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LOUISIANA WATER QUALITY TRADING GUIDANCE
DRAFT



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LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY

BATON ROUGE, LOUISIANA

Disclaimer

This document provides guidance for water quality trading (WQT) in Louisiana. Implementation of WQT will be governed by existing requirements of the Clean Water Act (CWA), Environmental Protection Agency (EPA) implementing regulations, and state laws. This document does not substitute for those requirements or laws. The recommendations in this guidance are not binding; the Louisiana Department of Environmental Quality (LDEQ) and EPA may consider other approaches consistent with the CWA, 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. LDEQ may change this guidance in the future.

The Association of Clean Water Administrators (ACWA) Water Quality Trading Toolkit¹ template for WQT guidance was used to develop this document. The guidance template follows that of the National Network on Water Quality Trading publication *Building a Water Quality Trading Program: Options and Considerations*².

¹ Association of Clean Water Administrators, p-22-67 (August 2016). *The Water Quality Trading Toolkit*. Available at: <https://www.acwa-us.org/toolkits/water-quality-trading-toolkit/>.

² 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/>.

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List of Acronyms

BMP	Best Management Practice
BOD	Biochemical Oxygen Demand
CFR	Code of Federal Regulations
CP	Conservation Practice
CPRA	Coastal Protection and Restoration Authority of Louisiana
CWA	Clean Water Act
EPA	United States Environmental Protection Agency
EQIP	Environmental Quality Incentives Program
FSA	Farm Service Agency
LAC	Louisiana Administrative Code
LDAF	Louisiana Department of Agriculture and Forestry
LDEQ	Louisiana Department of Environmental Quality
LPDES	Louisiana Pollutant Discharge Elimination System
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
PBT	Persistent Bioaccumulative Toxics
SWCD	Soil and Water Conservation Districts
TBEL	Technology-Based Effluent Limitation
TDS	Total Dissolved Solids
TMDL	Total Maximum Daily Load
TN	Total Nitrogen
TP	Total Phosphorus
TSS	Total Suspended Solids
USDA	United States Department of Agriculture
WQBEL	Water Quality-Based Effluent Limitation
WQT	Water Quality Trading

Introduction

The purpose of this document is to provide guidance for the implementation of water quality trading (WQT) for Louisiana. WQT is one tool to help achieve the goals of the Clean Water Act (CWA) and other public objectives³. Trading can occur between two “point sources,” and between a point source and a “nonpoint source”. 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, trading can help achieve water quality goals in flexible ways that are beneficial for landowners, communities, and the environment.

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

- 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 Louisiana requirements, CWA⁴ requirements, and local laws.

Ultimately, the information included and referenced in a Louisiana Pollutant Discharge Elimination System (LPDES) permit will be the requirements a point source permittee needs to follow. That information will be drawn from the following types of documents and other sources as relevant, including:

- *Trading rule*: Defines the essential components of each trade.
- *Trading guidance*: This document, which contains LDEQ guidelines for developing and implementing the state rule.
- *WQT plan*: Permittee-level document that contains the details of implementing a trade. The WQT plan may be based on an existing watershed trading framework; in the absence of a watershed trading framework, the water quality trading plan will include all specific details of a trading processes and performance standards.
- *Watershed trading framework*: Watershed-level document that contains the specific details of implementing a trade as it applies to multiple permittees trading within a watershed. A watershed trading framework is designed to work in tandem with the WQT plan to expedite permitting and formalize a consistent process and unit of trade where multiple permittees within a watershed intend to trade. Developing a watershed trading framework is not necessary to participate in Louisiana’s WQT Program. Where a watershed trading framework exists, a permittee’s WQT plan will incorporate the terms of the watershed trading framework.

³ EPA, *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 “finding solutions to complex water quality problems.”).

⁴ Federal Water Pollution Control Act, 33 U.S.C. § 1251, et. seq. (commonly referred to as “Clean Water Act”, CWA).

Chapter 1: Policy and Regulatory Instruments to Support Trading

Policy and regulatory instruments to support a WQT program in Louisiana are presented in this chapter. These topics include authority for WQT in Louisiana, public involvement, water body conditions that affect trading (such as no impairment, pre-Total Maximum Daily Load (TMDL), or post-TMDL), and mechanisms for effectuating the trade including provisions for and incorporation in an LPDES permit.

1.1 Building Water Quality Trading into a State's Regulatory Program

1.1.1 Authority for Water Quality Trading in the State

The CWA provides authority for EPA, states, and tribes to develop a variety of programs and activities to control pollution. WQT, as described in the 2003 EPA Trading Policy,⁵ is one of those tools. Trading is recognized in the Louisiana Revised Statute, R.S. 30:2074(B)(9)⁶. The Enrolled Act No. 371 (House Bill No. 423)⁷ of the 2017 Regular Session of the Louisiana Legislature amended and reenacted R.S. 30:2074(B)(9)(a), (b), and (c) and repealed R.S. 30:2074(B)(9)(d) and (e), relative to water quality; to provide for the powers and duties of the secretary of the Department of Environmental Quality; to provide for the establishment and administration of a WQT program; to provide for certain criteria for credits; to provide for limitations on use of credits; to provide for records; to provide for a pilot program; to provide for legislative oversight; and to provide for related matters. This WQT guidance sets forth recommendations LDEQ believes should be considered when WQT is conducted.

1.1.2 Public Involvement

Public involvement is an essential part of the CWA, including the LPDES program, thus it is also an important component of WQT plans. At many points in the process of determining how WQT will work, the public is encouraged to participate.

LDEQ will make the WQT program available for the public to review (Section 8.6). When a point source uses credits to offset a discharge, LDEQ will include documentation in the draft LPDES permit package referencing the trade. LPDES permittees covered under the general permitting system are not eligible to participate in WQT in Louisiana. Permittees covered under a general permit may apply for an individual permit in order to participate in WQT.

