



**WILLAMETTE
PARTNERSHIP**

Water Quality Trading Program Audit Concept Draft

Version 0.5

June 2016



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CONCEPT DRAFT: Water Quality Trading Program Audit

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WHO IS WILLAMETTE PARTNERSHIP?

Willamette Partnership is a non-profit located in Portland, OR. At Willamette Partnership, we believe that people need nature. Functioning ecosystems are a cornerstone of thriving communities. We are working on water quality trading as one of many ways to increase the pace, expand the scope, and improve the effectiveness of conservation. When designed well and combined with other tools, water quality trading has the potential to create vastly better outcomes for both ecosystems and people than traditional gray infrastructure. We have been active in the design and operation of water quality trading programs, and other ecosystem service markets, since 2004. Much of that work is developing the science and policy that lets land managers articulate the benefits of high quality conservation and restoration activities in ways that others can invest in. Willamette Partnership also acts as the coordinator for the National Network on Water Quality Trading (see below).

WHY A PROGRAM AUDIT AND WHAT WOULD IT DO?

Water quality trading programs typically include a process to confirm that credit-generating projects are in place and functioning properly, often referred to as “verification.” However, because water quality trading, especially point-nonpoint trades, involves numerous projects distributed across a large area, it can be challenging to conduct verification in a cost-effective manner. A full project verification typically includes confirmation that the credit-generating project meets eligibility criteria, accurately quantifies credits, and attains relevant performance standards initially and over time. This can include site visits before implementation, after implementation, and onward if the project is active for multiple years. So while it is critically important to ensure credits are real, verification processes that independently confirm performance for every project every year can be very expensive to maintain, and that cost may not be commensurate with the environmental value or risk reduction that information provides.

A program audit would shift verification standards from the site level up to the program level. Instead of a process that confirms every credit from every project is accurate every year it is claimed, a program audit would:

- Review program consistency with the guiding principles for water quality trading established by the [National Network on Water Quality Trading](#);
- Affirm the processes and controls are in place to ensure that whomever is reviewing and reporting on credits (agency, permittee, or third party) are at a low risk of doing so inaccurately and/or inappropriately; and
- Confirm that an independent review and visit to a sample of projects based on risk has uncovered no significant findings/problems with the projects that were reviewed.

Site- and program-level standards provide a similar function but with potentially significant cost differences. Most of the cost tied to site-level verification come from the labor associated with repeated site visits from an independent verifier over time. A program audit standard reduces both the number of projects visited by an independent verifier and the times that project is reviewed, and would be particularly well suited to programs that have a high volume of projects.

The draft audit standard below is intended as a starting point. It is a beta version that can be used to start conversation. It may not be the right option for many trading programs, but it does represent thoughts consistent with Willamette Partnership's experience overseeing verification processes and in-depth study of the International Standards Organization's 14000 series standards for environmental management systems. The program audit standard may also be applied as a checklist for trading program managers looking to evaluate processes internally.

THE NATIONAL NETWORK ON WATER QUALITY TRADING AND PROGRAM EVALUATION

The National Network on Water Quality Trading (Network) is a collaborative initiative seeking a national dialogue on how water quality trading can best contribute to clean water goals. That includes providing options and recommendations to improve consistency, innovation, and integrity in water quality trading. More information on the Network goals and products can be found at NNWQT.org. Willamette Partnership currently acts as the coordinator for participants in the Network.

The Network has an active dialogue related to defining "success" for water quality trading programs and tracking progress toward success through performance metrics and program evaluation. This audit standard may be useful to the Network participants as this dialogue continues.

WHAT WOULD A PROGRAM AUDIT INCLUDE?

The program audit conceptualized here includes a four stage review of 1) program principles; 2) internal quality control; 3) accurate tracking of credit transactions; and 4) program effectiveness. The audit could be applied by anyone responsible for assuring project eligibility and accurate credit quantities, including a state agency, a permittee, or a third party verification entity.

