

PROGRAM AUDIT OF VIRGINIA AQUATIC RESOURCES TRUST FUND

ENVIRONMENTAL LAW INSTITUTE

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Program audit of 2011-2015 operations of the Fund under the requirements of 33 U.S.C. 332.8(i), Virginia Code 62.1-44.15:20-23, and the Virginia Aquatic Resources Trust Fund Program Instrument.

Table of Contents

- Program Audit Overview..... 1
- Conformation of service areas to applicable regulations and standards 5
- Compliance with approved compensation planning framework 6
- Documented approval of mitigation project sites 6
- Site Development Plan Requirements 9
- Monitoring Requirements..... 12
- Long-Term Management and Maintenance Plan 13
- Adaptive Management Plan 14
- Recorded land protection documents 16
- Financial Assurances 17
- Maintenance of a credit tracking system 24
- Accurate credit tracking using the system..... 27
- Advance Credits 29
- Documentation of credit costs..... 33
- Satisfaction of reporting protocols 35
- Standard Operating Procedures 35
- Conclusion..... 36

Program Audit Overview

The Environmental Law Institute (ELI) has conducted an audit of the operations of the Virginia Aquatic Resources Trust Fund (VARTF) in accordance with the requirements of 33 CFR Part 332 and 40 CFR Part 230, Subpart J (the “Compensatory Mitigation Rule” or “Rule”).

The VARTF is an in-lieu fee program (ILF) operated by The Nature Conservancy (Conservancy) that provides compensatory mitigation for unavoidable permitted impacts to waters of the United States under the federal Clean Water Act and the Rivers and Harbors Act, and waters of the Commonwealth under Virginia state laws and regulations.

Each ILF must have an approved program instrument that meets the requirements of the Compensatory Mitigation Rule. 33 CFR 332.8(a), 40 CFR 230.98(a). ILFs, such as VARTF, that were operating under instruments approved prior to July 9, 2008 were authorized by the Rule to operate for two more years under their existing instruments. But after that time, all ILFs must have an approved instrument satisfying the Rule, unless the Army Corps of Engineers district engineer in consultation with the relevant interagency review team (IRT) approved an extension of up to three additional years. Any approved mitigation project for which all construction was completed under a prior instrument may, however, continue to operate indefinitely under the terms of the prior instrument if the district engineer determines that the project is providing “appropriate mitigation substantially consistent with the terms” of the Rule. 33 DFR 332.8(v)(2), 40 CFR 230.98(v)(2).

On July 14, 2011, the Norfolk District of the Corps and the Virginia Department of Environmental Quality (DEQ) approved the VARTF’s Program Instrument. It replaces the Memorandum of Understanding dated August 18, 1995, as amended December 18, 2003, which previously governed operation of the VARTF.

The Rule authorizes the district engineer to audit the records of each ILF. 33 CFR 332.8(i)(4), 40 CFR 230.98(i)(4). The VARTF Program Instrument also provides that the program “shall be audited once each five years by an independent auditor.” ELI must assess the VARTF’s substantial compliance with the program criteria established by the Program Instrument and the Compensatory Mitigation Rule. This audit covers the program activities of the VARTF from July 14, 2011 through December 31, 2015 that are subject to these criteria, and are not grandfathered in by the terms of the 2011 Program Instrument.

ELI has been advised that the Conservancy has separately retained an independent financial auditor to audit the financial record keeping and reporting of program accounts, receipts, and disbursements for this period, and so ELI has not reviewed the financial records of the VARTF, as distinct from the mitigation credit ledger and documents associated with tracking and accounting for performance of mitigation obligations.

Elements of Program Audit

A program audit involves performing procedures to obtain audit evidence to document the satisfaction of the program criteria, and specifically includes identifying the existence of systems of records, the existence of standard operating procedures, implementation of these systems and procedures, and inspection of relevant records to document compliance with requirements.

In the course of this audit, ELI examined records provided by The Nature Conservancy and VARTF records maintained by the Corps in its Regulatory In-lieu Fee and Bank Information Tracking System (RIBITS). In addition to documents pertaining directly to the specific mitigation projects commenced by VARTF after July 14, 2011, we examined the VARTF credit ledger spreadsheet; the VARTF budget spreadsheet; the agreed standard operating procedures (SOP) for VARTF projects; standard letters used in implementing the program; internal databases used by the Conservancy to manage and track the status of projects; and the VARTF annual reports 2010-2015. We considered internal controls related to the performance and documentation of required elements, and performed tests of the operation of these controls by matching documentation to the stated activities subject to the audit.

On this basis we determine whether the VARTF can document its substantial compliance with all required program elements, whether material representations made in its reports for the activities subject to the audit are supported by documentation, and whether any procedures or practices warrant additional attention or revision given that this is the first program audit under the 2011 Program Instrument.

The Compensatory Mitigation Rule and the VARTF Program Instrument comprise numerous provisions affecting operation of the VARTF. In accordance with our program audit agreement with the Conservancy as approved by the IRT, ELI reviewed the program's documentation of performance of the following material requirements:

- Conformation of Mitigation Project service areas to applicable regulations and standards;
- Compliance with the approved Compensation Planning Framework;
- Documented approval of Mitigation Project Sites;
- Site Development Plans including all required elements;
- Content of Monitoring Plans;
- Long Term Management and Maintenance Plan;
- Adaptive Management Plan;
- Financial Assurance;
- Recorded land protection documents;
- Documentation of credit costs;
- Maintenance of credit tracking system;
- Accurate tracking of credits using the system;
- Compliance with Advance Credit requirements;

- Satisfaction of required reporting protocols.

Activities Covered by the Program Audit

VARTF has provided compensatory mitigation for permitted impacts to aquatic resources in Virginia since 1995, managing over \$64 million in mitigation payments in 14 river basins at more than 120 mitigation project sites. Most of these sites and mitigation activities are not subject to the 2011 Program Instrument, and hence not to this program audit. However, we examined documents related to some of these sites, activities, and systems of records, in order to accurately review the systems of records and documents of those activities that are subject to the Program Instrument and the Rule.

ELI reviewed individual projects approved after the Instrument on July 14, 2011 for consistency with federal and state mitigation regulations, the Program Instrument, and VARTF's internal standard operating procedures (SOPs). Project activities reviewed include:

- Proposals for initial approval of 10 new or expanded project sites, including one submitted before the date of the Instrument but approved after it became effective;
- Submission of 4 Site Development Plans (SDPs) to the IRT, including for one site which had been initially approved prior to the date of the Instrument; and
- Approval of 1 Site Development Plan by the IRT, and the Plan's formal execution as an amendment to the Program Instrument.

Approval-related activities that were reviewed for these projects are summarized in Table A below. Only one project, Chickahominy River (LJ-11) (Wilson), has received a final approval to begin construction and had its SDP incorporated into the Instrument.

The projects were reviewed for consistency with the Rule, Virginia law and regulations, and the Instrument to the extent of their review and approval process milestones. VARTF staff reported that one of the projects proposed and initially approved during the audit period, Rivanna River (MJ-1), has been subsequently withdrawn; however, ELI reviewed activities that occurred while that project was active. ELI did not review projects that did not receive an initial evaluation letter (IEL).

Table A: Summary of Projects Approved Since 2011 Instrument

Project Name (RIBITS Code)	Date Proposal to Request Funding Submitted*	Date of Initial Approval (IEL)	Date Site Development Plan Submitted*	Date Site Development Plan Approved
The Cedars (Bowen) (TN-10)	<i>Pre-Instrument</i> July 7, 2011	July 22, 2011	August 2015	n/a
Piney Grove Preserve (CH-17)	Nov. 9, 2011	January 30, 2012	June 2015	n/a
Lower Chickahominy (Fowlkes) (LJ-14)	March 13, 2012	August 27, 2012	n/a	n/a
Church Neck (Oliver) (CB-22)	March 13, 2012	December 10, 2012	n/a	n/a
Oyster (Cubberly) (AO-4)	March 18, 2012	August 8, 2012	n/a	n/a
Pinnacle (Underwood) (TN-11)	March 25, 2012	August 8, 2012	n/a	n/a
Chickahominy River (Wilson) (LJ-11)	September 12, 2012	March 11, 2013	February 2015*	March 25, 2015
Shenandoah River (Cedar Creek) (SH-6)	June 12, 2013	February 4, 2014	n/a	n/a
Chippokes Creek (Bacon's Castle) (LJ-15)	July 12, 2013	November 18, 2013	n/a	n/a
Rivanna River (Lamb) (MJ-1)	February 27, 2014	July 8, 2014	n/a (<i>not moving forward</i>)	n/a (<i>not moving forward</i>)
Dameron Marsh/ Hughlett Point/Fleet Bay (Wm.Thompson) (CB-17)	<i>Pre-Instrument</i> October 3, 2008	<i>Pre-Instrument</i> November 2, 2008	March 2015	n/a

* Submittal date reflects the date of submittal or agreement that is noted on the proposal or Site Development Plan document itself. In cases where more than one version of a document was submitted (i.e., a draft project proposal was amended and re-submitted), the date in Table A corresponds with the most recent submittal reviewed by ELI. The draft SDP for LJ-11 was submitted in December 2013, more than a year before the version deemed final by the Corps.

Table B: Other Program Activities Reviewed

Project Name (RIBITS Code)	Date of Initial Approval	Type of Activity	Date of Activity
Turkeycock Mountain (Roanoke Stream Credit Purchase) (RO-7)	January 15, 2013	2,500 stream credits purchased from the Roanoke River Stream and Wetland Mitig Bank	2013

The audit also examined several other activities tied to regulatory milestones that occurred between July 14, 2011 and December 31, 2015. These included review of credit transactions and accounting for liabilities in the basins identified in the Instrument, and verification of transactions relating to the sale of advance credits (authorized in the Instrument) and their associated liabilities.

Conformation of service areas to applicable regulations and standards

The Rule provides that the service area for an ILF is the watershed, ecoregion, physiographic province, and/or other geographic area within which the in-lieu fee program is authorized to provide compensatory mitigation. The service area must be appropriately sized to ensure that the aquatic resources provided will effectively compensate for adverse environmental impacts across the entire service area. CFR 332.8(8)(d)(6)(i). An in-lieu fee program instrument may have multiple service areas governed by its original instrument; however, all impacts and compensatory mitigation must be accounted for by service area. 33 CFR 332.8(8)(d)(6)(i). Under Virginia law, the service area for a compensatory mitigation project is further defined as limited to the same or adjacent fourth order sub-basin (HUC-8) as the impacts for which credit is to be provided. The Instrument references Virginia's mitigation banking requirements, citing Va. Code 62.1-44.15:23. Service areas for VARTF projects and credit transactions involving those projects must conform both to the appropriate basin and to sub-basin (HUC-8) limits.