1.2 Water Body Conditions that Affect Trading

Trading can be used to meet part or all of a discharger's WQBELs and/or offset pollutant loads under several scenarios consistent with this guidance. All trades must be in compliance with existing federal and state regulations. Louisiana will allow trading in the following scenarios:

- 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 (Section 1.2.1);

⁵ See generally 2003 EPA Trading Policy *supra* note 2.

⁶ Louisiana R.S. 30:2074(B)(9). Available at: <http://www.legis.la.gov/Legis/Law.aspx?d=87135>.

⁷ Enrolled Act No. 371, Louisiana 2017 Regular Session, House Bill No. 423. Available at: <http://www.legis.la.gov/legis/ViewDocument.aspx?d=1052305>.

- To offset new or expanding point source discharges to a CWA-impaired water body without an 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) (Section 1.2.2);
- To offset existing pollutant loadings to a CWA-impaired water body with an EPA-approved TMDL or similar watershed analysis needed to support trades (Section 1.2.3); and
- 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 (Section 1.2.4).

1.2.1 No Impairment

In water bodies that are in attainment of water quality standards and are not covered by a TMDL, a point source discharge may have the reasonable potential to cause or contribute to a violation of water quality standards, and trigger the need for a water quality based effluent limitation (WQBEL). Absent a TMDL, existing state and local requirements and current conditions for nonpoint sources define the baseline for generating credits⁸. LDEQ will consider a point source permit the regulatory instrument for trade.

1.2.2 Trading in CWA 303(d) Impaired Waters without a TMDL (pre-TMDL)

Trading in CWA 303(d)-listed/impaired waters for a pollutant prior to a TMDL may be challenging; it is difficult to determine the allowable loading for a pollutant to a receiving water body without the analysis included in the TMDL process. With respect to pre-TMDL trading in a 303(d)-listed water body, LDEQ will consider whether the proposed WQT plan will lead to direct environmental benefit relevant to the conditions for which the water body is impaired.

LDEQ will also consider the following:

1. *Trading to allow for an existing discharge:* The source involved should conduct an analysis of pollutant loadings similar to LDEQ TMDL development process. The modeling results and/or other analysis would be subject to public review. Results will be referenced in the draft LPDES permit package; and
2. *New source, new discharge, or expanded discharge:* Trading must be implemented through an LPDES 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 EPA Trading Policy).

When EPA approves a TMDL, any trading agreements made prior to the TMDL that are inconsistent with TMDL requirements will have to be modified. LDEQ encourages parties

⁸ 2003 EPA Trading Policy, *supra* note 2, at p. 1610.

involved in pre-TMDL trading to contact LDEQ early in the process to ensure that future revisions to trading agreements do not create disincentives for early action towards pollutant reductions.

1.2.3 Trading in Waters with a TMDL (post-TMDL)

In the post-TMDL scenario, the TMDL will serve as the primary structure for the WQT plan. Once in place, TMDLs establish the assimilative cap for pollutant loadings from both point and nonpoint source contributors in the respective watershed. LDEQ may include specific trading provisions in a new or revised TMDL.

1.2.4 Alternative to a TMDL

EPA has acknowledged that the most effective method for achieving water quality standards for some impaired water bodies may be through controls developed and implemented without TMDLs, provided 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 standards⁹.

EPA has confirmed that LDEQ has the authority and discretion to use alternative approaches as a new goal of the CWA 303(d) program¹⁰ in the following circumstances:

1. Category 5alt- for impaired waters but a TMDL alternative plan is being implemented pre-TMDL; and
2. Category 4b- for impaired waters but for which other pollution controls are in place and expected to restore water quality within a reasonable period of time¹¹.

Under this alternative scenario, LDEQ may elect to place an impaired water on its category 5alt or 4b list instead of on its 303(d) list, using some form of watershed plan or watershed strategy to identify the pollution control requirements that are stringent enough to implement applicable water quality standards within a reasonable amount of time, along with an implementation schedule and a monitoring plan to track the effectiveness of the controls identified.

1.3 Mechanisms for Effectuating the Trade

Trading in Louisiana is authorized through a permit and/or agreement; in cases of nonpoint to point source trading, a written agreement between LDEQ and the appropriate governmental entity with jurisdiction over the nonpoint source is required. Written agreement may also be required between the permitted point source and the nonpoint source(s). The WQT plan will provide details that adequately describe the pollutant and credit units (Section 2.4) and credit characteristics (Section 6), calculation methodology (Section 4), and quantity of credits needed for a pollutant reduction.

⁹ EPA, Office of Wetlands, Oceans and Watersheds, *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act*, Section 5, (2005), available at https://archive.epa.gov/water/archive/web/pdf/2005_08_11_tmdl_2006irg_report_2006irg-sec5.pdf.

¹⁰ EPA, *A Long-Term Vision for Assessment, Restoration, and Protection under the Clean Water Act Section 303(d) Program*, (2013), available at https://www.epa.gov/sites/production/files/2015-07/documents/vision_303d_program_dec_2013.pdf.

¹¹ EPA, Office of Water, *NPDES Permit Writer's Manual*, Ch.9, pp.1 (Sept 2010), available at https://www.epa.gov/sites/production/files/2015-09/documents/pwm_chapt_09.pdf

The WQT plan should also examine water quality conditions to identify the potential for any localized impacts (Section 3.1.2).

LDEQ and other appropriate governmental entities will ensure the WQT plan used as a basis for permit conditions is clear on where credits can be acquired, how credits will be monitored and reported upon, how/if risk and uncertainty have been addressed (Section 5.1). LPDES permits will identify, as necessary, compliance schedules, mixing zones, antidegradation provisions, anti-backsliding provisions and related federal provisions.

Registering trades with LDEQ or its designee does not affect the responsibility of an LPDES permittee to comply with the terms of its permit.

1.3.1 Key Trading Provisions in an LPDES Permit

A permit operating under this guidance should contain enough detail to demonstrate compliance with the CWA and incorporate the following provisions.

