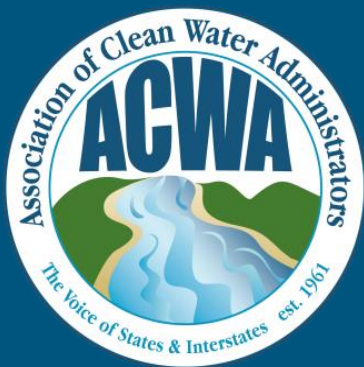


THE WATER QUALITY TRADING TOOLKIT

Created by the Association of Clean Water Administrators and Willamette Partnership



**WILLAMETTE
PARTNERSHIP**

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WATER QUALITY TRADING TOOLKIT: INTRODUCTION

Last updated 08/9/2016

Willamette Partnership and the Association of Clean Water Administrators (“ACWA”) developed the Water Quality Trading Toolkit (“Toolkit”) templates to provide a blueprint for those states/organizations seeking to create a water quality trading program.

The Toolkit consists of five templates meant to work in concert with each other: state guidance, watershed framework, state rule, NPDES permit, and program annual report. The templates are meant as a starting point only. Any language can be adjusted and customized to meet the needs of your particular state/organization. Furthermore, a state/organization may not need to use every template and may choose to use as many or as few of the templates as necessary. Each state/organization should use its discretion to determine which information, and how much detail, is placed in a rule, guidance, watershed trading framework, or NPDES permit.

ACWA and Willamette Partnership designed these documents as follows:

- The **state rule** provides the high level program purpose, required components of each trade, and key terminology used throughout the templates. Because the templates are meant to work in concert, it can be helpful to first review the rule, which lays the foundation for program structure and terminology used throughout.
- The **state guidance** is designed to set policy sideboards for all trades statewide (e.g., trading areas must be consistent with the TMDL).
- The **watershed trading framework** outlines the policies relevant to a specific watershed (e.g., eligible credit types, specific locations in which trades may occur) and the details of implementing a trade. Developing a watershed trading framework is not necessary, but can be useful to expedite permitting where multiple permittees within a watershed intend to trade.
- The **NPDES permit** template provides ideas for states on how to incorporate trading into permits. It provides with sample language on those permit provisions most likely to change as a result of trading. In these templates, authors assume that the majority of the detailed trading program requirements are housed in a watershed trading framework or trading plan¹ that is incorporated into the permit by reference.
- The **annual report** template is designed for permittees to report on progress under their permit and on individual credit-generating projects.

¹ A trading plan includes the trading program requirements for a specific permittee, most relevant in the absence of a watershed trading framework.

Toolkit users are encouraged to move content between the documents to best suit their state/organization's approach, particularly where the state/organization chooses not to use one or more document. For example, the templates for rule and guidance can be combined if the state wants one document for statewide policies. Or, if the state has a rule and guidance, but does not use watershed trading frameworks, the guidance and permit may house some of that material. The state guidance and watershed framework in particular have the potential for significant overlap in content. These templates cover many of the same topics, and the level of detail in the guidance and framework will be highly dependent on state/organization preference. The Toolkit templates were designed to err on the side of completeness, so where trading policies for state and watershed levels are the same (e.g., permits must go through review for localized impacts), the framework can simply refer to the guidance instead of repeating information from the state guidance.

The state guidance and watershed framework templates are organized to directly follow the structure of the National Network publication, *Building a Water Quality Trading Program: Options and Considerations* ("National Network Guide"). Section headers and numbering match the chapters in the National Network Guide, allowing template users quick and easy reference to options and considerations for developing state policies. In many cases, the state/organization may wish to combine subsections or otherwise simplify the document.

There are instructions, comment boxes, and options throughout the templates providing additional information or alternative language for states/organizations to consider. See the text box on the next page for a more detailed explanation of the template structure and conventions.

National Network on Water Quality Trading

The National Network on Water Quality Trading (National Network) is a collaborative of 18 agriculture, environmental, agency, utility, and trading practitioner groups, formed to establish 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.

In 2015, The National Network published *Building a Water Quality Trading Program: Options and Considerations*. This comprehensive reference covers the 11 essential elements of a trading program along with options for addressing them, considerations that program developers should take into account, and examples of where each approach has been applied. The publication can be downloaded at www.nnwqt.org.

Instructions for using the templates

The template is meant as a starting point only. Any language can be adjusted to meet the needs of a particular state. There are instructions, comment boxes, and options throughout the template providing additional information or alternative language for states to consider.

There are a few conventions used throughout the template that provide instructions and information for filling it out. They include:

- **Blue and all caps text is most likely to be modified:** Although any language in the template can be modified to meet state needs, text in blue is most likely to need customization. For example:

“This Water Quality Trading Framework sets forth recommendations that [STATE AGENCY] and other stakeholders believe should be considered when water quality trading is conducted in [WATERSHED NAME].”

- **Call out boxes provide instruction:** Throughout this template annual report, call out boxes will be used to provide instructions, considerations, and references for the subsequent section. These boxes can be deleted as the state drafts its documents. An example call out box is provided below.

In this section, provide a narrative summary of waste load limitations established in the permit for the pollutant(s) being traded as well as the permit requirements to provide trading credits for any discharged waste load in excess of this limitation(s) (with references) *or* pull in the exact permit language. Include also any special conditions in the permit that relate to trading (e.g., compliance schedule).

- **Green tables provide policy options:** The green tables allow the user to select language from a range of options, depending on which state policy choice is applicable. The user may select one (or more, in some cases) to paste into their draft document. An example table is provided below.

Agency Policy	Suggested Language
e.g., Public notice and comment will be required for individual projects only where trades occur outside of an approved trading plan or framework.	e.g., “[STATE AGENCY] will engage public comment on a permit’s trading plan or watershed trading framework, but not when projects are developed consistent with an approved plan or framework. Public notice and comment will occur when a credit-generating project is proposed outside of that approved plan or framework.”

- Where there is only one likely scenario, peach boxes provide sample language, for example:

The essential elements of the water quality trading plan, attached, include:

- Description of the Trading Area and how trades executed in this area are protective of beneficial uses;

WATER QUALITY TRADING TOOLKIT

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I. TEMPLATE RULE

Last Updated 6/9/16

About this template: The template is meant as a starting point only. Any language can be adjusted to meet the needs of a particular state. This template rule was developed to work in concert with other ACWA/Willamette Partnership Trading Toolkit templates, including the trading guidance, watershed framework, permit, and/or annual report templates.

State discretion will be the primary determinant of which information, and with how much detail, is placed in rule, guidance, or watershed trading frameworks. For the purposes of this Toolkit, the rule is designed to provide the high level program purpose and requirements. The authors assumed that much of the detail needed to support water quality trading would be housed in the state guidance, watershed frameworks, and/or permit water quality trading plans. The templates for rule and guidance can be combined if the state wants one document for statewide policies.

This template is written assuming that the permittee takes responsibility for the development of credits and the elements of a trade are effectuated through the NPDES permitting process. Some states may wish to consider an alternative approach, such as the one employed in North Carolina. In North Carolina, water quality trading uses a mitigation banking approach wherein private mitigation banks sign an MOA with the state on how they will create, monitor, maintain, track, and sell credits. A permittee can purchase credits from any such bank. In this case, the sections that follow would need to be revised such that the permit highlights the applicable Trading Area and all other requirements for credit projects are contained in the MOA with private mitigation banks. States wishing to use this approach can find more information and access North Carolina's policy documents.^{2,3}

This template also assumes that the permit contains a water quality trading plan, which is proposed by a permittee to the state agency for review the incorporated into the permit by reference. The language can be adjusted to reflect other situations, such as where the state agency develops the permit.

² North Carolina Admin. Code Title 15A § 02B.0240 (2014), available at http://portal.ncdenr.org/c/document_library/get_file?p_id=38446&folderId=209713&name=DLFE-15354.pdf

³ General Statutes of North Carolina § 143-214.26 (2013), available at http://www.ncleg.net/enactedlegislation/statutes/pdf/bysection/chapter_143/gs_143-214.26.pdf.

[STATE AGENCY]

[DIVISION]

XXX-XXX-XXXX

I. Purpose, Policy, and Authority

Use this section to establish legal authority for water quality trading and for broad policy statements.

- a. Purpose. The purpose of this rule is to implement [INSERT REFERENCES TO STATUTES] and establish minimum requirements for entities regulated under the federal Water Pollution Control Act (33 U.S.C. §1251 et seq.) and [INSERT CORRESPONDING STATE LAW] to meet pollution control requirements through water quality trading in [STATE].
- b. Policy. Water quality trading must be conducted consistent with the federal Water Pollution Control Act and [INSERT CORRESPONDING STATE LAW], and other relevant state and federal water quality regulations and implemented in a manner that:
 - i. ["Results in a net improvement of water quality and contributes to meeting water quality standards" or "Does not cause or contribute to violation of water quality standards"]
 - ii. ["Reduces the cost of meeting water quality standards and implementing TMDLs" or "incentivizes voluntary reductions from non-point sources."]

Include the previous statement to highlight economic benefits

- iii. Is consistent with anti-degradation policies;
- iv. Is consistent with local, state, and federal water quality laws;

The previous statement is redundant since new programs cannot be inconsistent with existing laws, however stakeholders may find it comforting to see this affirmative commitment. Consider omitting if that is not the case.

- v. Results in long term improvement in water quality;
- vi. Increases the pace and scale of restoration and attainment of water quality standards; and

Use one or both of the two previous statements (v and vi) where you want to draw attention to the broader watershed benefits.

vii. Assists in implementing TMDLs.

II. Guiding Principles

Use this section to establish underlying principles that should guide trading in the state. The Introduction of the [National Network Guide](#)⁴ includes guiding principles agreed upon by all National Network participants. Those principles are used as default language in the first scenario presented in this template. Some states may consider these statements somewhat aspirational or too “squishy” for a rule, in which case the latter option is recommended as a guide.

Scenario	Draft Rule Language
State wishes to make guiding statements consistent with the National Network	<p>In general, trading should be consistent with the following guiding principles:</p> <ul style="list-style-type: none"> a. Be grounded in sound science; b. Effectively accomplish regulatory and environmental goals; c. Contain mechanisms for transparency and accountability that allows [STATE AGENCY] and interested stakeholders to confirm that promised water quality improvements are actually delivered; and d. Not create localized adverse impacts on water quality.
State needs firm language in the rule	<p>The [STATE AGENCY] may approve water quality trading only if it promotes [“one or more” OR “all”] of the following policies:</p> <ul style="list-style-type: none"> a. Achieves pollutant reductions and progress towards meeting water quality standards; b. Reduces the cost of implementing Total Maximum Daily Loads (TMDLs); c. Establishes incentives for voluntary pollutant reductions from point and nonpoint sources within a watershed; d. Offsets new or increased discharges resulting from growth; e. Secures long-term improvement in water quality; or f. Results in demonstrable benefits to water quality or designated uses the water quality standards are intended to protect.

⁴ National Network on Water Quality Trading, p-10-11 (June 2015). *Building a Water Quality Trading Program: Options and Considerations*. Available at: <http://willamettepartnership.org/publications/>

III. Definitions

Use this section to identify important and recurring terms. For the purposes of this template, the policies and requirements related to these terms are excluded from the definitions and provided in subsequent sections. These definitions are consistent with the glossary of the National Network Guide.

- a. Best management practices (BMPs): In-water or land-based conservation, enhancement or restoration actions that reduce pollutant loading or create other water quality benefits. BMPs include, but are not limited to, structural and nonstructural controls and practices and flow augmentation.
- b. BMP Quality Standards: Specifications for the design, implementation, maintenance, and performance tracking of a particular BMP to ensure the estimated water quality benefits of a Trading Project are achieved and allow for verification that the BMP is performing as described in an approved Water quality trading plan.
- c. Certification: The formal approval process of the Credits generated from a BMP. Certification occurs after Project Review and is the last step before Credits can be used toward a compliance obligation.
- d. Credit: A measured, modeled, or estimated unit of trade that represents the water quality benefit generated by a BMP at a location over a specified period of time, above baseline and after application of trade ratios or any other adjustments.
- e. Credit generating actions/activities: Activities taken for the purpose of generating Credits by point or nonpoint sources, including but not limited to BMPs.

States may wish to expand this definition to include more explicit consideration of point source credit generating activities (e.g., installing advanced treatment technology, curtailing discharges).

- f. Credit Life: The period from the date a Credit becomes usable as an offset by a permittee (i.e., its “effective” date), to the date that the Credit is no longer valid (i.e., its “expiration” date).
- g. Offset(s): 1) Offsite treatment implemented by a regulated point source on upstream land not owned by the point source for the purposes of meeting its permit limit; 2) Load reductions that are purchased by a new or expanding point source to offset its increased discharge to an impaired waterbody. This second use is the more common use of offset. U.S. EPA considers both types of offsets to be trading programs.

Include this definition (Offset) only if you want to use the term separately from “credit.” Otherwise, delete.

- h. Project **Review**: The process of reviewing a credit-generating project relative to the water quality trading plan and applicable quality standards.

The term “Project Review,” used in subsection h. above, is used by the National Network to be inclusive of activities that verify credit project eligibility, implementation according to quality standards, or calculation of credits.

- i. **Project Site Screening (Site Screening or Site Validation): Review of eligibility for a proposed project.**
- j. **Public Conservation Funds:** Public funds that are targeted to support voluntary natural resource protection or restoration. Examples of public conservation funds include United States Department of Agriculture (USDA) cost share programs, United States Environmental Protection Agency (EPA) section 319 grant funds, United States Fish and Wildlife Service Partners for Fish and Wildlife Program funds, State Wildlife Grants, and state restoration grants. Public funds that are not considered public conservation funds include: public loans intended to be used for water quality infrastructure projects, such as Clean Water State Revolving Funds, USDA Rural Development funds, and utility sewer storm water and surface water management fees.
- k. **Registry (for Credits):** A centralized and easily accessible public ledger wherein credit information and accompanying documentation is stored to document credit issuance, transfer, and holdings.
- l. **Trading Area:** A geographic area within which credits can be bought and sold.
- m. **Trading Baseline:** Pollutant load reductions, site conditions, and/or BMP installation requirements that must be met prior to trading.
- n. **Water quality certification, water quality management plan, standalone order, or other binding agreement.** A permittee’s water quality trading plan may incorporate the terms of relevant state-wide trading guidance or a watershed trading framework by reference, or the permit may include all specific details.
- o. **Trading Project:** The site-specific implementation of a Water quality trading plan used to generate credits.
- p. **Trading Ratio:** A numeric value used to adjust the Credits generated from a Trading Project, or to adjust the number of Credits that a credit user needs to obtain. Trading ratios account for factors such as, but not limited to, in-stream attenuation or uptake of a pollutant between the locations of the generator and

the user of Credits, different forms or types of a pollutant, risk of BMP failure, uncertainty as to BMP performance, net environmental benefit.

- q. Water Quality Benefit: The water quality improvement that can reasonably be attributable to BMPs (for point source-to-nonpoint source trades) or wastewater treatment technologies or practices (point source-to-point source trades) installed at a site.
- r. Water Quality Trading or Trade: The use of water quality Credits generated at one location for compliance with water quality-based requirements at another location within a Trading Area.
- s. Water quality trading plan: A plan that describes the design, implementation, maintenance, monitoring, review and reporting components of one or more trading projects and that [STATE AGENCY] issues as a permit condition, water
- t. Watershed Trading Framework: A description—contained in a TMDL water quality management plan, independent state water quality management plan, agency order or rule—that identifies trading elements applicable to one or more entities in a Trading Area.

IV. Eligibility

Use this section for setting scenarios under which trading will be authorized—considering types of trades, pollutant types, waterbody conditions, and regulatory instruments. See Section 2 of the National Network Guide for options around types of allowable trades, appropriate regulatory instruments, trading areas, pollutants for trading, and eligible credit generating actions. See Section 3 for eligibility for buyers and sellers and baseline requirements for point and nonpoint source sellers.

- a. Water quality trading authorized under this division may not be used to meet technology-based effluent limitations unless expressly authorized by the underlying effluent guidelines.
- b. [STATE AGENCY] may authorize trading under the following scenarios:
 - i. Types of trades:

Choose one or more of the following types of trades.

- (1) Point-point trades. Trades between two permitted point sources under which one permittee agrees to reduce the discharge of pollutants below the baseline levels required to generate credits;
- (2) Point-nonpoint trades. Trades between a permitted point source and a nonpoint source to reduce the discharge of

nonpoint pollutants below the baseline levels required to generate credits;

- (3) Nonpoint-nonpoint trades. Trades between two non-point sources to reduce the discharge of nonpoint pollutants below the baseline levels required to generate credits;
- (4) Trades to offset stormwater discharges, which could be treated as either nonpoint-nonpoint, point-nonpoint, or point-point trades depending on applicable state law; and
- (5) Other types of trades approved by [STATE AGENCY] on a case-by-case basis.

ii. Water quality parameters eligible for trading:

Choose one or more of the following eligible pollutants

- (1) Nutrients (nitrogen and phosphorus), sediment, dissolved oxygen, biological oxygen demand, chemical oxygen demand, pH, and temperature; and
- (2) Other parameters approved by [STATE AGENCY] on a case-by-case basis.

iii. Water bodies eligible for trading:

Choose one or more of the following types of trades.

- (1) High quality waters: [STATE AGENCY] may authorize trading to maintain or improve water quality in non-impaired waters, including but not limited to, trading to offset new or increased discharges.

States may wish to adjust this language to better reflect their process for designating high quality waters (waterbody-by-waterbody or pollutant-by-pollutant).

- (2) Water quality limited waters: [STATE AGENCY] may authorize trading to:

- Meet the goals of a TMDL, TMDL alternative, or independent state water quality management plan;

Delete “TMDL alternative” if it is not applicable or you do not want to include this.

- Improve water quality and make progress toward attaining water quality standards for impaired waters pending a TMDL; and
- Where water quality is limited but the waterbody is not subject to a TMDL.

iv. Credit generating activities eligible for trading:

- (1) Modification of facility operations or use of wastewater treatment technologies [producing a net environmental benefit](#) are eligible for point source credit generation; and

In some states, there is controversy over whether point sources can generate credits from excess *unused* portions of the permitted effluent limit. These are often referred to as “capacity credits” or “phantom credits.” The language above is intended to prevent the use such capacity credits by requiring credits be generated from the modification or use of their facility, or even the generation of a “net environmental benefit.”

- (2) Approved BMPs are eligible for nonpoint source credit generation.

v. Regulatory instruments to authorize trading:

Choose one or more types of regulatory instruments.

- (1) [Permits](#). [\[STATE AGENCY\]](#) may authorize trading in an [NPDES](#) or similar permit to meet water quality based effluent requirements. A water quality trading plan that meets the requirements of [\[REFERENCE TO RULE SECTION VI\]](#) must be included as an enforceable permit condition. The permittee is legally responsible for complying with all plan requirements;
- (2) Compliance Schedules. Trading may be included in a compliance schedule incorporated into an NPDES permit or [\[STATE AGENCY\]](#) order so long as the trade is consistent with the requirements of [\[STATE RULES ON COMPLIANCE SCHEDULES\]](#) and federal Water Pollution Control Act (33 U.S.C. §1251 et seq.) Section 502(17) 40 C.F .R. § 122.2 and 122.47;
- (3) [Permit Variances](#). Trading may be included as a component of the pollution reduction plan in a discharger-specific, waterbody-specific or regional or state-wide variance issued under [\[STATE RULES ON VARIANCES\]](#); and

- (4) Water Quality Certifications. Trading may be authorized consistent with this rule as a condition in a water quality certification issued under CWA Section 401 and pursuant to [\[STATE RULES ON 401 CERTIFICATIONS\]](#).

V. Watershed Trading Frameworks

If your state will use watershed trading frameworks to establish details of watershed-level trading processes and standards, use this section to describe what must be included in those frameworks. Consider for inclusion all other trading elements that you feel should always be consistent at the watershed scale (e.g., how credits will be quantified?).

[\[STATE AGENCY\]](#) may establish watershed trading frameworks for the state and/or one or more watersheds in any TMDL, TMDL implementation plan, independent state water quality management plan, or by a separate agency order.

- a. The watershed trading framework must specify those pollutants that are subject to trading, the trading area, and regulations and applicable TMDL allocations and implementation schedules that will be used to derive trading baseline.
- b. Watershed trading frameworks may include more of the information referenced in [\[INTERNAL REFERENCE TO RULE SECTION VI.b.\]](#) to support a permit's water quality trading plan.
- c. [\[STATE AGENCY\]](#) must provide an opportunity for public notice and comment before issuing a watershed trading framework.
- d. A watershed trading framework [\["is" or "is not"\]](#) required in order for [\[STATE AGENCY\]](#) to approve a water quality trading plan.

VI. Requirements of a water quality trading plan

Use this section to establish requirements of trading-related permit conditions (i.e., Water quality trading plans) and whether those conditions can reference watershed trading frameworks and/or water quality trading plans to document enforceable conditions of those permits. This section assumes that the permittee proposes the water quality trading plan, which is reviewed by the state agency and must be approved prior to inclusion in the permit. See Section 1.3 of the National Network Guide for considerations on how to incorporate trading into a permit and the key provisions.

- a. A water quality trading plan must be proposed as part of a permit and approved by [\[STATE AGENCY\]](#) as part of permit conditions to make the terms of the trade enforceable.
- b. If a previously authorized watershed trading framework exists, and is applicable, a water quality trading plan must be consistent with the watershed trading

framework. A water quality trading plan may reference the watershed trading framework or components within the watershed trading framework.

If there is a statewide program with sufficient detail to act as a watershed trading framework for a permit, then add a new paragraph:

“If a state trading program exists, and is applicable, a permit can reference all or some of that state program as its water quality trading plan.”

- c. [STATE AGENCY] must provide an opportunity for public notice and comment on a water quality trading plan before approving it. [STATE AGENCY] may amend the water quality trading plan or require amendments prior to approval.
- d. Individual trading projects must be consistent with an approved water quality trading plan. Individual trading projects [“do” or “do not”] require separate public notice and comment.

See section 8.6 of Building a Water Quality Trading Program: for considerations regarding public notice for individual projects

- e. Absent a state or watershed trading framework, a permit’s water quality trading plan must include the following components and how they were derived:
 - i. The parameter for which trading is being proposed, the number of credits needed, and any credit generation milestones, including a schedule for credit generation;
 - ii. Trading area, including justification and how it is protective of the relevant designated uses;
 - iii. Trading baseline, including identification of any applicable requirements that apply within the trading area and must be implemented to achieve baseline requirements. The water quality trading plan must also identify sources of applicable regulation or law;
 - iv. Allowable credit-generating actions or activities, including quality and performance standards for those actions as described in [INTERNAL REFERENCE TO SECTION XII], and if necessary to [INCLUDE IN WHAT CASES], additional criteria for project site design, maintenance, and stewardship;
 - v. Description of credit quantification methodology, including how pre- and post-project conditions are modeled or measured, the assumptions and inputs used to derive the number of credits, and how baseline will be accounted for;
 - vi. Monitoring and reporting requirements, including parameters to be monitored, monitoring frequency, type of sample required, physical form

of the report, and any other trading-related monitoring that may be required *in addition* to CWA monitoring requirements;

- vii. Trading [ratio\(s\)](#), including description of the basis and assumptions supporting each trading ratio and whether it affects the size of the credit obligation or the number of credits generated from an individual trading project;
- viii. Other mechanisms to mitigate risk of insufficient credit generation, including “reserve pool,” insurance, performance bonding, etc. as well as justification for the selection and application of the given mechanisms;
- ix. Project pre-screening, including the documentation that will be provided and who is responsible for this function;
- x. Credit life information, including when credits become valid, how long credits remain valid, renewability of credits;
- xi. Requirements for review of project site implementation and performance, as described in [INSERT INTERNAL REFERENCE TO SECTION XIII] and the entity that will perform the review, review frequency and content, and the standards by which performance is judged;
- xii. Credit registration, including characteristics of credit registry and information on disclosure minimums; and

Note: This rule is set up such that the water quality trading plan will define the minimum characteristics of the Registry. An alternative option would be to include those provisions in the rule itself.

- xiii. Adaptive Management: [Water quality trading plans must include a description of how monitoring and other information may be used over time to adjust trading projects and under what circumstances.](#)
- f. Water quality trading plan Revision: An approved water quality trading plan must be reviewed and revised, whenever an NPDES permit or 401 water quality certification is renewed or modified or if there is a change in circumstances that affects a water quality trading plan element required by subsection (5) of this rule. Revised water quality trading plans must be submitted to [\[STATE AGENCY\]](#) for review and approval and must be shared publicly for notice and comment. If approved, [\[STATE AGENCY\]](#) will incorporate the revised plan into the NPDES permit or 401 water quality certification.
 - g. Annual Report: The regulated entity must submit an annual report to [\[STATE AGENCY\]](#) that describes water quality trading plan implementation and performance over the past year. The [\[“\[STATE AGENCY\] or “permittee”\]](#) shall make the annual report readily available to the public. The annual report must provide information on

the water quality trading plan elements described in [INTERNAL REFERENCE TO SECTION Vid]. The annual report must also include:

- xiv. Information specific to each trading project implemented:
 - 1. The location of active trading projects, BMPs used, and confirmation of site eligibility to generate credits;
 - 2. The trading project baseline;
 - 3. The quantification method and the quantity of credits generated from each trading project;
 - 4. The trading ratios used; and
 - 5. Summary of trading project monitoring results.
- xv. Summary of water quality trading plan performance including the total quantity of credits generated in the current year and total to date; and
- xvi. Adaptive management measures implemented under the water quality trading plan, if applicable.

VII. Requirements for Trading Baselines

Use this section to establish requirements for trading baselines, including but not limited to regulatory requirements, TMDL requirements, and general nonpoint source control authority requirements. “NPDES permits are included at the top of the list because permits ultimately govern how trading will work, and the NPDES permit can set baseline levels above and beyond the other sources of information in paragraphs VII.a.ii-iv.

- a. The requirements that comprise a trading baseline [“ may be derived from” or “ must account for”] the following:
 - i. Water quality based effluent limits for point-point trades;
 - ii. NPDES permits;
 - iii. [INSERT APPLICABLE STATE LAWS];
 - iv. Requirements of a federal land management plan, or an agreement between a federal agency and the state;
 - v. Requirements established in a Section 401 water quality certification;
 - vi. Tribal laws, rules, or permits;
 - vii. Projects completed as part of compensatory mitigation, supplemental environmental projects, or projects required under a permit or approval issued pursuant to Clean Water Act section 404;

- viii. Regulatory requirements a designated management agency establishes to comply with a [STATE AGENCY]-issued TMDL, water quality management plan or another water pollution control plan adopted by rule or issued by order under [REFERENCE TO STATE AUTHORITY];
 - ix. Other federal, state, and local rules or laws that establish affirmative requirements for individual nonpoint sources; and
 - x. Existing conditions.
- b. Trading baselines must:
 - xi. Include a specific base year that specifies when credit-generating activities may begin; and
 - xii. Specify any applicable pollution control requirements that may need to be implemented to meet baseline requirements prior to generating credits.
- c. BMPs required to meet baseline requirements and BMPs used to generate additional water quality benefits and trade credits may be installed simultaneously.

VIII. Requirements for Trading Areas

Use this section for establishing requirements and/or boundaries of trading areas or in what documents/programs trading areas must be established. If applicable, include what other plans or guidance they should be consistent with.

- a. Trading areas must be established in watershed trading frameworks, by [STATE NAME], or developed and included in a water quality trading plan on a case-by-case basis.
- b. Trading areas must be consistent with any applicable TMDL, TMDL implementation plan, or independent state water quality management plan.
- c. A trading area must be defined ecologically where a pollution reduction in one part of a watershed can be linked to a water quality improvement at a point of compliance.
- d. A trading area must be defined to reduce the risk of localized or downstream water quality impairments or localized or downstream impacts.

IX. Quantification of Benefits

Use this section for establishing the processes by which water quality benefits will be quantified, such as pre-determined pollution reduction rates, modeling, or direct monitoring. Add more details if desired in rule, such as any associated protocols for applying quantification methods.

See Section 4 of the National Network Guide for considerations in selecting an approach to quantifying water quality benefits.

[STATE AGENCY] or “permittee”] will quantify the water quality benefits of a trading project based on [estimated values for specific types of BMPs, modeling specific to the watershed trading framework or project, and/or by measuring the water quality benefits of a trading project by direct monitoring of pollutant reductions.](#)

X. Requirements for Trading Ratios

Use this section for establishing what factors must be accounted for in one or more trading ratios, such as watershed processes (e.g., attenuation); risk and uncertainty (both in terms of measurement error and project performance); ensuring net environmental benefit; and/or ensuring equivalency across types of pollutants. If applicable, include what guidance it should be consistent with. Add more detail if desired in rule, such as at what time(s) ratios should be applied (e.g., at time of credit calculation and/or time of trade).

See Section 5 of the National Network Guide for information on types of ratios, setting ratios, and taking a holistic approach to addressing risk and uncertainty.

- a. Water quality trades must include one or more trading ratios that apply to credits. [Ratio components and underlying assumptions must be clearly documented in the water quality trading plan.](#) Trading ratios may be used to account for variables associated with a trading project including, but not limited to the following: taking into account risk of project failure, BMP effectiveness, measurement uncertainty, in-stream attenuation of a pollutant between the locations of the generator and the user of credits, pollutant equivalency, and credit retirement for environmental benefit.

XI. Requirements for Credits

Use this section to establish what is required for a credit to be issued, when credits are issued, and, if applicable, what guidance it must be consistent with. Add more detail if desired in rule.

See Section 6 of the National Network Guide for options and considerations regarding credit life, renewal, legal protection, stewardship, and monitoring.

- a. Credits used for compliance with NPDES permit and 401 water quality certification requirements must be generated within the trading area of an approved water quality trading plan.
- b. A credit may not be used to meet a regulatory obligation by more than one entity at any given time.

