



# St. Tammany Parish, Louisiana Feasibility Study



**Appendix H – Nonstructural Implementation Plan**

**July 2023**

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# Section 1

## Definitions Related to the Nonstructural Plan

Term	Definition
AEP	Annual Exceedance Probability or 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 100-year 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 coastal storm surge inundation 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 La. R.S. 51:912, ART XIV-B., and be legally classified as immovable real property under state law. Notwithstanding the provisions of La. R.S. 9:1149.6, the manufactured homeowner and any subsequent owner of an immobilized manufactured home, may not deimmobilize the manufactured home in the future by detachment, removal, authentic act of deimmobilization, 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 La. R.S. 9:1149.4, as amended from time to time, and be legally classified as immovable real property under state law. Notwithstanding the provisions of La. R.S. 9:1149.6, the mobile homeowner and any subsequent owner of

an immobilized mobile home, may not deimmobilize the mobile home in the future by detachment, removal, authentic act of deimmobilization, or any other method.

Modular Home	"Modular home" and "modular housing" mean a factory-built, residential dwelling unit built to the International Residential Code as adopted by the Louisiana State Uniform Construction Code Council pursuant to La. R.S. 51:911.22, as amended from time to time. 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 La. R.S. 51:912, ART XIV-B. Notwithstanding the provisions of La. R.S. 9:1149.6, the modular homeowner and any subsequent owner of a modular home, may not deimmobilize the modular home in the future by detachment, removal, authentic act of deimmobilization or any other method.
National Flood Insurance Program (NFIP)	<p>1) 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>National Flood Insurance Program (NFIP). 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 Sponsor (NFS)	The NFS is the cost-sharing partner for the study, 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 study include the elevation of eligible residential structures and dry floodproofing of eligible nonresidential structures.
Nonresidential structure	A nonresidential structure includes commercial or mixed-use building 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 Plan, a structure must meet these criteria:

Preliminary Structure Eligibility Criteria	<ol style="list-style-type: none"><li>1. The structure must have a first-floor elevation at or below the applicable floodplain (which may be either a 25, 50 or 100 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.</li><li>2. The structure must be outside of the area of influence of the structural features recommended in the Optimized Tentatively Selected Plan (Optimized TSP) and not be receiving flood risk reduction benefits from the structural features (i.e., outside of the areas of influence (defined as the area that benefits from a given structural measure in the form of lowering stages) of the Optimized TSP.</li><li>3. The elevation or floodproofing measures proposed for the structure must be economically justified, as defined herein.</li><li>4. 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. Notwithstanding the provisions of La. R.S. 9:1149.6, a manufactured, modular or mobile homeowner and any subsequent owner of an immobilized manufactured, modular or mobile home, may not deimmobilize the manufactured, modular or mobile home in the future, by detachment, removal, act of deimmobilization, or any other method. Manufactured, modular and mobile homes that do not meet these requirements are not eligible for elevation. This criteria only applies to residential uses of manufactured, modular, and mobile homes.</li></ol>
Structural Plan	Structural measures are physical modifications designed to reduce the frequency of damaging levels of flood inundation. For purposes of this study, 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 .



## Section 2

# Introduction

In concert with the structural measures of the Optimized Tentatively Selected Plan (Optimized TSP) TSP, the nonstructural measures are a key component to reducing damages from riverine, rainfall and coastal storm events and supporting sustainable development in the study area. USACE recognizes that there are unique challenges in the implementation of a relatively large nonstructural plan. Because of this, USACE has proactively leveraged national experts in the planning, design, and construction of the nonstructural measures included in the Nonstructural Plan for this study. These national experts include the USACE National Nonstructural Committee, Flood Risk Management Center of Expertise, as well as project delivery teams that are currently working to implement similar projects (e.g., Southwest Coastal Louisiana; South Central Coastal Louisiana, Neuse River Basin; Florida Keys Monroe County; and the Fire Island Inlet to Montauk Point General Reevaluation Study). See generally: <https://www.crt.state.la.us/Assets/OCD/hp/uniquely-louisiana-education/Disaster-Recovery/The%20History%20of%20Building%20Elevation%20in%20New%20Orleans%2012-21-12.pdf> The Non Federal Sponsor (NFS), the Coastal Protection and Restoration Authority Board of Louisiana (CPRAB), and local stakeholders have also provided valuable information pertinent to the study. The USACE places a priority on continuing this coordination during preconstruction engineering and design (PED) and construction, and sharing lessons learned with other USACE teams. The PED phase occurs after Congress authorizes the final recommended plan.

