



APPENDIX L

NONSTRUCTURAL IMPLEMENTATION PLAN



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APPENDIX L

Nonstructural Implementation Plan

A. Definitions

Term	Definition
0-25-Year Floodplain	The 0-25-Year Floodplain is defined as having up to a 4% chance of being exceeded in any given year.
Base Flood	Defined by the National Flood Insurance Program (NFIP) as the “flood having a 1% 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 BFE is shown on community’s Flood Insurance Rate Map (FIRM).
Dry Flood Proofing	Dry flood proofing makes the structure watertight below the level for which hurricane storm surge risk reduction is provided by preventing flood waters that derive from storm surge from entering the structure. Dry floodproofing may include one or more of the following methods: using waterproof membranes or sealants to reduce seepage of floodwater through walls and wall penetrations; use of watertight shields for doors and windows; and/or installing measures to prevent sewer backup.
Economically Justified	The cost to elevate the structure does not exceed the total monetary cost of the hurricane storm surge damages that are anticipated to be avoided over the 50-year period of analysis (years 2025-2075).
Eligible structures	Structures that are determined by the United States Army Corps of Engineers (USACE) to be eligible for flood proofing after the completion of the investigations and analyses as described herein.
Flood Proofing	Any combination of structural and nonstructural additions, changes, or adjustments to structures which reduce the risk of hurricane storm surge damage to improved real property, water and sanitary facilities, structures and their contents.
Historic Structure	As defined in 44 CFR Part 59, means any 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 programs 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 programs that have been certified either by (a) an approved state program as determined by the Secretary of the Interior or; (b) directly by the Secretary of the Interior in states without approved programs.



<p>Hazardous, Toxic, or Radioactive Waste (HTRW)</p> <p>Localized Storm Surge Risk Reduction Measures</p>	<p>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”.</p> <p>Measures that are intended to reduce the risk of damage from certain hurricane storm surge events, as defined in this report. This measure consists of materials such as earth, concrete, masonry, or steel not to exceed six feet in height. These measures can be placed around a single structure or a small contiguous group of structures.</p>
<p>Non-Federal Sponsor (NFS)</p>	<p>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.</p>
<p>Nonstructural Measures</p>	<p>Nonstructural Measures are permanent or contingent measures applied to a structure and/or its contents that reduces the risk of damages that could result from hurricane storm surge. Nonstructural measures differ from Structural measures (i.e., levees, floodwalls, etc.) in that they focus on reducing the consequences of damages from hurricane storm surge instead of focusing on reducing the probability of damages from hurricane storm surge.</p>

B. Introduction

This Nonstructural Implementation Plan describes the general process for the implementation of nonstructural measures, as described in this Final Report, designed to reduce the risk of damages caused by hurricane and storm surge in the study area. The primary goal of the NED Recommended Plan (RP) is to reduce the risk of damage from hurricane storm surge for structures that have a FFE at or below the 0-25-year floodplain, based on hydrologic conditions predicted to occur in 2025 (the beginning of the 50-year period of analysis).

The NED RP consists of the following measures:

1. Elevation of eligible residential structures to the 100-year BFE based on year 2075 hydrology.
2. Dry flood proofing of eligible non-residential structures.
3. Construction of localized storm surge risk reduction measures of less than six feet in height around eligible industrial complexes and warehouses.

Property owners located in the project area will be informed of the details of implementation of the NED feature of the project, including eligibility criteria, the eligibility process, and the related duties and obligations of USACE, the NFS, and the property owner. Based upon present information, the anticipated duties and obligations are generally outlined below; however, some of this information may be modified as the Nonstructural Implementation Plan is finalized as part of planning, engineering, and design (PED). While each individual eligible non-residential and warehouse structures will be evaluated for the most cost effective nonstructural measure, the government reserves the right to determine which measure shall be implemented at each structure location. It is anticipated that implementation of the Nonstructural RP will occur over an approximate 18-year period (assuming funding of ~\$50 million/year). However, the scale of the Project is highly dependent upon the participation rate and the amount of funding allocated in any given year.

If the structure owner does not want to participate in the Project, USACE and the NFS would defer any further action on that structure until such time as the structure owner elects to participate or until the period of construction ends. However, the Government reserves, at its sole discretion, the right to determine whether or not a structure may participate in the NED RP after a structure owner has declined participation, and if allowed to participate, the timing and scheduling of such participation in the Project.