The concepts were designed explicitly to be consistent with the International Standards Organization's 14000 family of series for environmental management systems—designed to help companies and organizations manage their environmental responsibilities. Many utilities and other participants in water quality trading use the ISO 14000 standards in other parts of their operation. Several of the major carbon standards are also designed to be consistent with ISO 14000.

Finally, the audit concepts look to the National Network on Water Quality Trading's guiding principles and other options which were developed by agriculture, utility, regulatory, environmental, and trading practitioner groups.

WHO WOULD WANT A PROGRAM AUDIT?

The primary audience for a water quality trading program audit is a permittee who runs their own trading program. Much like a financial audit, the permittee may want an independent review of the accuracy and completeness of information on credits in order to build confidence with the state regulatory agency and their stakeholders. Permittees may also want an independent check that internal procedures are complete and effective, and that they are positioned to achieve the effects they want to see. As such, the formal audit could also be a simpler "audit review" which provides information to the program, but not an independent report.

State agencies may also be interested in audits of programs they run, or in audits of programs run by permittees they oversee. In other cases, the public may demand some level of independent review of trading programs.

I. PROGRAM PRINCIPLES AND POLICY

This section describes the standard for auditing a trading program for consistency with the National Network on Water Quality Trading's principles. The National Network on Water Quality Trading articulated guiding principles for water quality trading. An audit would include review of a program's principles for consistency with the Network's guiding principles. This may be an inherently subjective determination, but the specific questions below are intended to be as objective as possible.

In some cases, advanced criteria are also listed, marked with *(advanced). These criteria represent going above and beyond the basic components typically required for consistency with the Clean Water Act. Programs that are consistent with the advanced criteria are likely to be more effective at tracking and improving efficacy over time. At the time of publication, authors felt these were important considerations, but would be difficult for many existing programs to meet. As such, failure to meet advanced criteria would not result in a negative finding.

A. EFFECTIVELY ACCOMPLISHES REGULATORY AND ENVIRONMENTAL GOALS

- i. Is there logic linking trading program activity to applicable environmental goals?
 - a. Has a measurable environmental goal been articulated or referenced to?
 - b. Has the program defined a list of credit-generating activity types?
 - c. Has the program been designed to meet applicable regulatory requirements? Has the applicable regulatory agency agreed?
 - d. *(advanced) Are there clear, measurable program goals from which to track progress? Is there a rationale for why goals were chosen?
 - e. *(advanced) Has the program made estimates of how implementation of anticipated activity types and volume contribute toward achieving the identified environmental goal?
- ii. Provisions for the maintenance of activities generating credits:
 - a. Is there a requirement to maintain credit-generating activities for the life of the credit?
 - b. Are there financial assurances that funds will be available for maintaining credit generating activities?

B. IS BASED ON SOUND SCIENCE

- i. Is the science behind credit quantification documented, and has it been reviewed?
 - a. Is the method for quantifying water quality benefits at the "edge-of field" clearly identified, and approved by the regulatory authority? Is there documentation identifying how to apply the method, how to document method inputs and assumptions, and how to document results?
 - b. Is the method/approach for quantifying delivery of water quality benefits from edge-of-field to the waterbody clearly identified and approved by the regulatory authority? Is there documentation identifying how to apply the method, how to document method inputs and assumptions, and how to document results?
 - c. Is the method/approach for quantifying attenuation of water quality benefits through the waterbody clearly identified and approved by the regulatory authority? Is there documentation identifying how to apply the method, how to document method inputs and assumptions, and how to document results?
- ii. Are there systems in place to evaluate outcomes and improve the program?
 - a. Does the program have a process in place for regular review of program outcomes?
 - b. Is the program using that process?

- c. *(advanced) Is the program able to evaluate the program's efficacy at achieving progress toward water quality standards?

