



**US Army Corps
of Engineers®**

Charleston Peninsula, South Carolina: A Coastal Flood Risk Management Study

APPENDIX E: DRAFT REAL ESTATE PLAN

April 2020

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THE REAL ESTATE PLAN

1.1 Background

The purpose of the Charleston Peninsula Coastal Flood Risk Management Study is to investigate potential structural and nonstructural solution sets to reduce damages from coastal storms. The Charleston Peninsula, South Carolina is highly vulnerable to coastal storms which will be further exacerbated by a combination of sea level rise and climate change over the study period. The United States Army Corps of Engineers (USACE) Coastal Storm Risk Planning Center of Expertise will oversee technical review of the study. The City of Charleston is the Non-Federal Sponsor (NFS) for this project and the Feasibility Cost-Share Agreement with Charleston District was signed on October 10, 2018.

This report is tentative in nature, focuses on Alternative 3, the Tentatively Selected Plan (TSP) and is to be used for planning purposes only. There may be modifications to the plans that occur during Project Engineering and Design Phase (PED), thus changing the final acquisition area(s) and/or administrative and land cost. The author of this Appendix is familiar with the study area.

1.2 Study Area

The Charleston Peninsula is approximately 8 square miles, located between the Ashley and Cooper Rivers (Figure 1). The two rivers join to form the Charleston Harbor, a natural tidal estuary sheltered by barrier islands, before discharging into the Atlantic Ocean. The Charleston Peninsula is the historic core and urban center of the City of Charleston and is home to 40,000 people.

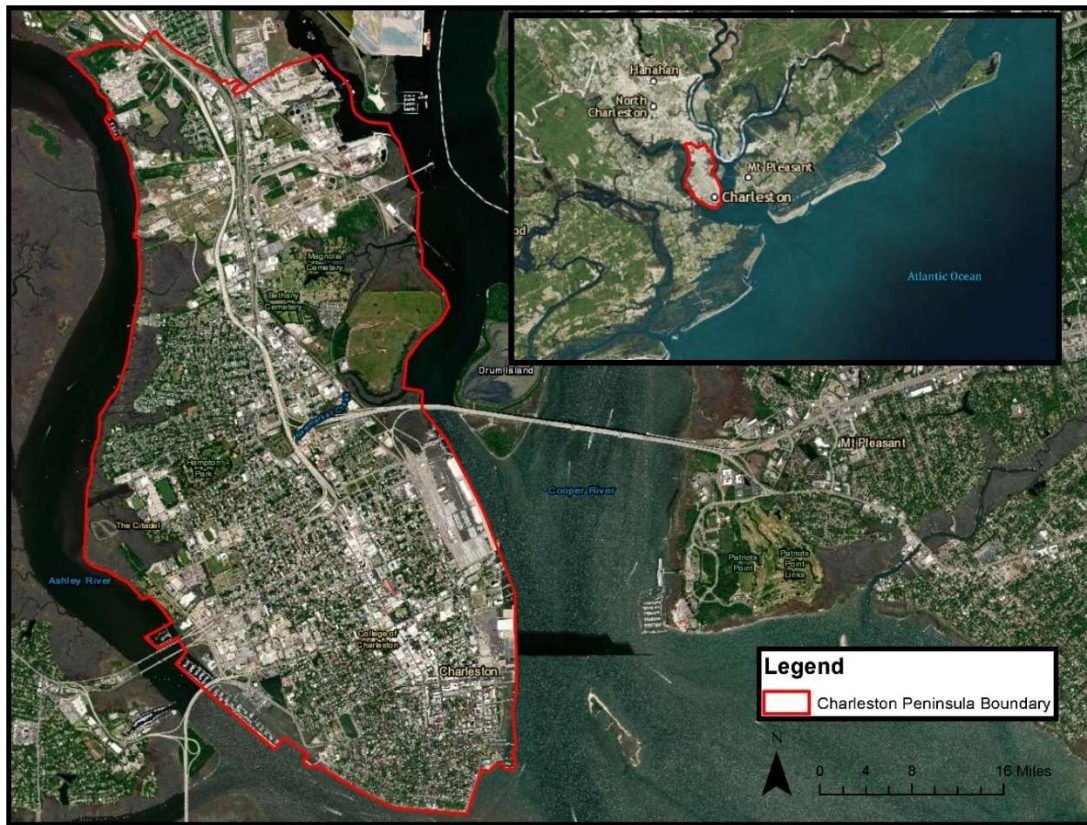


Figure 1. - Study Area

The first European settlers arrived in Charleston around 1670. Since that time, the peninsula city has undergone dramatic shoreline changes, predominantly by landfilling of the intertidal zone. Early maps show

that over one-third of the present-day peninsula has been “reclaimed.” Much of the landfilling occurred on the southern tip of Charleston, behind a seawall and promenade, known as the Battery and along the western shoreline.

Charleston played an important role in Colonial, Revolutionary, antebellum, and Civil War America. The southern portion of the peninsula is home to a great concentration of 18th and 19th century buildings which have been designated a National Historic Landmark District. Presently, Charleston is a popular tourist destination. The peninsula has a considerable number of hotels, restaurants, and shops in addition to residential neighborhoods. The peninsula is also home to the downtown medical district, multiple colleges, ports, and a US Coast Guard Station.

1.3 Purpose and Need for the Study

Charleston is a highly urbanized, relatively flat community with nearly all areas below elevation 20 feet North American Vertical Datum of 1988 (NAVD88). The low elevations and tidal connections to the Ashley and Cooper Rivers and Charleston Harbor place a significant percentage of the city at risk of flooding from high tides, tropical storms, hurricanes, and other storms. Exacerbating the flooding is the phenomenon of relative sea level rise (RSLR), which is the combination of water level rise and land subsidence. Without a plan to reduce damages from coastal storm surge inundation, the peninsula’s vulnerability to coastal storms is assumed to increase over time. This study will develop and evaluate coastal storm risk management measures that would be combined into alternative plans to address the flooding problem for Charleston residents, industries, and businesses. The alternative plans will be evaluated, compared, and a plan to reduce coastal storm damages will be recommended.

Should the recommended plan be authorized, and funds appropriated by Congress, the plan would be implemented by USACE and non-Federal sponsor.