- c. Credits may be generated only from BMPs that result in water quality benefits above trading baseline requirements.
- d. Credit generating activities must go through Project Review, be in place, and be producing water quality benefits during the same time period(s) defined for compliance in an [NPDES](#) permit or other regulatory instrument.
- e. Credits may be used for compliance purposes as long as pollution controls or practices are maintained and project review [confirms](#) that they are functioning as expected.

Add more detail on verification requirements here (subsection e), if desired.

- f. Credits must be calculated using best available science, tools, and methodologies, [including adjustment by \(an\) appropriate trading ratio\(s\) \(RULE SECTION X REFERENCE\)](#).
- g. Credits generated under an approved water quality trading plan [[“may” or “may not”](#)] include water quality benefits obtained with public conservation funds. Where public conservation sources of funding are used for credit-generating activities, it is the entity’s responsibility to demonstrate compliance with this requirement in its annual report.
- h. Credits [[“may” or “may not”](#)] be generated from BMPs installed before [\[STATE AGENCY\]](#) approves a water quality trading plan.

If credits may be issued before a BMP is installed (in subsection h below), consider listing conditions under which this could occur (e.g., if BMPs are verified as having been implemented consistent with BMP quality standards identified in a subsequently approved water quality trading plan and are functioning effectively).

XII. Requirements for Trading Project Quality Assurance

Use this section if the state would like to describe the key components of BMP quality standards, requirements for stewardship and/or legal protection of trading projects, or other approaches to measures by which the quality and performance of trading projects will be judged. Consider omitting if these components will be described in the state’s guidance.

Section 7 of the National Network Guide provides suggested components of a BMP quality standard and considerations around the use of these and other safe guards.

- a. [BMP quality standards applied to trading projects must consider, at a minimum:](#)
 - i. [Description of the BMP;](#)

- ii. Specifications for BMP siting, design, installation, operation, and maintenance;
- iii. Performance thresholds that BMPs must meet to generate credits;
- iv. Procedures for documenting site conditions, BMP performance, and water quality benefit quantification;
- v. Procedures for BMP review;
- vi. Minimum project length;
- vii. Credit release schedule, if applicable;
- viii. Length and style of required legal protection; and
- ix. Required funds for project stewardship.

XIII. Requirements for Trading Project Review, Certification, and Registration

Use this section if the state wants to establish sideboards for how and when projects are reviewed. Consider omitting if these components will be described in the state's guidance.

See Section 8 of the National Network Guide for considerations on when and how to conduct project review. See Section 11 for considerations around who should conduct various program administration duties (including review).

- a. All new trade projects must undergo project review and certification before credits are issued. *After credits are issued, all trade projects must undergo periodic ongoing project review.*
- b. Project review for a new trade project must include the following components:
 - i. Confirmation that project site BMPs *[have been installed]* and conform to the applicable quality standards required by *[STATE AGENCY]*;
 - ii. Confirmation that the site is eligible to generate credits and baseline requirements have been fulfilled;
 - iii. Review of the accuracy of water quality benefit quantification; and
 - iv. *Development of a report describing the project review findings including an attestation as to whether or not the site meets all program requirements.*
- c. *Project review must be ["overseen" or "conducted"] by ["[STATE AGENCY]" or "qualified professionals"];* and
- d. Project certification for a new trade project must include the following components:

- i. Confirmation that all required project documentation has been provided; and
- ii. Confirmation that a project review has been successfully completed; and
- iii. Signed attestation certifying the number of available credits.
- e. Project certification must be ["overseen" or "conducted"] by "[STATE AGENCY]" or "qualified professionals".

Use this subsection to include more detail on what constitutes a qualified professional or name a specific designated entity, if desired.

XIV. Compliance and Enforcement

Use this section if your agency wants or needs to establish trading-specific compliance procedures. Omit if existing compliance and enforcement procedures are sufficient to cover trading program activity.

XV. Program Evaluation

Use this section if your agency will carry out longer term evaluation of your trading program (e.g., for purposes of making modifications to guidance or frameworks to reflect up-to-date scientific knowledge and policy). If this is not necessary, omit this section.

- a. [STATE AGENCY], from time to time, will evaluate the effectiveness of a watershed trading framework or plan as part of its TMDL monitoring, § 305b water quality assessment, or other program evaluation efforts.

II. TEMPLATE GUIDANCE

Last Updated 07/07/16

About this template: The template is meant as a starting point only. Any language can be adjusted to meet the needs of a particular state. This template guidance was developed to work in concert with other ACWA/Willamette Partnership Trading Toolkit templates, including the trading rule, guidance, watershed framework, annual report, and/or permit templates.

State guidance and watershed trading frameworks in particular, have the potential for significant overlap in content. Each provides a different level of information covering many of the same topics, and the level of detail in the guidance and framework respectively will be highly dependent on the state's preference. For the purposes of this Toolkit, the state guidance is designed to set policy sideboards for all trades (e.g., Trading Areas must be consistent with the TMDL), whereas the watershed trading framework outlines the specific policies relevant to a specific watershed (e.g., map of the specific Trading Area for that framework). However, both templates were designed to err on the side of completeness, so where trading policies for state and watershed levels are the same (e.g., permits must go through review for localized impacts), the framework can simply refer to the guidance instead of repeating specific information or language.

Template organization: This template is organized to directly follow the structure of the National Network publication, *Building a Water Quality Trading Program: Options and Considerations* (National Network Guide). Section headers and numbering matches the chapters in the National Network Guide, allowing template users quick and easy reference to options and considerations for developing state policies. In many cases, the state may wish to combine subsections or otherwise simplify the document.

[STATE NAME] Water Quality Trading Guidance

[Date Approved]

[guidance Author]

[Logos]

Cover: INSERT COVER CITATION.

Disclaimer:

This document provides guidance for water quality trading in [STATE NAME]. Implementation of water quality trading will be governed by existing requirements of the Clean Water Act (CWA), Environmental Protection Agency (U.S. EPA) implementing regulations, and state laws. This document does not substitute for those requirements or laws. The recommendations in this guidance are not binding; [STATE AGENCY] (ABBREVIATION) and U.S. EPA may consider other approaches consistent with the CWA, U.S. EPA regulations and state laws. Decisions regarding water quality trades will be made on a case-by-case basis and will be guided by the CWA and applicable federal regulations and state laws, taking into account comments and information presented at that time by interested persons regarding the appropriateness of applying these recommendations to the particular situation. [STATE AGENCY] may change this guidance in the future.

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Introduction

The introduction section should describe the purpose of water quality trading, the objectives that the state agency seeks to achieve with trading, principles to guide trading (which may be specified in state guidance or rule), and any additional context.

The purpose of this document is to provide guidance for the implementation of water quality trading within [STATE NAME].

Purpose of Water Quality Trading

Water quality trading (WQT) is one tool to help achieve the goals of the CWA and other public objectives.⁵ Trading can occur between two “point sources,” point and “nonpoint sources,” or two nonpoint sources. WQT allows one source to meet its regulatory obligations by using pollutant reductions created by another source that has lower pollution control costs. Trading may not be appropriate for addressing all water quality challenges within a given watershed and should be evaluated for its efficacy towards meeting CWA requirements. When designed well and combined with other tools, however, trading can help achieve water quality goals in flexible ways that are beneficial for landowners, communities, and the environment.

Individual trades and different watersheds will face unique situations and issues. In general, watershed trading frameworks and water quality trading plans should follow these guiding principles:

Refer to the Executive Summary of the National Network on Water Quality Trading publication [*Building a Water Quality Trading Program: Options and Considerations*](#)⁶ (hereafter National Network Guide) if more detailed guiding principles are desired.

- Trades should be grounded in sound science and effectively accomplish regulatory and environmental goals over other alternatives;
- There needs to be accountability that allows regulators to confirm that promised water quality improvements are actually delivered;
- The benefits of trading must be delivered without allowing the discharger to produce localized water quality problems; and
- Trades need to be consistent with [STATE NAME] requirements, Clean Water Act (CWA)⁷ requirements, and local laws.

⁵ U.S. Environmental Protection Agency, *Water Quality Trading Policy*, 68 Fed. Reg. 1608, p. 1609 (Jan. 13, 2003) (final policy) (hereafter “2003 U.S. EPA Trading Policy”), available at <http://www.gpo.gov/fdsys/pkg/FR-2003-01-13/pdf/03-620.pdf> (“Water quality trading is an approach” to “[f]inding solutions to [] complex water quality problems.”).

⁶ National Network on Water Quality Trading, p-10-11 (June 2015). *Building a Water Quality Trading Program: Options and Considerations*. Available at: <http://willamettepartnership.org/publications/>

⁷ Federal Water Pollution Control Act, 33 U.S.C. § 1251, et. seq. (commonly referred to as “Clean Water Act”).

Background

This section should provide the background and context that prompted developing a water quality trading guidance (e.g., directed by legislature, agency decision for program consistency across the state, interest from permittees, etc.). It can also be used to clarify the role of this guidance relative to other important documents, like watershed frameworks and permittee water quality trading plans (see example below).

Ultimately, the information included and referenced in an NPDES permit or equivalent will be the requirements a permittee needs to follow. That information will be drawn from the following types of documents and other sources as relevant, including:

- **Trading rule:** [REFERENCE TO STATE RULE] defines the essential components of each trade.
- **Trading guidance:** This document, which contain [STATE AGENCY] guidelines for implementing [REFERENCE TO STATE RULE].
- **Watershed trading framework:** Watershed-level documents that contain the specific details of implementing a trade as it applies to multiple permittees trading within a watershed. Developing a watershed trading framework is not necessary, but can be useful to expedite permitting and formalize a consistent process and unit of trade where multiple permittees within a watershed intend to trade.
- **Water trading plan:** Facility- or permittee-level document that contains the details of implementing a trade. The water quality trading plan is incorporated into a permit or other binding agreement. Where a trading framework exists, a permittee's water quality trading plan will incorporate the terms of the watershed trading framework by reference. In the absence of a watershed trading frameworks, the water quality trading plan will include all specific details of trading processes and standards.

1. Policy & Regulatory Instruments to Support Trading

1.1 Building Trading into a State's Regulatory Program

Section 1.1 describes state-level authority and specific regulatory programs and regulatory instruments through which trading can occur. This section may also go over the role for the state agency and EPA in reviewing and issuing permits and any specifics of that process as it relates to trading.

1.1.1 Authority for Water Quality Trading in the State

Section 1.1 of the National Network Guide provides context, options, and considerations important to building trading into state authority. These policies and regulatory instruments are inextricably linked to CWA requirements. References to state rule, other forms of state authority, or watershed trading frameworks should be removed where those documents don't exist.

The Clean Water Act provides authority for U.S. EPA, states, and tribes to develop a variety of programs and activities to control pollution. Water quality trading, as described in the 2003 U.S. EPA Trading Policy,⁸ is one of those tools. [Trading is recognized in \[INSERT REFERENCES TO STATE STATUTE, RULE, or OTHER STATE SOURCES OF AUTHORITY\]](#). This water quality trading guidance (guidance) sets forth recommendations [\[STATE AGENCY\]](#) believes should be considered when water quality trading is conducted.

[This guidance is designed to work in tandem with watershed trading frameworks, where they are developed and approved.](#)

1.1.2 Public Involvement

See Section 1.1.2 and 8.6 of the National Network Guide for considerations and options on including the public in reviewing important aspects of a trading program consistent with relevant federal, state, local, and tribal public participation and procedural requirements.

Public notice and comment is an essential part of the CWA, including the NPDES program, thus it is also an important component of water quality trading plans. At many points in the process of determining how water quality trading will work, the public is encouraged to participate.

Agency Policy	Suggested Language
Public notice and comment will be required for individual projects only where trades occur outside of an approved water quality trading plan or framework.	[STATE AGENCY] will engage public comment on a permittee's water quality trading plan or watershed trading framework. Individual trading projects developed consistent with an approved water quality trading plan or watershed framework are not subject to public notice and comment unless directly referenced in the permit. Public notice and comment will occur when a credit-generating project is proposed <i>outside</i> of that

⁸ See generally 2003 U.S. EPA Trading Policy *supra* note 2

	approved plan or framework.”
Public notice and comment will be required during all stages.	[STATE AGENCY] requires public notice and comment to occur for any credit-generating action at Site Screening (see Section 7), Project Review and Certification (see Section 8), credit exchange, and credit use (e.g., application of credits toward a permit obligation, retirement).”
Public notice and comment will be required during Certification and trade/use.	[STATE AGENCY] requires public notice and comment to occur for trades during (see Section 8), credit transaction, and use.”
Public notice will be required, public comment will NOT be required during Certification and trade/use.	[STATE AGENCY] will give the public notice about a project’s Certification (see Section 8), credit transaction, and use, but will not provide a formal comment period.”

1.2 Waterbody Conditions that Affect Trading

Trading can be used to [“meet all or part of a discharger’s effluent limits” or “meet part or all of a discharger’s Water Quality-Based Effluent Limits (WQBELs)”] and/or offset pollutant loads under several scenarios consistent with this guidance and additional requirements in [Insert source of additional requirements, e.g., water quality trading plan].

See Section 1.2 of the National Network Guide. Delete bullet points below for those scenarios are not allowed in your state.

[STATE NAME] will allow trading in the following scenarios:

- To offset existing pollutant loadings to a CWA-impaired water body with a U.S. EPA-approved TMDL or similar watershed analysis needed to support trades;

States may wish to include amend the previous bullet to include offsetting new discharges to an impaired waterbody with a TMDL. Some case law, like Pinto Creek,⁹ makes such a scenario more difficult, but it is still allowable.

- To offset existing pollutant loadings prior to TMDL approval where a trade can provide documented environmental benefits, and the watershed provides enough context on loading to ensure trades do not cause or contribute to violations of water quality standards;

⁹ *Friends of Pinto Creek v. U.S. EPA*, 504 F.3d 1007, 1011-12 (9th Cir. 2007).

High quality waters can be designated based on individual pollutants (e.g., sediment) or as an entire waterbody. For the following bullet, re-word if your state uses the waterbody-by-waterbody approach to identifying high quality waters.

- To maintain water quality in waters that currently meet or exceed water quality standards, provided the beneficial uses are protected. For example, trading may be used to offset new or increased discharges of pollutants to avoid degradation of high quality waters; and
- To offset new or expanding point source discharges to a CWA-impaired water body without a U.S. EPA-approved TMDL. Point sources must ensure their discharge does not further impair the water body by the specific pollutant consistent with the requirements of 40 C.F.R. 122.4(i).

All trades must be in compliance with existing federal and state regulations.

1.2.1 Trading in 303(d) Impaired Waters without a TMDL

This section can be included if contemplating trades in 303(d) listed waterbodies for which a TMDL has not yet been developed. States may wish to consider this kind of trade as an interim step that makes reasonable further progress by reducing loading below the status quo. In other cases, states may consider this type of trade as “pre-TMDL” and require that it be supported by an analysis that gets at many of the same technical questions that the TMDL will address. This template is written primarily to address the latter – where significant technical analysis is needed to support a trade on a listed waterbody in the absence of a TMDL. See Section 1.2.2 of the National Network Guide for more information.

Trading in 303(d)-listed/impaired waters for a pollutant that needs a TMDL may be challenging; it is difficult to determine the allowable loading for a pollutant to a receiving water body without the analysis of the TMDL process. With respect to pre-TMDL trading in a 303(d)-listed waterbody, [STATE AGENCY] will consider whether the proposed water quality trading plan will lead to direct environmental benefit relevant to the conditions for which the water body is impaired. [STATE AGENCY] will also consider the following:

1. **Trading to allow for an existing discharge:** The sources involved should conduct an analysis of pollutant loadings similar to [STATE AGENCY] TMDL development process. The analysis would be subject to a public notice and review process as well as [STATE AGENCY] review and approval (e.g., as part of the § 401 Certification or NPDES permit process); and
2. **New source, new discharger, or expanded discharge:** Trading must be implemented through an NPDES permit. The discharge cannot cause or contribute to the violation of water quality standards. If a pollutant load allocation for the pollutant has been developed, then the discharger must demonstrate that a) there is sufficient remaining pollutant assimilation capacity to allow for the discharge, and b) existing discharges into the water body that do not meet applicable water quality standards are subject to compliance schedules designed to bring the water body into compliance with the applicable water quality standard. (See 40 CFR 122.4(i) and the 2003 U.S. EPA Trading Policy).

When U.S. EPA approves a TMDL, any trading agreements made prior to the TMDL that are inconsistent with TMDL requirements will have to be modified. [STATE AGENCY] encourages parties involved in pre-TMDL trading to contact [STATE AGENCY] early in the TMDL development

process to ensure that future revisions to trading agreements do not create disincentives for early action towards pollutant reductions.

1.3 Mechanisms for Effectuating the Trade

This section is used to describe the permit, orders, and/or licenses under which trading can occur. The template user may also choose to describe the required permit conditions here.

This template is written assuming that the permittee is responsible for the ongoing validity of credits used toward their permit obligation and the elements of a trade are effectuated through the NPDES permitting process. Some states may wish to consider an alternative approach, such as the one employed in North Carolina. In North Carolina, water quality trading uses a mitigation banking approach wherein private mitigation banks sign an MOA with the state regarding how they will create, monitor, maintain, track, and sell credits. A permittee can purchase credits from any such bank, who retains responsibility for ongoing certification of those credits. In this case, the sections that follow would need to be revised such that the permit highlights the applicable Trading Area and all other requirements for credit projects are contained in the MOA with private mitigation banks. States wishing to use this approach can find more information and access North Carolina's policy documents.^{10,11}

This template also assumes that the permit contains a water quality trading plan, which is proposed by a permittee to the state agency for review the incorporated into the permit by reference. The language can be adjusted to reflect other situations, such as where the state agency develops the permit.

Trading in [STATE NAME] is authorized through a [permit, order, or license]. [STATE AGENCY] expects the [permit, order, or license] to include a water quality trading plan providing detail or incorporate the detail from an approved watershed trading framework by reference to describe how trades will be conducted. [STATE AGENCY] will confirm that a permit and water quality trading plan adequately describe or clearly reference material that describe the pollutant and credit units (Section 2.4) and credit characteristics (Section 6), calculation methodology (Section 4), and quantity of credits needed for compliance (Section 1.3.1A). The water quality trading plan should also examine water quality conditions to identify the potential for any localized impacts (Section 3.1.2).

See Section 1.3.1 of the National Network Guide for options on incorporating credits into permit compliance reporting. It may be that no additional language needs to go here. A state may choose to specify which trading information goes into which parts of an NPDES permit.

[STATE AGENCY] will also review the permit for clarity on where credits can be acquired, how credits will be monitored and reported upon, how/if risk and uncertainty have been addressed (e.g., through appropriate trading ratios – see Section 5.1), and any connection between trading and compliance schedules, mixing zones, anti-degradation provisions, anti-backsliding provisions and related federal provisions. U.S. EPA's "Water Quality Trading Toolkit for Permit Writers - 2007" and "Water Quality

¹⁰ North Carolina Admin. Code Title 15A § 02B.0240 (2014), available at http://portal.ncdenr.org/c/document_library/get_file?p_id=38446&folderId=209713&name=DLFE-15354.pdf

¹¹ General Statutes of North Carolina § 143-214.26 (2013), available at http://www.ncleg.net/enactedlegislation/statutes/pdf/bysection/chapter_143/gs_143-214.26.pdf.

Trading Assessment Handbook – 2004” provide additional information and recommendations.¹² The National Network on Water Quality Trading’s “Building a Water Quality Trading Program: Options and Considerations” also provides useful options.¹³

Registering trades with [STATE AGENCY] or its designee does not affect the responsibility of an NPDES permittee to comply with the terms of its permit.

1.3.1 Key Trading Provisions in a Permit

A permit operating under this guidance should incorporate the following provisions.

A. Permit Effluent Limits

Permit effluent limits and potential trading obligations resulting from the Water Quality Based Effluent Limit (WQBEL), which is typically expressed as a [concentration, mass effluent limit, narrative] per [time period – day, month, or year].

Trading tends to be limited to mass loadings, so if a permit is expressed in terms of concentrations, permit writers should consider translating concentration into loadings where appropriate to facilitate trading.

See Section 6.1 of the National Network Guide or considerations around the length of time over which a credit is valid (also known as credit life).

B. Monitoring & Reporting Requirements

This section can be used to describe any monitoring requirements that apply to the entire state and/or set sideboards for monitoring requirements in individual permits.

Trading-related monitoring may be required in addition to, but not instead of, the monitoring obligations under the CWA that apply to all point sources and their associated NPDES permits.

C. Special Conditions

This section can be used to describe any special conditions that apply to the entire state (e.g., annual reporting requirements). Special conditions of a permit supplement numeric effluent limitations and require the permittee to undertake activities that reduce the overall quantity of pollutants, reduce the potential for discharge, or collect information that could be used to determine future permits.¹⁴

1.3.2 Incorporating Trading Program Details into a Permit

This section describes how the details of the trading program should be incorporated into the permit and should be adjusted to reflect any requirements set in rule. Permit writers may wish to consider how the placement of trading details within the permit (e.g., within effluent limits section vs special conditions) relates to potential permit violations, or how placement of a trading detail might trigger the

¹² www.epa.gov/owow/watershed/trading.htm

¹³ National Network on Water Quality Trading. 2016. *Building a Water Quality Trading Program: Options and Considerations*. Available at: www.nnwqt.org

¹⁴ U.S. Environmental Protection Agency, Office of Water, *NPDES Permit Writer’s Manual* Ch.9, pp.1 (Sept 2010), available at http://water.epa.gov/polwaste/npdes/basics/upload/pwm_chapt_09.pdf.

need for a permit modification later on. See Section 1.3.2 of the National Network Guide for options regarding how trading details are incorporated into the permit.

Where states choose to treat trading projects like mitigation banks, as is the case in North Carolina, the components of a water quality trading plan described below would instead apply to the Mitigation Banking instrument.

The permit should incorporate the following conditions of the trading program [[“directly” or “by reference to a watershed trading framework”](#)]:

- Trading Area (justification and how it is protective of the relevant designated uses);
- Baseline (sources of applicable regulation or law, how baseline is expressed in the permit – i.e., as a set of minimum BMPs, as a percentage load reduction target for all nonpoint sources, or, an overall requirement for a Trading Area);
- Description of credit quantification methodology (how pre- and post-project conditions are estimated, how credit values are derived, how baseline is accounted for);
- Trading ratio (articulation of assumptions and components, including description of scientific, policy, and risk management assumptions and components);
- Risk mitigation mechanisms (e.g., reserve pool, insurance, and performance bonding);
- Project Site Screening (whether this function is required or suggested, and if required, who is responsible for this function);
- Allowable credit-generating actions (approved actions, identification of quality and performance standards for those actions);
- Credit life (when credits become valid, how long credits remain valid, renewability of credits);
- Project site design, maintenance and implementation/performance confirmation (whether these components are required, and if so, the frequency and aspects of these confirmations);
- Project Review, including processes to confirm implementation and performance (whether required, the entity that will perform, the frequency and content, and the standards by which performance is judged); and
- Credit registration (if required, characteristics of credit registry, information disclosure minimums).

This information will be incorporated [[“directly in the effluent limits section,” “through a water quality trading plan, incorporated as a special condition,” OR “by referencing an approved watershed trading framework.”](#)]

2. Trading Basics: Who, What, Where, & How

This section covers the basics of trading. States may want to reference the specific statutes or rules to which these conditions relate.

2.1 Types of Trades

States can choose one or more types of allowable trades. Considerations available in Section 2.1 of the National Network Guide.

There are generally two different types of trades recognized for water quality trading: point-source-to-point-source trading, and point-source-to-nonpoint-source trading. [Both point and nonpoint sources are eligible to trade. Although this guidance focuses on regulated point sources as buyers, for which trades can be used to achieve compliance with WQBELs, \[STATE AGENCY\] supports voluntary purchases of water quality credits outside of compliance obligations \(e.g., for stewardship purposes\).](#)

2.1.1 Point-Source-to-Point-Source Trading

A point source may voluntarily modify operations or install treatment technology to reduce its pollutant discharge below its effluent limit by a particular amount for a particular period of time. This voluntary reduction creates a water quality benefit, or credit, that may be sold to another point source. [Credits cannot be generated from unused facility capacity.](#) Once sold, the reduction becomes part of a contract between the two point sources. The sale of credits increases the seller's effective discharge by the amount of the credit. Credits are characterized by an amount of a pollutant per unit of time.

A point source is able to decrease its reported discharge by purchasing credits generated by another point source located within the same Trading Area so long as the purchasing point source's discharge does not cause [\["localized impacts" or state-specific terminology\]](#) (individual point sources may have provisions in their permits that limit their ability to maintain or increase their discharge, in order to prevent localized impacts). Credits can only be used in the same [\["time period" or provide a specific time period, e.g., month\]](#) in which the underlying reduction occurred.

Each point source is responsible for ensuring that its discharge, adjusted by traded credits, meets its individual effluent limit.

Agency Policy	Suggested Language
If the guidance will authorize intraplant trading	"[STATE AGENCY] supports intraplant trading (trading between different outfalls within a facility or plant) that involves the generation and use of credits between multiple outfalls that discharge to the same receiving water. [STATE AGENCY] will treat intraplant trades like point-source-to-point-source interplant trades."
If the guidance will contemplate	"Bubble Limit NPDES permits integrate the aggregate waste load allocations (WLAs) or prescribed limits within a watershed under a

watershed/general permits with bubble effluent limits	group “bubble.” Such limits may be considered by [STATE AGENCY] to meet reductions prescribed under a TMDL. When permittees share an aggregated WLA, either in a watershed permit or in the individual permit of the parties that are sharing the load, an aggregate limit should be developed for the group as well as individual limits for each permittee in the group. This aggregate limit provides assurance to the permittees meeting their requirement that they will not be held responsible in the event one or more of the other permittees discharge above their respective individual limit. Bubble limits must be carefully evaluated to ensure localized impacts do not occur.”
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2.1.2 Point-Source-to-Nonpoint-Source Trading

Nonpoint sources create credits by implementing approved best management practices (BMPs) that reduce the amount of pollutant run-off. If a BMP is installed and the pollutant reduction is calculated and documented according to the BMP’s requirements, a credit can be created that may be sold to a point source. A nonpoint source credit is characterized by an amount of pollutant load reduced and a period of time during which the reductions occurred. As with point-source-to-point-source trades, these factors must be consistent with a point source’s NPDES requirements in order to be used towards compliance with the point source’s effluent limit. The credit amount is equal to the load reduction below baseline conditions (Section 3.2), which is calculated using the appropriate quantification method for a given BMP and then adjusted by the appropriate trading ratios (Section 5.1).

A point source may maintain or increase its actual pollutant discharge for a given period of time by purchasing credits generated during the same period of time by a nonpoint source located within the Trading Area (Section 2.3) defined in an existing watershed trading framework or a permit’s water quality trading plan. When nonpoint source reductions are used to offset point source discharges, the point source retains full responsibility for the quantity and delivery of the credits purchased from a nonpoint source and uses to meet its effluent limits (unless offset by using a trading program’s credit reserve account).

There are a number of ways that the state’s policies can buffer permittees from performance liability for individual projects. The state may require performance bonds, develop reserve account, or require that projects be protected by permanent easements. See Section 5 of the National Network Guide for a comprehensive review of mechanisms to mitigate risk and uncertainty.

A credit is effective for use by a buyer only after it has been quantified, reviewed, and certified (Sections 4 and 7), and then, the credit may only be used during its period of performance, or credit life (Section 3.6).

Should [STATE AGENCY] later determine that the BMP is not producing the expected reduction, the credit for that period may be nullified or reduced, and the point source’s effective discharge for that [TIME PERIOD] may need to be adjusted accordingly (or offset by using a trading program’s credit reserve account). Mechanisms used to verify [“reductions” and/or “project implementation”] include Site Screening, Project Review and Certification, monitoring, trade information tracking (including use of a trade registry), and recordkeeping and reporting (Section

- 7). [VERIFICATION ENTITY] will oversee verification of nonpoint source [“reductions” and/or “project implementation”].

2.2 Appropriate Regulatory Trading Instruments & Sectors

Agency Policy	Suggested Language
Guidance will establish a pre-defined list of appropriate regulatory instruments and seller types for trading	“[STATE AGENCY] has determined that the permit and sector types in Table 2.2 are appropriate tools for initiating, tracking, and monitoring trading activity.
The guidance will allow an agency to decide whether regulatory instruments or seller types are appropriate for trading on a case-by-case basis	“[STATE AGENCY] will consider appropriate, eligible trading participants on a case-by-case basis.”

Table 2.2. Permit and Sector Types Eligible to Buy or Sell Credits

Insert specific permit types for which trading will be allowed. If established, refer to state rule or trading guidance for pre-determined list. See Sections 2.2 of the National Network Guide for options on regulatory instruments, or types of trades. States can also include nonpoint-nonpoint trades, which are not included in this template.

Insert list of those sectors and land use categories eligible for trading. If established, refer to state rule for pre-determined list.

Delete if state will make determination on a case by case basis.

Buyer/permit type
e.g., NPDES wastewater permit holders
e.g., NPDES MS4 permit holders
e.g., Entities seeking a §401 Certification
e.g., Publicly owned treatment works (POTW)
e.g., Industrial dischargers
e.g., Confined animal feeding operations (CAFOs)/ Animal feeding operations (AFOs)
e.g., Agricultural operations
e.g., Construction and development activities

2.3 Trading Areas

Trades need to occur within a defined geographic boundary, known as the Trading Area, incorporated into a watershed trading framework, where available, or permit water quality trading plan. Relevant trading documents that define the Trading Area should include both a visual map of the area and general description of the boundaries. Trading Areas must be based on the science of a watershed. A Trading Area helps ensure there are no localized or downstream impacts and that trades do not cause or contribute to a violation of water quality standards.

