale of Successful Risk Management and Acquisition in Beatrice, Nebraska

By Laurie Bestgen, CFM, FEMA Region VII, Mitigation Division

The Mitigation Division's Risk Analysis Branch, in partnership with the Nebraska Department of Natural Resources and the City of Beatrice, completed a mitigation effectiveness study to measure the economic benefits of the flood-prone property acquisition program that has been ongoing in Beatrice for over 40 years. The study results show an estimated \$12.9 million in avoided flood losses from the May 2015 flood event in Beatrice.

**\$12.9** - **\$4.9** = **\$8 MILLION**  
MILLION MILLION SAVINGS IN 2015  
(FLOOD LOSS AVOIDED) (INVESTED)  
A 263% RETURN ON INVESTMENT

Beatrice is a city of approximately 12,500 people and is the county seat of Gage County in southeastern Nebraska. The Big Blue River flows through Beatrice and has been a source of flood risk since the city was

founded. After the City's largest flood of record in 1973, they began to systematically acquire flood-prone properties converting the acquired land to parks, hiking and biking trails, ballfields and other open space uses that restore many of the natural and beneficial functions of the Big Blue River floodplain. Since 1973, three additional significant flood events have occurred in Beatrice in 1984, 1993, and 2015. In May 2015, during the city's third largest flood of record, flood waters poured into the same areas that have flooded previously; but this time, the damages were remarkably less as a result of the acquisition program.

In addition to City funds, private contributions and gifts, community leaders have utilized several mitigation funding sources to support the program including FEMA's Hazard Mitigation Grant Program, Flood Mitigation Assistance Program, and Project Impact funds as well as HUD's Community Development Block Grant. Factoring in the initial investment of \$4.9 million (adjusted to 2017), the net savings in avoided losses realized just from the 2015 singular event is estimated to be \$8 million. Many of the structures were acquired prior to the 1984 and 1993 floods. So, cumulative avoided damages from all historical floods since the program began would be significantly higher while consideration of future events would add up to even more savings.

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An online interactive [Story Map](#) has been developed to allow readers to take a virtual journey through the history of flooding turned to mitigation success in Beatrice. This story of flood resilience also shows how Beatrice has combined flood risk mapping and assessment, mitigation planning and implementation and floodplain management to develop a holistic approach to flood risk reduction. FEMA's loss estimation software, HAZUS, was utilized to model the estimated avoided losses. Additional details on the methodology for the analysis are included in the online Story Map.

As a point of comparison and to consider potential future avoided losses, analysis was also done to estimate avoided losses during a 1-percent-annual-chance flood event. This analysis included an additional nine structures that have been acquired that were outside the 2015 flood extent, but would be inundated in a 1-percent-annual-chance flood event as well as three additional structures that have been acquired since 2015. The results of this analysis show an



Grable Street Greenspace in Beatrice - Photo by NeDNR

estimated \$26 million in flood loss savings if Beatrice were to experience a 1-percent-annual-chance flood. With the initial investment of \$5 million, this is a net savings of \$21 million.

## Flood Mitigation Assistance (FMA) Grant Opened for FY 2018

By Brian Dixon, CFM

Last month FEMA announced the release of the Flood Mitigation Assistance (FMA) grant for the 2018 fiscal year. The FMA grant has historically focused on mitigating repetitive loss and severe repetitive loss properties through buyouts and relocations. FEMA has expanded this grant to include Advance Assistance and Community Flood Mitigation Projects (defined below). The total amount of funds available under the 2018 fiscal year FMA grant program will be \$160 million. Of this, a total of \$70 million has been prioritized for Advance Assistance and Community Flood Mitigation Projects leaving an estimated \$90 million available for other FMA projects including planning projects and severe repetitive loss and repetitive loss buyouts and relocations. The Nebraska Department of Natural Resources is the FMA grant administrator. Applicants are required to submit grants through the e-Grants system, where they are then reviewed by NeDNR. There are multiple requirements for sub-applicants, with key ones including that the sub-applicants must be in good standing in the NFIP and they must have a FEMA-approved mitigation plan in order to apply for mitigation projects in accordance with Title 44 CFR Part 201. NeDNR recommends that applicants contact Mary Baker at [mary.baker@nebraska.gov](mailto:mary.baker@nebraska.gov) or 402-471-0572

if they have questions related to the FMA Grant application process or regarding opportunities for establishing more resilient communities in the future.