1.4 Study Authority

The authority to study all coastal South Carolina, including the Charleston Peninsula, was provided in the Rivers and Harbors Act of 1962, P.L. 87- 874, Section 110, and Senate Committee Resolution. Section 110 reads:

The Secretary of the Army is hereby authorized and directed to cause surveys to be made at the following named localities and subject to all applicable provisions of section 110 of the River and Harbor Act of 1950:

*Falmouth Harbor, Maine.
Channel between Point Shirley and Deer Island, Massachusetts.
Little Egg Inlet, New Jersey.
Brigantine Inlet, New Jersey.
Corsons Inlet, New Jersey.
Kings Bay Deep water Channel, Georgia.
Auglaize River at Wapakoneta, Ohio.*

Surveys of the coastal areas of the United States and its possessions, including the shores of the Great Lakes, in the interest of beach erosion control, hurricane protection and related purposes: Provided, That surveys of particular areas shall be authorized by appropriate resolutions of either the Committee on Public Works of the United States Senate or the Committee on Public Works of the House of Representatives.

On 22 April 1988, a Senate Committee Resolution authorized the Secretary of the Army to study the entire coast of South Carolina pursuant to Section 110:

“Resolved by the Committee on Environment and Public Works of the United States Senate, that the Secretary of the Army in accordance with the provisions of Section 110 of the River and Harbor Act of 1962, is hereby authorized to study, in cooperation with the State of South Carolina, its political subdivisions and agencies and instrumentalities thereof, the entire Coast of South Carolina in the interests of beach erosion control, hurricane protection and related purposes. Included in this study will be the development of a comprehensive body of knowledge, information, and data on coastal area changes and processes for such entire coast.”

The Bipartisan Budget Act of 2018 (Public Law 115-123), Division B, Subdivision 1, Title IV, appropriates funding for the study at full Federal expense. As identified under this “Supplemental Appropriation” bill, the study is subject to additional reporting requirements and is expected to be completed within three years and for \$3 million dollars:

FLOOD CONTROL AND COASTAL EMERGENCIES For an additional amount for ‘Flood Control and Coastal Emergencies’, as authorized by section 5 of the Act of August 18, 1941 (33 U.S.C. 701n), for necessary expenses to prepare for flood, hurricane and other natural disasters and support emergency operations, repairs, and other activities in response to such disasters, as authorized by law, \$810,000,000, to remain available until expended: Provided, That funding utilized for authorized shore protection projects shall restore such projects to the full project profile at full Federal expense: Provided further, That such amount is designated by the Congress as being for an emergency requirement pursuant to section 251(b)(2)(A)(i) of the Balanced Budget and Emergency Deficit Control Act of 1985: Provided further, That the Assistant Secretary of the Army for Civil Works shall provide a monthly report to the Committees on Appropriations of the House of Representatives and the Senate detailing the allocation and obligation of these funds, beginning not later than 60 days after the enactment of this subdivision.

1.5 Final Array of Alternatives

Numerous alternatives were considered throughout the planning process. Based on the screening criteria, the final array of alternatives include the No Action Alternative, Alternative 2 and Alternative 3 as described below and shown in Figures 2 and 3.

No Action Alternative

The No Action Alternative assumes that no actions would be taken by the Federal Government or local interests to address the problems identified by the study. Consequently, the No Action Alternative would not reduce damages from coastal storm surge inundation. Although this alternative would not accomplish the purpose of this study, it must always be included in the analysis and can serve several purposes.

Alternative 2

The management measures included in this alternative are:

- Storm surge wall along the perimeter of the Peninsula (approximately 7.8 miles)
- Nonstructural measures (approximately 100 structures)

The storm surge wall would be constructed along the perimeter of the peninsula to reduce damages from storm surge inundation. It would be strategically aligned to minimize impacts where possible to existing wetland habitat, cultural resources, and private property. The wall would be located on the landward side of all ports, yacht clubs, marinas, and the Coast Guard Station to allow for continued operation. The wall would tie into high ground as appropriate, including the existing Battery wall. The High Battery wall would be reconstructed

to meet USACE construction standards and raised to provide a consistent level of performance. Sections of the new wall would be fitted with walkways and railings to provide additional recreation opportunities in the study area. This alternative would include permanent and temporary pump stations as well as pedestrian, vehicle, railroad, boat, and storm (tidal flow) gates.

Where placed on land, the storm surge wall would be a T-wall with traditional concrete stem walls and pile supported bases. In the marsh, the storm surge wall would be a combination wall, which consists of continuous vertical steel piles on the storm surge side and battered steel pipe piles on the other side, connected by a concrete cap. Pilings for both wall types would be 50 to 70 feet deep to tie into marl bedrock. From the center of the wall on each side, a perpetual 25-foot easement is required for maintenance, plus a 10-foot temporary construction easement.

In addition to the storm surge wall, this alternative includes nonstructural measures that will be applied to residential structures within the study area that may incur damages from storm surge after the wall has been constructed. Nonstructural measures considered include relocations, potential buyouts, elevations, and floodproofing. Additional analysis will determine the application of these measures should the alternative be selected.

Alternative 3

The management measures included in this alternative are:

1. Wave attenuation structure offshore of the Battery (approximately 4,000 feet long)
2. Storm surge wall along the perimeter of the Peninsula (approximately 7.8 miles)
3. Nonstructural measures (approximately 100 structures)

A wave attenuation structure would be constructed in Charleston Harbor to dampen waves, reduce loading on the Battery wall, and prevent waves from overtopping during storm events. For the purposes of alternative evaluation, comparison, and impact analysis, the wave attenuation structure was analyzed as a breakwater made of granite rock, at an elevation of 16.2 feet NAVD88, with the toe placed approximately 230 feet from the shoreline. The structure was aligned to be parallel with the shoreline, to avoid encroachment into federal channels in the Charleston Harbor and Ashley River. Additional analysis will determine the optimized material type, placement, length, and height of the structure should this alternative be selected.