1. Permit Effluent Limits

Permit effluent limits and potential trading obligations resulting from the WQBEL, technology limitations (TBELs), or other guidelines which are typically expressed as a specific mass effluent limit per a specific time period. Some limits may also be expressed in terms of concentration.

2. Monitoring and Reporting Requirements

The monitoring section of a permit details the specific parameters to be monitored, monitoring frequency, the type of sample, the form of the report, and the timing for reporting to LDEQ.

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 LPDES permits.

3. Special Conditions

Special conditions may apply. 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 permit requirements.¹²

1.3.2 Incorporating Trading Program Details into an LPDES Permit

The WQT plan used as a basis for permit conditions will include the following information 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 percentage load reduction target for all nonpoint sources or as an overall requirement for a Trading Area);

¹² EPA, Office of Water, *NPDES Permit Writer's Manual*, Ch.9, pp.1 (Sept 2010), available at https://www.epa.gov/sites/production/files/2015-09/documents/pwm_chapt_09.pdf.

- *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);
- *Initial Project Site Screening* (this function is suggested but is not required);
- *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 performance standards for implementation); and
- *Credit registration* (characteristics of credit registry, and information disclosure minimums).

Chapter 2: Trading Basics: Who, What, Where, and How

Trading basics are presented in this chapter. Types of trades including point source-to-point source and point source-to-nonpoint source, appropriate regulatory trading instruments and sectors, trading areas, appropriate pollutants for trading, appropriate credit generating actions, and environmental justice and equity considerations are discussed.

2.1 Types of Trades

There are generally two types of trades recognized for WQT: point source-to-point source trading and point source-to-nonpoint source trading. Both point and nonpoint sources are eligible to trade. This guidance focuses on regulated point sources as sellers or buyers, for which trades can be used to achieve compliance with WQBELs, although LDEQ supports voluntary purchases of water quality credits outside of LPDES compliance obligations (e.g., for stewardship purposes). This guidance also focuses on nonpoint sources as sellers.

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. 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 (Section 2.3) so long as the purchasing point source's discharge does not cause localized impacts (an individual point

source may have provisions in their permit that limits their ability to maintain or increase their discharge, in order to prevent localized impacts). Credits can only be used in the same time period in which the underlying reduction occurs (Section 6.1). Each point source is responsible for ensuring that its discharge, adjusted by traded credits, meets its individual effluent limit. LDEQ will oversee verification of point source projects.

2.1.2 Point Source-to-Nonpoint Source Trading

Nonpoint sources can create credits by implementing approved USDA NRCS Conservation Practices (CPs) (also as Best Management Practices (BMPs))¹³ or through the operation of other eligible projects that reduce the net amount of pollutant runoff. If a BMP or other eligible project is installed and the pollutant reduction is calculated and documented according to the project's monitoring plan, 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 occurs. As with point source-to-point source trades, these factors must be consistent with a point source's LPDES 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 eligible project 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) as defined in an existing WQT plan. The WQT plan will be used as a basis for LPDES permit conditions, such as effluent limits, reporting requirements, BMPs, etc. 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 pool).

A credit is effective for use by a buyer only after it has been quantified, reviewed, and certified (Chapters 4 and 8), and then, the credit may only be used during its period of performance, or credit life (Chapter 6).

Should LDEQ or other appropriate governmental entity later determine that the BMP or other project 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 buying additional credits from Louisiana's WQT program's credit reserve pool (Section 5.2.1). 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 ledger), and recordkeeping and reporting (Chapter 8).

¹³ CPs and BMPs for land treatment will follow the United States Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS) Field Office Technical Guide (FOTG) found at <http://efotg.sc.egov.usda.gov>. Activities in the coastal area as defined by La. R.S. 49:214.2(4) will be consistent with or, in the alternative, not conflict with the Louisiana Coastal Master Plan, which can be found at <http://coastal.la.gov/our-plan/>.

LDEQ may consult with relevant agencies regarding oversight of the verification of land treatment nonpoint source projects, integrated coastal protection projects, and other eligible projects.

2.2 Appropriate Regulatory Trading Instruments and Sectors

LDEQ will consider a point source permit the regulatory instrument for trade. LDEQ will consider appropriate, eligible trading participants on a case-by-case basis.

2.3 Trading Areas

Trades need to occur within a defined geographic boundary, known as the Trading Area. The Trading Area is incorporated into a permit's WQT plan. Relevant trading documents that define the Trading Area should include both a visual map and general description of the boundaries of the Trading Area. Trading Areas must be based on sound science. 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.

Trading Areas will be defined by an applicable water quality strategy or TMDL, and in general will be upstream of a point of concern and within the same hydrological basin¹⁴. The point of concern for Louisiana is the Gulf of Mexico which is the ultimate receiving water body of waters of the state. In some cases, to ensure that trades do not result in temporary exceedances above water quality standards, trading will be restricted to upstream of a point of discharge. Trading between basins may be allowable in specific situations where the science supports it. LDEQ supports trades where adequate information exists to establish and correlate water quality improvements from implementation of BMPs or technological measures.

2.4 Appropriate Pollutants for Trading

LDEQ considers nutrients, sediment, and temperature appropriate pollutants for trading, which is consistent with the 2003 EPA Trading Policy. The unit of trade credit should be tied to the unit of pollutant in a permit. The EPA Trading Policy also allows for cross-pollutant trades in limited circumstances (e.g. offsetting a biochemical oxygen demand (BOD) loading with phosphorus credits) when pollutants contribute to similar water quality concerns within a water body (e.g. low dissolved oxygen). LDEQ will consider cross-pollutant trades, such as for BOD and nutrients, where the science exists to quantify and substantiate the equivalency and an equivalency ratio (Section 5.1) is used to translate the impact of reduced loading of one pollutant to an equivalent impact from the other.

