



Pearl River Basin, Mississippi, Federal Flood Risk Management Project

Appendix N – Nonstructural Implementation Plan



June 2024

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Section 1

Definitions Related to the Nonstructural Plan

Term	Definition
AEP	Annual Exceedance Probability (AEP) means the probability that a given rainfall total accumulated over a given duration will be exceeded in any one year.
Base Flood	The term “base flood” is defined by the National Flood Insurance Project (NFIP) as the “flood having a 1 percent chance of being exceeded in any given year and is also called the .01 annual exceedance probability flood”.
Base Flood Elevation (BFE)	The computed elevation to which floodwater is anticipated to rise during the base flood. The base flood elevation or BFE is shown on community’s Flood Insurance Rate Map (FIRM).
Dry Floodproofing	Dry floodproofing consists of sealing all areas of a structure up to a maximum of approximately 3 feet above ground level to reduce damage caused by 1% AEP BFE based on year 2082 hydrology by making walls, doors, windows and other openings resistant to penetration by water. Walls are coated with sealants, waterproofing compounds, or plastic sheeting. Back-flow from water and sewer lines is prevented by installing mechanisms such as drain plugs, standpipes, grinder pumps, and back-up valves. Openings, such as doors, windows, sewer lines, and vents, may also be closed temporarily with sandbags or removable closures, or permanently.
Economically Justified	The cost to implement the nonstructural measure of a certain structure does not exceed the total monetary cost of the flood damages that are anticipated to be avoided over the 50-year period of analysis (years 2032-2082).
Elevation (of structure)	The entire foundation of the residential structure will be lifted and placed on a new foundation (i.e., columns, piers, posted or raised foundation walls) so that the lowest habitable finished floor is above the design water surface elevation. All utilities and mechanical equipment, such as air conditioners and hot water heaters, will also be raised to this elevation. This measure is applicable to permanent residential structures only.
Eligible structures	Structures that are determined by the United States Army Corps of Engineers (USACE) to be eligible for floodproofing or elevation after the completion of the investigations and analyses as described herein.

First Floor Elevation	First floor elevation or FFE refers to the height of the first lowest floor of the structure above the adjacent grade. The higher the FFE of a structure, the less likely that flood damage to the structures will occur.
Floodproofing	As defined by the Federal Emergency Management Agency (FEMA) in 44 CFR, Chapter 1, Part 59, "floodproofing" means any combination of structural and nonstructural additions, changes, or adjustments to structures that reduce or eliminate flood damages to real estate or improved real property, water and sanitary facilities, structures, and their contents.
Hazardous, Toxic, and Radioactive Waste (HTRW)	HTRW means hazardous, toxic, and radioactive waste as more specifically defined in Engineer Regulation (ER) 1165-2-132, "Hazardous, Toxic, and Radioactive Waste (HTRW) Guidance for Civil Works Projects".
Historic Structure	As defined in 44 CFR Part 59, a historic structure is a structure that is: (1) listed individually in the National Register of Historic Places (maintained by the Department of the Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register; (2) certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district; (3) individually listed on a state inventory of historic places with historic preservation projects which have been approved by the Secretary of the Interior; and (4) individually listed on a local inventory of historic places in communities with historic preservation projects that have been certified either by (a) an approved state project as determined by the Secretary of the Interior or; (b) directly by the Secretary of the Interior in states without approved projects.
Manufactured Home	"Manufactured home" and "manufactured housing" mean a factory-built, residential dwelling unit constructed to standards and codes, as promulgated by the United States Department of Housing and Urban Development, under the National Manufactured Housing Construction and Safety Standards Act of 1974, 42 U.S.C. 5401 et seq., as amended. Further, the terms "manufactured home" and "manufactured housing" may be used interchangeably and apply to structures bearing the permanently affixed seal of the United States Department of Housing and Urban Development. To be eligible for elevation, a manufactured home must have a permanent foundation, be permanently affixed to the ground, meet the anchoring, construction, installation and other requirements of MS Code Ann. 75-49-3, and be legally classified as immoveable real property under state law. The manufactured homeowner and any subsequent owner of an immobilized manufactured home may not de-immobilize the manufactured home in the future by detachment, removal, authentic act of de-immobilization, or any other method.
Mobile Home	"Mobile home" means a factory-built, residential dwelling unit built to voluntary standards prior to the passage of the National Manufactured Housing Construction and Safety Standards Act of 1974. This term includes and is interchangeable with the term "house trailer" but does not include the term "manufactured home." To be eligible for elevation, a mobile home must have a permanent foundation, be permanently immobilized in accordance with the requirements of MS Code Ann. 75-49-93, as amended from time to time, and be legally classified as immoveable real property under state law. The homeowner

and any subsequent owner of an immobilized mobile home, may not de-immobilize the mobile home in the future by detachment, removal, authentic act of de-immobilization, or any other method.

Modular Home	"Modular home" and "modular housing" mean a factory-built, residential dwelling unit built to the International Residential Code. To be eligible for elevation, a modular home must have a permanent foundation, be permanently affixed to the ground, be legally classified as immovable real property under state law, and meet the anchoring, construction, installation, and other requirements of MS Code Ann. 75-49-, the modular homeowner and any subsequent owner of a modular home, may not de-immobilize the modular home in the future by detachment, removal, authentic act of de-immobilization or any other method.
National Flood Insurance Program (NFIP)	<p>The NFIP is a program that makes federally-backed flood insurance available in those states and communities that agree to adopt and enforce flood-plain management ordinances to reduce future flood damage.</p> <p>The program of flood insurance coverage and floodplain management administered under the Act and applicable federal regulations promulgated in Title 44 of the Code of Federal Regulations, Subchapter B.</p>
Non-Federal Interest (NFI)	The NFI plans to act as the sponsor, including any non-Federal interest that has contributed to, or is expected to contribute to, the non-Federal cost share of the proposed feasibility study or project modification.
Non-Federal Sponsor (NFS)	The NFS is the cost-sharing partner for the design, construction of the project, as well as for the Operation, Maintenance, Repair, Rehabilitation and Replacement (OMRR&R) of the project.
Nonstructural Measures	Nonstructural floodproofing measures are permanent or contingent measures applied to a structure and/or its contents that prevent or provide resistance to damage from flooding. Nonstructural food proofing measures differ from structural floodproofing measures (i.e., levees, floodwalls, etc.) in that they focus on reducing the consequences of damages from flood events instead of focusing on reducing the probability of damages from flood events.
Nonstructural Plan	Nonstructural measures are permanent or contingent measures applied to a structure and/or its contents that prevent or provide resistance to damages from flooding. Nonstructural Plan measures differ from structural measures in that they focus on reducing consequences of flooding instead of focusing on reducing the probability of flooding. Nonstructural measures reduce flood damages without significantly altering the nature or extent of flooding. The Nonstructural measures for this report include the elevation of eligible residential structures and dry floodproofing of eligible nonresidential structures.

Nonresidential Structure	A nonresidential structure is a any structure not defined as Residential.
Preliminary Structure Eligibility Criteria	<p>To be considered preliminarily eligible for participation in the Nonstructural Plan, except for acquisition the structure does not need to meet item 2, a structure must meet these criteria:</p> <ol style="list-style-type: none">1. The structure must have a first-floor elevation at or below the applicable floodplain (which may be either a 10% or 4%AEP floodplain depending on the location of the structure), based on hydrologic conditions predicted to occur in 2032 (the beginning of the 50-year period of analysis) at a specific location.2. The structure must have a permanent foundation and be permanently immobilized and affixed or anchored to the ground as required by applicable law and must be legally classified as immoveable real property under state law. Notwithstanding the provisions of MS Code Ann. 75-49-93, a manufactured, modular or mobile homeowner and any subsequent owner of an immobilized manufactured, modular or mobile home, may not de-immobilize the manufactured, modular or mobile home in the future, by detachment, removal, act of de-immobilization, or any other method. Manufactured, modular and mobile homes that do not meet these requirements are not eligible for elevation. This criterion only applies to residential uses of manufactured, modular, and mobile homes.
Residential Structure	A residential structure is where the primary use is habitational. Multifamily structures such as condominium and apartment buildings are grouped with residential structures.
Structural Plan	Structural measures are physical modifications designed to reduce the frequency of damaging levels of flood inundation. For purposes of this report, these measures include levees and floodwalls.
Special Flood Hazard Area (SFHA)	An area having special flood, mudflow or flood-related erosion hazards and shown on a Flood Hazard Boundary Map or a Flood Insurance Rate Map (FIRM) Zone A, AO, A1-A30, AE, A99, AH, AR, AR/A, AR/AE, AR/AH, AR/AO, AR/A1-A30, V1-V30, VE or V. The Special Flood Hazard Area (SFHA) is the area where the National Flood Insurance Program's (NFIP's) floodplain management regulations must be enforced.
Wet Floodproofing	Wet floodproofing prevents or provides resistance to damage from flooding while allowing floodwaters to enter the structure or area and equalize pressures on foundation walls or lower-level walls. A key feature associated with wet floodproofing are openings to allow floodwaters in, consisting of engineered flood vents in the structure walls.

Section 2

Introduction

This Nonstructural (NS) Implementation Plan describes the general process for the implementation of NS elevations, floodproofing and acquisition measures to reduce the risk of flood damages to residential and nonresidential structures caused by riverine and rainfall flooding in Pearl River Watershed between River Mile (RM) 270.0, located south of Richland, MS, and RM 301.77, located at the Ross Barnett Reservoir dam. The Plan is based in part on previous and on-going USACE projects and studies that contain a nonstructural component in the Tentatively Selected and Recommended Plans, however the implementation of the NS Plan for this study may be modified when new U.S. Army Corps of Engineers (USACE) guidance is issued for the implementation of nonstructural plans. The information in this plan presents a strategy that may be used to implement nonstructural measures in support of the authorized plan and will be refined and updated as more information becomes available.

Detailed plans and specifications for implementing NS measures will be developed as part of the Preconstruction Engineering and Design (PED) phase of the project if it is moved forward. The PED phase occurs after the Secretary of the Army for Civil Works (ASA-CW) determines USACE Recommended Plan. At this time a Non-Federal Interest has been identified, once a cost-sharing partner agreement for the design, construction of the project, as well as for the Operation, Maintenance, Repair, Rehabilitation and Replacement (OMRR&R) of the project is signed, they will become the Non-Federal Sponsor (NFS).

The primary goal of the NS Plan proposed is to reduce flood risk for structures in the plan as decided by ASA-CW. To preliminarily qualify for inclusion in the Nonstructural Plan, a structure must have a First Floor Elevation (FFE) at or below the applicable floodplain based on hydrologic conditions predicted to occur in 2032 (the beginning of the 50-year period of analysis). The FFE threshold varies by location throughout the study area as described in Section 3.4.1 in the main report.

Based upon current information, the anticipated duties and obligations of property owner are generally outlined in other Sections of this Appendix. However, some of this information may be modified as the NS Plan is finalized. While groups of structures have been evaluated for the most cost-effective nonstructural measure, USACE reserves the right to determine which measure will ultimately be implemented at each structure location including consideration of project costs and benefits as well.

The project area will be subdivided into distinct geographic areas or reaches for implementation and maps of these areas will be prepared and regularly updated to depict the current stage of structure elevation eligibility, structures to be acquired property addresses, names of the property owners, property line boundaries, locations of hazardous,

toxic and radioactive waste (HTRW), zoning districts, boundaries of regulatory floodways, flood zones, and other important information.

It is anticipated that implementation of the NS Plan will occur over an approximate 5-year period. However, the scale is highly dependent upon the number of structures receiving NS measures and the amount of funding allocated in any given year.

2.1 PROPOSED NONSTRUCTURAL MEASURES

The Nonstructural Plan identified structures are eligible for the below measures dependent upon structure type (Table M2-1). Property owner participation in the Nonstructural Plan is voluntary.