- Advance Assistance - Funding will be provided to develop mitigation strategies and obtain data to prioritize, select, and develop viable community flood mitigation projects. This design work will facilitate viable projects for future grant applications.
- Community Flood Mitigation Projects - The remaining set aside will fund projects for proven techniques that integrate cost effective natural floodplain restoration solutions and improvements to NFIP-insured properties that benefits communities with high participation and favorable standing in the NFIP.

## NFIP Turns 50

Source: [www.fema.gov/nfip50](http://www.fema.gov/nfip50)

August 1, 2018 commemorates the 50th anniversary of the National Flood Insurance Act of 1968. The Act was motivated by the devastating loss of life and property by Hurricane Betsy in 1965 and created the National Flood Insurance Program (NFIP). Since then, the program has aimed to reduce the impact of flooding on private and public structures by providing affordable insurance to property owners, renters, and businesses as well as by encouraging communities to adopt and enforce floodplain management regulations.

Where it rains it can flood, and the NFIP protects Americans against the financial losses from flood. For the safety of our communities, let's ensure that the NFIP is viable for the next 50 years.

### Quick Facts:

- The NFIP exists in more than 22,000 communities across the country who are choosing to protect themselves from flood by managing their floodplains.
- The NFIP assists and regulates local governments lowering the built environment's exposure to flood, which saves the Nation more than \$1.6 billion/year in avoided flood losses.
- The NFIP paid over \$64 billion in claims during the last 50 years, averaging \$1.28 billion per year. **For every one dollar invested in disaster mitigation today, six dollars can be saved.**
- We know from experience that individuals and businesses recover quicker and more fully with flood insurance than those without. Following Hurricane Harvey, the average Individual Assistance grant from FEMA was \$4,000, while the average NFIP claim payment in the same county was \$110,000 on average.
- More than 1,485 communities have taken a more assertive approach to keep their neighbors safe by joining the NFIP's Community Rating System which provides discounts for some flood insurance policies.
- FEMA has dedicated nearly \$4 billion in flood grants buying out or elevating nearly 53,000 properties.



- Since NFIP Flood Mitigation Grants began in 1996, the NFIP has helped mitigate more than 6,300 flood prone properties, investing \$1.1 billion.
- Since 1970, over 1.1 million riverine and coastal miles have been mapped to identify flood hazards, assess flood risks, and provide accurate flood hazard data, which has created more safe and resilient communities.

For more information, visit [www.FloodSmart.gov](http://www.FloodSmart.gov).

## NFIP: Understanding Increased Cost of Compliance Coverage (ICC)

By Brian Dixon, CFM

Flooding affects all Nebraskans. While the most notable flooding in Nebraska is due to riverine flooding, flooding can occur anywhere it rains. Properties that are close to streams and rivers are more susceptible to frequent flooding and may experience more than one flood. For these properties, constantly going through these flood cycles can become both expensive and frustrating. For owners whose buildings are substantially damaged, the requirement to bring the building into compliance with floodplain management laws or ordinances may be financially difficult.



FEMA has developed a short informative video about ICC and can be found here: <https://www.fema.gov/media-library/assets/videos/153762>

To meet this very real issue, and help break the cycle of repetitive damages, the NFIP has created the Increased Cost of Compliance (ICC) coverage program. ICC coverage provides residents and businesses, which have been substantially or repetitively damaged by flooding, with up to \$30,000 to help cover the cost of bringing their buildings into compliance with state and local requirements. ICC coverage can be used to elevate, relocate, demolish, or dry floodproof (non-residential buildings) after a flood when all of the following apply:

- The building is located in a Special Flood Hazard Areas (SFHA);
- The building is insured by an NFIP Standard Flood Insurance Policy;
- A local building official determines, based on local floodplain regulations, that the building is substantially or repetitively damaged and must be rebuilt to standards to reduce future flood damages; and
- ICC only pays for flood-related damage, which equals to at least 50 percent of the pre-flood market value of the home.

