

Living River Restoration Trust Program Instrument

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I. PROGRAM PURPOSE AND DESCRIPTION

This Living River Restoration Trust Program Instrument (“Instrument”) among the U.S. Army Corps of Engineers, Norfolk District (“Corps”), and the Living River Restoration Trust (“Sponsor”) details the establishment and processes for an in-lieu fee mitigation program of the Living River Restoration Trust In-Lieu Fee (ILF) Program (“Program”). This Instrument supersedes the First Amendment to the Living River Restoration Trust of 2009 (previously the Elizabeth River Restoration Trust). On April 10, 2008, a “Compensatory Mitigation for Losses of Aquatic Resources; Final Rule” (“Final Rule”) was published in the Federal Register, 33 Code of Federal Regulations (CFR) Parts 325 and 332. On August 2, 2016, Virginia Water Protection Permit Regulation (9VAC25 210 *et. seq.*) was updated and published. Lastly, Code of Virginia, Chapter 12 of Title 28.2., governing use of submerged lands, became effective June 26, 1979 and were most recently revised in October 2005.

USACE approval of this Instrument constitutes the regulatory approval required for the Program to be used to provide compensatory mitigation for Department of the Army permits pursuant to 33 C.F.R. 332.8(a)(1). This Instrument is not a contract between the Sponsor or Property Owner and USACE or any other agency of the federal government. Any dispute arising under this Instrument will not give rise to any claim by the Sponsor or Property Owner for monetary damages. This provision is controlling notwithstanding any other provision or statement in the Instrument to the contrary.

Additional regulatory authorizations may be required for wetland or stream impacts associated with the implementation of each Site Development Plan.

A. PURPOSE

The purpose of the Instrument is to provide a mechanism for compensatory mitigation for impacts to aquatic resources authorized by the Clean Water Act (33 U.S. Code [USC] § 1251 *et seq.*), the Rivers and Harbors Act (33 USC. 403), Virginia Water Protection Permit Regulation (*Virginia Administrative Code* 9VAC25 210 *et seq.*) and/or the Code of Virginia Chapter 12 of Title 28.2 while maximizing the benefit to the aquatic environment and the public interest. The purpose of this Instrument is to establish guidelines, responsibilities, and standards for the establishment, use, operation, and maintenance of the Program in accordance with regulations governing compensatory mitigation for unavoidable impacts authorized by Corps, Virginia Marine Resources Commission (“VMRC”) and/or DEQ permits.

The Sponsor agrees to follow and comply with the procedures set forth in this Instrument. The Program shall serve primarily as a compensatory mitigation tool pursuant to state and federal water laws and regulations. The Sponsor will use its resources to offset impacts that cannot be avoided, with the goal of achieving, at a minimum, no net loss of habitat, and to offset permitted project impacts affecting the environmental health of the Elizabeth River watershed. Although mitigation funds paid to the Sponsor as in-lieu fee payments should be sufficient, when taken together, to offset the impacts for which they are provided, the Program’s goal will

be to go beyond the minimum to achieve improvements to the Elizabeth River ecosystem. As part of the Corps, VMRC, and/or DEQ permit approval process, compensation for aquatic resources is considered only after avoidance and minimization of impacts to those resources have been considered to the maximum extent practicable. The Program provides a mechanism of compensation for permits involving impacts to aquatic resources found within the Elizabeth River watershed when off-site compensation for the loss of aquatic resources, occasioned by the issuance of permits, is deemed ecologically preferable and practicable. The primary purpose of the Program is to provide compensation for unavoidable permitted impacts to tidal submerged lands, intertidal mudflats, and other resources as described in this Instrument. Wetland, oyster habitat, stream and other aquatic resource mitigation, though not a primary focus of the Program, may also be proposed by the Sponsor under the Program, and considered by the Interagency Review Team (“IRT”). It is the intent of the signatories that the standards of specific Sites or projects authorized under the Program will be equivalent to the standards of mitigation banks. Where possible and appropriate, equivalent templates and policies will be used for the Program as are used for mitigation banks. This Instrument is intentionally broad and sets the framework under which the Trust-sponsored Sites will be identified, funded, operated, maintained, and managed. All individual Sites will be reviewed by the IRT for consideration of inclusion into the Program.

B. EFFECTIVE DATE AND TERM

This Instrument shall be effective upon the last date that it is executed by the Corps and the Sponsor (this date will be known as the Effective Date). The Sponsor shall be responsible for compliance with this Instrument and any subsequent Site Mitigation Work Plans until each Site is closed in accordance with the Program’s Site closure procedures or until all Credits are sold, whichever is later.

C. DISCLAIMER

This Instrument does not warrant the viability of the Program as a methodology to achieve mitigation. In addition, this Instrument cannot guarantee that any permittee will choose to make a payment to the Program or that the IRT, Corps, VMRC, or DEQ will recommend or approve any payments or contributions to the Program. Each permit will be considered on a case-by-case basis and each participating entity has discretion as to the mitigation it requires or will accept in relation to any particular permit.

II. DEFINITIONS

ADVANCE CREDITS – Credits that are not associated with a Mitigation Project and are available for sale prior to initiation of a Mitigation Project in accordance with this approved Instrument.

AVAILABLE CREDITS – Credits that have been approved for use by the Chair, in consultation with the IRT, and have not been debited or associated with a given permit. Available Credits may be Advance Credits or Released Credits.

BUFFER – Those areas located adjacent to and landward of either the waterway's mean high water (MHW) or wetlands. A buffer is an upland, wetland, and/or riparian area that protects and/or enhances aquatic resource functions associated with wetlands, rivers, streams, lakes, marine, and estuarine systems from disturbances associated with adjacent land uses.

BUFFER CREATION (ESTABLISHMENT)-Establishment of a buffer area where one did not previously exist. Buffer establishment includes planting native species for density and establishment of several missing layers of vegetation (trees, shrubs, and herbaceous), and associated measures such as livestock exclusion, fencing and posting.

BUFFER ENHANCEMENT (REHABILITATION) – Improvements to buffer areas including supplemental plantings for density or missing layers of vegetation, and removal of invasive species and replanting with native species.

BUFFER RESTORATION (REESTABLISHMENT) –Restoration of buffer areas, where one does not exist, that includes plantings for density and restores several missing layers of vegetation (trees, shrubs, and herbaceous), and associated measures such as livestock exclusion, fencing, and posting.

CREATION – The establishment of an aquatic resource, such as a wetland where an aquatic resource did not formerly exist.

CREDIT – A unit of measure representing the accrual or attainment of aquatic resource function, condition, or other performance measure at a mitigation site. It is also used to represent the mitigation liability of the Program.

LETTER OF CREDIT AVAILABILITY – A verification provided by the Sponsor to potential Credit purchasers stating that Credits are available for a specific time period and indicating if the Credits are Advanced or Released.

DEBIT – A unit of measure representing the reduction of available Credits corresponding to the loss of aquatic resource functions at an impact or project site.

ENHANCEMENT - The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve specific aquatic resource functions. Enhancement results in the gain of selected aquatic resource functions, but may also lead to a decline in other aquatic resource functions. Enhancement does not result in a gain in aquatic resource area.

ESTABLISHMENT – The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist. Establishment results in a gain in aquatic resource area and functions.

ESCROW AGREEMENT- An agreement memorializing a general arrangement under which funds are delivered to a third-party escrow agent for a given amount of time or until

the occurrence of an identified condition. The written escrow agreement, between the Sponsor and an escrow agent, provides instructions to the escrow agent regarding a sum of money deposited by the sponsor as assurance or guarantee for certain actions, with conditional delivery of the monies under stipulated circumstances.

FINANCIAL ASSURANCES – A mechanism used to guarantee some aspect of Mitigation Site performance. Financial Assurances may include a contingency account, escrow account, performance bond, insurance, letter of credit, or other mechanism acceptable to the IRT. Financial Assurances may be required for varying aspects associated with an In Lieu Fee Program including: a) a mechanism to guarantee the initial release of Credits; b) a mechanism to ensure that monitoring and maintenance of the Mitigation Site is completed; and c) a mechanism to ensure financing is available to address catastrophic event and long-term management.

FULL COST ACCOUNTING – The process of collecting and presenting information (costs as well as advantages) for each mitigation project. It is a conventional method of cost accounting that traces direct costs and allocates indirect costs. It includes all appropriate expenses such as land acquisition, planning and design, construction, planting, legal expenses, monitoring, maintenance, remediation, adaptive management, long-term management, administration, and contingencies.

FUNCTIONS – The physical, chemical, and biological ecosystem processes of an aquatic resource without regard to its importance to society.

GEOGRAPHIC SERVICE AREA - The geographic area within which impacts can be mitigated at a specific in lieu fee Mitigation Project as designated in its Mitigation Work Plan.

HYDROLOGIC UNIT CODE (HUC) – Divisions of the watersheds of the United States. For the purposes of this Instrument, HUC shall refer to those divisions as defined by the U.S. Geological Survey (USGS).

IN-LIEU FEE PROGRAM ACCOUNT (“PROGRAM ACCOUNT”) – An account at a financial institution that contains all compensatory mitigation monies, including any interest associated with the sale or transfer of Credits in accordance with this Instrument. Funds in this account can only be used to provide compensatory mitigation (including selection, acquisition, design, implementation, administration, and management of mitigation Credit Projects)

IN-LIEU FEE MITIGATION PROGRAM (“PROGRAM”) – The Program shall consist of the in-lieu fee activities and operations of the Sponsor.

INTERAGENCY REVIEW TEAM (IRT) – An interagency group of federal, state, tribal, and/or local regulatory and resource agency representatives that participates in the development of a Site Mitigation Plan and oversees the establishment, use, and operation of a Mitigation Site with the Corps serving as Chairperson.

LEDGER – An accounting of Mitigation Site and Program Credits and Debits. The RIBITS ledger is considered the official ledger for the Program and for the Mitigation Sites.

LONG-TERM MANAGEMENT PLAN (LTMP) – A description of how the Mitigation Site will be managed after performance standards have been achieved and the Site has been closed. The LTMP objective is to ensure the long-term sustainability of the Site. The LTMP will identify the party responsible for and the mechanisms the Sponsor will establish to finance long-term management.

LONG-TERM STEWARD –The party (landowner, easement holder, or other party) responsible for Long-Term Maintenance and Management of the Mitigation Site. The Sponsor is the Long-Term Steward for a Mitigation Site unless another Steward has been designated and has accepted this responsibility.

MITIGATION – Sequentially avoiding impacts, minimizing impacts, and compensating for impacts to aquatic resources. Because the Corps and/or DEQ determine that impacts have been avoided and minimized to the extent practicable prior to requiring compensatory permit conditions, Mitigation is used in this instrument as a synonym for compensatory mitigation.

MITIGATION WORK PLAN (MWP) – All technical work methods and descriptions for the Mitigation Site which eventually support the verification of a permit for construction work in jurisdictional wetlands and streams of the United States. The MWP is separated into the following two submissions for each Phase or portion of the Mitigation Site

CONCEPTUAL MITIGATION WORK PLAN (CMWP) - The MWP submitted by the Sponsor during the IRT's review of the proposed Mitigation Site. The CMWP should describe to the IRT the conceptual methods and techniques used to design and build the Mitigation Site.

FINAL MITIGATION WORK PLAN (FMWP) – The final mitigation construction plan, consisting of final grading, design, and engineered specifications, which is approved by the District Engineer prior to issuing a permit for work within jurisdictional wetlands and streams of the United States.

MITIGATION PROJECT – The entire compensatory mitigation project, including all activities described in the Mitigation Work Plan and undertaken on the Mitigation Site to generate Credits.

MITIGATION SITE ("SITE") – A site or sites where aquatic resources are restored, created, enhanced, or preserved expressly for the purpose of providing compensatory mitigation for authorized impacts to similar resources.