Table M2-1. Nonstructural Plan A-1 Structure Type Eligibility

Structure Type	Public	Private-Non-Profit	Residential-Non-Historic	Residential-Historic	Nonresidential
Property Acquisition & Structure Demolition	x	x	x	x	x
Retrofitting of Existing Buildings					
Structure Elevation			x	x	
Structure Dry floodproofing					x
Structure Wet floodproofing				x	x
Property Acquisition & Structure Relocation	x	x	x	x	x

2.1.1 Property Acquisition (Federal Easement) and Structure Demolition

Property acquisition and structure demolition involves voluntary acquisition of the at-risk structures and underlying land, and conversion of the land to open space through the demolition of the structure. The property must have a federal easement in perpetuity to open space uses to restore and/or conserve the natural floodplain functions. Allowable land uses for open space generally include parks for outdoor recreational activities, wetlands management, nature reserves, cultivation, grazing, camping (except where adequate warning time is not available to allow for evacuation), unpaved surfaces, and other uses that USACE determines are compatible with the federal easements.

Table M2-2 Advantages and Disadvantages of Property Acquisition and Structure Demolition

Advantages	Disadvantages
Removes at-risk structures from the floodplain	Requires addressing disposition of the flood-prone site
Provides property owners who have experienced repetitive losses with an “out.” Relocation assistance may be available to voluntary participants to lessen the emotional and financial impact of displacement.	A new site must be located
Reduces the physical, financial, and emotional strains that accompany flood events	For historic properties may result in an adverse effect to significant built-environment resources
Uses established demolition techniques	
Can be initiated quickly because qualified contractors are often readily available	
Eliminates future Federal, state, and local disaster assistance commitments because the building is no longer in the floodplain	

2.1.2 Retrofitting of Existing Buildings

Modifications to the structural elements of a building to reduce or eliminate the risk of future flood damage and to protect inhabitants. The structural elements of a building that are essential to protect in order to prevent damage include foundations, load-bearing walls, beams, columns, structural floors and roofs, and the connections between these elements. Retrofitting also includes modifications to the non-structural elements of a building or facility to reduce or eliminate the risk of future damage and to protect inhabitants. Retrofits are primarily defined as modifications to the elements of a building to reduce or eliminate the risk of future damage. Structural retrofits are designed to protect elements such as foundations, load-bearing walls, beams, columns, building envelopes, windows, structural floors, roofs, and the connections between these elements. Non-structural retrofitting involves the modification of a building or facility’s non-structural elements and may include elevation of heating and ventilation systems to minimize or prevent flood damage. The architect, engineer, or code official must recognize that retrofitting a residential or commercial structure influences how that structure reacts to hazards other than those associated with floodwaters, such as wind hazards. A holistic approach should be taken with regards to hazards when possible. Flood-related hazards (e.g., debris impact forces, erosion forces, and mudslide impacts), as well as non-flood-related hazards (e.g., wind forces), should also be considered in the retrofitting process. Retrofitting a structure to withstand only floodwater-generated forces may impair the structure’s ability to withstand the multiple hazards mentioned above. Thus, it is important to approach the retrofitting method selection and design process with a multi-hazard perspective.

Retrofitting measures for flood hazards may include the following or a combination thereof:

- Elevation of Residential Structures
- Dry Floodproofing of non-residential structures
- Wet Floodproofing
- Structure Relocation
- Elevation of Residential Structures

Elevating a structure to prevent floodwaters from reaching damageable portions is an effective retrofitting technique. Physically raising an existing structure to an elevation to the 1% AEP Base Flood Elevation (BFE) based on year 2082 hydrology or higher if required by USACE or local ordinance. Foundations must be designed to properly address all loads and effects, be appropriately connected to the floor structure above, and utilities must be properly elevated. Costs attributable to elevations in excess of the BFE will not be paid for as a project cost and all such costs must be borne solely by the property owner.

Elevations will not exceed 13 feet due to increased potential wind hazards. While elevation may provide increased protection of a structure from floodwaters, other hazards must be considered before implementing this strategy. Elevated structures may encounter additional wind forces on wall and roof systems, and the existing footings may experience additional loading. If the required elevation is greater than 13 feet above ground level, the structure would still be eligible for elevation up to that height with the residual risk present. Extended and open foundations (piers, posts, columns, and piles) are also subject to undermining, movement, and impact failures.

Table M1-3. Provides Advantages and Disadvantages Associated with Elevating a Home

Advantages	Disadvantages
Brings a building into compliance with the NFIP if the lowest horizontal structural member of the lowest floor is elevated to the BFE	May be cost-prohibitive
Reduces flood risk to the structure and its contents	May adversely affect the structure's appearance and the surrounding viewshed
Eliminates the need to relocate vulnerable items above the flood level during flooding	Does not eliminate the need to evacuate during floods
May reduce flood insurance premiums	May adversely affect access to the structure
Uses established techniques	Cannot be used in areas with high-velocity water flow, fast-moving debris flow, or erosion unless special measures are taken
Can be initiated quickly because qualified contractors are often readily available	May require additional costs to bring the structure up to current building codes for plumbing, electrical, and energy systems
Does not require the additional land that may be needed for floodwalls or levees	Requires consideration of forces from wind and possible changes to building design
	Flooding would continue to occur resulting in disruption to mobility and temporary inconvenience.

2.1.2.1 Dry Floodproofing

Dry floodproofing involves techniques applied to keep non-residential structures dry by sealing the structure to keep floodwaters out. In dry floodproofing, the portion of a structure that is below the DFE (walls and other exterior components) is sealed to make it watertight and substantially impermeable to floodwaters. Such watertight impervious membrane sealant systems can include wall coatings, waterproofing compounds, impermeable sheeting and supplemental impermeable wall systems, such as cast-in-place concrete. Doors, windows, sewer and water lines, and vents are closed with permanent or removable shields or valves. The expected duration of flooding is critical when deciding which sealant systems to use because seepage can increase over time, rendering the floodproofing ineffective. Waterproofing compounds, sheeting, or sheathing may fail or deteriorate if exposed to floodwaters for extended periods. Sealant systems are also subject to damage (puncture) in areas that experience water flow of significant velocity, or ice or debris flow. The USACE National Flood Proofing Committee has investigated the effect of various depths of water on masonry walls. The results of their work show that, as a general rule, no more than (3) feet (0.9 m) of water should be allowed on a nonreinforced concrete block wall that has not previously been designed and constructed to withstand flood loads. Therefore, application of sealants and shields should involve a determination of the structural soundness of a building and its corresponding ability to resist flood and flood-related loads. An engineer should be involved in any design of dry floodproofing mitigation systems so that they can evaluate the building and run calculations to determine the appropriate height of dry floodproofing. Research in this subject area is available in: *Flood Proofing Tests – Tests of Materials and Systems for Flood Proofing Structures* (USACE, 1988).

Table M2-4. Advantages and Disadvantages of Dry Floodproofing

Advantages	Disadvantages
Reduces the flood risk to the structure and contents if the design flood level is not exceeded	Does not satisfy the NFIP requirement for bringing residential structures into compliance
May be less costly than other retrofitting measures	Requires ongoing maintenance
Does not require the extra land that may be needed for floodwalls or reduced levees	Does not reduce flood insurance premiums for residential structures
Reduces the physical, financial, and emotional strains that accompany flood events	Usually requires human intervention and adequate warning time for installation of protective measures
Retains the structure in its present environment and may avoid significant changes in appearance	May not provide protection if measures fail or the flood event exceeds the design parameters of the measure
Appropriate design principles and practices may help to minimize changes to a Historic Building's features, integrity, and character.	May result in more damage than flooding if design loads are exceeded, walls collapse, floors buckle, or the building floats
Appropriate design principles and practices help maintain an individual property's site features (regardless of if historic or not), design, materials, and/or workmanship, and can play a critical role in avoiding or minimizing the potentially disruptive indirect visual impacts that Nonstructural measures can have on a surrounding neighborhood, historic district, or other types of built-environment resources.	Does not eliminate the need to evacuate during floods
	May adversely affect the appearance of the building if shields are not aesthetically pleasing
	May not reduce damage to the exterior of the building and other property
	May lead to damage of the building and its contents if the sealant system leaks

2.1.2.2 Wet Floodproofing

Dry floodproofing involves techniques designed to permit floodwaters to enter a structure to prevent or provide resistance to damage from flooding. Wet Floodproofing of a structure interior is intended to counteract hydrostatic pressure on the walls, surface and support systems of the structure by equalizing interior and exterior water levels during a flood.

Techniques designed to permit floodwaters to enter a structure to prevent or provide resistance to damage from flooding. Wet Floodproofing of a structure interior is intended to counteract hydrostatic pressure on the walls, surface and support systems of the structure by equalizing interior and exterior water levels during a flood.

Table M2-5. Advantages and Disadvantages of Wet Floodproofing

Advantages	Disadvantages
Reduces the risk of flood damage to a building and its contents, even with minor mitigation	Does not satisfy the NFIP requirement for bringing residential structures into compliance
Greatly reduces loads on walls and floors due to equalized hydrostatic pressure	Usually requires a flood warning to prepare the building and contents for flooding
May be eligible for flood insurance coverage of cost of relocating or storing contents, except basement contents, after a flood warning is issued	Requires human intervention to evacuate contents from the flood-prone area
Costs less than other measures	Usually requires human intervention and adequate warning time for installation of protective measures
Does not require the extra land that may be needed for floodwalls or reduced levees	Results in a structure that is wet on the inside and possibly contaminated by sewage, chemicals, and other materials borne by floodwaters and may require extensive cleanup
Reduces the physical, financial, and emotional strains that accompany flood events	Does not eliminate the need to evacuate during floods
Retains the structure in its present environment and may avoid significant changes in appearance	May make the structure uninhabitable for some period after flooding
Appropriate design principles and practices may help to minimize changes to a Historic Building's features, integrity, and character.	Limits the use of the floodable area
Appropriate design principles and practices help maintain an individual property's site features (regardless of if historic or not), design, materials, and/or workmanship, and can play a critical role in avoiding or minimizing the potentially disruptive indirect visual impacts that Nonstructural measures can have on a surrounding neighborhood, historic district, or other types of built-environment resources.	May require ongoing maintenance

2.1.2.3 Property Acquisition (Federal Easement) and Structure Relocation

Relocation involves the physical relocation of an existing structure to an area outside of a hazard-prone area. Typically, the property must have federal easement in perpetuity to open space uses to restore and/or conserve the natural floodplain functions. The structure may also be relocated to another portion of the current site, if more appropriate. However, the most effective way to eliminate the risk of flood damage is to relocate the structure entirely out of the floodplain. Relocation is an appropriate measure in high hazard areas where continued occupancy is unsafe. It is also a viable option in communities that are considering using the resulting open space for more appropriate floodplain activities.

Relocation of a structure requires steps that typically increase the cost of implementing this retrofitting method compared to elevation. These additional costs include moving the structure to its new location, purchase and preparation of a new site to receive the structure (with utilities), construction of a new foundation, and restoration of the old site. Structural relocation professionals should help owners to consider many factors in the decision to relocate. The structural soundness should be thoroughly checked, and arrangements should be made for temporary housing and storage of belongings. Relocation must conform to all applicable state and local regulations. Many states and communities have requirements governing the movement of structures in public rights-of-way.

Table M2-6. Advantages and Disadvantages of Relocation

Advantages	Disadvantages
Allows substantially damaged or improved structure to be brought into compliance with the NFIP	May be cost-prohibitive
Significantly reduces flood risk to the structure and its contents	A new site must be located
Uses established techniques	Requires addressing disposition of the flood-prone site
Can be initiated quickly because qualified contractors are often readily available	May require additional costs to bring the structure up to current building codes for plumbing, electrical, and energy systems
Can eliminate the need to purchase flood insurance or reduce the premium because the home is no longer in the floodplain	Potential to diminish a historic property's location, setting, and feeling
Reduces the physical, financial, and emotional strains that accompany flood events	
For historic structures, may provide opportunities for the preservation of unique and at-risk architectural types and/or buildings of great cultural significance	

2.2 PUBLIC EDUCATION AND ENGAGEMENT

USACE and/or the NFS will engage in a public education campaign to inform property owners and any impacted renters of those properties of the nonstructural component the ASA-CW selected alternative including, but not limited to eligibility criteria, the application process, responsibilities of property owners to clear title and remediate contaminated properties, and other key information about the project. USACE and/or the NFS will prepare and distribute written materials such as project information pamphlets, letters of invitation to participate, and public meeting notices. In addition, USACE and/or the NFS will issue press releases, hold public meetings and workshops, make presentations to homeowner's associations and other civic groups and organizations, and utilize a variety of social media and other public relations methods to inform property owners and tenants of the project.