C. Elevation of Eligible Residential Structures

Owners of eligible residential structures may participate in having their structure elevated to the 100-year BFE based on year 2075 hydrology. If the required elevation is greater than 13 ft above ground level, the structure would not be eligible for elevation and would be ineligible to participate due to engineering and risk related factors.

1. Determining Eligibility: 2 Step Eligibility Process

Step 1- Preliminary eligibility: Structures that meet the following eligibility criteria will have met this first step in the eligibility process and will be eligible for further consideration in the process.

- The residential structure must have a FFE at or below the 0-25-year BFE, based on hydrologic conditions predicted to occur in 2025 (the beginning of the 50-year period of analysis); and
- Elevation of the residential structure is deemed to be economically justified.

At the time of this Final Report, a structure inventory has been compiled which identifies 3,462 residential structures in the Study Area that, based on present information, have been deemed to be preliminarily eligible to participate in the Project (See Appendix N). These structures will require additional structure-specific analysis during PED to determine final eligibility.

Step 2 - Eligibility Determination – Investigations: The following is a general overview of Step 2 in the eligibility process for those residential structures meeting the Step 1 eligibility requirements. Additional details concerning the process, what makes up the eligibility criteria, and related requirements will be developed during PED and provided prior to Project implementation.

- Once preliminary eligibility is determined, residential property owners will be asked to grant a temporary right-of-entry to USACE and the NFS to enter upon the property to conduct such property and structural investigations deemed necessary to determine final eligibility for participation in the Project. These investigations may include, structural inspections, surveys, limited environmental testing and site assessments, verifying current elevation and determining elevation requirements, and conducting such other activities deemed necessary by USACE and the NFS to make a final determination of eligibility. A property owner may elect not to participate at any time prior to execution of an agreement for the performance of the nonstructural measure upon the property. Refusal to grant temporary right-of-entry will constitute the election not to participate.
- The property owner shall submit satisfactory documentation as deemed necessary by USACE (to be detailed during the design phase) which may include, but will not be limited to:
 - Proof of Ownership deemed necessary by USACE (including but not limited to a legal description of the property, deed, or a tax assessor's receipt) to identify the names of all of the owners of the property, and provide information regarding the names and addresses of all third party interest holders and any holders of a lien or encumbrance against the property.
 - In instances involving the representation of a person or persons whose signature is required for any document, subordination, or release which may be required to be executed for the Project, either through a trust, agency, succession, partnership, business, or corporation or any other form of representation under law or contract, documentation will be provided along with the title evidence that documents the identity, powers, and authorities of the person or persons authorized to act on behalf of the required signatory.
- The NFS shall conduct title research to confirm the property has clear title; and appraisals that may be necessary.
- An ASTM Phase I Environmental Site Assessment (ESA) and asbestos investigation will be conducted to confirm the absence of HTRW and damaged or friable asbestos or asbestos-containing materials, and, if warranted, additional HTRW investigations and a Phase II ESA will be conducted at the



property. 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 of same before the property can be deemed to have met the eligibility requirements;

- The structure will be evaluated by USACE to ensure that all of the following eligibility requirements are satisfied:
 - The structure can be elevated to meet the required BFE. However, in no event will a structure be raised greater than 13 ft above the ground level;
 - Based on a visual assessment, the structure is in a condition that is suitable for elevation without the need for repair or rehabilitation as determined by a professional registered structural engineer. Any repair or rehabilitation necessary to achieve that condition will be at the sole cost and expense of the property owner (see paragraph 5 “Eligible and Ineligible Improvement Costs” below);
 - Implementation of nonstructural measures will not impact threatened or endangered species;
 - 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; and
 - The property has not previously received any disaster assistance for the elevation of the structure.