Service areas are defined in the Section IV.C. of the Program Instrument, and Exhibit A to the Instrument, as the following basins: Atlantic Ocean, Chesapeake Bay, Chowan River, Lower James River, Middle James River, Upper James River, New River, Potomac River, Rappahannock River, Roanoke River, Shenandoah River, Tennessee River, and York River basins.¹ The Compensation Planning Framework (Exhibit A to the Program Instrument) documents the rationale for defining these 13 basins, documenting their consistency with the Rule's "appropriate" standard.

ELI reviewed the service areas defined in the Program Instrument, the tracking of service areas in the VARTF Credit Ledger document, and also the service areas defined in the one approved SDP (LJ-11) for consistency with the Rule, Virginia Code, and the Program Instrument.

Findings. VARTF uses HUC-8 to define "service area" at the project level, which is consistent with the Rule's suggested service area. The SDP for LJ-11 documents use of the HUC-8 in which the mitigation site is located, the primary HUC, and adjacent HUCs within the same major river watershed, as the service area for the project. ELI determined that VARTF uses HUC-8 service areas and the defined basins for all of its active mitigation project sites (pre- and post-instrument).

¹ The Compensation Planning Framework also addresses the Big Sandy River Basin, where VARTF previously provided compensatory mitigation, but for which VARTF no longer accepts funds related to compensation for impacts.

Compliance with approved compensation planning framework

All mitigation projects must be consistent with the approved compensation planning framework. Section V.A.2 of the Program Instrument, 33 CFR 332.8(c).

Consistency with the Compensation Planning Framework is documented in the Site Development Plan for individual projects. Specifically, the Site Development Plan includes a copy of the VARTF Off-site Mitigation Location Guidelines Checklist, typically attached as Exhibit E. This Checklist documents that the site has been selected after consideration of general regulatory requirements and practices (Section A) and additional criteria (Sections B and C) used by VARTF to determine and document consistency with the Compensation Planning Framework.

ELI reviewed the submitted SDPs to verify documentation of compliance with the approved Compensation Planning Framework. ELI specifically verified that the Checklist indicated, at item number C.11, that the project “follows the objectives and prioritization strategy of The Nature Conservancy’s watershed Approach to Compensation Planning Framework.” ELI then reviewed the relevant portion of the Compensation Planning Framework (based on the basin in which the project’s service area is located) and compared the objectives and prioritizations strategy for the basin to the description of the project in the SDP (SDP Article I.A-I.F), to verify that the mitigation site had been selected consistent with the Compensation Planning Framework. In making the consistency determination, ELI specifically considered descriptions of priority conservation areas, conservation targets, and threats. We also reviewed the prospectuses (proposals) submitted during the period.

Findings. ELI found that for all 4 mitigation sites for which an SDP was submitted (LJ-11, CH-17, CB-17, TN-10), item C.11 on the project’s Checklist accurately documented that the project description in the SDP was consistent with the objectives and strategies stated in the Compensation Planning Framework for the respective basin. We further determined that the proposals submitted for the other eight projects during the period covered by the audit also documented conformance to the Framework.

Documented approval of mitigation project sites

Initial approval of mitigation sites by the IRT is based on submittal of a proposal by the ILF, which must contain sufficient information to support an initial approval. The initial approval is documented by an Initial Evaluation Letter (IEL) signed by the Corps, which also authorizes disbursement of funds in accordance with the initial budget.

Submission of Proposals for Individual Mitigation Projects. Section V.A.2 of the Program Instrument requires the Conservancy to submit proposals for funding approval for “Mitigation Projects” to the IRT, which will be based on the Compensation Planning Framework and “must

include/address the 12 elements of mitigation plans at 33 CFR 332.4(c)(2)-(14).” “Each plan and associated funding requires approval by the IRT Chairs, in consultation with the IRT members (33 CFR 332.8(j); 33 CFR 332.8(i)) (9 VAC 25-210-116.D3 et seq).” Under current VARTF SOPs, when the Conservancy has decided to move forward with a project, the Conservancy should provide the IRT with a specific set of documents when submitting a project proposal for review: the Offsite Mitigation Checklist; Norfolk District Prospectus Checklist; a completed project proposal; a proposed budget; and coordination packages for historic resources and threatened and endangered species.² VARTF SOP at 1.

These Instrument provisions (and associated SOPs) are consistent with the Rule. Approval of a new project site (or a new phase of mitigation activities at a previously approved project site) is considered an “amendment” or “modification of the approved Instrument,” 33 CFR 332.8(g), and is therefore subject to the submittal, public notice, review, and approval requirements established in 33 CFR 332.8(d). For modifications of approved instruments, the sponsor must submit a “written request for an instrument modification accompanied by appropriate documentation.” 33 CFR 332.8(d)(2). The VARTF Instrument (and associated SOPs) establishes a process for the IRT’s initial review and “general” approval of individual projects prior to development of Site Development Plan, which mirrors the prospectus and initial evaluation process set out in the Rule for an original instrument. For each of the projects proposed after July 14, 2011, the proposal requirements in the Instrument are documented by a “Proposal to Request Funding from VARTF” (Proposal) and any materials that have been appended as exhibits (e.g., maps). (A project Proposal may also be referred to for internal purposes and/or on RIBITS as a “Prospectus.”) Under VARTF SOPs, this is documented by a completed Offsite Mitigation Checklist, Norfolk District Prospectus Checklist, coordination packages for historic resources and threatened and endangered species, and a proposed budget in addition to the Proposal.

Findings. ELI used RIBITS to retrieve a copy of each written Proposal, and then examined the content of the Proposal and any accompanying documentation for consistency with the requirements of the Instrument at V.A.2. A copy of the Proposal was found in the RIBITS Cyber Repository for 9 of the 9 projects reviewed (CH-17, CB-22, LJ-14, TN-11, AO-4, LJ-11, SH-6, LJ-15, MJ-1). The main body of each Proposal included a description of: project objectives, site selection (including how site conforms to the Compensation Planning Framework), mitigation goals, proposed mitigation work plan, determination of credits, geographic service area, use/tracking of mitigation site credits, site protection instrument, maintenance plan, performance standards, monitoring requirements, long-term management plan, adaptive management plan, and financial assurances. These elements were described in varying levels of detail across and within projects. ELI was able to verify that each Proposal does “include/address” each element of mitigation plans at 33 CFR 332.4(c)(2)-(14), as required by the Instrument.

² However, “exceptions may be made for projects that have been reviewed through the draft project proposal process.” SOP at 1.

Supplemental documentation (e.g., maps, aerial photographs, site visit photographs) typically was incorporated into, appended to (in same PDF file), or referenced as existing in the form of separate exhibits to the main Proposal. In some cases, some or all of the supplemental information referenced in the Proposal as being attached as an appendix or exhibit was not included with the copy of the Proposal document on RIBITS. At times it was possible to verify the existence of the supplemental document elsewhere in the Cyber Repository, or elsewhere.

Review and Approval of Proposals. Like submittal, review and approval of proposed projects are governed by the Instrument and the Rule. In the Instrument, Section V.A.4., the first approval is referred to as a “general approval,” also known as an “initial approval.” Funds are allocated to specific projects upon a project’s initial approval; as the Rule requires the sponsor to receive written authorization for disbursements for the program account. 33 CFR 332.8(i). Section V.A.3 of the Instrument provides that the IRT Chairs will approve specific project Proposals subject to factors including site suitability, long-term sustainability, impacts to aquatic resources mitigation, ratio of restoration to impacts of project in particular watersheds, maximum return on expended funds, benefits to rare and endangered natural resources, and an acceptable mitigation plan. Section X.I of the Instrument requires that all approvals be in writing (letter, electronic mail, of fax) and expressly approve the action or other matter for which approval is sought.

Initial approvals are documented by issuance of an Initial Evaluation Letter (IEL) or budget approval letter (or both) by the Norfolk Virginia Regulatory District. An IEL is a written communication from the Norfolk Virginia Regulatory District on behalf of the IRT confirming that the Norfolk District and the IRT reviewed the Proposal and providing a recommendation for future action. Under current VARTF SOPs, after review, the Chair of the IRT will provide the Conservancy with an Initial Evaluation Letter that includes: (a) recommendation of approval to move forward with development of the site development plan AND approval of all/portion of the proposed budget; or (b) recommendation of approval with changes to the original proposal; or (c) recommendation that the project not move forward. As noted previously, under the Rule, the establishment of a new or expanded project site is considered an amendment or modification of an approved Program Instrument and is therefore generally subject to the public notice, review, and approval requirements set out by regulation at 33 CFR 332.8(d).

Findings. For each of the 10 initial approvals issued after July 14, 2011, ELI sought to verify that the Conservancy had obtained initial approvals for projects consistent with representations in VARTF Annual Reports and other program materials (e.g., RIBITS project profiles). ELI first identified the date on which initial approval was issued by the IRT. Using RIBITS, a copy of the Initial Evaluation Letter was retrieved in order to verify that initial approval had been issued in writing and documented as required by the Instrument and Rule. A copy of the IEL was found on RIBITS for 8 of the 10 projects (LJ-11, AO-4, LJ-14, LJ-15, MJ-1, SH-6, TN-10, TN-11). For one project (CB-22), RIBITS contained a PDF file whose file name suggested it was an IEL, but the file is not a functional PDF and/or does not actually contain a copy of an IEL for CB-22. For

one project (CH-17), no IEL was found on RIBITS. ELI requested that VARTF staff provide a copy of the Initial Evaluation Letter, which was verified by ELI for CB-22 and CH-17.

Approval of Credit Purchase from Mitigation Bank. As indicated in Table B, Project RO-7 involved purchase of stream credits by VARTF from a mitigation bank, an action requiring approval by the IRT. According to the 2015 Annual Report, the Conservancy released a request for proposals for delivery of 2,500 to 3,500 stream credits, and “[a]fter thoughtful consideration, it was decided that 2,500 stream credits would be purchased from the Roanoke River Stream and Wetland Mitigation Bank, located in Franklin and Henry Counties.” Under Virginia stream compensation regulations, the purchase or use of credits from a mitigation bank for compensating project impacts is appropriate when several enumerated criteria are met, including that verification of credit purchase is provided to DEQ, that the bank site is “ecologically preferable to practicable on-site and off-site individual compensatory mitigation options,” and the bank is located in the same or adjacent subbasin within the river watershed of the impacted site. 9 Va. Admin. Code 25-210-116(E); Va. Code § 62.1-44.15:23. ELI sought to verify that the Conservancy had obtained initial approval for the RO-7 project as required by the Instrument and Rule, and consistent with representations in VARTF Annual Reports, by retrieving a copy of the Initial Evaluation Letter from RIBITS.

Findings. ELI was unable to locate a copy of an IEL in the RIBITS Cyber Repository for RO-7. ELI requested a copy of the IEL from VARTF staff. We verified the approval letter dated January 15, 2013, and also verification of the credit purchase on March 25, 2013.