In order to maximize community understanding, acceptance, and participation in the NS Plan, it is imperative that Rankin and Hinds Counties and local agencies are instrumental in the effort to communicate the benefits of the NS Plan and project. Local community involvement is a requisite for success. Familiarity with local political and community leaders will likely improve residents' level of comfort, trust, and understanding of the project goals, objectives, and benefits.

Section 3

Historic Structures and Lower Impact Demolition Stipulations (LIDS)

3.1 HISTORIC STRUCTURES

Although the NFIP provides some relief for historic structures from having to comply with floodplain management requirements, the NFIP and USACE recognize that historic structures should participate in Non-structural measures that can reduce the impacts of flood damages. Cultural resources, including properties included on or eligible for inclusion in the NRHP, significant at the state, local, and national level and/or of significance to Federally-Recognized Tribes, could be directly, indirectly, and cumulatively impacted by the implementation of the Nonstructural measures in a way that may diminish the integrity of these properties location, design, setting, materials, workmanship, feeling, and/or association. Conversely, although Non-structural measures have the potential to impact cultural resources, one of the most significant outcomes of this effort would be to reduce risk to historic structures from future flood events so they maintain their character and relationship to other historic buildings within a neighborhood or historic district, and protecting the architectural qualities of each neighborhood or historic district as a whole. Therefore, NS measures may have positive impacts not only for individual property owners, but also towards preserving at-risk unique architectural and design characteristics that the communities and historic districts in the Project Area strive to maintain and enhance.

USACE acknowledges that NS measures may result in modifications to historic buildings or other built-environment resources potentially not meeting the Secretary of the Interior's (SOI) *Standards for the Treatment of Historic Properties* (48 FR 44716-42, September 29, 1983). However, there are many retrofitting steps that may not have a negative, or even significant impact, upon the historic character of a site or its particular features and/or the neighborhood or historic district the building occupies. Preventive NS measures can be carried out without harming or detracting from historic character, as long as design and installation are carefully supervised by a professional knowledgeable in historic preservation. State and local historic preservation offices may require plan review and approval for flood retrofit projects on historic buildings. There may also be instances when a NS measure that best protects the site also may result in some loss of historic character. In such a case, the owner and the designer will have to weigh the costs of compromising character or historic authenticity against the benefits of safeguarding the site or a particular site feature against damage or total destruction. One example of such a choice is the decision whether to elevate a historic structure located in a flood hazard area, relocate it out of the area, retrofit it with dry or wet floodproofing techniques, or leave it in its existing state to face the risks of damage or loss. It is difficult to prescribe an equation for such a decision, since each situation will be unique, considering location, structural or site conditions, the variety of preventive alternatives

available, cost, and degree of potential loss of historic character. Here are some questions the designer may wish to pose in deliberating such a decision:

- What is the risk that the historic feature or the entire site could be totally destroyed or substantially damaged if the preventive measure is not taken? If the measure is taken, to what degree will this reduce the risk of damage or total destruction?
- Are there preventive alternatives that provide less protection from flood damage, but also detract less from historic character?
- What are they, and what is the trade-off between protection and loss of character? Is there a design treatment that could be applied to the preventive measure to lessen detracting of historic character?

To ensure full consideration of the potential impacts of Non-Structural measures to cultural resources, a Programmatic Agreement is being developed between the USACE, NFI, Mississippi State Historic Preservation Officer (SHPO) of the Mississippi Department of Archives and History (MDAH), Federally-Recognized Tribes, and the Advisory Council on Historic Preservation (ACHP). Potential adverse impacts resulting from Non-structural measures to cultural resources listed or eligible for the NRHP that cannot be avoided or minimized would be mitigated as appropriate following the procedures negotiated in the. Any additional conditions or requirements would be documented at that time. The Final Programmatic Agreement will be contained in the Final Environmental Impact Statement and executed before the ROD is signed. The Programmatic Agreement sets forth the agreed-upon procedures the USACE will follow prior to implementation of the selected alternative in order to satisfy USACE's Section 106 responsibilities for project undertakings.

3.2 LOWER IMPACT DEMOLITION STIPULATIONS

The NFS and USACE will ensure compliance with the Lower-Impact Demolition Stipulations included in the PRBFRMP Section 106 NHPA PA (Appendix E; also see below). USACE will ensure that the "*Lower-Impact Demolition Stipulations*" (LIDS; i.e., work restrictions) are made explicit in the demolition contract documents. USACE CR staff will conduct a joint briefing with the NFS to reinforce the legal obligation to comply with the LIDS.

For each property that demolition activities may occur at, prior to the commencement of any staging or demolition work, the NFS will provide USACE with advance notice and sufficient time for USACE CR staff to conduct any necessary reviews, evaluations, and consultation with the SHPO, Federally-Recognized Tribes, and other Consulting Parties, as appropriate.

All demolition properties will be reviewed by USACE for known historic properties and/or archaeologically sensitive areas. USACE will conduct background research and verify present site conditions to develop site-specific avoidance measures. In cases where demolitions occur on recorded archeological sites or sensitive areas, USACE will consult with SHPO, Federally-Recognized Tribes, and other Consulting Parties, as necessary, to develop site-specific treatment plans.

For any identified archaeological sites determined to be eligible for inclusion on the NRHP, or that are of undetermined NRHP eligibility, and/or archaeologically sensitive areas on or adjacent to the property, a SOI-Qualified archaeologist will apply a (50) meter (164 ft) radius buffer zone (i.e., “No Work Zone”) to avoid impacting the known site; unless there is reason to believe that the site/sensitive area may extend beyond in which case the buffer zone will be expanded appropriately. USACE will also consider any other unique site-specific factors in the development of the treatment plan. USACE will not be responsible for development of treatment plans or monitoring at archeological sites that have been determined ineligible for the National Register.

Depending on the unique circumstances of the demolition work and the potential for known/unidentified historic properties, or at the request of any party to this Agreement, USACE may deploy a SOI-Qualified archaeologist to monitor demolition activities in-part, or in entirety, in conjunction with adherence to LIDS.

If during the course of work, USACE archeological monitors observe significant or potentially significant findings as a result of activities associated with the construction item, the USACE archeological monitors will treat the findings in accordance with Stipulation III.B. of the PRBFRMP Section 106 NHPA PA.

USACE will verify compliance with the LIDS contained in Appendix E (also see below) of the PRBFRMP Section 106 NHPA PA. USACE reserves the right to conduct unannounced field inspections and monitor demolition activities to verify compliance with LIDS. If USACE observes violations of LIDS, USACE will request that the NFS’s representative on-site cease demolition activities until the effects of the construction item can be assessed. If adverse effects are observed, USACE will consult with SHPO and other Consulting Parties, as necessary.

Lower-Impact Demolition Stipulations

(To be Included in Demolition Contracts)

As provided in Stipulation IV, it is agreed by the Consulting Parties that the NFS shall ensure that their demolition contractor adheres to the “Lower-Impact Demolition Stipulations” (LIDS; i.e., work restrictions) as prescribed by USACE and SHPO. This will partially fulfill USACE requirements to comply with the National Historic Preservation Act (NHPA) for demolitions funded by USACE. In many cases, compliance with LIDS expedites project review and reduces costs because in-depth and lengthy historic reviews can be lessened as the Stipulations are designed to avoid impacts to archaeological resources.

For each property that demolition activities may occur at, prior to the commencement of any staging or demolition work, the NFS shall provide USACE with advance notice and sufficient time for USACE Cultural Resources (CR) staff to conduct any necessary reviews and/or evaluations and/or consultation with the SHPO, Federally-Recognized Tribes, and others, as appropriate. Depending on the unique circumstances of the demolition work and the potential for known/unidentified historic properties, USACE may deploy a SOI-*Qualified* archaeologist to monitor construction activities in-part or entirety. Additional Protocols for Working with Archaeological Monitors are provided below. Following the completion of USACE’s review, USACE will then notify and provide instructions to the NFS regarding any additional property-specific conditions and/or requirements (e.g., No Work Zones or Archaeological Monitoring requirements) and provide the NFS with Notice to Proceed. **The NFS and/or their contractors shall not initiate staging or ground-disturbing work prior to receiving approval from a USACE CR representative.** Failure to comply with the LIDS Stipulations may jeopardize the NFI’s receipt of Federal funding.

The NFS will ensure that these Stipulations and any property-specific “No Work Zones” are made explicit in demolition contracting documents to be used for construction purposes. Further, the NFS shall brief construction personnel of these Stipulations prior to the commencement of any staging or demolition activities. These briefings shall provide guidance on the nature of potential archeological findings.

USACE reserves the right to conduct unannounced field inspections and monitor demolition activities to verify compliance with LIDS.

General Approach:

- Major demolition activities, including placement of equipment, will be confined to areas where soils have been previously disturbed by activities, such as site development, construction, surface grading, landscaping, utility trenching, etc. USACE, or their designated representative, will identify areas of obvious soil disturbance and direct the NFS’s contractor to work within these areas;

- When heavy equipment is not in use, it will be staged on hard or firm surfaces where equipment is not susceptible to sinking. Paved surfaces will be used to the fullest extent possible;
- Tracked vehicles and/or large-tired equipment will be used whenever possible to reduce the depth of soil disturbance and minimize soil compaction to a depth of six (6) inches (15.2 cm) or less;
- The NFS will ensure that its contractors will not operate heavy equipment on wet soils if the equipment begins to sink more than six (6) inches (15.2 cm) below the current ground surface. Heavy equipment may be operated in the rain, but the NFS will ensure that its contractors will pay special attention to equipment sinkage, as noted above;
- Shearing off structural features at the ground-surface is strongly encouraged so that further soil disturbance is minimized;
- There will be no salvage of architectural materials from below-grade; and,
- Excavation of on-site materials and burial of debris are not permitted.

Activity Specific Guidelines:

- Treatment of Utilities:

Utility lines will be disconnected and capped. Extraction of utility lines is not an eligible USACE cost. In cases where there are no shut-off valves, limited excavation within the utility Rights-of-Way (ROW) will be required to cap these service lines. Excavation will be limited to the existing ROW to the greatest extent feasible to limit unnecessary ground disturbance.

- Footing and Pier Removal:

If it is necessary to remove footings and piers to ensure public health and safety, the soil disturbance caused by these activities should be limited to a depth no greater than six (6) inches (15.2 cm) below the footing or pier to be extracted. The excavation shall not exceed a 2-foot (0.6 m) lateral width from the footing or pier being extracted.

- Slab Removal:

The NFS will ensure, to the fullest extent possible, that its contractors will make every effort to limit any soil disturbance necessary to facilitate this process and limit excavation to within 2-feet (0.6 m) of the foundation perimeter and will not excavate more than six (6) inches (15.2 cm) below the depth of the foundation to minimize soil disturbance.

- Void and/or Feature filling

Any voids which require filling because they are a “health and safety issue” will be filled with clean fill from off-site. Whenever possible this will be a sand matrix, however sand is not required. These voids may include, but are not limited to,

those created as the result of exposing cisterns, privies, wells, and/or basement-like depressions.

- Surface Grading and Site Clean-Up:

The NFS will ensure that its contractors will limit site grading to within the first six (6) inches (15.2 cm) of the existing surface elevation (e.g., side walk level, driveway level, slab level, etc.). The NFS will ensure that its contractors will use light equipment (e.g., small bobcats, hand tools, etc.) to complete final site clean-up.