PERMITTEE – Party securing Credits from the Sponsor to use as compensatory mitigation for a permit issued to that party by a federal, state, or local government agency.

PERFORMANCE STANDARDS - Observable or measurable physical (including hydrological), chemical and/or biological attributes that are used to determine if a compensatory mitigation project meets its objectives.

PRESERVATION - The protection of ecologically important resources in perpetuity through the implementation of appropriate legal and physical mechanisms. .

PROGRAM INSTRUMENT (“INSTRUMENT”) – The legal document for the establishment, operation, and use of an In-Lieu Fee Program.

SITE PROTECTION INSTRUMENT –. An instrument that describes the legal arrangements, including site ownership, which will ensure the long-term protection of the Mitigation Site and that will typically be recorded in local land records.

RE-ESTABLISHMENT - means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area Functions and Services.

REGULATORY IN-LIEU FEE AND BANK INFORMATION TRACKING SYSTEM (RIBITS) – a web-based application developed and managed by the Corps to track mitigation bank and in-lieu fee program activity including credit transactions.

REHABILITATION - means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic Functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource Function, but does not in a gain in aquatic resource area.

RELEASED CREDITS – Credits associated with Mitigation Sites that have met their success criteria, and are available for debit as determined by the Chair in consultation with the IRT, and have been released for sale.

RESTORATION - The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource.

SITE DEVELOPMENT PLAN – The overall plan governing the establishment, creation, enhancement, and/or restoration of aquatic resources on an individual Mitigation Site.

SPONSOR – An entity responsible for establishing and maintaining a Mitigation Site. The Sponsor assumes legal responsibility for providing compensatory mitigation once a permittee secures Credits from the Sponsor. In this Instrument, the Living River Restoration Trust is the Sponsor for the ILF Program.

SUCCESS CRITERIA – The minimum standards required to meet the objectives for which the site was established.

III. REGULATORY AUTHORITIES – The establishment, use, and operation of the Program are carried out in accordance with the following authorities:

A. Federal Authorities:

1. Clean Water Act (33 USC §1251 *et seq.*)
2. Rivers and Harbors Act (33 USC §403)
3. Fish and Wildlife Coordination Act (16 USC §661 *et seq.*)
4. Regulatory Programs of the Corps of Engineers, Final Rule (33 CFR Parts 320-332)
5. Guidelines for Specification of Disposal Sites for Dredged and Fill Material (40 CFR Part 230)
6. Endangered Species Act (16 USC §1531 *et seq.*)
7. Magnuson Stevens Fishery Conservation and Management Act (16 USC §1801 *et seq.*)
8. Memorandum of Agreement between the Environmental Protection Agency and the Department of the Army concerning the Determination of Mitigation under Clean Water Act, Section 404(b)(1) Guidelines (February 6, 1990)
9. Regulatory Guidance Letter No. 05-01. U.S. Army Corps of Engineers, February 14, 2005
10. Regulatory Guidance Letter No. 08-03. U.S. Army Corps of Engineers, October 10, 2008

B. Commonwealth of Virginia Authorities:

1. Sections 62.1-44.15:20-23 of the Code of Virginia
2. Virginia Water Protection Permit Regulation (9 VAC §25-210 *et seq.*)
3. Section 28.2-2.1308 of the Code of Virginia; and
4. Guidelines for the Establishment, Use, and Operation of Tidal Wetland Mitigation Banks in Virginia (4 VAC §20-390-10 *et seq.*)

IV. PROGRAM OPERATION

A. MITIGATION PROGRAM AND RESOURCES

Resources of the Program shall consist of funds paid by permit applicants, permittees, or other parties as approved by the Corps, VMRC and/or DEQ to compensate for losses to aquatic resources in connection with issuance or verification of permits, resolution of unauthorized activities, or other cases as agreed upon by the Corps, VMRC, DEQ, and the Sponsor. Said funds shall be delivered to the Sponsor to be held in the Program Account and used by the Sponsor to accomplish Mitigation Projects as described herein. Subject to the terms of this Instrument, the Sponsor hereby agrees to receive and expend said funds in the manner and with the limitations described herein.

The Sponsor assumes responsibility for a Permittee's required compensatory mitigation once the Permittee has (1) secured the appropriate number and resource type of credits from the Sponsor; and (2) the IRT has received documentation that confirms that the Sponsor has accepted legal responsibility for providing the required compensatory

mitigation. The Sponsor shall complete the Credit Sale Statement, included as Exhibit F to the SDP, within two business days of each credit sale. The Credit Sale Statement shall identify the permit number and resource type of Credits that have been secured from the Sponsor.

B. INTERAGENCY REVIEW TEAM

The IRT is established by the Norfolk District U.S. Army Corps of Engineers (Corps) to review the documentation necessary for the establishment, use, operation, and management of the Program. The Corps will serve as Chair of the IRT. Where the MBI refers to action by the IRT, it is intended that the IRT will act through the Chair. The Corps along with representatives from VMRC, DEQ, the U.S. Environmental Protection Agency (EPA), U.S. Fish and Wildlife Service (FWS), U.S. National Oceanic and Atmospheric Administration (NOAA), the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS), Virginia Department of Game and Inland Fisheries (DGIF), Virginia Department of Conservation and Recreation (DCR), Virginia Department of Forestry (DOF), Virginia Department of Historic Resources (DHR), and other federal, state, and local agencies, as appropriate, may participate in the IRT as consulting members. Any of the IRT agency members may terminate participation upon written notification to all signatory parties. Participation of the IRT member seeking termination will end 30 days after such written notification.

C. PROGRAM GEOGRAPHIC SERVICE AREA

The Geographic Service Area (“GSA”) within which permitted projects may utilize this Program to satisfy any compensatory mitigation required by Corps, VMRC and DEQ permits is USGS Hydrologic Unit Code (HUC) 02080208. This GSA includes all or a portion of the cities of Suffolk, Chesapeake, Portsmouth, Norfolk, Virginia Beach, Newport News, Hampton and a portion of Isle of Wight county. A map of the GSA is included as Figure 1. The Program intends to implement mitigation projects primarily within the Elizabeth River watershed.

In order to accept mitigation payments for impacts occurring to aquatic resources outside of the approved GSA, the Sponsor may submit a written request to the IRT Chair, which will be considered on a case by case basis with regard to applicable federal and state regulations.

D. IN LIEU FEE PROGRAM ACCOUNT

In-lieu fee payments related to Mitigation Credit purchase received after the effective date of this Instrument for this Program will be deposited into a separate interest-bearing account (“Program Account”). Funds expended may be allocated to specific or multiple mitigation projects. The Sponsor shall hold any funds collected pursuant to this Instrument in the accounts identified above. The Sponsor shall account for the funds so held in accordance with generally accepted accounting principles, and the accounts shall be subject to audit from time to time, as determined by the IRT Chair, in consultation with the IRT, at the expense of the Program. The parties shall endeavor to cause such independent audit to occur prior to the expiration of the Instrument. Those approved funds received by the Program in excess of the amount needed for mitigation or restoration projects shall remain

with the Program. The Sponsor shall be required to provide financial assurances by setting aside contingency funds from the accounts sufficient to guarantee the construction and success of each Mitigation Site including remediation of catastrophic events and long-term management of each Mitigation Site.

The Program Account may only be used, upon approval by the IRT, for selection, design, acquisition, implementation, monitoring, administration, management, and protection of compensatory Mitigation Projects, and other related uses, including administration of the Program. Requests to expend funds for the long-term maintenance and management of a Mitigation Project must be accompanied by a description of needs, cost estimates for these needs, and a discussion of inflationary adjustments and other contingencies, as appropriate.

An administrative fee of 15% of funds deposited into the Program Account will be provided to the Sponsor when the funds are deposited. The administrative fee is deemed to represent and reimburse reasonable overhead and related costs of administering the Program to accomplish the Mitigation Projects described herein. The administrative fee shall initially be established at 15%, but may be periodically adjusted as the Program becomes fully established.

The IRT shall have oversight of the Program Account and all Mitigation Projects and the associated budgets for those projects. The Sponsor shall submit to the IRT an Annual Report by March 31 of each year. The Annual Report shall include detailed summaries of account deposits and disbursements made for each Mitigation Project during the previous calendar year (January 1-December 31). When so requested by the Corps, the Sponsor shall provide all books, accounts, reports, files and other records related to the Program Account. Any increase in excess of 10% from the total approved budget for a Mitigation Plan will require the IRT's approval before additional funds may be disbursed. The IRT may review Account records with 14 days written notice.

E. PROGRAM ACCOUNTING PROCEDURES

The Sponsor shall establish and maintain a system for tracking the calculation of Credits in relation to projects, the Debit or sale of Credits, and financial transactions in relation to Credits between the Sponsor and permittees. Credit production (the generation of an amount of Credits based on Projects), Credit transactions (purchase by permittees and debit by the Sponsor of Credits) and financial transactions (the exchange of money in relation to Credits) shall be tracked. The sale, conveyance, or transfer of Credits includes all natural services, functions and values associated with the natural resources (e.g., wetlands, streams, subaqueous lands, intertidal mudflats and other aquatic resources) from which Credits were derived. Credits may be used to compensate for environmental impacts under other programs (e.g., civil works, Superfund Program removal and remedial actions, and supplemental environmental projects for state and federal enforcement actions), but Credits may not simultaneously serve as mitigation for more than one activity.

F. PROGRAM DEFAULT

Should the IRT determine, in their sole discretion, that the Sponsor is in material default of any provision of this Instrument, the IRT Chair will provide the Sponsor with written notice of such material default. If the Sponsor fails to remedy such default within 30 days after its receipt of such notice, or if such default cannot reasonably be cured within 30 days, or the Sponsor fails to commence and diligently pursue remediation of such default during such 30-day period, then the IRT may, immediately upon written notice to the Sponsor, suspend the sale or transfer of any Credits and may suspend the expenditure or withdrawal of any funds from the account until the appropriate deficiencies have been remedied to the satisfaction of the IRT. Upon notice of such suspension, the Sponsor agrees to immediately cease all sales or transfers of Credits until the IRT Chair informs the Sponsor that the IRT have approved the Sponsor's resolution of deficiencies and that sales or transfers may be resumed. Should the Sponsor remain in default, the IRT may terminate all future Credit transactions from the Mitigation Site in question.

G. PROGRAM CLOSURE PROCEDURES

The Corps or the Sponsor may terminate this Instrument by giving 30 days' written notice to the other parties. Prior to termination by the Sponsor, it shall provide an accounting of funds and complete payment on contracts for projects approved by the IRT and any expenses incurred on behalf of the Program. Upon termination, after payment of all outstanding obligations, any remaining amounts in the Accounts shall be paid to any entities as specified by the IRT. In the event the Program is closed, the Sponsor is responsible for fulfilling any remaining mitigation obligations, unless the obligation is specifically transferred to another entity as agreed on by the Corps and the Sponsor. Appropriate funds will be provided through the accounts to meet the Sponsor's outstanding obligations. Where obligations are transferred to another entity, appropriate funds, as determined by the IRT, will be transferred so that said entity may fulfill its responsibility to bring the transferred obligation to completion. Monies or amounts remaining in the accounts after these obligations are satisfied must continue to be used for restoration, enhancement, and/or preservation of aquatic resources until such funds are depleted or expended.

