

KANSAS

FLOODPLAIN MANAGEMENT TIPS



February 2020

Managing Accessory Structures

When comparing aerial photos from year to year, one prominent trend is the abundance of sheds, barns, and other accessory structures that pop up like mushrooms after a spring rain. FEMA Technical Bulletin (TB) 7 explains that “Communities may allow wet floodproofing of [low-cost and small] accessory structures provided that they represent a minimal investment and are designed to have a low damage potential.” TB-7 further stipulates that “communities may allow wet floodproofing [of accessory structures] only through the issuance of a variance.” While accessory structures may not need to be elevated as securely as a new home, it is important for floodplain administrators to ensure that these structures are permitted, tracked, and built properly if they are located in a Special Flood Hazard Area. Failure to do so could result in probation or suspension from the National Flood Insurance Program (NFIP).

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In many communities, projects below a certain size threshold (i.e. 250 or 400 sq. ft.) are exempt from the requirement to obtain a building permit. That may cause floodplain administrators to not realize that accessory structure projects are under way until the structures are visible from the street. Additionally, many property owners with Letters of Map Amendment (LOMAs) may not realize that sections of floodplain can remain on their lot even after the principal structure has been removed. Some floodplain administrators mount signage in home improvement stores encouraging consumers to check if their proposed project is located in a floodplain. In smaller communities, it can be helpful to display a copy of the Flood Insurance Rate Map on a bulletin board in City Hall or in a municipal newsletter. This is especially effective when combined with a message such as “Are you in a floodplain...permits required for development in the ‘blue zone.’”

Setting the permit fee at a reasonable level can help facilitate compliance. During a recent Internet search, I found several models of storage sheds offered at a price below \$400. Requiring a \$500 permit for this type of structure may lead to a difficult conversation. Another step that can make the permit process easier is using the KDA-DWR sample administrative variance form. The administrative variance process allows a variance to be issued for an accessory structure without the formal involvement of the Board of Zoning Appeals in your community. To ensure that your accessory structure variance and permitting procedures are anchored on a firm legal foundation, KDA-DWR recommends including in your local ordinance the higher regulatory standards for accessory structures from the state model ordinance.

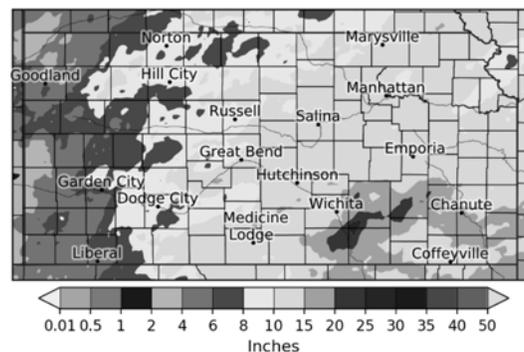
One common question from property owners involves TB-7’s wet floodproofing requirements. These state that an accessory structure “must be anchored to resist flotation, collapse, and lateral movement...be constructed of flood resistant materials...[and] be designed to allow for the automatic entry of flood waters.” The latter provision can be satisfied by installing openings below the BFE as described in [TB-1](#). For a chart classifying a building materials based on their resistance to flood damage, developers can turn to [TB-2](#).

Another common question occurs when property owners ask whether or not an Elevation Certificate (EC) is required. This can become a point of contention, as the survey work necessary for an EC can sometimes cost more than the accessory structure itself. A structure *with no mechanical or utility equipment* that is not elevated or dry-floodproofed would not need an Elevation Certificate or Floodproofing Certificate and a shed with utilities will need an Elevation Certificate.

If You Don't Like the Weather, Just Wait and it Will Change

The year of 2019 was a very wet year. We had more rain in our State of Kansas during May 2019 than in any other month of May in the history of the State. There were numerous times when hard and fast rains in May, June, July and August caused flash floods without a lot of warning time. Both urban communities with large swaths of impervious paved surfaces and rural communities surrounded by farmland suffered from flooding. Although levees helped reduce riverine flood risk, communities with accredited levees still encountered high water caused by an excess of precipitation in a short window of time. Some of the Kansas areas that experienced flash floods were in or near Peabody, Durham, Strong City, Ottawa, Wichita, Burlington, Emporia, Mulvane, Arkansas City and Winfield.