This Nonstructural Implementation Plan describes the general process for the implementation of elevations and dry floodproofing measures to reduce the risk of flood damages to residential and nonresidential structures within the study area. The Plan is based on previous and ongoing USACE projects and studies that contain a nonstructural component in the tentatively selected and recommended plans, however the implementation of the Nonstructural Plan for this study may be modified when new USACE guidance is issued for the implementation of nonstructural plans and as the study progresses. 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.

The primary goal of the Nonstructural Plan proposed as part of the Optimized TSP is to reduce flood risk for structures that are outside of the influence area of the structural features proposed in the same Optimized TSP. 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 parish. See Table H:1-1. A total of approximately 6,410 structures in the study area meet this requirement. Of the approximate total of 6,410 structures, there are approximately 5,583 residential structures which include 417 manufactured, modular homes and mobile homes (trailers) and 827 nonresidential structures. Property owner participation in the Nonstructural Plan is voluntary.

## 2.1 SUMMARY OF NONSTRUCTURAL PLAN DEVELOPMENT

According to Planning Bulletin 2019-03, nonstructural analyses are to be conducted using a “logical aggregation method.” Rather than the individual structure, selected groups of structures known as “aggregates” are the unit of analysis and each such aggregate is a separable element that must be incrementally justified. Aggregates were arranged based on several factors. Since the study area is subject to riverine, rainfall and coastal storm flood events, aggregates were primarily grouped according to the source (type of flood event) of the flooding. The inland aggregates that were grouped by riverine flood sources were further divided based on whether structures were located either in a rural or urban area. The coastal aggregates were further subdivided based on geographic boundaries. Using this method, 20 floodplain aggregates (groups of structures) were identified. An assessment of all structures located in the 10, 20, 50, and 100-year (10 percent, 4 percent, 2 percent, and 1 percent annual exceedance probability or AEP) floodplains was performed (Figure 4-3). The net benefits of each aggregate were analyzed based on the damages they would incur at the 10 percent, 5 percent, 2 percent and 1 percent AEP.

For each incremental floodplain aggregate, the combination of structures being elevated and dry floodproofed within an incremental floodplain, must be economically justified. The results of the study showed that 16 of the 20 aggregates within the study area were economically justified up to the 4 percent (25 year) AEP floodplain. Coastal Slidell was economically justified up to the 2 percent (50 year) AEP Floodplain, and coastal Lacombe, coastal Mandeville, and coastal Madisonville were economically justified up to the 1 percent (100 year) floodplain. See Table H:1-1.

The aggregates that showed flood damages (e.g. had FFE lower than the analyzed floodplain) were included in the Nonstructural Plan with residential structures considered for elevation and nonresidential structures considered for dry floodproofing. In order to be preliminarily eligible for inclusion in the Nonstructural Plan the follow criteria must be met:

- A.** The structure must have a first-floor elevation at or below the applicable floodplain (which may be either a 25, 50 or 100 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.
- B.** The structure must be outside of the area of influence of the structural features recommended in the Optimized Tentatively Selected Plan and not going to receive flood risk reduction benefits from the structural features of the Optimized TSP (i.e., outside of the areas of influence of the West Slidell and South Slidell Levee and Floodwall System and the Mile Branch Channel Improvements).
- C.** The elevation or dry floodproofing measures proposed for the structure must be economically justified, as defined herein.

- D.** 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 La. R.S. 9:1149.6, a manufactured, modular or mobile home owner and any subsequent owner of an immobilized manufactured, modular or mobile home, may not deimmobilize the manufactured, modular or mobile home in the future, by detachment, removal, act of deimmobilization, or any other method. Manufactured, modular and mobile homes that do not meet these requirements are not eligible for elevation. This criteria only applies to residential uses of manufactured, modular, and mobile homes.