V. MITIGATION PROJECT ESTABLISHMENT AND OPERATION**A. GENERAL MITIGATION SITE REVIEW PROCEDURES**

The primary emphasis of the Program is on aquatic resource restoration and protection. The use of this Program for compensatory mitigation shall occur only after the relevant permitted activity has complied with Corps and DEQ regulations and policies regarding avoidance and minimization of impacts or as stated in Section A, "Purpose and Goals" or otherwise herein. The Sponsor, pursuant to the terms of this Instrument, will act as a recipient of mitigation funds that are required of permittees and other parties as identified by the IRT. The Sponsor shall play no role in the Corps', VMRC's, or DEQ's decision to approve or deny a permit or decision as to whether mitigation is a necessary condition of any such permit. The

permitting agencies will determine the number of Credits required to compensate for permitted impacts utilizing accepted procedures used in Virginia for evaluating compensatory Mitigation Credits. The Sponsor will determine the fee amount needed to provide Mitigation Credit (see Section V.D). The Sponsor shall provide applicants requesting quotes with a Letter of Credit Availability including the following information: The number of Credits available, the type of Credit (Advance or Released), and cost per Credit in a particular Service Area. The Letter of Credit Availability shall contain identifying information regarding the impact site and other information deemed necessary by the Corps and the Sponsor. When a payment is provided to the Sponsor for Mitigation Credits, the Sponsor shall record the payment and the associated Credits on the Credit Ledger for that Service Area. To offset impacts to aquatic resources that result in payments into the Program Account, the Sponsor shall submit a Mitigation Project Prospectus to the IRT for funding approval in accordance with this Instrument. The Mitigation Project Prospectus will be based on the Compensation Planning Framework (Exhibit A), and the project (which will entail funding from the Program Account) requires approval by the IRT Chair in consultation with the IRT. The IRT may meet as needed with the Sponsor to review the Mitigation Project Prospectus and discuss relevant issues with Program procedures.

Once the project prospectus is determined to be complete (in accordance with Corps regulations 33 CFR 332.8 (g) (1) and 332.8 (d) (2), the Mitigation Project Prospectus will be public noticed. The Corps, VMRC and DEQ will approve or deny the Mitigation Project Prospectus. Such approval or denial will be based on various factors, including site suitability, long-term management and sustainability, and anticipated benefits of performing the proposed mitigation activities.

Following general approval by the IRT of a Mitigation Project Prospectus, the Sponsor shall submit for approval a Site Development Plan. The Site Development Plan should include, if applicable, a description of the proposed project and site-specific plan, including location; baseline conditions; Credit composition; assessment methodology; schedule of Credit availability; a site-specific Geographic Service Area; a schedule for conducting the project; monitoring, maintenance and reporting provisions; provisions for site protection and long-term management in perpetuity; a project budget; and performance standards for determining ecological success of Mitigation.

The Sponsor may request closure of approved projects once Success Criteria have been met. Within 90 days following the end of the required monitoring period, or following a written request by the Sponsor no sooner than the end of the monitoring period, for each Mitigation Site and upon satisfaction of the Success Criteria, as determined by the IRT, the IRT Chair will issue written confirmation to the Sponsor that the monitoring period has ended. Thereafter, any remaining contingency funds in excess of that needed for use in long-term management of the Mitigation Site shall be made available to the general balance of the Fund. The Mitigation Site will then close, and the period of long-term stewardship and preservation will commence.

Mitigation Projects initiated prior to the Effective Date of this Instrument may be closed with IRT approval once applicable criteria have been met.

All funds shall be used solely for the delivery and accomplishment of compensatory mitigation as described herein, and no Program funds may be expended except as provided for in this Instrument. Administrative fees of up to 15% of the mitigation payment for each Mitigation Project do not require approval for expenditure.

B. COMPENSATION PLANNING FRAMEWORK

The purpose of compensatory mitigation is to offset impacts to waters of the United States and State Waters. Therefore, priority is given to mitigation that replaces lost acreage, functions, and values of wetlands, streams, subaqueous lands, and intertidal mudflats and/or other aquatic resources. This Instrument is intentionally broad and sets the framework under which Program sponsored Mitigation Projects will be identified, funded, operated, maintained and managed.

The Compensation Planning Framework included as Exhibit A describes the process the Sponsor will use to select, secure and implement aquatic resource mitigation activities. The Sponsor agrees to follow the Compensation Planning Framework concepts in the administration of the Program and compensatory mitigation.

C. ADVANCE CREDITS

Advance Credits, as used in this Instrument, are Credits that are not associated with a completed compensatory Mitigation Project and that are available for sale prior to initiation of a Mitigation Project in accordance with an approved Mitigation Plan. The amount of Advance Credits is set out in Exhibit B. These Advance Credits are based on the identified suitable mitigation sites identified in the Elizabeth Project's 2016 Watershed Action Plan, the Compensation Planning Framework, and the Sponsor's past performance for implementing aquatic resource restoration throughout the watershed. In general, Advance Credit numbers are derived from projected demand for Credits using data from historical impacts and projections of future impacts. If demand for mitigation Credits exceeds the allotted amount of Advance Credits, and purchased Credits have not been released, the IRT may approve an increase in the number of Advance Credits.

The number of Advance Credits available to the Sponsor at any time to sell in the Service Area is equal to the number of Advance Credits specified in the Instrument minus any that have already been sold but not yet fulfilled. Once sold Advance Credits have been fulfilled, an equal number of Advance Credits will be re-allocated for sale to fulfill the new mitigation requirements.

A site shall be identified and work initiated within three years of the date an advanced credit is secured by a permittee, unless the district engineer determines that more or less time is needed to plan and implement an in lieu fee project for the credit type purchased. In the event that these improvements are not undertaken

in a timely fashion, the Corps, VMRC and DEQ in consultation with the IRT may request the Sponsor provide alternative mitigation proposals.

Should there be a surplus of credits created, above the amount needed to be fulfilled, those credits can be sold as released credits after review and approval by the Chair and IRT.

D. METHOD FOR DETERMINING PROJECT-SPECIFIC CREDITS AND FEES

The number of Credits allowed or assigned for each Mitigation Project shall be based on the compensation activity and must be included and approved in each Site Development Plan.

Shallow Water Sediment

Dredging or filling subaqueous or intertidal areas may degrade water quality and/or the habitat value of submerged and intertidal bottoms. The Program will typically mitigate these kinds of impacts by enhancing or restoring areas of the Elizabeth River where sediments are highly polluted, as the nearest in-kind mitigation. The aquatic functions and values that are degraded by dredging and filling are similar in nature to the functions and values that are improved by restoring areas with highly polluted sediments.

Oyster Reefs

Impacts to oyster reefs or substrate supporting oyster populations will be mitigated by restoration of oyster reefs. Though oyster reefs are not specifically listed as “special aquatic sites,” coral reefs are so designated. Coral reefs are not found in Virginia, but oyster reefs perform similar aquatic functions and provide similar aquatic values.

Intertidal Wetlands

Dredging or filling intertidal wetland areas that could include vegetated or non-vegetated wetlands may degrade water quality and/or the habitat value of intertidal wetlands. The Program will typically mitigate these kinds of impacts by re-establishing or restoring intertidal wetland areas within the Elizabeth River, as the nearest in-kind mitigation. The aquatic functions and values that are degraded by dredging and or filling intertidal wetlands are similar in nature to the functions and values that are improved by re-establishing or restoring areas of non-existing intertidal wetlands.

Riparian Buffers

Disturbance or development of functioning riparian buffers that may degrade water quality and/or the habitat value provided by upland buffer areas. The Program will typically mitigate these kinds of impacts by reestablishing or restoring riparian buffer areas within the Elizabeth River watershed, as the nearest in-kind mitigation. The aquatic functions and values that are degraded by degrading existing riparian buffer are similar in nature to the functions and values that are improved by re-establishing or restoring areas of non-existing riparian buffers.

Notwithstanding these rationales, nothing in this Instrument shall necessarily constrain the Corps, VMRC, or DEQ in their determinations of appropriate mitigation for specific aquatic impacts that they may permit or otherwise approve. The number of Credits required to appropriately and practicably mitigate impacts from specific projects permitted by the Corps, VMRC, and/or DEQ will be determined by those agencies.

The mitigation credit ratios are outlined in Exhibit C.

The price charged to permittees and others by the Sponsor for Credits is determined by the Sponsor and is outlined in the Fee Schedule included as Exhibit D. The cost per unit of Credit must take into account the expected costs associated with the restoration, establishment, enhancement, and/or preservation of aquatic resources in the Service Area. Such costs must be based on full cost accounting according to 33 CFR §332.8(o) (5) (ii) and will reflect, as appropriate, expenses for land or property interest acquisition, Project planning and design, construction, plant materials, labor, legal fees, monitoring, remediation or adaptive management activities, long-term management, and catastrophic events, as well as costs associated with the administration of the Program. The cost per unit Credit shall also take into account contingency costs appropriate to the stage of Project planning, including uncertainties in construction and real estate expenses. In addition, the cost must also include the cost of providing financial assurances that are necessary to ensure successful completion, protection, and maintenance of Projects in perpetuity, and may reflect other factors as deemed appropriate by the Sponsor and the IRT.

The prices charged to permittees or others by the Program for Credits shall be reviewed by the Sponsor and IRT on an annual basis, in conjunction with the Annual Report.

Each Site Development Plan shall be incorporated as an Appendix to this Instrument and following approval becomes a part of this Instrument (33 CFR §332.8(g)). Each party to this Instrument may delegate authority to approve the Site Development Plan to an individual employed by such party who is qualified by education or experience to approve such plans. No party to this Instrument may delegate or assign its rights or obligations hereunder to another agency or entity without the prior written consent of the remaining parties.

E. PROTECTION OF MITIGATION SITES

In general, sediment and oyster mitigation projects will be located on subaqueous lands belonging to the Commonwealth of Virginia and under the state's permanent management. A Land Use MOU between the Corps of Engineers, VMRC, and the Sponsor has been drafted, and signatures will be obtained for each subaqueous lands mitigation site. In addition, the Program may engage in Mitigation Projects on land in which the Sponsor owns the fee simple interest, provided that long-term protection mechanisms (such as conservation easements, deed restrictions, conservation land use agreements or other approved land protection measures) are approved by the IRT, in accordance with Section 332.7(a) of the Final Rule.

E. LEGAL RESPONSIBILITY FOR PROVIDING COMPENSATORY MITIGATION

Upon accepting payment from a permit applicant or permittee, the Sponsor assumes all legal responsibility for satisfying the mitigation requirements of the permit for which fees have been accepted (i.e., the implementation, performance, and long-term management of the compensatory Mitigation Project(s) approved under this Instrument and subsequent mitigation plans). The transfer of liability is established by: 1) the approval of this Instrument; 2) approval by the Corps and/or DEQ for a permittee or other party to use the Program as a compensatory mitigation method, including the amount of Credits required for particular impacts; 3) receipt and approval by the Corps and DEQ of a Credit sale form/letter/certificate that is signed and dated by the Sponsor and the permittee; 4) the transfer of fees from the permittee or other party requiring compensatory mitigation to the Sponsor; and 5) acceptance of those fees by the Sponsor.

Any delay or failure of the Sponsor to comply with the terms of this Instrument shall not constitute a default hereunder if and to the extent that such delay or failure is primarily caused by any act, event, or conditions beyond the Sponsor's reasonable control, as determined in the sole discretion of the IRT, and if such act, event or conditions significantly adversely affect the Sponsor's ability to perform its obligations hereunder, as determined in the sole discretion of the IRT. Such acts, events, or conditions may include: (i) Force Majeure (see H below) or interference by third parties; (ii) condemnation or other taking by any governmental body or corporate entity with eminent domain authority (or voluntary sale under threat of eminent domain) except that in such a condemnation or taking the Sponsor must use the funds received through condemnation to replace the lost mitigation value to the extent practicable and as determined and approved by the IRT and as described further herein; (iii) change in applicable federal or state law, regulation, or court decision affecting Corps, VMRC, and/or DEQ's jurisdiction, which affects compensation for permitted impacts to waters of the United States and State Waters; or (iv) the suspension or revocation of any permit, license, consent, authorization, or approval, which renders fulfillment of obligations under this Instrument impossible to perform. If the performance of, and compliance with, the terms of this Instrument are affected to a material extent by any such act, event, or condition, the Sponsor shall give written notice thereof to the IRT as soon as is reasonably practicable. The IRT has sole reasonable discretion to determine whether such an act, event, or condition qualifies under this paragraph as being out of the Sponsor's control and whether or not it constitutes a default.