LDEQ may specifically consider the following pollutants appropriate for trading:

- Nutrients – Total Nitrogen (TN) and Total Phosphorus (TP)
- Biochemical oxygen demand (BOD)
- Sediment – Total Dissolved Solids (TDS), Total Suspended Solids (TSS), and Turbidity
- Temperature

Persistent bioaccumulative toxics (PBTs) have the potential to threaten public health and, as such, will not be considered for trading. Other pollutants may be considered on a case-by-case basis with approval from LDEQ.

¹⁴ See LDEQ Water Quality Management Plan: Volume 4. Basin and Subsegment Boundaries. Available at: http://deq.louisiana.gov/assets/docs/Water/WQMPVolume4_9-9-14_final.pdf.

2.5 Appropriate Credit Generating Actions

Not all BMPs or project types may necessarily generate credits, and some BMPs or project types might not be eligible for the program. LDEQ may consider several factors for BMPs or project types to help determine appropriateness for credit-generating actions. Some factors that may be considered include whether the BMP or project reduces the pollutant parameter of concern and generates water quality benefits, and whether an adequate method exists to document the reduction generated from the BMP or project.

2.6 Environmental Justice and Equity Considerations

To alleviate environmental justice concerns, LDEQ's goal is that no segment of the population, regardless of race, color, national origin, or income, as a result of LDEQ policies, programs, and activities, suffers disproportionately from adverse human health or environmental effects.

Chapter 3: Trading Eligibility

Trading eligibility is presented in this chapter. Eligibility for buyers and trades including consideration of TBELs, avoiding localized impacts, compliance with antidegradation and anti-backsliding, and project eligibility of sellers to generate trades including baselines, timing, and credit stacking are discussed.

3.1 Eligibility for Buyers and Trades

3.1.1 Meeting Technology-Based Effluent Limitations (TBELs)

A point source that has attained applicable TBEL requirements can obtain credits to achieve 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

No pollutants may be discharged or activities conducted that cause or contribute to a violation of water quality standards except as allowed in regulatory mixing zones under a compliance schedule¹⁵. An LPDES permit may, when appropriate, specify a schedule of compliance¹⁶. If a discharge causes localized impacts that exceed narrative or numeric water quality criteria, a discharger may be deemed in noncompliance with the CWA. Quantification methods (Chapter 4) used to estimate credit generating eligibility should be able to identify the potential for localized impacts so that they can be avoided. A WQT 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. If a TMDL has already conducted some or all of this analysis, then it must be used.

In addition, no trades can lower the existing water quality of a water body under LDEQ's antidegradation policy, or authorize backsliding in an LPDES permit unless one of the exceptions in CWA §402(o) and 40 CFR §122.44(l) is shown to apply.

¹⁵ 2003 EPA Trading Policy, *supra* note 2, at p 1610.

¹⁶ 2017 LAC 33:IX.2713.

3.1.3 Compliance with Antidegradation

40 CFR §131.12 establishes a requirement for states to implement a statewide antidegradation policy that, at a minimum, maintains and protects the level of water quality necessary to support existing uses, maintains and protects 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 maintains and protects the water quality of any outstanding natural resource waters.

LDEQ's antidegradation policy is found in the Louisiana Administrative Code (LAC 33:IX.1109.A) and any activity conducted to generate credits for trading in Louisiana must be consistent with this policy. Consistent with EPA policy, LDEQ does not agree that trades and trading programs will result in 'lower water quality', as that term is used in 40 CFR. § 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.

3.1.4 Compliance with Anti-backsliding

As used in this guidance, anti-backsliding refers to the requirements of CWA §402(o) and 40 CFR §122.44(l), except as provided in LAC 33:IX.2707.L.2, that generally prohibit the renewal, reissuance, or modification of an existing LPDES 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 EPA policy, LDEQ does not view WQT to meet a WQBEL as a less stringent effluent limitation, provided the permittee is still responsible for the same level of pollutant reduction. Trading offers the LPDES 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

Both point sources and nonpoint sources may create pollutant reductions. However, not all reductions necessarily can be counted as credits. 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 appropriate BMP or be identified as an eligible project:* Each BMP or other project type should reference or include a guideline (e.g., USDA NRCS conservation practice standards) that articulates how a project should be designed, constructed, maintained, and monitored over time. WQT plans can also provide a process for LDEQ to review new and innovative approaches on a case-by-case basis (Chapter 6).
- *Projects need to be consistent with other laws and be 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* (Section 3.2.1.).
- *Project pollutant reductions need to be quantified in a verifiable way.* While pollutant reductions from point sources must be directly measured, credits produced by nonpoint source projects

can be quantified using project efficiency rates, LDEQ-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 (Chapter 5). It may also be important to adjust the reduction amount to account for risk of delays, decreases, or nonperformance.

3.2.1 Point and Nonpoint Source Credit Baselines

The trading baseline for credits 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.

1. 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 LPDES permit (i.e., both applicable TBELs and WQBELs are met prior to a point source selling credits). Further, any applicable TBELs must be met by the point source buyer prior to purchasing credits.