2. Execution / Recordation of Agreement

An agreement shall be executed between the NFS and the property owners. The agreement will be binding upon the owners, their heirs, assigns, transferees, and any other successors in interest. The provisions of this agreement will be developed during the design phase; however, it is anticipated that it will include provisions such as those discussed below. The agreement will obligate the property owner to expend any and all costs that may be necessary in connection with the elevation of the structure which are not deemed “eligible costs” (as described below); the agreement releases and holds USACE and the NFS harmless for any and all loss, cost, damage, or expense arising out of any claims, including third party claims that arise directly or indirectly from any Project-related activity. The agreement will include provisions that would prohibit both the conversion of any part of the structure located below the lowest habitable finished floor for purposes of human habitation, the alteration of the structure in any way that would impede the movement of flood waters under the structure and would prohibit the construction of any new habitable structures on the property that do not meet the FFE requirements of the Project. The agreement, as well as any required curative documents, subordination or release agreement(s), shall be recorded by the NFS in the public records of the Parish in which the property is located prior to commencement of the nonstructural improvements on the property.

The agreement will contain restrictive covenants that run with the land in perpetuity. Among other rights, the agreement will include the right for the NFS and the Government to inspect the property during structure elevation. The agreement, as well as any required curative documents, subordination or release agreement(s), shall be recorded by the NFS in the public records of the Parish in which the property is located prior to commencement of the nonstructural improvements on the property.

3. Commencement of Nonstructural Improvements.

Following eligibility determination and receipt of proof of recordation of the required documentation, elevation of the structure will be commenced. 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 2075. All utilities and mechanical equipment, including air conditioners and hot water heaters, will also be raised to the required elevation. Property owners may choose to raise the structure, utilities, and/or mechanical equipment in excess of the predicted 2075 100-year BFE; however costs attributable to elevations in excess of the minimum



requirements set forth herein are not deemed eligible costs (described below) and would be performed at the sole cost, risk, and expense of the property owner.

4. **Notice of Construction Complete (NCC).**

Upon completion of the improvements, an inspection will be performed by USACE and upon final approval by the District Engineer, or his designee, a notice of construction completion will be issued to the NFS and the individual elevation project will be closed out as complete.

5. **Eligible and Ineligible Project Costs.**

Eligible Project Costs: All elevations will require local permits prior to any onsite construction. Only the costs of elevation and foundation retrofitting are eligible costs. No Federal funds will be used to restore, replace, or repair the structure. No additions to the habitable spaces of the structure will be permitted in the performance of the elevation work. Elements of structure elevation work that are deemed to be potentially eligible project costs include: design costs; costs of obtaining all required permits (i.e., zoning or land use approvals, environmental permits or required certifications, historic preservation approvals, and building permits), except as identified to be an ineligible item of project cost; costs of title searches (in review of title information submitted by the property owner), surveys, and costs for the following tasks:

- elevating the structure;
- raising the roof and extending the walls of a side structure attached to the main structure (i.e., garage);
- raising mechanical equipment (i.e., 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 codes (i.e., stairs with landings, guardrails);
- creating large vent openings in the foundation and walls to meet requirements for flood water entry and exit;
- in instances where special access improvements (i.e., elevators, lifts, ramps, etc.) may be required (i.e., in the case of physically handicapped or elderly homeowners or occupants) special handicapped access can be considered an eligible improvement cost when documented by the medical certificate of a licensed physician. Multiple special access points may also be eligible for funding where necessary to meet state or local building code compliance;
- removal of any trees which restrict the elevation of a structure;
- site grading and site restoration including restoring landscaping to its preconstruction condition;
- for historic structures that are listed or eligible for listing on the National Register of Historic Places, costs associated with maintaining the historic designation as determined by the Louisiana State Historic Preservation Office (including such costs so as to preserve the historic façade and character of the building whether through exterior structural modifications, landscaping, lighting, paint, disguising and/or blending of the nonstructural measure with the building, etc.);
- temporary site protection measures during site work; and
- allowable relocation assistance funds for displaced tenants in accordance with Uniform Relocation Assistance and Real Property Acquisition Policies for Federal and Federally Assisted Programs 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. Relocation assistance for tenants may include, among other things, advisory services, differential housing payments, and reimbursement of costs of moving personal property, rental assistance to supplement the costs of leasing a comparable replacement dwelling, or down payment assistance to purchase a replacement dwelling. (See Appendix E, Real Estate Plan for more detailed information.) Note that a structure is ineligible for nonstructural measures if it would require elevation over 13 ft



above ground level due to engineering and risk related factors. Landowners whose properties are voluntarily elevated will not be eligible for benefits in accordance with URA; however, tenants of these structures may be eligible for these benefits.