G. LONG-TERM MANAGEMENT, INCLUDING TRANSFER OF LONG-TERM MANAGEMENT

The Sponsor is responsible for developing a Long-Term Management and Maintenance Plan for each Mitigation Project. The Long-Term Management and Maintenance Plan for each Mitigation Project shall contain specific objectives that address the long-term management requirements of the site. The Long-Term Steward shall document that it is achieving each objective or standard by submitting status reports to the IRT on a schedule approved by the IRT. The Sponsor shall also report annually on the beginning and ending account balances, including deposits and withdrawals from the account providing funds for long-term management for any Mitigation Projects.

The Sponsor or, any subsequent Long-Term Steward, shall provide the IRT with 60 days advance notice before any actions are taken to modify the Long-Term Management and Maintenance Plan. The Long-Term Management and Maintenance Plan may be amended or modified with the written approval of all signatory parties.

A primary goal of the Mitigation Project is to create or restore a self-sustaining natural aquatic system that achieves the intended level of aquatic ecosystem functionality with minimal human intervention, including long-term site maintenance.

The Long-Term Management and Maintenance Plan shall include, at a minimum, the following provisions for:

1. Periodic inspections of sites to detect and/or deter damage and will include reasonable actions to repair any observed damaged areas.
2. Monitoring the condition of aquatic improvements of the site such as ensuring any material placed for the purpose of capping or amending existing river sediments remains effective; plantings meet reasonable survivorship expectations; and rehabilitation goals are achieved regarding contamination levels and/or effects on marine life. The Long-Term Management and Maintenance Plan will include provisions to maintain and repair improvements as necessary to achieve the objectives of the Mitigation Project. Any improvements that are no longer needed to facilitate or protect the ecological function of the site may be removed or abandoned upon approval by the IRT.

The Sponsor is the default Long-Term Steward of each mitigation project, unless otherwise specified in the Site Development Plan of an individual site. The Sponsor may assign responsibilities for the Long-Term Management and Maintenance Plan to a third party Long-Term Steward by submitting a written proposal to the IRT. Upon review and approval by the IRT, the Sponsor and Long-Term Steward may sign the Long-Term Maintenance and Management Plan.

Once long-term management responsibilities have been transferred to the Long-Term Steward, the Long-Term Steward shall be the assignee and responsible party of all associated requirements, terms, and conditions of the Long-Term Management and Maintenance Plan, this Instrument, and any other applicable project requirements.

The Program account as discussed in Section IV. D will set aside funds for each approved mitigation project that will be targeted for long-term monitoring and long term stewardship. The specific long-term management and stewardship fund amounts and management strategy for each mitigation project will be presented in the Site Development Plan subject to approval by the IRT.

H. FORCE MAJEURE

Force Majeure shall mean an irreparable material and detrimental impact on the site over which the Sponsor or any entity controlled by the Sponsor could not have anticipated or controlled.

The IRT has sole reasonable discretion to determine whether an event is a “Force Majeure” event as defined herein, and further defined in each Site Mitigation Plan, and the Sponsor shall bear the burden of demonstrating to the IRT’s satisfaction that:

- a. The Force Majeure event was caused by circumstances beyond the control or anticipation of the Sponsor and/or any entity controlled by the Sponsor, including its contractors and consultants
- b. Neither the Sponsor nor any entity controlled by the Sponsor, including its contractors and consultants, could have reasonably foreseen and prevented such an event
- c. Damage was caused by such circumstances
- d. Damage is irreparable by any practicable and reasonable means as determined in the discretion of the IRT.

I. EMINENT DOMAIN AND TAKINGS

If a Mitigation Site is taken in whole or in part through eminent domain, the Sponsor shall utilize funds it receives on account of the eminent domain or taking process: 1) to provide replacement compensation to offset the loss of the conservation functions, services and values to the extent practicable, as determined in the discretion of the IRT; or 2) in the case of a donated conservation easement, in a manner consistent with the conservation purposes of the original contribution, pursuant to Treas. Reg. § 1.170A-14(g)(6). This replacement compensation must be provided within the same Service Area as the affected Mitigation Site and must be approved by the IRT.

In the event of eminent domain the Chair in conjunction with the IRT will adjust the Credits available from the mitigation project site to reflect the loss of area /or functions. The area of loss may include not only the area secured through eminent domain but also the area within the project site affected by the condemnation (e.g. through alternation of the hydrologic regime of the surrounding area).

VI. PROGRAM REPORTING PROTOCOLS

On an annual basis, the Sponsor shall provide the IRT with the statements it receives from all financial institutions or escrow agents holding funds accepted in relation to, or associated with, this Instrument. The annual report shall summarize all expenses and revenues associated with the Program during the previous year and shall include documentation associated with payments into, and expenditures from, the Program as well as mitigation liabilities assumed and compensation provided by credit type. If required by the Corps, the financial reporting method shall be modified.

The Sponsor shall submit an annual ledger report showing the beginning and ending balance of Available Credits, sold or Debited Credits, permitted impacts for each resource type in each GSA, all additions and subtractions of Credits, and any other Credit changes (e.g., Credits released or Credits suspended), as well as monies paid into the Program, expended for Mitigation Projects, and any remaining balances. The Corps may require additional reporting, as necessary, consistent with the full cost accounting standards and the Mitigation regulations at 33 CFR §332.8(o).

The Sponsor shall also maintain a separate ledger for each Mitigation Project. This ledger shall depict all Credit releases and Credit withdrawals by compensation resource type associated with the individual Mitigation Project.

VII. DISPUTE RESOLUTION

Resolution of disputes between Federal IRT agencies and the Corps regarding the planning, approval, and other aspects of Mitigation Projects approved under this Instrument shall be in accordance with Corps regulations at 33 CFR §332.8(e), as well as any other applicable federal regulations governing mitigation bank operation.. If the Sponsor does not agree with the IRT, the Sponsor may request an independent review from government agencies or academia. If such review is conducted, the Corps will have sole discretion in evaluation of such review, conclusions, or recommendations, and these same agencies ultimately have sole discretion in determination of whether the success criteria are met.

VIII. VALIDITY, AMENDMENT, MODIFICATION, AND TERMINATION OF THE INSTRUMENT

This Instrument may only be amended or modified with the written approval of all signatory parties hereto. The Corps will provide timely approval of any amendments or modifications to the Instrument within 60 days of receiving a complete modification, unless written extension of review is requested explaining request for delay. The Corps, or the Sponsor may terminate this Instrument by giving 30 days written notice to the other parties and satisfactory demonstration of compliance with the requirements of Paragraph IV.F.

Any proposed modification to a Mitigation Project, including, but not limited to, addition of lands to a site, establishment of additional sites, additions of different types of mitigation Credit resources not included in this Instrument or alteration of success criteria shall require review and approval of the IRT. Such modification shall require an amendment to this Instrument comply with Corps regulations at 33 CFR §332.8(g).

IX. THIRD PARTY RESALE OR BROKERAGE OF CREDITS

The resale, brokering, or transfer of Credits to any entity for resale or re-transfer from one permittee to another permittee is not authorized. Advance Credits may not be sold unless associated with a permit or enforcement case. The permit number shall be placed on every Credit bill of sale. For bills of sale associated with bulk sales where there is no associated permit number, the Sponsor shall include a special provision in the bill of sale stating that those Credits cannot be utilized to satisfy a Corps, VMRC, or DEQ permit requirement unless the permittee provides a written "bank ledger allocation statement" to the Corps and the Sponsor. This bank ledger allocation statement shall state that the associated Credit(s) was (were) part of a bulk sale to a specific party and has been allocated for use with a named project and a specific permit number (provide a copy of the Districts current Bulk Credit Banker Statement).

At the Sponsor's discretion, and with the approval of the Corps and the Sponsor may refund Credit purchases at the request of such purchaser, if the impacts for which the purchaser paid into the program have not occurred and if mitigation moneys have not been expended by the Program. If the refund is made, the Sponsor will no longer be responsible for mitigating for the impacts not taken.

X. OTHER PROVISIONS

A. Specific Language of Instrument Shall Guide Interpretation of Exhibits:

Any documents executed in accordance with this Instrument shall be consistent with the terms herein. The Instrument exhibits and associated documents will be interpreted in accordance with the terms, conditions, and requirements of the Instrument.

B. Notice: Any notice required or permitted hereunder shall be deemed to have been received when delivered by hand, transmitted electronically (including fax or email), after three days following the date deposited in the United States mail, postage prepaid, or on the day received by Federal Express or similar next day nationwide delivery system, addressed as follows (or addressed in such other manner as the party being notified shall have requested by written notice to the other party):

(Sponsor) Living River Restoration Trust
475 Water Street, C103A
Portsmouth, Virginia 23704

(Chair) Norfolk District U.S. Army Corps of Engineers
803 Front Street
Norfolk, Virginia 23510

C. Entire Instrument: This Instrument constitutes the entire agreement between the parties concerning the subject matter hereof and supersedes all prior agreements or undertakings.

D. Invalid Provisions: In the event any one or more of the provisions contained in this Instrument are held to be invalid, illegal, or unenforceable in any respect, such invalidity, illegality or unenforceability will not affect any other provisions hereof and this Instrument shall be construed as if such invalid, illegal, or unenforceable provision had not been contained herein.

E. Headings and Captions: Any paragraph heading or captions contained in this Instrument shall be for convenience of reference only and shall not affect the construction or interpretation of any provisions of this Instrument.

F. Counterparts: This Instrument may be executed by the parties in any combination, in one or more counterparts, all of which together shall constitute but one and the same Instrument.

G. Binding: This Instrument shall be immediately, automatically, and irrevocably binding upon the parties and their successors, assigns and legal representatives upon execution.

H. Transfer of Mitigation Responsibility: For projects in the GSA of this Program that require Department of the Army authorization pursuant to Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act of 1899, Sections 62.1-44.15:20-23 of the Code of Virginia, or the Virginia Water Protection Permit Regulations (9 VAC §25-210 *et seq.*), if such authorizations require compensatory mitigation, Credits from this Program may be used to satisfy those compensatory mitigation requirements if the Sponsor and the permittee reach a mutually acceptable financial agreement, subject to Corps, VMRC,

and/or DEQ written approval on a case-by-case basis. Notwithstanding anything in this Instrument, the Corps and VMRC have sole discretion over how many and what type of Credits are required for permits issued by such agency and whether Credits from this Program are acceptable as mitigation.

In consideration of the Sponsor's agreement to be bound by the terms of this Instrument, the IRT acknowledges that upon approval of a proposal by the permittee to secure Credits through a contract with this Program to satisfy all or part of the compensatory mitigation requirements for a Department of the Army, VMRC, and/or DEQ permit, a fully executed bill of sale or other instrument transferring Credit(s) from the Sponsor to the permittee shall act to transfer to this Program the responsibility for the required compensatory mitigation to be provided by the Sponsor in accordance with the permit.

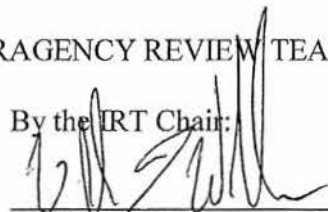
I. Approvals: For purposes of this Instrument, any approval required hereunder must be in writing and expressly approve the action or other matter for which approval is sought. Written approval may be transmitted by letter, electronic mail, or facsimile transmission.

J, Severability: The provisions hereof shall be deemed individual and severable and the invalidity or partial invalidity or unenforceability of any one provision or any portion thereof shall not affect the validity or enforceability of any other provision thereof.

