Guide to Optional or Higher Standards for Floodplain Administration

Introduction

Nebraska Administrative Code Title 455 Chapter 1 "Nebraska Minimum Standards for Floodplain Management Programs" establishes the standards that all Nebraska communities participating in the National Flood Insurance Program (NFIP) must enforce in their floodplain areas. Nebraska's standards include provisions that exceed the federal minimum standards in the Code of Federal Regulations Title 44 Part 60.3. Such higher standards include:

- 1-foot of freeboard (additional elevation of protection above the Base Flood Elevation).
- Prohibited development of structures for human habitation in the floodway.
- Prohibited storage of hazardous materials in any floodplain.

Nebraska's standards, while higher than federal standards, are the *minimum* required for Nebraska communities and are found in the State of Nebraska Model Floodplain Ordinance. However, as flood frequency and severity increases, communities across Nebraska are recognizing the need to further reduce flood risk through the establishment of local higher standards for development in flood hazard areas. Communities are granted the authority to adopt such higher standards through Nebraska Revised Statute § 31-1019.

Communities may also choose to adopt *optional* standards that expand the permitting options for new developments or implement new administrative procedures. While these standards may not be higher than state or federal minimums, they allow for flexibility within permitting procedures by defining optional structure types or permit review procedures.

Based on common practices in other states and communities, this document includes a wide range of possible additional standards that communities may choose to implement. The standards included in this document may be inserted into the draft floodplain regulations using the section numbers as they correspond to the State of Nebraska Model Floodplain Ordinance.

This guide should not be seen as a comprehensive list of every possible higher standard for floodplain development. Your community may choose to customize your floodplain ordinance with other local higher standards not included in this document to best address specific flood hazards.

Optional Standards

The following standards are considered optional and are not considered a "higher" regulatory standard than state or federal requirements for NFIP participating communities. These standards include language defining **accessory structures** and **agricultural structures** for the purposes of floodplain management, and for establishing **wet-floodproofing procedures** for such structures as an acceptable compliance method.

Wet-floodproofing of Agricultural Structures

The NFIP and state minimum standards delineate structural development by residential or nonresidential, and do not directly define agricultural structures. However, the Federal Emergency Management Agency (FEMA) Policy #104-008-03 issued February 2020 allows communities to define agricultural structures and establish variance procedures for such structures to utilize wet-floodproofing as a floodplain development compliance option. For agricultural structures to use wet-floodproofing as a compliance option, the developer must request and have an approved variance from the community's governing body responsible for variance review. **Communities do not need to adopt this language if the community intends to require elevation or dry-floodproofing as the only acceptable compliance options for agricultural and accessory structures.**

Adopting this language will allow the community to have flexibility when establishing the floodplain design requirements for a proposed structure that is exclusively used for agricultural purposes. Communities should note that placing a structure with the lowest floor below one (1) foot above the base flood elevation leaves the contents of the structure at risk of flood damages.

Model Language

The following language from Floodplain Management Bulletin P-2140 includes the floodplain management definition for agricultural structures, the variance procedures to allow wet-floodproofing of an agricultural structure, and the design requirements for wet-floodproofing. The language below must be included in its entirety in the floodplain management ordinance to allow such development to occur:

5.15 Wet-floodproofing of Agricultural Structures by Variance

A. All new, substantially improved, or substantially damaged agricultural structures utilizing wet-floodproofing shall:

i. Be anchored to resist flotation, collapse, and lateral movement.

ii. Have flood damage-resistant materials below one (1) foot above the base flood elevation in compliance with the requirements of Section 10 "Flood Damage Resistant Material."

iii. Have mechanical, electrical, and utility equipment elevated to or above one (1) foot above the base flood elevation.

iv. Have flood openings in compliance with the requirements for Enclosures Below Lowest Floor established in Section 5.13 of this ordinance.

B. If the structure is converted to another use, it must be brought into full compliance with the minimum standards governing such use.

8.30 Variances shall only be issued for new, substantially improved, or substantially damaged agricultural structures to utilize wet-floodproofing provided the following provisions are satisfied:

A. The structure is used exclusively in connection with the production, harvesting, storage, raising, or drying of agricultural commodities and livestock, or storage of tools or equipment used in connection with these purposes or uses, and will be restricted to such exclusive uses;

B. The structure has low damage potential including the amount of physical damage, contents damage, and loss of function;

C. The structure does not increase risks or pose a danger to public health, safety, and welfare if flooded and contents are released, including but not limited to the effects of flooding on manure storage, livestock confinement operations, liquified natural gas terminals, and production and storage of highly volatile, toxic, or water-reactive materials;

D. The structure has flood openings in compliance with the wet-floodproofing construction requirements established in Section 5.13 “Enclosures Below the Lowest Floor” of this ordinance.

