

**Peckman River Basin, New Jersey
Flood Risk Management Feasibility Study
Final Integrated Feasibility Report & Environmental
Assessment**

Appendix H: Nonstructural Implementation Plan

February 2020

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Chapter 1: Introduction

This Nonstructural Implementation Plan describes the general process for the implementation of nonstructural measures designed to reduce the risk of damages caused by coastal storms in the study area. The primary goal of the Recommended Plan is to reduce the risk of coastal storm damage through the implementation of nonstructural and structural measures. This Implementation Plan focuses on the nonstructural features of the Recommended Plan.

1.1 Leveraging National Assets for Success

The New York District recognizes that there are unique challenges related to implementing a relatively large nonstructural plan. Because of this, the District has proactively leveraged national experts in the planning, design, and construction of nonstructural measures. Within the enterprise, these groups include the National Nonstructural Committee, Coastal Storm Risk Management Center of Expertise, and Silver Jackets program, as well as project teams that are currently working to implement similar projects (e.g., Southwest Coastal, Louisiana project). The District is also coordinating with staff from the Federal Emergency Management Agency (FEMA), the New York City post-Hurricane Sandy Build it Back Program, the Louisiana post-Hurricane Katrina Road Home Program, the Association of State Floodplain Managers, and local floodplain managers. The NFS and local communities have also provided valuable information pertinent to the project. The District places a priority on continuing this coordination throughout PED and construction, and sharing lessons learned with USACE teams.

1.2 Recommended Plan

The Recommended Plan consists of implementing nonstructural measures within the ten percent floodplain upstream of Route 46. Up to 58 structures in Little Falls located in the ten percent floodplain near the Peckman River would be elevated or floodproofed (Table 1). The main objective of the nonstructural measures is to reduce flood damages through modifications of the existing structures. Structure elevations involve lifting structures so their first floor elevation is above the base flood elevation (also known as the one percent flood water surface elevation). The most appropriate wet floodproofing measures for the subject structures include elevating air conditioning and heating units, and filling basements so that they are not subject to flooding. Dry floodproofing measures would include making structures watertight by sealing walls and openings (i.e., doors and windows) with permanent or temporary shields.

Table 1. Nonstructural components of Alternative 10b-40.

Treatment	Residential	Non-residential	Subtotal
Elevation	16	0	16
Wet Floodproofing	29	9	38
Dry Floodproofing	4	0	4
Total	49	9	58

Per USACE Planning Bulletin (PB) 2016-01 “Clarification of Existing Policy for USACE Participation in Nonstructural Flood Risk Management and Coastal Storm Damage Reduction Measures” (December 22, 2015), the structure elevations and floodproofing will be implemented on a voluntary basis. Property owners may choose to participate in the plan.

The specific nonstructural measures to be implemented at each property will be reviewed and refined in the Pre-construction Engineering and Design (PED) phase to ensure that the proposed measures, and the applicable population is appropriately identified. Property owners located in the project area will be informed of the details of project implementation, 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 PED.

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 Recommended Plan after a structure owner has declined participation, and if allowed to participate, the timing and scheduling of such participation in the Project.

Chapter 2: Structure Elevations

Owners of eligible structures may participate in having their structure elevated.

2.1 Determining Eligibility: Two Step Eligibility Process

Step 1- Preliminary eligibility: Structures that are included in the Recommended Plan meet the eligibility criteria. 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 requirement. 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, 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 target design elevation;
 - 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.

2.2 Execution and 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 in Chapter 5); 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 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 county 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 county in which the property is located prior to commencement of the nonstructural improvements on the property.

2.3 Commencement of Nonstructural Improvements

Following eligibility determination, the historic property survey required by the project Programmatic Agreement, 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 target design elevation. 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 target design elevation; 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.

2.4 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.

2.5 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: historic property investigations, including mitigation in accordance with the project Programmatic Agreement, 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 properties, costs associated with the investigations, coordination, consultation and mitigation undertaken in accordance with the project Programmatic Agreement (including such costs to complete associated archaeological investigations, if warranted, 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.) Property owners whose properties are voluntarily elevated will not be eligible for benefits in accordance with URA. Tenants of these structures are generally not eligible for benefits in accordance with URA.

Ineligible Project Costs: The costs that exceed that which is necessary to safely elevate 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 target design elevation;
- 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).

2.6 Target Design Elevation

The target elevation for the first floor of all structures to be elevated will be at a height of one foot above the USACE-modeled one percent flood water surface elevation. USACE

determined that the “plus one foot” height accurately reflects uncertainty of wave effects on water surface elevations in the study area. The BFE varies in the project area from +130 feet to +190 feet NAVD88, with the lowest BFEs located at the confluence of the Peckman and Passaic Rivers. Construction of structure elevations, wet floodproofing, dry floodproofing, and ringwalls measures would be implemented on a voluntary basis. That is, property owners would choose to participate in the nonstructural portion of the plan. As described in Section 3.5, an at- or near-100 percent participation rate is likely and thus was assumed for the purposes of initial plan formulation.

Chapter 3:Floodproofing

Dry floodproofing consists of sealing all areas from the ground level up to approximately 3 feet of a structure to reduce the risk of damage from floodwaters resulting from coastal storms of a certain magnitude, as described in this report, by making walls, doors, windows and other openings resistant to penetration by floodwaters. 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 floodproofing 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 eligible 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.

3.1 Determining Eligibility: Two Step Eligibility Process

The process of determining eligibility would be substantially similar to the process followed above in connection with the elevation of structures. Identification of eligibility criteria and details concerning the process will be developed during PED and provided prior to project implementation. Eligible property owners who request application of the floodproofing measures to their structures 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.

3.2 Commencement of Improvements and NCC

If a determination is made that a structure is qualified for floodproofing, 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 county 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 floodproofed 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 floodproofing 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 floodproofing 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 floodproofed in accordance with the project coastal storm risk management objectives and requirements. After the agreement and associated curative documents are recorded in the public records of the Clerk of Court of the county in which the property is located, and the historic property investigations are completed, the floodproofing 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 floodproofing project will be closed out as complete.

Chapter 4: Implementation Method: Federal Procurement

The traditional method of implementation is generally described in publications of the USACE National Nonstructural 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 floodproofing measures. The Government will procure contracts that will allow a contractor to perform floodproofing 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.

4.1 Various Methods for Prioritizing the Nonstructural Elevation Work

4.1.1 Determining an Implementation Strategy

This Plan recommends the agreement of a strategy to implement nonstructural measures, to be developed and coordinated through the NFS and local stakeholders. Structures that have been identified as preliminarily eligible as part of the Recommended Plan are located across the study area. In order to effectively implement the Recommended Plan, clusters of eligible structures that represent the highest risk for flood surge damages (i.e. those with a MFE below the current ten percent water surface elevation) 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 property owners who reside in the 50 percent floodplain would be prioritized for construction over those

located in the 25 percent floodplain. Once these properties are elevated, the next highest-risk properties would be targeted. This approach couples risk exposure and clustering to determine which eligible properties should be prioritized.

Chapter 5: Operations, Maintenance, Repair, Rehabilitation, and Replacement (OMRR&R)

For all structure types, 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 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 floodproofing 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 floodproofed structure once the floodproofing 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. Floodproofed structures may 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 by not limited to, compliance with the requirements of Section 402 of the Water Resources Development Act of 1986, as amended. Upon NCC 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 floodproofing 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 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 floodproofed structures pursuant to the Project.