Additional information regarding the development and refinement of the Nonstructural Plan is contained in Appendix F: Economics.

Table H: 1-1. List of Aggregates included in Nonstructural Aggregation

<b>Aggregate Name</b>	<b>Percent AEP Floodplain</b>
Abita River Rural	4%
Bayou Castine	4%
Bayou Chinchuba	4%
Bogue Chitto River	4%
Lacombe Bayou	4%
Rural Bogue Falaya	4%
Rural Little Bogue Falaya	4%
Rural Pearl River	4%
Rural Tchefuncte	4%
Tchefuncte	4%
Urban Abita River	4%
Urban Bogue Falaya	4%
Urban Little Bogue Falaya	4%
Urban Pearl River	4%
Urban Tchefuncte	4%
Western Tchefuncte.	4%
Coastal Slidell	2%
Lacombe Coastal	1%
Coastal Mandeville	1%
Coastal Madisonville	1%

The structures within the influence area of the structural portions of the Optimized TSP (West Slidell and South Slidell Levee and Floodwall System, and Mile Branch Channel Improvements) were removed from the Nonstructural Plan because they will receive flood risk reduction from the structural measures. Additional structure-specific analysis will be performed during PED to determine final structure eligibility and the most appropriate and cost-effective floodproofing measures to be employed, including an analysis of elevations and dry floodproofing.

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 study progresses and/or as the Nonstructural Plan is finalized. While groups of structures (aggregates) have been evaluated for the most cost effective nonstructural measure, the USACE reserves the right to determine which measure shall ultimately be implemented at each structure location.

## 2.2 PROPOSED NONSTRUCTURAL MEASURES

The Nonstructural Plan is currently based on the following measures, which will be refined as additional data becomes available. Additional information regarding other Nonstructural measures will be added, as appropriate, and as the Nonstructural Plan is refined.

1. **Elevation of eligible residential structures** to the 100-year base flood elevation (BFE) based on year 2082 hydrology. 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. Elevations will not exceed 13 feet. Actions may include the following:
  - Elevation on piers, columns, or piles;
  - Elevation on continuous foundation walls;
  - Elevating on open foundations (e.g., piles, piers, posts, or columns);
  - Elevation of slab;
  - Slab separation;
  - Elevation on fill;
  - Second story conversion/attic build-out.
2. **Dry floodproofing** of eligible nonresidential structures to make the structure watertight below the BFE to prevent flood waters from entering, which may include sealing all areas of a structure up to a maximum of approximately 3 feet above ground level to reduce damage caused by inundation by making walls, doors, windows and other openings resistant to penetration by water. The maximum recommendation of dry floodproofing at three feet is based on hydraulic loading limits. Greater heights may be possible if an engineering analysis of a structure confirms its physical capacity to resist greater loads. 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 sealed. Dry floodproofing will be completed on eligible structures at or below 3 feet based on hydrologic conditions predicted to occur in 2032 (the beginning of the 50-year period of analysis). The following are additional dry floodproofing methods included in the Nonstructural Plan:
  - Sealing building to make it watertight or impermeable to floodwaters using waterproof membranes or sealants to reduce seepage of floodwater through walls and wall penetrations;
  - Use of watertight shields for doors and windows;
  - Reinforcing walls to withstand floodwater pressure and impact forces generated by floating debris;
  - Anchoring the structure to resist flotation, collapse, and lateral movement;
  - Installing drainage collection systems and sump pumps to prevent sewer backup, control the interior water level, or reduce hydrostatic pressure on the slab and walls;
  - Bracing of walls to address hydrostatic and hydrodynamic forces;

- Installing removable/permanent flood panels;
- Establishment of staging areas.

Flood proofed and elevated structures shall be considered a separable element and functional portion of the project.

### 2.3 HISTORIC STRUCTURES

Historic structures will be considered for elevation and dry floodproofing and after consultation pursuant to Section 106 of the National Historic Preservation Act. Based upon the historic preservation and flood protection requirements established by the U.S. Department of Interior and the U.S. Department of Homeland Security's Federal Emergency Management Agency, respectively, Elevation Design Guidelines for Historic Buildings in Louisiana Gulf Opportunity (GO) Zones, have been prepared by the Louisiana Office of Cultural Development, Office of Historic Preservation, to inform property owners and local Historic Preservation Commissions (HPCs) of elevation design principles to best ensure that historic properties are mitigated in a manner that protects their historic features.