IN WITNESS WHEREOF, the parties hereto have executed this Program Instrument on the date herein below last written.

INTERAGENCY REVIEW TEAM

By the IRT Chair:

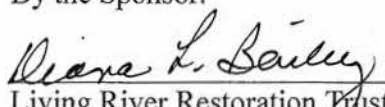


William T. Walker
Chief, Regulatory Branch
U.S. Army Corps of Engineers, Norfolk District

4/30/2018
Date

IN WITNESS WHEREOF, the parties hereto have executed this Program Instrument on the date herein below last written.

By the Sponsor:



Diana L. Bailey
Living River Restoration Trust
Chairperson

4 May 2018
Date

EXHIBIT A
Compensation Planning Framework
(§§332.8(d)(2)(viii)(A) & 332.8 (c))

Recent rules created to regulate in-lieu fee programs such as the Living River Restoration Trust (Sponsor) require a compensation planning framework be used for selecting, securing, and implementing mitigation projects funded through the Sponsor. The compensation planning framework must support a watershed approach to compensation mitigation.

The Sponsor will follow a science-based conservation approach to setting goals and priorities developing strategies, implementing mitigation projects and measuring results. This approach satisfies the requirements of the new compensatory mitigation rule for aquatic and wetland resources. In setting goals and priorities the Sponsor utilizes the efforts of the Elizabeth River Watershed Action Stakeholder team of which the Sponsor is a regular participant. The Elizabeth River Watershed Action Plan established conservation goals and priorities throughout the watershed and is updated regularly. Two of the five defined watershed actions identified in the 2016 plan include goals and priorities related to restoring contaminated river bottom, tidal wetland, vegetated buffers and oyster reef throughout the watershed. In some instances specific sites and areas of focus are identified that are in the most need of conservation action. The watershed based planning strategy developed by the Elizabeth River Watershed Action Team utilizes a collaborative, science-based conservation approach to identify where and how conservation efforts and projects are most needed in the watershed. The Sponsor will refer to the Watershed Action Plan when evaluating potential mitigation sites. Mitigation sites evaluated by the Sponsor may or may not be specifically referenced in the Watershed Action Plan but will be located within the Elizabeth River watershed and will support the goals and objectives of the Watershed Action Plan.

(a) Section 332(c)(2)(i): The Geographic Service Area, including a watershed-based rationale for the delineation of each Geographic Service Area.

The [United States Geological Survey](#) created a hierarchical system of hydrologic units that assign a unique Hydrologic Unit Code (HUC) to specific drainage geographic drainage regions. The HUC drainage regions can range in area from 40 square miles (12-digit HUC) to over 177,000 square miles (2-digit HUC). The proposed Program Geographic Service Area is based on a 8-digit HUC system identified as Hampton Roads with a corresponding HUC code of 02080208. The Hampton Roads HUC is located within the Lower James River basin in the State of Virginia. In this HUC, there have been losses of many aquatic environmental functions resulting from external impacts. In using this HUC as the basis for the ILF Program, unavoidable environmental impacts would be offset by compensatory mitigation within the Elizabeth River Watershed promoting the goal of no-net loss of acreage and aquatic functions on a watershed basis. The

Sponsor would also be willing to consider mitigating unavoidable aquatic impacts occurring in adjacent HUCs as determined appropriate by the Corps, VMRC, and/or DEQ.

The watershed-based rationale for each proposed mitigation area is described below (§332.8 (c)(2)(i)).

The 200 square mile Elizabeth River watershed will be the Programs focus area for mitigation since there have been significant environmental impacts to the natural aquatic resources within the Elizabeth River over the past 300 years. Sponsor proposes a watershed-based approach to restore and enhance aquatic resources found within the Elizabeth River watershed when off-site compensation for the loss of aquatic resources, occasioned by the issuance of permits, is deemed ecologically preferable and practicable. The primary purpose and goal of the Program is to provide compensation for unavoidable permitted impacts to aquatic tidal submerged lands. Other resources described in this document such as oyster reef habitat, intertidal wetlands and upland buffers though not a primary focus of the Program, may also be proposed by the Sponsor under the Program, and considered by the IRT. Suitable mitigation project sites that support the Watershed Action Plan can be located in the any of the three branches of the Elizabeth River, the main stem and the Lafayette River including their creeks and tributaries.

The watershed-based rationale for Project selection is based on the Twentieth Anniversary Watershed Action Plan for the Elizabeth River January 28, 2016, Elizabeth River Project (2016 Watershed Action Plan), prepared by nearly 150 regional scientists, regulators and other stakeholders and based on State of the Elizabeth River Scorecard 2014 by Virginia Department of Environmental Quality and Elizabeth River Project.

According to the 2016 Watershed Action Plan, "... the highest risk problems in the river sediment is the existing toxic concentrations of chemicals, primarily PAHs as a by-product of former wood treatment plants that formally operated on the Elizabeth River." In addition as the river became or urbanized and industrialized the Elizabeth River lost approximately 50% of its tidal wetland since world war II. Over the past century oyster populations in the Chesapeake Bay and Elizabeth River have been reduced by as much as 99 percent. The 2016 Watershed Action Plan stakeholders promote a holistic, no net loss approach for the remaining quality sediment, oyster reef habitat, tidal wetland, and wetland buffer habitat remaining in the watershed. To off-set ongoing subaqueous and intertidal habitat loss the Watershed Action stakeholders established sediment, oyster reef habitat, tidal wetland and upland buffer restoration goals throughout the watershed. The restoration goals outlined in the 2016 Watershed Action Plan include restoring known contaminated sediment areas, restoring 20 acres of tidal wetland, 40 acres of vegetated buffers and 20 acres of oyster reef throughout the Elizabeth River watershed including the main stem and the Lafayette River. The Sponsor's Program provides a clear watershed approach to planning and prioritizing off-setting aquatic mitigation to compensate for the unavoidable impacts to previously

undisturbed shallow water sediment, oyster reef habitat, tidal wetlands and upland buffer areas.

(b) Section 332.8(c)(2)(ii): A description of the threats to aquatic resources in the Service Area, including how the in-lieu fee program will help offset impacts resulting from those threats;

The Sponsor proposes to offer mitigation options for unavoidable permitted impacts to subaqueous river bottom and intertidal habitats involving the river bottom sediment, oyster colonies, intertidal wetlands and buffer areas in the Service Area identified above.

CONSERVATION TARGETS

Mud/Sand Benthic Communities

The dominant benthic habitat throughout the Service Area is made up of sand and mud, home to bacteria, clams, worms and other creatures that serve as a key food source for higher levels of aquatic life. This community is an indicator of the overall health of the Service Area since it was historically the foundation of the entire food web; today it is vulnerable to stresses associated with pollution, excess nutrients, oxygen content and sediment contamination. Deeper portions of this habitat are subjected to anoxia and hypoxia (exacerbated by excess nutrient loading) which limit the biological diversity of the system through changed food web dynamics. (Nature Conservancy Dec 2009, Dan Dauer, ODU 1999-2006). Some of the highest concentrations of toxics on the Chesapeake Bay are located in hotspot areas throughout the Elizabeth River. Scientists have documented a wide range of impacts to aquatic life in these areas, ranging from elevated rates of cancer and pre-cancerous lesions in indicator fish to elevated contaminants in fish tissue (VA Institute of Marine Science, College of William and Mary, 1998-2016). The Virginia Department of Health issued fish consumption advisories for the lower Chesapeake Bay for polychlorinated biphenyls (PCBs). Fish and crabs from the Elizabeth River appear to have elevated PCB concentrations. Scientists participating on planning teams developing the Elizabeth River Watershed Action Plan have indicated in each update of the plan that sediment quality must be considered a high priority for the Elizabeth River ecosystem to recover. The ILF Program was established by the Norfolk District of the US Army Corps of Engineers, the VA Department of Environmental Quality and Elizabeth River Project in 2004 to provide a mechanism for offsetting loss of remaining healthy sediments by restoring the benthic function of contaminated sediments as the nearest in-kind mitigation and as crucial to Elizabeth River ecosystem recovery. The Sponsor has demonstrated success with offsetting impacts in this manner with the highly successful remediation of contaminated sediments at Money Point in Chesapeake, 2004-2012, in which 36 million pounds of Polycyclic Aromatic Hydrocarbons (PAHs) contaminated sediments were removed, clean habitat established and ecosystem recovery documented. Cancer and pre-cancer lesions in the indicator fish species, the mummichog, was reduced at the site from more than

40% to background levels in pre- and post-surveys (VIMS, 2015). Diversity of fish increased from 4 species to 24 species in before and after fish surveys (data collected by Elizabeth River Project 2009, 2010, 2012, 2013)

Oyster Reef Ecosystem

The eastern oyster (*Crassostrea virginica*) was formerly integral to the Lower Chesapeake Bay ecosystem. Oyster reefs are ecosystem engineers providing several ecological services to the lower Bay and its tributaries located within the Service Area: 1) Oysters consume phytoplankton and detrital particles with sequestered nutrients by filtering up to 5 liters of water per hour. 2) Oyster reefs provide habitat for communities of sessile benthic invertebrates such as polychaetes (e.g., sabellids, serpulids), hydroids, bryozoans, and sponges, as well as critical nursery and foraging habitat for juvenile fishes. 3) Oysters supply food for birds, such as the American oystercatcher in intertidal flats. Moreover, oyster reefs can also help to buffer shorelines from erosion (Coen et al. 1999). Oyster reefs are typically found in the greatest aggregations at the mouths of rivers and creeks on hard substrate bottom. The historic footprint of oyster reefs in the Chesapeake was likely between 200,000 and 400,000 acres; today fewer than 20,000 acres are likely functional. As recently as 100 years ago, these oyster reefs were so massive that they posed a navigational hazard to ships. Oyster populations throughout the Service Area are suffering as a result of disease, habitat destruction and overharvesting and are estimated to exist at only 1% of historic levels (Nature Conservancy Dec 2009). The Sponsor has experience with creating mitigation oyster reefs including a 13 acre two dimensional reef at Scotts Creek and a three acre oyster reef at Money Point. The Sponsor regularly contracts with the Elizabeth River Project to oversee the creation of oyster reefs and has demonstrated success with restoring oyster habitats throughout the Elizabeth River Watershed by constructing more than ten reefs .

Tidal Wetlands

Tidal wetlands, which include saltwater marshes, experience periodic flooding by ocean-driven tides. Most common are emergent wetlands, dominated by salt-tolerant grasses (e.g. saltmarsh cordgrass (*Spartina alterniflora*), saltmeadow cordgrass (*Spartina patens*), big cordgrass (*Spartina cynosuroides*) saltgrass (*Distichlis spicata*). Though only a small percentage of the 200 square mile watershed qualifies as wetlands, these areas provide a nursery ground that sustains the regional productivity. Tidal wetlands are particularly important habitats for brackish and marine fishes, shellfish, various waterfowl, shorebirds, wading birds and several mammals (Boesch, D.F. & Turner, R.E. Estuaries (1984) . Most commercial and game fishes use estuarine marshes and estuaries as nursery and spawning grounds. Menhaden (*Brevoortia tyrannus*), bluefish (*Pomatomus saltatrix*), flounder (*Paralichthys dentatus*), sea trout (*Cynoscion regalis*), croaker (*Micropogonias undulates*), and striped bass (*Morone saxatilis*) are among the most familiar fishes that depend on estuarine wetlands during their larval stage. Blue crabs (*Callinectes sapidus*), are fished commercially throughout the Service Area and depend on coastal marshes, as do other shellfish, such as oysters, clams and shrimp. Loss of habitat along waterways poses the biggest threat to most bird species in the service area watershed. Deforestation, shoreline development and

shoreline erosion disrupt nesting activities, and chemical contaminants in the water damage the food source of many regional birds. (Nature Conservancy Dec 2009). Sponsor has demonstrated success with restoring tidal wetlands at Birdsong Wetland which as one of the first tidal wetland restoration projects in Virginia. Elizabeth River Project and Sponsor also carried out a wetland restoration and mitigation project at Money Point (“living cap”) which was one of the largest wetland project of its kind in the lower Chesapeake Bay.