Definition:

Agricultural Structure. For floodplain management purposes shall mean a walled and roofed structure used exclusively for agricultural purposes or uses in connection with the production, harvesting, storage, raising, or drying of agricultural commodities and livestock, including aquatic organisms. Structures that house tools or equipment used in connection with these purposes or uses are also considered to have agricultural purposes or uses.

Wet-floodproofing of Accessory Structures

While state minimum standards define accessory structures and allow the usage of wet-floodproofing as a compliance option for floodplain development, they do not fully align with FEMA Policy #104-008-03 issued February 2020. For communities to adopt language for accessory structures that is compliant with FEMA’s policy, the following language is recommended.

Accessory structures that fully meet the definition and size requirements for such use may utilize wet-floodproofing without the need for a variance from the community. A variance would still be required for the structure to utilize wet-floodproofing if the structure does not fully meet the definition or size requirements of an accessory structure.

Adopting this language will allow the community to have flexibility when establishing the floodplain design requirements for a small structure that is accessory to a principal building. Communities should note that placing a structure with the lowest floor below one (1) foot above the base flood elevation leaves the contents of the structure at risk of flood damages.

Model Language

The following language includes the floodplain management definition for accessory structures and the design requirements for wet-floodproofing. All language below must be included in the floodplain management ordinance to allow such development to occur.

5.16 Wet-floodproofing of Accessory Structures

A. All new, substantially improved, or substantially damaged accessory structures with the lowest floor below one (1) foot above the base flood elevation shall:

i. Not be used for human habitation;

ii. Be anchored to resist flotation, collapse, or lateral movement;

iii. Be used solely for the parking of vehicles or limited storage of readily removable items;

iv. Not have a floor area exceeding 800 square feet;

v. Have low damage potential including the amount of physical damage, contents damage, and loss of function;

vi. Have mechanical, electrical, and utility equipment elevated to or above one (1) foot above the base flood elevation;

vii. Have flood openings in compliance with the requirements for Enclosures Below Lowest Floor established in Section 5.13 of this ordinance.

B. If the structure is converted to another use, it must be brought into full compliance with the minimum standards governing such use.

8.31 Variances shall only be authorized to be issued for new, substantially improved, or substantially damaged large accessory structures to utilize wet-floodproofing provided the following provisions are satisfied:

A. The structure represents minimal investment and has low damage potential (amount of physical damage, contents damage, and loss of function).

B. The structure is larger than the size limits specified in [insert section number where requirements for accessory structures, including size limits, are specified].

C. The structure has flood openings in compliance with the wet floodproofing construction requirements established in Section 5.13 “Enclosures Below the Lowest Floor” of this ordinance.

Definition:

Accessory Structure. A structure on the same parcel of property as the principal structure, the use of which is incidental to the use of the principal structure. Also shall be known as “appurtenant structure.”

Time Limit for Floodplain Development Permit Validity

Under the minimum standards of the NFIP, developers have 180 days to begin construction after receiving an approved floodplain development permit. After construction has started, permits are then valid for as long as the development takes to complete, which may vary from weeks to years depending on the scope of the project. However, due to changes in floodplain conditions over time, some communities may choose to specify a time limit on how long construction can take place under an issued permit. Once the time limit expires, the developer must reapply or request to renew their existing floodplain development permit. Enacting this policy ensures that developers are routinely aware of their requirements for floodplain compliance and helps to avoid any breakdowns in communication between the developer and the floodplain administrator over time.

Communities may establish a timeline of their choice for the validity of a floodplain development permit. It is recommended that this timeline be aligned with any other existing timelines for local permits, including building, zoning, or utility permits, to ensure consistency across administrative procedures.

Model Language

To establish a written time limit for how long floodplain development permits are valid, the following language must be adopted in Section 4.4 "Application for Permit and Demonstration of Compliance" in the Model Ordinance:

4.48 Completion of the development shall occur within [Time Period (i.e. one (1) year)] from the date the floodplain development permit is issued by the floodplain administrator or a time limit commensurate with the project construction timeline. The applicant may request an extension for up to [Extension Time Period (i.e. one (1) year)]. The request must be made at least 30 days prior to the permitted completion deadline. Construction must start within 180 days of the issuance of the permit. If construction does not begin within this timeframe, a new permit must be issued;

Time Limit for Developer to Provide Proof of Compliance

For any permitted development in the floodplain, the developer must provide "proof of compliance" to the floodplain administrator upon completion of the project. Not obtaining proof of compliance is considered a violation, per the definition in 44 CFR 59.1 "Violation." Proof of compliance means any post-construction documentation; including photos, engineering certificates, or elevation certificates, that verify compliance with the issued floodplain development permit. Unfortunately, this step is occasionally missed by communities or the developer, and proof of compliance with the floodplain development permit is not obtained.