Site Development Plan Requirements

Following initial approval of a proposed project site, Section V.A.4 of the Program Instrument requires submittal and approval of a Site Development Plan. The Site Development Plan is the “mitigation plan” required by 33 CFR 332.4(c), 332.8(j). Under the Instrument it must include the location, baseline conditions, credit composition, assessment methodology, schedule of credit availability, service area, schedule for conducting the project, monitoring, maintenance and reporting provisions, provisions for protection and management in perpetuity with appropriate real estate arrangements and performance standards for determining ecological success, as well as provisions addressing project default, and transfer of mitigation site ownership. Under the Rule, a Site Development Plan must include: a statement of objectives, factors considered in site selection, site protection legal instrument, baseline information for the project, determination of credits, mitigation work plan, maintenance plan, performance standards, monitoring requirements, long-term management plan, adaptive management plan, description of financial assurances that will be provided, and other information as required by the district engineer. 33 CFR 332.4(c)(2)-(14).

Approval of a Site Development Plan is documented by a written agreement executed by the Conservancy, the Corps and Virginia DEQ, which is thereby incorporated into the Program

Instrument. For Site Development Plans prepared using the VARTF template, documentation of a specific required element may be found in the body of the agreement and/or or in an attached Exhibit (A-Q). Corps approval of the Site Development Plan instrument “constitutes the regulatory approval required for the VARTF [project] to be used to provide compensatory mitigation for Department of the Army permits pursuant to 33 C.F.R. 332.8(a)(1).”

One Site Development Plan was approved since July 11, 2011, for the LJ-11 Wilson dam removal and stream restoration project (“LJ-11 SDP”). The LJ-11 SDP was examined to verify the elements of a mitigation plan required at 33 CFR 332.4(c)(2)-(14), the additional substantive requirements specified by the Instrument (e.g., schedule of credit availability, provisions addressing project default, and transfer of mitigation site ownership), and documentation of the LJ-11 SDP’s approval as a modification to the Program Instrument under 33 CFR 332.8(d).

Findings. The approval of the Site Development Plan, as required by the Instrument at V.4 and the Rule as a modification to the Program Instrument, is documented by the signatures of authorized agents of the Conservancy (March 25, 2015), the Corps (March 19, 2015), and DEQ (March 23, 2015), all of which appear on the LJ-11 SDP reviewed by ELI. ELI determined that the SDP is substantially consistent with the 12 elements of a mitigation plan required under 33 CFR 332.4(c)(2)-(14). The LJ-11 SDP also includes a schedule of credit availability (LJ-11 SDP at V.F) and provisions addressing project default (LJ-11 SDP at VI.G) and transfer of mitigation site ownership (LJ-11 SDP at VIII.P).

Several elements of a mitigation plan under 33 CFR 332.4(c)(2)-(14) were selected separately for broader review in accordance with the program audit agreement and are discussed in greater detail in subsequent sections. These are: site protection instrument recordation; monitoring; long-term management and maintenance; adaptive management; and financial assurances.

Here we discuss the other SDP required elements: project objectives; site selection; site protection; baseline information; determination of credits; mitigation work plan; and performance standards.

Objectives: The LJ-11 SDP describes that the project is expected to produce 620 USM credits through stream and riparian area restoration. The Plan states that the stream and buffer restoration activities will protect the site’s hardwoods and forested wetlands and that the removal of the dam and restoration of the stream reach will help reduce inputs of sediment to the Chickahominy River, and it also enumerates “benefits in addition to the mitigation compensation.” LJ-11 SDP at I.B.

Site Selection: The LJ-11 site was evaluated in terms of the VARTF Offsite Mitigation Location Guidelines and the Compensation Planning Framework. LJ-Plan at I.E.

Site Protection Instrument: The Rule requires that each Site Development Plan include a description of the legal arrangements and instrument, including site ownership, which will be

used to ensure the long-term protection of the compensatory mitigation project site. ELI identified a description of the legal instrument in the LJ-11 SDP at Exhibit F.

Baseline Information: Baseline conditions are described in narrative form in the LJ-11 SDP at I.F, and survey and other existing condition information is included in Exhibit D. A delineation of waters of the United States on the proposed project site is included at Exhibit O of the LJ-11 SDP. In the description of baseline conditions, the LJ-11 SDP states, “To compensate for the lost 0.03 acres of wetlands, the Conservancy will debit 0.03 wetland credits from LJ-1. This compensation will be shown on the credit ledger from LJ-1. This transaction will be completed upon approval of the SDP and prior to impacts being taken.” LJ-11 SDP at I.F. As of the time of ELI’s review of the Ledger, the ledger sheet for LJ-1 did not reflect this transaction; however, the ledger sheet shows that sufficient wetlands credits are available to be debited from LJ-1 prior to impacts being taken.

Determination of Credits: The LJ-11 SDP includes a description of the number of credits to be provided (620 USM) and a brief explanation of the rationale. LJ-11 SDP at I.B.

Mitigation Work Plan: The Rule requires the mitigation plan to include “detailed written specifications and work descriptions,” including several specific elements. 33 CFR 332.8(c)(7). ELI identified each specific element in the mitigation work plan for LJ-11.

Maintenance: Under the Rule, the required “maintenance plan” includes a “description and schedule of maintenance requirements to ensure the continued viability once initial construction is completed.” 33 CFR 332.4(c)(8). Within the VARTF framework, these are maintenance requirements applicable during the Success Criteria monitoring period (and prior to the beginning of the “Long-Term Management and Maintenance” period, which is discussed in a later section of this report). The LJ-11 SDP provides that the Conservancy shall maintain the mitigation site “consistent with maintenance criteria established in this SDP. The Sponsor shall continue with such maintenance activities until completion of the monitoring period.” Exhibit D describes short-term maintenance requirements in terms of “anticipated corrective actions” (e.g., maintenance of riparian buffer plantings, repair/replacement of instream structures, repair of stream banks, and invasive species management). “Sponsor will inspect the stream and buffer restoration areas during each monitoring event to determine whether corrective action is needed to ensure achievement of Success Criteria.” Beyond that, Exhibit D provides that “[b]est professional judgment will be used to determine if corrective action or maintenance activities are necessary following a monitoring event.” The schedule for short-term maintenance activities is determined by the monitoring schedule and may vary from year to year.

Performance Standards: Ecologically-based performance standards, referred to by VARTF as Success Criteria, are documented in Exhibit I of the LJ-11 SDP. The Success Criteria are based on attributes that are objective and verifiable, as required under 33 C.F.R. § 332.5(b).

Pending Site Development Plans. ELI also reviewed Site Development Plans that were submitted to the IRT for review during the audit period but are still pending final approval by the IRT. According to the Program Instrument, Site Development Plans (Draft SDPs) submitted to the IRT should include all elements enumerated at Section V.A.4, if applicable, as well as specific provisions addressing project default and transfer of site ownership. Under current VARTF SOPs, when submitting a Draft SDP, the Conservancy must include the following via RIBITS: a final estimated budget; a confirmed delineation; and a red-lined Draft SDP (using the VARTF SDP template). Although each of the three Draft SDPs is subject to amendment by the parties prior to its final approval, ELI obtained and examined each submitted SDP (CH-17, CB-17, and TN-10) to determine its consistency with the Rule and Program Instrument's requirements SDPs at Section V.A.4. The contents of the Draft submitted SDPs reviewed by ELI appear to be consistent with the elements required by the Rule and Instrument.

Monitoring Requirements

A Site Development Plan must define monitoring requirements to determine if the project is on track to meet performance standards and must include a schedule for monitoring and reporting on results. 33 CFR 332.4(c)(10), 332.6, 332.8(q)(2). The length of the monitoring period must be sufficient to demonstrate that the project has met its performance standards, but be not less than five years. However, following project implementation, the district engineer may reduce or waive remaining monitoring requirements upon determining that performance standards have been met. 33 CFR 332.6(b). Consistent with the Rule, the Program Instrument provides that closure of a site may be requested no sooner than the end of the five-year monitoring period, but "Preservation projects may request closure once Success Criteria have been met." Mitigation projects initiated prior to the 2011 Program Instrument may be closed with IRT approval when applicable criteria have been met. Section V.A.4. The Rule requires that monitoring requirements address: the parameters to be monitored; the party responsible for conducting the monitoring; the frequency for submitting monitoring reports to the district engineer; and the party responsible for submitting monitoring reports to the district engineer. 33 CFR 332.4(c)(10), 332.6(a), 332.6(c)(2).

For SDPs developed using the VARTF template, monitoring requirements are documented mainly by two Exhibits to the SDP: Exhibit J (Monitoring Requirements for the Mitigation Site); and Exhibit K (Monitoring Report Requirements). ELI reviewed Exhibits J and K of the LJ-11 SDP for consistency with the Rule and Instrument. ELI also reviewed the monitoring provisions in the three Draft SDPs, although they remain subject to amendment as of the time of the audit. Consistency and sufficiency are legally up to the IRT.

Findings. The LJ-11 monitoring provisions are generally consistent with the requirements in the Rule and Instrument; as are the draft monitoring provisions in the CH-17 SDP, the CB-17 SDP, and the TN-10 SDP.

Long-Term Management and Maintenance Plan

As previously noted, one of the required elements of a mitigation plan (Site Development Plan) is a long-term management and maintenance plan. 33 CFR 332.4(c)(11). Under the Rule, components of a long-term management plan must include: the parties responsible for long-term management and maintenance; the long-term management and maintenance requirements; the party responsible for long-term ownership; annual cost estimates for carrying out long-term management needs; and the funding mechanism that will be used to meet those needs. 33 CFR 332.4(c)(11), 332.7(d)(2), 332.8(u). The Rule requires that the original in-lieu fee instrument “clearly indicate the party or parties responsible” for long-term management of a project and address any provisions necessary for long-term financing. 33 CFR 332.3(1)(2).

The Program Instrument defines a Long-Term Management and Maintenance Plan (“LTMMP”) as “the plan that defines the goals and objectives of long-term stewardship after Success Criteria monitoring has been completed.” Section II. The LTMMP for each project must contain “specific objectives that address the long-term management requirements of the site” and must include, at a minimum, provisions for periodic patrols of the site for signs of trespass and vandalism (including maintenance actions to deter trespass and repair vandalized features) and for monitoring the condition of structural elements (including provisions to maintain and repair these improvements as necessary). The Long-Term Steward, the party responsible for long-term management and maintenance of the site (which is the Conservancy unless otherwise designated), must document that it is achieving each objective by submitting status reports to the IRT on a schedule approved by the IRT. Section V.G.

The LTMMP must “specify all anticipated management activities and the necessary capacity to accomplish those activities.” Program Instrument, Section V.G. As discussed in the financial assurances section of this report, the Instrument requires the Conservancy to set aside funds to guarantee the success of each site, including for long-term management. Requests to expend funds for long-term management must be accompanied by a description of needs, annual cost estimates for these needs, and a discussion of inflationary adjustments and other contingencies as appropriate. Program Instrument, Section IV.D.