2. 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 WQT plan. Nonpoint source baseline levels need to be defined in a WQT plan. The following figure provides a decision tree that may be used to help set nonpoint source baselines that would apply to individual landowners:

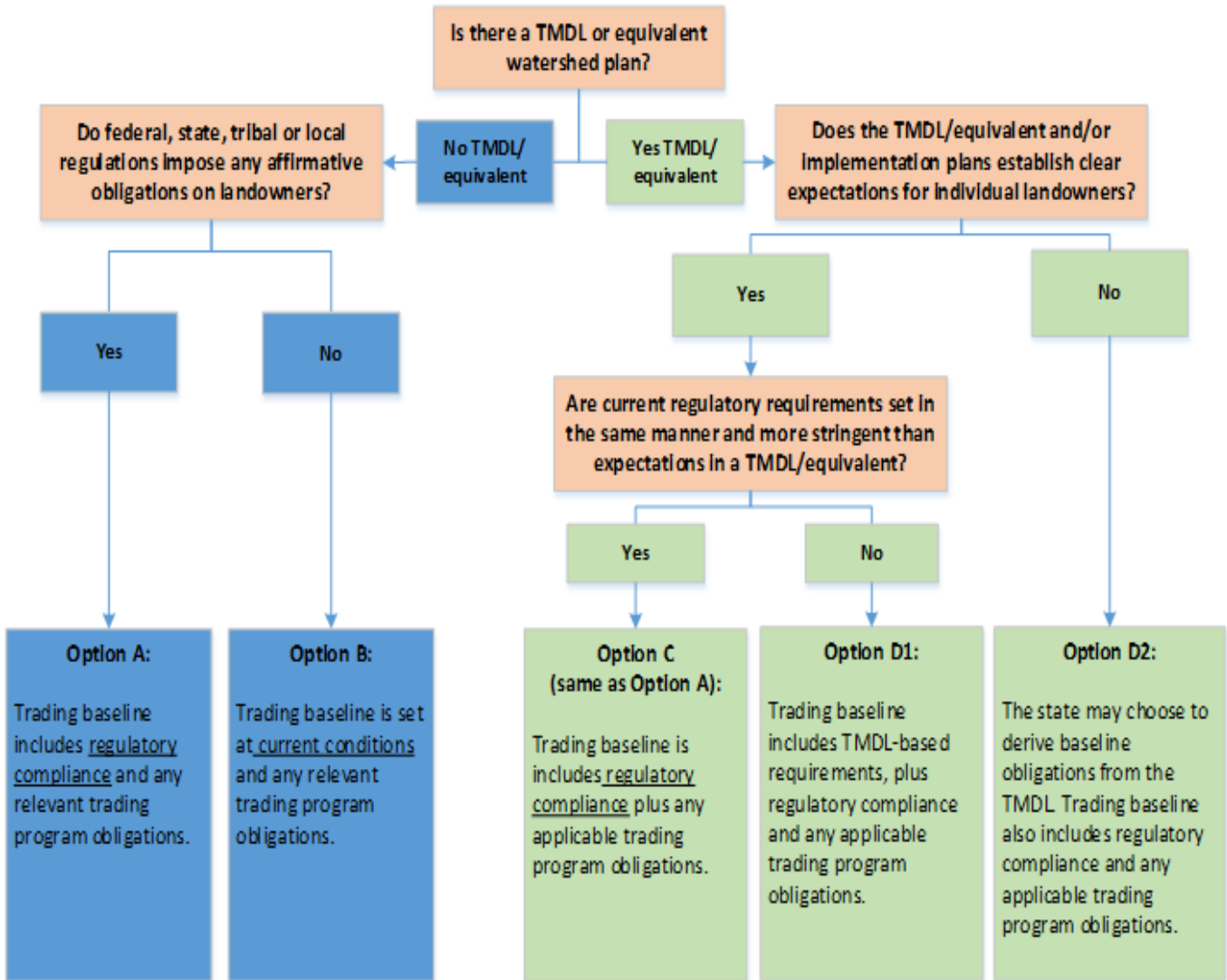


Figure1: Options for Deriving Nonpoint Source Baselines (figure reproduced from National Network on Water Quality Trading document)¹⁷

3. Expressing Baseline for Nonpoint Sources

Nonpoint source baseline requirements will be expressed with consideration of a TMDL or by existing conditions.

3.2.2 Scale of Applying Baseline for Nonpoint Sources

Baseline requirements will be assessed within the subsegment and applied to any individual nonpoint source prior to any credit generation.

¹⁷ National Network on Water Quality Trading, p 56 (June 2015). *Building a Water Quality Trading Program: Options and Considerations*. Available at: <http://willamettepartnership.org/publications/>.

3.2.3 Project Timing (base year)

The WQT plan should define the base year after which projects are eligible to generate credits. LDEQ considers that the base year may be established on a case-by-case basis.

3.2.4 Use of Public Conservation Funds

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. LDEQ 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 water management plan). According to the USDA Office of Environmental Markets, practices funded with NRCS funds must be maintained for the practice life as outlined in the conservation practice standard.

Some issues can arise from concerns over additionality if considering generating credits from lands under USDA easements. In all instances, USDA recommends consulting with the local state NRCS office prior to credit generation to ensure that the NRCS or Farm Service Agency (FSA) program requirements are consistent with the credit program. USDA considers that 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 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 the USDA NRCS Environmental Quality Incentives Program (EQIP) provides financial assistance at 50% of the cost of a sediment basin, and a farmer pays for 50%, then the farmer could sell 50% of the total credits from the project.

3.2.5 Credit Stacking

Credit stacking allows credits for multiple environmental markets to be generated from a single project area. In Louisiana, credit stacking may be admissible in the WQT program pending approval by LDEQ. The agency would require full disclosure from WQT participants who are also participating in other environmental markets.

Chapter 4: Quantifying Pollutant Reductions for Water Quality Credits

Quantification of pollutant reductions for water quality credits is presented in this chapter. 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). Reductions for nonpoint sources can be measured directly, or they can be estimated using models and project efficiency rates. Different quantification methods may work better for different pollutant reduction projects in different watersheds. A WQT plan's credit quantification approach needs to be approved by LDEQ, rely on the best available science, and be

accurate, repeatable, sensitive, and transparent. For all quantification methods, a WQT plan should articulate potential sources of uncertainty and how those uncertainties will be managed and mitigated.

4.1 Documenting Nonpoint Source Credit Quantifications

The project guidelines referenced in a WQT plan should articulate the documentation and information that is needed to accurately quantify pollutant reductions in a way that can be reviewed during the Project Review process.

4.2 Documenting Cross-Pollutant Credit Translations

Cross-pollutant trading, such as trading of BOD to address TN and/or TP, referenced in a WQT plan should articulate the documentation and information that is needed to accurately quantify pollutant reductions in a way that can be reviewed during the Project Review process.