To help ensure this permitting procedure is not missed, communities may choose to establish a timeframe for when proof of compliance must be provided upon completion of a project. Establishing this timeline will help communities obtain proof of compliance within a reasonable time after completion of a development, and including such model language gives communities additional legal backing for enforcement in the event that the required documentation is not provided by the developer.

Model Language

To establish a written time limit for developers to provide proof of compliance documentation upon completion of a development, paragraphs 4.43 - 4.44 in Section 4.4 “Application for Permit and Demonstration of Compliance” must be modified in the following manner:

4.43 For all new construction, substantial improvements, or repairs to substantial damage, an elevation certificate based upon the finished construction certifying the elevation of the lowest floor, including basement, and other relevant building components shall be provided to the floodplain administrator. Such certification shall be completed by a licensed surveyor, engineer, or architect within [Time Period (i.e. 30 days)] of finished construction.

4.44 When floodproofing is utilized for a non-residential structure, a floodproofing certificate shall be provided to the floodplain administrator. Such certification shall be completed by a licensed professional engineer or architect within [Time Period (i.e. 30 days)] of finished construction.

Higher Regulatory Standards

The following standards are considered **higher** than the state or federal minimum standards for floodplain administration and development. These standards include the establishment of higher flood protection elevations, limits on development types, and limits or prohibitions on enclosures below the lowest floor.

Floodplain Administrator Certified Floodplain Manager (CFM) Requirement

This language requires any person that assumes the community's floodplain administrator position to become a Certified Floodplain Manager (CFM) through the Association of State Floodplain Managers (ASFPM). Communities can set any timeline for when this credential must be obtained after start of employment. This requirement ensures that the floodplain administrator is trained in the minimum standards of the NFIP, can accurately determine base flood elevations, understands the floodplain development permit process, and can be a trusted resource in the community.

CFMs are required to obtain Continuing Education Credits (CECs) to maintain their credential, meaning the community will be consistently represented by a knowledgeable floodplain manager. Floodplain administrators can attend education opportunities hosted by the Nebraska Department of Natural Resources (NeDNR), the Nebraska Floodplain and Stormwater Managers Association (NeFSMA), ASFPM, FEMA or other providers throughout the year to obtain CECs. For communities with limited floodplain development, the credential may not be necessary to adequately enforce the floodplain management ordinance.

Model Language

The following underlined language must be added to the paragraph identifying the position of the enforcement officer of the floodplain ordinance:

4.1 DESIGNATION OF THE FLOODPLAIN ADMINISTRATOR

The [Position Title] of the community is hereby designated as the community's local Floodplain Administrator. The floodplain administrator shall, within [Time Period (i.e. one (1) year)] of being designated, become a Certified Floodplain Manager through the Association of State Floodplain Managers. The floodplain administrator is authorized and directed to administer, implement, and enforce all provisions of this ordinance. The floodplain administrator must serve to meet and maintain the commitments pursuant to 44 CFR 59.22(a) to remain eligible for National Flood Insurance for individuals and business within the political subdivision. If the local floodplain administrator position is unfilled, the community's Chief Executive or Chief Elected Official shall assume the duties and responsibilities herein.

Higher Freeboard Requirements

Nebraska's Minimum Standards for Floodplain Management Programs require that communities regulate development to an additional one (1) foot above the Base Flood Elevation (BFE). This means that new, substantially improved, or substantially damaged residential structures must elevate so that the lowest floor is above the BFE an additional foot, and that commercial/nonresidential buildings must elevate or dry-floodproof above the BFE an additional foot. This additional level of protection, referred to as "freeboard", is used as a factor of safety (44 CFR 59.1 "Freeboard"). The higher freeboard acknowledges

that larger floods than the base flood may occur, and that new developments in the floodplain may result in increased flood heights. Some communities in Nebraska have decided that one foot of freeboard is not enough to address their flood risk, and that additional protections are needed.

Your community has been granted the authority by statue to enact reasonable requirements for floodplain development, including any additional freeboard as may be required to address local flood hazards.

Model Language

If the community chooses to adopt a higher freeboard elevation than Nebraska's minimum one foot, the following paragraphs from the model ordinance must be modified to include the new freeboard requirement:

- Section 5.11(A) and (B)
- Section 5.12(A)(i) and (ii)
- Section 5.12(B)(i)
- Section 5.13(A)
- Section 5.14(B)
- Section 5.14(C)(i)

**Modifications may also be required for any other optional or higher standards adopted.*

Additional Note: FFRMS Freeboard Requirements

The federal government enacted the Federal Flood Risk Management Standard (FFRMS) in 2024. FFRMS establishes additional development requirements for any projects where federal money is involved, including FEMA and Housing and Urban Development (HUD) projects. HUD implemented their FFRMS standards on January 1, 2025, requiring that any homebuyer with a Federal Housing Assistance (FHA) insured mortgage may only purchase or build a home that meets HUD FFRMS standards. FEMA implemented their FFRMS standards on September 9, 2024. FEMA projects include Hazard Mitigation Assistance grant funded projects. Any communities in Nebraska that utilize HUD funded projects or have homebuyers utilizing FHA-insured mortgages should strongly consider implementing at least a two (2) foot freeboard for residential structures. More information on these actions and freeboard standards can be found using the links below:

