

# KANSAS

## FLOODPLAIN MANAGEMENT TIPS



June 2023

### Important Changes to Agricultural Structure Permitting in the Floodplain

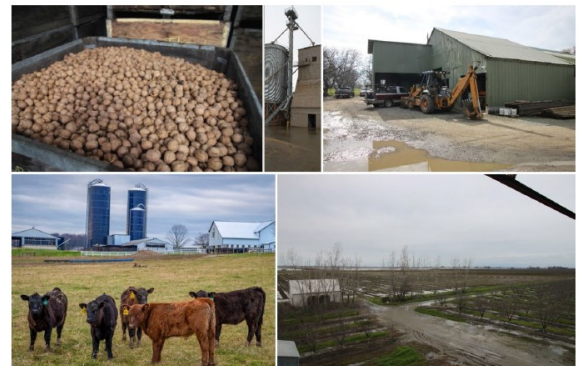
In the past, the state floodplain model ordinance language allowed agricultural structures to be wet floodproofed at grade with a floodplain development permit and no other documentation was required. Recent clarification from the Federal Emergency Management Agency (FEMA) has adjusted this to indicate that agricultural structures will now need to be elevated or dry floodproofed to a minimum of 1 foot above the Base Flood Elevation (BFE) to comply with National flood Insurance (NFIP) regulations, unless a variance is granted to allow wet floodproofing at grade, in addition to a floodplain development permit.

FEMA released [Bulletin P-2140](#), *Floodplain Management Bulletin: Floodplain Management Requirements for Agricultural Structures and Accessory Structures* (2021), which describes in greater detail what types of agricultural and accessory structures qualify for wet floodproofing, combining floodproofing techniques, best practices, sample language, and more. [Technical Bulletin 7](#) *Wet Floodproofing Requirements and Limitations* (2022) works in conjunction with P-2140 as a technical guide on how to appropriately allow wet floodproofing that is compliant with FEMA requirements.

P-2140 clarifies that the use and characteristics of some agricultural structures inherently have low-damage potential. This means in the event of a flood, the structures would require cleaning and only minor repairs to return them to service. Because of this, it is reasonable in some cases to allow for wet floodproofing to be used in lieu of requiring them to be elevated. Agricultural structures are used exclusively in connection with the production, harvesting, storage, drying, or raising of agricultural commodities. It excludes structures used for human habitation, employment, entertainment, manufacturing, or mixed/multiple purposes. It is not recommended to allow wet floodproofing if animal waste, toxic, or volatile chemicals would be released when flooded. These structures would be considered high-damage potential and should not be wet floodproofed. Likewise, if there is valuable equipment that would be damaged by inundation and could not be moved in time, it is not low-damage potential and should not be wet floodproofed.

Due to the wide variety and uses of agricultural structures and commodities, FEMA requires that each structure be evaluated individually and in-depth. This is why a variance is required to allow wet floodproofing for agricultural structures. Through this process, the justification for the grant of relief is provided and can be evaluated by the community review board. This will help to confirm the structure has low damage potential, low investment, and will meet the exclusive use requirement. Detailed descriptions of the proposed design and

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### Floodplain Management Requirements for Agricultural Structures and Accessory Structures

FEMA Floodplain Management Bulletin P-2140

August 2021

Version 1.1



FEMA P-2140 Cover (2021)

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construction will be evaluated for compliance. More than one individual will weigh the hardships versus any potential damage to the community and the structure. This will help to ensure a community remains in good standing with the NFIP.

Communities may apply for community-wide exceptions to the requirement of individual variances, to allow for agricultural structures to be wet floodproofed with only a permit based on valid justifications. Requests must be made in writing to the Kansas Department of Agriculture (KDA) – Division of Water Resources (DWR) Floodplain Team, who will review and pass on to the FEMA Region VII Office. The community must explain their hardships due to the normal requirements of elevating or dry floodproofing and provide scientific and technical data to support their exception to it based on flood conditions showing that wet floodproofing would not have adverse impacts. If the community can show that wet floodproofing is a practicable alternative that provides the minimum relief necessary, FEMA may grant an exception that would allow the forgoing of required variances and allow wet floodproofing to be authorized with only a permit. It should be known that FEMA may limit the exemption to certain structure types. The FEMA regional office will then monitor the community’s compliance with the specific provisions of the approval.

