NONSTRUCTURAL IMPLEMENTATION PLAN

FLORIDA KEYS COASTAL STORM RISK MANAGEMENT FEASIBILITY STUDY MONROE COUNTY, FLORIDA

FINAL INTEGRATED FEASIBILITY REPORT AND ENVIRONMENTAL IMPACT STATEMENT

APPENDIX G

April 2021

U.S. Army Corps
of Engineers
Norfolk District

TABLE OF CONTENTS

1 Definitions

Term	Definition
Base Flood	Defined by the National Flood Insurance Project (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).
Economically Justified	The cost to implement the nonstructural measure for 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 2030-2079).
Elevation (of structure)	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 above 12ft NAVD88. All utilities and mechanical equipment, such as air conditioners and hot water heaters, will also be raised to this elevation.
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.
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 sealed.
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 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.
Hazardous, Toxic, or 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.”
Non-Federal Sponsor (NFS)	The NFS is the cost-sharing partner for the study, design, and construction phases of the project. The NFS for this study is Monroe County, Florida.
Nonstructural Floodproofing Measures	Nonstructural Flood Proofing 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 Flood Proofing measures (i.e., levees, floodwalls, etc.) in that they focus on reducing the consequences on flooding instead of focusing on reducing the probability of flooding.
Preliminary Structure Eligibility Criteria	To be considered preliminarily eligible for participation in the Nonstructural Project, a structure must be economically justified meaning that the cost of the flood-proofing measure for the structure must not cost more than the total monetary value of the flood damages anticipated to be avoided over the 50-year period of analysis.

2 Nonstructural Implementation

2.1 Purpose

The Florida Keys Coastal Storm Risk Management Study (CSRM) incorporates nonstructural measures as part of the Recommended Plan. Once the study is complete, detailed plans and specifications for implementing nonstructural measures will be developed as part of the preconstruction engineering and design (PED) phase of the project. The PED phase occurs after Congress authorizes the recommended plan into law and appropriates funds for construction of the recommended plan. In concert with structural measures, nonstructural measures will be a key component to reducing long term coastal storm risk and supporting sustainable development. The information in this plan presents a strategy that may be used to implement nonstructural measures in support of the Florida Keys CSRM recommended plan.

2.2 Introduction

This nonstructural implementation plan describes the general process for the implementation of nonstructural measures, as described in the Florida Keys CSRM feasibility report. The primary goal of the nonstructural measures included in the recommended plan is to reduce the risk of damage to residential and non-residential structures caused by coastal storm inundation. The recommended plan includes the following nonstructural measures:

1. Elevation of 4,698 residential structures as required to prevent inundation of finished floors from the design water surface elevation associated with the 100 year storm plus sea level change projected to occur with the USACE high rate of sea level change. The height each eligible structure is elevated will depend on the first floor elevation (FFE) of that structure and the expected water levels that would result from coastal storm surge flooding where the structure is located.
2. Dry floodproofing of approximately 1,052 non-residential structures, plus floodproofing an additional 53 critical infrastructure buildings, up to the maximum height of three feet above the adjacent ground level.

Property owners in the project area will be informed of the details of nonstructural measure implementation, including eligibility criteria, the eligibility process, and the related duties and obligations of USACE, Monroe County, 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 study progresses and/or as the Nonstructural Implementation Plan is finalized as part of PED. While each structure has been evaluated for the most cost effective nonstructural measure, the government reserves the right to determine which measure shall ultimately be implemented as part of the recommended plan resulting from the study. Based on other nonstructural projects completed by USACE and Monroe County, it is estimated that implementation of elevation or floodproofing will take approximately three months per structure. It is anticipated at this time that all structures recommended for elevation and floodproofing in the recommended plan will be implemented over a ten year period. However, the scale of the project is highly dependent upon the participation rate and the total

implementation time is dependent on the amount of funding that is appropriated by Congress and contributed by the non-federal sponsor for implementation in any given year. Analysis of conditions in the Keys that are expected to impact the participation in nonstructural measures suggest that 70 percent of structure owners will choose to participate in the project.