- FEMA Policy: Federal Flood Risk Management
- Floodplain Management - Environmental Review - HUD Exchange

Elevating or Floodproofing Mechanical and HVAC Equipment Servicing a Building

Nebraska's Minimum Standards for Floodplain Management Programs explicitly require that new residential structures must be elevated with the lowest floor one (1) foot above the base flood elevation and nonresidential structures must be elevated or floodproofed to one (1) foot above the base flood elevation. For mechanical and HVAC equipment, Nebraska's standards meet those of the NFIP which require that electrical, heating, ventilation, plumbing and air conditioning equipment, and other service facilities must be designed and/or located to prevent water from accumulating in their components during flooding. Federal requirements also state that all public utilities and facilities such as sewer, gas, electrical, and water systems are to be located and constructed to minimize flood damage.

Most developers will construct new homes and businesses with the HVAC equipment elevated to the same elevation of the lowest floor, however, this is not explicitly required by state minimum standards. Not elevating such equipment can lead to increased flood insurance costs, loss of services to the building, and increased risks of property damage during a flood.

To best protect utilities and equipment for new construction, communities may choose to require that such equipment be elevated or dry-floodproofed to the same elevation of the structure it is servicing.

Model Language

To enact the requirement that all structures must have their equipment or mechanical services elevated or dry-floodproofed to the same elevation as the structure itself, the following sentences must be added to the regulations for residential and nonresidential structures as shown below:

5.11 Residential Structures

A. …

B. All machinery and equipment, such as electrical, heating, ventilation, air conditioning, plumbing, and any other service facilities, must be elevated to the same level as the lowest floor. The elevation of the lowest floor and all machinery and equipment servicing the structure shall be certified by a licensed land surveyor, professional engineer, or architect.

5.12 Nonresidential Structures

A. …

B. All machinery and equipment, such as electrical, heating, ventilation, air conditioning, plumbing, and any other service facilities, must be elevated the same level as the structure being serviced. The elevation of the lowest floor and all machinery and equipment servicing the structure shall be certified by a licensed land surveyor, professional engineer, or architect.

Additional Note: CRS Prerequisites

Communities looking to achieve a Class 8 rating or higher in the Community Rating System are required to adopt and enforce at least a one (1) foot freeboard requirement for machinery and equipment servicing a residential structure. This requirement is described in the 2021 Addendum to the CRS Coordinator's Manual, 2017 Edition. The addendum can be found on the Community Rating System (CRS) resources page.

Removal of Language Allowing Dry-floodproofing for Nonresidential Structures

Nebraska's Minimum Standards for Floodplain Management Programs allow nonresidential structures to be constructed with the lowest floor below one (1) foot above BFE if the structure is dry-floodproofed and has certification from an engineer that all dry-floodproofing requirements are met. The issue with most dry-floodproofing measures is that they require human action to install or maintain the equipment used to make the structure watertight. This requires the development of an action and maintenance plan that includes adequate warning time for the floodproofing measures to be installed. In many cases, there is

not enough warning before a flood event for these actions to take place, or the building does not have enough trained staff to complete the actions in time, leading to property damage and loss of function. Communities may choose to require elevation of the lowest floor to the community's required protection level as the only compliance method for both residential and nonresidential structures.

Model Language

To remove the option for dry-floodproofing non-residential structures, remove lines 5.12(A)(ii)(1-3) from the model ordinance.

5.12 Nonresidential Structures

A. …

i. ….

ii. -REMOVE- Be dry-floodproofed so that below one (1) foot above the base flood elevation, the structure along with attendant utility and sanitary facilities:

1. Is watertight with walls substantially impermeable to the passage of water; and,

2. Has structural components with the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and,

3. Is certified by a registered professional engineer or architect to meet the standards of 5.12(A)(ii)(1-2). A floodproofing certificate shall be provided to the floodplain administrator as set forth in Section 4.44 of this ordinance. -REMOVE-

Regulation of Critical Facilities for Federal Flood Risk Management Standard (FFRMS) Compliance

Communities may choose to regulate activities that are vital to the continuous operation of the community in times of disaster such as hospitals, first responder facilities, facilities that store hazardous materials, or other community lifelines to higher standards than those established by the regulations for residences and nonresidences. These higher standards may include higher freeboard requirements and/or regulating these facilities within both the 1% and 0.2% annual chance floodplain boundaries. For compliance with FEMA's FFRMS standards, communities must regulate "critical actions", as defined below, to either 3-feet above the base flood elevation, or to the elevation of the 0.2% annual chance flood, whichever is higher.