Ineligible Project Costs: The costs that exceed that which is necessary to safely elevate and or flood-proof an eligible structure are deemed ineligible costs and any such costs remain the sole responsibility of the property owner. These costs may include, among others, costs associated with:

- 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;
- cost for elevation above the identified BFE;
- modifications to structures that are not attached to the eligible structure;
- modifications to tubs, 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 (i.e., stairways and landing modifications);
- the proper remediation, removal and disposal of environmental contaminants including but not limited to HTRW, 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;
- costs associated with special access improvements (i.e., elevators, lifts, ramps, etc.) that are not deemed eligible; and
- improvements to structures not considered the primary residence (i.e., detached garage, shed and/or barns).

D. Dry Flood Proofing of Eligible Non-Residential Structures

Dry flood proofing consists of sealing all areas from the ground level up to approximately 3 ft of a structure to reduce the risk of damage from storm surge resulting from hurricanes of a certain magnitude, as described in this report, by making walls, doors, windows and other openings resistant to penetration by storm surge waters. Walls are coated with sealants, waterproofing compounds, or plastic sheeting is placed around the walls and covered, and back-flow 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.

Some common flood proofing measures 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.

While each individual eligible non-residential structures will be evaluated for the most cost effective nonstructural measure, the government reserves the right to determine which measure shall be implemented at each structure location.

Determination of Eligibility. The process of determining eligibility would be substantially similar to the process followed above in connection with the elevation of residential structures. Identification of eligibility criteria and details concerning the process will be developed during PED and provided prior to Project implementation. At the time of this Final Report, a structure inventory has been compiled which identifies 342



preliminarily eligible non-residential structures and public buildings in the Study Area. Eligible property owners who request application of the dry flood-proofing measures to their commercial structures or public buildings, must provide temporary right-of-entry, undergo similar site and structural assessments, present the requisite documentation, and undergo a structure-specific analysis performed during the design phase that is substantially similar to that which is described above in connection with the elevation of residential structures.

Commencement of Improvements and NCC. If a determination is made that a structure is qualified for dry flood proofing, a scope of work will be developed and the property owner will be required to execute an agreement in favor of the NFS. The agreement will be accompanied by the requisite curative documents, including, but not limited to any subordinations or releases of interest from third party interest owners, and holders of any liens or encumbrances against the property. The agreement and supporting curative instruments, subordinations and releases will be filed in the records of the Clerk of Court in the parish where the property is located and will be binding upon the owners, their heirs, assigns, transferees, and any other successors in interest. The provisions of this agreement will be developed during the design phase; however, it is anticipated that the developed agreement may include provisions such as those discussed below. Each structure that is dry flood proofed must have an approved sanitary disposal system and be in compliance with local and state health and building codes. The owners of the structure must agree to hold the Government and the NFS harmless for the dry flood proofing work to be performed on the structure and must allow both entities the right to inspect the properties during floodproofing. Additionally, the agreement will include provisions that would prohibit the conversion or modification of any part of the structure in a manner that would damage or impair the flood proofing work performed on the Structure by the Project and prohibit the construction of any new structure on the property or modification to the existing structure that is not flood proofed in accordance with the Project hurricane storm surge risk reduction objectives and requirements. After the agreement and associated curative documents are recorded in the public records of the Clerk of Court of the parish in which the property is located, the dry flood proofing work will be commenced, completed, inspected by USACE, and after final approval by the District Engineer, or his designee, a notice of construction completion will be issued to the NFS and the individual dry flood-proofing project will be closed out as complete.

E. Construction of Localized Storm Surge Risk Reduction Measures around Industrial Facilities and Warehouses

These measures are intended to reduce the risk of flooding from certain hurricane storm surge events, as described in this report. These measures involve the construction of localized storm surge risk reduction features that measure less than six feet in height around industrial complexes and warehouses that meet the Project's eligibility criteria. These risk reduction measures can be constructed of earth, concrete, masonry or steel and can be placed around a single structure or a contiguous group of structures. While each individual eligible warehouses and industrial structures will be evaluated for the most cost effective nonstructural measure, the government reserves the right to determine which measure shall be implemented at each structure location.