VARTF has developed a general template, from which each of the four site-specific LTMMPs has been adapted, that provides for all the key components of a long-term management plan. For SDPs developed using the VARTF template, the LTMMP is included as a stand-alone document, typically attached at Exhibit M, that covers the full range of stewardship responsibilities assigned to responsible parties after a site has met its Success Criteria. In the case of a project with an approved SDP, documentation of an executed Long-Term Management and Maintenance Plan includes signature by the Long-Term Steward, the Corps, and DEQ.

ELI examined the final, executed Long-Term Management and Maintenance Plan for LJ-11. In addition, we reviewed the three projects for which an SDP, including a LTMMP, have been submitted to the IRT: CH-17, CB-17, and TN-17.

Findings. ELI found that the Long-Term Management and Maintenance Plans we reviewed are generally consistent with the requirements of the VARTF Program Instrument and the Rule for LJ-11, CH-17, CB-17, and TN-10. The LTMMP template used by VARTF creates a separate document that is incorporated by reference into the Site Development Plan. This approach allows the LTMMP to be viewed all in one place and structures the plan as a stand-alone instrument, like a contract. The LJ-11 LTMMP has been executed and signed by the Conservancy (as Long-Term Steward), the Corps, and DEQ. It grants the Corps, DEQ, and their authorized agents the right to inspect the site and take actions necessary to verify compliance with the LTMMP, which by its own terms is enforceable in a proceeding at law or in equity or in an administrative proceeding by Corps or DEQ.

Adaptive Management Plan

Under the Rule, each mitigation plan (Site Development Plan) must include an “adaptive management plan,” defined as a management strategy to address unforeseen changes in site conditions or other components of the project, and that must identify the party or parties responsible for implementing adaptive measures. It must guide decisions for revising compensatory mitigation plans and implementing measures to address foreseeable and unforeseen circumstances that adversely affect compensatory mitigation success. 33 CFR 332.4(c)(12). Adaptive management should include selection of appropriate measures and involve analysis of monitoring results to identify potential problems and identify and implement measures to rectify them. 33 CFR 332.2.

The Program Instrument provides for adaptive management by allowing changes to be made to SDPs, authorizing “modifications [that] must be made in a Site Development Plan to ensure successful establishment” of a project site (upon a written request and IRT approval). Program Instrument, Section V.A.4.

Within the VARTF framework, an “adaptive management plan” is not prepared in the form of a stand-alone document or addressed comprehensively in a distinct section of the SDP. Instead, adaptive management principles are incorporated (both explicitly and implicitly) throughout the SDP, including in the mitigation work plan, monitoring and short-term maintenance requirements, and long-term management and maintenance plan. Therefore, documentation of an “adaptive management plan” is found by aggregating the adaptive management provisions throughout the SDP.

ELI examined the approved SDP for LJ-11 to identify adaptive management provisions throughout its components. Next, ELI sought to verify the SDP’s incorporation of adaptive

management principles to an extent consistent with the Rule’s requirements: to address unforeseen changes; guide decisions for revising mitigation plans and implementing measures; identify parties responsible for implementing adaptive measures; select appropriate measures; and involve analysis of monitoring results to identify potential problems and corrective measures. ELI sought to verify the aforementioned requirements during both the establishment and short-term monitoring phase and the long-term stewardship phase.

Findings. ELI found that by considering provisions from several different components of the SDP, the SDP is consistent with the adaptive management planning requirements set out in the Rule. We examined the SDP to determine its consistency with respect to both short-term monitoring and long-term stewardship.

Short-Term Monitoring and Maintenance Phase: The LJ-11 SDP designates the Conservancy as the party generally and primarily responsible for implementing adaptive management measures during the establishment and monitoring phase, stating that the Sponsor “shall develop necessary contingency/adaptive management plans and *implement* appropriate remedial actions in coordination with the IRT to address the likelihood that a [project] may fail to achieve the Success Criteria” (emphasis added) (LJ-11 SDP, Article VI.F). However, in the event that the Conservancy fails to implement necessary measures within one growing season, the IRT becomes responsible for notifying the Conservancy and appropriate authorizing agencies of the failure, and directing and/or taking “appropriate remedial actions” including suspension/revocation of Available Credits. (LJ-11 SDP, Article VI.F.)

By directing the Conservancy to “develop necessary contingency/adaptive management plans and implement appropriate remedial actions in coordination with the IRT” if there is a “likelihood that a [project] may fail to achieve the Success Criteria,” the SDP establishes a general framework to guide decisions about when, why, and by whom mitigation plans are revised and remedial measures are implemented during the site’s monitoring period. (LJ-11 SDP, Article VI.F.) The guidance is broad and the decision-making framework is flexible, but flexibility is an important feature of adaptive management.

By identifying Success Criteria (at Exhibit I) for monitoring and requiring monitoring reports to include a discussion of any deviation from as-built or the previous year’s data (at Exhibit K), the LJ-11 SDP documents selection of appropriate managers and a requirement to analyze monitoring results during the short-term monitoring phase. Exhibit K also provides that monitoring reports must, if necessary, contain a “corrective action plan” including “any proposed actions or maintenance activities, a schedule, and a monitoring plan (e.g., the control of undesirable species, the repair of a damaged water control device, the replacement of damaged, planted vegetation, etc.).”

Long-Term Stewardship Phase: With respect to the long-term stewardship phase, adaptive management principles are incorporated into the Long-Term Management and Maintenance Plan

(at Exhibit M). The LJ-11 LTMMP provides, “While it is not anticipated that major management actions will be needed, an objective of this Long-Term Management and Maintenance Plan is to conduct monitoring to identify any issues that arise, and use adaptive management to determine what actions might be appropriate.” It states that to use “adaptive management” means to use “an approach to natural resource management which incorporates changes to management practices, including corrective actions as determined to be appropriate by the IRT in discussion with the Long-Term Steward,” thereby identifying the Long-Term Steward and IRT as responsible for decision-making and implementation. While any incorporation of adaptive management principles can be characterized as “addressing unforeseen changes,” the LTMMP also specifically states that adaptive management practices will include “activities necessary to address the effects of climate change, fire, flood, or other natural events.” (LJ-11 LTMMP, Article IV.A.)

According to Article IV.A of the LJ-11 LTMMP, annual monitoring will assess measures including condition, degree of erosion, invasive and non-native species, water quality, fire hazard, and/or other aspects. The LTMMP requires the Steward to provide an annual report on all management tasks conducted and general site conditions to the IRT, which must include “recommendations with regard to (1), any maintenance measures deemed to be warranted, (2) any problems that need near-, short-, and long-term attention . . . and (3) any changes in the monitoring or management program that appear to be warranted based on monitoring results to date.” (LJ-11 LTMMP, Article IV.D.) These provisions specifically document the selection of appropriate measures and the analysis of monitoring results to identify potential problems and corrective measures, as required by the Rule.

The LTMMP also provides guidance for decisions about its own modification, providing that the Long-Term Steward, property owner, and IRT “may meet and confer from time to time, upon the request of any one of them, to revise the [LTMMP] to better meet management objectives and preserve the conservation values.” Any proposed changes to the LTMMP must be discussed with the IRT and the Long-Term Steward, be designed with input from all parties, and be approved by the IRT in writing. (LJ-11 LTMMP, Article V.C.) The IRT is required to “consider whether such actions will help ensure the continued viability of the Mitigation Site’s biological resources” prior to considering adaptive management changes to the LTMMP. (LJ-11 LTMMP, Article IV.A.)

Recorded land protection documents

Section V.E. of the Program Instrument requires the VARTF to protect the land associated with each mitigation site “by a recorded document that preserves the land in perpetuity with the protection ‘running with the land’.” No credits may be sold, debited, or released until the Corps and DEQ have acknowledged proof of the recordation. The Conservancy may engage in Mitigation Projects on land in which it owns fee simple interest provided that appropriate land protection mechanisms are approved by the IRT pursuant to 33 CFR 332.7(a) and the Virginia

Administrative Code. According to the SDP template used by VARTF, and Section IV.F of the LJ-11 SDP that has been incorporated into the Instrument, the Real Estate Protection Document must be recorded in the chain of title for the land on which the site is located and “must, among other things, ensure the right of ingress and egress for the Sponsor, IRT, and the Long-Term Steward.”

VARTF instruments refer to land protection documents as “Real Estate Protection Instruments.” Recorded Real Estate Protection Instruments are documented by a copy of the instrument, typically a Conservation Easement or set of deed restrictions, with a receipt from the County Clerk.

Findings. The recorded Conservation Easement was attached to the LJ-11 SDP and is consistent with the requirements of the Rule and Instrument. Exhibit F of the LJ-11 SDP consists of copies of the real estate instruments used to protect the site, conservation easements, which are a form of long-term protection allowed under the Rule. 33 CFR 332.7(a). There is a copy of a Deed of Conservation Easement (“Conservation Easement”) granted to The Nature Conservancy by the trustees of the Martha Wilson Trust (fee simple owner), including an official receipt documenting its recordation in Henrico County, Virginia on October 26, 2015. There is also a copy of a Conservation Easement granted to the Nature Conservancy by the Martha Wilson Trust with an official receipt documenting recordation in Kent County, Virginia on November 2, 2015.

Consistent with 33 CFR 332.7(a)(1)-(2), the Conservation Easement also prohibits incompatible uses (Article 3); establishes the right to ingress and egress and to enforce site protections in two third-parties, the Corps and DEQ (Recital I; Article 5); and provides that VARTF funds will be used by the Conservancy to protect, preserve, and monitor the buffer areas and preservation areas in perpetuity (Recitals H).

Although recordation of the site protection instrument is not required at the draft SDP stage, we examined the three draft SDPs. For CB-17 the Conservancy is the grantee in a recorded easement, recorded December 23, 2008 and attached to the draft SDP. For TN-10, the Conservancy is the fee simple owner and has granted a “natural area preserve dedication and open space easement” to Virginia DCR, which has been recorded, September 11, 2012, and a scanned copy of which is available on RIBITS. For CH-17, the draft SDP contains recorded deeds as proof that the Conservancy is the fee simple owner; however, deed restrictions needed are attached in draft form, awaiting comments from the IRT.

Financial Assurances

For any compensatory mitigation project under the Rule, the Corps must require “sufficient financial assurances to ensure a high level of confidence that the compensatory mitigation project will be completed in accordance with performance standards.” 33 CFR 332.3(n). For in-lieu fee programs, this means that the sponsor must provide, and the IRT must approve, a

mechanism to ensure that sufficient funds are available to complete any and all of the sponsor's mitigation obligations at a site – even in the event that the sponsor proves unable or unwilling to do so as planned. The Rule requires that a description of a project's "financial assurances" be included in every mitigation plan (Site Development Plan). 33 CFR 332.4(c)(13).

According to the Rule's language and interpretive information issued by the Corps,³ the "financial assurances" required by the Rule can be understood as "short-term financial assurances" – they must be in place until a project meets its performance standards, but are distinct from financial resources set aside for long-term management costs. The latter, referred to in the Rule as "long-term financing mechanisms," are identified as one of the required elements of a project's long-term management plan (and therefore also must be included in the SDP). 33 CFR 332.4(c)(11).