Model Language

The following language defines critical facilities, and establishes the higher standards for critical facilities to satisfy FEMA's FFRMS requirements for critical actions:

5.15 Critical Facilities

A. New construction, substantially improved, or substantially damaged critical facilities are prohibited in all areas of the floodplain and the 0.2% annual chance floodplain unless the following provisions are met:

i. No feasible alternative site exists for the construction of an equivalent action within the corporate or extraterritorial jurisdiction boundaries of [community name].

ii. The facility has the lowest floor, including basement, of all structures elevated to one (1) foot above the 0.2% annual chance flood elevation or three (3) feet above the base flood elevation, whichever is higher; or,

iii. Together with attendant utility and sanitary facilities, nonresidential structures are dry-floodproofed so that below the flood protection elevation identified in Section 5.15(A)(ii):

a. The structure is watertight with walls substantially impermeable to the passage of water;

b. The structure has structural components with the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and

c. A registered professional engineer or architect shall certify that the standards of 5.15(A)(ii)(a-b) are satisfied. A floodproofing certificate shall be provided to the floodplain administrator as set forth in Section 4.44 of this ordinance.

iv. The facility has at least one access road connected to land outside the 0.2% annual chance floodplain that is capable of carrying emergency support vehicles and the top of the access road is no lower than the flood protection elevation identified in Section 5.15(A)ii.

Definition:

Critical Facility. Any property that, if flooded, would result in severe consequences to public health and safety. Critical facilities include, but are not limited to:

A. Facilities that produce, use, or store hazardous materials;

B. Hospitals, nursing homes, and housing likely to contain vulnerable populations;

C. Emergency support function facilities such as police stations, fire stations, vehicle and equipment storage facilities, and emergency operations centers; and,

D. Public and private utility facilities vital to maintaining or restoring normal services to flooded areas before, during, and after a flood.

Additional Note: Definitions for Critical Actions and Critical Facilities

The definitions for critical actions and critical facilities are **not** used interchangeably. Critical facilities are structures and institutions that are deemed by the local community and other jurisdictions as

critical to the continuity of the community before, during and after an event. Although the affected jurisdiction has the primary responsibility for determining what structures and institutions are *critical facilities*, FEMA reserves the right to make a final determination for what is a *critical action* as needed to support the review and approval of a Hazard Mitigation Assistance (HMA) project application.

Prohibiting Enclosures Below the Lowest Floor

This prohibition enacts that new or substantially improved/damaged structures cannot have enclosed spaces below the lowest floor. Enclosures below the lowest floor include crawlspaces, above ground garages, or any area for storage, parking, or building access that is placed lower than the lowest floor of a structure. Typically, this construction method is used to elevate the lowest floor of a structure to be compliant with local freeboard standards while maintaining usable space beneath the elevated area. However, such development practices can increase the impacts of the development of floodwater flows, and leaves the materials or vehicles stored in the area susceptible to flood damages. These structures may also be at an increased risk for foundational collapse if the enclosed space is inundated by floodwaters that exceed the elevation or flood forces of the base flood.

This prohibitory language requires that for any elevated structure, the structure must be elevated using posts, piles, piers, or fill (if the use of fill is allowed by the community).

Model Language

To enact this prohibition, the following sentence must replace all of Section 5.13 "Enclosures Below Lowest Floor":

5.13 Enclosures Below Lowest Floor

A. All new construction, substantially improved, or substantially damaged structures shall not have fully enclosed areas below the lowest floor below one (1) foot above the base flood elevation.

Additional Note: Adopting Wet-floodproofing Language for Ag. or Accessory Structures

If the community chooses to adopt a prohibition of enclosures *and* the language for wet-floodproofing agricultural structures or accessory structures, the requirements for flood openings typically included in Section 5.13 will need to be moved to those respective sections. Both the agricultural structure and accessory structure sections reference the flood opening requirements in Section 5.13, and the placement of the above statement would eliminate this language.

Limiting the Size of Enclosures Below the Lowest Floor

Limiting enclosure sizes below the lowest floor will reduce the structure's impact on floodwater elevations, and will help to minimize the amount of stored items or vehicles at risk of incurring flood damages. Such size limits may also encourage that the enclosure only be used as a stairway to access the lowest floor of the structure. This language does not require such size limits for crawlspaces with heights lower than five (5) feet below the top of the next higher floor.

Model Language

To enact these size limits, the following language must be added to Section 5.12 "Enclosures Below Lowest Floor":

5.13 Enclosures Below Lowest Floor

A. …

B. …

C. The size of such enclosed areas shall not exceed [insert size limit (recommended 299)] square feet except for buildings where the minimum clearance height of the enclosed area is less than five (5) feet.