2.3 Elevation of Residential Structures

For the purposes of nonstructural measure evaluation, the term residential structures includes one, two, or three story single family homes and smaller multifamily homes such as duplexes. Larger multifamily structures such as condominium and apartment buildings are grouped with non-residential (commercial) structures due to the size and nature of the structures that prevents them from being elevated or acquired. Each structure that has a FFE below the design water level and where elevation was determined to be cost effective in comparison to the estimated value of inundation damage was considered eligible for elevation of the structure "in place." If after completion of the investigation of the property, USACE determines that the structure is still 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 above the design water level. All utilities and mechanical equipment, such as air conditioners and hot water heaters, will also be raised to this elevation. Property owners may choose to raise the structure, utilities, and/or mechanical equipment in excess of the recommended first floor elevation; however, costs attributable to elevations in excess of the minimum requirements set forth herein must be borne solely by the property owner. 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.

2.3.1 Application and Approval Process for Elevation

Residential property owners of structures eligible for elevation as part of the recommended plan who wish to participate in the project must complete and submit an application. A property owner may withdraw the application at any time prior to the execution of a Flood Proofing Agreement by the property owner and USACE. The NFS and USACE will work together to verify eligibility for participation in the project. Applications will be submitted to USACE, but processing/verifying tasks may be split between USACE and the NFS depending on the NFS's capability. Incomplete applications or applications which contain false or misleading information or substantial errors will not be processed. The application and approval process includes the following steps:

- The application includes an authorization for temporary right-of-entry to USACE and the NFS to enter upon the property. This is required in order for USACE and the NFS to enter in and upon the structure and land for purposes of investigating, inspecting, surveying, performing required environmental surveys, testing, and site assessments, evaluating the condition of the structure, determining elevation requirements, verifying the current elevation, and conducting other activities necessary for USACE to make a determination of structure eligibility;

- 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;

- An ASTM Phase I Environmental Site Assessment (ESA) and Asbestos investigation (and if warranted, additional HTRW investigations and a Phase II, ESA), inspections, surveys and boundary monumentations will be completed. An ESA Report shall be prepared and shall include an HTRW and asbestos certification. The Report shall state whether the property is “clean” and cleared to proceed with the elevation process; or shall identify miscellaneous debris (i.e. appliances, junk vehicles and parts, general debris, etc.) that must be cleaned up or removed from the property; or shall identify that there is the potential for HTRW on the property and state that a Phase II ESA is required for further evaluation. The property owner shall be notified in writing of the results of the Phase I ESA. If the Phase I ESA indicates the potential presence of HTRW on the property, the property owner shall be notified in writing that the property has been identified for potentially HTRW. The notice shall also request the property owner to execute a separate right-of-entry for the HTRW investigations and the performance of a Phase II ESA. In addition, the notice shall advise the property owner that if contamination is found, the property owner be responsible for all costs of clean-up under state and Federal laws (regardless of whether the property owner participates in the project), and that if the property owner refuses to provide the additional right-of-entry for the Phase II ESA, the property owner will be removed from the project. The property owner shall be notified in writing of the results of the Phase II ESA. If the Phase II ESA identifies contamination, the property owner will be notified in writing of the remediation that is required to be performed, at the owners cost and expense, that the work must be performed by a licensed HTRW remediation professional and that documentation from a third party licensed HTRW remediation profession must be provided to the Government with sufficient evidence to support that the contamination has been successful and properly remediated is required before a final determination on eligibility can be made;

- The structure will be assessed to make sure that the following eligibility requirements are satisfied:

    a. The structure is in a condition suitable for human habitation;

    b. The property is not located on Federal property and leased land:

    c. The structure can be elevated to meet the required FFE so that the habitable floors are raised to levels which will protect the residential structures from storm

surge inundation to reduce future losses to the extent practicable. However, in no event will a structure be raised greater than 12 feet above the ground level;

d. Based on a signed written certification by the property owner, as confirmed by the assessment, 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.);

e. The property owner does not owe taxes or other debts to any state or local governmental entity or to the Federal government;

f. The property owner has not previously received any federal assistance for the elevation of the structure.

g. The structure complies with the building code and floodplain management codes under which the structure was originally permitted;

- A determination that a structure is eligible for elevation as specified by the recommended plan will be made after all inspections, investigations, assessments, title research, analysis and all other work required to determine eligibility is complete and prior to the development of the elevation scope of work. Additional foundation analysis may be required to verify adequate foundation type.