Monthly Precipitation as of 7 AM 30 May 2019



Created 112 PM CDT 30 May 2019

Courtesy National Weather Service Wichita

Three recent science articles seem to explain a possible reason why there were so many quick flash events. Those articles are attached to the email version of this newsletter and include:

[“Analysis of Frequency and Magnitude of Extreme Rainfall Events with Potential Impacts on Flooding: Case Study from Central United States”](#)

[“Kansas Rains Are Shifting From Summer to Spring”](#)

[Study: U.S. Tornado Frequency Shifting Eastward from Great Plains](#)

Drawing some information from each of the three articles, it seems that western Kansas will have less rain and precipitation while eastern Kansas will have more rain. Along with the eastern portion becoming wetter it looks like the storm events will come in harder faster rainfalls which will occur less often. Heavy rains will shift from summer into spring. That is almost exactly what happened in May of 2019. The eastern half of Kansas had severe rain events followed by even more hard fast rains due to storms that traveled in sequence like the cars of a train. This was a recipe for flash floods in some areas.

On top of this, as southwestern Kansas gets drier the dryline shifted east approximately. One source indicated a shift of 140 miles eastward in Kansas. The dryline is the separation between moist air from the Gulf of Mexico and the hot dry air coming from the Southwest. This is important in the formation of tornadoes. We all know that tornadoes are associated with storms and those storms bring rain. Too much rain leads to flooding.

Document provided by Dr. Vahid Rahmani titled, “Analysis of frequency and magnitude of extreme rainfall events with potential impacts on flooding: a case study from the central United States”. In the Summary and Conclusions on page 7 you will find this statement, “The findings suggest that based on recent trends, Kansas is likely to experience more frequent and more intense 24- hour rainfall totals in the near future.”

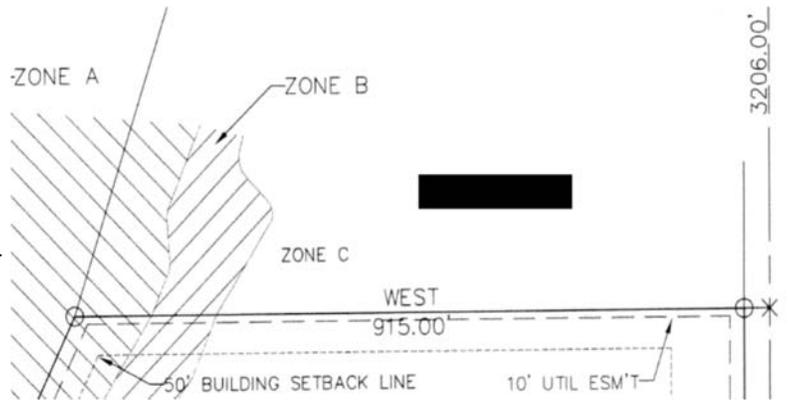
The KCUR article on Kansas rain shifting from summer to spring by Brian Grimmett, ksnewsservice.org, included this statement. “An analysis of precipitation records from the past 100 years also showed that eastern Kansas is getting wetter while southwestern Kansas is getting dryer.”

The KMUW story about tornado frequency shifting had this to say: dry conditions move storms and tornadoes from west to east. “As the Great Plains dry out, there’s less moisture to have the type of storms that spawn tornadoes, Mr. Gensini said. Tornadoes form along the “dry line” where there are more thunderstorms because there’s dry air to the west and moist air from the Gulf of Mexico to the east. That dry line is moving east.”

It is hard to predict our weather here in Kansas with any certainty. Less than 2% of the homes in Kansas are covered by flood insurance. Consider buying flood insurance to protect your property from uncertainty. Also consider an above grade storm shelter constructed to standards of FEMA’s [P-320 manual](#) to protect yourself from both flooding and tornadoes.

“Platting” a Course to Safer Development

44 Code of Federal Regulations (CFR) 60.3 requires communities that participate in the National Flood Insurance Program (NFIP) to “Require that all new subdivision proposals and other proposed developments (including proposals for manufactured home parks and subdivisions) greater than 50 lots or 5 acres, whichever is the lesser, include within such proposals base flood elevation data...” The same language is present in the model floodplain management ordinance used as a template by many Kansas communities.



This portion of a subdivision plat shows the location of the

However, a common problem observed by KDA-DWR staff is that many subdivision plats fail to include base flood elevation (BFE) data. Subdivision plats will often use a line on a map to mark where the floodplain is located. For instance, the example at top left shows the floodplain as a cross-hatch area. However, The regulations stipulate not just a labeling of the floodplain, but an inclusion of base flood elevation data. Community officials should not approve a plat that does not have BFE information available.

Just a few years ago, finding BFE data could prove challenging. However, a wide variety of tools are now available to help make this data more accessible, even in rural areas or approximate Zone A floodplains. BFE data is relatively easy to locate in a Zone AE detailed study floodplain. The lettered cross sections from the FIRM can be used in that case. These cross sections are available for download as a geographic information system (GIS) shapefile from the [FEMA Map Service Center \(MSC\)](#). To locate the shapefile, use the MSC search box to enter the name of the community. Then, select the National Flood Hazard Layer (NFHL) folder under the Effective Products listing.