Determination of Eligibility. At the time of this Final Report, a structure inventory has been compiled which identifies 157 preliminarily eligible industrial complexes and warehouse in the Study Area. Eligible property owners, who request implementation of the localized storm surge risk reduction measures around their industrial facilities and warehouses must provide temporary right-of-entry, undergo similar site and structural assessments, present the requisite documentation, and undergo a site-specific analysis performed during the design phase that is substantially similar to that which is described above in connection with the elevation of residential structures. Identification of eligibility criteria and details concerning the process will be developed during PED and provided prior to Project implementation.

Commencement of Improvements and NCC. If a determination is made that a structure is qualified for localized storm surge risk reduction measures, a scope of work will be developed. Thereafter, an agreement in favor of the NFS shall be executed by the property owners and will be accompanied by requisite curative documents, including but not limited to subordinations or releases of interest from third party interest owners, and holders of any liens or encumbrances against the property. The agreement will be binding upon



the owners, their heirs, assigns, transferees, and any other successors in interest. The provisions of this agreement will be developed during the design phase; however, it is anticipated that the developed agreement may include provisions such as those discussed below. The agreement will include provisions that would prohibit the conversion or modification of any part of the localized storm surge risk reduction measures in a manner that would damage or impair the hurricane storm surge risk reduction objectives of the Project and would prohibit the construction of any new structure on the property or modification to the existing structures that does not provide for hurricane storm surge risk reduction in accordance with the Project objectives and risk reduction requirements. After the agreement and associated curative documents are recorded in the public records of the Clerk of Court of the parish in which the property is located, the localized storm surge risk reduction measures will be constructed and inspected, and after final approval by the District Engineer, or his designee, a notice of construction completion will be issued to the NFS and the individual storm surge risk reduction project will be closed out as complete.

F. Implementation Method: Federal Procurement

The traditional method of implementation is generally described in publications of the USACE National Flood Proofing Committee and Flood Risk Management Planning Center of Expertise. This method of implementation utilizes a Federal procurement to obtain design and construction contractors for the various flood proofing measures. The Government will procure contracts that will allow a contractor to perform flood proofing work on multiple structures through a series of one or more task orders. The contractor will also be responsible for all work associated with the elevation from approval of the elevation plans for each structure to final inspection. For construction of localized storm surge risk reduction measures a ‘small quantities determination’ by USACE Real Estate Division must be made and the ensuing solicitation would require the contractor to provide contractor furnished borrow from commercial pits that are environmentally compliant and that provide materials that meet the Government’s specifications for this measure construction.

Each non-residential structure will be evaluated to determine the most cost effective method of flood proofing. At the time of this Report, it is anticipated that implementation of localized storm surge risk reduction measures will be through the Federal procurement of Indefinite Deliverable, Indefinite Quantity (IDIQ) contracts that will be implemented by the issuance of individual task orders for the implementation of flood proofing measures at each warehouse. The basis for this assumption is that the PDT has completed an inspection of the warehouse inventory. That inspection indicates that the geographic distribution of these warehouses and the inability to determine the schedule for voluntary participation do not comport with the clustering strategy whereby the rest of the NED RP will be implemented. For these reasons it is anticipated that an individual task order will be limited to a single warehouse to be flood proofed. The PDT anticipates that only a small amount of borrow would be needed for construction of the localized storm surge risk reduction measures for each warehouse being accomplished by separate task order. Based on this conclusion, it is foreseeable that commercial borrow sites would be used. As of the date of this Report, there are several commercial borrow sites within the project area that are readily available.

Real Estate regulations (ER. 405-1-12, paragraph 12-9d(3)) allow for small quantities of borrow material to be supplied by the construction contractor through the use of readily available commercial sites, if supported by an analysis conducted by the Government and the NFS, and if no other constraints exist. Since it has been determined that each IDIQ task order will address a single warehouse, for purposes of this Final Report, it has been assumed that the analysis performed pursuant to the above cited ER 405-1-12 will determine that the required borrow quantities constitute a small quantity that can be obtained through a commercial site that meets the Project requirements. Prior to issuing a construction task order, the Government will conduct the necessary analysis in accordance with ER 405-1-12. Contractors would be required to demonstrate that any proposed commercial borrow site is environmentally cleared and contains geotechnically suitable borrow material. In evaluating the suitability of the proposed commercial borrow site, impacts to wetlands or bottomland hardwoods would be prohibited. Costs of utilizing a commercial borrow site would be considered an item of construction cost, and not an item of LERRD cost.