THREATS

Global climate change (Sea level rise and increased climatic variability)
Upland development - stormwater and sediment alterations
Atmospheric sources of nutrients
Shoreline hardening/modification
Altered freshwater flows and lost connectivity
Aquatic invasive species
Wastewater treatment discharge
Recreational and commercial boating
Terrestrial invasive species
Dredging
Wetland ditching
Historic industrial discharges
Incidental and accidental hazardous material spills

The majority of the threats to benthic and wetland habitats also can be attributed to permitted and unpermitted impacts from dredging and filling of river bottom habitats and shoreline development. The dredging impacts can be the result of maritime interest for deeper channels and/or for installation of tunnels and bridges. Filling impacts can vary, but are often the result of filling for maritime development, installation of bridges, tunnels, roads, and other development projects. Filling has a more significant impact on benthic and wetland habitats since it results in permanent loss of the habitat, compared to dredging which can slowly recover overtime. Sponsor will help offset these impacts through the nearest in-kind compensatory mitigation by restoring contaminated sediments areas, restoring oyster reefs, creating new tidal wetlands or creating new upland buffer areas to offset impacts from sediment dredging, river bottom filling and shoreline development.

Sponsor assisted the Elizabeth River Project and community stakeholders in identifying a number of sites in the Elizabeth River watershed which have elevated levels of contaminants in the sediments. These sites are identified in the 2016 Elizabeth River Watershed Action Plan as priority sediment restoration sites and could be selected as mitigation Project sites. These areas will be the focus areas for mitigation projects to offset impacts by restoring functioning subaqueous habitat. Many of these areas have elevated concentrations of organic and inorganic contaminants which have resulted in an impaired benthic habitat, and in some cases high rates of cancer in the mummichog. The goal will be to focus mitigation funds in these areas to reduce sediment contamination and improve the biological productivity in these areas. The Trust will evaluate

remedial approaches which not only restore impacted sediment but also incorporate habitat restoration within the project. If capping of contaminated sediments is selected as the remedial approach the cap may have a wetland or oyster reef adding to enhance the habitat value. This approach addresses the contaminants of concern while also providing critical habitat.

Sponsor will also evaluate other sites in the Elizabeth River watershed to determine suitable sediment mitigation projects. Sponsor uses sediment, benthic, and fish tissue data collected in the past to explore new sites.

1. If a Catastrophic Event, event of Force Majeure or Unlawful Act occurs at an ILF Project site before success criteria are met (within the first five (5) years), Sponsor will assess the particular site once it has been deemed safe to enter and perform the following steps:
 - (a) Assess damage to current mitigation site, including but not limited to, determining if cap material was lost and determining if contaminants in sediment or porewater increased.
 - (b) Notify the U.S. Army Corps of Engineers of the possible impacts;
 - (c) If needed, provide a site specific Remedial Action plan to address any impacts to the U.S. Army Corps of Engineers for review and approval;
 - (d) Carry out any needed adaptive management
2. If a Catastrophic Event, event of Force Majeure or Unlawful Act occurs at an ILF Project site after success criteria are met (i.e., during the Long-Term Management Period), the Sponsor will assess the ILF Project site and determine whether action needs to be undertaken to correct any damage to a mitigation site.

(c) Section 332.8(c)(2)(iii): An analysis of historic aquatic resource loss in the Service Area.

Over the last 100 years, the Elizabeth River and Nansemond River watersheds and associated tributaries have come under increased stress due to development within the watershed. In the Elizabeth River watershed there have been significant dredging projects for marine navigational interests. Many of these projects resulted in converting shallow water habitat to deep water habitat. This change in depth can result in significant reductions in the diversity and abundance of invertebrates found in this habitat. It has been reported that it can take up to 6 months for benthic recovery, once dredging is completed (Nichols and Howard-Strobel 1991). If maintenance dredging is carried out this recovery time can be much greater. These impacts to benthic habitat can have negative impacts on fish usage since food sources are reduced. This type of transformation from shallow water to deep water in the Elizabeth River has been occurring from early 1800s to present and has resulted in an overall increase in water depth.

In addition, overtime there have been significant impacts to wetlands, oyster reefs, and upland buffers. The combinations of these impacts overlaid on the impacts to benthic habitats has resulted in significant cumulative affects to aquatic resources. These impacts have combined to reduce the functions and values of aquatic resources in the Service Area. Some watersheds have been impacted more than

others, especially those that occur within a municipality or urban area such as Elizabeth River.

Impacts to the Elizabeth River began in the early 1600s as part of the export of tobacco from the region. Between 1682 and 1725 a number of wharves were built to allow shipment of materials out to Europe and the West Indies. During that time natural channels supported most sailing ships. However by the early 1800s numerous wharves were built for shipping and bulkhead and backfilling of wetlands started to occur. The construction of Norfolk Naval Shipyard in 1812 promoted waterfront development up the Southern Branch of the Elizabeth. As Norfolk and Portsmouth grew in the 1800s many of the small tributaries of the river were filled with dredge material and ship ballast. Then in 1889 six large coal transshipment facilities were built and significant dredging and filling occurred to accommodate deeper draft ships. To improve ship access to Elizabeth River the main harbor was deepened to 7.6 m and lengthened. The mean depth of the Elizabeth River in 1872 was 5.8 meters, however by 1982 the mean was 13.7 meters (136% change). The length of the river in 1872 was 16 miles however by 1982 it had increased to 43 miles (170% change). As dredging proceeded the material was disposed of in wetlands and small tributary channels. These impacts over time have resulted in the Elizabeth River losing over 50% of its original wetlands (Nichols and Howard-Strobel 1991).

In addition to the impacts mentioned above, the Elizabeth River is also designated as an impaired waterway for low dissolved oxygen, low benthic life, high nutrients, and high bacteria levels (VADEQ, 2014). The river also has many areas impacted with industrial by-chemicals. These factors combined with the physical changes to the river have contributed to additional wildlife impacts. These chronic cumulative impacts are of concern for finfish, shellfish, and other organisms which live in the river. Increases in the amount and quality of clean river bottom would improve natural resources and water quality.

(d) Section 332.8(c)(2)(iv): An analysis of current aquatic resource conditions in the Service Area.

The majority of the aquatic resources in the Service Area have been impacted by intense urban development which has resulted in the loss of vegetative buffers, wetlands, oyster reefs, an increase in contaminated sediments and poor water quality. One of the largest contributors to these impacts is stormwater runoff from impervious surfaces. Impervious surfaces increase the amount of storm water that carries pollutants and reaches the river. These pollutants can result in poor water quality which has negative impacts on aquatic resources.

Dr. Daniel Dauer from Old Dominion University conducted an Elizabeth River river-wide benthic study from 1998-2005 using the Benthic Index of Biotic Integrity (B-IBI). Over this eight year time period, the average river-wide B-IBI scores was 2.4 indicating that the much of the bottom habitat in the Elizabeth River is degraded and not supporting a thriving benthos (reports and data can be downloaded at <http://www.elizabethriver.org/studies>). These degraded habitats can

be the result of sediment contamination and impede colonization of benthic dwelling invertebrates (Dr. Dauer, ODU 1998-2006).

The majority of the threats to benthic habitat also can be attributed to permitted and unpermitted impacts from dredging and filling of river bottom habitats. The dredging impacts can be the result of maritime interest for deeper channels and/or for installation of tunnels and bridges. Filling impacts can vary, but can be the result of filling for maritime development, installation of bridges, tunnels, roads, and other development projects. Filling has a more significant impact on benthic habitats since it results in permanent loss of the habitat, compared to dredging which can slowly recover overtime. Sponsor will help offset these impacts through the nearest in-kind compensatory mitigation.

Contaminated sediments continue to be a significant environmental problem that impairs the use of many water bodies. It is often a contributing factor cited in over 3,200 fish consumption advisories issued nationwide. In addition, based upon two inventories of data compiled from numerous studies, approximately 26–27% of sediment samples nationwide had chemical concentrations sufficiently high to warrant concern for potential toxicological effects. These trends seen nationwide are not different than what we see in our Service Area. In 1994 the Elizabeth River was identified as one of three areas of concern for toxics by the Chesapeake Bay program (Chesapeake Bay Program, 2000).

Current aquatic resource conditions in the Service Area are poor to moderate, depending upon the location. The recently published Chesapeake Bay Report Card 2014 indicates the Elizabeth River as having poor ecosystem health but with significantly improving trends. The James River was noted for moderate ecosystem health with slightly improving trends.

The following species have been found in the Elizabeth River watershed and have been identified as sensitive, rare, threatened, or endangered by the US Department of Interior or State of Virginia.

BIRDS

Piping Plover (*Charadrius melodus*) Federally Threatened

Least Tern (*Sternula antillarum*) State Rare

FISH

Atlantic Sturgeon (*Acipenser oxyrinchus*) Federally Endangered

(e) Section 332.8(c)(2)(v): A statement of aquatic resource goals and objectives for the Service Area, including a description of the general amounts, types and locations of aquatic resources the program will seek to provide.

The goal of the Program is the rehabilitation or re-establishment (collectively known as restoration) of lost aquatic resource function of natural aquatic systems that achieves an intended level of aquatic ecosystem functionality with minimal

human intervention, including long-term maintenance. These activities will serve as mitigation for permitted impacts within the Service Areas for which the Sponsor is used as compensatory mitigation. Rehabilitation or reestablishment is preferred because of the greater likelihood of success. In some cases, enhancement would be chosen if the functional benefits are clear and apparent.

It is anticipated that all future proposed ILF Projects will be located within the Elizabeth River Watershed including areas of the main stem, Lafayette River, and eastern, western and southern branches and will be evaluated consistent with the 2016 (or current version) Watershed Action Plan for the Elizabeth River. The goal of the program is to provided off setting aquatic resource values as they relate to sediment quality, water quality and habitat enhancement. Sediment rehabilitation and enhancement will be achieved by either removing areas of contaminated sediment or replacing it with clean restoration sand, through the addition of sediment amendment materials designed to sequester organic industrial compounds in place or other approved restoration methods. Habitat enhancement will be achieved through ILF projects involving oyster reef restoration and wetland restoration/creation. All of the ILF Projects involving sediment, oyster reefs and or wetlands will demonstrate the potential for positive benefits to marine habitat and water quality.

Sponsor may also mitigate for wetland losses if the approved service area does not have a viable mitigation bank in place at the time of mitigation need. Sponsor may choose to combine several types of mitigation approaches into one project site to maximize ecosystem function.

Based on the anticipated advance credits needed to initiate the first mitigation projects requested under the revised Instrument, Sponsor is requesting 16 advance credits for sediment restoration. Two advance credits for oyster mitigation, two advance credits of tidal wetland mitigation and two advance credits for upland buffer mitigation for a total of 22 advance credits. In general advance credit numbers are derived from projected demand for credits using data from historical impacts and projections of future impacts. If demand for mitigation credits exceeds the allotted amount of advance credits, and purchased credits have not been released, the IRT may approve an increase in the number of advance credits.

Sixteen advance credits for shallow sediment restoration is based on the needs for a mitigation project in Paradise Creek on the Southern Branch. A site specific Site Development Plan will be prepared and submitted once the Program Instrument and Compensation Planning Framework are approved by the IRT. The sediment remediation approach in Paradise Creek would need to be carried out as an entire project and thus the Sponsor is requesting all 16 credits.