Residents and business owners may be eligible to claim ICC funds under the “substantially damaged” provision if the local floodplain administrator must determine that the building is substantially damaged. Substantially damaged is defined as damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damage condition would equal or exceed 50 percent of the market value of the Structure before the damage occurred.

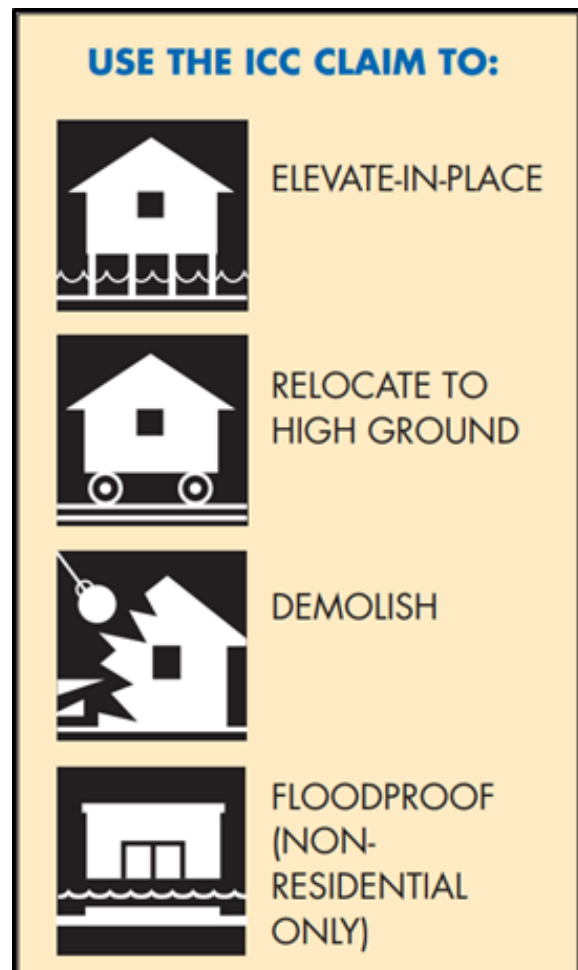
Residents and business owners may be eligible to claim ICC funds under the “repetitively damaged” provision if the local floodplain administrator must determine that the building is repetitively damaged. All of the following conditions must be met to be eligible to claim ICC funds under the “repetitively damaged” provision:

- It must be covered by an NFIP flood insurance policy;
- It must have suffered flood damage on at least two occasions during a 10-year period ending on the day of the second loss;
- The cost to repair the flood damage, on average, equaled or exceeded 25 percent of the market value of the building at the time of each of the two flood losses, or cumulatively total 50 percent of the pre-flood market value, as defined by the local floodplain ordinance; and
- In addition to the claim requesting ICC, the NFIP must have paid a previous qualifying claim.

Floodplain Administrators have a key role in the ICC claim process. The most important points of involvement are:

- Making substantial damage determinations, whether based on a one-time, 50% determination (costs compared to market value) or based on repetitive flood damage (if specified in local floodplain management regulations in the definition for “substantial damage”).
- Helping owners, design professionals, and contractors understand requirements to bring buildings into compliance with all of the requirements for flood resistant construction based on flood zone and base flood elevation.
- Issuing permits for work to bring substantially damaged buildings into compliance, inspecting work during construction, and providing owners with Certificates of Occupancy or other documentation of completion and compliance.