See Section 2.3 of the National Network Guide for discussion of Trading Areas. One of the options below is applicable where the TMDL defines a *point of concern*, where water quality goals must be met. The point of concern may be an impaired lake, estuary, or other water body, and is generally the most downstream point within the Trading Area. For example, many TMDLs for nutrients (e.g., Chesapeake Bay¹⁵ and Lower Boise River¹⁶) or water temperature (e.g., Willamette River¹⁷) identify a *point of maximum impact*, which is the location within the waterway where the effects of pollutant loading have been identified as the greatest, or the monitoring station at which impairment/attainment will be assessed.

Agency Policy	Suggested Language
If the guidance will present several options for Trading Areas	“Trading Areas will be defined by an applicable water quality strategy or TMDL, and in general will be upstream of a point of concern within a given watershed. In some cases, trading will be restricted to upstream of a point of discharge or only within [STATE AGENCY]. Generally, trading between basins is inappropriate, but may be appropriate in specific situations where the science supports it.”
If trading needs to be upstream of a “point of concern” in the same watershed	“Credits need to be generated upstream of a [“point of concern” or “point of compliance,” or “point of impairment/attainment”] within the same watershed defined in a TMDL or similar water quality strategy.”
If trading needs to be upstream of the point of discharge	“Credits need to be generated upstream of a point of discharge within the same watershed defined in a permit or similar regulatory instrument.”
If trading with downstream sources is allowed within a small	“Credits can be purchased from sources downstream of the point of discharge, but only within a small watershed (e.g., HUC-12).”

¹⁵ MDA 2008a, *supra* note 94, at p.7.

¹⁶ Idaho Department of Environmental Quality, *Lower Boise River Subbasin Assessment and Total Maximum Daily Load*, at § “TMDL Targets”, (2015), available at <https://www.deq.idaho.gov/media/1118789/draft-final-lbr-tp-tmdl-addendum-2015.pdf>.

¹⁷ Oregon Department of Environmental Quality, *Willamette Basin TMDL*, pp. 14-32 – 14-33, (2006), available at <http://www.deq.state.or.us/wq/tmdls/docs/willamettebasin/willamette/chpt14wqmp.pdf>.

watershed	
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Any watershed trading framework or water quality trading plan needs to analyze the potential for localized impacts and be specific about measures and/or monitoring that will be completed to ensure there are no localized impacts. More information on analyzing potential for local impacts can be found in Section 3.1.2. If a TMDL has already conducted some or all of this analysis, it should be used.

2.4 Appropriate Pollutants for Trading

This section defines pollutants that the state will consider for trading. As written, it assumes that the state will develop a pre-approved list of pollutants and allow for the approval of other pollutants as appropriate and with adequate information. The 2003 U.S. EPA Trading Policy encourages the trading of nutrients, sediments, and other pollutants, but does not currently support the trading of *persistent bioaccumulative toxics*.¹⁸ Most trading programs to date have focused on phosphorus and nitrogen. Trading has also occurred for pollutants such as temperature. Additional considerations are discussed in Section 2.4 of the National Network Guide.

[STATE AGENCY] considers [POLLUTANTS] appropriate pollutants for trading—specifically:

- [NAME FORM OF POLLUTANTS IF NECESSARY]; and
- [NAME FORM OF POLLUTANTS IF NECESSARY].

The unit of credit should be tied to the unit of pollutant in a permit. [STATE AGENCY] supports trades where adequate information exists to establish and correlate water quality improvements from implementation of best management practices or technological measures.

[POLLUTANTS] have the potential to threaten public health and, as such, [should not be considered for trading,” or “may be considered on a case by case basis with approval from [STATE AGENCY],” or “will be considered on a case by case basis with approval from [STATE COMMISSION]”]

2.5 Appropriate Credit Generating Actions

This section discusses the eligible actions or BMP-types for generating credits. Identifying pre-approved BMPs may occur at the state level or may be more appropriately identified at the individual trading program level. If the template users would like to include a pre-approved list of BMPs in this guidance, see Section 2.5 of the Framework Template for sample text. See Table 2.5a and 2.5b of the National Network’s Guide for options and considerations for selecting appropriate credit generating actions.

2.6 Environmental Justice & Equity Considerations

Conditions related to equity and environmental justice are most likely to be incorporated throughout the trading program and this guidance, making this section unnecessary. However, states may wish to deliberately describe the development and justification for those conditions (e.g., use of EPA’s

¹⁸ 2003 U.S. EPA Trading Policy, *supra* note 2, at p. 1610.

Environmental Justice Screening Tool). Section 2.6 of the National Network Guide provides more discussion on how these issues relate to trading.

3. Trading Eligibility

This section explains the basic eligibility requirements that credit buyers and credit sellers need to meet in order to participate in trading.

3.1 Eligibility for Buyers and Trades

3.1.1 Meeting Technology-Based Effluent Limitations (TBELs)

The use of trading to meet TBELs is prohibited in the 2003 U.S. EPA Trading Policy unless expressly authorized by the underlying effluent guidelines. Reiterating that prohibition here is somewhat redundant, but can be comforting to stakeholders to see repeated.

A point source that has attained applicable TBEL requirements can obtain credits to achieve its water quality based effluent limits (WQBELs). The CWA requires point sources to meet the more stringent of TBELs or WQBELs. Trading is not allowed to meet TBELs unless expressly authorized by the underlying effluent guidelines.

3.1.2 Avoiding Localized Impacts

See Section 3.1.2 of the Network's guidance for more discussion on avoiding localized impacts.

The [[“permit evaluation report” or “fact sheet”](#)] needs to analyze the potential for localized impacts and be specific about measures and/or monitoring that will be completed to ensure there are no localized impacts. A localized impacts assessment should address the following:

- Near-field analysis of potential impacts on local aquatic biota from a facility's effluent.
- Comparison of effluent data to relevant regional water quality standards (both narrative and numeric).
- Consideration of all parameters that may have a negative impact on biota: chlorophyll-*a*, turbidity, dissolved oxygen, pH, biological oxygen demand (BOD), indices of biotic integrity for macroinvertebrates or fish.

In addition, no trades can lower the existing water quality of a Tier 2 (high quality) or Tier 3 (outstanding quality) water body under [STATE AGENCY's] anti-degradation policy, or authorize backsliding in an NPDES permit unless one of the exceptions in CWA §402(o) and 40 CFR §122.44(l) is shown to apply.

3.1.3 Compliance with Anti-degradation

States may choose to rely on existing anti-degradation policies instead of developing any provisions specific to trading. In that case, repeating those policies here is not necessary, but may be comforting to stakeholders. In place of Sections 3.1.3 and 3.1.4, consider inserting the following, “In addition, no trades can lower the existing water quality of a Tier 2 (high quality) or Tier 3 (outstanding quality) water body under [[STATE AGENCY's](#)] anti-degradation policy, or authorize backsliding in an NPDES permit unless one of the exceptions in CWA §402(o) and 40 CFR §122.44(l) is shown to apply. Applicable TMDLs.”

40 CFR §131.12 establishes requirements for states to implement statewide anti-degradation policies that, at a minimum, maintain and protect the level of water quality necessary to support existing uses, maintain and protect water quality that exceeds the level needed to support CWA §101(a)(2) uses unless procedures are followed to demonstrate that lowering water quality is necessary to accommodate important economic or social development in the area in which the waters are located, and maintain and protect the water quality of any outstanding national resource waters [STATE AGENCY]'s anti-degradation policy is found in [REFERENCE] and any activity conducted to generate credits for trading in [STATE NAME] must be consistent with this policy. Consistent with U.S. EPA policy, [STATE AGENCY] does not believe that trades and trading programs will result in 'lower water quality', as that term is used in 40 C.F.R. § 131.12(a)(2), when the trades or trading programs achieve a no net increase of the pollutant traded and do not result in any localized impairment of designated uses.

Example Anti-degradation Language from Oregon regarding Tier 2 (high quality) waters

The Environmental Quality Commission or DEQ may approve a lowering of water quality in a water body that currently meets all water quality standards (i.e., high quality water) if a demonstration is made that 1) all water quality standards will be met and beneficial uses protected, 2) no other reasonable alternative exists, and 3) the lowering of water quality is necessary for social and economic benefits that outweigh the environmental costs. For more information, see the DEQ Anti-degradation Policy Implementation IMD at <http://www.deq.state.or.us/wq/pubs/imds/antideg.pdf>.

3.1.4 Compliance with Anti-backsliding

States may choose to rely on existing anti-backsliding policies instead of developing any provisions specific to trading. In that case, repeating those policies here is not necessary, but may be comforting to stakeholders. In place of Sections 3.1.3 and 3.1.4, consider inserting the language suggested in the call out box above section 3.1.3 above.

As used in this guidance, anti-backsliding refers to the requirements of CWA §402(o) and 40 CFR §122.44(l) that generally prohibit the renewal, reissuance, or modification of an existing NPDES permit that contains effluent limitations, permit conditions, or standards that are less stringent than those established in the previous permit. The CWA and Code of Federal Regulations (CFR) also establish exceptions to the anti-backsliding prohibitions in CWA §402(o) and 40 CFR §122.44(l), respectively

Consistent with U.S. EPA policy, [STATE AGENCY] does not view water quality trading to meet a water quality-based effluent limitation as a less stringent effluent limitation, provided the permittee is still responsible for the same level of pollutant reduction. Trading offers the discharger an additional means of achieving its limitation and, therefore, is not subject to the anti-backsliding prohibitions.

3.2 Project Eligibility to Generate Credits

Note that the National Network Guide focused on nonpoint source credit sellers. This template has been expanded to include point source credit sellers as well.

Both point sources and nonpoint sources may create pollutant reductions. However, not all reductions necessarily can be counted as credits. A pollutant reduction may need to be discounted to reflect uncertainty, attenuation, and/or policy choices. As an example, if a permit or TMDL requires a reduction from a specific source of 100 pounds per day of a pollutant into a water body and the source reduces its pollutant amount by 110 pounds per day, then the source has up to 10 pounds per day to trade. Before that reduction can become a credit, the reduction must go through several checks:

- *Project uses an approved BMP:* Each watershed trading framework or plan can [[“create a list of pre-approved BMPs from state-approved BMPs or “can propose eligible BMPs for approval by \[STATE AGENCY\]”](#)]. Each pre-approved BMP should reference or include a guideline (e.g., NRCS practice standards) that articulates how a BMP should be designed, constructed, maintained, and monitored over time. Watershed trading frameworks and water quality trading plans can also provide a process for [\[STATE AGENCY\]](#) to review new and innovative approaches on a case-by-case basis (Section 6).
- *Projects need to be consistent with other laws and in good standing:* To generate a credit, a project should be in compliance with applicable federal, state, local, and tribal requirements.
- *Projects need to demonstrate consistency with baseline requirements.* See Section 3.2.1.
- *Project BMP’s pollutant reduction quantified in a verifiable way.* While pollutant reductions from point sources must be directly measured, credits produced by nonpoint source practices can be quantified using BMP efficiency rates, [\[STATE AGENCY\]](#) -approved modeling, and/or direct measurement. This quantification requires clear documentation of pre-project conditions and a consistent methodology for measuring or estimating post-project conditions.
- *Projects must adequately account for risk and uncertainty.* Pollutant reductions must account for uncertainty in model inputs or assumptions (Section 5), or for unknowns related to the attenuation of the pollutant through the water system (Section 4). It may also be important to adjust the reduction amount to account for risk of delayed, decreased, or nonperformance.

3.2.1 Point & Nonpoint Source Credit Baselines

Setting baseline requirements, particularly for nonpoint sources, is often difficult. The National Network Guide provides a framework for identifying sources of information relevant to setting baseline. Coordination with stakeholders as well as federal, state, and local agencies is important.

Sections 3.2.2-3.2.5 of this template and the National Network Guide are all related to setting baseline requirements. The template user may wish to combine or remove these sections from the final Framework, or retain them as a place to provide justification for the various decisions that went into designing the baseline policy.

The trading baseline for both point and nonpoint credit sellers establishes a minimum level of water quality improvement and/or level of implementation that must be achieved before the project or landowner is eligible to generate credits.

A. Point source baselines

Credits are earned by pollutant reductions beyond a baseline level of pollutant reduction. For point source sellers, baseline is equivalent to the effluent limit in their NPDES permit (i.e., both

applicable TBELs and WQBELs are met prior to a point source selling credits). Any applicable TBELs must be met by the point source buyer prior to purchasing credits.

B. Nonpoint source baselines

Nonpoint source trading baselines should be set in a manner that considers whether the credit-generating activities go beyond any current federal, state, tribal, and local requirements; existing abatement requirements derived from a TMDL or other water quality goal; and/or required by the watershed trading framework or plan. Nonpoint source baseline levels need to be defined in a watershed trading framework or plan. Figure 3.5.2 below provides a decision tree to help set nonpoint source baselines that would apply to individual landowners in a watershed.

C. Expressing Baseline for Nonpoint Sources

Nonpoint source baseline requirements can be expressed in the following ways:

- minimum technology-based or practice-based (BMP) requirement;
- performance-based threshold requirement (e.g., a numeric load such 20/lbs TP/year/acre;
- % pollution reduction from current loading levels;
- standard water quality contribution (e.g., 10% of seller's credits retired to meet baseline); or
- Existing condition.

3.2.2 Timing of Meeting the Trading Baseline

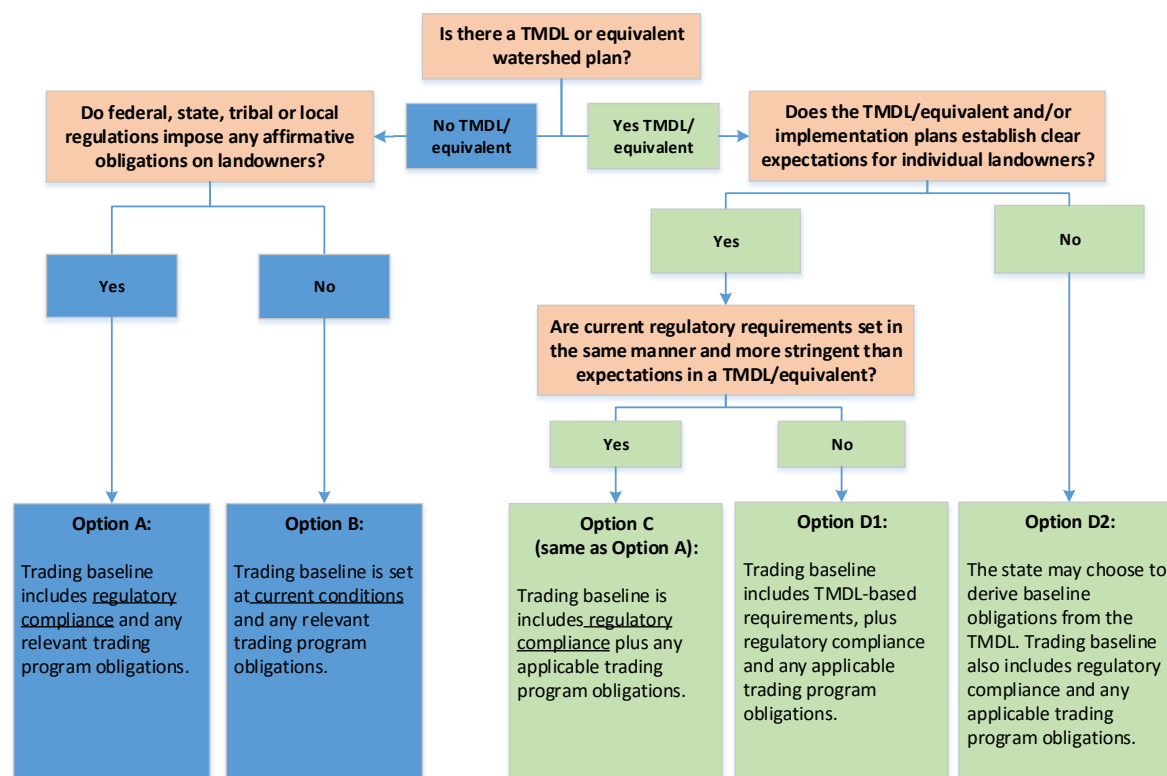
This template assumes that the timing of meeting trading baseline may vary among programs. Localized factors such as potential program participation, as well as TMDL obligations are likely to factor into the most appropriate timing of meeting the trading baseline.

The permit water quality trading plan or watershed trading framework, where available, should define when the trading baseline must be met. The agency will consider the following approaches:

- Baseline must be met prior to generating credits;
- Baseline may be met simultaneously with the generation of credits; or
- Baseline will be phased in over time in a defined manner.

Figure 3.2.2: Options for Deriving Nonpoint Source Baselines

An editable version of this diagram is available in a separate file within the toolkit



3.2.3 Scale of Applying Baseline for Nonpoint Sources

One or more of the approaches to baseline scale can be selected from the table below. Alternately, the template user may choose to define the scale at which baseline is applied in the watershed trading framework, in which case, this section should be omitted.

Agency Policy	Suggested Language
Baseline requirements apply to an individual field.	"Baseline requirements will be applied to the individual site intended for credit generation." Consider pairing this option with language to guard against leakage, either here or elsewhere in this guidance. For example, "Actions leading to degradation of environmental conditions must not increase elsewhere on the operation as a result of meeting baseline requirements."
Baseline requirements apply to a farm operation.	"Baseline requirements will be applied to entire agricultural operations."
Baseline requirements apply to	"Baseline requirements will be applied to all agricultural

all farm operations of the individual or entity.	operations within the Trading Area that are managed by the individual or entity intending to generate credits”
Baseline requirements apply to all nonpoint sources within the subwatershed.	“Baseline requirements will be applied to all nonpoint sources within the subwatershed prior to any credit generation.”

3.2.4 Project Timing (base year)

See Section 3.2.5 of the National Network Guide for considerations around the options provided below.

The permit water quality trading plan or watershed trading framework, where available, should define the base year after which projects are eligible to generate credits. The agency will consider the following approaches:

- Fixed base year based on the year of the TMDL;
- Fixed base year based on the approval of the water quality trading plan; or
- A different window of eligibility.

3.2.5 Use of Public Conservation Funds

Restrictions on the use of public funds may also be defined in a state rule. Adjust language for consistency if use of public funds is addressed differently in state rule.

This document includes provisions governing the use of *public conservation funds* for activities that generate water quality credits. Public conservation funds include those targeted to support voluntary natural resource protection and/or restoration, with a primary purpose of achieving a net ecological benefit through creating, restoring, enhancing, or preserving habitats. Public loans intended to be used for capital improvements of public water systems (e.g., Clean Water State Revolving Funds and USDA Rural Development funds) and utility stormwater and surface water management fees are not public funds dedicated to conservation.

Public conservation funds can help make bigger and more robust projects. [STATE AGENCY] supports the use of cost sharing to help nonpoint sources meet baseline requirements, including using those funds to install baseline BMPs (e.g., a nutrient management plan or irrigation management plan). However, the proportion of a credit-eligible project funded by public dollars dedicated to conservation cannot be used to generate credits nor can the same BMP on the same acre of land cannot be sold to offset the impacts from two different credit buyers. However, the use of proportional accounting for multi-credit projects is not considered double counting. For example, if NRCS’ Environmental Quality Incentives Program cost shares 50% of a sediment basin, and a farmer pays for 50%, then the farmer could sell 50% of the total credits from the project. In the original example, this means that of the 10 remaining pollutant reductions.

3.2.6 Credit Stacking

Credit stacking refers to the generation of credits for multiple environmental markets (e.g. wetland and phosphorus credits) from a single project area. Most environmental markets are in the early stages and therefore the issue of credit stacking is rare. However, it is important to specify if and how credit stacking is considered to avoid double counting.

Agency Policy	Suggested Language
Credit stacking is PROHIBITED	In [STATE NAME], projects that have sold credits for another environmental market cannot sell water quality credits
Credit stacking is ALLOWED with proportional accounting	In [STATE NAME], a project can generate multiple types of credits, but those credits need to be linked and accounted for proportionally. For example, if a project generates both wetland and phosphorus credits on the same 10 acres, and sells 50% of the project's wetland credits, then the farmer could only sell 50% of the total phosphorus credits from the project.
Credit stacking is ALLOWED, without a specific accounting method	In [STATE NAME], credit stacking may be admissible in some scenarios pending approval by [STATE AGENCY].

4. Quantifying Pollutant Reductions for Water Quality Credits

Section 4 of the National Network Guide provides information for agencies on how to select and evaluate a credit quantification approach; however, the subsections in the National Network Guide are not particularly suited for this template. Consider using this section to define the eligible quantification methods and provide references to documentation of the methods technical underpinnings and assumptions, instructions for use, and instructions for documenting credit quantification.

Pollutant reductions can be quantified in several ways to generate water quality credits. Quantification includes an estimate of the pollutant reduced at the end of a pipe (point source) or at the edge of a field (nonpoint source). It may also include delivery into the waterbody, and attenuation between the point of generation and point of use.

Reductions can be measured directly, or they can be estimated using models and BMP efficiency rates. Different quantification methods will work better for different BMPs in different watersheds. A watershed trading framework or plan's credit quantification approach needs to be approved by [STATE AGENCY], rely on the best available science, and be accurate, repeatable, sensitive, and transparent.

For all quantification methods, a watershed trading framework or plan should articulate potential sources of uncertainty and how those uncertainties will be managed and mitigated.

Documenting Point Source Credit Quantification

This section will likely be similar to other state requirements for measuring and documenting permittee effluent loads/concentration. Consider referencing those requirements here.

4.1 Documenting Nonpoint Source Credit Quantifications

The BMP guidelines referenced in a watershed trading framework or plan should articulate what documentation and information is needed to accurately quantify pollutant reductions in a way that can be reviewed during the Project Review process.

5. Managing Risk & Uncertainty

5.1 Trading Ratios

See Sections 5.1.1-5.1.4 of the National Network Guide for discussion of particular types of ratios.

This guidance template assumes specific ratios will be set for a watershed trading framework or plan. States may choose to set some default ratios or particular criteria within state guidance to create more certainty for watersheds and permits. The National Network didn't recommend specific, numeric ratios. Instead, the Network recommended considering the types of ratios listed below, and documenting the state's rationale behind why it chooses particular numeric ratios or types of ratios.

Trading ratios are numeric values used to adjust available credits for a seller or credit obligation of a buyer. Trading ratios developed for a watershed framework or water quality trading plan should consider the program's objectives, watershed goals, economic feasibility, and acceptable levels of risk or uncertainty.

Each watershed trading framework or plan will consider the six types of ratios listed below and document whether each ratio is needed, and if it is, establish the applicable ratios that framework or plan. Ratios that adjust credit quantities produced at the end of a pipe or edge of a field can include:

- 1) Delivery from a field to a water body and through a water body;
- 2) Attenuation through a water body before reaching a point of environmental concern.
- 3) Equivalency between different pollutants (e.g., between phosphorus and nitrogen for dissolved oxygen);

Delivery, attenuation, and equivalency can also be addressed through quantification in Section 4, in which case a ratio may not be necessary

- 4) Uncertainty (e.g., measurement or estimation error, variability in BMP performance, variability in weather);
- 5) Reserve (e.g., for BMP failure or temporary diminishment); and

A reserve ratio is not necessary if other program elements address *force majeure* and other unforeseen events causing catastrophic BMP failure. This risk can be addressed by aggregators, private insurance, or contract provisions between parties.

- 6) Retirement /water quality contribution. Ratios may also be used to increase credit quantities to incentivize restoration of priority areas, to incentivize early action, etc.

A watershed trading framework could choose to apply a retirement ratio only to certain BMPs, such as those that provide little or no ancillary benefits.

It may be that other aspects of the watershed trading framework (e.g., eligibility criteria or conservative model assumptions) make some types of ratios unnecessary.

In combination, an overall trade ratio should be greater than 1:1. In relatively simple trades between an upstream seller and a downstream buyer, a ratio may be close to 1:1 if the pollutant is not diverted or diminished as it moves downstream.

Ratios will be reviewed in conjunction with the reissuance of NPDES permits for point sources. The reviews will be conducted by [STATE AGENCY] or its designee.

6. Credit Characteristics: Issuance, Life & Renewal

Once a pollutant reduction has been converted into a credit, there are several aspects of that credit that are important to define.

6.1 Credit Life & Project Life

A credit's "life" is the period from the date a credit becomes usable by a permittee for compliance purposes through to the date when the credit expires and is no longer valid. The credit life needs to be based in science and tied to the critical period(s) for a watershed.

6.1.1 Credit Life

Credit life will be set in the watershed trading framework or plan. The state will consider the following approaches, provided it is consistent with applicable TMDLs, pollutant dynamics, and watershed dynamics:

- annual,
- applicable during a discrete season or months, or
- covering a discrete number of years.

6.1.2 "Banking Credits" for Later Use

Credits cannot be used outside of their approved credit life, also known as banking (e.g., a pollutant reduction in 2012 cannot be used to offset a discharge in 2016).

6.1.3 Project Expiration & Renewal

Where projects are continuing to function and are properly maintained, the pollutant reductions from projects [can](#) be renewed to generate credits in subsequent compliance cycles (though the reductions may need to be adjusted to reflect the baseline requirements and trading ratios—See Sections 3.2 and Section 5 — that apply at that future point in time).

6.1.4 Other Credit Characteristics

A. Credits are not property rights

Similar to a point source's effluent limit, credits are tied to a specific permittee's authorization to discharge. Just as U.S. EPA and the [\[STATE AGENCY\]](#) may need to adjust a point source's effluent limit, credits may need to be adjusted. [\[STATE AGENCY\]](#) does recognize that approved credits are *tradable goods with an ascertainable value, and encourages predictable and transparent management of trading and other water quality programs*.

B. Credits as assets

Use this section if the state wishes to make any clarifying statements regarding the nature of a credit that may be useful for their designation within financial systems. The National Network does not provide options or considerations on this topic.

D. Credit treatment for tax purposes

Use this section if the state wishes to make any clarifying statements regarding the nature of a credit that may be useful for the tax treatment of credit-related payments or holdings. The National Network does not provide options or considerations on this topic.

E. Interaction with farm bill programs

Credit sales should not impact a farmer's eligibility for Farm Bill programs in most circumstances; however, where trading overlaps with Farm Bill programs, it is the obligation of trading participants to work with USDA in order to understand any possible implications of trading on Farm Bill program participation.

7. Project Implementation & Quality Assurance

This section describes the standards that ensure the projects seeking credits were implemented to a high standard, do not create unanticipated environmental impacts, and are maintained in a way that achieves the credited water quality benefits for as long as the project is valid.

7.1 Project Site Screening (moved to Section 8)

Project Site Screening has been moved Section 8. The header is included here to maintain consistency with the organization of National Network Guide.

7.2 BMP Quality Standards

This section is used to describe expectations for BMP quality and how the state will evaluate them. The template user may wish to allow for more than one such option at the state level, allowing the approach to vary by framework or water quality trading plan.

State Policy	Suggested Language
BMP Quality Standards define performance targets for credit generating actions	“BMP quality standards set design, installation, maintenance, and performance standards can help to ensure that BMPs are performing as anticipated. Quality standards for the pre-approved BMPs [in Appendix X of this guidance” or “should be defined within a watershed trading framework or plan”].
Certified professionals judge BMP quality	“Credits may be issued if the project has been overseen and designed by one of the following types of certified professionals (e.g., a NRCS Technical Service Provider, stormwater engineer). For each BMP, the applicable expertise is defined in Table X”
BMPs are reviewed by the state on a case-by-case basis	“ STATE AGENCY will review installed BMP for quality and consistency with quantification of water quality benefits.”

7.3 Preparing a Project Design & Management Plan

This section is written consistent with Option B in the National Network Guide, which sets minimum expectations for project design and management plan, but does not require the use of a standard template. Section 7.4 of the National Network Guide provides other options.

All credit-generating projects need to have a project design and management plan. The project design and management plan should be prepared by someone qualified¹⁹ to select and properly design appropriate BMPs to improve water quality at a specific location.

A project design and management plan should meet the following requirements:

- Be designed with the goal of improving water quality.
- Meet all applicable laws and regulations (wetlands, stream channel alteration, etc.).
- Cause no significant adverse impacts to water quality or other resources (i.e., shall not violate water quality standards).
- Outline specific goals.
- Describe the proposed BMPs, the NRCS or other relevant quality standards for each BMP, and the BMP implementation plan.
- Describe the BMP monitoring and maintenance plan and how it will ensure the BMPs stay consistent with quality standards during the project life.

Whether the project design and management plan addresses resource issues other than water quality is up to the producer. The project design and management plan may address resource issues other than water quality at the discretion of the producer.

Agency Policy	Suggested Language
If project design and management plans are required to use a template	All credit-generating projects need to prepare a project design and management plan using the state-approved template in Appendix X . The plan should be prepared by someone qualified to select and properly design appropriate BMPs to improve water quality at a specific location. Whether the plan addresses resource issues other than water quality is up to the producer.
If project design and management plans are not required	Credit sellers need to submit adequate information for [STATE AGENCY] or their designee to review and approve the project.

7.4 Documenting Pre- & Post- Project Site Conditions

This section is included to maintain consistency with the format of the National Network Guide, but may not be applicable for state-level guidance. This section is used to describe specific documentation

¹⁹ A qualified professional could be any of the following: an NRCS certified planner or an NRCS employee, a certified crop advisor, or a professional services provider. Some BMPs, such as constructed wetlands, will require consultation with other experts as well, subject to [\[STATE AGENCY\]](#)'s approval (not sure on wording here). Some BMPs on the list may specify the type of expert that will need to be consulted in the project's design, installation, and maintenance requirements.

requirements for pre- and post-project site conditions, if those requirements are applicable for the entire state. States may also wish to set these requirements for a watershed trading framework or individual permittee.

7.5 Required Project Protection

Topics from Sections 7.5.1-7.5.3 of the National Network Guide have been combined here. See the guide for considerations on whether to require project protection, use of a minimum protection period, and whether the protection needs to run with the land.

Adequate legal and financial safeguards [*“must be in place” or “should be considered”*] to protect the project for a minimum time period. Legal protections might include *leases, deed restrictions, easements, contracts, etc.* that protect the BMPs as they operate for the life of the project.