Under the terms of the Instrument, the "Conservancy shall be required to provide financial assurances by setting aside contingency funds from the [Trust Fund Account] sufficient to guarantee the success of each Mitigation Site undertaken in accordance with Corps and DEQ regulations, *including remediation of catastrophic events and long-term management* of each Mitigation Site" (emphasis added). Program Instrument, Section IV.D. Unlike the rule, the Program Instrument uses the term "financial assurances" to characterize not only assurances for mitigation success but also ongoing funding for catastrophic events and long-term management. For purposes of this audit, financial assurances generally refer to the broader definition from the Program Instrument; the terms "short-term financial assurances" and "long-term financial assurances" are used to further describe these mechanisms as necessary.

For VARTF projects approved and implemented under the 2011 Instrument, financial assurances are provided by four separate funding mechanisms: the "Maintenance and Monitoring Fund," the "Catastrophic Event Fund," the "Stewardship Endowment," and the "Long-Term Management Endowment." Each of these mechanisms plays a different role in ensuring that projects will be constructed, established, and maintained in accordance with the project's Site Development Plan, or, in the alternative, that the Conservancy will be able to provide a corresponding amount of mitigation credits from another source.

The Instrument authorizes use of the VARTF program account ("Trust Fund") for the planning, implementation, monitoring, management, and protection of mitigation projects and administration of projects, subject to approval by the IRT. (Section IV.D.) As described by VARTF staff and documented in Annual Reports, VARTF's accounting system tracks funds at basin level and project level. When the Conservancy submits a project Proposal for review and initial approval by the IRT, it also submits a proposed budget. The proposed budget includes the cost of planning and implementing the mitigation project, *and* it identifies monies necessary for

³ Steve Martin, 2015 Update to IWR White Paper, *Implementing Financial Assurance for Mitigation Project Success* (March 2016), at 2.

each of four additional funding mechanisms, which collectively are characterized as a project's financial assurances:⁴

- **Maintenance and Monitoring Fund:** The Maintenance and Monitoring Fund holds the monies necessary to conduct maintenance and monitoring activities during the initial (typically 10-year) monitoring period. Monies for this Fund are first identified as a line item in the proposed project budget, which is submitted to the IRT with the initial Proposal. Once the Proposal and proposed budget are approved and an IEL is issued, the amount identified for the Maintenance and Monitoring Fund is considered “allocated” to the project, which means it is reserved within the overall Trust Fund for expenditure on that project alone. (Funds allocated to mitigation projects are no longer included in the “Total Balance” reported by VARTF in its annual Account Summary for the Trust Fund, and therefore are not to be identified, allocated, or spent for any other purpose.) The amount of the Maintenance and Monitoring Fund for a project remains subject to adjustment until final approval of the project's SDP and Final Site Budget, where it is recorded as the “corrective action/maintenance” line item. The monies allocated for this purpose will remain in the Trust Fund for the duration of the project's Success Criteria monitoring period, unless and until they are spent, or transferred out of the Fund (upon approval by the IRT) to cover maintenance and monitoring costs at the time such costs are actually incurred by the Sponsor. The Maintenance and Monitoring Fund is a mechanism for short-term financial assurances. At the end of the monitoring period, when Success Criteria have been achieved and the project is closed, the maintenance and monitoring fund ends and any remaining balance is returned to the general Trust Fund.
- **Catastrophic Event Fund:** The Catastrophic Event Fund holds funds that may be needed to remediate damage caused by “catastrophic events” to features (e.g., created, enhanced, or restored wetlands and streams) that are not self-sustaining and are likely more vulnerable to such damage (because of location, design, and/or construction) than similar naturally existing resources, in order to ensure that they continue to provide adequate compensatory mitigation. The Site Development Plan enumerates a list of specific “catastrophic events” for which this fund can be used. LJ-11 SDP, Article IV.D-E. Monies for the Catastrophic Event Fund are identified in the proposed budget and are allocated at the time the IEL is issued. The Catastrophic Event Fund provides both short-term and long-term financial assurances: the allocated funds are available to be spent by the Sponsor (at the IRT's direction) during the initial monitoring period. The funds remain allocated to the project even after the Success Criteria monitoring has closed, and are available to be spent by the Long-Term Steward in case of catastrophe. These funds

⁴ Information about VARTF financial assurance mechanisms was obtained from the Program Instrument, Site Development Plans, and interviews with VARTF staff. Descriptions in this section are based on these sources.

remain allocated to the project until the entire balance has been spent by the Sponsor, Long-Term Steward, or both.⁵

- **Stewardship Endowment Fund:** These monies support the required monitoring and enforcement of the Real Estate Protection Document by the easement or deed holder. The funds are identified in the proposed budget and allocated at the time the IEL is issued. After execution of the Real Estate Protection Document and prior to the start of construction, the monies are transferred out of the Trust Fund and into a Conservancy-held endowment (referred to as the “VARTF endowment”). (As described below, the VARTF endowment combines the Stewardship funds with Long-Term Management Fund monies for this and other VARTF projects). The easement holder is the user of Stewardship Endowment Fund monies, to monitor the site and enforce the terms of the Real Estate Protection Document (e.g., compel the landowner to comply with the restrictions). The Stewardship Endowment Fund provides both short-term and long-term financial assurances; it becomes available by the start of construction, if not earlier, and it remains “attached” to the site for use by the easement holder in the long-term.
- **Long-Term Management Fund:** The requirement for a Long-Term Management Fund is set out in Section V.G of the Program Instrument. These monies are identified in the proposed budget and allocated at the time of initial approval, but the final amount is based on the SDP and the Long-Term Management and Maintenance Plan and is approved by the IRT through approval of the SDP. At any time between SDP approval and the beginning of construction, the monies for this fund are transferred out of the Trust Fund and into the VARTF endowment, where they are pooled with the project’s Stewardship funds and funds for other projects to serve as the principal that will generate an annual return sufficient to cover annual expenses. (Annual expenditures for each fund’s activities are tracked and reported for each individual project.) These monies will sit untouched in the VARTF endowment for the entire monitoring period, from Year 0 until monitoring ends, typically after Year 10. Once monitoring ends and the long-term management phase begins, these monies are available to be withdrawn from the VARTF endowment for expenditure by the Long-Term Steward, if and when eligible costs are incurred.

⁵ When the Conservancy is not the Long-Term Steward, it is not yet clear where the Catastrophic Event Fund will be maintained. This has not yet arisen under the Program Instrument.

Table C: Summary of VARTF Approach to Financial Assurances

FINANCIAL ASSURANCE MECHANISM	VARTF INSTRUMENT AUTHORIZING AND CONTROLLING THE MECHANISM	COVERAGE (AUTHORIZED USES)	AVAILABLE FOR USE
Maintenance and Monitoring Fund	Site Development Plan (Article IV.D)	- Initial monitoring and reporting -Corrective action and maintenance during initial monitoring period	During the Success Criteria monitoring period (for use by Sponsor)
Catastrophic Event Fund	Site Development Plan (Article IV.D, IV.E)	-Remediate damage caused by catastrophic events to features that are not self-sustaining (as specified in SDP)	During the Success Criteria monitoring period (for use by Sponsor); after Success Criteria monitoring has ended (for use by Long-Term Steward)
Stewardship Endowment Fund	Site Development Plan (Article IV.D)	-Monitoring by Long-Term Steward (after initial monitoring period) -Enforcement of real estate protection instrument	After the real estate protection instrument has been executed (for use by easement holder)
Long-Term Management Fund	Program Instrument (Section V.D); Site Development Plan (Article IV.D)	-Long-term management costs (after initial monitoring period)	After Success Criteria monitoring has ended (for use by Long-Term Steward)

ELI reviewed the four funding mechanisms described above to determine whether together they constitute “financial assurances” substantially consistent with the Rule and Program Instrument requirements. ELI also reviewed the LJ-11 SDP to verify that it included a description of financial assurances as required under 33 CFR 332.4(c)(13).

Findings. We find that the four funding mechanisms used by VARTF to ensure project success and maintain resources in the long-term are substantially consistent with the short-term financial assurances requirements of the Rule, the long-term funding requirements of the Rule, and the financial assurance requirements of the Instrument.

The Rule allows the Corps, the IRT, and the Sponsor considerable flexibility in how the short-term financial assurances requirement might be satisfied for a given project. However, the Rule does provide some broad requirements with respect to applicability, type, coverage, timing, and

amount of short-term financial assurance mechanisms that may be provided by sponsors and approved by regulators. The following discussion describes VARTF mechanisms' conformity to any applicable Rule requirements as well as to the Program Instrument and, at the project level, to the project's SDP.

Applicability, Coverage, and Timing: In general, under the Rule short-term financial assurances are required to ensure a high level of confidence that any compensatory mitigation project will be successfully completed in accordance with its Success Criteria. VARTF's instruments and procedures establish a framework to provide financial assurances, in the form of the four funding mechanisms, as individual projects are approved. Of the four projects for which SDPs were submitted during the audit period (LJ-11, CH-17, CB-17, TN-10), all four SDPs included descriptions of financial assurances provided by the four mechanisms described above.

ELI also sought to verify whether procedures were being followed to set aside funds for long term financial assurance. ELI verified documentation of the transfers into the VARTF endowment of the funds for the LJ-11 Long-Term Management Fund, the LJ-11 Stewardship Endowment Fund, and the SH-6 Stewardship Endowment Fund. VARTF provided documentation of the transfers with ledger entries dated December 8, 2015 corresponding to the amounts in those funds.

We note that at the initial approval stage, that some of the Proposals submitted by VARTF for preservation projects stated that financial assurances would be provided, while others indicated that certain financial assurances would not be required. For example, the prospectus for LJ-14 stated, "As a preservation project, there is little risk that the mitigation will not be successful following the acquisition of the property and recording of the conservation easement. Therefore, additional financial assurance will not be required for this project. The balance of the Fund serves as sufficient financial assurance for project success." The budget did, however, include line items for stewardship endowment and long term management. The Corps approved the IEL with the condition that a revised budget include an item for "mitigation monitoring," which was then added to the budget. A catastrophic event fund was not required for this preservation project. The Rule does provide for cases "where an alternative mechanism is available to ensure a high level of confidence that the compensatory mitigation will be provided and maintained," for which the Corps "may determine that financial assurances are not necessary for that mitigation project." 33 CFR 332.3(n)(1). Because of this provision, and the fact that site budgets have not been finalized through approval of an SDP, ELI does not find inconsistency with the Rule.

With respect to timing and release, the Rule provides that short-term financial assurances "shall be phased out once the compensatory mitigation project has been determined by the district engineer to be successful in accordance with its performance standards. The DA permit or instrument must clearly specify the conditions under which the financial assurances are to be

released to the permittee, sponsor, and/or other financial assurance provider, including, as appropriate, linkage to achievement of performance standards, adaptive management, or compliance with special conditions.” 33 CFR 332.3(n)(4). VARTF staff reported that these funds are released to the general Trust Fund upon achievement of all Success Criteria at the end of the monitoring period. LJ-11 SDP does not address the release of Maintenance and Monitoring Funds specifically; however, the SDP describes the Fund as available during the monitoring period, from which it may be inferred that the funds are no longer available in the long-term.