Two advance credits for oyster reef habitat are requested based potential impact to relic oyster reefs from maintenance dredging, shore line development throughout the service area and construction cost savings that are possible through pricing economies of scale. Two acres of oyster reef habitat restoration allows for either one large single oyster reef restoration project site or a number of smaller oyster

reef restoration sites spread out over a larger section of river. The size and distribution of oyster reef habitat will be presented in a project specific Site Development Plan that will be submitted once the Program Instrument and Compensation Planning Framework are approved by the IRT.

Two advance credits for both tidal wetland restoration and upland buffer habitat are requested based potential impact of ongoing waterside development throughout the service area and potential construction cost savings that are possible through pricing economies of scale. Two acres of advance credits for wetland restoration and two acres of advance credits for upland buffers allows for either one large single wetland and upland buffer restoration project site or a number of smaller restoration sites spread out over a larger section of river. The size and distribution of wetland and upland buffer restoration projects will be presented in a project specific Site Development Plan that will be submitted once the Program Instrument and Compensation Planning Framework are approved by the IRT.

Prioritization Strategy (§332.8(c)(2)(vi)).

While all the future proposed ILF Project sites will have natural values, some of the areas may currently provide good habitat for sensitive species, while other areas will need restoration or rehabilitation treatment to increase their overall functions. Sites that have been identified for potential restoration in the 2016 Watershed Action Plan will be evaluated as ILF Project sites first. The prioritization strategy for ILF Project sites will be to identify areas within the Elizabeth River watershed that have the highest habitat value for conservation and active management. The goal in the case of sediment quality and oyster reef habitat Project sites will be to conduct and manage the mitigation on land below mean low water that is owned by the Commonwealth of Virginia, in which cases an alternative to fee title and conservation easements is required. For intertidal wetland and upland buffer sites, the goal will be to acquire fee title land or land protected under a conservation easements, and create or restore the riparian habitats of the property. Specifically, the Sponsor will:

Rehabilitation of aquatic sediment resources will occur on existing state owned river bottom. Sediment rehabilitation projects will focus on river bottom that has been impacted by development or negative human activity.

Restoration of aquatic oyster reef resources will occur on existing state owned river bottom. Oyster restoration projects will focus on river bottom areas that provides 1) suitable hard sandy sediments suitable to support oyster reef construction material, 2) evidence of existing natural oyster recruitment nearby 3) sufficient water depth to allow marine equipment and 4) local community support for the project.

The initial priority for sediment and oyster projects will be the rehabilitation of the aquatic resources identified in the 2016 Watershed Action Plan.

The second priority will be to rehabilitate or re-establish tidal wetland and upland buffer areas within the Elizabeth River Watershed that have been lost as a result of shore line development, filling or erosion. The Sponsor will evaluate and prioritize potential tidal wetland and upland buffer project sites based a wetland mitigation site selection process developed by the Washington Department of Ecology (Ecology Publication #09-06-032 Dec 2009) or similar selection process on the land availability scenarios listed below:

1) The Sponsor will evaluate the suitability of tidal wetland and upland buffer restoration projects on donated fee simple land it receives. Preference for wetland restoration on donated land will be made based on its ability to meet the goals and objectives of the Elizabeth River Watershed Action Plan.

2) The Sponsor will evaluate the suitability of tidal wetland and upland buffer restoration project sites on private land in situations where the land owner agrees to place a conservation easement on the land that allows for long term monitoring, maintenance and protection. Preference for wetland restoration on donated land will be made based on its ability to meet the goals and objectives of the Elizabeth River Watershed Action Plan.

3) The Sponsor may consider the fee purchase of land that is suitable for tidal wetland and upland buffer restoration projects that meet the objectives of the Elizabeth River Watershed Action Plan.

Explanation of How Preservation Objectives Identified and Addressed in the Prioritization Strategy Satisfy the Criteria for Use of Preservation in § 332.3(h) (§332.8(c)(2)(vii)).

The new rule requires that the goal setting and prioritization of aquatic resources required in the prioritization strategy above also satisfy the criteria for use of preservation. In the new rule, preservation may be used to provide compensatory mitigation for activities when the following criteria are met:

- (i) The resources to be preserved provide important physical, chemical or biologic functions for the watershed;
- (ii) The resources to be preserved contribute significantly to the ecological sustainability of the watershed.

The Sponsors Program strategy is to restore create, and preserve aquatic resources using science-based development, maintenance and monitoring strategies.

Sponsor will develop a credits fee structure that is adequately priced to allow the set-aside of sufficient Long-Term Management funds to cover the long-term maintenance and monitoring requirements.

The prioritization strategy will allow the Sponsor to focus first on restoration of resources in areas that have the highest potential for success, need or are at risk. These resources include: 1) shallow river bottom characterized as degraded or severely degraded based on benthic studies conducted by Dr. Dauer of Old

Dominion University and other sediment quality studies conducted in the Elizabeth River including studies by the US Navy, US Army Corps of Engineers, Virginia Port Authority and the Virginia Department of Environmental Quality. 2) river bottom areas that have the highest potential for success for oyster reef restoration, and 3) shoreline areas that have the highest potential for success for tidal wetlands reestablishment, providing enhancement, restoration and protection of these areas will greatly increase the function of the aquatic resources.

While the district engineer must make the final determination, Sponsor will select ILF Projects sites based upon the prioritization criteria above.

Many of the future proposed ILF Projects sites may have been historically impacted or are under threat of adverse modification and/or destruction from current or future outside impacts. The extent and type of threats vary from site to site, and will be discussed in more detail as specific ILF Project sites are proposed for inclusion in the Program.

ILF Project sites involving shallow water river bottom rehabilitation and oyster reef restoration will be located in subaqueous land belonging to the Commonwealth of Virginia and thus benefiting from disturbance consideration as part of the joint permit application process for tidal and sub tidal development projects. For Projects involving sub tidal lands the Sponsor will work with appropriate IRT agencies to designate these areas as mitigation or conservation lands and will make efforts to negotiate a conservation land use agreement with the appropriate agencies. A copy of an example Conservation Land Use Memorandum of Understanding agreement can be found in Exhibit E.

ILF Project sites involving intertidal and upland buffer areas will be permanently protected through appropriate real estate or other legal instruments such as conservation easements or restrictive deed language.

Public and Private Stakeholder Involvement (§332.8(c)(2)(viii)).

The Watershed Action Plan for the Elizabeth River, updated in 2016, was developed by nearly 150 stakeholders representing local industry, government, citizens, civic organization, state and federal regulatory agencies, academics, the US Navy, USACE, NOAA, USFW, public utilities and consulting groups. Stakeholder meetings were facilitated by Dr. E Frank Dukes, director of the Institute for Environmental Negotiation, University of Virginia. In addition the Sponsor created two separate forums for private and public stakeholder involvement in commentary on Sponsor Project sites 1) Sponsor Technical Advisory Committee is comprised of representatives from local government, industry, academia, state and federal regulatory agencies, scientists and consulting engineers. It meets as needed to review data and remediation approaches for Sponsor managed sediment sites and has provided key recommendations on other sites. 2) Sponsor is a coordinating organization of the Sediment Remediation Partnership. This local stakeholder group is comprised of more than 50 agencies working on sediment remediation related projects and research in the lower bay

and meets regularly to discuss current sediment restoration issues and active projects with an objective of providing an open forum to discuss sediment management trends in the Hampton Roads area.

Long-term Management Strategies (§332.8 (c)(2)(ix)).

For project sites located at elevations below mean low water (shallow sediment and oyster reef Project sites) on State owned river bottom Section 332.7 of the Final Rule states, "The aquatic habitats, riparian areas, buffers, and uplands that comprise the overall compensatory mitigation project must provide long-term protection through real estate instruments or other available mechanisms as appropriate." A provision in the Final Rule addresses mitigation project sites located on state owned land where conservation easements may not be available. The provision states, " For government property, long-term protection may be provided through federal facility management plans or integrated natural resources plans." Project sites located below mean low water on state owned river bottom will be managed on a long-term basis in accordance with a Conservation Land Use Memorandum of Understanding signed by the Sponsor, VMRC, Corps and DEQ.

Project sites located at elevations above mean low water (tidal wetland and buffer Project sites) will be managed on a long-term basis through the recordation of a conservation easement or a deed restriction on the Project site. Long-term maintenance of the Project site will be funded by sales of credits to permittees.

Site specific Long-term Management and Maintenance Plans will be approved by IRT for each Project site.

The Long-Term Management and Maintenance Plan shall include, at a minimum, the following provisions for:

- 1) Periodic inspections of sites to detect and/or deter damage and will include reasonable actions to repair any observed damaged areas.
- 2) Monitoring the condition of aquatic improvements of the site such as ensuring any material placed for the purpose of capping or amending existing river sediments remains effective; plantings meet reasonable survivorship expectations; and rehabilitation goals are achieved regarding contamination levels and/or effects on marine life. The Long-Term Management and Maintenance Plan will include provisions to maintain and repair improvements as necessary to achieve the objectives of the Mitigation Project. Any improvements that are no longer needed to facilitate or protect the ecological function of the site may be removed or abandoned upon approval by the IRT.

Periodic Progress Evaluations (§332.8 (c)(2)(x)).

Sponsor will prepare and submit annual reports that (1) briefly evaluates the current state of each project site and (2) reports on the progress of the program in

achieving the goals and objectives set forth in the geographic service area encompassing those project sites. Additionally, according to Virginia State regulations (9VAC25-210 *et seq.*), annual reports will “...detail contributions received and acreage and type of wetlands or streams preserved, created or restored in each watershed with those contributions, as well as the compensatory mitigation credits contributed for each watershed of project impact.”

The annual report may contain photographs and other reporting, as appropriate. Where practical, adaptive management will be used, in the event potential problems are identified. Reports will be provided to the USACE and any other regulatory agency, upon request.

Additional Information (§332.8 (c)(2)(xi).

No additional information presented.

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Exhibit D
Program Mitigation Fee for Advance Credits