Adequate legal and financial safeguards must be in place to protect the project for a minimum time period [*“for the duration of the credit life”, “five (5) years for non-structural BMPs and twenty (20) years for structural BMPs”*]. These minimum stewardship times recognize the balance between maintaining operational flexibility for farmers and the need to provide some certainty for point source buyers over the life of their NPDES permit and facility plan. Minimum protection periods for the pre-approved BMPs [*“are included in BMP Quality Standards in Appendix X of this guidance” or “should be defined within a watershed trading framework or plan”*].

7.6 Stewardship Funds

Credit sellers *should also demonstrate that they* [*“have” or “will have”*] *adequate funding to operate and maintain BMPs* *for the duration of the credit life*. *These types of financial protections could include maintenance funds, performance bonds, restricted accounts, insurance, financial Certification, etc.* Different BMPs may require different lengths and amounts of funding. Stewardship requirements for the pre-approved BMPs [*“are included in BMP Quality Standards in Appendix X of this guidance” or “should be defined within a watershed trading framework or plan”*].

8. Project Review, Certification, & Tracking

This section describes a standard process to confirm a credit-generating projects implementation, review project performance, and track credits over time. This section will be highly variable as it is based on the state's process (including public notice and comment) and terminology. This template provides one example of how a state may choose to manage these aspects of program administration, along with a few options within that example.

Some of the terms and assumptions applied here include:

- Credits become real and can be used after a "Credit Certificate" is signed by the state agency, which occurs after implementation and initial Project Review are complete.
- "Registration" is the process of entering credits in a credit registry or ledger.
- Credits are used when they are reported on a DMR, after which they are retired and cannot be used or sold again.

It may also be relevant to note that while including process-related information in this guidance provides a high level of transparency and certainty for credit sellers, it may hamper the state's ability to update processes or forms as the program involves. Template users may consider omitting operational information from the guidance in favor of developing an informal "handbook" or "protocol" for credit sellers that provides specific instructions and can be more easily updated.

8.1 Initial Project Site Screening

Watershed trading frameworks and plans may choose to include an initial site screen for potential credit-generating projects to confirm eligibility (based on appropriate site conditions, per BMP Guidelines, and baseline requirements) before a credit seller invests significant time or money. [STATE AGENCY] believes this step provides good information ["and should be required in the watershed trading framework or plan" or "but is optional"].

Site Screening does not guarantee a project will be successfully reviewed and certified, but may help credit sellers reduce risk and avoid unnecessary costs by identifying any potential problems before investments are made. Basic eligibility criteria for non-point sources are listed in Section 3.4 of this guide. Table 2.5 lists BMPs approved for credit generation.

The watershed trading framework or plan should define the entity that is to conduct project Site Screening, which may be either the state agency, permittee, or an approved third party. The credit seller should submit the following documentation with a request for Site Screening:

- Draft Project design and management plan
- Draft project protection documentation (e.g., lease, easement, etc.)
- Summary of project eligibility relative to requirements in the watershed trading framework or plan

Complete and correct information is required for accurate evaluation project eligibility. Approval represents only a preliminary determination of the project's eligibility to generate credits. The type, quantity, and final approval of credits are confirmed in later phases. [Where a project is not approved, a justification and suggestion for remedy will be provided.](#)

8.2 Initial Project Review & Credit Certification

See Section 8.1 and Section 11.1.2 of the National Network Guide for discussion of what information is required during Project Review, how many projects get reviewed, and who completes the initial review. As noted above, the content of this section will vary greatly depending on the state's process and terminology. Specifically, some states may conduct administrative and technical review prior to project implementation, in which case, this step includes only confirmation of project implementation.

8.2.1 Required Components of Initial Review

A. Point Sources

A point source wishing to generate credits will submit to [\[STATE AGENCY\]](#) a [credit application for review](#) showing credits generated on a [monthly](#) basis using [daily](#) monitoring data, application of baseline requirements, and application of any trading ratios.

Proposed point source credit project design and management plans are reviewed by [\[STATE AGENCY\]](#) as part of the procedures for NPDES permits. The credit transaction is also required to be reported in the DMRs for both the point source buyer and seller in the same time period the point source buyer is using the credits.

B. Nonpoint Sources

Nonpoint sources wishing to generate credits will submit to [\[STATE AGENCY\]](#) a [credit application for review](#) ([Section 8.1.3](#)), after which a Project Review is conducted. The reviewing entity should be defined in the watershed trading framework or plan, and [may be either the state agency, permittee, or an approved third party](#). This review includes:

- [Administrative Review](#): Confirmation of project eligibility ([if not already confirmed during Site Screening](#)) relative to all requirements in the permit.
- [Technical Review](#): Confirmation that credits were quantified accurately via review of [\[QUANTIFICATION METHOD\]](#) and that all required documentation (e.g., data files, model parameters and/or assumptions) is complete and correct.
- [Confirmation of Project Implementation](#): Confirmation that the project was installed ([via a site visit or other means](#)) consistent with an approved Project design and management plan, and that any BMPs expected as part of baseline are in place.

8.2.2 Confirming Project Implementation

Use this section to describe whether site visits are conducted and who conducts them.

Nonpoint source credit project implementation will be confirmed [via site visit](#). [Site visits](#) may be conducted by either the state agency, permittee, or a qualified third party, as defined in the watershed trading framework or plan. A site visit should occur within [1 year](#) of project

implementation and before credits may be certified or issued. [STATE AGENCY] may visit the site at any time throughout the life of the credit to confirm implementation.

8.2.3 Required Project Documentation for Nonpoint Source Credit Projects

Describe the project documentation that is required for review of a nonpoint source credit project if it is applicable for the entire state. This is one area of the review process that is particularly likely to change over time as forms or checklists are created, and may be more applicable for an informal “handbook” or “protocol” for credit sellers that provides specific instructions and can be more easily updated over time.

The credit seller should submit the following documentation as part of the [credit application for review](#):

- As-Built (post-construction) project design and management plan
- Final project protection documentation (e.g., lease, easement, etc.)
- Documentation of project stewardship (e.g., stewardship plan)
- Credit quantification package (e.g., data files, model parameters, etc.)

8.3 Ongoing Project Review

A. Point Source Credits

Proposed point source credit projects are reviewed by [STATE AGENCY] as part of the procedures for NPDES permits. Discharge Monitoring Reports (DMRs) will be reviewed and compared with trading information contained in the applicable report, with any material anomalies being investigated by [STATE AGENCY]. Inspections of point source records may include review of documents related to a best management practice’s performance of pollutant reduction.

B. Nonpoint Source Credit Projects

This section defines the process for Project Review after the first year (or first review cycle, where review is not conducted annually), including what information is reviewed, how often, and who is responsible for ongoing verification.

To verify that nonpoint source projects are being maintained and functioning as detailed in their respective project design and management plan (Section 4.5), [[“some” or “all”](#)] nonpoint source credit-generating projects should be reviewed [[“annually,” or “on the schedule described for each BMP in Appendix X,” or “periodically at the discretion of the state agency”](#)]. The reviewing entity should be defined in the watershed trading framework or plan, and [may be either the state agency, permittee, or an approved third party](#).

[Additional reviews may be conducted at any time. The review conducted depends on the individual project proposal, and may include site visits \(Section 8.2.1\).](#) Copies of the reports from these reviews will be provided to the credit holder. NPDES permit holders remain responsible for ensuring the proper implementation of BMPs and the correct amount of credits produced. [Any compliance matters or enforcement actions will be taken up with the NPDES permit holder only.](#)

8.3.1 Ongoing Review of Project Implementation

This section describes whether and how often project implementation will be confirmed throughout the life of the project and can easily be combined with Section 8.2.

Ongoing [site visits](#) to confirm project implementation will be conducted [by the state agency, the permittee, or a qualified third party, as defined in the watershed trading framework or plan.](#)

[\[STATE AGENCY\]](#) [retains the option to](#) visit the BMP sites themselves, to verify the documentation of the BMP design, maintenance, and monitoring performance. NPDES permit holders remain responsible for ensuring the proper implementation of BMPs and the correct amount of credits produced. The permittee will likely wish to hold project developers accountable for project performance through contracts, however the NPDES permit holder shall be held responsible for any compliance matters. Enforcement actions will be taken up with the NPDES permit holder only.

8.3.2 Ongoing Review of Eligibility & Credit Calculation

Use this section to describe whether and how often the eligibility and credit calculations will be revisited throughout the life of the project. Consider combining 8.2.1 and 8.2.2 with 8.2.

[\[STATE AGENCY\]](#) expects that credit sellers will maintain valid documentation of eligibility and accurate credit quantification. For projects lasting longer than 5 years, these materials will go through Project Review (see Section 8) [on a five-year cycle by the state agency, the permittee, or a qualified third party, as defined in the watershed trading framework or plan.](#)

8.3.3 Failure to Meet Performance Standards

In the event that Project Review identifies a failure to meet performance standards, [the permittee should notify state agency immediately, after which the permittee will have 60 days to submit a plan for remedy, including performance benchmarks and the conditions under which credits will be suspended or cancelled.](#)

8.4 Dealing with Differences of Opinion during Project Review

This section is most applicable where third parties conduct Project Review on the agency's behalf. If the role of third parties will be defined in the watershed trading framework or plan, consider omitting this section from the guidance. The dispute resolution approach described in this guidance can be incorporated into the contract for Project Review services.

[In the event that a dispute arises between a project developer and the \[3rd PARTY REVIEWER\] related to verification of a credit estimate, the parties agree in good faith to first seek resolution of the dispute through referral of the matter to the \[STATE AGENCY\].](#)

8.5 Credit Issuance, Tracking, and Reporting

8.5.1 Timing of Credit Issuance

This section assumes the following process steps are in place:

- Credits become real after a “Credit Certificate” is signed by the state agency (Option A from Section 8.4.1 in the National Network Guide), where credit issuance occurs *after* all stages of Initial Project Review, including confirmation of project implementation. Some states may issue credits ex-ante.
- The state agency provides the final approval necessary to issue credits (Section 11.1.2 Option D);
- There is a centralized credit ledger (Sec 8.5, Option A or B); and

A. Point Sources

Once a state agency confirms a point source’s creditable pollutant load reductions, the [\[STATE AGENCY\]](#) will provide the point source with a [Credit Certificate](#), at which time credits are issued and included in the [\[LEDGER MANAGER\]](#) ledger as certified point source credits.

B. Nonpoint Sources

After Project Review of nonpoint source credits, [\[STATE AGENCY\]](#) or [\[3rd PARTY REVIEWER\]](#) will Certify that all aspects of a project are in place and provide a [Credit Certificate](#) to [\[STATE AGENCY\]](#). The [\[STATE AGENCY\]](#) will review the [Credit Certificate](#). Once approved, the [\[STATE AGENCY\]](#) will provide the credit seller with a [Credit Certificate](#), at which point credits issued and included in the [\[LEDGER MANAGER\]](#) ledger as certified point source credits.

The language below makes space for phased release of credits, particularly for BMPs that are slow to mature (e.g., riparian or wetland restoration). The BMPs for which phased credit releases apply should be noted either here or in the BMP Quality Standards Appendices.

Most BMPs will start generating water quality improvements immediately. All credits can be released as soon as these BMPs are installed. For BMPs that take time to mature (e.g., restored wetlands or riparian planting), credits may be released in phases, or a ratio can be used to account for time lag, as described in [Appendix X](#).

8.5.2 Serialization of Credits upon Issuance

Use this section if credit serialization is required. Serialization of credits is analogous to putting a license plate on a car. It provides each unit of environmental benefit with a unique identifier. The primary objective of serialization is to track credits back to the underlying project in the event of project failure.

8.5.3 Tracking Credits and Trades

The focus of this section is expanded from the National Network Guide. This section can describe how credit use, changes in project or credit status should be reported, and to whom. It may be important for tracking purposes to specify when credits are considered “used.” If the roles related to tracking credits will be defined in watershed trading framework or plan, consider omitting this section from the guidance.

Any change in status for the following information must be reported to the [\[STATE AGENCY\]](#) and [\[LEDGER MANAGER\]](#) immediately:

<i>Change</i>	<i>Reporting</i>	<i>Submitted by</i>	<i>How submitted and to whom</i>

Credit status	Note whether the credit is ex ante, ex post, active, retired, suspended, cancelled.	Permittee	[LEDGER MANAGER]
Credit use	The application of credits toward a permit obligation should be reported through a Notice of Credit Use, indicating: the number of credits used, the project(s)/facility generating the applied credits, and signature from the credit owner.	Permittee	[STATE AGENCY] via permittee attestation accompanying DMR and [LEDGER MANAGER]
Trades	The movement of credits between owners should be reported on a Trade Notification Form, including: the transacted credit quantity, project(s)/facility generating the transacted credits, purchase price, and signatures from the buyer and seller.	Trade parties	[LEDGER MANAGER]

Trading parties must generate and maintain records to substantiate the validity of underlying reductions of pollutants and to document trades. These records are to be made available to [STATE AGENCY] upon request. Buyers should retain copies of trading records on site for a five-year period after completion of a trade contract.

8.5.4 Credit Retirement & Resale

It may be important for tracking purposes to specify when credits are considered retired. In establishing a formal timing of credit retirement, consider whether credit re-sale will be allowed.

Credits are considered used after they are applied toward a permit obligation and reported in a DMR. Credits are retired upon receipt of formal notice of use or at the end of the credit life, whichever comes first. Credit use is reported to [STATE AGENCY] and [LEDGER MANAGER] via formal, written notice. The [LEDGER MANAGER] will automatically retire credits at the end of their credit life. Credits may be resold prior to use and retirement.

8.5.5 Suspending or Cancelling Credits

In the event that performance standards or other conditions of the water quality trading plan of framework are not met, the [STATE AGENCY] or [3rd PARTY REVIEWER] will submit a Notice of Credit Suspension to the [LEDGER MANAGER], indicating that credits are suspended and cannot be used or sold. In the event that the nonconformance is not remedied per procedures in Section 8.2.3, [STATE AGENCY] or [3rd PARTY REVIEWER] will submit a Notice of Credit Cancellation to the [LEDGER MANAGER], indicating that credits should be cancelled.

8.6 Credit Ledger & Public Information

Use this section to describe the nature of the credit ledger/registry, responsibilities of the entity managing the ledger, and what information is shared with the public (either via the ledger or otherwise).

This section is written consistent with Option A or B in Section 8.5.1 of the National Network Guide, where credits are tracked in a central ledger. Where the state agency manages the credit ledger, consider adding additional functions related to compliance (e.g., tracking the impact of trade credits on effluent limits, or producing *Trade Summary Reports* required for permit compliance and providing them to the point sources involved in trades). Where the permittee manages their own ledger, consider narrowing the scope of the ledger to only that permittee's credits.

[\[STATE AGENCY\]](#) or [\[PERMITEE\]](#) or [\[3rd PARTY REVIEWER\]](#) is responsible for tracking trades and the day-to-day oversight of trading. It may designate another entity to assist with those tasks. Major functions of trade tracking include the following:

- Not accepting trades that have not been reviewed and certified as meeting program requirements;
- Tracking all trades in a central registry and showing credit balances for credit-generating projects and for permittees;
- Reconciling all trades in the Trading Area to ensure credits are not used more than once;
- Making trading information readily available to regulatory agencies and the public; and

By maintaining the trade registry, [\[STATE AGENCY\]](#) or [\[PERMITEE\]](#) or [\[3rd PARTY REVIEWER\]](#) ensures that an accounting of all trades and credits is available to the public and relevant agencies. The registry must be subject to sound data system and accounting principles with the ability to support outside review.

9. Compliance & Enforcement

This section is largely blank, providing an opportunity for states to specify their own enforcement procedures. These may be the same as other NPDES violations (if these are specified for the state). For additional options, see the National Network publication *Building a Water Quality Trading Program* Section 9.3.

Compliance will be ascertained through the permittee's DMR and annual reports, which shall demonstrate that it has secured and continues to hold an adequate credit balance to meet its established effluent limits. Enforcement of the trading program shall be consistent with [STATE AGENCY] enforcement policies and guidance.

10. Program Improvement & Tracking

10.1 Improving Program Standards, Protocols, & Process

This section describes the approach to updating this guidance, watershed frameworks, and water quality trading plans. Consider consolidating 10.1-10.3.

10.2 Updating Quantification Methods

Agencies may wish to include information on when and how quantification methods will be reviewed and updated, particularly where there are specific review timelines in place for a model or quantification method used in the program.

Quantification methods may be updated periodically, either at the request of the permittee or credit seller (following the process in Section 10.4), or through internal review when proposed or developed by the [\[STATE AGENCY\]](#).

[\[QUANTIFICATION METHOD\]](#) will be reviewed on an [X](#) year cycle to incorporate new monitoring data.

10.3 Incorporating Trading Program Updates

This section describes the timing or process through which changes in the trading program take effect. Typically, this is associated with modifications or renewal of a permit.

Changes in trading program processes and quantification methods must be reflected in the permittee's water quality trading plan in order to take effect.

10.4 Approving New & Modified BMPs

The process described below should be modified consistent with the state's internal review processes. This example builds from review processes in Idaho and by the Chesapeake Bay Program Water Quality Goal Implementation Team. This section may only be relevant if a pre-approved list of credit-generating BMPs exist at the state or watershed level.

Quality standards development is essential for consistently and legitimately translating ecological benefit into a credit that can legally offset an impact. These quality standards are used in Site Screening, site design & implementation, verification, Certification, and registration to predictably and fairly operate across watersheds as applied to different permittees. Standards development also includes adaptive management to improve the elements of trading guidance, frameworks, or plans with new information over time. Therefore, this watershed trading framework will be updated as necessary over time to reflect new, technologies, practices and policy.

A list of approved BMPs can be found in [Appendix X](#). [Appendix X](#) sets out which BMPs are recommended for trading, as well as each BMP's procedures for determining the amount of credits generated and its

monitoring and maintenance requirements. Practices are developed and added to the list by following the steps outlined below. Practices may be added to the BMP List at any time.

Step 1: Prepare and Submit Proposed BMP Package

New practices, practices already on an approved BMP List, or improved design, measurement, or calculation methods to BMPs already on the BMP List, may be nominated by anyone for inclusion on the BMP List. Each proposed BMP package must contain a description of the BMP and how it works; where the BMP should be applied (appropriate site conditions); potential side effects and ancillary benefits; design, installation, operation, and maintenance requirements; monitoring requirements; a method for quantifying credits, including any appropriate BMP efficiency or uncertainty ratio(s); and substantiating information. The proposed BMP package must be submitted to [\[STATE AGENCY\]](#) or its designee.

Step 2: Initial Screening of BMP Proposal

[\[STATE AGENCY\]](#) or its designee will perform an initial screening of the package for completeness and may get technical input from other organizations.

Step 3: Review Process and Criteria for BMP Consideration

[\[STATE AGENCY\]](#) or its designee will review the package in a timely matter. If the proposed BMP involves new technology or methods for which data and experience are insufficient to support credit quantification, then the BMP may require additional review. If the BMP is recommended, the public will be given an opportunity to comment on the new BMP. [\[STATE AGENCY\]](#) may revise the BMP guideline based on comments, and then issue its final decision. If it is approved, the BMP will be placed on the BMP List.

Significant revisions to BMPs that have already been approved will follow the same process as for adding a new BMP. BMP revisions may be triggered by results from monitoring of the BMP's overall effectiveness and impact on other environmental parameters, as well as research of the BMP's performance on other sites.

Step 4: State Concurrence, Public Notice and Comment

If the BMP technical committee recommends the BMP, it is forwarded to [\[STATE AGENCY\]](#) to conduct a [public notice and comment period](#). Comments will be limited to the new BMP, and not to the program or the list of BMPs that have already been approved.

Step 5: Final Decision/Addition to BMP List

[\[STATE AGENCY\]](#) will revise the BMP based on public comments, in consultation with the BMP technical committee, and issue its final decision. If it is approved, the BMP will then be placed on the BMP List for the specific watershed trading framework.

Revisions to BMPs that have already been approved will follow the same process as for adding a new BMP. BMP revisions may be triggered by the results from monitoring of a BMP's overall effectiveness

and impact on other environmental parameters, as well as research on a BMP's performance at other sites.

10.5 Evaluating Program Effectiveness

Use this section to describe any monitoring or evaluation efforts to determine the efficacy of the trading program.

11. Steps for Developing Watershed Trading Frameworks

This section provides an opportunity to clearly tie together the state's guidance and watershed trading frameworks, and should reflect the approach taken throughout this guidance. This is not covered in the National Network Guide.

Watershed trading frameworks are designed for watersheds where multiple buyers and sellers may be interested in trading. The watershed trading framework is not a requirement to trade, but a framework can contain information individual permits can reference, streamlining the process for individual permittees. Some of the information a watershed trading framework might contain includes:

- Sectors that would be eligible to trade and the specific conditions for their eligibility;
- Approved credit-generating activities and respective quality standards;
- General baseline obligations that exist in that framework area;
- Applicable trading ratios for the pollutant (i.e., attenuation, delivery, performance delay, uncertainty, reserve, retirement, etc.);
- Examination of water quality conditions to identify localized impacts;
- Trading Area boundaries, and priority areas if desired;
- Adaptive management plan to improve the operations, science, and effectiveness of trading over time; and
- Direction as to how to incorporate these watershed-specific details into water quality trading plan documents.

Watershed trading frameworks will need to be [approved by \[STATE AGENCY\] after public notice and comment](#). [If a TMDL covers any of the Trading Area, the watershed trading framework must be consistent with the TMDL, including specific wasteload allocations and load allocations \(actual allocations, timing, baseline assumptions, etc.\). A TMDL or TMDL implementation document may provide guidance for trading in a watershed or may contain requirements that should be incorporated into a watershed trading framework.](#)

III. TEMPLATE WATERSHED TRADING FRAMEWORK

Last Updated 7/7/16

About this template: The template is meant as a starting point only. Any language can be adjusted to meet the needs of a particular state and/or watershed group. This template watershed trading framework was developed to work in concert with other ACWA/Willamette Partnership Trading Toolkit templates, including the trading rule, guidance, annual report, and/or permit templates.

State guidance and watershed trading frameworks in particular have the potential for significant overlap in content. Each can provide different levels of detail covering many of the same topics, and it will be highly dependent on a state's preference to the amount of overlap or detail in each document. For the purposes of this Toolkit, the state guidance is designed to set policy sideboards for all trades (e.g., trading areas must be consistent with the TMDL), whereas the watershed trading framework outlines the specific policies relevant to an individual watershed (e.g., map of the specific trading area for that framework). However, both templates were designed to err on the side of completeness, so where trading policies for state and watershed levels are the same (e.g., permits must go through review for localized impacts), the watershed trading framework can simply reference the guidance rather than repeating specific information or language.

Template organization: This template is organized to directly follow the structure of the National Network publication, *Building a Water Quality Trading Program: Options and Considerations* (National Network Guide). Section headers and numbering match the chapters in the National Network Guide, allowing template users quick and easy reference to options and considerations for developing state policies. In many cases, the state may wish to combine subsections or otherwise simplify the document.

[WATERSHED NAME]

Water Quality Trading: Watershed Trading Framework

[Date Approved]

[Framework Author]

[Logos]

Disclaimer:

This document provides a framework for water quality trading in [WATERSHED NAME]. Implementation of water quality trading will be governed by existing requirements of the Clean Water Act (CWA), Environmental Protection Agency (U.S. EPA) implementing regulations, and state laws. This document does not substitute for those requirements or laws. The recommendations in this watershed trading framework (or framework) are not binding until they are incorporated into appropriate regulatory instruments or orders; [STATE AGENCY] and U.S. EPA may consider other approaches consistent with the CWA, U.S. EPA regulations, and state requirements. Decisions regarding water quality trades will be made on a case-by-case basis and will be guided by the CWA and applicable federal regulations and state laws, taking into account comments and information presented at that time by interested persons regarding the appropriateness of applying these recommendations to the particular situation. [STATE AGENCY] may change this framework in the future.

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Introduction

The introduction section should describe the purpose of water quality trading, the objectives that the state agency seeks to achieve with trading, principles to guide trading (which may be specified in state guidance or rule), and any additional context. Much of this section directly overlaps with the State Guidance Template and can be considered for removal. In the event that the state doesn't have guidance, this section provides the program's foundations.

The purpose of this document is to provide a framework for the implementation of water quality trading within the [WATERSHED NAME].

Purpose of Water Quality Trading

Water quality trading (WQT) is one tool to help achieve the goals of the CWA and other public objectives.²⁰ Trading can occur between [two “point sources,” “point and nonpoint sources,” or “two nonpoint sources”]. WQT allows one source to meet its regulatory obligations by using pollutant reductions created by another source that has lower pollution control costs. Trading is not appropriate for resolving all water quality challenges, and its efficacy must be evaluated before assuming it can be useful in a watershed. When designed well and combined with other tools, however, trading can help achieve water quality goals in flexible ways that are beneficial for landowners, communities, and the environment.

While this framework provides the process and policies to facilitate trading within the watershed, individual trades will face unique situations and issues. In general, users of this watershed trading framework (framework) should follow these guiding principles:

Refer to the Executive Summary of the National Network on Water Quality Trading publication *Building a Water Quality Trading Program: Options and Considerations*²¹ (hereafter National Network Guide) if more detailed guiding principles are desired.

- Trades should be grounded in sound science and effectively accomplish regulatory and environmental goals over other alternatives;
- There needs to be accountability that allows regulators to confirm that promised water quality improvements are actually delivered;
- The benefits of trading must be delivered without allowing the discharger to produce localized water quality problems; and

²⁰ U.S. Environmental Protection Agency, *Water Quality Trading Policy*, 68 Fed. Reg. 1608, p. 1609 (Jan. 13, 2003) (final policy) (hereafter “2003 U.S. EPA Trading Policy”), available at <http://www.gpo.gov/fdsys/pkg/FR-2003-01-13/pdf/03-620.pdf> (“Water quality trading is an approach” to “[f]inding solutions to [] complex water quality problems.”).

²¹ National Network on Water Quality Trading, p-10-11 (June 2015). *Building a Water Quality Trading Program: Options and Considerations*. Available at: <http://willamettepartnership.org/publications/>

- Trades need to be consistent with [STATE NAME] requirements, Clean Water Act requirements, and local laws.

Watershed Context

The [WATERSHED NAME] begins in [HEADWATERS] and runs to [OUTLET] including the tributaries [TRIBUTARY NAMES]. The [WATERSHED NAME] covering covers XXX square miles and includes [MAJOR LAND USES]. Approximately XXX,XXX people reside within the watershed, including the communities of [CITY/TOWN NAMES].

The watershed includes waters impaired by [POLLUTANTS] that impact [DESIGNATED USES OF 303(D)-LISTED WATERS]. The [WATERSHED NAME] faces challenges include: [LIST AND DESCRIBE WATERSHED CHALLENGES].

Other important efforts besides WQT are underway to enhance and protect ecological functions that will also improve water quality and/or designated uses, including:

Table I.1. Watershed Improvement Efforts

Insert a description of ongoing efforts in the watershed; this might include watershed planning or integrated water resource planning efforts, collaborative initiatives to improve watershed health, etc. Where a TMDL is in place, template users can pull from the Reasonable Assurances to help populate this section.

<i>Effort</i>	<i>Objective</i>	<i>Lead</i>

The particular objectives of this watershed trading framework are tied to the following goals:

Table I.2. Pollution Reduction Targets

Insert pollution reduction targets, such as TMDL waste load allocations, that serve as the impetus for water quality trading.

<i>Goal</i>	<i>Interim benchmark</i>	<i>Timeline for meeting</i>	<i>Source for goal</i>

1. Policy & Regulatory Instruments to Support Trading

1.1 Building Trading into a State's Regulatory Program

This section describes state-level authority and specific regulatory programs and regulatory instruments through which trading can occur.

1.1.1 Authority for Water Quality Trading in the State

Section 1.1 of the National Network Guide provides context, options, and considerations important to building trading into state authority. These policies and regulatory instruments are closely tied to CWA requirements.

If authority for trading is established in the state guidance or rule, this section should be removed. References to state rule, other forms of state authority, or state guidance should be removed where those documents don't exist.

The Clean Water Act provides authority for U.S. EPA, states, and tribes to develop a variety of programs and activities to control pollution. Water quality trading, as described in U.S. EPA's 2003 U.S. EPA Trading Policy, is one of those tools. Trading is recognized in [\[INSERT REFERENCES TO STATE SOURCES OF AUTHORITY\]](#). This framework sets forth recommendations that [\[STATE AGENCY\]](#) and other stakeholders believe should be considered when water quality trading is conducted in [\[WATERSHED NAME\]](#).

This watershed trading framework is designed to work in tandem with the [\[STATE GUIDANCE\]](#) and provide trading details that can be incorporated directly or by reference into permits and other regulatory instruments by reference.

Ultimately, the information included and referenced in an NPDES permit or equivalent will be the requirements a permittee needs to follow. That information will be drawn from the following types of documents and other sources as relevant, including:

- **Trading Rule:** [\[REFERENCE TO STATE RULE\]](#) defines the essential components of each trade.
- **Trading Guidance:** State-level guidance which contains [\[STATE AGENCY\]](#) guidelines for implementing [\[REFERENCE TO STATE RULE\]](#).
- **Watershed Trading Framework:** This document, which contains the specific details of implementing a trade as it applies to multiple permittees trading within a watershed. This document is intended to expedite permitting and formalize a consistent process and unit of trade where multiple permittees within a watershed intend to trade.
- **Trading Plan:** Facility- or permittee-level document that contains the details of implementing a trade. The trading plan is incorporated into a permit or other binding agreement. The permittee's trading plan will incorporate the terms of this framework by reference.

1.1.2 Public Involvement

See Sections 1.1.2 and 8.6 of the National Network Guide for options on public review of important aspects of a trading program. States should also incorporate specific public input processes established in state rule or guidance.