- After the Government confirms that the property owner has adequately documented clear title to the property, such documentation to include but not be limited to the subordination or release of any interests held by leaseholders, third parties and holders of liens, mortgages, judgments and encumbrances, a Flood Proofing Agreement containing a “Residential Structure Elevation Covenant Running With The Land” in favor of the NFS shall be executed by the property owner and USACE and/or NFS. The Agreement will authorize USACE, the NFS, or their contractors to enter the property for purposes of implementing the flood proofing action and for inspection and enforcement purposes, and will include the agreement of the property owners to hold harmless the NFS and USACE for any damages arising from the flood proofing work, and a covenant running with the land shall be executed by all owners of the property. These agreements shall be recorded by the NFS in the appropriate public records of the County and if applicable, municipality, 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. The covenant shall prohibit the conversion or occupancy of any part of the structure located below the lowest habitable finished floor for human habitation and the alteration of the structure in any way to impede the movement of flood waters under the structure, as well as prohibiting the construction of any other structure in a manner that would impede the movement

of floodwaters under the structure. The Flood Proofing Agreement, together with the easement(s) and covenant running with the land, as well as any required release or subordination agreements, shall be recorded by the NFS in the appropriate public records of the county in which the property is located. The Agreement will state the property owner is willing to expend any costs that may be necessary in connection with the elevation of the structure which are not eligible costs.

- After the Flood Proofing Agreement together with the easement and covenant and any required subordination agreements are recorded in the public records, the elevation of the structure will be commenced, completed, inspected, and after final approval by the District Engineer, a notice of construction completion will be issued to the NFS and the individual elevation project will be closed out as complete.

2.3.2 Eligible and Ineligible Elevation Costs

Structure elevation work 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 (i.e. zoning or land use approvals; environmental permits or required certifications; historic preservation approvals; and building permits), and costs of surveys, state and local applicable tax, and costs for the following tasks:

- Raising the structure per the recommended plan;
- 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;
- Only trees which restrict the demolition and reconstruction work on any structure may be removed;
- Relocation assistance funds for displaced tenants are available to cover some expenses incurred during the actual raising of the structure;
- Debris removal (all demolition debris (hazardous and non-hazardous) shall be removed and taken to an approved landfill);
- Site grading and site restoration including restoring landscaping to its preconstruction condition;
- Temporary site protection measures such as temporary construction fencing.

If additional work is required as a condition of building permit issuance, and if such work is not listed as eligible above, the property owner will be required to provide funds equal to the amount

of the cost to complete the required work. In no event shall the structure be elevated if it is formally determined that the structure is not physically sound and capable of being raised safely. The costs associated with the following tasks are ineligible.

- Any work not strictly necessary for the safe completion of the structure elevation;
- Any repair of existing deficiencies, including structural and system deficiencies;
- Modifications or improvements to a septic system except for extension of lines from the raised structure to the existing system;
- Cost for elevation of more than what is necessary per the recommended plan;
- Modifications to structures that are not attached to the eligible structure and/or structures not considered the primary residence (i.e., detached garage, shed and/or barns);
- 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 (i.e., 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;
- Costs to bring a non-conforming structure into compliance with current building code, housing code and/or other applicable codes; and
- Unless a satisfactory written medical opinion is provided by a duly licensed physician that special access is required for a handicapped or mobility challenged property owner or the property owner's family member or other person currently residing in the home, or by a tenant currently occupying the home, costs associated with special access improvements such as elevators, lifts, ramps, etc.

2.3.3 Accessibility Accommodations for Elevated Structures

If a property owner and/or the property owner's family member or other person or tenant who is an 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, a physician actively licensed by the state of Florida and in good standing must provide a written medical opinion and confirmation that special handicapped access is required before any means of special access may be included as a project funded feature in the elevation of the structure. Multiple special access points are eligible for funding where necessary to meet state or local building code compliance. 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.