Prohibiting the Construction or Placement of Manufactured Homes

Manufactured homes are typically at a higher risk of incurring flood damages due to the types of materials used to construct them. Additionally, manufactured home parks may house lower-income families, many of whom may not have the means to evacuate or find alternative living arrangements in the event of a flood. Requiring new, substantially improved, or substantially damaged manufactured homes to be located outside of the floodplain can help mitigate these risks and helps to maintain the natural functions of the floodplain. Some Nebraska communities already prohibit manufactured homes in their corporate limits or extraterritorial jurisdictions through other local zoning regulations or building codes. Communities should ensure this language aligns with any existing prohibitions.

Model Language

To enact this prohibition, the following sentence must replace all of Section 5.14 "Manufactured or Mobile Homes":

5.14 Manufactured or Mobile Homes

A. New or substantially improved manufactured or mobile homes shall be prohibited within any flood prone area.

B. The repair or replacement of substantially damaged manufactured or mobile homes shall be prohibited within any flood prone area.

Prohibiting the Placement of Fill

Fill refers to earthen material that is used to raise ground elevations. The use of fill in the floodplain may occur to elevate a structure to be compliant with local floodplain regulations, to elevate or level ground for property access, to improve the conditions of the land for agricultural use, or for landscaping or other projects involving earthwork. Fill must be permitted by the local floodplain administrator for use in a floodplain, and the developer must demonstrate that the fill will not result in unacceptable increases in surface water elevations. However, the placement of fill in a floodplain may still result in increases in surface water elevations that are not anticipated by the engineering analysis during the permitting process.

Some communities choose to prohibit the use of fill in the floodplain to maintain their carrying capacity and natural functions. Such prohibitions extend to the use of fill to elevate a structure, meaning elevated structures must instead be placed on posts, piles, or piers; or, above an enclosure (if enclosures are not prohibited elsewhere in the ordinance).

Model Language

To enact this prohibition, the following sentence must be added to Section 5.2 "Design and Construction Standards":

5.29 Placement of Fill

A. The placement of fill shall be prohibited within any flood prone area.

Prohibiting the Placement or Replacement of On-site Waste Disposal Systems

Storage receptacles for on-site waste disposal systems such as septic tanks or dump stations can break open, become buoyant, or contaminate floodwaters if not properly installed. Communities may enact regulations that prohibit such systems from being placed in any area designated as flood prone by the floodplain administrator. This prohibition may not be feasible for counties or rural communities without public wastewater systems. Many communities already prohibit septic tanks within their corporate limits and/or extraterritorial jurisdictions. Communities should ensure this language aligns with any existing prohibitions.

Model Language

To enact this prohibition, the following sentence must replace line "C" of Section 5.24 "Water Supply and Sanitary Sewer Systems":

5.24 Water Supply and Sanitary Sewer Systems

C. The placement of new or substantially improved on-site waste disposal systems shall be prohibited within any floodplain.

D. The repair or replacement of substantially damaged on-site waste disposal systems shall be prohibited within any floodplain.

Prohibiting Recreational Vehicles from Flood Prone Areas

Recreational vehicles are at a significantly higher risk of incurring flood damages when placed in any floodplain. Because recreational vehicles are not considered "structures" by NFIP and state definitions, there are no elevation or anchoring requirements that they must adhere to. The expectation is that any recreational vehicle placed in the floodplain must only be located on site temporarily, or must be removed from the floodplain in the event of a flood warning. Enforcing these standards can be difficult for a community, especially when the community has limited flood warning times, or the recreational vehicle park has limited road access. Recreational vehicles that are not relocated in the event of flooding can be quickly swept away by floodwaters, and may cause damage to neighboring properties or infrastructure.

In communities where these enforcement challenges are too great, it is highly recommended that the floodplain ordinance prohibit the placement of recreational vehicles in the floodplain. This prohibition serves to protect both the health and safety of campers and the health and safety of the community.

Model Language

To enact a prohibition on Recreational Vehicles in the floodplain, the following sentence must replace all language in Section 5.27 "Recreational Vehicles" in the model ordinance:

5.27 Recreational Vehicles

A. The placement of recreational vehicles and new recreational vehicle parks shall be prohibited within any floodplain.

Lowering the Threshold for Substantial Improvement and Substantial Damage

Federal and state regulations require that structures that experience repairs to damage and/or improvements that cost more than 50% of the structure's market value must be brought into compliance with the community's floodplain ordinance. However, many communities have experienced that this 50% threshold is too high, resulting in at-risk structures not being brought into compliance with the community's standards for flood protection.

Communities may adopt a local lower threshold of their choice for what is considered a "substantial" improvement or repair. Lowering this threshold will eventually result in more structures being better protected from the impacts of flooding. The lower threshold will help bring noncompliant, existing structures into compliance by elevation or floodproofing, thus reducing the at-risk populations and property in the community's jurisdiction.