More information on ICC coverage is available through FEMA’s ICC website: [www.fema.gov/increased-cost-compliance-coverage](http://www.fema.gov/increased-cost-compliance-coverage). FEMA has also developed the brochure, Increased Cost of Compliance Coverage: How You Can Benefit, which you may wish to distribute to your residents following a flood. FEMA has also developed a short informative video about ICC which can be found here: <https://www.fema.gov/media-library/assets/videos/153762>



Graphic Courtesy of FEMA

## Q&A: The Floodplain Development Permit (FDP)

By Chuck Chase, CFM & Brian Dixon, CFM

NFIP participation requires that communities adopt and enforce a floodplain management ordinance regulating development occurring within their floodplain. Enforcement of this ordinance is primarily accomplished through the Floodplain Development Permit (FDP) process. While the FDP is a fairly basic form for floodplain management, it still creates confusion and hang-ups. NeDNR receives many questions related to FDPs and there are a few things that should be noted about a FDP.

### ***When do I need to fill out a permit?***

Requiring FDPs for all permanent, and some temporary, development activities within the floodplain allows for proper management and monitoring. FDPs are required for numerous activities including new construction, improvements to existing structures, and repair to damaged structures, regardless of the cause – fire, flood or tornado. It does not matter what type of development is taking place in the floodplain, all development requires an FDP. The definition of 'Development' in floodplain management encompasses a wide range of activities.

*Development means any man-made change to improved or unimproved real estate, including but not limited to the construction, reconstruction, renovation, repair, expansion or alteration of buildings or other structures; the placement of manufactured homes; streets and other paving; utilities; filling, grading, and excavation; mining; dredging; drilling operations; storage of equipment or materials; or obstructions.*

### ***What does a permit need to look like?***

There is no 'Standard' FDP form. Many communities have developed their own FDP to ensure that they have all the additional information they desire before development commences in the floodplain. Others prefer to use one of the templates from the NeDNR website ([Zone A](#), or [Zone AE](#) with floodway) which document the bare minimum information a community needs before development begins.

### ***What is the required information that needs to be on a permit?***

At minimum the FDP establishes the location, the type of construction, the Base Flood Elevation, and the required elevation to elevate or floodproof a structure. The assessed values associated with the structure and the costs associated with the development are also tracked.

### ***Where do I find the information to put on the permit?***

It is the responsibility of the applicant to fill out the permit application, and to provide the supporting documentation. The permitting authority should never hesitate to ask for more information, no matter who the applicant is. Questions in regard to the development processes, elevations, or other items, are not out of line and should be answered before the permit is signed. By signing the permit, the permitting authority is implying that the proposed development is "reasonably safe from flooding."

### ***What information do I need to keep with the FDP?***

In short, anything that pertains to the information on the FDP needs to be attached to the permit. This may include an Elevation Certificate, an Engineering Certificate indicating the cumulative impact of the project is less than 1 foot of rise, a No-Rise Analysis, a 404 Permit, or any other document that holds source information found on the FDP.

### ***How long do I need to keep a permit on file?***

The FDP must be kept on file forever.

## Records Management for Floodplain Development Permits

By Liz Doerr, Antelope County Zoning Administrator

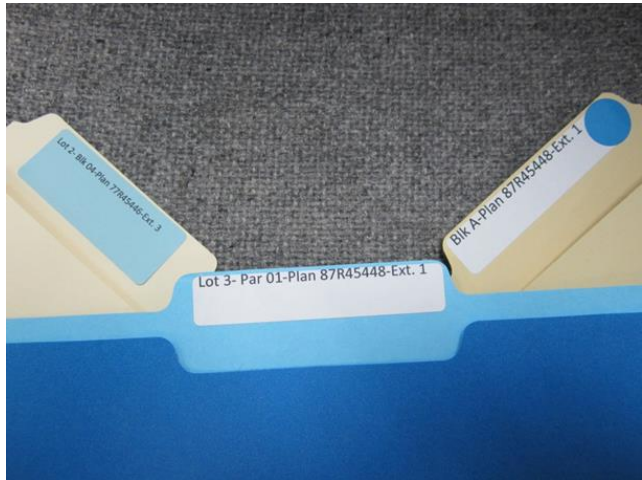
How do you keep track of your floodplain permits? Using color in your system can be helpful. If you use blue file folders (think blue for water), blue labels, or even just putting a blue color coding label dot on a file folder, you can quickly identify that it is for a floodplain permit.