Chapter 5: Managing Risk and Uncertainty

Managing risk and uncertainty through use of trading ratios is presented in this chapter. Trading ratios are numeric values used to adjust available credits for sellers or credit obligation of a buyer based on various forms of risk and uncertainty. Trading ratios will be used to ensure that the environmental benefit of a credit-generating project is equivalent to or greater than the reduction that would occur if the point source installed treatment technology on site.

5.1 Trading Ratios

LDEQ will consider multiple types of ratios including Uncertainty, Reserve/Retirement, and Equivalency Ratios that may be included into the WQT plan and establish the applicable ratios.

5.1.1 Uncertainty Ratios

An Uncertainty Ratio will be applied to all trades to compensate for scientific uncertainty, including potential inaccuracies in estimation methods and/or variability in project performance. LDEQ will set Uncertainty Ratio on a case-by-case basis.

5.1.2 Reserve/Retirement Ratios

A Reserve/Retirement Ratio will be used to insure against unforeseen credit losses due to weather induced project failure. These ratios may be assessed on a case-by-case-basis. Unused Reserve/Retirement credits will be retired at the end of the credit life to protect against potential environmental degradation.

5.1.3 Equivalency Ratios

An Equivalency Ratio will be used to account for differences in impact from different forms of the same pollutant, or for cross-pollutant trading (e.g., TN and/or TP for BOD) and assessed on a case-by-case basis.

5.2 Applying Ratios

Trading ratios will be applied separately, to facilitate evaluation and possible adjustment as new scientific research becomes available, as follows:

1. An Uncertainty Ratio will be applied at the time of credit estimation, prior to project certification and credit issuance.
2. A Reserve/Retirement Ratio and/or an Equivalency Ratio will be applied at the time of trade.

Chapter 6: Credit Characteristics: Issuance, Life and Renewal

Characteristics including credit issuance, life, renewal, banking, rights and interactions with other programs as well as characteristics of project life including expiration and renewal are presented in this chapter.

6.1 Credit Life

A credit life is the period from the date a credit becomes usable until such a time as the credit is no longer valid. This is specific to the period of time over which a given BMP or project is expected to function and generate credits.

6.1.1 Credit Life and Value Calculation

Credit life will be defined in the WQT plan. LDEQ may consider setting the period of credit life as follows, provided it is consistent with applicable TMDLs, pollutant dynamics, and watershed dynamics:

- Annual credit lives are based on ecological justifications and links between the timing of pollutant load reductions from eligible projects and point source discharge impacts over the year;
- Applicable during a discrete season or months, a seasonal credit life is matched to critical periods in a TMDL or permit; or
- Covering a discrete number of years.

The final credit value is ultimately a function of the measured water quality benefits adjusted to baseline requirements (Chapter 3) and trading ratios (Chapter 5).

6.1.2 “Banking Credits” for later use

In a WQT program context, “banking credits” refers to the generation of a credit in one time period with the intention of using that credit in another time period. The time period for a credit will be related to its credit life. Credits cannot be used outside their approved credit life.

6.2 Project Expiration and Renewal

Where projects are continuing to function and are being properly maintained, LDEQ will consider the renewal of pollutant reduction credit-generating projects in subsequent compliance cycles (though reductions may need to be adjusted to reflect any changes in baseline requirements or trading ratios).

6.3 Other Credit Characteristics

6.3.1 Credit Rights

As a Louisiana District Court has held that the rights associated with carbon credits are among the “bundle of rights” included in property ownership¹⁸, LDEQ recognizes that

¹⁸ Roseland Plantation LLC v. U.S. Fish and Wildlife Serv., No. 05-0793, 2006 LEXIS 29334, at *2-3 (W.D. La 04/05/06).

approved credits are tradable goods with an ascertainable value and encourages predictable and transparent management of trading and other water quality programs.

6.3.2 Interactions 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.

Chapter 7: Project Implementation and Quality Assurance

This chapter describes the standards that ensure the projects seeking to generate credits are implemented to a high quality standard that achieves the credited water quality benefits for as long as the project is valid.

7.1 Eligible Project Quality Standards

LDEQ will review eligible projects for quality and consistency with quantification of water quality benefits on a case-by-case basis.

7.2 Preparing a Project Design and Management Plan

All credit-generating projects require a project design and management plan or equivalent documents that are approved by LDEQ. The project design and management plan or equivalent documents should be prepared by a qualified professional¹⁹ to select and properly design appropriate projects to improve water quality at the project location.

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

- Be designed to include as either a primary or secondary benefit of improving water quality or qualify as integrated coastal protection;
- 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 project (BMP or technology), the relevant quality standards for each project, and the project implementation plan; and
- Describe the project monitoring and maintenance plan and how it will ensure the eligible project stays consistent with quality standards during the project life.

7.3 Required Project Protection Documentation

Adequate legal and financial safeguards must be in place to protect the project for the duration of the credit life. Many projects will require ongoing action to operate and maintain, thus, project developers may be asked to demonstrate that they have adequate funding to steward project sites for the duration of the project life to safeguard the project's full function and to prevent project

¹⁹ A qualified professional could be any of the following: the LDAF, an NRCS certified planner, or a professional services provider. Some projects will require consultation with other experts as well or may specify the type of expert that will need to be consulted in the project's design, installation, and maintenance requirements.

failure. These protections provide some certainty for point source buyers over the life of their LPDES permit and facility plan. Legal protections might include leases, deed restrictions, easements, contracts, etc. that protect the project as they operate for the life of the credit.

Chapter 8: Project Review, Certification, and Tracking

This chapter describes a standard process to confirm credit-generating project implementation, review project performance, and to track credits over time (See Figure 2). LDEQ will provide oversight for all point source projects. LDEQ may consult with relevant agencies regarding oversight of nonpoint source credit generating projects. LDEQ will review all projects that are part of the program.