2.3.4 Relocation Assistance for Residents of Elevated Structures

Tenants who reside in structures being elevated and who are deemed to be "displaced" 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). The non-federal sponsor will receive credit toward their 35 percent of the implementation cost share for providing temporary relocation assistance as part of the Lands, Easements, Rights of Way, Relocations, and Disposal Area (LERRD) for the project. Appropriate advisory services, including reasonable advance written notice of the following:

- 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.

2.4 Dry Floodproofing of Non-Residential Structures and Critical Infrastructure

For the purposes of nonstructural measure evaluation, non-residential structures include commercial structures, multifamily structures such as condominium and apartment buildings that cannot be elevated or acquired, critical infrastructure, and any other structure that is not a single family home or duplex. Non-residential structures are eligible for floodproofing and included in the recommended plan if they were estimated to have significant damage that could be reduced with the implementation of floodproofing and if the amount of damage to that structure is greater than the cost to floodproof it. 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 sealed. 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.

2.4.1 Application and Approval Process for Floodproofing

Nonresidential property owners of structures eligible for floodproofing as part of the recommended plan who wish to participate in the project must complete and submit an application. A property owner may withdraw the application at any time prior to the execution of a Flood Proofing Agreement by the property owner and USACE. The NFS and USACE will work together to verify eligibility for participation in the project. Applications will be submitted to USACE, but processing/verifying tasks may be split between USACE and the NFS depending on the NFS's capability. Incomplete applications or applications which contain false or misleading information or substantial errors will not be processed. The application and approval process includes the following steps:

- The application includes an authorization for temporary right-of-entry to USACE and the NFS to enter upon the property. This is required in order for USACE and the NFS to enter in and upon the structure and land for purposes of investigating, inspecting, surveying, performing required environmental surveys, testing, and site assessments, evaluating the condition of the structure, determining elevation requirements, verifying the current elevation, and conducting other activities necessary for USACE to make a determination of structure eligibility;

- 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;

- An ASTM Phase I Environmental Site Assessment (ESA) and Asbestos investigation (and if warranted, additional HTRW investigations and a Phase II, ESA), inspections, surveys and boundary monumentations will be completed. An ESA Report shall be prepared and shall include an HTRW and asbestos certification. The Report shall state whether the property is "clean" and cleared to proceed with the elevation process; or shall identify miscellaneous debris (i.e. appliances, junk vehicles and parts, general debris, etc.) that must be cleaned up or removed from the property; or shall identify that there is the potential for HTRW on the property and state that a Phase II ESA is required for further evaluation. The property owner shall be notified in writing of the results of the Phase I ESA. If the Phase I ESA indicates the potential presence of HTRW on the property, the property owner shall be notified in writing that the property has been identified for potentially HTRW. The notice shall also request the property owner to execute a separate right-of-entry for the HTRW investigations and the performance of a Phase II ESA. In addition, the notice shall advise the property owner that if contamination is found, the property owner be responsible for all costs of clean-up under state and Federal laws (regardless of whether the property owner participates in the

project), and that if the property owner refuses to provide the additional right-of-entry for the Phase II ESA, the property owner will be removed from the project. The property owner shall be notified in writing of the results of the Phase II ESA. If the Phase II ESA identifies contamination, the property owner will be notified in writing of the remediation that is required to be performed, at the owners cost and expense, that the work must be performed by a licensed HTRW remediation professional and that documentation from a third party licensed HTRW remediation profession must be provided to the Government with sufficient evidence to support that the contamination has been successful and properly remediated is required before a final determination on eligibility can be made;

- A determination that a structure is qualified for dry floodproofing will be made after all inspections, investigations, assessments, title research, and all other work required to determine eligibility for dry flood proofing is complete and prior to the development of the scope of work;

- A Flood Proofing Agreement containing a "Covenant Running with the Land" in favor of the NFS shall be executed by the property owner and USACE and/or NFS. The Agreement will authorize USACE, the NFS, or their contractors to enter the property for purposes of implementing the floodproofing action and for inspection and enforcement purposes, an agreement to hold harmless the NFS and USACE for any damages arising from the flood-proofing work, and a covenant running with the land shall be executed by all owners of the property. The Flood Proofing Agreement, together with the easement(s) and covenant running with the land, as well as any required subordination agreements, shall be recorded by the NFS in the public records of the County, and municipality if applicable, in which the property is located. Each structure that is dry floodproofed must have an approved sanitary disposal system and be in compliance with local and state health and building codes;

- After the Flood Proofing Agreement together with the easement and covenant and any required subordination agreements are recorded in the public records, the dry floodproofing work will be commenced, completed, inspected, and after final approval by the District Engineer, a notice of construction completion will be issued by to the NFS and the individual dry floodproofing project will be closed out as complete.