G. Various Methods for Prioritizing the Nonstructural Elevation Work

NED Implementation Strategy

This Final Report recommends a strategy to implement the nonstructural project for eligible structures. Structures that have been identified as preliminarily eligible as part of the NED RP are located across the 4,700 mile, three-parish study area. In order to effectively implement the NED RP, clusters of eligible structures that represent the highest risk for storm surge damages (i.e. those with a FFE below the 10-year stage) would be identified and prioritized for construction. Individual structures would be addressed based on a ranking of risk from highest to lowest within the cluster. The ranking of individual structures would be revisited as elevation work is completed, as additional funding is distributed, and as new clusters are identified. Addressing groups of structures within a small geographic area would be more cost-effective, efficient, and would also allow for a more strategic methodology for applying nonstructural measures to at-risk structures. Additional work on this process would occur during the design phase of the Project.

Any structure scheduling or prioritization will be subject to the availability of Federal funds. The locations for scheduling or prioritizing the implementation of nonstructural work will be determined during PED but will be fully assessed for implementing the nonstructural plan in an efficient and cost-effective manner. Some of the methods for scheduling or prioritizing nonstructural work that will be considered as part of the prioritization process are as follows; however, additional methods of scheduling or prioritizing such work will also be considered for the priority locations to implement the nonstructural plan

Clustering

The eligible property owners in a contiguous neighborhood or subdivision (i.e. small scale area) would be targeted for priority in nonstructural plan implementation. A focus on clustered properties would create a ranking hierarchy of which properties to address first. The size of a cluster would need to be defined but would consist of an area where multiple eligible structures would be constructed simultaneously. This approach would rank efficiency as the main factor in determining which eligible properties should be prioritized.

Risk-Level

Within the clustered area, structures of various risk levels would be identified. In such cases, the focus would be on willing property owners that exhibit the highest risk for flood damages. For example, if 100 property owners execute agreements within the clustered area, the owners who reside in the 0-5-year floodplain would be prioritized for construction. Once these properties are elevated, the next highest-risk properties (6-10-year floodplain) would be targeted. This approach couples risk exposure and clustering to determine which eligible properties should be prioritized.

H. Operations, Maintenance, Repair, Rehabilitation, and Replacement (OMRR&R)

For all structure types (residential, non-residential, and warehouses) OMRR&R costs are expected to be 'de minimus' and will be confined to regular, periodic surveys and site visits of structures where nonstructural measures have been applied in order to determine that the requirements of the OMRR&R Manual are being met. Costs for these efforts have not been calculated as part of NFS OMRR&R responsibilities. Once the NED nonstructural measures have been implemented and NCC'd, the owner of the property will be responsible for all cost and risk of maintaining, repairing, rehabilitating and replacement the flood proofing measures that were utilized for the subject property. A draft OMRR&R Manual shall be provided to the NFS as early as possible in the period of implementation because USACE will issue a NCC for each flood proofed structure once the flood proofing is complete. At the time of the issuance of an NCC, the NFS's obligations for operation and maintenance for the subject structure or lands commences. Flood proofed structures shall be considered a separable element and functional portion of the Project. The NFS is responsible for the enforcement of the provisions of the agreement executed by the owners of property benefiting from the nonstructural measures and for enforcement of the requirements of the OMRR&R Manual, including but not limited to, compliance with the requirements of Section 402 of the Water Resources Development Act of 1986,



as amended. Upon NCC for NED implementation for a given structure or contract, the USACE will furnish to the NFS a final OMRR&R manual addressing, among other things, the NFS responsibility for enforcement of terms of the flood proofing agreement, as well as other OMRR&R requirements.. The NFS shall conduct periodic inspections at the intervals specified in the OMRR&R Manual to ensure that the owners, their heirs, and assigns, are in compliance with the terms and conditions of the executed agreements and shall provide written certifications to USACE that the structures and lands have been inspected and that no violations have been found. Regarding the elevated residential structures, the inspections 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 2075 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 flood proofed structures pursuant to the Project.