DWR has updated the state model ordinance to reflect these clarifications and to ensure new ordinances adopted will reflect these requirements. Please contact KDA-DWR for any interest in updating your current floodplain ordinance. Ordinances that currently have adopted permit-only options for wet floodproofing of agricultural structures will have to be updated to reflect the requirement for a variance, or to include the criteria for evaluating permit applications in a community with an approved exemption. KDA-DWR will be in contact with these communities to assist them with the update. Please direct any questions to Cheyenne Sun Eagle or Tara Lanzrath on the Floodplain Team.

### **Residential Safe Rooms in the Floodplain**

[FEMA P-320](#) *Taking Shelter from the Storm* (2021) is the most recent edition of FEMA guidance on the planning, design, construction, and installation of residential safe rooms. It is based on the International Code Council (ICC) 500 which codifies their recommendations. For technical guidance, the FEMA publication [P-361](#), *Safe Rooms for Tornadoes and Hurricanes: Guidance for community and Residential Safe Rooms* (2021) should be sought. Safe rooms can provide adequate protection from severe wind events and add value to a structure. Tornadoes are prevalent in Kansas, and issues can arise when property owners shelter in place in the floodplain.

Safe rooms in the floodplain must comply with local floodplain management ordinance elevation requirements, be designed to meet the flood hazard criteria, and be coordinated with local emergency management. They are not allowed to be built in the designated floodway under any circumstances unless granted permission by board of appeals in accordance with the International Residential Code (IRC). If the safe room is inundated, the occupants could become trapped by floodwater. As with any floodplain development, it needs a local floodplain development permit from the



FEMA Technical Bulletin 7 Cover (2022)



FEMA P-320 Cover (2021)



community.

Best practice is to use the most conservative siting requirements between local codes, ICC 500, and FEMA P-361. The design professional must ensure the safe room can withstand expected wind forces and floodwaters, even if the safe room is going into a residential structure. During such an event, the main structure may be destroyed. If in an area of flash flooding, the room should not be occupied during an expected flooding event.

If the safe room must be located in the floodplain, it should be elevated to or above the minimum required elevation by the community in which it is located, or to the base flood elevation plus one foot; whichever is higher. If the community has adopted a higher freeboard than one foot, that is the minimum requirement. It should be well understood that floods do exceed the base flood and required design elevations, so safe rooms without additional freeboard could flood and present danger to the occupants. Another consideration may be to incorporate the flood level record elevation for the area or community. All state and local requirements must be met. If state or local emergency management officials order a mandatory evacuation, property owners must evacuate and not shelter in the safe room.

### **2023 ASFPM Conference**

From May 07-12, the KDA-DWR Floodplain Team attended the Association of State Floodplain Managers (ASFPM) 2023 annual conference in Raleigh, NC. At the conference, team members learned about post-disaster response and recovery, risk communication, social justice, stormwater and urban flooding, natural and beneficial functions, modeling, mitigation, mapping, and more. The goal of the annual ASFPM conference is to bring together floodplain professionals in all aspects of floodplain management to foster new relationships and provide a vast array of educational and networking opportunities.

State Mapping Coordinator, Joanna Rohlf delivered a presentation titled, “Going Regulatory with 2D Modeling in Kansas” with co-presenters from WSP, a Kansas state mapping contractor. Water Structures Program Manager, Terry Medley moderated a presentation session regarding, “Local Stormwater Projects and Design Standards”. Finally, Kansas NFIP Coordinator, Tara Lanzrath moderated a presentation session regarding, “Modeling for Mitigation”. The floodplain team enjoyed a number of social events hosted by the conference. Next year’s conference will be held in Salt Lake City, UT. Local floodplain managers are

encouraged to attend. For more information, visit:

[2024 ASFPM Conference](#)



Floodplain Team and contractors solve escape room in Raleigh



Floodplain Team at the Raleigh Convention Center

## Training Opportunities

### 2D Modeling Application Training

The Kansas Department of Agriculture will host a free workshop on HEC-RAS 2D modeling applications provided by WSP. The class will be held in **Wichita, KS July 18-20, 2023**. This workshop will utilize HEC-RAS 6.3.1 and ArcGIS Pro. WSP can provide up to 12 laptops if you are unable to bring a laptop with the software installed. This class is limited to 20 participants and will be on a first come basis. The goal of this workshop is to educate participants on the preparation of input data needed for HEC-RAS 2D modeling using ArcGIS Pro, setting up and running a HEC-RAS 2D rain-on-mesh model, and how to derive and use the modeling results. This class is approved for 12 Continuing Education Credits (CEC) toward the Certified Floodplain Manager (CFM) credential.

If interested in the training, please fill out the workshop registration [form](#) and email it to [Joanna Rohlf](#).