2.5 Implementation Method

The traditional method of nonstructural project implementation is generally described in publications of the USACE National Flood Proofing Committee and Flood Risk Management Planning Center of Expertise. Under the traditional method, the USACE District utilizes a Federal procurement to obtain design and construction contractors for the various nonstructural measures. The Government will procure contracts that will allow a contractor to perform work on multiple structures through a series of one or more task orders and who will be responsible for all work associated with the implementation of the recommended nonstructural measures from the approval of the elevation and/or floodproofing plans for each structure to the final inspection of completed structures.

The property owner enters into a Flood Proofing Agreement with USACE, which contains a restrictive covenant running with the land in favor of the NFS and/or USACE. The form of the Agreement (and easement and covenant) will be prepared subsequent to the completion of the feasibility study during PED and will be submitted to CESAD and HQUSACE for review and approval. The Agreement will identify among other things, a “not-to-exceed” dollar amount, the USACE contractor performing the work, restrictions on the future development and alteration of the structure after the work is completed, and requirements for compliance with local flood management regulations and/or the NFIP. The Agreement will require the property owners and their heirs, successors, and assigns, to covenant, warrant, and agree to forever release, discharge, indemnify, defend, and hold and save harmless USACE and the NFS (and their contractors) from and against any liability or any claim of any kind or nature whatsoever which might arise out of the work performed on the structure in connection with the project, and any damages or injuries resulting either directly or indirectly from any work and/or any flooding of the land or of the structure. In addition, the Agreement will authorize right of entry to the property and the structure by the NFS and USACE for the completion of the nonstructural work and for continued oversight by the NFS once the project has been completed.

The Agreement and the restrictive covenant shall prohibit future alteration or new construction for human habitation or occupancy on the property at an elevation or floodproofing lower than the design height and shall contain the following restrictions: (a) upon completion of the elevation or floodproofing work, no part of the structure located below the level of the lowest habitable finished floor will thereafter be converted to living area for human habitation or occupancy, or otherwise altered in any manner which would impede the movement of waters beneath the structure; (b) the area below the lowest habitable finished floor shall be used solely for the parking of vehicles, limited storage, or access to the structure and will never be used for human habitation or occupancy; (c) that mechanical, electrical, or plumbing devices shall not be installed below the FFE. These restrictions and the following statement must be specifically included in every deed and instrument that conveys or purports to convey title to or any interest in the land or structures thereon, or which imposes a lien, encumbrance, or mortgage on such lands or structures, which is executed subsequent to the execution of the covenant:

> “This property has received Federal elevation assistance. Federal law requires that flood insurance coverage on this property must be maintained during the life of the project regardless of transfer of ownership of such property. Pursuant to 42 U.S.C. §5154a, failure to maintain flood insurance on this property may prohibit the owner from receiving Federal disaster assistance with respect to this property in the event of a flood disaster. The property owner is also required to maintain this property in accordance with the floodplain management criteria of Title 44 of the Code of Federal Regulations Part 60.3 and the floodplain management regulations adopted by the community within which this property is located.”

The executed Agreement will be recorded, by the Non-Federal sponsor in the appropriate public records of the County, and municipality if applicable, where the property is located. A Certificate of Occupancy must be issued by a qualified building official to certify that the construction was properly completed. Upon completion of the elevation or floodproofing, a professional land

surveyor will verify that the structure has been elevated to the required elevation. Upon completion of the elevation or floodproofing of each structure, a Notice of Construction Completion (NCC) is issued by USACE to the NFS. 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.