Public involvement is crucial to the success of a trading program. This watershed trading framework was submitted for public review [in accordance with state transparency rules \[STATE RULE REFERENCE\]](#) and approved by [\[STATE AGENCY\]. \[INSERT RELATED INFO, SUCH AS STAKEHOLDER INVOLVEMENT IN BUILDING THE FRAMEWORK.\]](#)

Select from the options below, or reference the state's requirements in rule or guidance:

Agency Policy	Suggested Language
Public notice and comment will be required for individual projects only where trades occur outside of an approved trading plan or framework.	"[STATE AGENCY] will engage public comment on a permittee's trading plan or watershed trading framework. Individual trading projects developed consistent with an approved plan or framework are not subject to public notice and comment unless directly referenced in the permit. Public notice and comment will occur when a credit-generating project is proposed <i>outside</i> of that approved plan or framework."
Public notice and comment will be required during all stages.	"[STATE AGENCY] requires public notice and comment to occur for any credit-generating action at Site Screening, Project Review, Certification, credit exchange, and credit use."
Public notice and comment will be required during Certification and trade/use.	"[STATE AGENCY] requires public notice and comment to occur only during Certification, credit exchange, trade, and credit use."
Public notice will be required, public comment will NOT be required during Certification and	"[STATE AGENCY] will give the public notice about a project's Certification, credit exchange, trade, and credit use."

trade/use.	
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1.2 Waterbody Conditions that Affect Trading

Trading can be used to [“meet all or part of a discharger’s effluent limits” or ““meet all or part of a discharger’s Water Quality-Based Effluent Limits (WQBELs)]] and/or offset pollutant loads under several scenarios consistent with this framework and additional requirements in [Insert source of additional requirements, e.g., trading plan].

See Section 1.2 of the National Network Guide. Delete bullet points below if those scenarios are not supported in your state, or reference the state’s guidance.

[STATE AGENCY NAME] will allow trading in the following scenarios:

- To offset existing pollutant loadings to a CWA-impaired water body with a U.S. EPA-approved TMDL or similar watershed analysis needed to support trades;

States may wish to include amend the previous bullet to include offsetting new discharges to an impaired waterbody with a TMDL. Some case law, like Pinto Creek, makes such a scenario more difficult, but it is still allowable.

- To offset existing pollutant loadings prior to TMDL approval where a trade can provide documented environmental benefits, and where the sufficient knowledge about watershed loading is available provides enough context on loading to ensure trades do not cause or contribute to violations of water quality standards;

For the following bullet, re-word if your state uses the waterbody-by-waterbody approach to identifying high quality waters.

- To maintain water quality in waters that currently meet or exceed water quality standards, provided the designated uses are protected. For example, trading may be used to offset new or increased discharges of pollutants to avoid degradation of high quality waters; and
- To offset new or expanding point source discharges to a CWA-impaired water body without a U.S. EPA-approved TMDL. Point sources must ensure their discharge does not further impair the water body by the specific pollutant consistent with the requirements of 40 C.F.R. 122.4(i).

[STATE AGENCY] cannot allow trades that would circumvent existing U.S. EPA-approved technology-based effluent limitation guidelines.

1.3 Mechanisms for Effectuating the Trade

This section is used to describe the permit, orders, and/or licenses under which trading can occur. The state agency may also choose to describe the required permit conditions here. It is written assuming that the permittee takes responsibility for the development of credits and the elements of a trade are

effectuated through the NPDES permitting process. Some states may wish to consider an alternative approach, such as the one employed in North Carolina. In North Carolina, water quality trading uses a mitigation banking approach wherein private mitigation banks sign an MOA with the state on how they will create, monitor, maintain, track, and sell credits. A permittee can purchase credits from any such bank. In this case, the sections that follow would need to be revised such that the permit highlights the applicable Trading Area and all other requirements for credit projects are contained in the MOA with private mitigation banks. States wishing to use this approach can find more information and access North Carolina's policy documents.^{22,23}

This template also assumes that the permit contains a water quality trading plan, which is proposed by a permittee to the state agency for review the incorporated into the permit by reference. The language can be adjusted to reflect other situations, such as where the state agency develops the permit.

Trading may be implemented through a [permit, order, or license](#). [\[STATE AGENCY\]](#) will review each permit referencing this framework for clarity and consistency on where credits may be acquired, how credits will be monitored and reported upon, how/if whether/how risk and uncertainty have been addressed, and any connection between trading and compliance schedules, mixing zones, anti-degradation provisions, and related federal provisions.

1.3.1 Key Trading Provisions in a Permit

A permit operating under this framework should incorporate the following provisions.

A. Permit Effluent Limits

Permit effluent limits and potential trading obligations resulting from the Water Quality Based Effluent Limits (WQBELs), which are typically expressed as a [\[concentration, mass effluent limit, narrative\]](#) per [\[time period – day, month, or year\]](#).

Trading tends to be limited to mass loadings. If a permit is expressed in terms of concentrations, the permit writers should consider translating concentration into loadings where appropriate.

See Section 6.1 of the National Network Guide or considerations around the length of time over which a credit is valid (also known as credit life). Where the credit is valid over a longer period of time (e.g., pollutant has a seasonal or annual residence time in the watershed) it is more likely that permittees will be able to line up credit need with credit availability.

B. Monitoring and Reporting Requirements

This section can be used to describe any monitoring requirements that apply to the entire watershed covered by the framework and/or set parameters for monitoring requirements in individual permits. Any trading-related monitoring may be required in addition to, but not instead of, the monitoring obligations under the CWA that apply to all point sources and their associated NPDES permits.

²² North Carolina Admin. Code Title 15A § 02B.0240 (2014), available at http://portal.ncdenr.org/c/document_library/get_file?p_id=38446&folderId=209713&name=DLFE-15354.pdf

²³ General Statutes of North Carolina § 143-214.26 (2013), available at http://www.ncleg.net/enactedlegislation/statutes/pdf/bysection/chapter_143/gs_143-214.26.pdf.

C. Special Conditions

This section can be used to describe any special conditions that apply to their entire framework and/or set monitoring requirements in individual permits. Special conditions of a permit supplement numeric effluent limitations and require the permittee to undertake activities that reduce the overall quantity of pollutants, reduce the potential for discharge, or collect information that could be used to determine future permits²⁴.

1.3.2 Incorporating Trading Program Details into a Permit

This section describes how the details of the trading program should be incorporated into the permits. Permit writers should consider how placement of trading details might relate to potential permit violations, or how placement of a trading detail might trigger a permit modification later on. See Section 1.3.2 for options regarding how trading details are incorporated into the permit.

The permit should incorporate [“by direct statement” or “by reference to this framework”] the following conditions of the trading program:

- Trading area (justification and how it is protective of the relevant designated uses);
- Baseline (sources of applicable regulation or law, how baseline is expressed in the permit – i.e., as a set of minimum BMPs, as a percentage load reduction target for all nonpoint sources, or, an overall requirement for a trading area);
- Description of credit quantification methodology (how pre- and post-project conditions are estimated, how credit values are derived, how baseline is accounted for);
- Trading ratio (articulation of assumptions and components, including description of scientific, policy, and risk management assumptions and components);
- Risk mitigation mechanisms (e.g., reserve pool, insurance, and performance bonding);
- Project Site Screening (whether this function is required or suggested, and if required, who is responsible for this function);
- Allowable credit-generating actions (approved actions, identification of quality and performance standards for those actions);
- Credit life (when credits become valid, how long credits remain valid, renewability of credits);
- Project site design, maintenance and implementation/performance confirmation (whether these components are required, and if so, the frequency and aspects of these confirmations);
- Project review of project site implementation and performance (whether required, the entity that will perform, the frequency and content, and the standards by which performance is judged); and
- Credit registration (if required, characteristics of credit registry, information disclosure minimums).

This information will be incorporated [“directly in the effluent limits section,” “through a trading plan, incorporated as a special condition,” OR “by referencing this framework.”] Referencing this framework does not reduce the responsibility of a NPDES permittee to comply with the terms of its permit. NPDES

²⁴ U.S. Environmental Protection Agency, Office of Water, *NPDES Permit Writer’s Manual* Ch.9, pp.1 (Sept 2010), available at http://water.epa.gov/polwaste/npdes/basics/upload/pwm_chapt_09.pdf.

permittees participating in credit trades are ultimately responsible for the quantity and quality of the credits even when a third party acts as an aggregator or reviewer of credits. However, several mechanisms are available to protect permittees from risk of project failure, as described in Section 5 of this framework.

2. Trading Basics: Who, What, Where, & How

This section covers the basics of trading. You may want to reference the specific statutes, rules to which these conditions relate.

2.1 Types of Trades

States can choose one or more types of allowable trades. Considerations are available in Section 2.1 of the National Network Guide.

Trading is allowed in the following scenarios:

- To achieve compliance with existing permitted discharges;
- To offset new growth; and
- Through voluntary purchases of water quality credits outside of compliance obligations.

2.2 Appropriate Sectors (Trading Parties)

There are generally two different types of trades recognized for water quality trading: point-source-to-point-source trading, and point-source-to-nonpoint-source trading. Both [point and nonpoint sources are eligible to generate and sell credits](#). Although this framework focuses on regulated point sources as buyers, [\[STATE NAME\]](#) supports [\[INSERT OTHER SITUATIONS OR CASE-BY-CASE ALLOWANCES\]](#). This framework explicitly supports potential trades for the following permit types and sectors:

Table 2.2. Permit and Sector Types Eligible to Sell Credits

Insert specific permit types for which trading will be allowed. If established, refer to state rule or trading guidance for pre-determined list(s). See Sections 2.2 of the National Network's Guide for options on regulatory instruments, or types of trades. States can also include nonpoint-nonpoint trades, which are not included in this template.

Insert a list of those sectors and land use categories eligible for trading. If established, refer to state rule or trading guidance for pre-determined list(s). Eligible sellers may include: publicly owned treatment works (POTWs), industrial dischargers, agriculture, confined animal feeding operations (CAFOs), and others, as determined by the state agency.

Buyer/permit type

e.g., NPDES wastewater permit holders

e.g., NPDES stormwater permit holders (MS4, industrial and/or construction)

e.g., Entities seeking a §401 Certification

Seller/sector type

e.g., Publicly owned treatment works (POTWs)

e.g., Industrial dischargers

e.g., Confined animal feeding operations (CAFOs)/ Animal feeding operations (AFOs)

e.g., Agricultural operations

e.g., Construction and development activities

2.3 Trading Areas

The trading area for this framework is the [\[TRADING AREA DESCRIPTION\]](#) mapped in Figure 2.3 below. A carefully chosen trading area helps ensure there are no localized or downstream impacts and that trades contribute to meeting water quality standards.

See Section 2.3 of the National Network’s Guide for discussion of Trading Areas. The potential for localized impacts is a related topic, discussed in Section 3.1.2 of this template. Template users may wish to combine those two sections.

Users may also wish to delineate priority areas for trading activities and areas where trading is not appropriate.

Figure 2.3. Trading Area(s)

[\[INSERT TRADING AREA\(S\) FIGURE\]](#)

2.4 Appropriate Pollutants for Trading

See Section 2.4 of the National Network Guide for appropriate pollutants for trading. As written this section assumes some pre-approved list of pollutants and some pollutants that are excluded due to concerns of impacts on human and ecosystem health.

[\[STATE AGENCY\]](#) considers [\[POLLUTANTS\]](#) appropriate pollutants for trading—specifically, [\[FORM OF POLLUTANTS, IF NECESSARY\]](#). The unit of credit should be tied to the unit of pollutant in a permit.

[\[STATE AGENCY\]](#) supports trades where adequate information exists to establish and correlate water quality improvements from implementation of best management practices (BMPs) or technological measures.

This framework currently supports trades for the following pollutants:

Table 2.4 Appropriate Pollutants for Trading

Credit Type	Units/Time Period
TOTAL PHOSPHORUS (TP)	LBS/TIME
TOTAL NITROGEN (TN)	LBS/TIME
TEMPERATURE	KILOCALORIES/TIME
SEDIMENT	TONS/TIME

[[POLLUTANTS](#)] have the potential to threaten public health and, as such, [should not be considered for trading,” or “may be considered on a case- by- case basis with approval from STATE AGENCY,” or “will be considered on a case- by- case basis with approval from STATE COMMISSION”]

2.5 Appropriate Credit Generating Actions

This section lists the eligible actions or BMP-types for generating credits. See Section 2.5 of the National Network Guide for considerations around use of pre-approved BMPs. Add to/subtract from/modify this table as desired. For some BMPs, you may choose to require combination with one or more additional BMPs.

The following BMPs are eligible to generate credits for addressing X pollutant under this framework. For information on credit quantification associated with these BMPs, [see Section 4](#). For information on BMP quality standards, [see Section 7 of this framework and Appendix X](#). For information on proposing the addition of new BMPs and/or quantification methods, [see Section 10.4](#) of this framework.

Table 2.5. Pre-approved BMP Types and Quantification Methods

BMP Type	Quantification Method	Performance Standard	Project Life
Constructed Wetland	NTT	NRCS 656	15
Field Border/Filter Strips	NTT	NRCS 386/393	
Grassed Waterway	NTT	NRCS 412	10
Riparian Grass Buffer	NTT	NRCS 390	15
Riparian Forest Buffer	NTT	NRCS 391	15
Wetland Restoration	NTT	NRCS 657	8-15
Conservation Tillage	NTT	NRCS 329	1
Contour Farming	NTT	NRCS 330	
Cover Crops	NTT	NRCS 340	1
Crop Rotation	NTT	NRCS 328	
Heavy Use Area Protection	NTT	NRCS 561	10
Livestock Exclusion Fencing	NTT	NRCS 382	19
Nutrient Management	NTT	NRCS 590	1

2.6 Environmental Justice and Equity Considerations

Conditions related to equity and environmental justice are most likely to be incorporated throughout the Framework, making this section unnecessary. However, states may wish to deliberately describe the development and justification for those conditions (e.g., use of U.S. EPA's Environmental Justice Screening Tool). Section 2.6 of the National Network Guide provides more discussion on how these issues relate to trading.

3. Trading Eligibility

This section explains the basic eligibility requirements that credit buyers and credit sellers need to meet in order to participate in trading.

3.1 Eligibility for Buyers and Trades

3.1.1 Meeting Technology-Based Effluent Limitations (TBELs)

The use of trading to meet TBELs is prohibited in EPA's 2003 U.S. EPA Trading Policy guidance unless expressly authorized by the underlying effluent guidelines. Reiterating that prohibition here is redundant with Section 1.2 of this framework template, but can be comforting to stakeholders to see repeated.

A point source that has attained applicable TBEL requirements can obtain credits to achieve its water quality based effluent limits (WQBELs). The CWA requires point sources to meet the more stringent of TBELs or WQBELs. Trading is not allowed to meet TBELs unless expressly authorized by the underlying effluent guidelines.

3.1.2 Avoiding Localized Impacts

See Section 3.1.2 of the Network's guidance for more discussion on avoiding localized impacts.

The ["[permit evaluation report](#)" or "[fact sheet](#)"] needs to analyze the potential for localized impacts and be specific about measures and/or monitoring that will be completed to ensure there are no localized impacts. A localized impacts assessment should address the following:

- Near-field analysis of potential impacts on local aquatic biota from a facility's effluent;
- Comparison of effluent data to relevant water quality standards (both narrative and numeric); and
- Consideration of all parameters that may have a negative impact on biota: chlorophyll-*a*, turbidity, dissolved oxygen, pH, biological oxygen demand (BOD), indices of biotic integrity for macroinvertebrates or fish.

3.1.3 Compliance with Anti-degradation Policy

States may choose to rely on existing anti-degradation policies instead of developing any provisions specific to trading. This template provides a sparing reference that can be used to this effect. Alternately, states may wish to deal with this in slightly more depth than shown here. See Sections 3.1.3 of the template for state guidance for example language to that effect.

No trades can lower the existing water quality of a Tier 2 (high quality) or Tier 3 (outstanding quality) water body under [STATE AGENCY's] anti-degradation policy.

Example Anti-degradation Language from Oregon on Tier 2 (High Quality) Waters

The Environmental Quality Commission or DEQ may approve a lowering of water quality in a water body that currently meets all water quality standards (i.e., high quality water) if a demonstration is made that 1) all water quality standards will be met and beneficial uses protected, 2) no other reasonable alternative exists, and 3) the lowering of water quality is necessary for social and economic benefits that outweigh the environmental costs. For more information, see the DEQ Anti-degradation Policy Implementation IMD at <http://www.deq.state.or.us/wq/pubs/imds/antideg.pdf>.

3.1.4 Compliance with Anti-backsliding

States may choose to rely on existing anti-backsliding policies instead of developing any provisions specific to trading. This template provides a sparing reference that can be used to this effect. Alternately, states may wish to deal with this in slightly more depth than shown here. See Sections 3.1.4 of the template for state guidance for example language to that effect.

No trades can authorize backsliding in an NPDES permit unless one of the exceptions in CWA §402(o) and 40 CFR §122.44(l) is shown to apply.

3.2 Project Eligibility for Credits

Note that the National Network Guide focuses on nonpoint source credit sellers. This framework template has been expanded to include point source credit sellers as well. Template users may wish to omit this section if it is largely repetitive of state guidance.

Both point sources and nonpoint sources may create pollutant reductions. However, not all reductions necessarily can be counted as credits. A pollutant reduction may need to be discounted to reflect uncertainty, attenuation/location of the pollutant reduction, and/or policy choices. Before that reduction can become a credit, the reduction must go through several checks:

- *Project uses an approved BMP and Quality Standards:* The BMP types and associated quantification methods in Table 2.5 have been pre-approved for generating credits in the [WATERSHED NAME]. The standards for BMP design, implementation, maintenance, monitoring, and Project Review are included in Appendix X. Other BMPs can generate credits on a case-by-case basis (Section 7).
- *Projects need to be consistent with other laws and in good standing:* To generate a credit, a project should be in compliance with applicable federal, state, local, and tribal requirements.

Other eligibility requirements that may be listed here may relate to the hydrologic connectivity of BMP projects, the base year of eligibility, funding sources and additional baseline or minimum requirements.

3.2.1 Point and Nonpoint Source Credit Baselines

Setting baseline requirements, particularly for nonpoint sources, is often difficult. The National Network Guide provides sources of information relevant to setting baseline. Coordination with stakeholders as well as federal, state, and local agencies is important. Sections 3.2.2-3.2.5 of this framework template and the National Network Guide are all related to setting baseline requirements. The template user may wish to combine or remove these sections from the final framework, or retain them as a place to provide justification for the various decisions that went into designing the baseline policy.

Both point and nonpoint credit sellers need to meet minimum requirements (baseline) prior to selling credits.

C. Baseline for point sources

For point source buyers, all required Technology-Based Effluent Limits must be met prior to generating credits ([CITATION TO LOCAL RULES]). Credits for point source sellers are earned by pollutant reductions beyond a baseline level of pollutant reduction.

D. Baseline for nonpoint sources

Credits are generated from BMPs that are in addition to those explicitly required of individual landowners by current federal, state, and local requirements (e.g., existing agricultural orders). Current and unresolved violations of these requirements (Table 3.2.1) need to be addressed prior to generating credits.

Table 3.2.1. Credit Baselines for Point and Nonpoint Sources

Seller Type	Baseline	Timing	Source of baseline
Point source	Effluent limits in their its NPDES permit	Prior to generating credits	NPDES permit
Nonpoint source	INSERT ANY BASELINE EXPECTATION INCLUDING LEVEL, EXPRESSION (E.G., BMPs, LOADING, LOAD REDUCTIONS), AND SCALE (E.G., FARM, FIELD, OR WATERSHED)	INSERT TIME PERIOD FOR PROJECT ELIGIBILITY	LIST WHERE REQUIREMENTS COME FROM (E.G., TMDL, STATE NONPOINT SOURCE REGS, ETC.)

3.2.2 Expressing Baseline for Nonpoint Sources

Baselines are expressed as BMPs.

Agency Policy	Suggested Language
<u>Technology or practice-based</u> A minimum set of BMPs that must be in place before credits can be generated.	“Credit baseline for nonpoint sources under this framework includes the following BMPs: [INSERT LIST OF ELIGIBLE BASELINE BMPS]”
<u>Performance-based</u>	“Credit baseline for nonpoint sources under this framework is XX [UNITS of POLLUTANT PER UNIT AREA AND TIME] (e.g., 100 lbs of

A level of environmental performance that must be achieved before a landowner is eligible to trade.	total nitrogen per acre per year) consistent with the load allocations established for nonpoint sources in the TMDL. [INSERT CONNECTION BETWEEN PERFORMANCE LEVEL AND TMDL LOAD ALLOCATIONS] ”
<u>Standard water quality contribution</u> A standard ratio that retires a certain percentage of all credits towards meeting water quality goals.	“Credit baseline for nonpoint sources under this framework is equal to X% of “credits generated” or “water quality benefit.” ”

3.2.3 Timing of Meeting Baseline for Nonpoint Sources

[BMPs required under new orders or requirements may generate credits until those new requirements take effect.](#)

Agency Policy	Suggested Language
Baseline requirements must be met prior to generating credits.	“For nonpoint credit sellers operating under this framework, all baseline requirements must be met prior to generating credits.”
Baseline requirements may be met simultaneously while generating credits.	“For nonpoint credit sellers operating under this framework, baseline requirements may be met simultaneously while generating credits.”
Baseline requirements will be phased in over time.	“For nonpoint credit sellers operating under this framework, baseline requirements will be phased in over time as described in Table X. ”

3.2.4 Scale of Applying Baseline for Nonpoint Sources

Agency Policy	Suggested Language
Baseline requirements apply to an individual field.	“Baseline requirements will be applied to the individual site intended for credit generation.” Consider pairing this option with language to guard against leakage, either here or elsewhere in the framework. For example, “Actions leading to degradation of environmental conditions must not increase elsewhere on the operation as a result of meeting baseline requirements.”
Baseline requirements apply to a farm operation.	“Baseline requirements will be applied to entire agricultural operations.”
Baseline requirements apply to all farm operations of the	“Baseline requirements will be applied to all agricultural operations within the trading area that are managed by the

individual or entity.	individual or entity intending to generate credits”
Baseline requirements apply to all nonpoint sources within the subwatershed.	“Baseline requirements will be applied to all nonpoint sources within the subwatershed prior to any credit generation.”

3.2.5 Project Timing (base year)

Projects are eligible to generate credits if installed [[“after xxxx year,”](#) or [“following the approval of the watershed TMDL’](#)]. The base year may be updated from time to time.

Agency Policy	Suggested Language
Fixed base year	“Projects are eligible to generate credits if installed [“after xxxx year,” or “following the approval of the watershed TMDL’].”
Current year	“Projects are eligible to generate credits if installed after the year XXXX. ”
Eligibility window	“Projects are eligible to generate credits if installed within the years XXXX-XXXX. ”

3.2.6 Use of Public Conservation Funds & Double Counting

Restrictions on the use of public conservation funds are likely to be defined in state rule and/or guidance on water quality trading. Section 3.2.6 of the template for state guidance and rule provide example language for policies regarding public conservation funds.

3.2.7 Credit Stacking

Refer to state rule and/or guidance as to whether credit stacking is allowed. Section 3.2.7 of the template for state guidance provides example language that can be used in the framework in the absence of rule or guidance that covers this topic.

4. Quantifying Pollutant Reductions for Water Quality Credits

Section 4 of the National Network Guide provides information for agencies on how to select and evaluate a credit quantification approach. Consider using this section to define the eligible quantification methods and provide references to documentation of the methods' technical underpinnings and assumptions, instructions for use, and instructions for documenting credit quantification for the Project Review process (described in Section 8).

Table 2.5 above lists current, approved edge-of-field credit quantification methods for each eligible BMP under this framework. [Appendix X](#) describes the documentation and information needed to accurately quantify pollutant reductions and document calculations. Calculations are subject to technical review (Section 8).

Attenuation from a point of pollution reduction through the watershed to a point of concern will be quantified [\[QUANTIFICATION METHOD\]](#). [Appendix X](#) describes the documentation and information needed to accurately quantify attenuation using [\[QUANTIFICATION METHOD\]](#).

Additional credit quantification methods can be used on a case-by-case basis so long as they are approved by [\[STATE AGENCY\]](#) using the process described in [Section 10.4](#), rely on the best available science, and are accurate, repeatable, sensitive, and transparent.

5. Managing Risk & Uncertainty

5.1 Trading Ratios

Sections 5.1.1-5.1.6 of the National Network Guide discuss the various types of ratios. It is important to remember that trading ratios are just one way of dealing with risk and uncertainty. The National Network Guide Section 5.2 describes a holistic approach to managing risk in WQT programs.

States may consider combining all types of ratios into one number or keeping them separate (See Guide Section 5.1.5.). Ratios can also be applied at different stages of the credit lifecycle (e.g., at the time of credit estimation vs. at the time of credit issuance or trade), and therefore, can be applied to decrease the number of credits available for sale or to increase the number of credits a buyer must purchase (See Guide Section 5.1.6).

See state rule and/or guidance on water quality trading for default ratios established for all trades.

Ratios adjust the available credits for a seller or the credit obligation for a buyer to account for various forms of risk and uncertainty. Table 5.1 describes the ratios that will be applied to all trades under this framework:

Table 5.1. Summary of Trading Ratios Applicable to this Framework

If the ratios need to be defined based on the project location or BMP, consider doing so through the use of additional tables, by expanding this table, or by referring to a tool, model or spreadsheet. All fields in the table below should be considered as an example and not a policy recommendation.

Ratio Type	Ratio	Applied to	Notes
Instream attenuation	<i>e.g., NA</i>	<i>Credit buyer's obligation</i>	<i>Attenuation is quantified using [METHOD], as described in Section 4.</i>
Equivalency	<i>e.g., NA</i>	<i>Credit buyer's obligation</i>	<i>Only the forms of pollutants listed are eligible. Cross pollutant trades are not allowed at this time.</i>
Uncertainty	<i>e.g., 2:1</i>	<i>Credit buyer's obligation</i>	<i>This multiplier accounts for the following factors²⁵:</i> <ul style="list-style-type: none"> <i>Meteorological conditions;</i> <i>Variability in BMP efficiency rates, operations, and risk that the BMP will fail;</i> <i>Any time lag for restoration projects that take time to mature;</i> <i>Credit estimation error;</i> <i>Unknown differences in how different forms of the pollutant act in the watershed.</i>
Reserve	<i>e.g., NA</i>	<i>Credit buyer's obligation</i>	<i>Point sources are responsible for maintaining their own reserves of credits to ensure compliance. As a result, reserve ratios are not used.</i>

²⁵ See EPA Region 3. 2014. Accounting for Uncertainty in Offsets and Trading Programs. EPA Technical Memorandum. Accessed 8/19/2015 at http://www.epa.gov/reg3wapd/pdf/pdf_chesbay/TradingTMs/Final_Uncertainty_TM_2-12-14.pdf.

Retirement	<i>e.g., 1.2:1</i>	<i>Credit buyer's obligation</i>	<i>A 0.2 factor is used to ensure that all trades generate a net water quality benefit.²⁶</i>
TOTAL	<i>e.g., 2.2:1</i>	<i>Credit buyer's obligation</i>	

Trading ratios, and allowing for adjustments to those ratios, can provide important incentives for different types of activities. State agencies may choose to provide ways to reduce ratios based on actions like early implementation, watershed-level monitoring, actions with multiple ecological benefits, etc. The language below is one example dealing with uncertainty ratios.

The uncertainty ratio multiplier can be adjusted downward by as much as 0.5, with approval from [STATE AGENCY], if:

- The permittee can demonstrate, through direct measurement, in-stream water quality improvements in a manner that reduces the influence of uncertainty; or
- The permittee agrees to fund and undertake research initiatives investigating the [Insert research need that would address existing sources of uncertainty].
- The project in question has been generating credits for multiple years and has developed a strong track record of reliable performance.

[STATE AGENCY] will evaluate ratios in conjunction with the reissuance of NPDES permits for point sources to ensure they remain sufficiently protective of the environment and appropriate for that permitted trade.

5.2 Taking a Holistic Approach to Managing Uncertainty

Trading ratios are just one way in which program uncertainty and risk are addressed in water quality trading programs. There are several other mechanisms that deal with risk, described in Section 5.2 of the National Network Guide, which may be applicable to your watershed and/or stakeholders. It is likely this section can be deleted for the final framework. This section can be omitted if all mechanisms to address risk and uncertainty are addressed in the state guidance or elsewhere in this watershed trading framework.

²⁶ See EPA Region 3. 2014. Accounting for Uncertainty in Offsets and Trading Programs. EPA Technical Memorandum. Accessed 8/19/2015 at http://www.epa.gov/reg3wapd/pdf/pdf_chesbay/TradingTMs/Final_Uncertainty_TM_2-12-14.pdf.

6. Credit Characteristics: Issuance, Life and Renewal

Some or all credit characteristics may be covered in state guidance or rule. Consider omitting those sections that are redundant.

Once a pollutant reduction has been converted into a credit, there are several aspects of that credit that are important to define.

6.1 Credit Life & Project Life

A credit's "life" is the period from the date a credit becomes usable by a permittee for compliance purposes through to the date when the credit expires and is no longer valid. The credit life needs to be based in science and tied to the critical period(s) for a watershed.

6.1.1 Credit Life

Credits are ["annual," "applicable during xxx-xxx months," or "covering x# years."]

6.1.2 "Banking Credits" for Later Use

Credits cannot be banked (e.g., a pollutant reduction in 2012 cannot be used to offset a discharge in 2016).

6.1.3 Project Expiration & Renewal

Section 6.1.3 of the National Network Guide also provides some options around more nuanced project renewal concepts.

Where projects are continuing to function and are properly maintained, the pollutant reductions from projects [can](#) be renewed to generate credits in subsequent compliance cycles (though the reductions may need to be adjusted to reflect the baseline requirements and trading ratios — See Sections 3.2 and Section 5 — that apply at that future point in time).