Type of Financial Assurance Mechanism: Under the Rule, “Financial assurances may be in the form of performance bonds, escrow accounts, casualty insurance, letters of credit, legislative appropriation for government sponsored projects, *or other appropriate instruments, subject to the approval of the district engineer.*” 33 CFR 332.3(n)(2). The four mechanisms used by VARTF have been approved by the Corps through approval of the LJ-11 SDP. The mechanisms are “other appropriate instruments” consistent with the Rule.

Amount of Financial Assurances: The Rule addresses short-term financial assurances separately from long-term funding. With respect to amount of short-term financial assurances, which must be incorporated into the cost per unit credit, 33 CFR 332.8(m)(ii), the Rule provides, “The amount of the required financial assurances must be determined by the district engineer, in consultation with the project sponsor, and must be based on the size and complexity of the compensatory mitigation project, the degree of completion of the project at the time of project approval, the likelihood of success, the past performance of the project sponsor, and any other factors the district engineer deems appropriate.” As reported by VARTF staff and documented in proposed budgets and Final Site Budgets reviewed by ELI, the amount of short-term financial assurances, contingency funds held in the Maintenance and Monitoring Fund, have typically been set at 20% to 30% of the cost of the mitigation work plan.

The Rule also requires that the “rationale for determining the amount of required [short-term] financial assurances must be documented in the administrative record for either the DA permit or the instrument.” The description of the Maintenance and Monitoring Fund in the LJ-11 SDP states, “An itemized analysis of the monies necessary to conduct maintenance and monitoring activities during the monitoring period has been conducted. The itemized analysis is based on [Conservancy’s] estimate of hours and frequencies of specific anticipated management activities, and costs are calculated from [Conservancy’s] real costs for these activities.” ELI is unable to verify documentation of a connection between the fixed percentage of the mitigation budget reported by VARTF staff and the rationale for calculating the amount of the Maintenance and Monitoring Fund described in the SDP. VARTF does have supporting documentation for the “success monitoring” line item of the budget, but the “corrective action” portion uses a percentage based on VARTF’s experience and professional judgment. VARTF staff have not implemented any projects under the new Program Instrument as of the end of the audit period (given the recent SDP approval), but given that full cost accounting requirements in the Rule

have resulted in more detailed line-item budgets for the construction and monitoring phase, they anticipate relying less on corrective action funds than they have tended to for pre-Instrument projects.

Maintenance of a credit tracking system

Section IV.E of the Program Instrument requires the Conservancy to establish and maintain a system to track credit availability and transactions across the entire program, within each basin, and separately for each Mitigation Project. 33 CFR 338.2(i), (p)(2), (q).

ELI reviewed the Conservancy's records and databases to ascertain the means by which VARTF tracks credit availability, liability, and transactions, and reviewed the procedures used in maintaining these systems of records.

VARTF maintains a credit tracking system – an excel spreadsheet ledger – to track credit sales, including advance credit sales, the generation and release of credits, and remaining liabilities. A separate budget ledger tracks all financial transactions. The credit ledger tracks liabilities and released credits by basin and service area as well as resource type: Non-Tidal Wetlands (NTW), Tidal Wetlands (TW), and Streams. The credit ledger is somewhat complex as it must address, as a practical matter, pre-instrument projects and liabilities as well as those subject to the Rule.

The ledger allows VARTF to maintain and report the following data:

- **Liability:** All liabilities accepted (i.e., credits sold) by the Trust Fund. Credit liability is tracked by resource type (NTW, TW, Streams) and whether credits can be used to satisfy no-net-loss (NNL) liability (i.e., restoration credits) or not (i.e., preservation credits). For wetlands NNL liability equals the number of acres impacted, for streams NNL is ½ the total credit liability.
- **Released Credits:** Credits that have met success criteria as determined by the IRT and are available to satisfy liability. NNL credits may be used to satisfy NNL liability. Preservation credits must be paired 1:1 with credits that address NNL. Released credits are applied to existing liabilities (pre-instrument liabilities and advance credits). Once liabilities in a service area are met the remaining credits can be released for sale. Because mitigation project service areas are often smaller than an entire basin, released credits within a basin may not be able to satisfy all liabilities within the full basin.
- **Released Credits Available:** These are the released credits generated by mitigation project minus the released credits applied to liability, and minus any sold released credits.
- **Advance Credits:** Advance credits are sold in service areas with no (or insufficient) released credits available to meet the liability at the time of the sale. Advance credits are

defined in the Program Instrument, which establishes caps on advance credits available for each basin and resource type. For each basin and resource type, the advance credits available equal the advance credit cap amount minus the advance credits sold.

- **Preservation Credits Not Yet Available:** These are preservation credits that have met success criteria and are ready for release, but must be paired with NNL credits to be released. The credit ledger does not clearly identify paired credits in all cases. In some cases these are reflected in notes to the project tabs; in other cases there are no notes and the annual report lists as paired credits the sum of released preservation credits reported on the project tabs (described below).

The credit ledger includes tabs for each individual mitigation project approved and active in each basin in which VARTF works. The individual project sheets track released credits and withdrawn (or satisfied) credits by resource type (NTW, TW, Stream). The ledger also includes an Advance Credit (AC) tab by basin.

- **Individual project tabs:** The project tabs specify the project ID, project name, basin, HUC, and service area HUCs for each project. Separate line items distinguish credit releases and individual credit withdrawals and each is recorded by resource type (NTW, TW, Stream). Permit number, applicant name, locality, date, payment amount, basin, and HUC are recorded for each individual credit withdrawal to satisfy permittee liability. Impacts, impact type, and restoration and preservation credits approved/required are recorded for each resource type. Summary tables for credits available, promised credits, and released credits are included at the top of each sheet.
- **Advance credit tab for each basin:** Each basin has a tab tracking the status of the approved advance credits for the basin. Summary tables at the top of the sheet show the total advance credits released for each basin, the available balance of advance credits, as well as promised advance credits. Each advance credit tab shows the sales of advance credits in the basin, providing data on permit number, applicant, date of transaction, locality, basin, physiographic province, and HUC for each line item. The number of advance credits sold is recorded under NTW, Stream, or TW. The AC sheet does not distinguish NNL from preservation credits.

The ledger also includes summary sheets that roll up the data on impacts/liability as well as released, sold, and remaining credits by basin and project. The summary tabs include:

- **Revenue Tabs:** The revenue tabs are maintained for NTW, TW, and Streams. Each of these tracks all credit drawdowns/liabilities, including advance credits, released credits, and unmet credit liability. The columns are permit number, applicant, locality, TNC letter date (assuming liability), fund contribution (sales price), basin, HUC, physiographic province, impacts, resource type (Cowardin), restoration credit drawdown, preservation

credits drawdown, the designated restoration credit project ID (individual project or AC), preservation credit project ID, total credits required, no net loss met (y/n), preservation credits mitigated (y/n/partial), impacts mitigated (y/n/partial), remaining NNL credit liability, remaining preservation credit liability, and advance credit sale.

- Project Summary Tab: The project summary tab is organized by mitigation project. It summarizes the released credits (restoration and preservation), promised credits (restoration and preservation), credits allocated/sold (restoration and preservation), and released credits balanced (restoration and preservation) for NTW, Stream, and TW. Each project line includes project name, project ID, project HUC, and service area HUCs.
- Impacts tab: The impacts tab rolls up information from the revenue and project tabs. By basin it totals \$ received, sum of impacts, sum of restoration credit drawdown, sum of total credits required, sum of remaining NNL credit liability, and sum of remaining preservation credit liability. Separate tables address total impacts, pre-instrument impacts, advance credit sales, and released credit sales for each resource type.

VARTF also tracks requests for credits and quotes for prices:

- Quotes Tabs: VARTF records promised credits as requests for reservations of credits that are received from applicants. Separate tabs are maintained for each resource (NTW, TW, and Streams). Columns include quote expiration date, permit number, applicant, locality, TNC letter date, fund contribution (sales price), basin, HUC, physiographic province, impacts, resource type (Cowardin), restoration credit drawdown, preservation credits drawdown, the designated restoration credit project ID (individual project or AC), preservation credit project ID, total credits required, no net loss met (y/n), preservation credits mitigated (y/n/partial), impacts mitigated (y/n/partial), remaining NNL credit liability, remaining preservation credit liability, and paid/not-paid/promised/expired.

VARTF does not maintain a written SOP or process document for data entry and credit tracking. The following description was provided by the staff: Upon inquiry from an applicant, each potential sale is logged in as 'promised credits' in the Quotes tab for each resource type (NTW, Streams, TW) as well as in the individual project tab or advance credit tab for each basin (depending on whether or not there are released credits available in the basin: where no credits are available for sale the project is entered into the advance credit tab). Promised credits are distinguished on the quotes and AC or project tabs as 'promised.' If the promised credits are not paid within 90 days, the quote expires and the status of the credit is changed to expired on the quotes tab and the line item is deleted from the AC tab or individual project tab. If the credits are paid, the item gets marked as paid on the quotes tab and entered into the revenue tab for the resource (NTW, Streams, TW). The item is then also marked as paid on the AC or individual project sheet and the date is updated to reflect the date of payment. The transaction is only then

also entered into the budget ledger, used to track program revenues and project and program expenses.

When released credits become available to satisfy an advance credit liability, the transaction is entered into the individual project tab and removed from the advance credit tab. The line item is then also updated in the revenue tab to reflect the liability was satisfied or partially satisfied.

Potential or “proposed” credits are not tracked in the credit ledger. However, both the VARTF annual report and RIBITS include data on “proposed” credits based on project prospectuses.

Findings: We determined that the VARTF maintains a credit tracking system that is capable of tracking credit availability and transactions across the entire program, within each basin, and separately for each Mitigation Project.

Accurate credit tracking using the system

The system must accurately track the calculation of credits, debit and sale of credits, and financial transactions related to credits. Section IV.E of Program Instrument, 33 CFR 338.2(i), (q).

We compared the data in the ledger and tabs with the data reported in the VARTF Annual Reports. We also reviewed the internal updating of the ledger to document that the data in the ledger were entered and updated correctly with each transaction. Specifically, we did the following:

- Reviewed primary documentation of credit sales from 2012 – 2015 (provided by VARTF) to review whether each credit sale was entered correctly into the revenue and advance credit (as appropriate) tabs, and primary documentation of credit release approvals in four basins to ensure individual project tabs and summary tables (project summary and impacts tabs) tracked releases accurately.

Findings: Primary documents on credit sales and credit releases were accurately reflected in the credit ledger. We found no inconsistencies in our review.