Alternative 1	No Action	N/A
Alternative 2	Structural Storm Surge Wall along the perimeter of the Peninsula and Nonstructural Measures in Wagener and Newmarket areas.	Figure 2
Alternative 3	Structural and Nonstructural Alternative 2 combination, plus a Wave Attenuation Structure in the harbor	Figure 3

Table 1. - Final Array of Alternatives



Figure 2. – Alternative 2

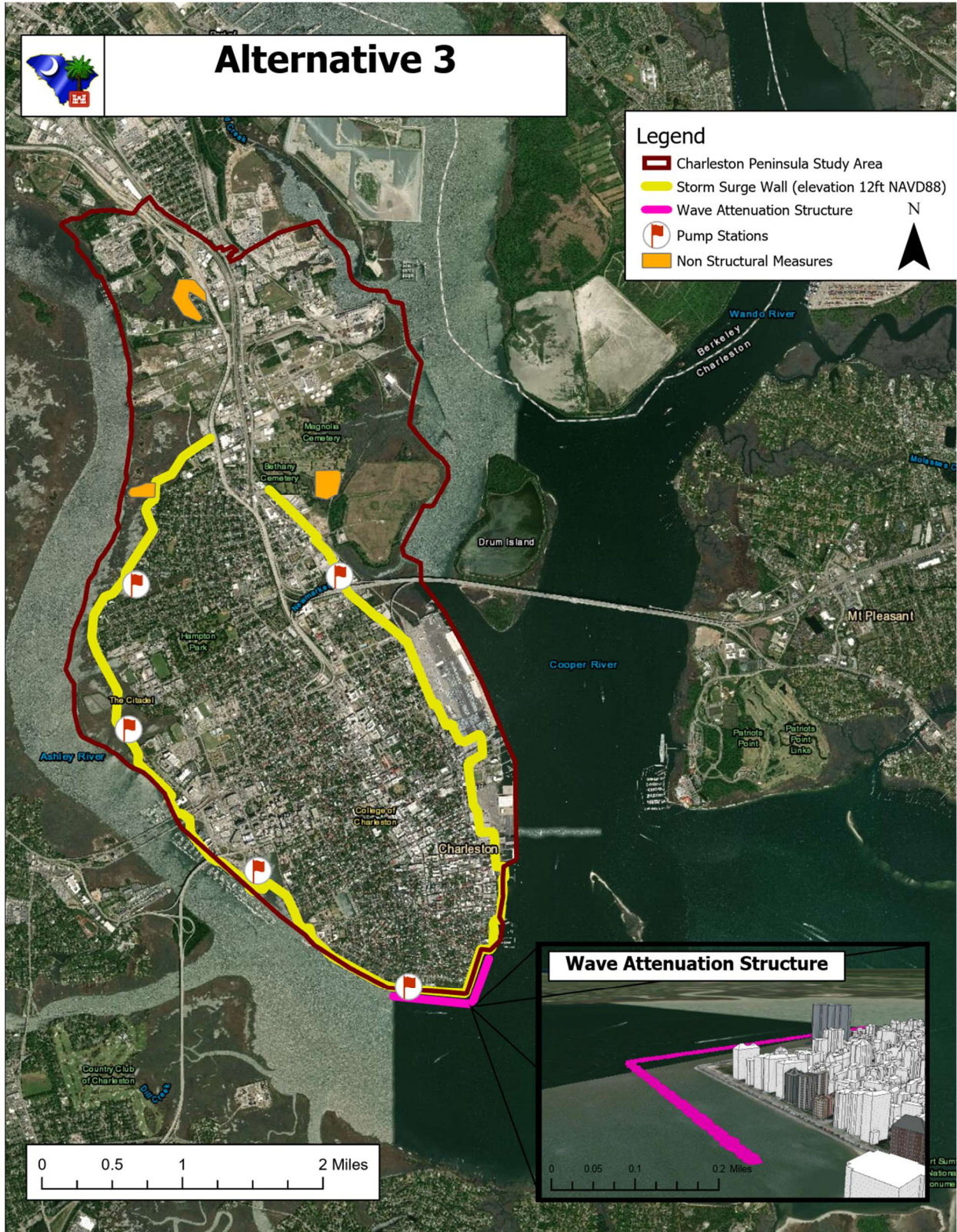


Figure 3. – Alternative 3

1.6 Project Measures

Following is an array of Structural, Non Structural and Mitigation measures.

STRUCTURE MEASURES:			
Measure Type	Description	Estate Required	REP Real Estate Cost Formulation
Storm Surge Wall	Wall onshore along the perimeter of Peninsula (elevation 12 ft. NAVD88). <i>T-wall on land (4.2 miles), to include a recreational walkway of select areas to be determined.</i>	Temporary Work Area Easement (TWAE) & Perpetual Flood Protection Levee Easement (PFPLE). Fee Acquisition to be determined.	PFPLE buffer is 35 ft. on each side of the wall which includes wall. TWAE buffer is 10 ft. on either side of the PFPLE. Total temporary and permanent buffer applied = 70 ft.
Storm Surge Wall	Wall along the perimeter of Peninsula (elevation 12 ft. NAVD 88). <i>Combo Wall in marsh (3.6 miles) to include a recreational walkway of select areas to be determined.</i>	Temporary Work Area Easement (TWAE) & Perpetual Flood Protection Levee Easement (PFPLE)	PFPLE buffer is 35 ft. on each side of the wall which includes the wall. TWAE buffer is 25 ft. on either side of the PFPLE. Total temporary and permanent buffer applied = 70 ft.
Pump/Power Stations	Structure used to pump interior storm water and/or house power generation for tide gates. Locations of stations to be determined.	PFPLE	PFPLE buffer is 60ft. X 60ft. pad sites. Total permanent area = 3,600 sq. ft. each pad.
Pedestrian, vehicle, railroad, boat and storm (tidal) gates	Select Gates. Number/type/location of gates to be determined.	TWAE & PFPLE	Temporary construction and permanent access for gates included in estates for Storm Surge Wall.
High Battery Wall	Raising of existing High Battery Wall may be reconstructed to meet USACE construction standards, to be determined.	City-owned land	Value costs to be determined based on PFPLE and Administrative.
Staging and Storage areas	Staging during construction and storage areas for surge and tide gates. Areas to be determined.	City-owned land wherever possible	Value costs to be determined based on TWAE & PFPLE and Administrative.
Wave Attenuation Structure	To be constructed in the Charleston Harbor to dampen waves, reduce loading on existing Battery Wall, and prevent waves from overtopping during storm events.	No estate required due to Navigational Servitude.	No property rights or administrative costs associated with this measure due to Navigational Servitude.
Disposal and Borrow areas	Necessary disposal of ground or marsh material to be determined later during PED phase.	TWAE & PFPLE	Value costs to be determined based on TWAE & PFPLE and Administrative.