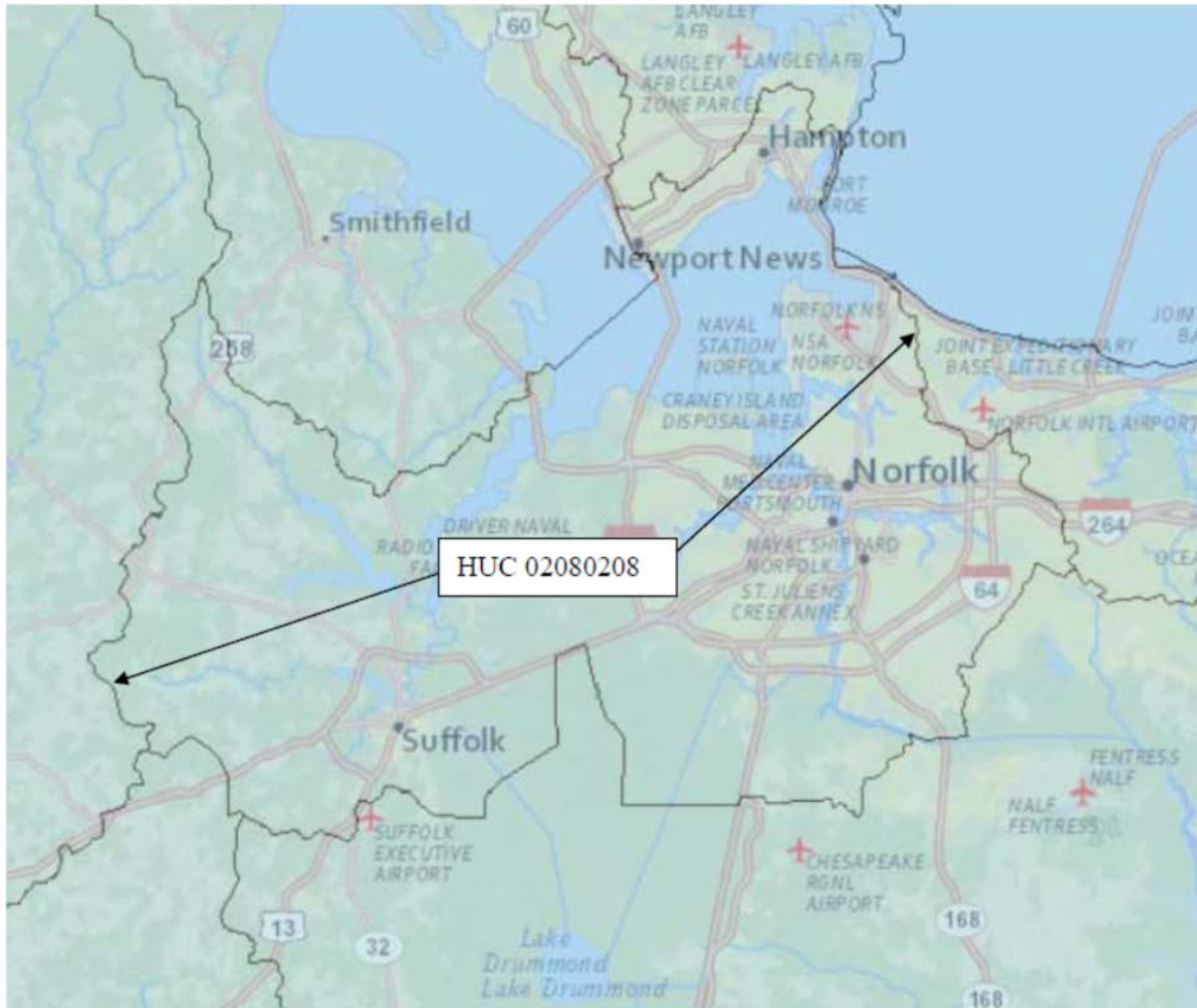
Basin	HUC Code	Proposed Mitigation Activity	Advance Credits	Proposed Credit Ratio	Cost per Credit
Lower James Hampton Roads	2080208	Subaqueous Restoration - upper range (dredging with clean amended back fill)	8	0.25:1	\$370,000
		Subaqueous Rehabilitation - lower range (direct sediment amendment)	8	1:1	\$370,000
		Oyster Reef Restoration	2	1:1	\$254,740
		Tidal Wetland Restoration	2	1:1	\$740,000
		Upland Buffer Restoration	2	15:1	TBD

Exhibit B Advance Credits					
Service Area			Advance Credits		
River Basin	HUC	HUC Code	Sub Aqueous Bottom	Oyster Reef	Tidal Wetland
Lower James River	Hampton Roads	2080208	16	2	2

EXHIBIT C	
Mitigation Crediting Ratios	
Proposed Mitigation Activity	Ratio
Subaqueous Restoration - upper range (dredging impacted sediment with amended back fill placement)	0.25:1 (Sub Aqueous bottom Credit)
Subaqueous Rehabilitation - lower range (impacted sediment amendment to improve pore water chemistry)	1:1 (Sub Aqueous bottom Credit)
Oyster Restoration	1:1 (Oyster Reef Credit)
Tidal Wetland Restoration	1:1 (Tidal Credit)
Tidal Wetland Creation	1:1 (Tidal Credit)
Tidal Wetland Enhancement - upper range (vegetation enhancement with high increase in function)	3:1 (Tidal Credit)
Tidal Wetland Enhancement - Lower range (invasive control or activities partially addressing function)	5:1 (Tidal Credit)
Upland Buffer Restoration* (Tidal Credit)	15:1 (Tidal Credit)

*The purchase of upland buffer restoration credits must be paired with an equal amount of another mitigation credit type

FIGURE 1
Program Geographic Service Area



Hampton Roads Hydrologic Unit Code 02080208

Exhibit G
Mitigation Credit Cost Determination Tables

<p style="text-align: center;"><i>Exhibit G</i> <i>Attachment 1- Sediment Restoration through dredging and amending</i> <i>(March 2018)</i></p>			
Project Cost Detail	Credit Size (acres)	Base Construction Cost	Task Assumptions
	0.25	\$225,000	
Site Development Plan	1.5%	\$3,375	For review and approval of IRT
Finalize Design & Specifications	11.0%	\$24,750	Preliminary design complete
Permitting	0.5%	\$1,125	Cost to prepare JPA application
Program and Construction PM	3.0%	\$6,750	Construction management
Construction QA/QC	3.0%	\$6,750	Construction QA/QC
Construction Contingency	19.0%	\$42,750	Rule of thumb recommended by Trust peer review experts
Legal	0.5%	\$1,125	Contract review
Community Relations	0.3%	\$563	Community outreach
Administrative Costs (10 years)	15.0%	\$33,750	As per ILF instrument
Long-term Monitoring (5 years)	5.0%	\$11,250	2 pore water samples/acre during years 1,3 & 5
Long-term Stewardship	2.0%	\$4,500	Annual site review
Catastrophic Events Escrow	4.0%	\$9,000	Required by Site Development Plan
Non-construction Cost	64.8%	\$145,688	
Total Cost Per 0.25 Acres		\$370,000	

Exhibit G			
<i>Attachment 2 - Sediment Rehabilitation through amending (March 2018)</i>			
Project Cost Detail	Credit Size	Base Construction Cost	Base Construction Cost per Acre
	1.0 acres	\$152,500	
Site Development Plan	5.0%	\$7,625	For review and approval of IRT
Finalize Design & Specifications	15.0%	\$22,875	Preliminary design complete
Permitting	5.0%	\$7,625	Cost to prepare JPA application
Program and Construction PM	5.0%	\$7,625	Construction management
Construction QA/QC	5.0%	\$7,625	Construction QA/QC
Construction Contingency	25.0%	\$38,125	Rule of thumb recommended by Trust peer review experts
Legal	1.0%	\$1,525	Contract review
Community Relations	1.0%	\$1,525	Community outreach
Administrative Costs (10 years)	15.0%	\$22,875	As per ILF instrument
Long-term Monitoring (5 years)	30.0%	\$45,750	2 pore water samples/acre during years 1,3 & 5
Long-term Stewardship	10.0%	\$15,250	Annual site review
Catastrophic Events Escrow	25.0%	\$38,125	Required by Site Development Plan
Non Construction Cost	142.0%	\$216,550	
Total Cost Per Acre		\$370,000	

Exhibit G <i>Attachment 3 - Oyster Reef Restoration (March 2018)</i>			
Project Cost Detail	Project Size	Base Construction Cost	Base Construction Cost per Acre
	1.0 acres	\$135,000	
Project Site Development Plan	5.0%	\$6,775	For review and approval of IRT
Site Surveys	3.0%	\$4,065	2 surveys (pre and post construction)
Permitting	3.0%	\$4,065	Cost to prepare JPA application
Program and Construction PM	3.0%	\$4,065	Construction management
Construction QA/QC	2.0%	\$3,000	Construction QA/QC
Construction Contingency	25.0%	\$33,875	Rule of thumb recommended by Trust peer review experts
Legal	1.0%	\$1,355	Contract review
Community Relations	1.0%	\$1,540	Community outreach.
Administrative Costs (10 years)	15.0%	\$20,325	As per ILF instrument
Long-term Monitoring (5 years)	10.0%	\$13,550	Tong survey and oyster count years 1,3 & 5
Long-term Stewardship	10.0%	\$13,550	Annual site review
Catastrophic Events Escrow	10.0%	\$13,550	Required by Site Development Plan
Non Construction Cost	88.0%	\$116,415	
Total Cost Per Acre		\$254,740	

Exhibit G <i>Attachment 4 - Tidal Wetland Restoration (March 2018)</i>			
Project Cost Detail	Project Size	Base Construction Cost	Base Construction Cost per Acre
	1.0 acres	\$300,000	
Land Purchase	1	\$125,000	
Project Site Development Plan	5%	\$15,000	For review and approval of IRT
Engineering	20.0%	\$60,000	Wetland design and survey
Permitting	2.0%	\$6,000	Cost to prepare JPA application
Program and Construction PM	5.0%	\$15,000	Construction management
Construction QA/QC	5.0%	\$15,000	Construction QA/QC
Construction Contingency	25.0%	\$75,000	Rule of thumb recommended by Trust peer review experts
Legal	1.0%	\$3,000	Contract review
Community Relations	1.0%	\$3,000	Community outreach
Administrative Costs (10 years)	15.0%	\$45,000	As per ILF instrument
Long-term Monitoring (5 years)	6.0%	\$18,000	Plant density survey years 1,3 & 5
Long-term Stewardship	10.0%	\$30,000	Annual site review
Catastrophic Events Escrow	10.0%	\$30,000	Required by Site Development Plan
Construction Cost Total	105%	\$440,000	
Total Cost Per Acre		\$740,000	

Exhibit F Credit Sale Statement

LIVING RIVER RESTORATION TRUST FUND Letter of Credit Availability											
				THIS VOUCHER MUST ACCOMPANY ALL REQUESTS FOR TRUST FUND CREDIT AVAILABILITY							
Shallow River Sediment Impacts in Acres (add rows as necessary)											
Cowardin	NAO/VMRC Permit #	Applicant	Locality	Requested Date	Payment Amount	Basin **	8-digit HUC	Physiographic Province*	Impacts (ac)	Credits Required	Lat/Long
MIUB2											
MIUB3											
Oyster Reef Impacts in Acres (add rows as necessary)											
Cowardin	NAO/VMRC Permit #	Applicant	Locality	Requested Date	Payment Amount	Basin **	8-digit HUC	Physiographic Province*	Impacts (lf)	Total Compensation Required (TCR)	Lat/Long
MIRF1											
Intertidal Wetland Impacts in Acres (add rows as necessary)											
Cowardin	NAO/VMRC Permit #	Applicant	Locality	Requested Date	Payment Amount	Basin **	8-digit HUC	Physiographic Province*	Impacts (ac)	Credits Required	Lat/Long
M2US2											
M2US3											
Heritage Element / T&E Species Impacts (add rows as necessary)											
Rank	Species / Community			DCR/DGIF comments provided?							
CONTACT: Name of USACE Project Manager				Address			Email Address		Phone No.		
CONTACT: Name of Va DEQ Project Manager				Address			Email Address		Phone No.		
APPLICANT CONTACT INFORMATION: To Be Completed by Applicant or Applicant's Representative											
Contact (Person LRRT Should Contact with Questions)				Address			Email Address		Phone No.		
<p>1. Use this form to inquire if credits are available and to reserve those credits for 90 days. This voucher represents the availability of suitable credits from the Trust Fund and is NOT considered payment for permitted impacts.</p> <p>2. The Living River Restoration Trust (LRRT) cannot process the request for available credits unless all applicable information in this voucher is completed. Identify the Cowardin of the resource being impacted and fill in all fields to the right of that Cowardin. APPLICANTS ARE RESPONSIBLE FOR COMPLETING THE CONTACT INFORMATION.</p> <p>3. Please be sure to address the section on Heritage Element/T&E Species Impacts. If the agencies have determined that no species/community impact will be incurred, enter "N/A" in the appropriate fields. DCR/DGIF comments/response on any Element Occurrence impacts should be included as an attachment via email.</p> <p>4. If the impact amounts change, the project must be re-coordinated with LRRT.</p> <p>5. If you receive this voucher with both your Corps and DEQ permits, only one voucher per permit number needs to be submitted to LRRT. The highest amount required from either permit should be submitted.</p> <p>6. Submit completed forms to Dave Koubsky via email: dkoubsky@elizabethriver.org</p> <p>7. Thank you for your cooperation and participation.</p>											
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> ** Basin <div style="border: 1px solid black; padding: 2px; display: inline-block;">CB</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">Chesapeake Bay</div> </div> <div style="text-align: center;"> <div style="border: 1px solid black; padding: 2px; display: inline-block;">LJ</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">Lower James</div> </div> </div>											