C. PROVIDES SUFFICIENT ACCOUNTABILITY, TRANSPARENCY, ACCESSIBILITY, AND PUBLIC PARTICIPATION TO ENSURE THAT PROMISED WATER QUALITY IMPROVEMENTS ARE DELIVERED

- i. Is the following information made available to the public?
 - a. information on program rules and processes,
 - b. type and status of credit-generating projects,
 - c. credit ownership
 - d. *(advanced) effectiveness of trading over time
- ii. Is the information above made available online and/or on at least an annual basis?
- iii. Is responsibility for project performance (including mechanisms for correcting problems) clear and formally identified in legal documents (e.g., contract between landowner and project developer or administrator)?
- iv. Does the program have a dispute resolution process outlined in its contracts with credit producers or in its approved program documentation?
- v. Was the public meaningfully engaged?
 - a. Did stakeholders participate in the design of the program?
 - b. Was an open public comment period provided prior to approval of the program?

D. DOES NOT PRODUCE LOCALIZED WATER QUALITY IMPACTS

- i. Are there program provisions to avoid causing or contributing to a violation of relevant numeric or narrative water quality standards at any location in the watershed?
 - a. Are there program design elements specifically designed to limit localized water quality problems?
 - b. Did the permit or similar regulatory approval for trades include a review to confirm no localized impacts would occur, or if yes, those impacts were mitigated?

E. IS CONSISTENT WITH THE CWA REGULATORY FRAMEWORK

- i. Minimum treatment technologies/requirements (baseline requirements) for both point and nonpoint sources
 - a. Is the point source baseline requirement clear? Is there documented justification for why that baseline was selected?
 - b. Is the nonpoint source baseline requirement clear? Is there documented justification for why that baseline was selected?
- ii. Effect on water quality at an intake for drinking water supply: Is there documentation that a trade will not adversely impact a drinking water source?
- iii. Implementation of a TMDL approved or established by U.S. EPA
 - a. Is there documentation showing the program will not delay implementation of an approved TMDL?
 - b. Are trades consistent with approved caps within the TMDL?
- iv. Is there a commitment that credit-generating projects comply with relevant environmental legislation, regulation, and other requirements?

F. INCLUDES APPROPRIATE COMPLIANCE AND ENFORCEMENT PROVISIONS TO ENSURE LONG-TERM SUCCESS

- i. Does the program have clear requirements for documentation, project review, tracking, enforcement provisions, and adaptive management needed to determine compliance and enforce regulatory and other agreements?

2. ENVIRONMENTAL CREDIT MANAGEMENT SYSTEM AUDIT

This section describes procedures to audit a trading program's internal controls and assess risk of incomplete, inaccurate, or inappropriate credit tracking and reporting. A trading program's internal controls are the systems it uses to confirm projects are in place and functioning as promised, and that the agreed-to policies and procedure are being followed. The outcome of this phase is a finding of high, medium, or low risk that then determines how many credit projects/transactions are sampled and what information is reviewed. The audit of internal controls would ask:

A. TRADING FRAMEWORK OR PLAN

- i. Is the trading plan current?
- ii. Has the trading plan been communicated to key personnel?
- iii. Is the trading plan available to the public?
- iv. Was the trading plan developed with meaningful input from the public?
- v. Is the public involved in reviewing material changes to the trading plan?

B. PLANNING THE ENVIRONMENTAL CREDIT MANAGEMENT SYSTEM

- i. *(advanced) Is it clear who is responsible for meeting program goals and on what timeframe?
- ii. *(advanced) Are there clear performance indicators from which to evaluate the environmental credit management system? Is there a rationale documented for why indicators were chosen?