- Compared projects entered into the revenue tabs to those entered into the individual project tabs to document that each project entered into the revenue tab was accurately updated when liability was satisfied (or partially satisfied) and checked that the summary tables in the ledger (impacts and project summary tabs) align with the data in the revenue and project tabs.

Findings: With the exception of a few apparent record-keeping errors in the revenue tabs, noted below, the summary tables (project summary and impacts tabs) line up with the individual project and revenue tabs.

We found several very minor discrepancies associated with failure to update (or accurately update) the revenue tabs when liability had been satisfied or partially satisfied for individual projects or when advance credit liabilities had been satisfied.

- We noted three instances in the SH basin where the revenue tab did not update the remaining NTW preservation liabilities shown in the individual project tabs (permits 00-4593, 02-4083, 02-9065 – all pre-instrument, and less than 1/3 credit in the aggregate). We noted one instance in the SH basin where the revenue tab shows 0.28 NTW preservation credits still to be satisfied while the SH-3 project tab shows 1.372 preservation credits were satisfied (permit 02-9065 pre-instrument), with the likely reason being that 0.28 restoration NNL credits were logged into the revenue tab from SH-4, and the preservation credits from SH-3 were not logged in the revenue tab.
- The NTW revenue tab for one permit in the TN basin correctly shows partial satisfaction of mitigation liability, but did not update numbers in the last columns to reflect the portion of liability satisfied by TN-8 as shown in the project tab (permit 01-0688- pre-instrument).
- Finally, we observed one instance in the NW basin where the revenue tab correctly reflects the status of NTW advance credit liability, but where the permit (11-1835) was apparently deleted from the NW-AC tab; as a result the NW-AC tab shows remaining available advance credits for NTW of 0.29 when no advance credits remain, but this error was not carried forward to the revenue tab, nor to the annual report.

These do not materially affect the summary presentation of the data.

- Compared the summary tables in the credit ledger to the data presented in the 2015 VARTF Annual Report. This step is to document that publicly available information is supported by the ledger entries, which are supported by documentary evidence.

Findings: After correcting discrepancies we identified in the revenue tab in the ledger, we were able to align credit numbers reported in the annual report with the credit ledger. Minor exceptions appear to be two data transfer errors relating to advance credits: The 2015 Annual Report lists an available advance credit balance of NTW for the TN basin of 2.28 credits, but the underlying credit ledger records indicate an available advance credit balance of 2.72 credits. This appears to be merely a data transfer error, reporting advance credits sold in the annual report rather than available advance credits. The 2015 Annual Report identifies total stream credit liability in the CB basin (including advance credit liability) as zero, following the 2014 Annual Report. However, this does not reflect 312 advance stream credits sold by VARTF in 2014 (WP-13-1298). Nevertheless, both annual reports show the available advance credits for streams as 4,688 (which reflect the sale of 312 advance credits from the 5,000 allocated to the basin), and both list the amount paid for those advance stream credits indicating the existence of the liability. We find that, with these exceptions, the Annual Report is supported by the records maintained by the Fund.

Advance Credits

Advance credits are authorized in the Rule, 33 CFR 332.8(n). Section V.C. and Exhibit B of the VARTF Program Instrument specify the allocation of Advance Credits for each of the basins identified in the Compensatory Mitigation Framework. VARTF has sold NTW, TW, and Stream advance credits, and its records support the following status of advance credits. The Advance Credit balances are documented in individual supporting tables provided for each basin in the Annual Reports.

Table D: Advance Credit Cap, Advance Credits Sold, and Advance Credit Balance by basin and resource type.

	NTW			TW			Streams		
	Cap	Sold	Balance	Cap	Sold	Balance	Cap	Sold	Balance
AO	5	4.7	0.3	2	0.18	1.82	5000	0	5000
CB	20	1.15	18.85	2	0.17	1.83	5000	312	4688
CH	5	5	0	2	0.06	1.94	5000	195	4805
LJ	20	0	20	2	0.01	1.99	10000	1680	8320
MJ	10	0	10	0	0	0	5000	0	5000
NW	5	4.71	0.29	0	0	0	5000	3908	1092
PO	5	0	5	2	0.30	1.7	10000	0	10000
RO	5	4.79	0.21	0	0	0	5000	3410	1590
RP	5	0	5	2	0.04	1.96	7500	306	7194
SH	5	1.78	3.22	0	0	0	10000	2036	7964
TN	5	2.28	2.72	0	0	0	5000	2534	2466
UJ	10	2.05	7.95	0	0	0	5000	0	5000
YK	10	0	10	2	0	2	5000	0	5000

Under the Rule, VARTF must complete land acquisition and “initial physical and biological improvements” by the third full growing season after the first advance credit is sold in each service area, unless the district engineer determines that more or less time is needed. 33 CFR 332.8(n)(4).

Furthermore, as released credits are produced by in-lieu fee projects they must be used to fulfill advance credits already provided in the specified service area before remaining released credits can be sold or transferred. 33 CFR 332.8(n)(3).

We reviewed the VARTF records relating to sale of advance credits and satisfaction of regulatory requirements. Most of the advance credit liability taken on by the Fund remains, and in some cases existing advance credit liability has extended beyond the three-year timeline established in the regulations. We have interpreted the third full growing season requirement to mean that any advance credits sold after the start of any growing season would not come due until after the following three subsequent full growing seasons. For example, if a credit were sold

in June 2012, initial improvements would be required to be complete by the end of the 2015 growing-season (i.e., three full growing seasons would occur in 2013, 2014, and 2015).

We used annual Public Notices issued by the Norfolk District on wetland hydrology as a rubric for the start of the growing season. In general, growing season in Virginia was judged to begin at some point in February. For instance, over the past four years, the notices have described the start of the growing season in southeastern Virginia as follows:

2013: “as early as the first couple weeks of February 2013”

2014: “as early as February 20”

2015: “Late February”

2016: “Last full week of February”

However, the growing seasons for specific sites can vary. For example, the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/reg_supp/EMP_Piedmont_v2b.pdf) states that the growing season dates are determined through onsite observations or by approximation using WETS tables available from NRCS. The Supplement also provides information on the end of the growing season. The end of the growing season in Virginia was judged to be in December (http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/reg_supp/EMP_Piedmont_v2b.pdf).

Given this information, in order to establish a consistent audit standard, we assumed a growing season of February 21 – December 15 each year when determining when a given service area may be in default. We set the parameters for our analysis of service areas in default of advance credit deadlines as follows:

- Credits sold 7/2011 – 2/21/2012, growing season would be 2012, 2013, 2014; overdue by end of 2014;
- Credits sold 2/22/2012 – 2/21/2013, growing seasons would be 2013, 2014, 2015; overdue by end of 2015;
- Credits sold 2/22/2013 – 2/21/2014, growing seasons would be 2014, 2015, 2016; due late this year.

For date of sale, we used the dates entered in VARTF’s Credit Ledger revenue tabs as “TNC Letter Date.” The Advance Credit ledger sheets for each basin list dates for each permit transaction. However, these dates often, but do not always, align with the letter date in the revenue tabs. Where they do not align, they are generally some months earlier. Because The Nature Conservancy does not assume liability for the compensatory mitigation until confirming

its acceptance of liability by acknowledging and depositing the permittee's payment, we used the letter date as the date of credit sale.

Finally, we determined that the requirement to acquire a site and commence improvements must be characterized by the ability of the site eventually to satisfy the liability of the advance credits. Thus, the site must not only be within the service area that would enable it to satisfy the credits but also it must be intended to produce mitigation of the type needed to satisfy the credits. Thus, we separately tracked liability for NTW, TW, and Stream advance credits, as these are separately defined in the Program Instrument.

Based on these parameters, we identified VARTF service areas with advance credit sales where required site acquisition/improvement actions might be overdue. First, we reviewed the revenue tabs in the credit ledger to identify individual advance credit sales that trigger the start of the obligation; we include all advance credits within the overdue trigger year (even though the obligation is triggered by the first sale). Note that although advance credits are defined by basin, the relevant service area for any advance credit transaction is usually limited to the same or adjacent 8-digit HUC as the impact (as also defined in the Compensation Framework), a smaller area than the basin. We then reviewed the annual reports (including project descriptions and all basin credit balance attachments to the report), data included in RIBITS, and the individual project tabs in the credit ledger to identify mitigation project site activity that could meet the requirements of the Rule. Where advance credits had been sold in advance of the 2012 and 2013 growing seasons, we identified mitigation site activities in the relevant service area(s) to determine whether the mitigation activity requirements of site acquisition and initial physical and biological improvements might have been met through activities at those sites. See Table E below. We considered projects in the relevant service areas even where the site acquisition may have occurred prior to the instrument so long as it may potentially be available to satisfy the advance credits sold in the service area.

Findings: In five of the basins the three full growing season time limit has evidently been exceeded in one or more service areas without the commencement of required mitigation site improvements (Atlantic Ocean, Chowan River, Lower James River, New River, and Tennessee River). In the Roanoke River (RO) basin, the project we identified may be fully committed to prior liabilities, but technically is within the relevant time frame for commencement of activities. In the Rappahannock River (RP) basin, we identified one project within the time frame that is preservation-only, and cannot meet advance credit obligations without paired NNL credits.

We were unable on the basis of the documentation maintained by VARTF to determine with precision whether any other ongoing mitigation projects satisfy the three-growing season timing requirement for these listed service areas. Nor is it clear whether the requirement is satisfied in those service areas where there is an ongoing project identified but where the credits are entirely or primarily intended to satisfy pre-instrument liability.

Table E: Advance Credits: Commencement of Improvements by Third Full Growing Season.

Basin	Resource (NTW,TW, Stream)	Service Areas	First Advance Credit Sale in the Service Area	Total ACs Potentially Past Deadline (ac.)	Timely Project Actions in Service Area	Project Activities Potentially Relevant
AO	NTW	2040303*	10/30/2012	2.043 NNL; 1.035 Pres	No	
	TW	2040303	10/24/2012	0.02 NNL	No	A0-1, A0-3 in the service area, but out-of kind and 2015 annual report lists 0.0 for "potential" tidal credits.
	NTW	2060010	1/10/2013	0.0165 NNL	No	
	TW	2060010	11/11/2011	0.082 NNL	No	
CH	NTW	3010204	12/8/2011	1.565 NNL; 1.03 Pres	No	
	TW	3010205**	12/10/2012	0.06 NNL	No	
LJ	Stream	2080206	9/24/2011	520 credits	No	Several projects with site development plans approved or pending (LJ-11, LJ-14, LJ-15)
	Stream	2080208	9/30/2011	234 credits	No	"
NW	NTW	5050001	3/30/2012	2.96 NNL, 1.69 Pres	No	
	NTW	5050002	10/3/2012	0.193 NNL, 0.097 Pres	No	
TN	NTW	6010101	5/24/2012	0.057 NNL	TN-8	May meet some advance credit needs
	Stream	6010101	5/24/2012	412 credits	No	Projects with site development plans pending (TN 10, TN-11), physical improvements on TN-10, invasives management on both TN-10, TN-11.
	NTW	6010102	9/21/2012	0.039 NNL	TN-8	May meet some advance credit needs
	Stream	6010205	5/30/2012	200 credits	No	Projects with site development plans pending (TN 10, TN-11), physical improvements on TN-10, invasives management on both TN-10, TN-11.
RO	NTW	3010101	5/2/2012	0.05 NNL; 0.025 Pres	RO-3	May be committed to pre-existing liabilities
RP	Stream	2080103	8/4/2011	306 credits	RP-4	Preservation credits only

*The fee schedule in the Program Instrument lists only 02060010 and 02080110 as AO HUCs; the VARTF Project Summaries for the annual report identify only 02040304; project tabs in the credit ledger also list 02040303.