8.1 Initial Project Site Screening for Nonpoint Source Projects

Project developers may choose to get an initial site screening for projects to confirm potential credit-generating eligibility. Site Screening does not guarantee a project will be eligible to generate credits, but may help credit sellers reduce risk and avoid unnecessary costs by identifying any potential concerns before investments are made.

8.2 Initial Project Review

8.2.1 Required Components of Initial Project Review for Point and Nonpoint Source Projects

1. Point Sources

A point source wishing to generate credits will submit to LDEQ a credit application for review showing anticipated credits to be generated on an annual basis using quarterly monitoring data, after which a project review is conducted.

2. Nonpoint Sources

A nonpoint source wishing to generate credits will submit to LDEQ a credit application (Section 8.2.3), after which a project review is conducted.

Initial Project Review includes:

- *Administrative Review:* Confirmation of project documentation submittal completeness and correctness relative to all requirements for credit generation.
- *Technical Review:* Confirmation that credits will be quantified accurately via review of quantification method (Section 3.2) and that all required documentation (e.g., data files, model parameters and/or assumptions) is complete and correct.
- *Confirmation of Project Implementation/Maintenance:* Confirmation that the project was installed consistent with an approved project design and management plan, and that any projects expected as part of baseline are in place and/or being maintained.

8.2.2 Confirming Project Implementation for Nonpoint Source Projects

Project implementation will be confirmed via site visit by a relevant agency representative (LDEQ, LDAF, Soil and Water Conservation Districts (SWCD), or CPRA). A site visit should occur within one year of project implementation and before credits may be certified or issued. LDEQ 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 Projects

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

- As-Built (post-construction) project design and management plan (Section 7.2)
- Final project protection documentation (Section 7.3)

8.3 Credit Certification, Credit Issuance, Tracking, and Reporting

8.3.1 Timing of Credit Certification and Issuance

1. Point Sources

After the Initial Project Review where LDEQ confirms a point source's creditable pollutant load reductions, LDEQ will provide a point source with a Credit Certificate. At that time, credits are issued and included in the LDEQ ledger as certified credits.

2. Nonpoint Sources

After the Initial Project Review where LDEQ confirms a nonpoint source's credits confirms eligibility, LDEQ will provide a nonpoint source with a Credit Certificate. At that time, credits will be issued and included in the LDEQ ledger. Credits may also be released in phases based on achieving performance standards.

8.3.2 Serialization of Credits upon Issuance

Serialization of credits provides each unit of environmental benefit with a unique identifier that indicates whether credits have been issued and are considered real from an accounting perspective.

8.3.3 Tracking Credits and Trades

Any change in project or credit status must be reported to LDEQ immediately. Trading parties must maintain records to substantiate the validity of underlying reductions of pollutants and to document trades. These records are to be made available to LDEQ upon request. Buyers should retain copies of credit purchase records on site for a minimum of five years after credit use.

8.3.4 Credit Retirement

Credits are considered used after they are applied toward a permit obligation. Credits are retired upon implementation in an LPDES permit and/or at the end of the credit life (Section 6.1). LDEQ will automatically retire credits at the end of their credit life. Unused credits applied in a LPDES permit may become available for use upon modification of the LPDES permit (to remove the unused credits), prior to the end of the credit life.

8.4 Ongoing Project Review

A. Point Source Credits

Proposed point source credit-generating projects will be reviewed by submitting monitoring data that is compared with trading information contained in the applicable report on an annual basis, with any material anomalies being investigated by LDEQ. Inspections of point source records may include review of documents related to a project's performance of pollutant reduction.

LPDES permittees will likely wish to hold project developers accountable for project performance through contracts when credits are generated through private agreements. However the LPDES permittee shall be held responsible for any compliance matters. Enforcement actions will be taken up with the LPDES permittee only.

B. Nonpoint Source Credits

To verify that nonpoint source projects are being maintained and functioning as detailed in their respective project design and management plan (Section 7.2), all nonpoint source credit-generating projects should be reviewed on the schedule described for each project. LDEQ expects that nonpoint source credit sellers will maintain valid documentation of eligibility and accurate credit quantification. For projects lasting longer than five years, these materials will go through Ongoing Project Review on a five-year cycle by LDEQ.

LDEQ retains the option to visit any project site to verify the documentation of the project design, maintenance, and monitoring performance.

8.4.1 Failure to Meet Performance Standards

In the event that performance standards or other conditions of the WQT plan are not met, LDEQ will submit a Notice of Credit Suspension to the project developer and LPDES permittee, indicating that credits are suspended and cannot be used or sold. The LPDES permittee will have a set time to submit a plan for remedy, such as a permit modification request and/or purchase of additional credits. In the event that the nonconformance is not remedied by project developer, LDEQ will submit a Notice of Credit Cancellation, indicating that credits will be cancelled.

8.4.2 Dealing with Differences of Opinion during Project Review

In the event that a dispute arises between a project developer and a third party representative related to verification of project maintenance or performance, the parties agree in good faith to first seek resolution of the dispute through referral of the matter to LDEQ.

8.5 Credit Ledger

LDEQ is responsible for maintaining the credit ledger for tracking trades and for the day-to-day oversight of trading. LDEQ may designate another entity to assist with those tasks. Major functions of trade tracking may include the following:

- Not accepting trades that have not been reviewed and certified as meeting program requirements;
- Tracking all trades in a central ledger 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; and
- Making trading information readily available to regulatory agencies and the public.

8.6 Public Availability of Information on Projects

By maintaining the credit ledger, LDEQ ensures that an accounting of all trades and credits is available to the relevant agencies and the public. The credit ledger must be subject to sound data system and accounting principles with the ability to support outside review. When agencies collect and review project information, the CWA, the Freedom of Information Act, and the state privacy

laws will be the primary drivers in determining what information and documents may be publically available.