### The History and Future of Floodplain Maps

This one-hour class is for floodplain managers interested in learning the background and future of flood mapping. Kansas now has statewide base level engineering (BLE), an efficient modeling and mapping approach to show credible flood hazards, which will assist communities in the future, particularly those without a FEMA flood insurance rate map (FIRM), that may be able to use the BLE as best available data. The course will briefly cover the history and background of mapping and the NFIP, then move into the methodology and technical applications and uses of the BLE data. Approved for 1 hour of Continuing Education Credit (CEC) towards the Certified Floodplain Manager (CFM) credential. Virtual training to be held on June 29, 2023 from 1:30 P.M.-2:30 P.M. Please Register [Here](#).

### NFIP 101: Introduction to Floodplain Management (CEC-eligible)

This course is intended for those just beginning a career in floodplain management to provide the skills to administer and enforce floodplain management ordinances, as well as communication techniques to explain the impact of floodplain management decisions on insurance, public safety, and health. It includes an overview of regulations based on types of flood hazards identified, substantial improvement and damage, and the permitting process. Approved for 12 ASFPM CECs. Users must complete all units and knowledge checks to earn a certificate. It can also be taken for no credit as a reference guide or refresher. This free online course can be taken any time and found [here](#).

Find more information about floodplain management from Kansas Department of Agriculture  
Division of Water Resources online at:

<http://agriculture.ks.gov/divisions-programs/dwr/floodplain>

Email saves money on postage. The electronic newsletter also has links and the photos are in color. In the case that you are getting this newsletter by postal mail and would prefer email please contact Cheyenne Sun Eagle at: [cheyenne.suneagle@ks.gov](mailto:cheyenne.suneagle@ks.gov).

To find and register for upcoming training, as well as recordings of previous trainings, please see our new Floodplain Management Training webpage at:

<https://agriculture.ks.gov/divisions-programs/dwr/floodplain/training>

**Kansas Department of Agriculture**  
**Division of Water Resources**  
**Floodplain Program**  
**Training Registration Form**

Name \_\_\_\_\_

Title \_\_\_\_\_

Organization \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Telephone \_\_\_\_\_ Fax \_\_\_\_\_

E-mail \_\_\_\_\_

Name, date and location of training you will attend \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

\*Please share this invitation with anyone else who could benefit from the training.

\*\*Classroom locations will be sent to registered participants one week before the training.

\*\*To find and register for upcoming training, as well as recordings of previous trainings, please see our new Floodplain Management Training webpage at: <https://agriculture.ks.gov/divisions-programs/dwr/floodplain/training>

\*\* Any individual with a disability may request accommodation in order to participate in training. Persons who require special accommodations must make their needs known at least five working days prior to training. For more information, including special accommodations, please contact Cheyenne Sun Eagle at 785-296-0854 or by email [Cheyenne.Suneagle@ks.gov](mailto:Cheyenne.Suneagle@ks.gov).

Please scan and email your registration to: [cheyenne.suneagle@ks.gov](mailto:cheyenne.suneagle@ks.gov)

Or mail to:

KANSAS DEPARTMENT OF AGRICULTURE  
FLOODPLAIN MANAGEMENT PROGRAM  
1131 SW Winding Road, Suite 400  
TOPEKA, KS 66615

For questions about training, please contact Cheyenne Sun Eagle by email at [cheyenne.suneagle@ks.gov](mailto:cheyenne.suneagle@ks.gov) or by phone at 785-296-0854. You may also contact Tara Lanzrath by email at [tara.lanzrath@ks.gov](mailto:tara.lanzrath@ks.gov) or by phone at 785-296-2513

Please help us keep our records current. If the name that appears on this newsletter is for an individual no longer with your organization, please call 785-296-0854 or email [cheyenne.suneagle@ks.gov](mailto:cheyenne.suneagle@ks.gov) to report the change.

Kansas Department of Agriculture  
Division of Water Resources  
Topeka Field Office  
Floodplain Management  
1131 SW Winding Road, Suite 400  
Topeka, KS 66615

**Kansas Association For Floodplain Management 2023 Conference in Mulvane**

The 2023 KAFM Conference will be August 30-31 at the Kansas Star Hotel and Event Center in Mulvane, Kansas.

**Association of State Floodplain Managers 2024 Conference in Salt Lake City**

The 2024 ASFPM Conference will be June 23-27, at the Salt Palace Convention Center in Salt Lake City, Utah.

**KDA/DWR Water Structures  
Floodplain Program Staff**

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