NONSTRUCTURAL MEASURES: Voluntary			
Measure Type	Description	Estate Required	REP Real Estate Cost Formulation
Flood proofing	Dry flood proofing consists of waterproofing the structure to up 3 feet above ground level.	Right of Entry ROE	No property rights associated with this measure. Administration costs to liaison between the property owner and the construction company for the ROE have been included in the CE. There is no relocation compensation for voluntary measures.
Elevations	Involves lifting an existing structure to an elevation that is at least equal to or greater than the design flood elevation.	ROE	No property rights associated with this measure. Administration costs to liaison between the property owner and the construction company for the ROE have been included in the CE. There is no relocation compensation for voluntary measures.
Buyout	If the cost to flood proof or elevate a structure costs more than the value of the structure, then the measure applied may be considered a potential buyout.	Fee Acquisition if needed.	Parcels to be surveyed and potential buyouts will be determined, including acquisition and relocation costs.
MITIGATION MEASURES:			
Measure Type	Description	Estate Required	REP Real Estate Cost Formulation
Wetland Mitigation	Construction within saltmarsh wetlands expect to buy credits through mitigation bank.	Fee Acquisition, TWAE, or Road Easement if needed. Mitigation Conceptual plan only.	
Living Shoreline Mitigation	Construction in salt marsh or tidal wetlands of living shorelines	Fee Acquisition, TWAE, or Road Easement if needed. Mitigation Conceptual plan only.	

Table 2. - Project Measure Descriptions

1.7 Real Estate Requirements

This Real Estate Plan (REP) is prepared in accordance with applicable Engineering Regulations and presents preliminary and estimated real estate requirements based on the information and resources available at this time with multiple assumptions, for the Charleston Peninsula Coastal Flood Risk Management Study (the project). The City of Charleston is the non-Federal sponsor (NFS) for the study. The City and USACE signed the Feasibility Cost-Share Agreement on October 10, 2018.

This REP is an appendix to the Feasibility Study and describes the lands, easements, rights of way, relocation, and disposal areas (LERRD) anticipated, identified or estimated at this time, that appear to be required for construction, operation and maintenance of the proposed project; including estimated number of parcels, acreage, estates, ownerships, and preliminarily and roughly estimated values and identified assumptions. The

REP will also include other relevant information on NFS ownership of land, proposed standard and non-standard estates, existing federal projects and potential relocations under the Uniform Relocation Assistance and Real Property Acquisition Policies Act (P.L. 91-646, as amended), facility/utility relocations, a baseline cost estimate (ROM), a schedule for real estate activities, and other issues as required.

1.8 Recommended Estates

If a property must be acquired for the project, the NFS will need to acquire all needed property rights and interest up to and including fee acquisitions. Most of the structural measures for the storm surge wall will require perpetual and temporary construction easements. Some properties we did assume would require fee acquisitions due to the amount of land and building remaining after the taking, leaving an uneconomic remnant. The NFS and Federal administrative costs associated with obtaining all real estate is included in the Administrative Review.

Standard Estates that may be needed for this project are identified and set out below. This is a preliminary list due to the feasibility stage of the project and sufficient information is not available to provide more accurate identification of potential property rights, interest and estates that may be required or the value of such property rights, interest and estates.

Fee:

The fee simple title to (the and described in Schedule A) 1/ (Tracts Nos. , and), Subject, however, to existing easements for public roads and highways, public utilities, railroads and pipelines.

Temporary Work Area Easement:

A temporary easement and right-of-way in, on, over and across (the land described in Schedule A) (Tracts Nos. _____, _____ and _____), for a period not to exceed _____, beginning with date possession of the land is granted to the United States, for use by the United States, its representatives, agents, and contractors as a (borrow area) (work area), including the right to (borrow and/or deposit fill, spoil and waste material thereon) (move, store and remove equipment and supplies, and erect and remove temporary structures on the land and to perform any other work necessary and incident to the construction of the _____ Project, together with the right to trim, cut, fell and remove therefrom all trees, underbrush, obstructions, and any other vegetation, structures, or obstacles within the limits of the right-of-way; reserving, however, to the landowners, their heirs and assigns, all such rights and privileges as may be used without interfering with or abridging the rights and easement hereby acquired; subject, however, to existing easements for public roads and highways, public utilities, railroads and pipelines.

Perpetual Flood Protection Levee Easement:

A perpetual and assignable right and easement in (the land described in Schedule A) (Tracts Nos. _____, _____ and _____) to construct, maintain, repair, operate, patrol and replace a flood protection (levee) (floodwall)(gate closure) (sandbag closure), including all appurtenances thereto; reserving, however, to the owners, their heirs and assigns, all such rights and privileges in the land as may be used without interfering with or abridging the rights and easement hereby acquired; subject, however, to existing easements for public roads and highways, public utilities, railroads and pipelines.

Road Easement:

A (perpetual [exclusive] [non-exclusive]and assignable) (temporary) easement and right-of-way in, on, over and across (the land described in Schedule A) (Tracts Nos. _____, _____ and _____) for the location, construction, operation, maintenance, alteration replacement of (a) road(s) and appurtenances thereto; together with the right to trim, cut, fell and remove therefrom all trees, underbrush, obstructions and other vegetation, structures, or obstacles within the limits of the right-of-way; (reserving, however, to the owners, their heirs and assigns, the right to cross over or under the

right-of-way as access to their adjoining land at the locations indicated in Schedule B); 5/ subject, however, to existing easements for public roads and highways, public utilities, railroads and pipelines. If sand and gravel or other quarriable material is in the easement area and the excavation thereof will not interfere with the operation of the project, the following clause will be added: "excepting that excavation for the purpose of quarrying (sand) (gravel) (etc.) shall be permitted, subject only to such approval as to the placement of overburden, if any, in connection with such excavation;"

Utility and/or Pipeline Easement:

A perpetual and assignable easement and right-of-way in, on, over and across (the land described in Schedule A) (Tracts Nos. _____, _____ and _____), for the location, construction, operation, maintenance, alteration; repair and patrol of (overhead) (underground) (specifically name type of utility or pipeline); together with the right to trim, cut, fell and remove therefrom all trees, underbrush, obstructions and other vegetation, structures, or obstacles within the limits of the right-of-way; reserving, however, to the land owners, their heirs and assigns, all such rights and privileges as may be used without interfering with or abridging the rights and easement hereby acquired; subject, however, to existing easements for public roads and highways, public utilities, railroads and pipelines.

Non-Standard Estates

If it is determined that a non-standard estate is needed during the planning and design phase, the District Real Estate Office will seek waiver of standard estates and approval or non-standard estates or measures through the USACE South Atlantic Division (SAD) to HQ USACE.

1.9 Real Estate Cost Analysis and Assumptions

This REP summarizes progress to date on the Charleston Peninsula feasibility study and identifies the alternatives and prepares a budgetary estimate of Real Estate costs that will be considered in greater detail as the study progresses toward selection of the Tentatively Selected Plan (TSP). Real Estate utilized Rough Order of Magnitude (ROM) for cost estimates developed during this feasibility stage of the study in accordance with the ER 405-1-12, Chapter 12 (including Change 31) and Real Estate Policy Guidance Letter No. 31.