Model Language

To enact a lower threshold for substantial improvement and substantial damage, the following language must be modified in Section 6.0 "Existing and Nonconforming Use Structures":

SECTION 6.0 EXISTING AND NONCONFORMING USE STRUCTURES

6.1 DAMAGE TO EXISTING OR NONCONFORMING USE STRUCTURES

6.11 …

A. If any existing or nonconforming use structure is destroyed by any means, including flood, it shall not be reconstructed if the cost to return the structure to pre-damaged conditions when combined with any additional proposed improvements is equal to or exceeds [Lower Number Threshold] percent of the pre-damage market value of the structure except that if the structure and any additions are (re)constructed in conformity with the provisions of this ordinance. Such damage shall constitute "substantial damage" as defined in Section 10.0 of this ordinance.

6.2 IMPROVEMENTS TO EXISTING OR NONCONFORMING USE STRUCTURES

6.21 …

A. Any additions, alterations, reconstruction, or improvements of any kind including repairs to an existing or nonconforming use structure where the costs of which would equal or exceed [Lower Number Threshold] percent of the pre-improvement market value shall require the structure and any additions to fully comply with the provisions of this ordinance. Such improvements shall constitute a "substantial improvement" as defined in Section 10.0 of this ordinance.

Definitions:

Substantial Damage. Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damage condition would equal or exceed [Lower Number Threshold] percent of the market value of the structure before the damage occurred.

Substantial Improvement. Any reconstruction , rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds [Lower Number Threshold] percent of the market value of the structure before the "start of construction" of the improvement. This term includes structures which have incurred "substantial damage", regardless of the actual repair work performed. The term does not, however, include either:

A. Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions; or,

B. Any alteration of a "historic structure", provided that the alteration will not preclude the structure's continued designation as a "historic structure".

Cumulatively Tracking Costs of Improvements or Repairs

Determinations of substantial improvement or substantial damage are typically made per occurrence, and are not required to be tracked over time. However, structures that experience improvements consistently below the threshold for substantial improvement are not being built safe from flooding, which continuously puts the community at an increased risk for more property damage. While the NFIP requires phased projects to be considered as one substantial improvement determination, it can be difficult for communities to know when a phased project is occurring, as phases are often submitted as separate permits over longer durations of time.

Additionally, structures that are routinely damaged by flooding below the substantial damage threshold present additional costs to the community. Because these structures are not being mitigated or repaired to be safe from future damages, the occupants of the structure and the surrounding community are consistently put at risk each time a flood event occurs.

To ensure that property owners are not purposefully completing projects in phases that are below the substantial improvement threshold, and to help mitigate more structures that are routinely damaged by flooding, communities have the option to adopt cumulative requirements for tracking improvement and repair costs over time. Communities that adopt this language will need to develop administrative procedures for tracking permit applications for improvements or repairs on the same structure. Communities will also need to choose a reasonable period of time that costs will be tracked.

Model Language

To require that costs of improvements and repairs are tracked over time, the following language must be modified in Section 6.0 "Existing and Nonconforming Use Structures":

SECTION 6.0 EXISTING AND NONCONFORMING USE STRUCTURES

6.1 DAMAGE TO EXISTING OR NONCONFORMING USE STRUCTURES

6.11 …

A. If any existing or nonconforming use structure is destroyed by any means, including flood, it shall not be reconstructed if the cost to return the structure to pre-damaged conditions when combined with any additional repairs or improvements within [Time Period (i.e. ten (10) years)] prior to the date of the permit application is equal to or exceeds fifty (50) percent of the pre-damage market value of the structure except that if the structure and any additions are (re)constructed in conformity with the provisions of this ordinance. Such damage shall constitute "substantial damage" as defined in Section 10.0 of this ordinance.

6.2 IMPROVEMENTS TO EXISTING OR NONCONFORMING USE STRUCTURES

6.21 …

A. Any additions, alterations, reconstruction, or improvements to an existing or nonconforming use structure when combined with any additional improvements or repairs within the [Time Period (i.e. ten (10) years)] prior to the date of the permit application where the costs of which would equal or exceed fifty (50) percent of the pre-improvement market value shall require the structure and any additions to fully comply with the provisions of this ordinance. Such improvements shall constitute a "substantial improvement" as defined in Section 10.0 of this ordinance.

Definitions:

Substantial Damage. Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damage condition when combined with any additional repairs or improvements within [Time Period (i.e. ten (10) years)] prior to the floodplain development permit application would equal or exceed fifty (50) percent of the market value of the structure before the damage occurred.

Substantial Improvement. Any reconstruction , rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds fifty (50) percent of the market value of the structure before the "start of construction" of the improvement, when combined with any additional repairs or improvements within [Time Period (i.e. ten (10) years)] prior to the floodplain development permit application. This term includes structures which have incurred "substantial damage", regardless of the actual repair work performed. The term does not, however, include either:

A. Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions; or,

B. Any alteration of a "historic structure", provided that the alteration will not preclude the structure's continued designation as a "historic structure".