C. IMPLEMENTING AND OPERATING THE ENVIRONMENTAL CREDIT MANAGEMENT SYSTEM

- i. Roles and responsibilities
 - a. Are there clear management structures, roles, and responsibilities for review, approval, and quality control?
 - b. Have these been communicated to key personnel?
 - c. Do those with quality assurance roles have sufficient authority to identify and address problems?
 - d. Is there a lead contact for the program to ensure the environmental credit management system is established, implemented, and maintained?
- ii. Key personnel are aware of environmental credit management systems
 - a. Are key personnel designated and aware of their role in the environmental credit management system?
 - b. Have staff demonstrated knowledge of water quality trading and the actions generating credits?
- iii. Internal and external communication
 - a. Are systems in place to share information internally regarding how best to achieve consistency with the environmental management system?
 - b. Is the information on projects (e.g., credit quantities, relative location, action types, and status) easily accessible to the public (e.g., via annual reports posted to a website, posting of credits on a registry) such that the public can independently assess the activity occurring under the program?
 - c. Is there a process for responding to inquiries from external interested parties?
- iv. Key documents describing the environmental credit management system (e.g., trading program protocols, internal procedures)
 - a. Have key documents been identified?
 - b. Are they up to date?
 - c. Are they available to the public?
- v. Version control on key documents
 - a. Is there a procedure for version control?

- b. Have documents been approved by top management?
- c. Are they current, legible, identifiable, and maintained in an orderly manner?
- d. Is it clear which document is the operational version? (i.e., old versions are removed promptly and labeled with the date or version).
- vi. Operational control
 - a. Are there standard operating procedures in place that define how to evaluate project conformance with the trading plan, and the program's objectives?
 - b. Are all relevant legal requirements identified for assessing the legality of credit-generating activities?
 - c. Are those standard operating procedures shared with and used by all staff and contractors?
 - d. Are there adequate systems in place to ensure required documentation/reports are submitted completely and on time, and that all compliance requirements are met (e.g., internal calendars, recordkeeping policies)?
- vii. Unexpected events
 - a. Is there a plan to deal with unexpected events?
 - b. Does a plan exist, and has it been approved by top management?
 - c. If an unexpected event has occurred, was the response consistent with the plan?

D. CHECKING FOR CONSISTENCY WITH THE ENVIRONMENTAL CREDIT MANAGEMENT SYSTEM

- i. Monitoring:
 - a. Are all credit-generating activities monitored?
 - b. Does monitoring occur consistent with a protocol and apply techniques supported in the literature?
 - c. Is there justification for how the frequency of monitoring activities balances risk and cost?
 - d. Is monitoring conducted or reviewed by an independent party?
- ii. Quality Control:
 - a. Are there clear procedures for QAQC on data entry?
 - b. Do the procedures include more than one staffer tracking credits, such that data entry and management can be checked by someone other than the person doing data entry?
 - c. Are there automated/computer systems to check for errors?
- iii. Nonconformance to standards
 - a. Is there a process for dealing with projects that do not conform to performance standards?
 - b. At a minimum, does the system require that a record be made of each nonconformance, and evidence of the response to correct the nonconformance?
- iv. Recordkeeping
 - a. Are procedures in place to ensure records are maintained and available?
 - b. Are records legible, traceable to a project, stored in a way as to be readily retrievable, and protected against damage, deterioration, or loss?
 - c. Is there a clear list of what documentation should be available within each project record? Does it contain, at minimum, the project identifier, location, start and end dates for the project and credits, documentation of credit quantification, documentation of project review?
 - d. Is there a process for checking that the record is complete before issuing credits?
 - e. Are retention times established and recorded and retention time confirmed?
- v. Internal Review of the Environmental Credit Management System

- a. Is there a procedure for periodic internal reviews of the environmental management system? Is that procedure being used?
- b. Do the staff responsible for tracking and reporting credits have some level of independence to challenge the credit quantities of eligibility of a given project?
- c. Does the program have conflict of interest policies or procedures to protect that independence?

E. MANAGEMENT REVIEW

- i. Are there periodic management reviews of the environmental credit management system?
- ii. Did those reviews cover changes needed to trading plan, objectives, and environmental management system elements? Environmental performance? Results of internal or external audits? Opportunities for continued improvement?

F. CONTINUAL IMPROVEMENT

- i. Do the trading program policies and procedures include a commitment to continual improvement?

Future iterations of this audit standard may include additional criteria based on tools developed by the National Network on Water Quality Trading.