6.1.4 Other Credit Characteristics

The contents of 6.1.4 (credits as property rights, credits as assets, tax implications, connection with farm bill programs) are likely to be covered in state rule and/or guidance, if at all. For that reason, it is not covered in this template. Section 6.1.4 of the template for state guidance provides example language that can be used in the framework in the absence of rule or guidance that covers this topic.

7. Project Implementation and Assurance

This section describes the standards that ensure the projects seeking credits were implemented to a high standard, do not create unanticipated environmental impacts, and are maintained in a way that achieves the credited water quality benefits for as long as the project is valid. There is likely to be contents in the state guidance or rule on this subject. The further treatment of this topic within the framework provides an opportunity to develop additional detail on the various parties and processes that will be involved within the particular watershed. States should consider placing required documentation or processes in the state rule.

7.1 Project Site Screening (moved to section 8)

Project Site Screening has been moved to Section 8. The header is included here to maintain consistency with the organization of National Network Guide.

7.2 BMP Quality Standards

This section is used to describe expectations for BMP quality and how the state will review them.

State Policy	Suggested Language
BMP quality standards define performance targets for credit generating actions.	"BMP quality standards set design, installation, maintenance, and performance standards to ensure that BMPs are performing as anticipated. Quality standards for the pre-approved BMPs in this framework are referenced in Section 2.5."
Certified professionals judge BMP quality.	"Credits may be issued if the project has been overseen and designed by one of the following types of certified professionals (e.g., a NRCS Technical Service Provider , stormwater engineer)."
BMPs are reviewed by the state on a case-by-case basis.	" STATE AGENCY will review a proposed BMP for quality and consistency with quantification of water quality benefits."

7.3 Project Design & Management Plan

This section is written consistent with Option B in the National Network Guide, which sets minimum expectations for project design and management plans, but does not require the use of a standard template. Section 7.4 of the National Network Guide provides other options.

All nonpoint source credit-generating projects need to prepare a project design and management plan. The project design and management plan should be prepared by someone qualified²⁷ to select and properly design appropriate BMPs to improve water quality at a specific location.

A project design and management plan should meet the following requirements:

- Be designed with the goal of improving water quality;
- Meet all applicable laws and regulations ([wetlands, stream channel alteration, etc.](#));
- Cause no significant adverse impacts to water quality or other resources (i.e., cannot lead to a violation of water quality standards and must protect the designated use(s) of state waters);
- Outline specific goals;
- Describe the proposed BMPs, the NRCS or other relevant quality standards for each BMP, and expectations for BMP implementation; and
- Describe expectations for BMP monitoring and maintenance and how they will ensure the BMPs stay consistent with quality standards during the project life.

The project design and management plan may address resource issues other than water quality and obligations that are not already required at the discretion of the credit seller.

Agency Policy	Suggested Language
If project design and management plans are required to use a template	All credit-generating projects need to prepare a project design and management plan using the state-approved template in Appendix X. The project design and management plans should be prepared by someone qualified to select and properly design appropriate BMPs to improve water quality at a specific location. Whether the project design and management plans addresses resource issues other than water quality is up to the producer.
If project design and management plans are not required	Credit sellers need to submit adequate information for [STATE AGENCY] or their designee to evaluate the technical merits project design and anticipated management.

²⁷ A qualified professional could be any of the following: an NRCS certified planner or an NRCS employee, a certified crop advisor, or a professional services provider. Some BMPs, such as constructed wetlands, will require consultation with other experts as well. Some BMPs on the list may specify the type of expert that will need to be consulted in the project's design, installation, and maintenance requirements.

7.4 Documenting Pre- and Post- Project Site Conditions

This section may be used to describe specific documentation requirements for pre- and post-project site conditions, if those requirements are applicable for the entire framework. States may also wish to set these requirements for an individual permittee.

Credit sellers should document site conditions before and after installation of the credit generating BMP. Specific documentation needs are specified in the [BMP quality standards in Appendix X](#).

7.5 Project Protection & Stewardship Requirements

See Section 7.5 and Section 7.6 of the National Network's Guide for discussion of project protection and stewardship. The language below is built for 7.5.1 Option A, 7.5.2 Option C, and 7.6 Option B.

This section can be re-written so that project stewardship is specific to a BMP type and/or part of BMP guidelines. Project protection periods can be linked to the project life or the credit life, and the relevant legal safeguards can specify whether protection needs to remain enforceable when property changes hands. The section could also be adjusted to add more specificity on the timing of when project stewardship funds need to be secured.

Adequate legal and financial safeguards must be in place to protect the project for a minimum time period, as described below.

7.5.1 Required Project Protection

Legal protections might include [leases, deed restrictions, contracts or easements](#) that protect the BMPs as they operate for the length of the minimum project protection period (described below).

7.5.2 Minimum Project Protection Period

The project protection period for each BMP is described in [Appendix X \(e.g., seasonal, annual, five \(5\) or twenty \(20\) years\)](#). These minimum stewardship times recognize the balance between maintaining operational flexibility for credit sellers and the need to provide some certainty for point source buyers over the life of their NPDES permit and facility plan.

7.6 Stewardship Funds

Credit sellers should also demonstrate that they [have, or will have](#), adequate funding to operate and maintain BMPs [for the duration of the credit life](#). These types of financial protections could include maintenance funds, performance bonds, restricted accounts, insurance, financial assurances, etc. Different BMPs may require different lengths and amounts of funding.

8. Project Review, Certification, & Tracking

This section describes a standard process to confirm a credit-generating project's implementation, review project performance, and track credits over time. This section will be highly specific to a given state since it is based on the state's processes (including credit issuance and public notice and comment) and each state's terminology. This template provides one example of how a state may choose to manage these aspects of program administration, along with a few options within that example.

Some of the terms and assumptions applied here include:

- Credits become real and can be used after a "Credit Certificate" is signed by the state agency, which occurs after implementation and Initial Project Review are complete.
- "Registration" is the process of entering credits in a credit registry or ledger.
- Credits are used when they are reported on a Discharge Monitoring Report (DMR) or other regulatory reporting tool, after which they are retired and cannot be used or sold again.

It may also be relevant to note that while including process-related information in the framework provides a high level of transparency and certainty for credit sellers, it may hamper the state's ability to update processes or forms as the program evolves. Particularly where watershed frameworks receive significant public oversight and/or formal approval, states may consider omitting operational information from the framework in favor of developing an informal "handbook" or "protocol" for credit sellers that provides specific instructions and can be more easily updated.

If this information is covered in detail in the state guidance, consider omitting it here.

8.1 Initial Project Screening

All potential credit generating projects can undergo an optional Site Screening to determine eligibility.

Agency Policy	Suggested Language
All projects intended to generate credits must go through Site Screening process prior to Project Review.	All potential credit generating projects must undergo a Site Screening to determine eligibility prior to Initial Project Review.
Site Screening is voluntary and is performed at the credit seller's discretion.	All potential credit generating projects can optionally undergo a Site Screening to determine eligibility prior to Initial Project Review.
Site Screening is not required or necessary.	Delete section.

Site Screening does not guarantee a project will be verified, but may help credit sellers reduce risk and avoid unnecessary costs by identifying any potential problems before investments are made. Basic eligibility criteria for non-point sources are listed in Section 3.4 of this framework. Table 2.5 lists BMPs approved for credit generation.

The credit seller should submit the following documentation with a request for Site Screening to [\[STATE AGENCY\]](#) or [\[3rd PARTY REVIEWER\]](#):

- Draft project design and management plan;
- Draft project protection documentation (e.g., lease, easement, etc.); and
- Summary of project eligibility relative to requirements in this framework.

Complete and correct information is required for accurate evaluation of project eligibility. Approval represents only a preliminary determination of the project's eligibility to generate credits. The type, quantity, and final approval of credits are confirmed in later phases. [Where a project is not approved, a justification and suggestion for remedy will be provided.](#)

8.2 Initial Project Review & Credit Certification

See Section 8.1 and Section 11.1.2 of the National Network Guide for discussion of what information is required, how many projects go through Project Review, and who completes the Initial Project Review. As noted above, the content of this section will vary greatly depending on the state's process and terminology. In this templates, the authors assumed that Project Review would occur after implementation. Specifically, some states may conduct administrative and technical review prior to project implementation, in which case, this step includes only confirmation of project implementation.

8.2.1 Required Components of Initial Review

D. Point Sources

A point source wishing to generate credits will submit to [\[STATE AGENCY\]](#) a [credit application for Project Review](#) showing credits generated on a [monthly](#) basis using [daily](#) monitoring data, application of baseline requirements, and application of any trading ratios.

Proposed point source credit [project design and management plan](#) are reviewed by [\[STATE AGENCY\]](#) as part of the procedures for NPDES permits. The credit transaction is also required to be reported in the DMRs for both the point source buyer and seller in the same time period the point source buyer is using the credits.

E. Nonpoint Sources

Nonpoint sources wishing to generate credits will submit to [\[STATE AGENCY\]](#) or [\[PERMITTEE\]](#) or [\[3rd PARTY REVIEWER\]](#) a [credit application for Project Review](#) (see Section 8.1.3), after which a Project Review is conducted by [\[STATE AGENCY\]](#) or [\[PERMITTEE\]](#) or [\[3rd PARTY REVIEWER\]](#). This includes:

- **Administrative Review:** Confirmation of project eligibility ([if not already confirmed during Site Screening](#)) relative to all requirements in the permit.
- **Technical Review:** Confirmation that credits were quantified accurately via review of [\[QUANTIFICATION METHOD\]](#) and that all required documentation (e.g., data files, model parameters and/or assumptions) is complete and correct.
- **Confirmation of Project Implementation:** Confirmation that the project was installed ([via a site visit or other means](#)) consistent with an approved project design and management plan, and that any BMPs expected as part of baseline are in place.

8.2.2 Confirming Project Implementation

Use this section to describe whether site visits are conducted and who conducts them.

Project implementation will be confirmed via site visit by the [STATE AGENCY] or [PERMITTEE] or [3rd PARTY REVIEWER] within 1 year of project implementation and before credits may be certified or issued. [STATE AGENCY] may visit the site at any time throughout the life of the credit to confirm implementation and proper maintenance.

8.2.3 Required Project Documentation

Describe the project documentation that is required for Project Review if it is applicable for the entire framework. States may want to consider formally recognizing these requirements in rule, however, this is one area of the Project Review process that is particularly likely to change over time as forms or checklists are created, and may be more applicable for an informal “handbook” or “protocol” for credit sellers that provides specific instructions and can be more easily updated over time.

The credit seller should submit the following documentation as part of the credit application for review:

- As-built (post-construction) project design and management plan;
- Final project protection documentation (e.g., lease, easement, etc.);
- Documentation of project stewardship (e.g., stewardship plan); and
- Credit quantification package (e.g., data files, model parameters, etc.).

8.3 Ongoing Verification

This section defines the process for Project Review after the first year (or first review cycle, where review is not conducted annually), including what information is collected, how often, and who is responsible for ongoing Project Review.

To verify that nonpoint source projects are being maintained and functioning as detailed in their respective project design and management plans (Section 4.5), the [STATE AGENCY] or [PERMITTEE] or [3rd PARTY REVIEWER] will conduct reviews of some or all nonpoint source credit-generating projects [“annually”, or “on the schedule described for each BMP in Appendix X,” or “periodically at the discretion of the [STATE AGENCY]”].

Additional reviews may be conducted at any time. The review conducted depends on the individual project proposal, and may include site visits. Copies of the reports from these reviews will be provided to the credit holder. NPDES permit holders remain responsible for ensuring the proper implementation of BMPs and accurate accounting of credits produced. Any compliance matters or enforcement actions will be taken up with the NPDES permit holder only.

8.3.1 Ongoing Review of Project Implementation

This section describes whether and how often project implementation will be confirmed throughout the life of the project and can easily be combined with Section 8.2. This can be done with a table in this section, or by including the ongoing review requirements with each of the BMP quality standards (presumed here to be in Appendix X).

Ongoing Project Review requirements vary by project type. Requirements are described in BMP quality standards in Appendix [X].

8.3.2 Ongoing Review of Eligibility & Credit Calculation

Use this section to describe whether and how often the eligibility and credit calculations will be revisited throughout the life of the project. Similar to 8.2.1 above, this can be shown in a table here or included in individual BMP quality standards. Consider combining 8.2.1 and 8.2.2 with 8.2.

[STATE AGENCY] expects that credit buyer will maintain valid documentation of eligibility and accurate credit quantification. For projects lasting longer than 5 years, these materials will go through administrative reviewed by [STATE AGENCY] or [PERMITTEE] or [3rd PARTY REVIEWER] on a five-year cycle described in Appendix [X].

8.3.3 Failure to Meet Performance Standards

In the event that Project Review identifies a failure to meet performance standards, the permittee notifies [STATE AGENCY] immediately, after which the permittee will have 60 days to submit a plan for remedy, including performance benchmarks and the conditions under which credits will be suspended or cancelled.

8.4 Dealing with Differences of Opinion during Project Review

This section is most applicable where third parties conduct Project Review on the agency's behalf. The dispute resolution approach described in the framework can be incorporated into the contract for Project Review services.

In the event of a dispute arises between a credit seller and the [3rd PARTY REVIEWER] related to technical review of a credit estimate, the parties agree in good faith to first seek resolution of the dispute through referral of the matter to the [STATE AGENCY].

8.5 Credit Issuance, Tracking, and Reporting

8.5.1 Timing of Credit Issuance

This section assumes the following process steps are in place:

- Credits become real after a "Credit Certificate" is signed by the state agency (Option A from Section 8.4.1 in the National Network Guide), where credit issuance occurs *after* all stages of Initial Project Review, including confirmation of project implementation. Some states may issue credits ex-ante, or before the project is implemented fully;
- The state agency provides the final approval necessary to issue credits (Section 11.1.2 Option D); and

- There is a centralized credit ledger (Sec 8.5, Option A or B).

E. Point Sources

Once [STATE AGENCY] confirms a point source's creditable pollutant load reductions, [STATE AGENCY] will provide the point source with a [Credit Certificate](#), at which time credits are issued and included in the [LEDGER MANAGER](#) ledger as certified point source credits.

F. Nonpoint Sources

After Project Review of nonpoint source credits, [STATE AGENCY] or [3rd PARTY REVIEWER] will certify that all aspects of a project are in place and provide a [Credit Certificate](#) to [STATE AGENCY]. The [STATE AGENCY] will review the [Credit Certificate](#). Once approved, the [STATE AGENCY] will provide the credit seller with a [Credit Certificate](#), at which point credits issued and included in the [LEDGER MANAGER](#) ledger as certified nonpoint source credits.

The language below makes space for phased release of credits, particularly for BMPs that are slow to mature (e.g., riparian or wetland restoration). The BMPs for which phased credit releases apply should be noted either here or in the BMP quality standards appendices.

Most BMPs will start generating water quality improvements immediately. All credits can be released as soon as these BMPs are installed. For BMPs that take time to mature (e.g., restored wetlands or riparian planting), credits may be released in phases, or a ratio can be used to account for time lag, as described in [Appendix X](#).

8.5.2 Serialization of Credits upon Issuance

Use this section if credit serialization is required.

8.5.3 Tracking Credits and Trades

The focus of this section is expanded from the National Network Guide. This section can describe how credits can be used, changes in project or credit status should be reported, and to whom. It may be important for tracking purposes to specify when credits are considered "used."

Any change in status of information in Table 8.4.3 must be reported to the [\[STATE AGENCY\]](#) and [\[LEDGER MANAGER\]](#) immediately.

Table 8.4.3. Tracking Changes

Change	Reporting	Submitted by	How sSubmitted and to wWhom
Credit status	Note whether the credit is ex ante, ex post, active, retired, suspended, cancelled.	Permittee	[LEDGER MANAGER]
Credit use	The application of credits toward a permit obligation should be reported through a Notice of Credit Use , indicating: the number of credits used, the	Permittee	[STATE AGENCY] via permittee attestation accompanying DMR and

	project(s)/facility generating the applied credits, and signature from the credit owner.		[LEDGER MANAGER]
Trades	The movement of credits between owners should be reported on a Trade Notification Form, including: the transacted credit quantity, project(s)/facility generating the transacted credits, purchase price, and signatures from the buyer and seller.	Trade parties	[LEDGER MANAGER]

Trading parties must generate and maintain records to substantiate the validity of underlying reductions of pollutants and to document trades. These records are to be made available to [STATE AGENCY] upon request. Buyers should retain copies of trading records on site for a five-year period after completion of a trade contract.

8.5.4 Credit Use, Status, Retirement, & Resale

It may be important for tracking purposes to specify when credits are considered retired. In establishing a formal timing of credit retirement, consider whether credit re-sale will be allowed.

Credits are considered used after they are applied toward a permit obligation and reported in a DMR. A change in credit status [STATE AGENCY] and [LEDGER MANAGER] via formal, written notice. Credits are retired upon receipt of formal notice of use or at the end of the credit life, whichever comes first. Credit use is reported to [STATE AGENCY] and [LEDGER MANAGER] via formal, written notice. The [LEDGER MANAGER] will automatically retire credits at the end of their credit life. Credits may be resold prior to use and retirement.

8.5.5 Suspending or Cancelling Credits

In the event that performance standards or other conditions of this framework are not met, the [STATE AGENCY] or [3rd PARTY REVIEWER] will submit a Notice of Credit Suspension to the [LEDGER MANAGER] and credit buyer/owners, indicating that credits are suspended and cannot be used or sold. In the event that the nonconformance is not remedied per procedures in section 8.2.3, [STATE AGENCY] or [3rd PARTY REVIEWER] will submit a Notice of Credit Cancellation to the [LEDGER MANAGER] and credit owners, indicating that credits should be cancelled.

8.6 Credit Ledger & Public Information

Use this section to describe the nature of the credit ledger/registry, responsibilities of the entity managing the ledger, and what information is shared with the public (either via the ledger or otherwise).

This section is written to be consistent with Option A or B in Section 8.5.1 of the National Network Guide, where credits are tracked in a central ledger. Where the state agency manages the credit ledger, consider adding additional functions related to compliance (e.g., tracking the impact of trade credits on effluent limits, or producing *Trade Summary Reports* required for permit compliance and providing them to the point sources involved in trades). Where the permittee manages their own ledger, consider narrowing the scope of the ledger to only that permittee's credits

[STATE AGENCY] or [PERMITTEE] or [3rd PARTY REVIEWER] is responsible for tracking credit-generating projects and credit issuance, transaction, use, and retirement through management of the credit ledger. Major functions of trade tracking include the following:

- Accepting and processing Credit Certificates, Notices of Credit Status Change, Notices of Credit Use, Trade Notification Forms, Notices of Credit Suspension, and Notices of Credit Cancellation;
- Rejecting project credits that have not been verified as meeting program requirements;
- Reconciling and accounting of all transactions, credit use, and retirement in the trading area to ensure credits are not used more than once; and
- Making information readily available to regulatory agencies and the public regarding the following:
 - Credit generating projects: location, BMPs applied, credits generated and Project Review status; and
 - Accounting of all credit account balances.

The credit ledger must be subject to sound data system and accounting principles with the ability to support review by [“the state agency” or “an independent third party auditor”].

9. Compliance and Enforcement

This section is largely blank, providing an opportunity for states to specify their own enforcement procedures. These may be the same as other NPDES violations (if these are specified for the state). Most likely, any trading-specific compliance measures would be included in state guidance or rule, in which case, this section can be omitted. For additional options, see the National Network publication *Building a Water Quality Trading Program* Section 9.3.

Compliance will be ascertained through the permittee's DMR and annual reports, which shall demonstrate that it has secured and continues to hold an adequate credit balance to meet its established effluent limits. Enforcement of the trading program as detailed in this framework shall be consistent with applicable state and U.S. EPA enforcement policies and guidance.

10. Program Improvement and Tracking

10.1 Improving Program Standards, Protocols, and Processes

This section describes the approach to updating and “adaptively managing” the Trading framework standards and processes. Consider consolidating 10.1-10.3.

10.2 Updating Quantification Methods

Agencies may wish to include information on when and how quantification methods will be reviewed and updated, particularly where there are specific review timelines in place for a model or quantification method used in the program.

Quantification methods may be updated periodically, either at the request of the permittee or credit seller (following the process in Section 10.4), or through internal review when proposed or developed by the [\[STATE AGENCY\]](#).

[\[QUANTIFICATION METHOD\]](#) will be reviewed on an [\[X\]](#) year cycle to incorporate new information, research findings, and/or monitoring data.

10.3 Incorporating Trading Program Updates

This section describes the timing or process through which changes in the trading program take effect. Typically, this is associated with modifications or renewal of a permit.

Changes in trading program processes and quantification methods [must be reflected in the permittee’s approved permit and/or trading plan in order to take effect.](#)

10.4 Approving New and Modified BMPs

The process described below should be modified consistent with the state’s internal review processes. This example builds from review processes in Idaho and by the Chesapeake Bay Program Water Quality Goal Implementation Team. States may wish to provide an example of a BMP package as described in Step 1 as a means of clarifying expectations for those proposing new practices.

[BMP quality standards are essential for consistently and legitimately translating ecological benefit into a credit that can legally offset an impact. These quality standards are used in Site Screening, site design & implementation, Project Review, Certification, and registration to predictably and fairly operate across watersheds as applied to different permittees. Standards development also includes adaptive management to improve the elements of trading guidance, frameworks, or plans with new information over time. Therefore, this framework will be updated as necessary over time to reflect new, technologies, practices, and policy.](#)

A list of approved BMPs can be found in [Appendix \[X\]](#), which includes each BMP’s quantification methodology, monitoring, and maintenance requirements. Practices are developed and added to the list by following the steps outlined below. Practices may be added to the BMP List at any time.

The state may consider removing the above paragraph if pre-approved BMPs are listed in individual trading frameworks and not the state guidance.

A list of approved BMPs can be found in Section 2.5. This BMP List sets out which BMPs are currently recommended for trading, and [Appendix X](#) describes each BMP’s quality standard, including procedures for determining the amount of credits and its monitoring and maintenance requirements. Practices are developed and added to the list by following the steps outlined below. Practices may be added to the BMP List [[“at any time,” “on an \[INTERVAL\] schedule,” or “on a case-by-case basis”](#)].

Step 1: Prepare and Submit Proposed BMP Package

New practices may be nominated by [anyone](#) for inclusion on the BMP List. Each proposed BMP package must contain a description of the BMP and how it works; where the BMP should be applied (appropriate site conditions); potential side effects and ancillary benefits; design, installation, operation, and maintenance requirements; monitoring requirements; a method for quantifying credits, including any appropriate BMP efficiency or uncertainty ratio(s); and substantiating information. The proposed BMP package must be submitted to [\[STATE AGENCY\]](#).

Step 2: Initial Screening of BMP Proposal

[\[STATE AGENCY\]](#) will perform an initial screening of the package for completeness and forward complete packages in a timely manner to a [BMP technical committee comprised of NAMES OF ORGS OR STAKEHOLDER TYPES](#), to review such packages. The BMP committee only reviews [nonpoint source BMPs](#).

Step 3: Review Process and Criteria for BMP Consideration

The BMP technical committee will review the package in a timely matter. If the proposed BMP involves new technology or methods for which data and experience are insufficient to support credit quantification via models or pre-approved efficiency rates, then the BMP will initially only be approved if reductions in pollutant loading due to the BMP can be [directly measured, granted the monitoring is scientifically credible and not cost prohibitive](#).

Step 4: State Concurrence, Public Notice and Comment

If the BMP technical committee recommends the BMP, it is forwarded to [\[STATE AGENCY\]](#) to conduct a public notice and comment period. Comments will be limited to the new BMP, and not to the program or the list of BMPs that have already been approved.

Step 5: Final Decision/Addition to BMP List

[\[STATE AGENCY\]](#) will revise the BMP based on public comments, in consultation with the BMP technical committee, and issue its final decision. If it is approved, the BMP will then be placed on the BMP List for the specific watershed trading framework.

Significant revisions to BMPs that have already been approved will follow the same process as for adding a new BMP. BMP revisions may be triggered by the results from monitoring of a BMP's overall effectiveness and impact on other environmental parameters, as well as research on a BMP's performance at other sites.

10.5 Evaluating Program Effectiveness

Use this section to describe any monitoring or evaluation efforts to determine the efficacy of the trading program

IV. TEMPLATE NPDES PERMIT LANGUAGE

Last Updated 07/07/16

About this template: The template is meant as a starting point only. Any language can be adjusted to meet the needs of a particular state. This template was developed to work in concert with other ACWA/Willamette Partnership Trading Toolkit templates, including the trading rule, guidance, watershed framework, and/or annual report.

The template provides ideas for states on how to incorporate trading into permits. It does not provide complete language for the entire permit. Instead, it provides sample language on the permit provisions most likely to change as a result of trading. The Toolkit includes a companion Excel spreadsheet that includes more comprehensive permit language samples.

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Template NPDES Permit Language

Last updated 3/24/16

1. Trading Scenarios

The National Pollutant Discharge Elimination System (NPDES) permit is the document wherein trading provisions become enforceable. Every state prepares NPDES permits in a slightly different manner, but there are common elements within every permit (see Section 1.3.1 of the [National Network Guide](#)²⁸):

- Effluent limits define the maximum concentration and/or mass of a pollutant a permittee can discharge;
- Monitoring and reporting requirements detail what gets monitored, how, how often, and in what form of reporting; and
- Special and general conditions supplement the effluent limitations with actions a permittee must take to reduce pollution/potential for discharge or to collect information.

It is anticipated that trading may occur in waterbodies that are not impaired, impaired but without a TMDL, impaired with a TMDL, and impaired with an alternative to a TMDL (see Section 1 of the National Network Guide). [Permit writers may also need to consider a permittee's experience and track record when considering the inclusion of a water quality trading plan in the permit.](#) This permit template, along with the other toolkit templates, assume the use of a water quality trading plan as including the trading program requirements for a specific permittee. NPDES permit writers will also need to account for many different permitting scenarios within water quality trading plans including, but not limited to:

- Renewal of a permit prior to completion of a water quality trading plan;
- Renewal of a permit with existing TMDL/WLAs and an existing water quality trading plan;
- Renewal of a permit incorporating new TMDL waste load allocations with treatment options to be evaluated including water quality trading; and
- Development of a new permit.

The sections below include some of the basic issues, with permit language options, to address these scenarios.

2. Authorization to Discharge & Authorization to Trade

The permit needs a broad authorization to discharge and use trading.

Scenario	Draft Permit Language
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²⁸ National Network on Water Quality Trading. 2015. *Building a Water Quality Trading Program: Options and Considerations* (hereafter "National Network Guide"). Available at: <http://willamettepartnership.org/publications/>

TMDL and water quality trading plan in place	“Water quality trading is authorized as an option for addressing [INSERT POLLUTANTS] load discharges that are in excess of the water quality based effluent limitations in [INSERT TABLE REFERENCE] of the Effluent Limitations and Monitoring Requirements.”
TMDL and water quality trading plan to come	ADD: “... once the permittee has completed the work as described in the Special Conditions Section and submitted a revised water quality trading plan, and once the [STATE AGENCY] has modified this permit to attach an approved water quality trading plan.”

3. Schedule of Submissions & Schedule of Compliance

A schedule defines when trading-specific information needs to be submitted to the permitting agency for review and possible incorporation into a permit. These provisions would be repeated if a permit has separate schedules for submissions and for compliance.

Scenario	Draft Permit Language
Permit with a complete water quality trading plan	“The permittee must submit with the permittee's [MONTH] DMR report an annual report describing the activities conducted by the permittee under the water quality trading plan during the previous year.”
Permit with a water quality trading plan to come	<p>“The permittee must submit no later than 9 months from the issuance of this renewal permit a water quality trading plan which addresses the information needs identified in the Special Conditions Section of this permit.</p> <p>If the revised water quality trading plan is approved by the [STATE AGENCY] after public and agency review, [“the NPDES permit will be modified to include the water quality trading plan either directly or by reference or “it will become enforceable under the NPDES permit by reference”]</p>
Permit that needs time to explore treatment options	<p>“The Facilities Plan for [POLLUTANTS] must be completed XX months after the issuance of the renewal permit. The selected [POLLUTANT] treatment option must be submitted no later than XX months from the issuance of the renewal permit along with a request to modify the permit to include the needed treatment option.”</p> <p>If the selected treatment options include the development and implementation of water quality trading, [“the permit will be modified to include a compliance schedule for submission of a water quality trading plan” or (where a draft plan or framework is already available) “trading may proceed per the water quality trading plan enforceable under this NPDES permit by reference”]</p> <p>If the water quality trading plan is approved by the [STATE AGENCY] after public and agency review, [“the NPDES permit will be modified to include the water quality trading plan either directly or by reference” or “it will become enforceable under the NPDES permit by reference”]</p>

4. Effluent Limitations and Monitoring

The effluent limitations section must describe the discharge limits, but will also likely need to define how the use of water quality credits will actually offset excess waste load discharges and therefore meet effluent limits. Inclusion of trading in this portion of the permit is only applicable where the permitting agency has authorized trading and a Trading Plan is part of the permit either directly, or by reference.

Scenario	Draft Permit Language
Permit with a complete water quality trading plan	Calculate total pollutant/waste load Calculate excess waste load Identify credits required for every unit of excess waste load

The effluent limits section can also include the reporting requirements for credits

Scenario	Draft Permit Language
Permit with a complete water quality trading plan	“The facility shall report the quantity of credits that it currently holds on its monthly discharge monitoring report (DMR).”
	“In the comment section of the DMR, the permittee must include a reference to the publicly available web location of its credit registration.”
	“Each month, the permittee must compute the number of credits needed to offset any exceedances of the effluent limitation(s) for [POLLUTANT(S)] that occurred during the month and document that the permittee has secured the necessary credits to offset these exceedances on the monthly DMR.”

5. Required Elements of a Water Quality Trading Plan

A schedule defines when trading-specific information needs to be submitted to the permitting agency for review and possible incorporation into a permit. These provisions would be repeated if a permit has separate schedules for submissions and for compliance.