Treatment of New Discoveries:

- Inadvertent Discovery of Previously Unknown Archaeological Remains and Artifacts

If during the course of demolition work, archaeological artifacts (prehistoric or historic) are inadvertently discovered, and there is no reasonable expectation that the property contains human remains, funerary objects, Native American sacred objects or objects of cultural patrimony, all work must stop immediately within a (50) meter (164 ft) radius buffer zone around the point of discovery; unless there is reason to believe that the area of the discovery may extend beyond in which case the buffer zone will be expanded appropriately, and the Contractor shall take all reasonable measures to avoid or minimize harm to the finds. The contractor shall inform the NFS's representative, who will in turn contact USACE CR staff. In such cases, USACE will deploy a (SOI)-*Qualified* archaeologist to conduct a site assessment. The NFS will ensure that the Contractor does not proceed with work until USACE CR completes consultation with the SHPO, Federally-Recognized Tribes and others, as appropriate. If human remains, funerary objects, Native American sacred objects or objects of cultural patrimony are discovered, or suspected, the provisions stipulated under "Inadvertent Discovery of Human Remains" (below) shall be followed:

- Inadvertent Discovery of Human Remains

If unmarked graves, burials, human remains, or items of cultural patrimony are discovered, or suspected, all work must stop immediately within a one hundred (100) meter (328 ft) radius buffer zone around the point of discovery; unless there is reason to believe that the area of the discovery may extend beyond the one hundred (100) meter (328 ft) radius buffer zone in which case the buffer zone will be expanded appropriately. Any NFS, their contractor, or subcontractor, who knows or has reason to know that they have inadvertently discovered human remains, burials, funerary objects, Native American sacred objects or objects of cultural patrimony must provide immediate notification of the inadvertent discovery, with written confirmation, to the representative of the NFS, who will in

turn contact USACE CR staff. USACE will implement measures to protect the discovery from theft and vandalism. Any human remains or other items in the immediate vicinity of the discovery must not be removed or otherwise disturbed, and no photographs should be taken at this time of the human remains. USACE will implement measures to protect the discovery from theft and vandalism. USACE will notify local law enforcement, and the SHPO, by telephone to assess the nature and age of the human skeletal remains within twenty-four (24) hours of the discovery and accompany local law enforcement personnel during field investigations. USACE will also notify interested Federally-Recognized Tribes of the discovery within the same period. If the appropriate local law enforcement official determines that the remains are not involved in a criminal investigation, USACE will follow jurisdictional guidelines as provided for based on land ownership to determine the course of action for each situation. The NFS will ensure that the Contractor does not proceed with work until USACE CR completes consultation with the SHPO, Federally-Recognized Tribes, and others, as appropriate.

- **Protocol for Working with Archaeological Monitors:**

- **Archaeological Monitoring –Compliance Violations:**

If during spot checks, USACE CR Specialists/Archaeologists observe violations of the Lower-Impact Demolition Stipulations, they shall request that the NFS's representative on-site cease demolition activities until the effects of the construction item can be assessed through intensive visual inspection. If adverse effects are observed, USACE shall consult with SHPO and other Consulting Parties, as necessary.

- **Archaeological Monitoring–Findings Assessment:**

If during the course of work, USACE archeological monitors observe significant or potentially significant findings as a result of activities associated with the construction item a findings assessment will be required. If the USACE archeological monitors determine that a findings assessment will require a discontinuation of work greater than one (1) hour in duration, the archeological monitor is responsible for promptly notifying the NFS's representative on-site regarding the delay. If after the initial one hour findings assessment, the archeologist has determined more evaluation time will be necessary at this location, the archeologist shall promptly convey this to the NFS's representative on-site.

- **Archaeological Monitoring --Asbestos Demolitions:**

The NFS's contractors shall establish a safety perimeter beyond which archeological monitors will not be permitted to cross without first obtaining the appropriate training and personal protective equipment (PPE).

Archaeologists shall have formal asbestos training, a pulmonary fitness examination, and may be required to wear a full respirator and a Tyvek suit. If an archeological monitor needs to cross the safety perimeter, she/he shall approach the NFS's representative on site and notify them of the need to access the demolition site. The NFS's representative on site shall have all equipment inside the work zone stop work so that the archaeologist may conduct a brief inspection. Once the archeological monitor has completed work, she/he shall leave the restricted zone and the work may resume. This procedure applies not only to field inspections but also to monitoring of known archeological sites and investigations of inadvertent discoveries.

Section 4

Process for the Elevation of a Residential Structure

4.1 PRELIMINARY ELIGIBILITY

For purposes of this NS Plan, the term “residential structure” includes where the primary use is habitational. Multifamily structures such as condominium and apartment buildings are grouped with residential structures. To be considered preliminarily eligible for participation in the NS Plan, except for acquisition the structure does not need to meet item 2, a residential structure must meet these criteria:

1. The structure must be in the 10% or 4% AEP year floodplain depending on the location of the structure, based on hydrologic conditions predicted to occur in 2032 (the beginning of the 50-year period of analysis) at a specific location.
2. The structure must have a permanent foundation and be permanently immobilized and affixed or anchored to the ground as required by applicable law and must be legally classified as immoveable real property under state law. Notwithstanding the provisions of MS Code Ann. 75-49-93 , a manufactured, modular or mobile homeowner and any subsequent owner of an immobilized manufactured, modular or mobile home, may not de-immobilize the manufactured, modular or mobile home in the future, by detachment, removal, act of de-immobilization, or any other method. Manufactured, modular and mobile homes that do not meet these requirements are not eligible for elevation. This criterion only applies to residential uses of manufactured, modular, and mobile homes.

A residential structure that has a FFE at the specified floodplain for that location. The eligible residential structures would be elevated to the 1% AEP BFE based on year 2082 hydrology. Costs attributable to elevations in excess of the BFE will not be paid for as a project cost and all such costs must be borne solely by the property owner. If the required elevation is greater than 13 feet above ground level, the structure would still be eligible for elevation up to that height with the residual risk present. Foundations must be designed to properly address all loads and effects, be appropriately connected to the floor structure above, and utilities must be properly elevated.

4.2 SECOND STAGE OF ELIGIBILITY DETERMINATIONS

The following is a general description of the process that will apply to willing owners of preliminarily eligible residential structures. Participating owners of eligible structures must complete and submit an application to USACE, but the processing, investigation and /verifying tasks for final eligibility may be split between USACE and the NFS depending on the capability of the NFS. Incomplete applications or applications that contain false or misleading information or substantial errors will not be processed.

Owners of preliminarily eligible structures that do not want their structure elevated, may elect to not participate. USACE and the NFS will defer any further action on that structure until such time as the property owner elects to participate or until the period of construction ends. If there is a title transfer (i.e., the home is sold or there is a donation, succession, foreclosure, etc.) and the project remains authorized and funded, the new owner(s) may elect to participate. A property owner may elect not to participate at any time prior to the issuance of right-of-entry for construction for the elevation of the structure. For properties with multiple owners, all owners must consent in writing to the elevation of the structure during the application process. Because this NS Plan requires voluntary participation there will be no exercise of eminent domain by the NFS or USACE.

Residential property owners will be required to grant a temporary right-of-entry to USACE and the NFS to enter in and upon the property to conduct such property and structural investigations deemed necessary for USACE to determine final eligibility of the structure for participation in the Project. These investigations may include, structural inspections, surveys, limited environmental testing and site assessments, inspections to verify current elevation and determine elevation requirements, and to conduct other activities deemed necessary by USACE. Refusal to grant temporary right-of-entry to USACE will constitute an election by the property owner not to participate.

Title research and appraisals will be completed by the NFS to confirm fee ownership and the existence of leases, third party interests, and any liens, judgments, or mortgages on the property. The title research will identify the names and addresses of all owners of an interest in the property, inclusive of owners of the fee interest, leasehold or third-party interest and holders of any liens, mortgages, or judgments against the property. The property owner must provide satisfactory proof of ownership of the real property and the permanent structure to be elevated. Proof of ownership is to include an authentic Certificate of Title and a Certificate of Mortgage that identifies the names of all owners of the real property and the structure to be elevated, as well as any holders of a lease interest, third party interest holders and any holders of a lien or encumbrance against the property. All property owners, leaseholders, mortgagees, lienholders, and any other person or entity with an interest in the real property on which the structure to be elevated is located, as well as all persons and entities who have an interest in the structure to be elevated, must consent in writing to the elevation of a structure on a USACE form designated for such purpose. Additionally, the property owner is to provide written verification from the tax assessor that no taxes are due and payable on the property, as well as documentation from any holder of a mortgage, lien, or encumbrance, that the mortgage, lien, or encumbrance is in good standing or has been satisfied and released.

The property must have clear title that is not subject to any outstanding right or interest that will present an impediment to the implementation of the project including but not limited to property/boundary disputed, succession matters, etc. To that end, as one of the conditions of being determined to be eligible to participate in the NS Plan, the property owner will be responsible to clear the title of all ownership issues, (in accordance with the conditions and requirements deemed necessary by the USACE), from holders of leases, liens, judgments,

encumbrances, or third-party interests at the property owner's sole expense. The failure of the property owner to provide clear title documentation and obtain the required consents of other interest holders, to the satisfaction of USACE, will result in a USACE determination of ineligibility of the structure to participate in the Nonstructural Plan.

USACE policy is to avoid the use of project funds for Hazardous, Toxic, and Radioactive Waste (HTRW) removal and remediation activities. See ER 1165-2-132 and the American Society for Testing and Materials (ASTM) E 1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (ASTM, 1997). Pursuant to Engineer Regulation 1165-2-132, Hazardous, Toxic, and Radioactive Waste (HTRW) Guidance for Civil Works Projects (26 June 1992), an American Society for Testing and Materials (ASTM) Phase I Environmental Site Assessment and Asbestos investigation site reconnaissance will need to be conducted. It will be conducted during PED.

Prior to construction and after a right-of-entry for on-site HTRW investigations is provided by the property owner, an ASTM E 1527-13 Phase II Environmental Site Assessment will be completed. If the Phase II Environmental Site Assessment identifies contamination, the property owner will be notified in writing of the remediation that is required and that the work must be performed by a licensed HTRW remediation professional. If the presence of HTRW, asbestos, or asbestos-containing materials in a damaged or friable form is confirmed on the property, the property owner will be obligated, at his sole cost and expense, to conduct all necessary response and remedial activities in full compliance with applicable local, state, and federal laws and regulations and provide proof thereof before USACE makes a final determination as to whether the structure meets the eligibility requirements. In addition, documentation from a third party licensed HTRW remediation professional must be provided by the property owner to USACE with sufficient evidence to support that the contamination has been successfully and properly remediated.

A determination that a structure is qualified for elevation will be made by USACE after all inspections, investigations, assessments, title research, and other required activities related to eligibility for elevation is complete and prior to the development of the scope of work. Additional foundation analysis may be required to verify adequate foundation type.

Additional requirements for residential home elevation are included below.

- The structure is not located on federal property or leased land;
- The structure can be elevated to meet the required BFE so that the habitable floors are raised to levels that will protect the structure from flooding and reduce risk from future losses to the extent practicable. However, in no event will a structure be raised greater than 13 feet above the ground level;
- A signed written certification by the property owners, as confirmed by USACE and NFS assessments, that the structure does not have signs of actual or potential significant structural defects, distress, or failure (i.e., no evidence of corrosion of steel framing or concrete; no water or insect damage to wood framing; no framing that is in obvious need of repair or replacement, no settlement, cracking, buckling, or collapse

- of the foundation; no damage to load bearing or masonry walls; no damage to veneer or signing, no evidence of unrepaired roof leaks, etc.);
- The structure is permanently anchored or affixed to the ground to render it immobile (Section 4.6);
 - The structure is legally classified as immovable real property under state law and if applicable, the structure owner provides USACE with an authentic and current act of immobilization and agrees in writing not to take any future actions such as the removal or detachment of the structure, the execution of an act of de-immobilization, or other actions such that the structure is legally classified as moveable personal property (See Section 4.6);
 - The owner of a manufactured, modular, or mobile home must also be the owner of the real property to which the structure is permanently anchored or affixed (Section 4.6);
 - The property owner does not owe taxes or other debts to any state or local governmental entity or to the United States of America or to USACE;
 - The property owner has not previously received any disaster assistance for the elevation or floodproofing of the structure;
 - The structure must have an approved sanitary disposal system and be in compliance with existing local and state health, building and zoning codes as of the time of the structure elevation. Code compliance is the responsibility of the property owner (both for implementation and cost) as a matter of eligibility of the structure;
 - The implementation of nonstructural measures will not impact threatened or endangered species or their habitat;
 - Implementing nonstructural measures on the property does not require fill in the waters of the United States and would not result in any impact to wetlands;
 - See specific requirements for the elevation of manufactured, modular and mobile homes located in Section 4.6 of this Appendix.