These Real Estate ROM cost estimates were identified using GIS data from City of Charleston Assessor’s office. Similar properties were identified and grouped by Model Areas (1-5) Battery, Port, Marina, Newmarket and Wagener Terrace. The primary information used for the data were poly lines over aerial maps using ArcGIS to display simulated structural and nonstructural footprints and Assessor’s Parcel information. See Figure 4 Real Estate Impacted by Project for the footprint of the storm surge wall and parcels and buildings impacted by the construction buffer around the peninsula. For the purposes of this stage in the feasibility study, only real estate requirements for a footprint of a 12-foot storm surge wall were estimated. Due to insufficient information available on condominium ownerships and tenants, no costs were included in this stage of the study. No acquisition parcels are located within the Battery area of the footprint and therefore, no ROM costs are included during this phase of the study.

Structural footprints were based on USACE Storm Surge Wall design criteria as provided by Engineering. To prepare preliminary costs of real estate, each parcel was placed in a classification based on residential and nonresidential properties. The Real Estate assumptions were estimated based upon acquisition of perpetual easements and fee title. Temporary work area and permanent easements were calculated based on wall height and width of the footprint within all model areas of the peninsula. The degree of property rights, utility relocations or railroad intersections have not been determined. Due to the complexity of the underground and aerial utilities an assumption was made that 40% of all parcels would require some relocation of utilities. For feasibility planning purposes the last assessed value of improvements at the City Assessor’s office was used to determine cost of improvements on land. Cost assumptions included walls located on land and in the



Figure 4. Real Estate Impacted by Project

marshlands, intersecting parcels and structures, along roadways, including pump house locations and gates. For those parcels with the wall located within the Marshlands were assumed no compensation due to navigational servitude. Preliminary federal and nonfederal administration costs were calculated based on the number of parcels that would be required for construction of the project.

ROM COST ESTIMATE (CE) IS NOT AN APPRAISAL; RATHER, THIS IS A PLANNING REFERENCE FOR THE EARLIEST STAGES OF PROJECT COST ESTIMATING BASED ON EXTREMELY LIMITED DETAIL. THE VALUES REFLECT THE CE, AND PRE-ACQUISITION APPRAISAL SERVICES TO DETERMINE THE CURRENT ACTUAL MARKET VALUE OF LERRD WILL BE OBTAINED DURING A LATER PHASE OF THE FEASIBILITY STUDY. ALSO, THE FOLLOWING ASSUMPTIONS APPLY DUE TO THE PRELIMINARY/LOW LEVEL OF PROJECT DESIGN AND DETAILS THAT ARE CRITICAL TO DETERMINING MORE ACCURATE ESTIMATES FOR THE REAL ESTATE PROJECT COSTS.

General Study Assumptions:

- Extraordinary Assumption: 5% Design Maps, ROM Cost Estimates (CE) based on combined ArcGIS maps and City Assessor Data adjusted +15% for impending 2020 reassessment, are correct and best data available; mapping 70 ft. footprint for storm surge wall (including a 20 foot temporary and 50 foot permanent), along the perimeter of Peninsula (7.8 miles), parcel locations by model areas, estates, square footage, ownerships, using current 2019 Assessed Values, etc.
- Extraordinary Assumption: All parcel structures that were intercepted by the wall footprint were considered potential buyouts and relocation in the CE. Due to high cost of real estate in the Port area, several high cost properties have been excluded as they more than double the Real Estate costs and it is assumed that such impacts would be avoided and addressed later during design and feasibility study. If not, the RE costs could increase by more than \$62 Million.
- Extraordinary Assumption: That the proposed study design will not cause additional and/or a typical flooding damages due to pumping/power stations, developed and maintained for the project construction use and perpetual year-round project Operation and Maintenance O&M.

General Assumption: When the property remaining after the storm surge wall easement acquisition and the remaining parcel is of little value (uneconomic remnant), then the property owner would be bought out. No parcels have been identified during the ROM stage. Parcels impacted by the storm surge wall footprint will need to be assessed during design phase.

- Hypothetical Condition: Based on an “As Clean” condition with no significant hazardous materials/contamination being present.
- Most Temporary Work Area Easements (TWAE) are for a 3 yr. term. Once determined for project Staging and Storage areas a 5yr. term for TWAE will be assumed.

1.10 Navigational Servitude

The Commerce Clause of the Constitution confers upon the Government a dominant right to use, control and regulate the navigable waters of the United States for various commerce-related purposes, including navigation and flood control. USACE policy is to use navigational servitude whenever possible.

A preliminary review of South Carolina ownership rights and navigational servitude has resulted in the determination that the Ashley and Cooper Rivers and Charleston Harbor surrounding the peninsula have been identified as navigable. Real Estate cost analysis assumptions were made in consideration that navigational servitude will suffice to absolve the NFS from any responsibility to compensate landowners for the use of

marshland that becomes the site of the storm surge wall footprint. If recreational opportunity (walkway on the Combo Wall in the Marsh) is provided incidentally to the Government’s use of navigational servitude and does not add to the footprint of land used for the project, the NFS does not need to acquire land in fee.

1.11 Public Law 91-646, Relocation Assistance Benefits

The Federal Relocation Assistance Program, Public Law 91-646 applies to NFS acquisitions. A meeting was held with the NFS on 1/29/2020 to review real estate requirements for the project including Relocation Assistance. The NFS has completed the assessment questionnaire to confirm their role and responsibilities to fulfill the Federal Acquisition requirements, including P.L. 91-646 (Exhibit A)

Preliminary ROM costs for the acquisition of real estate included the assumption of potential buyouts with relocation benefits. The cost to prepare and administer Federal Relocation Assistance Program benefits resulting from the possible taking of property (18 residential and commercial parcels) were considered. NFS costs includes acquisition and replacement costs including, appraisal, survey, title, legal, business relocation and moving expenses. No relocation assumptions were attributed to vacant lands. Following is a summary of estimated costs for relocation considered in the Real Estate Baseline Cost Estimate (ROM) for a 12-foot Storm Surge Wall. (Table 4)

Preliminary Relocation Costs (ROM)

Location	Parcels	Estimated Cost
Wagener Terrace	3	\$ 315,000
Newmarket	10	\$1,050,000
Port	5	\$3,540,000
Marina	0	0
Battery	0	0
Total	18	\$4,905,000

1.12 Project Sponsor Responsibilities and Capabilities

The City of Charleston, South Carolina will be the non-Federal Project Sponsor (NFS). The NFS has the responsibility to acquire all real estate interests required for the project. The NFS shall accomplish all alterations and relocations of facilities and utilities, structures and improvements determined by the government to be necessary for construction of the project. The sponsor will have all operation and maintenance responsibility for the project after construction is completed.