Expansion of Substantial Damage to Include Repetitive Loss Structures

A structure is considered to have experienced "repetitive loss" when it has experienced any flood-related damage on two separate occasions during a ten-year period, where the cost to repair after each event averages 25 percent of the structure's market value. Repetitive loss structures have a history of being damaged by flooding and are at a higher risk of continuing to incur flood damage if they are not mitigated. Communities have the option to include structures that experience repetitive losses in their definition of substantial damage. This implies that any structure that is substantially *or* repetitively damaged must be brought into compliance with the current floodplain regulations for the community, further reducing the number of at-risk structures over time.

Additionally, NFIP policyholders that meet this threshold will qualify for Increased Cost of Compliance (ICC) coverage. ICC coverage allows for up to an additional $30,000 on top of any flood insurance claim related to a substantially damaged structure. If the community chooses to include repetitive loss structures in their definition for substantial damage, the NFIP will help pay the added costs of bringing buildings into compliance with the community's floodplain management requirements for new construction through the ICC claims process.

Model Language

To require repetitive loss structures to be constructed in compliance with the local floodplain management ordinance, the definition for Substantial Damage must be modified to include cumulative cost tracking, and in the following manner:

Substantial Damage. Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damage condition when combined with any additional repairs or improvements within ten (10) years) prior to the floodplain development permit application would equal or exceed fifty (50) percent of the market value of the structure before the damage occurred. The term also includes flood-related damage sustained by a structure on two separate occasions during a 10-year period for which the cost of repairs at the time of each such flood event, on average, equals or exceeds 25 percent of the market value of the structure before the damage occurred.

Non-conversion Agreements for Enclosures Below Lowest Floor

When a community permits a development to occur with an enclosed space below the lowest floor, it is required by state and federal minimum standards that such areas are not used for human habitation or any purposes besides limited storage, parking, or access to upper floors. However, because the usage of the area is internal to the structure, it can be difficult for a community to enforce this requirement without

additional written procedures. Communities can choose to implement additional standards for ensuring the usage of the area is not converted after construction is completed. These options include:

- Deed restrictions filed with the county office of the Register of Deeds; or,
- Signed non-conversion agreement between the community and property owner.

Communities interested in this language are highly encouraged to discuss the formatting and language for deed restrictions or non-conversion agreements with their local legal counsel to verify that no other procedures or local regulations are being impacted. Non-conversion agreements should allow for inspection by the community at any time. The language provided below allows the community to enact a non-conversion agreement document that must be signed by both the property owner and the floodplain administrator, allowing for periodic inspections of the enclosed space.

Model Language

To require non-conversion agreements signed by the community and property owner for enclosures below the lowest floor to not be used for human habitation, the following language must be added to Section 5.13 "Enclosures Below Lowest Floor":

5.13 Enclosures Below Lowest Floor

A. …

B. …

C. For all new construction, substantially improved, and substantially damaged structures, fully enclosed areas below the lowest floor and below one (1) foot above the base flood elevation shall have a non-conversion agreement signed by both the floodplain administrator and the property owner and filed with the office of the Register of Deeds. The non-conversion agreement must establish the following provisions:

1. That the enclosed area below the lowest floor shall be used solely for parking of vehicles, limited storage, or access to the building and will never be used for human habitation without first becoming fully compliant with the flood damage prevention ordinance in effect at the time of conversion.

2. That all interior walls, ceilings, and floors below one (1) foot above the base flood elevation shall be unfinished or constructed of flood-resistant materials.

3. That mechanical, electrical, or plumbing devices that service the building shall not be installed below one (1) foot above the base flood elevation.

4. That the openings in the walls of the enclosed area below the lowest floor shall not be blocked, obstructed, or otherwise altered to reduce the size of the openings or restrict the automatic entry and exit of floodwater.

5. That any variation in construction beyond what is permitted shall constitute a violation of this agreement and Section 5.13 "Enclosures Below the Lowest Floor" of this ordinance.

6. That the owner and subsequent owners agree to allow a representative of [Community Name] in the premises to verify compliance with this agreement at least [Inspection Period (i.e. once each year)]. The representative will provide notice at least 48 hours in advance.

7. That this agreement shall be recorded with the deed to the above property so that proper notice of such restrictions shall be made to subsequent owners.

Additional Note: Non-conversion Agreements and Accessory/Agricultural Structures

Communities should file copies of any signed non-conversion agreement with the permit files for the structure. For communities that have chosen to adopt language to allow for wet-floodproofing of accessory and/or agricultural structures, the provisions of 5.13(C)(1-7) will apply, meaning non-conversion agreements must be signed for each structure type when wet-floodproofing is utilized. Approval of a variance for such agricultural structures must be conditional upon the signing of a non-conversion agreement, and a copy of the agreement must be maintained with the variance documentation. An example non-conversion agreement form can be found on the Community Rating System (CRS) resources page.