Scenario	Draft Permit Language
Permit with a complete water quality trading plan	“The permittee will implement the attachment water quality trading plan to achieve compliance with the [POLLUTANT] effluent limitations established in [INSERT TABLE REFERENCE] of this permit.”
Permit with an acceptable water quality trading plan to come	“This permittee has submitted a water quality trading plan in its NPDES permit renewal application but the plan lacks an adequate description of several essential water quality trading plan elements. Consequently, the permit writer will establish specific permit language in this section to require the permittee to resubmit a revised water quality trading plan which adequately addresses the plan elements (see Table 5 for language).”
Permit without a water quality trading plan	“The permit writer will establish specific permit language in this section to require the permittee to develop a water quality trading plan which

adequately addresses the plan elements (see Table 5 for language).”

For every permit with a completed and accepted Trading Plan referenced by or attached to the permit, there will need to be some language describing the elements of the Plan. For every permit with an incomplete plan or a requirement for a plan to be submitted, there will need to be permit language identifying what needs to be covered by the plan.

Table 5. Essential Elements of a Water Quality Trading Plan

The essential elements of the attached water quality trading plan include:

- Description of the trading area and how trades executed in this area are protective of designated uses;
- Description of the applicable baseline requirements, which should include: sources of applicable regulation or law in the trading area, how baseline is expressed in the permit—i.e., as a set of minimum BMPs for credit sellers; as a % reduction target applied to all credits sold; as an overall requirement imposed on the buyer;
- Description of the credit quantification methodology(ies), including: how pre- and anticipated post-project conditions are estimated or measured, how credit values are derived, how baseline is accounted for;
- Description of the trading ratio(s), including: articulation of assumptions, calculations and components;
- Description of the risk mitigation mechanisms, such as: reserve pool, insurance, and performance bonding requirements;
- Description of the credit generating project pre-screening process and whether it is required or suggested;
- Description of the allowable credit generating BMPs, including: actions, identification of quality and performance standards;
- Credit life, including: when credits become valid, how long credits remain valid, how credit life matches up with permit limits, renewability of credits;
- Project site design, maintenance and implementation/performance confirmation, including: whether these components are required, and if so, the frequency and aspects of these confirmations;
- Project review of project site implementation and performance (if required) with: the entity that will perform, the frequency and content, and the standards by which performance is judged); and

- Credit registration (if required) with characteristics of credit registry, information disclosure minimums.

Essentially, the same permit language could be used for the other scenarios by modifying the language slightly to indicate that these are the essential elements which need to be covered in the water quality trading plan to be submitted.

6. Required Reporting Elements

For every permit with a completed Trading Plan, there will need to be some language in the permit on required elements of an Annual (or more frequent) Report.

Table 6: Required Elements of a Report

The permittee must generate an Annual Water Quality Trading Report, submit it with the first DMR of each year, and post that report to a publicly available website. That report should include the following:

a. Summary descriptions of all WQT projects, including those completed in prior years, including:

- (1) Project site descriptions;
- (2) Number of credits generated from each project site and methods used for quantifying credit values;
- (3) Whether credits were generated by permittee or purchased by the permittee, and if so, from whom;
- (4) How credits were used (e.g., applied towards compliance with waste discharge limitations, sold to another permittee);
- (5) Summary of any material changes at project sites, and how the permittee has responded and/or remedied the changes;
- (6) Summary of site conditions/progress versus applicable performance standards.

b. A progress update relative to the water quality trading plan (e.g., status of plantings).

c. A progress update of water quality trading plan implementation versus compliance schedule obligations, and other permit conditions.

7. Permit Modification

Some permittees may need time to identify a treatment technology and/or develop a water quality trading plan. Permit reopener language supports amendments to the permit.

Scenario	Draft Permit Language
----------	-----------------------

Permit without a complete water quality trading plan	“Once the agency has received, reviewed, submitted for public notice, responded to public comment, and approved the selected [POLLUTANT] treatment options, the permit will be modified to include the necessary WQT plan implementation conditions.”
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V. TEMPLATE ANNUAL REPORT

Last updated 04/12/2016

ABOUT THIS TEMPLATE: The template is meant as a starting point only. Any language can be adjusted to meet the needs of a particular state. This template annual report was developed to work in concert with other ACWA/Willamette Partnership Trading Toolkit templates, including the trading rule, guidance, watershed trading framework, and/or permit templates.

Water Quality Trading Program Annual Report

Reporting Date

NPDES Permit Number

NPDES Permittee

Effective date of water quality
trading plan

1. Introduction

Provide the reader a brief background on the conditions under which a permit (and TMDL or other watershed document, if applicable) was established and the requirements from the permit and/or water quality trading plan that apply to this report and the trades and trade projects described in this annual report.

Provide the reader with a brief background on the purpose of the report. Describe why there is a water quality trading plan and why the permit required the permittee to implement such a plan. If the water quality trading plan was required to offset excess waste load discharges, describe the pollutant(s) involved and the requirements from the NPDES permit and/or water quality trading plan that apply to this report.

This annual report is a summary of water quality trading activities conducted for X, Y, and Z parameters water quality trading plan issued in [YEAR], as approved by [STATE AGENCY] and [REGULATORY PERMIT] requirements.

2. Trading Requirements

A. Permit Waste Load Limitations & Trade Credit Requirements

In this section, provide a narrative summary of waste load limitations established in the permit for the pollutant(s) being traded as well as the permit requirements to provide trading credits for any discharged waste load in excess of this limitation(s) (with references) or pull in the exact permit language. Also, include any special conditions in the permit that relate to trading (e.g., compliance schedule). This example assumes that a TMDL is in place for the waterbody. Where there is not a TMDL in place, revise to reference the technical basis for waste load allocations.

The waste load allocation for [xxx](#) (pollutant) is based on the total maximum daily load (TMDL) established for the [\[WATERSHED NAME\]](#) basin ([add appropriate reference](#)). The TMDL study examined the water quality standards violations in [xxx](#) river basin and calculated the total maximum daily load for [xxx](#) pollutant allowed in order to achieve the existing water quality standard. Based on this TMDL work, the waste load allocations (WLA) were established for point sources discharging into the [\[RIVER NAME\]](#). This permit established the effluent waste load allocation of [3 pounds per day from October 31 through May 31 and 2 pounds per day from June 1 to September 30](#). The permittee is required to secure credits to offset any excess waste load, which is generally meant to be [XXX](#) credits per [YYY](#) time. Actual credit requirements may depend on actual discharges described more fully in [Section X.X](#) of the permit. Table 5.1 provides a summary of waste load discharges and any required trading activity.

The permittee must provide [3 credits for every 1 pound of excess waste load discharged above these effluent limits](#).

B. Water Quality Trading Plan Requirements

Where the specifics of trading are incorporated into the permit through a water quality trading plan, use this section to either summarize (with references) the requirements of the water quality trading plan or include the specific language from the water quality trading plan.

Any project generating credits must be consistent with the permittee's water quality trading plan, and some of those requirements include:

- Credits must be generated and used by the permittee within the [XXXX](#) trading area, described more fully in [Section X.X](#) of the water quality trading plan;
- Trading baseline is defined as [XXXXX](#);
- Credits are calculated using approved methodologies for approved BMPs ([INSERT LINK TO THESE](#)); and
- Credit value is adjusted by a ratio of [XXXX](#) defined in [Section X.X](#) of the water quality trading plan.

The activities reported here were also implemented to meet the following additional objectives of the water quality trading plan, including:

- [OBJECTIVE 1 \(e.g., reduce XXXX quantity/time of Y pollutant\)](#)
- [OBJECTIVE 2 \(e.g., Acquire XXXX credits from A, B, and C BMP types or quantity of projects\)](#)
- [OBJECTIVE 3 \(e.g., Provide X, Y, and Z additional environmental benefits\)](#)
- [OBJECTIVE 4 \(e.g., Create X, Y, and Z economic or other value for the community\)](#)

The [\[POLLUTANT\]](#) water quality trading plan and associated activities reported in this document are specific to the [\[TRADING AREA DESCRIPTION\]](#).

3. Changes Implemented Through Adaptive Management

This section of the annual report is intended to provide a summary of adaptive management measures implemented under the water quality trading plan during the reporting year.

Adaptive management actions may have been driven by the permittee and approved by the state agency to update the water quality trading plan, or process changes recommended by the state agency. It is important for transparency to include all programmatic changes and the resulting impacts on projects and credits reported on as part of the water quality trading plan.

It is also important to note, that under Section VII of this report, the permittee will describe, based on monitoring conducted during this reporting period, what adaptive management changes are anticipated for the coming year.

Section X.XX of the water quality trading plan describes the acceptable use and authorization of adaptive management in implementing the water quality trading plan. Table 3.1 describes the programmatic changes in effect during the reporting period.

Table 3.1. Adaptive Management Actions

Change	Reason for Change	Impact of Change
<i>e.g., canopy cover and native shrub/woody vine cover will now be used to gauge performance in riparian restoration projects in place of woody stem density. All projects must achieve $\geq 25\%$ combined native shrub and woody vine cover in years 5, 10, 15, and 20. Canopy cover must be $\geq 25\%$ in years 15 and 20.</i>	<i>e.g., High variability in stem density methodologies used by restoration practitioners in the state makes data difficult to compare with other restoration projects. Project managers feel stem density is not an accurate reflection of site condition.</i>	<i>e.g., Monitoring data will shift to new metrics beginning 2016.</i>
<i>e.g., [STATE AGENCY] updated online calculation tool to incorporate recommendations of technical advisory committee</i>	<i>e.g., Additional research completed by University, reviewed and approved by technical advisory committee to allow for calculation at field scale.</i>	<i>e.g., All new projects beginning in 2016 will utilize updated tool for credit calculations</i>

4. Compliance Schedule & Conditions

Insert any compliance schedule requirement for the trading program under the NPDES permit for reader reference.

Table 4.1 demonstrates the permittee's compliance with any trading compliance schedule conditions in the permit.

Table 4.1. Compliance Schedule Conditions

Special Condition	Compliance	Documentation of Compliance

Sample Special Conditions

At issuance of the permit, the permittee may not have the trading credits to offset the excess waste load they are currently discharging at the time the permit is signed. Furthermore, it may take some time for the permittee to secure the needed credits. Consequently, the permitting agency may establish a compliance schedule in the permit for phased implementation of the needed credits at specific times. These milestones may look like this:

- Permittee will provide within 6 months of permit issuance credits to offset one third of the excess XXX (pollutant) waste load being discharged.
- Permittee will provide within 12 months of permit issuance credits to offset two thirds of the excess XXX (pollutant) waste load being discharged.
- Permittee will provide within 18 months of permit issuance credits to fully offset the excess XXX (pollutant) waste load being discharged.
- Another example of a compliance schedule condition would be to identify the specific date for submittal of the Water Quality Trading Annual Report.
- Permittee will provide, with the first DMR report of each year, an Annual Report describing the work to implement the water quality trading plan.
- Another example of a compliance schedule condition would be where the permittee does not currently have a water quality trading plan and the permit is establishing the requirement for them to develop and submit a plan for inclusion into the permit.
- Permittee will within 12 months of permit issuance submit a water quality trading plan and a request to integrate the plan into the NPDES permit.

5. Summary of Annual Trading Activities

This section provides a summary of all credit trading activity for the reporting year including all credits generated by the permittee, purchased and/or sold to other permittees. This section should also include information on how activities for the reporting year make progress towards implementing the water quality trading plan.

Section X of the PERMIT authorizes water quality credit trading through the implementation of a water quality trading plan. The following describes the credit trading activities for [POLLUTANT] that occurred during the reporting year and how those trading activities resulted in water quality benefits.

Table 5.1 below demonstrates how water quality trading for the reporting year was used to meet requirements of the NPDES permit.

Table 5.1 Annual Load Allocation and Crediting

Table 5.1 below illustrates the use of credits to offset any excess waste load from the waste load allocations established under the NPDES permit. It is intended that this table is supported by more detailed data (i.e. monthly, daily) either in an appendix or in a separate spreadsheet. This is intended to be a summary for a reader to understand total activity. This is a summary of all activities and is supported by more detailed tables below.

Permitted WLA ²⁹	Actual WL Discharged ³⁰	Excess WL ³¹	Credits Needed ³²	Credits Secured ³³	Credits Used ³⁴	Net WL ³⁵

²⁹ Permitted Waste Load Allocations – The allowable daily discharges by pollutant

³⁰ Actual Waste Load – Loads calculated at the point of discharge for a permittee

³¹ Excess Waste Load – The difference between Permitted Waste Load Allocation and Actual Waste Load calculated at the point of discharge

³² Credits Needed – The number of credits needed to offset the Excess Waste Load factoring in any needed trading ratio

³³ Credits Secured – The number of credits secured by the various trading projects implemented and described in Table 5.2

³⁴ Credits Used – The total number of credits used to meet permit requirements for the reporting period

³⁵ Net Waste Load – The difference between the Excess Waste Load and the total credits used for the reporting period

Table 5.2. Credit Summary

The table below is a summary of credit trading activity for the reporting period. Additional information regarding the compliance of each credit with requirements per state rule/guidance and additional verification information shall be provided in additional sections of the annual report. Additional information pertaining to project verification and performance are also to be provided in additional sections of the document.

Project Name/ID ³⁶	Project Type ³⁷	Credits Generated ³⁸	Permittee Generated or Purchased ³⁹	Credit Seller ⁴⁰	Use of Credits ⁴¹	Credits Used	Credits Sold
<i>e.g., Lower Smith Creek Ranch</i>	<i>e.g., Tree planting</i>	<i>e.g., 2.86E+05 (kcal/d)</i>	<i>e.g., Purchased</i>	<i>e.g., Credit Seller</i>	<i>e.g., Applied to waste load requirements</i>	<i>e.g., 2.86E+05 (kcal/d)</i>	

³⁶ Project Name/ID: Form of identification for each individual project. This may be established by either the state agency or by permittee, but should provide a means of identifying individual projects.

³⁷ Project Type: Provides a brief description of the BMPs implemented within the project site.

³⁸ Credits Generated: The total number of credits generated from the project for the reporting period.

³⁹ Permittee Generated or Purchased: Whether the credits were generated by the permittee or purchased from a credit seller.

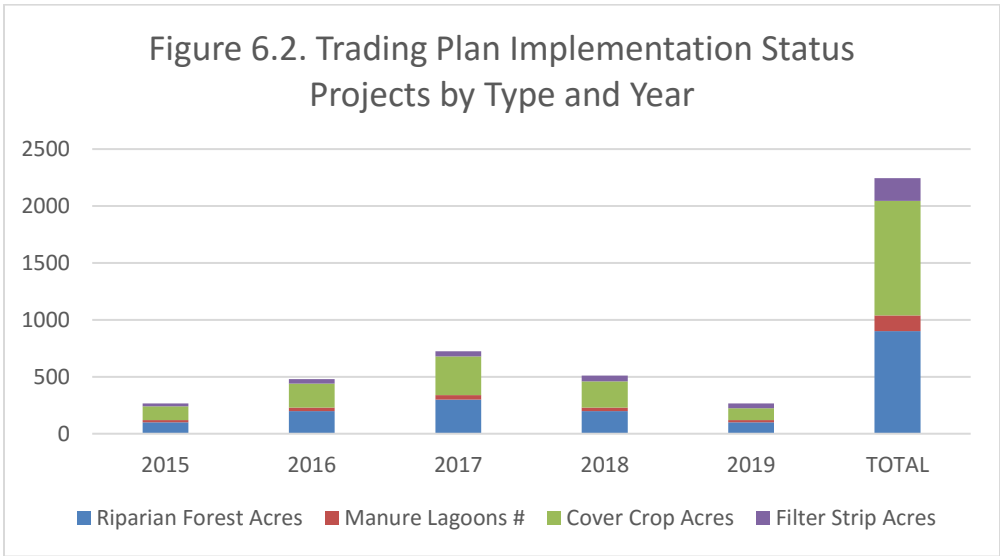
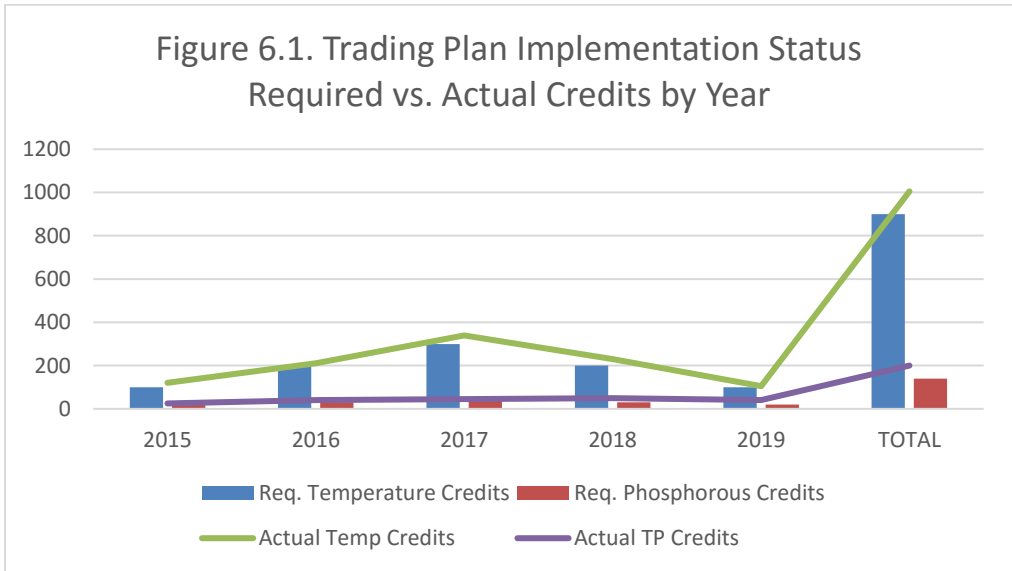
⁴⁰ Credit Seller: Provide the name of the individual or organization from whom the credits were purchased.

⁴¹ Use of Credit: Whether credits were used to meet waste load requirements or sold to another permittee.

6. Water quality trading plan Performance

Provide a summary of how annual activities contribute to progress made in implementing the water quality trading plan. Include total quantity of credits acquired during reporting year and total quantity of credits acquired to date for water quality trading plan if relevant.

Figure 6.1 below identifies progress made toward overall permit objectives. Figure 6.2 summarizes the number of BMP projects by BMP type implemented each year.



7. Credit Project Performance & Adaptive Management

a. Summary of Project Performance

Project performance was monitored consistent with requirements for particular BMPs as described in Section X.X. of the Water quality trading plan and summarized in more detail in Appendix C. [“All credit-generated projects used for this reporting period are meeting required performance standards.” or “The majority of projects are on track to meet or have met performance criteria. Projects X, Y, and Z did not attain performance criteria this year. Specific corrective actions were taken described in more detail in Appendix B and Section I of this report.”] Some of the most important results are described in Table 7.1.

Table 7.1. Project Performance Result Summary

Use Table 7.1 to summarize programmatic take-aways from credit project performance monitoring, including any changes in project conditions (i.e., failure). In this template, more detailed project performance information, broken down by site, would be captured in Appendix B – Monitoring Data.

Performance Result	Implication	Any Action Taken in Response
<i>e.g., significant growth in invasive species in spring months across multiple projects</i>	<i>e.g., Warm spring temperatures created conditions conducive to invasive species growth earlier in the season</i>	<i>e.g., Site review and potential herbicide application will occur 2-3 weeks earlier</i>

b. Anticipated Adaptive Management Actions

Under this permit, the permittee is responsible for adaptive management of the water quality trading plan, which includes [DESCRIBE THE SCOPE OF ADAPTIVE MANAGEMENT AND ASSOCIATED PROCESSES]. Table 7.2 summarizes the key changes that the permittee anticipates making in the next year of program operations

Table 7.2. Adaptive Management Actions Taken or Recommended

Use Table 7.2 to summarize programmatic actions implemented for the reporting year including the action taken, rationale for adjustment, and effective date. Description of management measures proposed for coming year, action taken and rationale for adjustment. If there is more detailed data supporting the changes proposed here, consider an appendix to house that information.

Adaptive Management Actions	Description/Rationale	Implementation Date
<i>e.g., change from Shade-a-lator version 6.2</i>	<i>e.g., A new version of the model has been approved DEQ. The new version will allow for the use of remotely sensed data.</i>	<i>e.g., 1/1/16</i>

Appendix A. Credit requirements

Use this section to describe how the total number of needed credits was determined including the water quality trading plan baseline, annual waste load allocation, and application of trading ratios.

- a. Calculation of Credit Needs
- b. Calculation of Water quality trading plan Baseline
- c. Application of Trading Ratios

Appendix B: Project Monitoring Reports

Use this section to provide an update on each credit-generating project.

Site Name:

Project ID:

Watershed (HUC 8):

Project Location (lat/long):

Project size (e.g., acres, linear feet of stream):

Project Developer:

Trading baseline achieved? Y/N

Public conservation funds used? Y/N

Source	Amount

Verifier name and accreditation number:

Verification Activity	Years Complete
Milestone Verification (Eligibility, quantification, site visit)	2012
Interim Verification (Monitoring report review)	2013, 2014, 2015

Verification Activities Completed

Project Overview (200-300 words):

Performance Summary (200-300 words):

Monitoring Data Summary:

Measurement/Metric	Performance Threshold	Site Results	Meeting Performance Threshold?
<i>e.g., density of trees</i>	<i>100/acre</i>	<i>150 trees/acre</i>	✓

[Insert any description or explanation related to site metrics]

Selected Photo Point Monitoring:

Photo point 1B
Pre-project, Feb 2012



As-built, May 2012



Year 1, Sept 2012



Year 2, Sept 2013

Photo point 2A
Pre-project, Feb 2012



As-built, May 2012



Year 1, Sept 2012



Year 2, Sept 2013

Photo point 3A
Pre-project, Feb 2012



As-built, May 2012



Year 1, Sept 2012



Year 2, Sept 2013

Summary of Site Management Actions Taken:

Site Management Actions Planned (including relevant timeframe):

Verified Credits

Accounting Unit	Action Type	Start Date	End Date	Credit Type	Units and Unit Type	Reserve Credits Withheld	Total Anticipated Credits	Credits Issued to Date

Appendix C: Credit Compliance with Rules & Regulations

Use this section to provide information that demonstrates compliance of credit requirements per the relevant rule or regulation.

EXAMPLE. For Oregon, this section might contain the permittee's explanation of compliance with the rule governing trading in the state, Oregon Rule 340-039-0040(4).

1. Credits used for compliance with NPDES permit and § 401 water quality certification requirements must be generated within the trading area of an approved water quality trading plan.
2. A credit may not be used to meet a regulatory obligation by more than one entity at any given time.
3. Credits may be generated only from BMPs that result in water quality benefits above the trading baseline requirements.
4. Credits generated under an approved water quality trading plan may not include water quality benefits obtained with public conservation funds. Where public sources of funding are used for credit-generating activities, it is the entity's responsibility to demonstrate compliance with this requirement in its annual report.
5. Credits may be used for compliance with NPDES permit requirements and § 401 water quality certifications once implementation of BMPs has been verified as consistent with applicable BMP quality standards according to OAR 340-039-0025(5)(h).
6. Credits may be generated from BMPs installed before DEQ approves a water quality trading plan if BMPs are verified as having been implemented consistent with BMP quality standards identified in a subsequently approved water quality trading plan and are functioning effectively.

VI. TEMPLATE ANNUAL REPORT TABLES

1. Annual Load Allocation and Crediting Summary

Annual Load Allocation and Crediting Summary								
Instructions								
Enter the point source information in the yellow boxes provided at the top of the annual load allocation and credit summary spreadsheet.								
Facility Name:				Compliance Year:				
Municipality:				NPDES Permit No:				
Watershed:								
Parameter being traded:				Reporting Date:				
Date	Permitted Waste Load Allocation ¹	Actual Waste Load Discharged ²	Excess Waste Load ³	Trading Credits Needed ⁴	Trading Credits Generated ⁵	Trading Credits Purchased ⁶	Total Credits Used ⁷	Net Waste Load ⁸
May 1, (year)			0					
May 2, (year)			0					
May 3, (year)			0					
...			0					
May 31, (year)			0					
			0					
June 1, (year)			0					
...			0					
June 30, (year)			0					
			0					
July 1, (year)			0					
....			0					
July 31, (year)			0					
			0					
August 1, (year)			0					
...			0					
August 31, (year)			0					
			0					
September 1, (year)			0					
...			0					
September 30, (year)			0					
			0					
October 1, (year)			0					
...			0					
October 31, (year)			0					
			0					
Total	0	0	0	0	0	0	0	0
Waste Load Allocations - Daily Loads developed under the TMDL								
Actual Waste Load - Loads calculated at the point of discharge								
Excess Waste Load - Difference between Waste Load Allocation and Actual Waste Load calculated at the point of discharge								
Trade Credits Needed - The number of credits needed to off set the Excess Waste Load factoring in any needed trading ratio								
Trade Credits - The number of credits generated by the trading projects listed in the trading plan								
Trading Credits Purchased - The number of credits purchased for the reporting year not listed in the trading plan								
Total Credits Used- The total number of credits used for the reporting year								
Net Pollutant Load - The Difference between the excess waste load and the total credits used for the reporting year								

2. Trading Plan Summary

[illegible]

Credit Project Performance Report								
Create a duplicate reporting sheet for each credit generating project.								
Enter the project information in the yellow boxes provided in the top section of the report.								
Overview								
Project ID				Project Location				
Project Name				Watershed				
Project Developer/Seller				Project Size (Acres)				
Credit Verification								
Credit Type(s)				Verifier(s)				
Initial Verification Date				Verifier accreditation number				
Project Description								
Describe the project including an overview of the location, acreage, anticipated project life and a general description of BMPs implemented as part of the project.								
Project BMPs								
Provide information for each of the headers provided. The operational status is whether the BMP was functional during the reporting								
BMP Type	Location/Field	Installation/ Start Date	End Date	Verification Date	Monitoring/ Evaluation Date	Operational Status	Annual Credits Verified	Total Credits Verified
BMP Performance								
Enter monitoring information for each BMP associated with the individual project, including the date of monitoring, the metric used to determine performance, any minimum standard required and the actual metric measurement for the year. If more than one monitoring date occurred, use additional lines for each reporting.								
BMP Type	Location/Field	Monitoring Date	Performance Metric	Metric Standard	BMP Performance			
Adaptive Management Actions Taken/Recommended								
Provide a description of any adaptive management actions taken during the previous year and any actions recommended for the coming year based on monitoring.								

VII. GLOSSARY

This glossary is based on the National Network Guide.

303(d) List

The list of impaired and threatened waters (stream/river segments, lakes) that the CWA requires all states to submit for U.S. EPA approval every two years on even-numbered years.

4b Alternative

See Alternative to a TMDL Scenario.

401 Certification

As described in 33 U.S.C. § 1341(a)(1), when a federal permit or license applicant plans to undertake any activity (including facility construction or operation) that may result in any discharge into navigable waters, it must obtain a 401 certification. The certification must come from the relevant state and certify that the discharge will comply with select provisions of the CWA.

Active Trading Program

See Trading Program.

Adaptive Management

A systematic approach for improving natural resource management, with an emphasis on learning about management outcomes and incorporating what is learned into ongoing management.⁴² Adaptive management in water quality trading programs may focus on improving program operations, quantification methods, and overall program effectiveness.

Additionality

In an environmental market, the environmental benefit secured through the payment is deemed additional if it would not have been generated absent the payment provided by the market system.⁴³

Aggregator

A third party that collects pollutant reduction credits from several producers to sell in bulk to permitted industrial and municipal facilities.

Alternative to a TMDL Scenario

See Total Maximum Daily Load.

Antibacksliding

As defined in CWA sections 303(d)(4) and 402(o) and 40 C.F.R. § 122.44(l), unless falling under a relevant exception, a reissued permit must be as stringent as the previous permit.⁴⁴

⁴² See Byron K. Williams, Robert C. Szaro, & Carl D. Shapiro, *Adaptive Management: The U.S. Department of the Interior Technical Guide*, pp. v & 1 (U.S. Department of Interior, 2009), available at <http://www.usgs.gov/sdc/doc/DOI-%20Adaptive%20ManagementTechGuide.pdf>.

⁴³ Willamette Partnership ECAS 2013, *supra* note 198, at p. 48 in Appendix B.

Antidegradation

As defined in 40 C.F.R. § 131.12 and relevant state rules and implementation guidelines, these policies ensure protection of existing uses and of water quality for a particular waterbody where the water quality exceeds levels necessary to protect fish and wildlife propagation and recreation on and in the water. Antidegradation also includes special protection of waters designated as outstanding national resource waters. Antidegradation plans are adopted by each state to minimize adverse effects on water.⁴⁵ *See also* Tier 2 Antidegradation Review.

Attenuation (pollutant)

The change in pollutant quantity as it moves between two points, such as from a point upstream to a point downstream.

Banking (of credits)

Credits generated in the present are used to offset a future discharge outside of the credit life.

Baseline (General Nonpoint Source Control Authority)

The level of pollutant reductions a state expects nonpoint source landowners to achieve, as derived from general nonpoint source control authority, prior to trading. Some states may have general, broad authority to control nonpoint source pollution,⁴⁶ which can be used to establish trading baseline levels for state trading guidance, frameworks, or particular trading plans.

Baseline (Regulatory Requirements)

The level of pollutant load associated with specific land uses and management practices that comply with stated requirements in applicable, state, local, or tribal regulations.⁴⁷ These regulations are typically affirmative water quality obligations or non-disturbance regulations (e.g., all farms must have nutrient management plans in place, or riparian vegetation may not be actively disturbed).