Title to any acquired real estate will be retained by the NFS and will not be conveyed to the United States Government. Prior to advertisement of any construction contract, the NFS shall furnish to the government an Authorization for Entry for Construction (Exhibit B) to all lands, easements and rights-of-way, as necessary. The NFS will also furnish to the government evidence supporting their legal authority to grant rights-of-way to such lands. The NFS shall comply with applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, approved 2 January 1971, and amended by Title IV of the Surface Transportation Uniform Relocation Assistance Act of 1987, Public Law 100-17, effective 2 April 1989, in acquiring real estate interests for the Project, and inform all affected persons of applicable benefits, policies, and procedures in connection with said Act(s). An Assessment of the Non-Federal Sponsor’s Capability to Acquire Real Estate is at Exhibit “A” to the Real Estate Appendix.

The non-Federal sponsor is entitled to receive credit against its share of project costs for the value of lands it provides and the value of the relocations that are required for the project. Generally, for the purpose of

determining the amount of credit to be afforded, the value of the LER is the fair market value of the real property interest, plus certain incidental costs of acquiring those interests, that the non-federal sponsor provided for the project as required by the Government.

The NFS should not acquire lands required for the project prior to execution of the Project Partnership Agreement (PPA). Should the NFS proceed with acquisition of lands prior to execution of the PPA, it is at the risk of not receiving credit or reimbursement for any costs incurred in the connection with the acquisition process should the project not be approved, appropriated and PPA not be signed. There is also risk in acquiring lands either not needed for the project or not acquired in compliance with requirements for crediting purposes in accordance with 49 CFR Part 24, dated March 2, 1989. (Exhibit C NFS Risk Letter)

1.13 Government Owned Property

The City of Charleston is assumed to be the owner of all lands proposed for staging and storage areas for the project. The U.S. Coast Guard Station USCG is located in the study area (Marina) and included within the footprint of the storm surge wall. Later in the design phase, when the impacted area is confirmed, the impacted area property may require an out grant or easement with the USCG. There are several Federal owned properties within the peninsula study area, however, not located with the wall footprint. Close coordination will be conducted during the acquisition phase of the project to ensure no mission disturbance for the USCG.

There is one Federal Project nearby the study area:

Charleston Harbor (Post 45) – extend and deepening of harbor entrance channel and deepening and widening of inner harbor channels. Construction began in March 2018 and currently ongoing.

1.14 National Historic Preservation Act (NHPA)

Charles Town, originally settled in the late 1600's by English colonists on the west bank of the Ashley River, but moved shortly thereafter to the peninsula and officially became known as *Charleston in 1783*. The Charleston peninsula contains the heart of the city's historic areas, and its diverse architecture and archeological sites reflects the historical and cultural development of the city. See the Cultural Section of the Main Report.

A preliminary historical site-impact analysis was conducted by a USACE Archeologist. The analysis consists of costs associated with the survey and mitigation of architecture and archaeology of various properties. It was determined that the study as it is currently designed, does include structural measures that would have a physical impact on two parcels which contain property that is eligible for or listed in the National Register of Historic Places (NRHP). However, some measures of the Feasibility Study are located in NRHP listed historic districts, and there may be visual or view-scape effects.

Additionally, some buildings designated and protected as “historic” may be included in the Non-Structural measures category. If a property owner voluntarily chooses to alter his/her property through a Project Non-Structural measure, then the property may lose its historic designation. Approximately 100 parcels are eligible for Non-Structural measures and will be surveyed post TSP to determine historical impact and mitigation.

See Cultural Resources in the Main Feasibility Report.

1.15 Mineral/Timber Rights

Based on current design level, there are no future mineral/timber activities or other subsurface minerals identified within the scope of the study area.

1.16 Hazardous, Toxic, and Radioactive Waste (HTRW)

Hazardous, Toxic and Radioactive Waste (HTRW) is addressed in the Main Feasibility Report. Based on current design level, there are no known HTRW located within the scope of the study area.

1.17 National Environmental Policy Act (NEPA)

NEPA is addressed in the Environmental Resources Section of the Main Feasibility Report. Based upon the current level of design includes construction within the marshlands and living shorelines. Compensatory mitigation is assumed by buying wetland credits through a mitigation bank. Based on early conceptual design in the Feasibility Study, the draft Mitigation Plan included an assumption of 530 Acres of mitigation land at \$7,500 per acre. This early plan is conceptual and requires further habitat analysis before the end of this study. For that reason, the total estimate mitigation land costs of \$4,000,000 were not included in the RE Baseline ROM Costs. A selected mitigation plan will be identified before the end of the project.

1.18 Zoning Ordinances

Zoning ordinances will be identified with the completion of the gross appraisal later in the feasibility study.

1.19 Induced Flooding

There will be no flooding induced by the construction or the operation and maintenance of the project. Five Pump/ Power Stations will be constructed located throughout the footprint of the project to manage any flooding due to operation of pedestrian, vehicle, railroad, boat, and storm (tidal flow) gates. While the storm drainage system is not a Federal responsibility, any impacts to the interior hydrology due to the proposed project will be evaluated and mitigated to the extent justified under USACE policy, if necessary.

1.20 Public Support or Opposition

The first public meeting was held at the start of the feasibility study in January 2019 and was well attended. At this point in the study, there has been no significant opposition from the public. However, due to the high value of real estate on the peninsula, owner opposition is expected. As a result of public scoping, stakeholder engagement, and conduct of the environmental review, visual impacts of the wall, property acquisition and construction related effects are a concern of the public.

1.21 Acquisition Schedule

The NFS is responsible for acquiring real estate interests required for the project. The proposed project is currently in feasibility stage. It is anticipated that phases will be preliminarily determined and are expected to be revised as the design progresses. The acquisition of all property rights and interest, including fee and acquisition through negotiation and condemnation, will be accomplished over several years with the acquisition of all the real estate interest required for each respective phase completed in advance of contracting for construction of that phase. The Government will provide the NFS will a written notice to proceed with acquisition upon execution of the Project Partnership Agreement PPA. The following estimated acquisition schedule indicates the length of time required for each step in the standard acquisition process.