3. CREDIT STATEMENTS: AUDIT OF ANNUAL CREDIT STATEMENTS

The program audit will review annual credit statements for completeness and accuracy. Reviewers will use professional judgement to determine how many projects to review and at what depth, based in part on findings from the review of internal controls. The higher the risk, the deeper the review of credit statements will go.

Table 1. Some sample guidelines reviewers *can* use to shape their professional judgement on audit of credit statements.

Factor	What gets reviewed by risk level		
	High	Medium	Low
Location and credit quantities vis a vis program requirements	All projects	All projects	All projects
Completeness of documentation and that projects exist (from aerial or photo evidence)	All projects	All projects	All projects
Accuracy of info: Eligibility	Review documentation for all projects started that year	Review documentation for 50% of projects started that year	Review documentation for 25% of projects started that year
Accuracy of info: Credit quantity	Recalculate credits for 50% of projects started that year	Recalculate credits for 25% of projects started that year	Recalculate credits for 10% of projects started that year
Accuracy of info: Actions installed per guidelines	Site visits to 50% of projects started that year	Site visits to 25% of projects started that year	Site visits to 10% of projects started that year
Accuracy of info: Performance standards met	Site visits to 50% of all ongoing projects	Site visits to 50% of projects	Site visits to 10% of projects
Timeliness of report submittals and placement of info in the public domain	All projects	All projects	All projects

Sampling Procedure. The percentages in the table above represent guidelines. For many programs, the volume of projects in a year may be small. In all cases, no sample size will be smaller than 3 projects (e.g., if 5 projects are implemented in a year for a low-risk program, 3 project sites will still be reviewed). If there is a single project that constitutes greater than 50% of a program's total credit volume, that project will be included in the sample.

For any audit, the program administrator will provide the auditor with a full list of projects implemented under the trading program with information on which projects are/are not meeting the program's performance standards, project type and location, and project start and end dates.

Review Procedures:

The following checks will be conducted on those projects selected for audit review.

- Location and credit quantities vis a vis program requirements
 - Match credit quantification documentation with project documentation reflecting final credit values
 - Check project location on individual project files for internal consistency and consistency with registry/public platform
- Completeness of documentation and that projects exist (from aerial or photo evidence)
 - Project documentation in all pertinent locations (e.g., paper and electronic files) should be consistent with what is required by a program's documentation procedures
 - Check that the version of project documents are consistent between pertinent locations
- Accuracy of info: Eligibility (Review documentation)
 - Identify eligibility requirements
 - Review documentation for selected projects for consistency with eligibility requirements using criteria or guidelines set by the program
- Accuracy of info: Credit quantity (Recalculate credits)
- Accuracy of info: Actions installed per guidelines (Site visits)
 - Qualitative visual assessment that installation guidelines have been met
 - Where qualitative assessment reveals apparent violations and quantitative assessment methods exist, perform quantitative assessment to confirm whether guidelines were met.
- Accuracy of info: Performance standards met (Site visits)
 - Qualitative visual assessment of performance standard metrics
 - Where qualitative assessment reveals apparent violations, quantitative assessment of performance standard metrics
- Timeliness of report submittals and placement of info in the public domain
 - Review online/public profile for individual projects relative to program standards. Check for completeness of the project file and use of correct versions, credit values, project location, and other defining metrics.

4. AUDIT OF PROGRAM EFFECTIVENESS

Program effectiveness can mean a lot of different things. In this case, the audit is looking to see if the program is making progress on the benchmarks the program defines for itself. Most likely, program goals will vary based on the maturity of the program. Those benchmarks could be based on the number of credits generated, miles of stream restored, or specific concentrations of pollutants instream related to water quality standards. The National Network on Water Quality Standards is working on a menu of effectiveness metrics tied to the different levels of trading program maturity.

The audit will review a program's system to track progress toward benchmarks and stated results. The result of the audit is a summary confirmation of the program's statements. The audit will not independently repeat ambient water quality monitoring or re-collect effectiveness data.

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