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

Once the nonstructural measures have been implemented and NCC sent, the owner of the property will be responsible for all costs and risk of maintaining, repairing, rehabilitating, and replacing the floodproofing measures that were implemented for the subject property. For all structure types, OMRR&R costs to the NFS are expected to be 'de minimus' and will be confined to costs associated with 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 Monroe County's OMRR&R responsibilities. OMRR&R costs are 100 percent non-federal and are not cost shared. OMRR&R costs will depend on the number of structures that are ultimately completed considering the measures are voluntary and full participation is not expected.

An OMRR&R Manual shall be provided to Monroe County 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, Monroe County's obligations to confirm that structure owners are in compliance with the OMRR&R Manual commence. Monroe County 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 design water surface elevation 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 design water surface elevation; 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 properties where nonstructural measures were implemented pursuant to the Florida Keys CSRM project. Monroe County 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.

2.7 Various Methods for Prioritizing the Nonstructural Work

The structures that have been identified by the study as eligible for nonstructural measures and are included in the recommended plan are distributed throughout the municipalities and islands in the Florida Keys. In order to effectively implement nonstructural measures included in the Plan, a phasing plan will be developed during PED to facilitate the prioritization and/or scheduling the nonstructural work across the study area. Any structure scheduling or prioritization will be subject to the availability of Federal funds. 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 may also be considered.

2.7.1 Clustering

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

2.7.2 Risk-Level

Willing property owners may not exist in clusters. In such cases, an alternative option is to focus on the willing property owners that exhibit the highest risk for coastal storm inundation damage. Under this approach, priority would be given to willing property owners of structures identified to have the most damage and then complete work on the structures with less damage only after work on the high risk ones has been completed.

2.7.3 First Come, First Served

This approach would involve creating a list of willing property owners and ranking them by how quickly their contracts and eligibility documentation are processed. This approach would help ensure that resources would be used effectively by focusing on properties that have owner support for the implementation of nonstructural measures.

2.8 Actions to be taken by the Non-Federal Sponsor in Support of the Project

Actions taken to comply with Section 402 of the Water Resources Development Act of 1986, as amended (33 U.S.C. 701b-12) will be the obligation of the NFS, which will work to ensure development, compliance, and enforcement consistent with local floodplain management plans and regulations, adoption of more stringent local floodplain regulations, adoption of more restrictive county and municipal building codes, land use and zoning regulations, and other developmental controls. The NFS obligations in this regard include:

- Not less than once each year the NFS will inform affected interests of the extent of protection afforded by the Plan;
- The NFS will participate in and comply with applicable Federal floodplain management and flood insurance regulations.
- The NFS will comply with Section 402 of the Water Resources Development Act of

1986, as amended (33 U.S.C. 701b-12), which requires a non-Federal interest to prepare a floodplain management plan within one year after the date of signing the Project Partnership Agreement (PPA), and to implement such plan not later than one year after completion of construction of the Plan, or functional elements of the Plan. The plan shall be designed to reduce the impacts of future hurricane and storm surge 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 hurricane storm surge risk reduction provided by the Plan. The NFS will provide an information copy of the plan to USACE upon its preparation.

- The NFS will publicize floodplain information in the area concerned and will provide this information to zoning and other regulatory agencies for their use in adopting regulations, or taking other actions, to prevent unwise future development and to ensure compatibility with hurricane and storm surge flood risk reduction levels provided by the Plan.

Additionally, the NFS will be obligated to prevent obstructions or encroachments on the properties where nonstructural measures have been implemented (including prescribing and enforcing regulations to prevent such obstructions or encroachments) or the addition of facilities which might reduce the level of risk reduction the Plan affords, hinder operation and maintenance of the Plan, or interfere with the Plan's proper function. Presently, Monroe County participates in the NFIP.

2.9 Collaboration with Other Agencies and Local Communities

Coordination and collaboration across Federal, State, and local agencies is necessary to achieve flood risk reduction in a comprehensive and systematic manner. This approach may require collaboration between multiple agencies. In order to maximize community understanding, acceptance, and participation in the nonstructural measures included in the Florida Keys CSRM project it is imperative that Monroe County and local agencies are instrumental in, and potentially leading, the effort to communicate the benefits of such a 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.