<https://www.crt.state.la.us/Assets/OCD/hp/uniquely-louisiana-education/Disaster-Recovery/Final%20Elevation%20Design%20Booklet%2012-07-15%20v2.pdf>

The Guidelines represent a framework in which a range of potential elevation actions, each with a range of planning considerations, including neighborhood context, treatment of elevation and historic fabric interface, and vacant parcels, may be evaluated to produce the best, individualized approach for a given historic building and/or historic district. Although the National Flood Insurance Project (NFIP) provides some relief for historic structures from having to comply with floodplain management requirements, the NFIP and Federal Emergency Management Agency (FEMA) recognize that historic structures should participate in mitigation measures that can reduce the impacts of flood damages. Under the NFIP regulations and the floodplain regulations of some of the communities in the study area, an historic structure is not eligible for floodproofing if the elevation or dry floodproofing methods will preclude the structure's continued designation as an "historic structure" or will be damaging to the historical character or value of the structure as determined by the Louisiana State Historic Preservation Office (SHPO). Cultural resources, including archaeological resources and historic/architectural resources, could be directly and indirectly affected by the implementation of the Nonstructural Plan. Based on the history of the study area and the number of existing historic sites and artifacts found during previous investigations, a relatively low potential exists that previously unrecorded archaeological sites will be identified during site investigations. To ensure full consideration of potential impacts to cultural resources, a Programmatic Agreement has been developed between the USACE, New Orleans District and the Louisiana SHPO regarding the implementation of the Optimized TSP in the study area. The Final Programmatic Agreement will be contained in the FIFR-EIS 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 Optimized TSP in order to satisfy USACE's Section 106 responsibilities for project undertakings.

## **2.4 PUBLIC EDUCATION AND ENGAGEMENT**

USACE and/or the NFS will engage in a public education campaign to inform property owners of the nonstructural component of the Optimized TSP 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 shall 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 Nonstructural Plan, it is imperative that St. Tammany Parish and local agencies are instrumental in the effort to communicate the benefits of the 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

# Process for the Elevation of Residential Structures

### 3.1 PRELIMINARY ELIGIBILITY

For purposes of this Nonstructural Implementation Plan, the term “residential structure” includes one, two, or three story single family homes and smaller multifamily homes such as duplexes. 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 Plan, a residential structure must meet these criteria:

1. The structure must have a first-floor elevation at or below the applicable floodplain (which may be either a 25, 50 or 100 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 be outside of the area of influence of the structural features recommended in the Optimized Tentatively Selected Plan and not be receiving flood risk reduction benefits from the structural features (i.e., outside of the areas of influence of Optimized Tentatively Selected Plan --the West Slidell and South Slidell Levee and Floodwall System and the Mile Branch Channel Improvements).
3. The elevation measures proposed for the structure must be economically justified, as defined herein.
4. 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. Notwithstanding the provisions of La. R.S. 9:1149.6, a manufactured, modular or mobile homeowner and any subsequent owner of an immobilized manufactured, modular or mobile home, may not deimmobilize the manufactured, modular or mobile home in the future, by detachment, removal, act of deimmobilization, or any other method. Manufactured, modular and mobile homes that do not meet these requirements are not eligible for elevation. This criteria 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 (i.e., the 4 percent, 2 percent or 1 percent AEP floodplain), and is in an area outside of the influence from the structural features (based on hydrologic conditions predicted to occur in 2032) will be considered for eligibility for elevation of the structure “in place.” The eligible residential structures would be elevated to the 100-year base flood elevation (BFE) based on year 2082



hydrology. If the required elevation is greater than 13 feet above ground level, the structure would not be eligible for elevation and would be ineligible to participate due to engineering and risk related factors. 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.