** Program Instrument indicates advance credits available only in 03010204, 03010201, 03010202.

As released credits are produced by in-lieu fee projects, they must be used to fulfill any advance credits that have already been provided in the same service area before any remaining released credits can be sold or transferred. 33 CFR 332.8(n)(3). We examined released credits for the service areas in which VARTF has sold advance credits. In some instances, released credits were not used to satisfy advance credits, but the VARTF in general allocated these released credits to the oldest liability in the basin or service area; this approach of satisfying pre-instrument liability with released credits is substantially consistent with the approach laid out in the Rule.

In a few instances, we determined that released credits in a basin are available for sale although advance credits are outstanding in the basin. This was accounted for by the difference in HUC-defined service areas within the basin, which is consistent with the Rule. For example, in the CH basin released NTW credits are available for sale even though all advance credits for NTW remain unsatisfied. The advance credits outstanding are in HUC 03010204, while the excess released credits are in other service areas within the basin.

Documentation of credit costs

For each type of resource, the cost per credit must be determined by the sponsor, based on full cost accounting, and including as appropriate, land costs, project plan and design, construction, plant materials, labor, legal fees, monitoring, remediation and adaptive management, and administration costs, as well as contingencies, long term management and protection, and financial assurance. 33 CFR 332.8(o)(5), Program Instrument, Section V.D. Prices charged will be reviewed by the Conservancy and IRT at least annually within three months after the annual report. Section V.D.

ELI sought to document that the cost per credit in the approved SDP for LJ-11 was based on the budget for project activities that will generate the associated stream credits, and that the cost per credit listed in the LJ-11 SDP is substantially consistent with the price per credit listed in the Program Instrument. The costs per credit are documented in the Final Site Budget, which is included in the Site Development Plan (at Exhibit P). Rationale for the costs per credit is documented in the SDP and the VARTF budget ledger.

Exhibit H to the LJ-11 SDP documents the number of credits associated with each proposed mitigation activity. Based on the mitigation work plan (but subject to change based on the result of as-built reports after project is implemented), the stream restoration phase of LJ-11 is anticipated to generate 620 USM credits. These credits will be generated through the following activities: stream restoration (439 USM), re-establishment/planting of stream buffer areas (12 USM), buffer area preservation (139 USM), and additional credits from the conservation easement (30).

Next, ELI sought to document the total budget for project activities that would generate the total 620 USM credits, and that the total was calculated based on full cost accounting. The Final Site

Budget (LJ-11 SDP, Exhibit P) and the budget ledger indicate that the LJ-11 stream restoration project received initial approval on 3/11/2013 with a proposed budget of \$160,000 dollars. According to a notation by VARTF on the budget ledger, all of the \$160,000 was “allocated to USM Stream.” LJ-11SDP, Exhibit P documents that the initial \$160,000 request was based on the sum of the proposed budgets for stream restoration design/construction (\$200,000), success criteria monitoring (\$15,000), corrective action/maintenance (\$60,000), the stewardship endowment (\$15,000), and long-term management (\$5,000), less a \$125,000 land purchase price credit. Exhibit P shows that between the approval of the IEL and the approval of the SDP, the budgets for each component of the project were adjusted. The Final Budget for “mitigation and associated costs” (stream restoration, success monitoring, and corrective action/maintenance) and “long-term costs” (stewardship endowment, long-term management, catastrophic fund) reflects that adjustments between the IEL and submittal of the SDP resulted in a \$33,000 increase in the budgets for the project activities to be funded by USM funds. The \$160,000 allocated in 2013, added to the budget increase of \$33,000 in 2015, is \$193,000, which constitutes the total portion of the final budget for which the funding source is “USM funds.”

The SDP reports a “cost per credit” of \$311.29, consistent with these calculations.

Findings: Exhibit P and the budget ledger document that the total USM budget is made up of the specific budgets for different types of project activities (restoration design/construction, success criteria monitoring, corrective action/maintenance, the stewardship endowment funding, and long-term management funding); and that the total USM budget is reflected in the cost per credit listed in the SDP for LJ-11.

For restoration design/construction, ELI identified a partially-itemized budget. The budget ledger worksheet for LJ-11, which indicates it was last updated on 11/25/2015, reflects the itemized cost of specific expenditures for “restoration expenses” incurred between 5/29/2013 and 12/20/13 (e.g., stream design, construction plans – stream, hydrologic analysis, VSMP/SWPP), as well as some of the anticipated expenditures for the future construction phase (e.g., contractor oversight, as-built survey). The budget for long-term management and maintenance is broken down into very specific line item costs in Exhibit P; Exhibit P then documents how the total annual cost, which will be funded by the interest earned by the endowment, and capitalization rate were used to calculate the total funds that must be contributed for the principal of the endowment. The budget for stewardship activities is presented the same way in Exhibit P. Exhibit P documents that the corrective action/maintenance budget was based on 30% of the budget for restoration design/construction. ELI reviewed the documentation success criteria monitoring and reporting, which is reported as a specific number.

The cost per credit is less than the \$500 for stream advance credits in the Lower James basin authorized in Exhibit D to the Program Instrument. LJ-11 will service pre-existing liabilities.

Satisfaction of reporting protocols

Section VI of the Program Instrument requires the Conservancy to submit an annual ledger report showing beginning and ending balance of available credits, sold or debited credits, permitted impacts for each resource type in each service area, additions and subtractions of credits, and any other credit changes, as well as monies paid into the Program, expended for Mitigation Projects and any remaining balances. The Conservancy must also maintain a ledger for each Mitigation Project and enter the data on RIBITS.⁶ 33 CFR 332.8(q)(1). Under the Rule, the annual report must address income, disbursements, and interest on program account, list of permits for which program funds were accepted, description of program fund expenditures, and balance of advance credits and released credits for each service area at the end of the reporting period. 33 CFR 332.8(i)(3). The ILF must submit monitoring reports on its mitigation project sites. 33 CFR 332.6(a),(c), 332.8(q)(2). And the district engineer may require annual reporting on financial assurance funds. 33 CFR 332.8(q)(3). The VARTF annual report is due each March 31 for the preceding calendar year's activities. Program Instrument Section IV.D.

Satisfaction of annual reporting protocols under the Program Instrument is documented in the Annual Report on status and activities for each year between 2011 and 2015. ELI sought to verify that VARTF Annual Reports from 2011 to 2015 had been prepared and submitted consistent with the annual reporting requirements in the Program Instruments and the Rule related to ELI's program audit. Specifically, ELI reviewed each of the five Annual Reports and its supporting documentation, which included Project Summaries (summarizing status of each project and any activities or changes during the reporting year), a map or maps depicting project sites, and tables showing the credit balances for each basin broken down by individual project.

Findings: Between 2011 and 2015, VARTF has submitted an Annual Report that is substantially consistent with reporting protocols established by the Instrument and the Rule.⁷

Standard Operating Procedures

Standard operating procedures (SOPs) can be highly important for maintaining program consistency and assuring accurate performance when staff changes occur. The Conservancy has entered into agreed SOPs for VARTF Projects in collaboration with the Corps and DEQ.

The current version of these SOPs was approved February 20, 2013. Our review of program documents indicates that these SOPs are being implemented by VARTF. The program manager

⁶ Section VI of the Program instrument also requires the Conservancy to document expenses and revenues on a quarterly basis, with statements from all financial institutions or escrow agents, documentation of which is being reviewed by the financial auditor.

⁷ ELI noted a minor error in the Financial Summary statement in the 2015 Annual Report, where the unallocated balance of the Trust Fund is listed as \$18,560,700 in the text and \$18,569,800 in Table 5, resulting from an apparent data entry or transcription error.

and data manager of the VARTF were familiar with the SOPs and referred to them in explaining procedures for seeking mitigation site initial approvals, Site Development Plans, and funding requests. These also cover procedures for credit releases.

In addition to these SOPs for interaction with the IRT, the Conservancy also maintains the following template documents for operation of the VARTF and interaction with purchasers and prospective purchasers of credits:

- Credit sale template
- Credit availability letter
- Conflict Disclosure Form
- Credit Availability Voucher
- Credit Payment Voucher

The Conservancy could benefit from additional written procedures to determine when to set up project ledgers on the credit ledger, and written procedures on entering satisfaction of advance credits and related topics. The responsible staff members have standard practices and these are, to the best we have determined, routinely followed. But there are not documented SOPs procedures for the entry of data and management of these databases.

Conclusion

We find the VARTF program activities that are subject to the Compensatory Mitigation Rule and the 2011 Program Instrument to be in substantial compliance with their material requirements, with one exception. The requirement that site acquisition and initial physical and biological improvements be completed by the third growing season after the first sale of advance credits in a service area was not met for all basins and service areas in which advance credits were sold by VARTF.

We offer several additional observations:

VARTF continues to have substantial pre-Instrument liabilities that it is endeavoring to meet, in addition to the satisfaction of advance credits sold post-Instrument. While our review showed that released credits were being applied to pre-Instrument liabilities prior to satisfaction of advance credits, the program would benefit from written procedures confirming this priority with the IRT.

Only one Site Development Plan was approved during the period covered by the audit. Additional draft SDPs were submitted during the period, and if approved will begin to address outstanding liabilities. ELI's audit addressed VARTF operations only. The Corps and DEQ should consider reviewing their operating procedures and priorities to ensure that timely review will occur as more plans enter the review and approval process.

The data presented in the 2015 Annual Report are consistent with the post-Instrument transactions and database information we reviewed. However, there is in the Report no single data presentation that fully represents the total unmet pre-Instrument and advance credit liability. The Table 2 summary identifies total liabilities, total released credits, and other categories, but does not indicate what number and types of liabilities remain unsatisfied. The data do appear in the basin tables, but are not displayed in a manner to readily enable the reader readily to identify the amount of unmet liability (requires subtraction and some assumptions to discern why released credits may not have been applied, or what advance credits are unsatisfied). VARTF may want to consider a clearer presentation of outstanding liabilities in future reports.

VARTF could benefit from written standard operating procedures for tracking potential credits (currently done on a manager's database, and summarized annually), and from written procedures on when to set up ledger entries for projects that are making their way through the approval process.

ENVIRONMENTAL LAW INSTITUTE

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