Real Estate Acquisition Schedule

Project Partnership Agreement	Start Date
Maps and General Descriptions of LERRD to NFS	Within 2 weeks of start date
Plat and Owner Verification	Within 6 months of NFS map receipt
Negotiations (Utilities & Facilities)	Within 6 months of Plat and Owner Verification
Appraisal of Property	Within 6 months of NFS of Plat receipt
Review Value Estimates	Within 6 months of Estimate receipt

Negotiations (Private Owners)	Within 3 months after Value Estimate
Closings	Within 2 months of Negotiations*
Possession	Within 1 day of closing
Certification of Chief of Real Estate	Within 2 weeks of possession
Process Total	2 years 6 months
<i>Condemnation/Eminent Domain</i>	<i>Within 1 year of failure of negotiations</i>

Table 3. – Real Estate Acquisition Schedule

1.22 Utility and Facility Relocations

Public Facility Relocations have two components—the cost to relocate the actual infrastructure itself (construction relocation costs) and the relocation administrative costs for preparing or reviewing real estate documents including Relocation Agreements, with utilities—all of which are LERRD (Lease, Easement, Right of Way, Relocation and Disposal). These construction relocation and administrative relocation costs are 100% the responsibility of the NFS and are not creditable under the PPA. Following are the estimated utility and facility relocation administrative costs for the Tentative Selected Plan:

- Cost of developing Relocation Agreements for approximately 10 utilities (water, sewer and storm water, gas, electric, water, sewer, telephone, fiber optics, cable).
NFS \$25,000 X 10 = \$250,000
FED \$5,000 X 10 = \$50,000.
- Cost of obtaining permission/easements from railroads for crossing and deployable floodwalls. We are anticipating only 2 railroad crossings on the peninsula.
NFS \$50,000 X 2 = \$100,000
FED \$5,000 X 2 = \$10,000
- Cost to prepare and review easements and real estate documents that may be required for proposed relocation of utilities = \$5,000 for each impacted parcel, estimated at 40% of the total # of parcels. We assumed the 12' Barrier footprint of 136 parcels or 54 parcels in our calculations. At this point in the study, this estimated projection may be high or low.
NFS \$5,000 X 54 = \$235,000
FED \$2,500 X 54 = \$117,500

All costs associated with public facility relocations, during this feasibility stage are considered preliminary and tentative. These estimated administrative costs will be reassessed as the design is refined.

1.23 Administrative Review Costs

The estimated administrative costs for the Tentative Selected Plan are included in the Real Estate Baseline and Cost Estimate (Table 4) as follows.

12-foot Storm Surge Wall

- Cost to prepare and review *temporary and permanent easements* that will be required for the construction of the storm surge wall footprint and floodgates where required for each impacted parcel and estimating 118 parcels. NFS cost includes acquisition costs of appraisal, survey, title and legal.

NFS \$15,000 per parcel X 118 = \$1,770,000.

FED Support \$5,000 per parcel X 118 = \$590,000.

- Parcel structures that were intersected by the 12-foot storm surge wall footprint were considered potential buyouts with relocation and acquisition costs in fee were included in the CE. NFS potential *buyout* cost includes costs to prepare and review acquisition including appraisal, survey, title and legal. There are approximately 18 potential buyouts.

NFS \$15,000 per parcel X 18 = \$270,000

FED Support \$ 5,000 per parcel X 18 = \$90,000

Non-Structural Benefits

- Cost to prepare and review *temporary rights of entry* required for survey, inspection and construction of nonstructural measures, including home raising and flood proofing. Estimating 100 residential structures below 12 ft. NAVD88 will be impacted by the project.

NFS \$1,000 per parcel X 100 = \$ 100,000.

FED Support \$ 500 per parcel X 100 = \$50,000.

1.24 Real Estate Baseline Cost Estimates (ROM)

a. Lands					
	Fee		18		
	Temporary Easements		59	\$4,103,204	
	Perpetual Easements		59	\$29,760,307	
			136		
b. Improvements					
	Residential			\$29,564,787	
	Commercial				
c. Mineral Rights				\$0	
d. Damages				\$0	
e. P.L. 91-646 Relocation Costs				\$4,905,000	
f. Acquisition Cost - Admin (136 ownerships)					
	18 Parcels in Fee, 118 easements, Inc. Utilities			\$3,632,500	
	Federal	\$907,500			
	Non-federal	\$2,725,000			
		\$3,632,500			
	Subtotal			\$71,965,798	
	Contingencies (45%)			\$32,384,609	
	TOTAL			\$104,350,407	

Table 4. - Real Estate Baseline Cost Estimate (ROM)

1.25 Chart of Accounts

The cost estimate for all Federal and non-Federal real estate activities necessary for implementation of the project after completion of the feasibility study for land acquisition, construction, LERRD, and other items are coded as delineated in the Cost Work Breakdown Structure (CWBS). This real estate cost estimate is then incorporated into the Total Current Working Estimate utilizing the Microcomputer Aided Cost Engineering System (MCACES).

Charleston Peninsula ROM - Chart of Accounts				
		FEDERAL	NON-FEDERAL	TOTALS
01A	PROJECT PLANNING			
	Other			
	Project Cooperation Agreement	\$ -	\$ -	\$ -
01AX	Contingencies (45%)	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
	Subtotal	\$ -	\$ -	\$ -
01B	LANDS AND DAMAGES			
01B40	Acq/Review of PS	\$ 907,500.00	\$ -	\$ 907,500.00
01B20	Acquisition by PS	\$ -	\$ 2,725,000.00	\$ 2,725,000.00
01BX	Contingencies (45%)	<u>\$ 408,375.00</u>	<u>\$ 1,226,250.00</u>	<u>\$ 1,634,625.00</u>
	Subtotal	\$ 1,315,875.00	\$ 3,951,250.00	\$ 5,267,125.00
01H	AUDIT			
01H10	Real Estate Audit	\$ -	\$ -	\$ -
01HX	Contingencies (45%)	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
	Subtotal	\$ -	\$ -	\$ -
01R	REAL ESTATE LAND PAYMENTS			
01R1B	Land Payments by PS	\$ -	\$ 63,428,298.00	\$ 63,428,298.00
01R2B	PL91-646 Relocation Pymt by PS	\$ -	\$ 4,905,000.00	\$ 4,905,000.00
01R2D	Review of PS	\$ -	\$ -	\$ -
01RX	Contingencies (45%)	<u>\$ -</u>	<u>\$ 30,749,984.10</u>	<u>\$ 30,749,984.10</u>
	Subtotal	\$ -	\$ 99,083,282.10	\$ 99,083,282.10
	TOTALS	<u>\$ 1,315,875.00</u>	<u>\$ 103,034,532.10</u>	<u>\$ 104,350,407.10</u>
	ROUNDED TO			\$104,400,000

Table 5. – Chart of Accounts

This Real Estate Appendix has been prepared in accordance with policy and guidance set forth in ER 405-1-12, Chapter 12, Real Estate Planning and Acquisition Responsibilities for Civil Works Projects.