If USACE determines that the structure is eligible for elevation, the entire foundation of the structure will be lifted and placed on a new foundation (i.e., columns, piers, posted or raised foundation walls) so that the lowest habitable finished floor is at or above the 1% AEP BFE predicted to occur in 2082 to a maximum of 13 feet above ground level. All utilities and mechanical equipment, such as air conditioners and hot water heaters, will also be raised up 13 feet above ground level. Property owners may choose to raise the structure, utilities, and/or mechanical equipment in excess of the predicted 2082 1% AEP BFE up to 13 feet; however, costs attributable to elevations in excess of the BFE will not be paid for as a project cost and all such costs must be borne solely by the property owner.

4.3 ELEVATION COSTS

Elevations will require the issuance of state and local government permits prior to the commencement of any onsite construction. No Federal funds will be used to restore, replace, or repair a structure or bring a structure into compliance with applicable building and other codes. No additions to the habitable spaces of a structure (including but not limited to,

outbuildings, detached garages, sheds, etc.) will be permitted in the performance of the elevation work. Elements of structure elevation work that are potentially eligible project costs include, but are not limited to: design costs; costs of title searches (in review of title information submitted by the property owner), surveys; costs of obtaining all required permits (i.e., zoning or land use approvals, environmental permits or required certifications, historic preservation approvals, and building permits); and the costs for the following tasks:

- Raising the roof and extending the walls of a side structure attached to the main structure (i.e., garage);
- Raising mechanical equipment (e.g., air conditioner, furnace, water heater, electrical panel, fuel storage, valves, or meters);
- Connecting, disconnecting, and extending utility connections for electrical power, fuel, incoming potable water, wastewater discharge;
- Meeting access requirements of applicable building and other codes (e.g., stairs with landings, guardrails) and/or the Americans with Disabilities Act;
- Creating large vent openings in the foundation and walls to meet requirements for floodwater entry and exit;
- Special access improvements (e.g., elevators, lifts, ramps, etc.) when a satisfactory written medical opinion is provided by a medical doctor who is active, in good standing and licensed by the state of Mississippi, stating that special handicapped access is required for a handicapped or mobility challenged property owner and/or the property owner's family member and/or other person currently residing in the home, and/or by a tenant currently occupying the home. Multiple access points may also be eligible where necessary to meet state and/or local building and other code requirements;
- Removal of any trees and other vegetation which restrict the elevation work;
- Debris removal (all demolition debris (hazardous and non-hazardous) will be removed and taken to an approved landfill);
- Site grading and site restoration including grading landscaping to it preconstruction condition;
- Temporary site protection measures during the elevation work such as temporary construction fencing;
- Allowable relocation assistance funds for displaced tenants who are unable to occupy the structure during the elevation process in accordance with the Uniform Relocation Assistance (URA) and Real Property Acquisition Policies for Federal and Federally Assisted Programs of 1970, Public Law 91-646, 84 Stat. 1984 (42 U.S.C. 4601), as amended by the Surface Transportation and Uniform Relocation Assistance Act of 1987, Title IV of Public Law 100-17, 101 Stat. 246-256. Relocation assistance for tenants who cannot live in the structure during the elevation process, may include, among other thing, advisory services, eligible reasonable out-of-pocket expenses incurred during temporary displacement (e.g., moving and storage of household goods required to be removed during construction, temporary quarters, meals, etc.);

- If additional work is required as a condition of building permit issuance, and if such work is not listed as eligible herein, the property owner will be required to fund and conduct such additional work. In no event will the structure be elevated if USACE determines that the structure is not physically sound and/or capable of being raised safely.

The costs that exceed that which is necessary to safely elevate a structure are deemed ineligible costs and any such costs are the sole financial responsibility of the property owner. The following items are ineligible:

- Any work that is not strictly necessary for the safe completion of the structure elevation;
- Any structural and system repair due to existing deficiencies;
- Modifications or improvements to a septic system except for extension of lines from the raised structure to the existing system and back flow valves;
- Cost for elevation above the (2082) 1% AEP BFE elevation;
- Modifications to structures that are not attached to the eligible structure;
- Modifications to pools, spas, hot tubs, and related structures or accessories;
- Modifications to decks and patios not connected to or immediately adjacent to the structure except for modifications that are expressly required by building codes (e.g., stairways and landing modifications);
- The proper remediation, removal and disposal of environmental contaminants including but not limited to HTRW, lead, asbestos, and asbestos-containing materials in damaged or friable form. All HTRW remediation costs will be borne solely by the property owner;
- Costs associated with bringing a non-conforming structure into compliance with current building codes, housing codes, and/or other applicable codes;
- Special access improvements are not eligible costs, unless a satisfactory written medical opinion is provided by a medical doctor who is active, in good standing and licensed by the state of Mississippi stating that special handicapped access is required for a handicapped or mobility challenged property owner and/or the property owner's family member and/or other person currently residing in the home, and/or by a tenant currently occupying the home. See Section 4.3;
- Structures not considered the primary residence (i.e., detached garage, shed and/or barns).

Participation in the Nonstructural Plan does not guarantee reduced rates under the NFIP.

Pursuant to 44 CFR 60.3(d), developments are restricted from obstructing the flow of water and increasing flood heights. State and local building and zoning codes must be taken into consideration in the implementation process. Some codes contain restrictions on "substantial improvements" to existing non-confirming structures that require that the entire structure be brought up to current code requirements, which may increase the costs beyond that of the elevation costs alone. In addition, zoning codes may have height restrictions for

buildings in residential areas that might affect the ability of certain structures to be raised without obtaining a variance or other form of relief from the zoning code. The property owner will be responsible for obtaining any required variances. All elevations will be considered “development in the floodplain” and will require local permits prior to any onsite construction. Failure to obtain the required local permits may result in a violation of the local floodplain ordinance and/or the NFIP. The elevated structure must comply with the locally adopted floodplain ordinances. The NFS and the local government with jurisdiction will be responsible for ensuring that the elevated structure is compliant with the NFIP.

4.4 ACCESSIBILITY ACCOMMODATIONS

If a property owner and/or the property owner’s family member or other person or tenant, who is a current occupant of the structure at the time of scheduling elevation of the structure, is physically disabled or has mobility impairments, such as in the case of elderly homeowners, special access improvements (e.g., elevators, lifts, ramps, etc.) may be an eligible cost. A satisfactory written medical opinion must be provided by a medical doctor who is active, in good standing and licensed by the state of Mississippi, stating that special handicapped access is required for a handicapped or mobility challenged property owner and/or the property owner’s family member and/or other person currently residing in the home, and/or by a tenant currently occupying the home. Multiple access points may also be eligible where necessary to meet state and/or local building and other code requirements. Where ramps are used to provide access, the ramps will be designed to meet Federal standards for slope and width. Where ramps are not technically feasible, a mechanical chairlift may be installed. Special access features will be subject to state and local building and other applicable codes.

4.5 RELOCATION ASSISTANCE

Tenants who are deemed to be “displaced” under the Uniform Relocation Assistance and Real Property Acquisition Act (URA) regulations, may be eligible for certain benefits in accordance with Uniform Relocation Assistance and Real Property Acquisition Policies for Federal and Federally Assisted Projects of 1970, Public Law 91-646, 84 Stat. 1894 (42 U.S.C. 4601), as amended by the Surface Transportation and Uniform Relocation Assistance Act of 1987, Title IV of Public Law 100-17, 101 Stat. 246-256; 49 Code of Federal Regulations 24; and HUD Handbook 1378 (collectively referred to as the URA). Displacement longer than 90 days will be consistent with the URA. Appropriate advisory services, including reasonable advance written notice of:

- Date and approximate duration of the temporary relocation;
- Address of the suitable decent, safe, and sanitary dwelling to be made available for the temporary period;
- Terms and conditions under which the tenant may lease and occupy a suitable decent, safe and sanitary dwelling in the building/complex upon completion of the project;

- Provisions of reimbursement, in accordance with the requirements of the URA, for all reasonable out of pocket expenses incurred in connection with the temporary relocation;
- In addition to relocation advisory services, residential displaced tenants may be eligible for other relocation assistance including relocation payments for moving expenses and replacement housing payments for the increased costs of renting a comparable replacement dwelling;
- All temporary housing costs must be approved in advance in writing by the USACE.

4.6 ELEVATION OF MANUFACTURED, MODULAR, AND MOBILE HOMES

There are unresolved areas of legal and policy concern associated with including manufactured, modular, and mobile homes in the structures that may be eligible for elevation. The Project Delivery Team (PDT) has not researched how many of the preliminary eligible structures are manufactured homes, or modular homes, or mobile homes. The PDT is continuing to work with the vertical team, the Offices of Counsel, the USACE National Nonstructural Committee and others, to reach consensus on the propriety of including these types of structures for elevation in the Nonstructural Plan. This collaboration will continue to evaluate how to best protect the federal investment and enforce requirements to ensure that these kinds of homes remain immovable real property and permanently affixed to the ground in perpetuity.

The state of Mississippi classifies property as either immovable or moveable. Immoveable property refers to things like land and everything permanently attached to it like a house or buildings. Moveable property are things that physically exist and can be moved from one place to another. Generally, a house and the land upon which it sits would be considered immovable property. However, if the home is a manufactured, modular or mobile home, it is classified as moveable personal property under state law unless it has been permanently immobilized in accordance with the requirements of state law. See MS Code Ann. 75-49-93 modular and mobile homes that are not permanently affixed to the ground are considered personal property like a vehicle and are subject to the Vehicles License Tax. Further, if the manufactured, modular or mobile home is located on land that is owned by someone other than the owner of the home, the manufactured, modular or mobile home is considered moveable and is treated like cars and boats.

Immobilizing means the manufactured, modular or mobile home is made a part of the land, both physically and legally. If made immovable, the home is legally treated like land and other buildings on the land. In order for a manufactured, modular, or mobile home to be legally classified as immovable real property, the structure owner must comply with the requirements MS Code Ann. 75-49-93 which include the execution of an act or declaration of demobilization stating that the structure will remain permanently attached to the lot or tract of land described in the act or declaration, and the act or declaration of immobilization must contain the written consent of all owners of the structure and all holders of a mortgage or security interest. Upon recordation of the act of immobilization in the public records, the structure is subject to all laws concerning immovable property.

Although an act of immobilization must state that the manufactured, modular, or mobile home will remain permanently attached to the land, the act of immobilization can be “undone”. Even if a manufactured, modular, or mobile home has been immobilized in accordance with state law, MS Code Ann. 75-49-93 authorizes the owner (and subsequent owners) to thereafter de-immobilize the manufactured, modular and mobile home. This process effectively transforms the immobilized corporeal immovable manufactured, modular or mobile home back to the legal status of a corporeal moveable thing and personal as opposed to real property. MS Code Ann. 75-49-93), provides that an owner may de-immobilize a manufactured, modular or mobile home by detachment or removal. To be effective against third persons, the owner must comply with statutory provisions requiring the execution of an act of demobilization, recording of the act in the public records, and the submission of application to the department of public safety, office of motor vehicles, for a new certificate of title. Upon issuance of a new certificate of title, the de-immobilization process is complete, and the manufactured, modular or mobile home will be deemed moveable and subject to all laws concerning moveable personal property.

4.7 REAL ESTATE REQUIREMENTS FOR THE IMPLEMENTATION OF RESIDENTIAL STRUCTURE ELEVATIONS

The elevation of eligible residential structures will require the NFS to acquire a standard right of entry for survey and exploratory work and a standard right of entry for construction. A standard temporary work area easement will be acquired for the duration of construction on any improvements. Also, the NFS will be required to obtain subordinations and releases for all rights required for project implementation, including the temporary ROW easements.