Having permits filed by the legal description can give you the history of the property even if there is a new property owner. Filing by legal description can be helpful when determining what development has occurred on the property, whether development was pre-firm or post-firm, or whether it has been substantially improved or substantially damaged. Since BFE

determinations are valid for a certain amount of time, it is wise to keep a copy of the BFE with each permit as the BFE for a location may change in the future. This will give you a timeline of activity for the property.

If you prefer to file your permits by order issued or landowner, it is wise to have a database that includes the permit number, applicant, and legal description so that you can cross-reference your permits to quickly find the desired permits. The permit numbers can begin with the letter F to identify that it is indeed a floodplain development permit.

Having a good filing system is helpful in being an effective Floodplain Administrator.



## Mark Your Calendar

If you have questions about any of these opportunities, please contact Chuck Chase at [chuck.chase@nebraska.gov](mailto:chuck.chase@nebraska.gov) or 402.471.9422.

All times listed as Local Time.

### **NeFSMA Annual Membership Meeting**

**November 15th, 2018, Ashland, Nebraska, 8:30 am – 5:00 pm**

The Nebraska Floodplain & Stormwater Managers Association will be holding their Annual Membership meeting from 8:30 am – 3:00 pm, with the museum remaining open till 5:00pm, on November 15<sup>th</sup>, 2018.

It will be held at the Strategic Air and Space Museum, 28210 W Park Hwy, Ashland, NE 68003.

Additional information can be found at: <https://www.nefsma.com>

### **273: Managing Floodplain Development through the National Flood Insurance Program (NFIP)**

**January 6-10, 2019, Lincoln, Nebraska, 8:00 am – 5:00 pm**

### **ASFPM – Certified Floodplain Manager (CFM) Exam**

**January 11, 2019, Lincoln, Nebraska, 9:00 am – 12:00 pm**

The Nebraska Department of Natural Resources will be hosting a FEMA 273 course. Following the course NeDNR will be hosting a CFM exam session. Both will be held at the Ortner Center at Union College, 3800 S 48<sup>th</sup> St, Lincoln, NE 68506.

For additional information or to register, please contact Chuck Chase at [chuck.chase@nebraska.gov](mailto:chuck.chase@nebraska.gov)

### **Additional Resources and Training Tools**

#### **National Flood Insurance Program Online Training Courses**

NFIP Training courses for insurance agents, claims adjusters, surveyors and community officials are being offered through the FEMA Emergency Management Institute (EMI) Independent Study (IS) Program. IS courses are open and free to anyone. Floodplain administrators may find these videos helpful.

The Independent Study catalog is available at <http://training.fema.gov/is/crslist.aspx> . Course exams require a FEMA Student Identification (SID) Number, which can be obtained at <https://cdp.dhs.gov/femasid> .

#### **Using Flood Risk Products in Hazard Mitigation Plans Guide**

FEMA encourages communities to use its flood risk products (FRPs) alongside regulatory products to support their local mitigation planning, from identifying the location and extent of flood hazards to better prioritizing areas in need of mitigation assistance. This publication walks the user through how each FRP can be applied to help meet the mitigation planning requirements found at 44 CFR Section 201.6. To view the publication, visit: <https://www.fema.gov/media-library/assets/documents/168137>.

#### **Higher Standards: Increased Cost of Compliance (ICC)**

The NFIP produced a five-minute video to explain how ICC can help qualifying policyholders meet the costs of rebuilding after a flood and how, with the help of ICC, future flood risks and flood insurance costs can be reduced. To view the video, visit: <https://www.fema.gov/media-library/assets/videos/153762>.

#### **CFM Exam Study Guide**

The ASFPM Certification Board of Regents recently released a new CFM study guide that explains recommended prerequisites, what to expect on exam day, links to all technical references backing up each exam question, and supplemental study materials including videos and online tutorials. To download the new study guides, visit: <http://www.floods.org>.



## WANT MORE INFORMATION?

**Visit NeDNR’s Floodplain Website at**  
<https://dnr.nebraska.gov/floodplain>

**Or Contact**

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