Prepared by:

Dorothy Steinbeiser
Senior Realty Specialist

Reviewed and approved by:

John S. Hinely
Chief, Real Estate Acquisition Branch

EXHIBITS

Exhibit A - Assessment of Non-Federal Sponsor's Real Estate Acquisition Capability

City of Charleston, South Carolina Assessment of Non-Federal Sponsor's Real Estate Acquisition Capability

I. Legal Authority:

- a. Does the sponsor have legal authority to acquire and hold title to real property for project purposes? **YES**
- b. Does the sponsor have the power to eminent domain for this project? **YES**
- c. Does the sponsor have "quick-take" authority for this project? **YES**
- d. Are any of the land/interests in the land required for this project located outside the sponsor's political boundary? **NO The City is not aware of any land located outside of the political boundary.**
- e. Are any of the lands/interests in land required for the project owned by an entity whose property the sponsor cannot condemn? **The City cannot answer this question at this time. If any of the land is owned by another government entity, they may not be able to condemn.**

II. Human Resource Requirements:

- a. Will the sponsor's in-house staff require training to become familiar with the real estate requirements of Federal projects including P. L. 91-646, as amended? **YES**
- b. If the answer to II.a. is "yes", has a reasonable plan been developed to provide such training? (yes/no) **The City will communicate with the Realty Specialist about any training that is needed outside of the overview already provided.**
- c. Does the sponsor's in-house staff have sufficient real estate acquisition experience to meet its responsibilities for the project? **YES**
- d. Is the sponsor's projected in-house staffing level sufficient considering its other work load, if any, and the project schedule? **NO The City is aware that they will need to obtain additional staff.**
- e. Can the sponsor obtain contractor support, if required in a timely fashion? **YES**
- f. Will the sponsor likely request USACE assistance in acquiring real estate? **The City has not analyzed whether they would request USACE assistance at this time.**

III. Other Project Variables:

- a. Will the sponsor's staff be located within reasonable proximity to the project site? **YES**

- b. Has the sponsor approved the project/real estate schedule/milestones? **The City is in the process of approving the project in coordination with USACE.**

IV. Overall Assessment:

- a. Has the sponsor performed satisfactory on other USACE projects?
YES
- b. With regard to the project, the sponsor is anticipated to be: **Highly capable**

V. Coordination:

- a. Has this assessment been coordinated with the sponsor? **YES**
- b. Does the sponsor concur with this assessment? **YES**

Prepared by:

Dorothy Steinbeiser
Senior Realty Specialist

Reviewed and approved by:

John S. Hinely
Chief, Real Estate Acquisition Branch

Exhibit B. - Authorization for Entry for Construction

I _____, _____ for the
(Name of accountable official) (Title)

(Sponsor Name) _____, do hereby certify that the _____ (Sponsor Name) has acquired the real property interest required by the Department of the Army, and otherwise is vested with sufficient title and interest in lands to support construction for (Project Name, Specifically identified project features, etc.). Further, I hereby authorize the Department of the Army, its agents, employees and contractors, to enter upon _____
(identify tracts)

to construct (Project Name, Specifically identified project features, etc.) as set forth in the plans and specifications held in the U. S. Army Corps of Engineers' (district, city, state)

WITNESS my signature as _____ for the
(Title)

(Sponsor Name) this __ day of _____, 20_____.

BY: _____
(Name)

(Title)

ATTORNEY'S CERTIFICATE OF AUTHORITY

I, _____, _____ for the
(Name) (Title of legal officer)

(Sponsor Name), certify that _____ has
(Name of accountable official)

authority to grant Authorization for Entry; that said Authorization for Entry is executed by the proper duly authorized officer; and that the Authorization for Entry is in sufficient form to grant the authorization therein stated.

WITNESS my signature as _____ for the
(Title)

(Sponsor Name), this _____ day of _____, 20_____.

BY: _____
(Name)

(Title)

Exhibit C. – Non-Federal Sponsor Risk Letter



DEPARTMENT OF THE ARMY
SAVANNAH DISTRICT, CORPS OF ENGINEERS
100 W. OGLETHORPE AVENUE
SAVANNAH, GEORGIA 31401-3640

Date

Real Estate Division

Subject: Charleston Peninsula Project – Real Estate Acquisition

City of Charleston
2 George Street
Charleston, SC 29401

Dear _____ :

The intent of this letter is to formally advise the City of Charleston, South Carolina, as the potential non-Federal sponsor for the proposed project, of the risks associated with land acquisition prior to the execution of the Project Partnership Agreement (PPA) or prior to the Government's formal notice to proceed with acquisition. If a non-Federal sponsor deems it necessary to commence acquisition prior to an executed PPA for whatever reason, the non-Federal sponsor assumes full and sole responsibility for any and all costs, responsibility, or liability arising out of the acquisition effort.

Generally, these risks include, but may not be limited to, the following:

- (1) Congress may not appropriate funds to construct the proposed project;
- (2) The proposed project may otherwise not be funded or approved for construction;
- (3) A PPA mutually agreeable to the non-Federal sponsor and the Government may not be executed and implemented;
- (4) The non-Federal sponsor may incur liability and expense by virtue of its ownership of contaminated lands, or interests therein, whether such liability should arise out of local, state, or Federal laws or regulations including liability arising out of CERCLA, as amended;
- (5) The non-Federal sponsor may acquire interests or estates that are later determined by the Government to be inappropriate, insufficient, or otherwise not required for the project;
- (6) The non-Federal sponsor may initially acquire insufficient or excessive real property acreage which may result in additional negotiations and/or benefit payments under P.L. 91-646 as well as the payment of additional fair market value to affected landowners which could have been avoided by delaying acquisition until after PPA execution and the Government's notice to commence acquisition and performance of LERRD; and

(7) The non-Federal sponsor may incur costs or expenses in connection with its decision to acquire or perform LERRD in advance of the executed PPA and the Government's notice to proceed which may not be creditable under the provisions of Public Law 99-662 or the PPA.

We appreciate the City's participation in this project. Should you have questions or concerns pertaining to this letter please feel free to contact at (912) 652-XXXX.

Sincerely,

Savannah District
Chief, Acquisition Branch
Real Estate Contracting Officer