In addition, a non-standard estate in the form of a permanent easement for restrictions and access (permanent easement), will likely be proposed by USACE and submitted in accordance with USACE regulations with a request for approval later in the study process. It is anticipated that such an easement will be imposed in, on, over, and across the land on which the residential structure(s) has been or will be elevated in connection with this project. The contemplated easement will perpetually prohibit the grantors, heirs, successors, assigns, and all others from: (1) using any portion of the ground level of the elevated structure for human habitation; (2) constructing or placing any enclosure or permanent obstruction that would impair the flow of water on the ground level of the elevated structure; and (3) engaging in other uses of the elevated structure or the land that would impair, contravene, or interfere with the integrity of the elevated structure. There would be a reservation of rights and privileges in favor of the grantors, heirs, successors, and assigns to use the land in such a manner so as not to interfere with, or abridge, the rights, easement, prohibitions, and restrictions contained in the easement. The easement would also include a right of ingress and egress over and across the land by NFS, its representatives, agents, contractors, and assigns, for the purpose of inspecting and monitoring the elevated residential structures and land in order to enforce the rights and prohibitions contained in the easement. A similar nonstandard estate (permanent easement) to that described above, may also be required for manufactured, modular and mobile homes that are to be elevated

as part of the Nonstructural Plan. A Real Estate Plan regarding the estates to be acquired will be developed during PED phase of the project.

Section 5

Process for Dry Floodproofing of Eligible Non-Residential Structures

Dry floodproofing consists of sealing all areas below the flood damage risk reduction level of a nonresidential and nonresidential portions of mixed-use structures to make walls, doors, windows, and other openings impermeable to water penetration and watertight to ensure that floodwaters cannot get inside. Based on NFIP testing conducted at the Engineering Research and Development Center, dry floodproofing can generally only be performed on the walls and portions of a conventionally built structure from the ground level to up to 3 feet above ground level. Walls are coated with sealants, waterproofing compounds, or plastic sheeting is placed around the walls and covered. Back-flow valves from water and sewer lines prevention mechanisms such as drain plugs, standpipes, grinder pumps, and back-up valves are installed. Openings, such as doors, windows, sewer lines, and vents, may also be closed temporarily, with sandbags or removable closures, or permanently sealed.

Dry floodproofing measures to be implemented under the Nonstructural Plan include:

- Backflow valves;
- Closures on doors, windows, stairwells and vents--they may be temporary or permanent;
- Rearranging or protecting damageable property--e.g., relocate or raise utilities;
- Sump pumps and sub-drains; and
- Water resistant material; metal windows, doors, and jambs; waterproof adhesives; sealants and floor drains.

Dry floodproofing of nonresidential and structures must be performed in accordance with engineering and design standards and building codes. Applicable design standards and building codes are summarized and complied within the NFIP Technical Bulletin (TB) 3-93, Nonresidential Floodproofing—Requirements and Certification, and the requirements pertaining to dry flood-proofing of nonresidential structures found in 44 C.F.R. §§ 60.3(b)(5) and (c)(4).

5.1 PRELIMINARY ELIGIBILITY

For the purposes of the Nonstructural Plan, the term “nonresidential structure” includes commercial or mixed-use buildings where the primary use is commercial or non-habitational. To be considered preliminarily eligible for participation in the Nonstructural Project, a structure must meet these criteria:

1. The structure must be in the 10% or 4% AEP year floodplain depending on the location of the structure, based on hydrologic conditions predicted to occur in 2032 (the beginning of the 50-year period of analysis) at a specific location.
2. The structure must have a permanent foundation and be permanently immobilized and affixed or anchored to the ground as required by applicable law and must be legally classified as immovable real property under state law.
3. Structure is located in an area where there is low velocity flooding (less than 3 ft/sec) and the flooding is not flashy (more than 1 hour of warning).

Dry floodproofing achieves flood damage risk reduction, but it is not recognized by the NFIP for any flood insurance premium rate reduction when applied to nonresidential and residential-historic structures and may not be used under the NFIP for new or substantially damaged buildings located in a Special Flood Hazard Area.

5.2 SECOND STAGE OF ELIGIBILITY DETERMINATIONS

The following is a general description of the process that will apply to willing owners of preliminarily eligible nonresidential and residential-historic structures. Participating owners of eligible structures must complete and submit an application to USACE, but the processing, investigation and verifying tasks for final eligibility may be split between USACE and the NFS. Incomplete applications or applications that contain false or misleading information or substantial errors will not be processed.

Owners of preliminarily eligible structures that do not want their structure elevated, may elect to not participate. USACE and the NFS will defer any further action on that structure until such time as the property owner elects to participate or until the period of construction ends. If there is a title transfer (i.e., the home is sold or there is a donation, succession, foreclosure, etc.) and the project remains authorized and funded, the new owner(s) may elect to participate. A property owner may elect not to participate at any time prior to the issuance of right-of-entry for construction for the elevation of the structure. For properties with multiple owners, all of the owners must consent in writing to the dry floodproofing of the structure during the application process.

Nonresidential property owners will be required to grant a temporary right-of-entry to USACE and the NFS to enter in and upon the property to conduct such property and structural investigations deemed necessary for USACE to determine final eligibility of the structure for participation in the Project. These investigations may include, structural inspections, surveys, limited environmental testing and site assessments, inspections to verify current elevation and determine dry floodproofing requirements, and to conduct other activities deemed necessary by USACE. Refusal to grant temporary right-of-entry to USACE will constitute an election by the property owner not to participate.

The property owner must submit satisfactory proof of ownership. Proof of ownership will require a Certificate of Title and a Certificate of Mortgage that identifies the names of all

owners of the property, as well as any holders of a lease interest, third party interest holders and any holders of a lien or encumbrance against the property. Additionally, the property owner shall provide written verification from the tax assessor that no taxes are due and payable on the property, as well as documentation from any holder of a mortgage, lien, or encumbrance, that the mortgage, lien, or encumbrance is in good standing or has been satisfied and released.

Title research and appraisals will be completed by the NFS to confirm fee ownership and the existence of leases, third party interests, and any liens, judgments, or mortgages on the property. The title research will identify the names and addresses of all owners of an interest in the property, inclusive of owners of the fee interest, leasehold or third-party interest and holders of any liens, mortgages, or judgments against the property. The property owner must provide satisfactory proof of ownership of the real property and the permanent structure to be dry floodproofed. Proof of ownership will include an authentic Certificate of Title and a Certificate of Mortgage that identifies the names of all owners of the real property and the structure to be dry floodproofed, as well as any holders of a lease interest, third party interest holders and any holders of a lien or encumbrance against the property. All property owners, leaseholders, mortgagees, lienholders, and any other person or entity with an interest in the real property on which the structure to be elevated is located, as well as all persons and entities who have an interest in the structure to be elevated, must consent in writing to the dry floodproofing of a structure on a USACE form designated for such purpose. Additionally, the property owner will provide written verification from the tax assessor that no taxes are due and payable on the property, as well as documentation from any holder of a mortgage, lien, or encumbrance, that the mortgage, lien, or encumbrance is in good standing or has been satisfied and released.

The property must have clear title that is not subject to any outstanding right or interest that will present an impediment to the implementation of the project including but not limited to property/boundary disputed, succession matters, etc. To that end, the property owner will be responsible to clear the title of all ownership issues, (in accordance with the conditions and requirements deemed necessary by USACE), from holders of leases, liens, judgments, encumbrances, or third-party interests at the property owner's sole expense. The failure of the property owner to provide clear title documentation and obtain the required consents of other interest holders, to the satisfaction of USACE, will result in a USACE determination of ineligibility of the structure to participate in the NS Plan.

USACE policy is to avoid the use of project funds for HTRW removal and remediation activities. See ER 1165-2-132 and the American Society for Testing and Materials (ASTM) E 1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (ASTM, 1997). USACE policy is to avoid the use of project funds for HTRW removal and remediation activities. See ER 1165-2-132 and the American Society for Testing and Materials (ASTM) E 1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (ASTM, 1997). Pursuant to Engineer Regulation 1165-2-132, Hazardous, Toxic, and Radioactive Waste (HTRW) Guidance for Civil Works Projects (26 June 1992), an American Society for Testing and

Materials (ASTM) Phase I Environmental Site Assessment and Asbestos investigation site reconnaissance will need to be conducted. It will be conducted during PED.

Prior to construction and after a right-of-entry for on-site HTRW investigations is provided by the property owner, an ASTM E 1527-13 Phase II Environmental Site Assessment will be completed. If the Phase II ESA identifies contamination, the property owner will be notified in writing of the remediation that is required and that the work must be performed by a licensed HTRW remediation professional. If the presence of HTRW, asbestos, or asbestos-containing materials in a damaged or friable form is confirmed on the property, the property owner will be obligated, at his sole cost and expense, to conduct all necessary response and remedial activities in full compliance with applicable local, state, and federal laws and regulations and provide proof thereof before USACE makes a final determination as to whether the structure meets the eligibility requirements. In addition, documentation from a third party licensed HTRW remediation professional must be provided by the property owner to the USACE with sufficient evidence to support that the contamination has been successfully and properly remediated.

A determination that a structure is qualified for dry floodproofing will be made by USACE after all inspections, investigations, assessments, title research, and other required activities related to eligibility is complete, and prior to the development of the scope of work. Additional foundation analysis may be required to verify adequate foundation type.

Additional requirements for nonresidential and residential-historic structures floodproofing are included below.

- The property is not located on Federal property and leased land;
- A signed written certification by the property owners, as confirmed by the USACE and NFS assessments, that the structure does not have signs of actual or potential significant structural defects, distress, or failure (i.e., no evidence of corrosion of steel framing or concrete; no water or insect damage to wood framing; no framing that is in obvious need of repair or replacement, no settlement, cracking, buckling, or collapse of the foundation; no damage to load bearing or masonry walls; no damage to veneer or signing, no evidence of unrepaired roof leaks, etc.);
- The structure is legally classified as immovable real property under state law and if applicable and deemed necessary by USACE, the structure owner provides USACE with an authentic and current act of immobilization and agrees in writing not to take any future actions such as the removal or detachment of the structure, the execution of an act of de-immobilization, or other actions so as to render the structure moveable personal property (See Section 5.6);
- The structure is permanently anchored or affixed to the ground to render it immobile (Section 5.6);
- The property owner must also be the owner of the real property to which the structure is to be permanently affixed;

- The property owner does not owe taxes or other debts to any state or local governmental entity or to the Federal government;
- The property owner has not previously received any disaster assistance for the elevation or floodproofing of the structure;
- The structure must have an approved sanitary disposal system and be in compliance with existing local and state health, building, zoning and other codes as of the time of the dry floodproofing. Code compliance is the responsibility of the owners (both for implementation and cost) as a matter of eligibility of the structure;
- The implementation of nonstructural measure will not impact threatened or endangered species or their habitat;
- Implementing nonstructural measures on the property does not require fill in the waters of the United States and would not result in any impact to wetlands.

5.3 DRY FLOODPROOFING COSTS

Eligible costs. All dry floodproofing will require the issuance of local permits prior to any onsite construction. No Federal funds will be used to restore, replace, or repair the structure or bring the structures up to current building codes. Elements of structure work that are deemed to be potentially eligible dry floodproofing costs include, but are not limited to: design costs; costs of obtaining all required permits (i.e., zoning or land use approvals, environmental permits or required certifications, historic preservation approvals, building permits, etc.); costs for title searches and the review of title documents; survey and inspection costs; and costs for the following tasks:

- Installation of backflow valves;
- Closures on doors, windows, stairwells and vents-- temporary or permanent;
- Rearranging or protecting damageable real property components--e.g., relocate or raise utilities;
- Sump pumps and sub-drains;
- Water resistant material; water resistant window coverings, doors and jambs; waterproof adhesives; sealants and compounds, and floor drains;
- Plastic sheeting around the walls;
- Connecting, disconnecting, and extending utility connections for electrical power, fuel, incoming potable water, wastewater discharge;
- Removal of any trees that restrict the dry floodproofing of a structure;
- Temporary site protection measures during site work.