### **3.2 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 NFS's capability. 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 elevation of the structure during the application process. Because this Nonstructural Plan requires voluntary participation there will be no buy-outs, relocations of structures outside of the applicable floodplain, or the 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 of the 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 shall 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 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 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;

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 Nonstructural Plan, the property owner shall 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, shall 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 (ESA) and Asbestos investigation site reconnaissance was conducted on 1-22 October 2021 to assess the potential for HTRW materials within the footprints for each of the alternatives in the Final Array of Alternatives. A second updated ASTM E 1527-13 Phase I Environmental Site Assessment was completed on 8 March 2023 for the Optimized TSP and is contained in Appendix C: Environmental. The March 2023 ESA determined that there is a low probability of encountering HTRW during construction within the Optimized TSP footprint and the borrow sites.

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 ESA 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 shall 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. See Appendix C: Environmental.

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 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 siding, no evidence of unrepaired roof leaks, etc.);
- The structure is permanently anchored or affixed to the ground to render it immobile (Section 3.6);
- 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 deimmobilization, or other actions such that the structure is legally classified as moveable personal property (See Section 3.6);
- 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 3.6);
- 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 the 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 habitats;
- 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 3.6 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 100-year 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 100-year 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. Detailed guidance on foundation construction can be found in FEMA P-550 “Coastal Construction Manual” Volume 1 (August 2011) Volume 1 [https://www.fema.gov/sites/default/files/documents/fema\\_p550-recommended-residential-construction-coastal-areas\\_0.pdf](https://www.fema.gov/sites/default/files/documents/fema_p550-recommended-residential-construction-coastal-areas_0.pdf)

### 3.3 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 Louisiana, 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 3.3. 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) shall 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 things, 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 shall 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) 100 year 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 shall 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 Louisiana 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 3.3;
- Structures not considered the primary residence (i.e., detached garage, shed and/or barns).

Residential property owners may be eligible for reduced insurance rates under the NFIP if the first floor of the structure is at or above the Base Flood Elevation (BFE) (or higher if specified by local regulations) after the elevation is completed and a certificate of occupancy has been issued. However, the 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 shall 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.

### **3.4 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 Louisiana, 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 3.3. 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 shall 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 shall be subject to state and local building and other applicable codes.

### **3.5 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.

### **3.6 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. At this time, there are approximately 417 homes that are either manufactured, modular or mobile homes included in the total number of 5,583 residential structures that are preliminarily eligible for elevation. The Project Delivery Team (PDT) has not researched how many of the 417 structures in this count are manufactured homes, or modular homes, or mobile homes. Further investigation into the legal classification of these 417 structures will be conducted by the PDT before PED. 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 kind of homes remain immovable real property and permanently affixed to the ground in perpetuity.

The state of Louisiana 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 La. R.S. 9:1149.4 (2022) Manufactured, 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 of La. R.S. 9:1149.4 (2022), which include the execution of an act or declaration of demobilization stating that the structure shall 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 shall 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, La. R.S. 9:1149.6 (2022) authorizes the owner (and subsequent owners) to thereafter deimmobilize 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. La. R.S. 9:1149.6 (2022), provides that an owner may deimmobilize 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 deimmobilization, 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 deimmobilization process is complete, and the manufactured, modular or mobile home shall be deemed moveable and subject to all laws concerning moveable personal property.

### **3.7 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 CEMVN 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 the Coastal Protection and Restoration Authority Board of Louisiana, 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.

See Appendix G: Real Estate Plan for further discussion regarding the estates to be acquired.

## Section 4

# Dry Floodproofing of Eligible Nonresidential Structures

Dry floodproofing consists of sealing all areas below the flood damage risk reduction level of a nonresidential structure 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 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). Design standards identified in Appendix D: Engineering and associated costs identified in Appendix D Annex 5: Cost Engineering were developed to comply with current standards as of March 2023 and Appendix F: Economics.

### 4.1 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:

- A. The structure must have a first-floor elevation at or below the applicable floodplain (which may be either a 25, 50 or 100 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.
- B. The structure must be outside of the area of influence of the structural features recommended in the Optimized Tentatively Selected Plan and not be receiving flood risk reduction benefits from the structural features (i.e., outside of the areas of influence (defined as the area that benefits from a given structural measure in the form of lowering stages) of the Optimized Tentatively Selected Plan).
- C. The floodproofing measures proposed for the structure must be economically justified, as defined herein.
- D. 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.