For a subdivision located in a Zone A floodplain, BFE data may be available for free from the State of Kansas as a result of ongoing mapping projects. To find out, visit the [KDA-DWR BFE Portal](#). Simply draw a polygon around the area and DWR staff will conduct a review to determine if data already exists or is under development. If data is not available from KDA-DWR, the U.S. Army Corps of Engineers (USACE) can develop BFE calculations for a reasonable fee or approximately \$350. To obtain a BFE from USACE, contact Neal Harton with the Tulsa District at neal.harton@usace.army.mil or 918-669-4920.

The American Planning Association’s report on *Subdivision Design and Flood Hazard Areas* notes that having detailed flood hazard data “...on preliminary plans can help community staff and planning boards make informed decisions as the subdivision is being approved...[and that] having information on final plats is very helpful in informing potential new residents and buyers of parcels of flood risk on the lots being developed.” Due to the abundance of resources for located BFE data, there is no excuse not to follow local and federal requirements and list this data on a subdivision plat. It promotes safety in your community and helps protect your residents’ investments by facilitating compliant construction of new development.

While BFE data is easily accessible, another piece of information you may find on a plat can be relatively difficult to track down. Some plats identify areas known as “drainage easements” or “floodway reserve easements.” For instance, the U.S. Department of Agriculture’s [Emergency Watershed Protection Program—Floodplain Easement](#) option allows landowners to sell a permanent flood management easement to the Natural Resource Conservation Service. New structures are prohibited in these easement areas, and existing structures must be removed. More information on development restrictions in easement areas can be identified by reading the deed file for the property or by contacting a local engineering firm or drainage/watershed district.

Training Opportunities

The Floodplain Management Program will host the following training sessions throughout Kansas. If you are interested in any of the no-cost training opportunities, please contactor Steve Samuelson at 785-296-4622. A training registration form is in this newsletter.

Basics of the National Flood Insurance Program

This class is for officials responsible for administering their local floodplain management ordinance. The focus is on the National Flood Insurance Program (NFIP) and concepts of floodplain management, maps and studies, ordinance administration, and the relationship between floodplain management and flood insurance. Provides 3.5 hours Continuing Education Credit (CEC) toward the Certified Floodplain Manager (CFM) credential. Limited to 20 participants.

- Olathe - Tuesday, February 25th, 2020 from 8:30 a.m.—12:30 p.m.
- Ellis - Thursday March 5, 2020 from 8:30 a.m.—12:30 p.m.

Letters of Map Revision

This special course is being offered through the mapping CTP program. This four hour course will provide an overview of the process and go through aspects of the LOMR application. Approved 4.0 hours toward CFM. Limited to 20 participants. Contact Tara Lanzrath at tara.lanzrath@ks.gov to register for this special course.

- Manhattan - Wednesday, May 19, 2020 from 10:00 a.m.—2:30 p.m.

Post-Flood Responsibilities

This free class is intended for community officials responsible for administering floodplain management regulations. The course focuses on what to do during and after a disaster event. Topics include substantial damage, permitting, Increased Cost of Compliance (ICC) and violations. Approved for 3.5 hours CEC for CFM. Limited to 20 participants.

- Herington— Wednesday, February 12th, 2020 from 8:30 a.m.—11:30 a.m.

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. If you are getting this newsletter by postal mail and would prefer email please contact Steve Samuelson at Steve.Samuelson@ks.gov.

Mark your calendar. The Kansas Association for Floodplain Management 2020 conference will be September 1st-4th in Mulvane. More information will be posted at the website: www.kafm.org. Registration will be done through a link on the website. If you have questions about registration please contact Jon Bristor, Chairman, at 620-326-2207.

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.

Please scan and email your registration to: steve.samuelson@ks.gov

Or mail to:

KANSAS DEPARTMENT OF AGRICULTURE
FLOODPLAIN MANAGEMENT PROGRAM
6531 SE Forbes Ave., Suite B
TOPEKA, KS 66619

For questions about training, please contact Steve Samuelson by email at steve.samuelson@ks.gov or by phone 785-296-4622.

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 785-296-4622 or email steve.samuelson@ks.gov to report the change.

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Kansas Department of Agriculture
Division of Water Resources
Topeka Field Office
Floodplain Management
6531 SE Forbes Ave., Suite B
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ASFPM 2020 National Conference in Fort Worth

The 2020 Association of State Floodplain Managers National Conference will be June 7-11, 2020 in Fort Worth, TX This conference is an excellent opportunity for floodplain managers to receive training on mapping technologies, regulations, permitting, outreach and best practices. It is estimated the conference will be attended by more than 1,000 floodplain management professionals. This conference is great chance to meet people for networking and to learn the latest news in floodplain management. Visit www.floods.org for more information.

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