Work for items that are eligible costs will include actual costs (itemized costs for each task), including but not limited to: design costs, costs of obtaining all required permits (e.g., zoning or land use approvals; environmental permits or required certifications; historic preservation approvals; and building permits), administrative costs for acquisition of real estate interests (including title search and appraisals), costs of surveys, and state and local applicable tax.

Unless otherwise limited by state, Federal, or local laws or ordinances or structural limitations, the dry floodproofing option that provides the greatest level of risk reduction based on the flooding at the 1% AEP BFE predicted to occur in 2082, will be the option available to the owner of the structures. If additional work is required as a condition of building permit issuance, and if such work is not listed previously as eligible, the property owner will be required to complete the required work at the owner's sole expense.

Ineligible costs. The costs that exceed that which is necessary to safely dry floodproof a structure is deemed ineligible costs and any such costs remain the sole responsibility of the property owner. The following costs are ineligible:

- Any structural and system repair due to existing deficiencies;
- Modifications or improvements to a septic system except for extension of lines from the flood proofed structure to the existing system and back flow valves;
- Cost for dry floodproofing more than 3 feet above ground level;
- Modifications to structures that are not attached to the eligible structure;
- Modifications to tubs, pools, spas, hot tubs, and related structures or accessories;
- The proper remediation, removal and disposal of environmental contaminants including but not limited to HTRW, lead, asbestos, and asbestos-containing materials in damaged or friable form;
- Costs associated with bringing a non-conforming structure into compliance with current building code, housing code, and/or other applicable codes.

5.4 REAL ESTATE REQUIRED FOR DRY FLOODPROOFING

A standard temporary work area easement will be required for the duration of construction of any improvements. A separate perpetual non-standard easement in the form of a "Land Use Restrictions Easement and Perpetual Access for Inspection and Project Monitoring Easement" (perpetual easement) which provides the necessary rights and restrictions to protect the federal investment will also be required. Such a non-standard estate will likely be proposed by USACE District and submitted for approval by USACE Headquarters in accordance with USACE regulations later in the study process. The contemplated perpetual easement will prohibit the grantors, heirs, successors, assigns, and all others from engaging in other uses of the structure or the land that would impair, contravene, or interfere with the integrity of the structure. Further, the perpetual easement would contain a reservation of rights and privileges in favor of the grantor(s), heirs, successors and assigns, of all such rights and privileges that can be made of the property without interfering with or abridging the rights, and restrictions imposed, but subject to existing easements for public roads and highways, public utilities, railroads and pipelines. The easement would also include a right of ingress and egress over and across the land by the Non-Federal Sponsor for inspection and monitoring of the structure and land for the enforcement of the rights and prohibitions contained in the easement. A Real Estate Plan regarding the estates to be acquired will be developed during PED phase of the project.

Section 6

Process for Wet Floodproofing of Eligible Non-Residential Structures

Wet floodproofing prevents or provides resistance to damage from flooding while allowing floodwaters to enter the structure or area and equalize pressures on foundation walls or lower-level walls. A key feature associated with wet floodproofing are openings to allow floodwaters in, consisting of engineered flood vents in the structure walls. Per FEMA TB, 7-93:

Flooding of a structure's interior is intended to counteract hydrostatic pressure on the walls, surfaces, and supports of the structure by equalizing interior and exterior water levels during a flood. Inundation also reduces the danger of buoyancy from hydrostatic uplift forces. Such measures may require alteration of a structure's design and construction, use of flood-resistant materials, adjustment of building operation and maintenance procedure, relocation and treatment of equipment and contents, and emergency preparedness for actions that require human intervention.

Wet floodproofing of structures must be performed in accordance engineering design standards and building codes. Applicable design standards and building codes are summarized and compiled within FEMA TB 1-93, Openings in Foundation Walls for Buildings Located in Special Flood Hazard Areas, and FEMA 259, Engineering Principles and Practices for Retrofitting Flood Prone Residential Buildings, FEMA 348. Protecting Building Utilities from Flood Damage, and the requirements pertaining to floodproofing of structures found in 44 C.F.R. §§ 60.3(b)(5) and (c)(4).

6.1 PRELIMINARY ELIGIBILITY

For the purposes of the Nonstructural Plan, the term "nonresidential structure" includes commercial or mixed-use buildings where the primary use is commercial or non-habitational. Multifamily structures such as condominium and apartment buildings are grouped with nonresidential (commercial) structures due to the size and nature of the structures that prevents them from being elevated or acquired. To be considered preliminarily eligible for participation in the Nonstructural Project, a structure must meet these criteria:

1. The structure must be in the 10% or 4% AEP year floodplain depending on the location of the structure, based on hydrologic conditions predicted to occur in 2032 (the beginning of the 50-year period of analysis) at a specific location.
2. The structure must have a permanent foundation and be permanently immobilized and affixed or anchored to the ground as required by applicable law and must be legally classified as immovable real property under state law.

Wet floodproofing achieves flood damage risk reduction, but it is not recognized by the NFIP for any flood insurance premium rate reduction when applied to nonresidential and residential-historic structures and may not be used under the NFIP for new or substantially damaged buildings located in a Special Flood Hazard Area.

6.2 SECOND STAGE OF ELIGIBILITY DETERMINATIONS

The following is a general description of the process that will apply to willing owners of preliminarily eligible nonresidential and residential-historic structures. Participating owners of eligible structures must complete and submit an application to USACE, but the processing, investigation and verifying tasks for final eligibility may be split between USACE and the NFS. Incomplete applications or applications that contain false or misleading information or substantial errors will not be processed.

Owners of preliminarily eligible structures that do not want their structure elevated, may elect to not participate. USACE and the NFS will defer any further action on that structure until such time as the property owner elects to participate or until the period of construction ends. If there is a title transfer (i.e., the home is sold or there is a donation, succession, foreclosure, etc.) and the project remains authorized and funded, the new owner(s) may elect to participate. A property owner may elect not to participate at any time prior to the issuance of right-of-entry for construction for the elevation of the structure. For properties with multiple owners, all owners must consent in writing to the wet floodproofing of the structure during the application process.

Nonresidential and residential-historic structures property owners will be required to grant a temporary right-of-entry to USACE and the NFS to enter in and upon the property to conduct such property and structural investigations deemed necessary for USACE to determine final eligibility of the structure for participation in the Project. These investigations may include, structural inspections, surveys, limited environmental testing and site assessments, inspections to verify current elevation and determine wet floodproofing requirements, and to conduct other activities deemed necessary by USACE. Refusal to grant temporary right-of-entry to USACE will constitute an election by the property owner not to participate.

The property owner must submit satisfactory proof of ownership. Proof of ownership will require a Certificate of Title and a Certificate of Mortgage that identifies the names of all of the owners of the property, as well as any holders of a lease interest, third party interest holders and any holders of a lien or encumbrance against the property. Additionally, the property owner is to provide written verification from the tax assessor that no taxes are due and payable on the property, as well as documentation from any holder of a mortgage, lien, or encumbrance, that the mortgage, lien, or encumbrance is in good standing or has been satisfied and released.

Title research and appraisals will be completed by the NFS to confirm fee ownership and the existence of leases, third party interests, and any liens, judgments, or mortgages on the property. The title research will identify the names and addresses of all owners of an interest

in the property, inclusive of owners of the fee interest, leasehold or third-party interest and holders of any liens, mortgages, or judgments against the property. The property owner must provide satisfactory proof of ownership of the real property and the permanent structure to be dry floodproofed. Proof of ownership is to include an authentic Certificate of Title and a Certificate of Mortgage that identifies the names of all of the owners of the real property and the structure to be dry floodproofed, as well as any holders of a lease interest, third party interest holders and any holders of a lien or encumbrance against the property. All property owners, leaseholders, mortgagees, lienholders, and any other person or entity with an interest in the real property on which the structure to be elevated is located, as well as all persons and entities who have an interest in the structure to be elevated, must consent in writing to the dry floodproofing of a structure on a USACE form designated for such purpose. Additionally, the property owner is to provide written verification from the tax assessor that no taxes are due and payable on the property, as well as documentation from any holder of a mortgage, lien, or encumbrance, that the mortgage, lien, or encumbrance is in good standing or has been satisfied and released.

The property must have clear title that is not subject to any outstanding right or interest that will present an impediment to the implementation of the project including but not limited to property/boundary disputed, succession matters, etc. To that end, the property owner will be responsible to clear the title of all ownership issues, (in accordance with the conditions and requirements deemed necessary by the USACE), from holders of leases, liens, judgments, encumbrances, or third-party interests at the property owner's sole expense. The failure of the property owner to provide clear title documentation and obtain the required consents of other interest holders, to the satisfaction of USACE, will result in a USACE determination of ineligibility of the structure to participate in the NS Plan.

USACE policy is to avoid the use of project funds for HTRW removal and remediation activities. See ER 1165-2-132 and the ASTM E 1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (ASTM, 1997). Pursuant to Engineer Regulation 1165-2-132, Hazardous, Toxic, and Radioactive Waste Guidance for Civil Works Projects (26 June 1992), an American Society for Testing and Materials (ASTM) Phase I Environmental Site Assessment and Asbestos investigation site reconnaissance will need to be conducted. It will be conducted during PED.

Prior to construction and after a right-of-entry for on-site HTRW investigations is provided by the property owner, an ASTM E 1527-13 Phase II Environmental Site Assessment will be completed. If the Phase II Environmental Site Assessment identifies contamination, the property owner will be notified in writing of the remediation that is required and that the work must be performed by a licensed HTRW remediation professional. If the presence of HTRW, asbestos, or asbestos-containing materials in a damaged or friable form is confirmed on the property, the property owner will be obligated, at his sole cost and expense, to conduct all necessary response and remedial activities in full compliance with applicable local, state, and federal laws and regulations and provide proof thereof before USACE makes a final determination as to whether the structure meets the eligibility requirements. In addition, documentation from a third party licensed HTRW remediation professional must be provided

by the property owner to the USACE with sufficient evidence to support that the contamination has been successfully and properly remediated.

A determination that a structure is qualified for dry floodproofing will be made by USACE after all inspections, investigations, assessments, title research, and other required activities related to eligibility is complete, and prior to the development of the scope of work. Additional foundation analysis may be required to verify adequate foundation type.

Additional requirements for nonresidential and residential-historic structures floodproofing are included below.

- The property is not located on Federal property and leased land;
- A signed written certification by the property owners, as confirmed by the USACE and NFS assessments, that the structure does not have signs of actual or potential significant structural defects, distress, or failure (i.e., no evidence of corrosion of steel framing or concrete; no water or insect damage to wood framing; no framing that is in obvious need of repair or replacement, no settlement, cracking, buckling, or collapse of the foundation; no damage to load bearing or masonry walls; no damage to veneer or signing, no evidence of unrepaired roof leaks, etc.);
- The structure is legally classified as immovable real property under state law and if applicable and deemed necessary by USACE, the structure owner provides USACE with an authentic and current act of immobilization and agrees in writing not to take any future actions such as the removal or detachment of the structure, the execution of an act of de-immobilization, or other actions so as to render the structure moveable personal property (See Section 6.6);
- The structure is permanently anchored or affixed to the ground to render it immobile (Section 6.6);
- The property owner must also be the owner of the real property to which the structure is to be permanently affixed;
- The property owner does not owe taxes or other debts to any state or local governmental entity or to the Federal government;
- The property owner has not previously received any disaster assistance for the elevation or floodproofing of the structure;
- The structure must have an approved sanitary disposal system and be in compliance with existing local and state health, building, zoning and other codes as of the time of the dry floodproofing. Code compliance is the responsibility of the owners (both for implementation and cost) as a matter of eligibility of the structure;
- The implementation of nonstructural measure will not impact threatened or endangered species or their habitat;
- Implementing nonstructural measures on the property does not require fill in the waters of the United States and would not result in any impact to wetlands.