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 structures and may not be used under the NFIP for new or substantially damaged buildings located in a Special Flood Hazard Area.

## **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 nonresidential 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. Because the Nonstructural Plan requires voluntary participation, there will be no buy-outs, relocations of structures outside of the applicable floodplain, or the exercise of eminent domain by the NFS or USACE.

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 shall 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 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 of the 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 shall 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 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.

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 shall 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, shall 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 (ESA) and Asbestos investigation site reconnaissance was conducted on 1-22 October 2021 to assess the potential for HTRW materials within the footprints for each of the alternatives in the Final Array of Alternatives. A second updated ASTM E 1527-13 Phase I Environmental Site Assessment was completed on 8 March 2023 for the Optimized TSP and is on file within Appendix C: Environmental. The March 2023 ESA determined that there is a low probability of encountering HTRW during construction within the Optimized TSP footprint and the borrow sites. 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 ESA 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 shall 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. See Appendix C: Environmental.

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 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 deimmobilization, or other actions so as to render the structure moveable personal property (See Section 3.6);

- The structure is permanently anchored or affixed to the ground to render it immobile (Section 3.6);
- 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 habitats;
- 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.

### 4.3 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 shall 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 100-year storm surge flood state predicted to occur in 2082, shall 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 are 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.

#### **4.4 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 CEMVN and submitted for approval by HQUSACE 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. (Refer to Appendix G: Real Estate Plan for further discussion regarding the estates to be acquired.)





## Section 5

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

The Non-Federal Sponsor 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 St. Tammany Parish government, and municipal and local governments within the Parish 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 shall:

- 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 shall 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, St. Tammany Parish participates in the NFIP (See FEMA Community Status Book, Louisiana October 2019 <https://www.fema.gov/cis/LA.html> ).

## Section 6

# Performance of the Nonstructural Work

The Nonstructural 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 Floodproofing 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 12-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. A 12-year implementation schedule is based on the assumption that five separate contractors would each floodproof and/or elevate 100 structures concurrently, thereby totaling approximately 500 structures to be elevated and/or floodproofed within a given year. The implementation of other USACE projects in Louisiana containing a nonstructural plan were also considered in making the 500 structures a year assumption. The PDT also 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 foundation.

Maps of the 16 eligible aggregate areas will be prepared by the PDT and regularly updated to depict the current stage of structure elevation eligibility. After the 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, shall be recorded by the NFS in the appropriate public records of the parish in which the property is located and shall be binding upon all of the 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 7

# 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:

### 7.1 CLUSTERING

If numerous property owners in a contiguous neighborhood or subdivision agree to participate, 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.

### 7.2 CLUSTERING BASED ON LOW-INCOME OR ENVIRONMENTAL JUSTICE COMMUNITIES

This methodology would identify populations that are exposed to high levels of environmental stressors and/or are low-income or minority populations within the project area using up-to-date economic statistics, aerial photographs, and U.S. Census Bureau 2013-2017 American Community Survey (ACS) estimates. EPA has developed an environmental justice (EJ) mapping and screening tool called EJSCREEN, which is based on nationally consistent data and an approach that combines environmental and demographic indicators in the form of EJ indexes. EJSCREEN relies on the 2013-2017 ACS 5-year summary file data. This approach would rank environmental and demographic data as the main factor in determining which eligible properties should be prioritized.

### 7.3 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 4 percent (25 year) AEP Floodplain will be prioritized for construction. Once these properties are elevated, the next highest-risk properties (6-10-year floodplain) will be targeted. This approach will rank

risk exposure as the main factor in determining which eligible properties should be prioritized.

#### **7.4 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 8

# 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 shall be detailed in the Final OMRR&R Manual issued by USACE to the NFS. These OMRR&R obligations shall 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 shall conduct periodic inspections at specified intervals and provide written certifications to USACE that the structures and lands have been inspected and documenting 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 100-year 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 shall 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'. Costs for these efforts have not yet been calculated but will be included in the FIFR-EIS.

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