Baseline (TMDLs)

The level of pollutant reductions a TMDL and/or a TMDL implementation plan expects specific nonpoint sources to achieve. A single nonpoint source's baseline requirement from a TMDL is derived from the nonpoint source's LA (if a nonpoint source falls under an aggregate LA, then a portion of that LA should be assigned to each nonpoint source).⁴⁸

Baseline (Trading)

The combined pollutant load and/or BMP installation requirements that must be met prior to trading. At a minimum, all individual nonpoint sources must meet existing state, local, and tribal regulatory requirements. Where a TMDL exists and it establishes,

⁴⁴ *See* 2007 U.S. EPA Toolkit for Permit Writers, *supra* note 21, at p. Glossary-1 in Glossary.

⁴⁵ *See id.* at p. Glossary-2 in Glossary.

⁴⁶ *See, e.g.,* Revised Code of Washington § 90.48.080 (2014) (“It shall be unlawful for any person to throw, drain, run, or otherwise discharge into *any of the waters of this state...*”) (emphasis added). Washington Department of Ecology authority to regulate nonpoint sources under this law was recently upheld by the Washington Supreme Court. *Lemire v. Washington*, 178 Wash.2d 227 (Wash. 2013). Likewise, all dischargers are subject to regulation under California state law. California Water Code § 13260(a)(1) (2014). On the other hand, the federal CWA definition of “point source” specifically excludes “agricultural stormwater discharges and return flows from irrigated agriculture.” 33 U.S.C. § 1362(14).

⁴⁷ *See* 2007 U.S. EPA Toolkit for Permit Writers, *supra* note 21, at p. 8 in “Water Quality Trading Scenario: Point Source-Nonpoint Source Trading.”

⁴⁸ *See id.* at p. 7.

through the TMDL and/or the TMDL implementation plans, requirements that differ from existing state, local, and tribal requirements, then the requirements stemming from TMDL LAs and/or TMDL implementation plans will supplement the existing regulatory requirements. Where general nonpoint source control authority exists in a state, a state can rely on this authority to set or supplement its trading baseline level.

Base Year

The date after which implemented BMPs become eligible to generate credits.

Best Management Practices (BMP)

BMPs include, but are not limited to, structural and nonstructural controls and operation and maintenance procedures. BMPs can be applied before, during, and after pollution-producing management activities to reduce or eliminate the introduction of pollutants into receiving waters.⁴⁹ BMPs can consist of land management practices and in-stream improvements (e.g., in-stream restoration actions or in-stream flow augmentation).

BMP Guidelines

A document that defines: A) an approved quantification method, B) the appropriate pre-project site condition to use for calculating the reduction, C) installation and maintenance quality standards, and D) ongoing performance standards to ensure that each BMP is consistently achieving the desired water quality improvements.

Buyers

Buyers of credits include any public or private entity that chooses to invest in water quality credits and other similarly quantified conservation outcomes. Buyers typically buy credits to meet a regulatory obligation. Eligibility criteria for buyers are described in Section 3.1.

Calibration (modeling)

Adjustment of model parameters to better match local conditions, ideally using measured water quality data and BMP site performance metrics representative of the geographic area in which the model will be applied.

Clean Water Act (CWA)

33 U.S.C. § 1251 et seq.

Certification

The formal application and approval process of the credits generated from a BMP. Certification occurs after project review and is the last step before credits can be used toward a compliance obligation.

Compliance Obligation

The total number of credits that a regulated entity must hold in its compliance ledger at particular points in time. In the case of NPDES permittees, this obligation is based on a calculation as to the facility's exceedance over its effluent limit, as adjusted by trading ratio(s) (and where applicable, other policy obligations, such as a reserve pool requirement).

Compliance Schedule

As defined in 33 U.S.C. § 1362(17) and 40 C.F.R. § 122.47, a compliance schedule is a schedule of remedial measures included in a permit or an enforcement order, including a sequence of interim requirements (e.g., actions, operations, or milestone events) that lead a permittee to compliance with the Clean Water Act and regulations.⁵⁰

Credit

⁴⁹ 2007 U.S. EPA Toolkit for Permit Writers, *supra* note 21, at p. Glossary-2 in Glossary.

⁵⁰ *Id.*

	A measured or estimated unit of pollutant reduction per unit of time at a specified location, ⁵¹ as adjusted by attenuation/delivery factors, trading ratios, reserve requirements, and baseline requirements.
Credit (Ex Ante)	Issued based on projects that have received a favorable project site screening but have not yet been implemented.
Credit (Ex Post)	Issued after a project has been implemented, reviewed, and certified.
Credit Contract Period	The duration of a contract between a regulated entity and a project developer (this is relevant where a regulated entity enlists an outside party to fulfill trading plan obligations).
Credit Life	The period from the date a credit becomes usable as an offset by a permittee (i.e., its “effective” date), to the date that the credit is no longer valid (i.e., its “expiration” date).
Credit Stacking	See Stacking (Credit).
Critical Period	The period(s) during which hydrologic, temperature, environmental, flow, and other conditions result in a waterbody experiencing critical conditions with respect to an identified impairment.
Delivery Ratio	See Trading Ratio (Delivery).
Designated Management Agencies (DMA)	As defined in 40 C.F.R. § 130.2(n), an agency identified by a water quality management plan and designated by a state to implement specific control recommendations.
Designated Uses	As defined in 40 C.F.R. § 131.3(f) and 40 C.F.R. § 131.10, designated uses are those uses specified in water quality standards for each waterbody or segment whether or not they are being attained. As defined in 40 C.F.R. § 131.10(a), examples of designated uses include public water supply, protection and propagation of fish, shellfish, and wildlife, recreation, agriculture, industrial, and navigation.
Designee	A person or entity who has been officially chosen to do something or serve a particular role.
Direct Monitoring	See Quantification Method (Direct Monitoring).
Discharge Monitoring Report	A periodic water pollution report prepared by point sources discharging to surface waters of the United States and the various states. Point sources collect wastewater samples, conduct chemical and/or biological tests of the samples, and submit reports to a state agency or the U.S. EPA.
Discharge Point	

⁵¹ See 2007 U.S. EPA Toolkit for Permit Writers, *supra* note 21, at p. Glossary-2 in Glossary.

The point at which a point source adds/discharges a pollutant (as defined in 33 U.S.C. § 1362(6)) into a navigable water (as defined in 33 U.S.C. § 1362(7)). A discharge of a pollutant is defined in 33 U.S.C. § 1362(12).

Effectiveness Monitoring

Systematic data collection and analysis to determine progress of a given water quality trading program (or other implementation strategies) toward the achievement of water quality standards or other program goals. Effectiveness monitoring provides the basis for adaptive management.

Effluent Limit

As defined in 33 U.S.C. § 1362(11), an effluent limit means any restriction established by a state or U.S. EPA on quantities, rates, and concentrations of chemical, physical, biological, and other constituents which are discharged from point sources into navigable waters, the waters of the contiguous zone, or the ocean, including schedules of compliance. *See also* Water Quality-Based Effluent Limitation (WQBEL), and Technology-Based Effluent Limit (TBEL).

Equivalency Ratio

See Trading Ratio (Equivalency).

Exceedance

The difference between a facility's load discharge and its effluent limit.

Hold the Line

See Interim Limits.

Hotspot

See Localized Impact.

Interim Limits

In a pre-TMDL scenario, some states impose more stringent limits on point sources based on the reasonable potential analysis required by 40 C.F.R. § 122.44(d)(1)(ii) (on the theory that even a miniscule addition of the pollutant causing the impairment will contribute to the continuation of this impairment). These interim limits are Water Quality Based Effluent Limits (WQBELs) and, as such, can serve as the impetus for water quality trading. If a state does not impose stricter limits in a pre-TMDL scenario, then permittees are allowed to "hold the line."

Interim Permitting

See Interim Limits.

Leakage

In environmental markets, leakage means that environmental improvements are happening in one location at the expense of increasing environmental degradation somewhere else.

Ledger

A service or software that provides a ledge function for tracking credit quantities and ownership; accounting summaries that cover primarily transactional information. *See also* Registry.

Load Allocation (LA)

As defined in 40 C.F.R. § 130.2(g), this is the portion of a receiving water's loading capacity that is attributed either to one of its existing or future nonpoint sources of pollution or to natural background sources. Load allocations are best estimates of the loading, which may range from reasonably accurate estimates to gross allotments, depending on the availability of data and appropriate techniques for predicting the loading. Wherever possible, natural and nonpoint source loads should be distinguished.

Localized Impact

A localized concentration of pollution that causes a violation of water quality standards at a particular location. In assessing potential near-field impacts, agencies should also consider whether trading will comply with the Endangered Species Act and other species and habitat protection laws; and whether or not near-field discharges addressed through trading will degrade groundwater in violation of any applicable state water quality regulations.

Location Ratios

See Trading Ratio (Delivery).

Look-Back Period

The time period preceding the implementation of a permittee's trading plan during which landowners may take credit for installed BMPs. A look-back period is intended to adjust for a market failure that disincentivizes early action by landowners.

Mixing Zone

As authorized by 40 C.F.R. § 131.13 and implemented according to state law, the area where wastewater discharged from a permitted facility enters and mixes with a stream or waterbody. A mixing zone is an established area where water quality standards may be exceeded as long as acutely toxic conditions are prevented and all designated uses, such as drinking water, fish habitat, recreation, and other uses are protected.

Modeling

See Quantification Method (Modeling).

Municipal Separate Storm Sewer System (MS4) Permit

A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (i) Owned or operated by a state, city, town, borough, county, parish, district, association, or other public body (created to or pursuant to state law) including special districts under state law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the Clean Water Act that discharges into waters of the United States. (ii) Designed or used for collecting or conveying stormwater; (iii) Which is not a combined sewer; and (iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2 (As defined in 40 CFR 122.26(b)(8)).

National Pollutant Discharge Elimination System (NPDES) Permit

As defined in 33 U.S.C. § 1342.

Near-Field Impact

See Localized Impact.

Nonpoint Source

Diffuse sources of water pollution, such as stormwater and nutrient runoff from agriculture or forest lands. See 40 C.F.R. § 35.1605-4. U.S. EPA guidance describes a nonpoint source as "includ[ing] pollution caused by rainfall or snowmelt moving over and through the ground and carrying natural and human-made pollutants into lakes, rivers, streams, wetlands, estuaries, other coastal waters and ground water. Atmospheric deposition and hydrologic modification are also sources of nonpoint pollution."⁵²

Nutrient Management Plan

⁵² U.S. Environmental Protection Agency, *Nonpoint Source Program and Grants Guidelines for States and Territories*, p. 7, note 2 (2013), available at <http://water.epa.gov/polwaste/nps/upload/319-guidelines-fy14.pdf>.

Plan developed for a specific agriculture operation that outlines principles and practices for managing the amount (rate), source, placement (method of application), and timing of plant nutrients and soil amendments.⁵³

Offset(s)

1) (*noun*) Offsite treatment implemented by a regulated point source on upstream land not owned by the point source for the purposes of meeting its permit limit; 2) (*noun*) Load reductions that are purchased by a new or expanding point source to offset its increased discharge to an impaired waterbody. This second use is the more common use of offset. (Note: U.S. EPA considers both types of offsets to be trading programs); 3) (*verb*) to compensate for.⁵⁴

Payment Stacking

See Stacking (Payments).

Permittee

Any entity with a discharge approved or pending approval under state- or federally-issued permit (e.g., NPDES permit). This document focuses on point source permittees seeking or granted permission to purchase water quality credits as a means of permit compliance.

Persistent Bio-accumulative Toxics

See Toxics (Persistent Bio-Accumulative).

Point of Concern

The point at which the greatest deviations from a particular water quality standard occurs, as identified through appropriate watershed-wide modeling (usually in a TMDL).

Point Source

As defined in 33 U.S.C. § 1362(14), this means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include agricultural stormwater discharges and return flows from irrigated agriculture.

Post-Project Performance

The estimated or measured pollution load associated with the post-project site conditions.

Post-Project Site Conditions

The necessary data to quantify post-project water quality benefit through an assessment of actual or anticipated site conditions after project installation. Post-project site conditions may be assessed via a site visit and/or interpretation of remote data.

Post-TMDL Scenario

See Total Maximum Daily Load.

Pre-Determined Pollution Reduction Rates

See Quantification Method (Pre-Determined Pollution Reduction Rates).

Pre-Project Site Assessment

⁵³ See Natural Resources Conservation Service, *Conservation Practice Standard: Nutrient Management, Code 590*, pp. 6-7 (2012), available at http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1046896.pdf.

⁵⁴ 2007 U.S. EPA Toolkit for Permit Writers, *supra* note 21, at p. Glossary-4 in Glossary.

The process of developing and documenting the information necessary to input the needed data into water quality benefit quantification methods. This may include a site visit and/or interpretation of remote data. A pre-project site assessment includes, at the least, an assessment of pre-project conditions and an assessment of anticipated post-project conditions.

Pre-Project Performance

The estimated or measured pollution load associated with the pre-project site conditions.

Pre-Project Site Conditions

The necessary data to quantify pre-project water quality benefit through an assessment of site conditions prior to project installation. Pre-project site conditions may be assessed via a site visit and/or interpretation of remote data.

Pre-TMDL Scenario

See Total Maximum Daily Load.

Program Administrator

The organization responsible for the operation and maintenance of a water quality trading program. Specific responsibilities of a program administrator may include: defining credit calculation methodologies, protocols, and quality standards; project review; and credit registration.⁵⁵

Project

One or more BMPs or other activities, that, taken together, are proposed for generating credits on a single site.

Project Design and Management Plan (Operation and Maintenance Plan)

The document that details A) how the proposed credit-generating actions will be designed and installed to meet BMP guidelines, including a description of the proposed actions, installation practices, anticipated timelines, restoration goals, and anticipated threats to project performance; and B) how the project developer plans to maintain/steward the practice or action for the duration of the project life, keep the practice or action consistent with BMP guidelines, and report on that progress.

Project Developer

Any entity that develops credits, whether that entity is the permittee, a contractor of the permittee that develops or aggregates credits, or a landowner developing credits on a permittee's behalf.

Project Life

The period of time over which a given BMP is expected to generate credits. Typically, the project life is also the minimum project protection period.

Project Protection Agreements

The enforceable agreements to protect BMPs at the project site, which may include leases, contracts, easements, or other agreements. Project protection agreements must cover the credit life and should run with the land to ensure the project will not be affected if ownership changes. *Ideally, these protections will also mitigate against proximate disturbing land use activities.*

⁵⁵ See Willamette Partnership ECAS 2013, *supra* note 198, at p. 8.

Project Protection Period

The duration of the project protection agreement, which at a minimum must cover the credit life.

Project Review

The process of confirming that a credit-generating project has completed certain elements that should help ensure the project provides the water quality benefits it promises. Specifically, confirmation that project site BMPs or credit-generating activities and credits conform to the applicable quality standards required by a program administrator or regulator. This process includes: (1) an administrative review for the completeness and correctness of documentation; (2) technical review for the completeness and accuracy of quantification; and (3) confirmation of project implementation and/or performance.

Project Review (Initial)

The first project review, usually in the first year of project implementation.

Project Review (On-going)

Project reviews in subsequent years of the project life.

Project Review Entity

A state regulatory body, a qualified third party, or a permittee that performs the project review function.

Project Review Plan

The portion of a permittee's trading plan that describes the proposed methods of project review, what information is reviewed and when, who conducts project review, qualification requirements for project reviewers, and the project reviewer's protections against conflicts of interest. The project review plan should also clarify whether and when on-site inspection should occur.

Project Review Protocol

The document that provides the standardized, specific guidance on the review and assessment of credit-generating actions and BMPs and credit calculation methodologies under a water quality trading program.

Project Site (Project or Site)

The location at which BMPs are undertaken or installed.

Project Site Screening (Site Screening or Site Validation)

The initial site screening process through which a project developers receive confirmation that their proposed projects are likely eligible to produce credits, based on the information available at that time.

Proportional Accounting

The generation of multiple credit types where a project site performs more than one distinct environmental benefit on non-spatially overlapping areas.⁵⁶ Although multiple credit values are produced, the sale of one credit has a corresponding reduction in the proportion of all other credits.

Protocols

⁵⁶ See WP & TFT 2014, *supra* note 206, at § 5.3.1.

Step-by-step manuals and guidelines for achieving particular environmental outcomes. Protocols include the actions, sequencing, and documentation necessary to generate credits from eligible BMPs.

Public Conservation Funds

See Public Funds Dedicated to Conservation.

Public Funds Dedicated to Conservation

Funding targeted to support voluntary natural resource protection and/or restoration with a primary purpose of achieving a net ecological benefit through creating, restoring, enhancing, or preserving habitats.⁵⁷ Examples include Farm Bill Conservation Title cost share and easement programs, U.S. EPA section 319 grant funds, U.S. Fish and Wildlife Service Partners for Wildlife Program, and state wildlife grants. Public loans intended to be used for capital improvements of public wastewater and drinking water systems (e.g., State Clean Water Revolving Funds and USDA Rural Development Funds), bond-backed public financing, and utility stormwater and surface water management fees from ratepayers, are not public funds dedicated to conservation.⁵⁸ Public funds dedicated to conservation are often referred to as “cost share” and/or “matching funds.”

Publicly Owned Treatment Works (POTW)

A treatment works which is owned by a State or municipality. This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant (As defined in 40 CFR 403.3).

Quality Standards (BMP)

The necessary specifications associated with a particular credit-generating activity or BMP that ensures that the estimated ecosystem service benefits at a project site are actually achieved through implementation.

Quantification Method

Scientifically-based method for determining the load reduction associated with a given credit-generating activity or BMP. Quantification methods can be grouped into three general types: pre-determined rates/ratios, modeling, and direct monitoring.

Quantification Method (Pre-Determined Pollution Reduction Rates)

Standard modeled values based on the best available science that is used to calculate water quality improvement.

Quantification Method (Modeling)

Mathematical and/or statistical representation of processes driving changes in water quality, based in science, used to estimate the water quality benefits provided by the credit-generating activities. Modeling is also frequently used to predict attenuation of pollutants.

Quantification Method (Direct Monitoring)

Sampling and analysis of both water chemistry (e.g., river turbidity or temperature) and surrogates for water quality (e.g., eroding stream banks or shade from riparian vegetation) used to measure the realized water quality benefits of BMPs and credit-generating activities.

⁵⁷ See Oregon Interagency Recommendations on Public Funds, *supra* note 204.

⁵⁸ See Willamette Partnership ECAS 2013, *supra* note 198, at p. 15.

Registration (of Credits)

The process of assigning a unique serial number to a verified and certified credit, and uploading the credit (and accompanying documentation) to a publicly available website.

Registry

See Ledger. A ledger that includes more project-specific information. Credit registries may act as a mechanism for public disclosure of trading project documentation.

Regulated Entities

Entities regulated under the Clean Water Act. Typically, these entities are regulated via permits, but may also be regulated under operating licenses or judicial/administrative consent decrees.

Regulatory Baseline

See Baseline (Regulatory Requirements).

Report (Annual Compliance)

Annual reports that aggregate the details of individual site performance reports into a comprehensive summary of overall trading plan performance. These reports may be required as special conditions in permits.

Reserve Pool

A collection or bank of unused credits that is available to compensate for unanticipated shortfalls in the quantity of credits that are actually generated.⁵⁹

Reserve Ratio

See Trading Ratio (Reserve).

Retirement Ratio

See Trading Ratio (Retirement).

Site Conditions (Post-Project)

The characteristics and conditions of the project site that are measured or are anticipated to be present after the implementation of a BMP or action and assuming the project site continues to be managed as planned.

Site Conditions (Pre-Project)

A description or measurement of site conditions prior to implementation of the BMP action, used to calculate the current input level of a pollutant (in default unit of trade) from the project site into the waterbody.⁶⁰

Site Performance (Post-Project)

The pollutant load (measured or anticipated) that will enter a waterway, as calculated by the relevant quantification method's interpretation of post-project conditions.

Site Performance (Pre-Project)

The modeled pollutant load that is entering a waterway, as estimated by the relevant quantification method, from a site prior to installing a BMP or action.

Site Screening

⁵⁹ 2003 U.S. EPA Trading Policy, *supra* note 2, at p. 1612.

⁶⁰ *See* Willamette Partnership ECAS 2013, *supra* note 198, at p. 50 in Appendix B.

See Project Site Screening.

Site Validation

See Project Site Screening.

Stacking (Credit)

The generation and sale of more than one kind of credit from the same action on the same area of land, at the same time.⁶¹

Stacking (Payments)

The use of multiple funding sources to support a credit-generating project. Payment stacking is most often discussed in the context of water quality trading when public funds dedicated to conservation are used to fund BMPs or credit-generating activities.

Stewardship Funds

The funding necessary to maintain project sites for the duration of the credit life. Project developers must demonstrate adequate stewardship funding is in place before credits can be verified. Stewardship funding instruments often include performance bonds, restricted accounts, insurance, or other similar documentation.

Technology-Based Effluent Limit (TBEL)

As described in 33 U.S.C. § 1311(b)(1)(A)-(B), a permit limit for a pollutant that is based on the capability of a treatment method to reduce the pollutant to a certain concentration. TBELs for publicly owned treatment works (POTWs) are derived from the secondary treatment regulations (40 C.F.R. Part 133) or state treatment standards. TBELs for non-POTWs are derived from national effluent limitation guidelines, state treatment standards, or on a case-by-case basis from the best professional judgment of the permit writer.⁶²

Tier 2 Antidegradation Review

As part of a Tier 2 Antidegradation program, States and Tribes can identify procedures that must be followed and questions that must be answered before a reduction in water quality can be allowed to “high quality” waters—water bodies where existing conditions are better than necessary to support CWA § 101(a)(2) “fishable/swimmable” uses. In no case may water quality be lowered to a level which would interfere with existing or designated uses.

Total Maximum Daily Load (TMDL)

As defined in 33 U.S.C. § 1313(d)(1)(C), and 40 C.F.R. § 130.2(i), as well as in relevant state regulations. A TMDL is the calculation of the maximum amount of a pollutant a waterbody can receive and still meet applicable water quality standards (accounting for seasonal variations and a margin of safety), including an allocation of pollutant loadings to point sources (waste load allocations (WLAs)) and nonpoint sources (load allocations (LAs)).⁶³

- **Alternative to a TMDL Scenario:** A regulatory environment in which a state uses alternative pollution control requirements instead of implementing a TMDL. Under this alternative, states must provide adequate documentation that the required control mechanisms will address all major pollutant sources and establish a clear link between the control mechanisms and water quality standards (e.g., a 4b

⁶¹ See WP & TFT 2014, *supra* note 206, at § 5.3.2.

⁶² See 2007 U.S. EPA Toolkit for Permit Writers, *supra* note 21, at p. 27.

⁶³ See *id.*, at p. Glossary-5 in Glossary.

rule).⁶⁴ A state may provide for the use of water quality trading in a 4b watershed plan or strategy.

- **Pre-TMDL Scenario:** A regulatory environment in which a waterbody has been listed as impaired but is not yet covered by an approved TMDL.
- **Post-TMDL Scenario:** A regulatory environment in which a TMDL serves as the primary structure and driver for a trading framework or plan. NPDES permits are written to meet the assumptions of the TMDL WLA, and the resulting WQBEL serves as the immediate driver for a trade. States may also have additional requirements surrounding trading in the context of a TMDL.

TMDL Implementation Plans

The management plans designed to implement the waste load and load allocations assigned to entities in the TMDL. In some states, a TMDL implementation plan is required in order to translate LAs into baseline requirements.

Toxics (persistent bio-accumulative)

Persistent bio-accumulative toxics (PBTs). PBTs are chemicals that are toxic, persist in the environment and bioaccumulate in food chains and, thus, pose risks to human health and ecosystems. PBTs include aldrin/dieldrin, benzo(a)pyrene, chlordane, DDT and its metabolites, hexachlorobenzene, alkyl-lead, mercury and its compounds, mirex, octachlorostyrene, PCBs, dioxins and furans, and toxaphene.⁶⁵

Tracking

The process of following the status and ownership of credits as they are issued, used, retired, suspended, or cancelled.

Trading Area

A geographic area within which credits can be bought and sold. A trading area should be defined ecologically where a pollution reduction in one part of a watershed can be linked to a water quality improvement at a point of compliance. Trading areas can also be defined to reduce the risk of localized water quality impairments or localized impacts.

Trading Baseline

See Baseline (Trading).

Trading Guidance

A state's statute, rule, policy, guidance, or other documents articulating how WQT should occur within that state.

Trading Framework

Watershed-level documents that contain details of trading processes and standards.

Trading Plan

Permittee-level trading details; the specific incorporation of trading elements into a permit or other binding agreement. A permittee's trading plan may incorporate the

⁶⁴ See 2006 Integrated Reporting Guidance, *supra* note 63, at pp. 53-56.

⁶⁵ See U.S. Environmental Protection Agency, *Multimedia Strategy for Priority Persistent, Bioaccumulative, and Toxic (PBT) Chemicals*, (2011), available at <http://www.epa.gov/pbt/pubs/fact.htm>. Notable PBTs are prioritized by EPA's Canada-United States Binational Toxics Strategy. *Id.* See also 2003 U.S. EPA Trading Policy, *supra* note 2, at p. 1610 (EPA did not originally support trading of persistent bioaccumulative toxics).

terms of relevant state-wide trading guidance or a watershed trading framework by reference, or it may include all specific details within the permit itself.

Trading Program

The general term used to describe the approach to trading taken by a state agency and/or WQT stakeholders; the full range of policies supported by a state. Active trading programs have completed approved program designs and/or have completed transactions.

Trading Ratio

A trading ratio is a numeric value used to adjust available credits for a seller or credit obligation of a buyer based on various forms of risk and uncertainty. Ratios are applied to account for various factors, such as watershed processes (e.g., attenuation), risk, and uncertainty— both in terms of measurement error and project performance, ensuring net environmental benefit, and/or ensuring equivalency across types of pollutants.

Trading Ratio (Delivery)

The factor applied to pollutant reduction credits when sources are directly discharging to a waterbody of concern that accounts for the distance and unique watershed features (e.g., hydrologic conditions) that will affect pollutant fate and transport between trading partners.⁶⁶

Trading Ratio (Equivalency)

The factor applied to pollutant reduction credits to adjust for trading different pollutants or different forms of the same pollutant.⁶⁷

Trading Ratio (Retirement)

The factor applied to pollutant reduction credits to accelerate water quality improvement. The ratio indicates the proportion of credits that must be purchased in addition to the credits needed to meet regulatory obligations. These excess credits are taken out of circulation (retired) to accelerate water quality improvement.⁶⁸

Trading Ratio (Reserve)

A type of uncertainty ratio in which credits are held in “reserve” and then used to account for uncertainty and offset failures in project performance.

Trading Ratio (Uncertainty)

The factor applied to pollutant reduction credits generated by nonpoint sources that accounts for lack of information and risk associated with BMP measurement, implementation, and performance.⁶⁹

True-Up Period

NPDES permits with trading can include provisions that allow buyers a window of time at the end of the compliance period to purchase needed credits. Because a facility may not know year-to-year the exact amount of credits needed for compliance, a true-up period can reduce risk to regulated sources of overbuying or under buying credits in any given year. May also be referred to as a “reconciliation period”.

Uncertainty Ratio

⁶⁶ See 2007 U.S. EPA Toolkit for Permit Writers, *supra* note 21, at p. Glossary-3 in Glossary.

⁶⁷ See *id.*

⁶⁸ See *id.*, at p. Glossary-5 in Glossary.

⁶⁹ See *id.*, at p. Glossary-6 in Glossary.

See Trading Ratio (Uncertainty).

Units of Trade

The quantity of tradable pollutants, typically expressed in terms of pollutant load per unit time, at a specified location (e.g., lbs/year at the point of concern).

Validation (Model)

An iterative process through which to test the capabilities of a calibrated model to reproduce system behavior within acceptable bounds; the process through which results from credit quantification methods are assessed relative to evaluation criteria. Often, validation includes the comparison of model results with measured data, sensitivity analyses, and uncertainty analyses. Validation may also include a comparison with other model outputs, literature values, and/or expert judgement.

Variance

As authorized by 40 C.F.R. § 131.13 and implemented according to state law, a variance is a time-limited change in the water quality standards for a particular regulated entity, typically limited to three-to five-year duration, with renewals possible.

Verification

See Project Review.

Waste Load Allocation (WLA)

As defined in 40 C.F.R. § 130.2(h), this is the portion of a receiving water's loading capacity that is allocated to one of its existing or future point sources of pollution. WLAs constitute a type of water quality-based effluent limitation.

Wastewater Treatment Plant (WWTP)

See Publicly Owned Treatment Works, but is not necessarily publicly owned.

Water Quality Benefit

The environmental improvement directly attributable to BMPs installed at a site. Determining water quality benefit is the first step in determining the credits available for sale (it must be reduced by applicable attenuation or modeling factors, baseline factors, or ratios). One way water quality benefit may be calculated is by subtracting the modeled post-project performance from the modeled pre-project performance.

Water Quality Criteria

As defined in 40 C.F.R. § 131.3, water quality criteria are elements of state water quality standards, expressed as constituent concentrations, levels, or narrative statements, representing a quality of water that supports a particular use. When criteria are met, water quality will generally protect the designated use.

Water Quality Standard

As defined in 40 C.F.R. § 131.3(i), Water quality standards are provisions of state or federal law which consist of a designated use or uses for the waters of the United States and water quality criteria for such waters based on such uses. Water quality standards are to protect the public health or welfare, enhance the quality of water, and serve the purposes of the Clean Water Act.

Water Quality Based-Effluent Limitation (WQBEL)

As described in 33 U.S.C. § 1312(a), a WQBEL is an effluent limitation determined by selecting the most stringent of the effluent limits calculated using all applicable water quality criteria (e.g., aquatic life, human health, wildlife, translation of narrative criteria) for a specific point source to a specific receiving water for a given pollutant or based on the facility's waste load allocation from a TMDL.

Watershed Plan

A TMDL-like regulatory strategy for managing and improving an impaired waterbody established by regulators before a TMDL is promulgated, or if a TMDL is not otherwise pursued for a watershed.