6.3 WET FLOODPROOFING COSTS

Eligible costs. All wet floodproofing will require the issuance of local permits prior to any onsite construction. No Federal funds will be used to restore, replace, or repair the structure or bring the structures up to current building codes. Elements of structure work that are deemed to be potentially eligible wet floodproofing costs include, but are not limited to: design costs; costs of obtaining all required permits (i.e., zoning or land use approvals, environmental permits or required certifications, historic preservation approvals, building permits, etc.); costs for title searches and the review of title documents; survey and inspection costs; and costs for the following tasks:

- Wet floodproofing of the structure;
- Engineered flood vents;
- Flood-resistant construction materials such as rigid foam board wall insulation or cement board and molding within the interior of the building,
- Elevation and wet floodproofing of electric outlets,
- Concrete floor treatment and interior wall and floor sealer/stains;
- Exterior paint coatings;
- Sand/water blasting or other manual removal of rusted coatings and application of epoxy coatings;
- Elevation and wet floodproofing of mechanical and electrical equipment;
- Connecting, disconnecting, and extending utility connections for electrical power, fuel, incoming potable water, wastewater discharge;
- Removal of any trees which restrict the elevation of a structure;
- Temporary site protection measures during site work.

Work for items that are eligible costs will include actual costs (itemized costs for each task), including but not limited to: design costs, costs of obtaining all required permits (e.g., zoning or land use approvals; environmental permits or required certifications; historic preservation approvals; and building permits), administrative costs for acquisition of real estate interests (including title search and appraisals), costs of surveys, and state and local applicable tax.

Unless otherwise limited by state, Federal, or local laws or ordinances or structural limitations, the dry floodproofing option that provides the greatest level of risk reduction based on the flooding at the 1% AEP floodplain based on 2082 hydrology, will be the option available to the owner of the structures. If additional work is required as a condition of building permit issuance, and if such work is not listed previously as eligible, the property owner will be required to complete the required work at the owner's sole expense.

Ineligible costs. The costs that exceed that which is necessary to safely dry floodproof a structure is deemed ineligible costs and any such costs remain the sole responsibility of the property owner. The following costs are ineligible:

- Any structural and system repair due to existing deficiencies;

- Modifications or improvements to a septic system except for extension of lines from the flood proofed structure to the existing system and back flow valves;
- Cost for wet floodproofing more than 3 feet above ground level;
- Modifications to structures that are not attached to the eligible structure;
- Modifications to tubs, pools, spas, hot tubs, and related structures or accessories;
- The proper remediation, removal and disposal of environmental contaminants including but not limited to HTRW, lead, asbestos, and asbestos-containing materials in damaged or friable form;
- Costs associated with bringing a non-conforming structure into compliance with current building code, housing code, and/or other applicable codes.

6.4 REAL ESTATE REQUIRED FOR WET FLOODPROOFING

A standard temporary work area easement will be required for the duration of construction of any improvements. A separate perpetual non-standard easement in the form of a “Land Use Restrictions Easement and Perpetual Access for Inspection and Project Monitoring Easement” (perpetual easement) which provides the necessary rights and restrictions to protect the federal investment will also be required. Such a non-standard estate will likely be proposed by USACE District and submitted for approval by USACE Headquarters in accordance with the USACE regulations later in the study process. The contemplated perpetual easement will prohibit the grantors, heirs, successors, assigns, and all others from engaging in other uses of the structure or the land that would impair, contravene, or interfere with the integrity of the structure. Further, the perpetual easement would contain a reservation of rights and privileges in favor of the grantor(s), heirs, successors and assigns, of all such rights and privileges that can be made of the property without interfering with or abridging the rights, and restrictions imposed, but subject to existing easements for public roads and highways, public utilities, railroads and pipelines. The easement would also include a right of ingress and egress over and across the land by the Non-Federal Sponsor for inspection and monitoring of the structure and land for the enforcement of the rights and prohibitions contained in the easement. A Real Estate Plan regarding the estates to be acquired will be developed during PED phase of the project.

Section 7

Flood Risk Reduction Actions to be taken by the Non-Federal Sponsor

The NFS will be required to undertake certain flood event risk reduction actions to comply with Section 402 of the Water Resources Development Act of 1986, as amended (33 U.S.C. 701b-12) (Section 402). These actions, include but are not limited to, actions to ensure that Rankin and Hinds Counties government, and municipal and local governments within the Counties develop, comply, monitor, and enforce floodplain management plans, regulations, building codes, land use and zoning regulations, and any other developmental controls that are consistent and compliant with the requirements of Section 402 and the regulations promulgated thereunder. In addition, the NFS will:

- Inform affected interests of the extent of protection afforded by the National Economic Development (NED) authorized plan not less than once each year;
- Participation in and compliance with applicable Federal floodplain management and flood insurance projects.
- Compliance with Section 402 of the Water Resources Development Act of 1986, as amended (33 U.S.C. 701b-12), including the preparation of a floodplain management plan within one year after the date of execution of the Project Partnership Agreement (PPA); implementation of such plan not later than one year after completion of construction of the project, or functional elements of the project. The final authorized plan will be designed to reduce the impacts of future flood events in the project area, including but not limited to, addressing those measures to be undertaken by non-Federal interests to preserve the level of flood risk reduction provided by the completed project. The NFS will provide an informational copy of the plan to USACE once the plan is finalized.
- Publication of floodplain information and provision of the information to zoning and other regulatory agencies for use in adopting regulations, or taking other actions, to prevent unwise future development and to ensure compatibility with the completed project.

Additionally, the NFS will be obligated to prevent obstructions or encroachments on the properties that have been flood proofed (including prescribing and enforcing regulations to prevent such obstructions or encroachments). Presently, many communities within Rankin and Hinds Counties participate in the NFIP (See FEMA Community Status Book, Mississippi, July, 2023 <https://www.fema.gov/cis/MS.html>).

Section 8

Performance of the Nonstructural Work

The NS Plan may be implemented using one or more of the methods described in this Section. The “traditional method” of implementation is generally described in publications of the USACE National Nonstructural Committee and Flood Risk Management Planning Center of Expertise. Under the traditional method, USACE will procure contracts that will allow a contractor to perform floodproofing work on multiple structures through a series of one or more task orders. In such event, the selected contractor will generally be responsible for all work associated with the elevation and/or dry floodproofing from beginning to end (i.e., from plan approval, to construction, to final inspection and acceptance of the work by USACE). A design build contract will be used as a best practice.

Another potential implementation mechanism allows the NFS to perform “in kind” contributions such as procurement and contracting and construction of the elevation and dry floodproofing. This method would require the NFS to execute an In Kind Memorandum of Understanding consistent with the Project Partnership Agreement.

It is anticipated that implementation of the Nonstructural Plan will occur over an approximate 5-year period. However, this timeframe is highly dependent upon the number of structures actually receiving nonstructural measures, the amount of funding allocated in any given year, and the participation rate. The PDT assumed that it would take a four-month period of time to complete the elevation or floodproofing on structures with a slab foundation, and a three month period of time to complete the elevation or floodproofing of structures with a crawl space foundation.

Maps of the eligible aggregate areas will be prepared by the PDT and regularly updated to depict the current stage of structure elevation eligibility. After USACE confirms final eligibility, the right of entry granted by the property owner will authorize USACE, the NFS, and their respective contractors to enter upon the properties to implement the floodproofing measures and for inspection and enforcement purposes. The easements and any required releases and/or subordination agreements, will be recorded by the NFS in the appropriate public records of the county in which the property is located and will be binding upon all owners, their heirs, assigns and successors in interest, as well as upon all tenants, third party interest holders and holders of any liens, mortgages, judgments, and encumbrances in the property. After the required documents are recorded, the required elevation or dry floodproofing work will be commenced, completed and inspected.

A certificate of occupancy must be issued by the appropriate qualified building official with jurisdiction to certify that the dry floodproofing or elevation work was completed properly and in accordance with the final USACE approved plans and specifications. Additionally for elevations, a professional land surveyor must verify that the structure has been elevated to

the required elevation. When the elevation or dry floodproofing work is completed, all structures must be covered by flood insurance in an amount at least equal to the costs of the elevation or dry floodproofing work, or to the maximum limit of coverage made available with respect to the property, whichever is less. The NFS is responsible for ensuring and maintaining compliance with any enforceable restrictions for the structure and property. The property owner is required to operate and maintain the integrity of their specific nonstructural measures. After final inspection, approval, and acceptance of the work by the District Engineer, a notice of construction completion (NCC) will be issued to the NFS, and the floodproofing or elevation work for the structure will be financially closed out by USACE.

Section 9

Methods for Scheduling and/or Prioritizing Residential Elevations

The scheduling and/or prioritization of residential structure elevations will be subject to the availability of Federal funds. The locations for scheduling and/or prioritizing the work will be determined during PED but will be conducted in an efficient and cost-effective manner. Some of the methods for scheduling and/or prioritizing nonstructural work that will be considered as part of the prioritization process are as follows:

9.1 CLUSTERING

If numerous property owners in a contiguous neighborhood or subdivision agree to participate, then that particular area could be targeted for priority in structure elevation implementation. A focus on clustered properties can create a ranking hierarchy of which properties to address first. The size of a cluster will need to be defined but could consist of zip codes or neighborhoods. This approach will rank efficiency as the main factor in determining which eligible properties should be prioritized.

9.2 CLUSTERING BASED ON LOW-INCOME OR ENVIRONMENTAL JUSTICE COMMUNITIES

This methodology would identify populations in areas of EJ concern which are areas where the population is exposed to high levels of environmental stressors and reside in disadvantage communities as identified by the Council on Environmental Quality's Climate and Economic Justice Screening Tool or are low-income or majority minority populations within the project area using the most recent economic and demographic statistics from the U.S. Census Bureau. This approach would rank environmental and demographic data as the main factor in determining which eligible properties should be prioritized. Homeowners in disadvantaged communities or those living at or below the poverty level would be given priority.

9.3 RISK-LEVEL

Willing property owners may not exist in clusters. In such cases, an alternative option is to focus on the willing property owners who have structures that exhibit the highest risk for flood damages. For example, if 1,000 property owners who reside in the 10% AEP floodplain will be prioritized for construction. Once these properties are elevated, the next highest-risk properties 4% will be targeted. This approach will rank risk exposure as the main factor in determining which eligible properties should be prioritized.

9.4 FIRST-COME, FIRST-SERVED

This approach would involve creating a list of eligible structures that will be ranked based on how quickly elevation contractors can be procured and the processing of applications and the finalization of eligibility determinations. This approach would help ensure that resources will be used effectively by focusing on properties that have owner support for the residential structure elevations.

Section 10

Operation, Maintenance, Repair, Replacement, and Rehabilitation

There are no NFS OMRR&R obligations for the completed nonstructural work other than the performance of monitoring and periodic inspections. The required inspection and monitoring of the completed nonstructural work will be detailed in the Final OMRR&R Manual issued by USACE to the NFS. These OMRR&R obligations will commence upon the issuance of a Notice of Construction Completion (NCC) by USACE. In accordance with the requirements of the Final OMRR&R Manual, the NFS will conduct periodic inspections at specified intervals and provide written certifications to USACE that the structures and lands have been inspected and document whether or not any violations have been found.

Inspections by the NFS of elevated residential structures will determine among other things, that no part of the structure located below the level of the lowest habitable finished floor has been converted to living area for human habitation, or otherwise altered in any manner which would impede the movement of waters beneath the structure; that the area below the predicted 2082 1% AEP BFE is being used solely for the parking of vehicles, limited storage, or access to the structure and not for human habitation; that mechanical, electrical or plumbing devices have not been installed below the BFE; that the property is in compliance with all applicable floodplain ordinances and regulations. USACE will have the right, but not the obligation, to perform its own inspections of the elevated and flood proofed structures pursuant to the project. For all structure types (residential and nonresidential) OMRR&R costs are expected to be 'de minimus'.

Beginning at the time of issuance of the NCC, the property owner will be responsible for all costs and risk associated with maintaining, repairing, rehabilitating and replacing the completed floodproofing measures on the property.