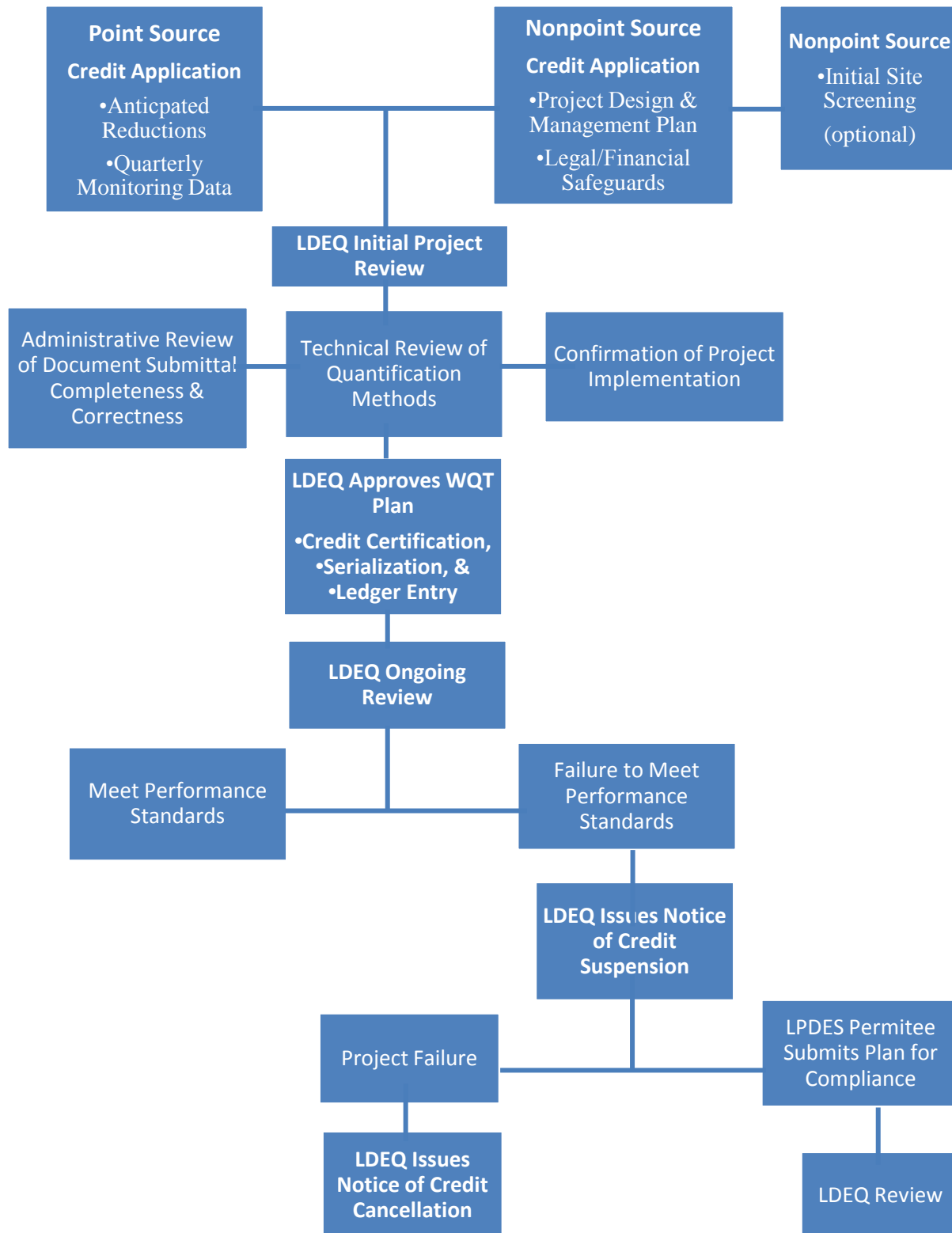


Figure 2: The Louisiana WQT Program Credit Generating Process.

Chapter 9: Point Source Compliance and Enforcement

This chapter explains how point source compliance is determined and the circumstances under which regulatory enforcement will be assessed and carried out in the WQT context.

9.1 Compliance Determination

Credits need to be purchased prior to any compliance date in the permit in sufficient number to cover even the worst case scenarios for unexpected environmental conditions (e.g., low river flows) or discharges. Compliance will be ascertained through the permittee's DMRs and any other reporting conditions included in the LPDES permit, which shall demonstrate that it has secured and continues to hold an adequate credit balance to meet its established effluent limits.

9.2 Enforcement

Insufficient credit balances or failure to meet other permit conditions (e.g., submitting incomplete monitoring reports) will generate a noncompliance event in a trading context. Enforcement of the WQT program shall be consistent with LDEQ enforcement policies²⁰.

Chapter 10: Program Improvement and Tracking

This chapter describes the processes for collecting and incorporating new information into the WQT program. The trading program improvements and tracking presented within these sections are not intended to affect or assess individual permit compliance. Rather, improvement and tracking here is intended to evaluate how to adapt the WQT program over time to better make progress toward water quality goals.

10.1 Improving Program Standards, Protocols, and Process

Trading program standards are those criteria or specifications that a project must meet to participate and generate credits. This includes eligibility criteria (see Chapter 3), BMP quality and performance standards (see Chapter 7), and requirements for project review, approval, credit issuance, and tracking (see Chapter 8). LDEQ will manage changes to the WQT program on a case-by-case basis, making changes and updates to standards, protocols, and processes by determining the appropriate course of action based on circumstances as they arise.

10.2 Updating Quantification Methods

The ability to scientifically assess both watershed needs and quantify benefits of projects implemented to reduce water quality impacts are continually evolving. The information needed to improve quantification methods will vary depending on the method being used. Quantification methods may be updated periodically through internal LDEQ review.

10.3 Updating New and Modified Project Practices

Project 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 and implementation, verification, certification, and registration stages to predictably and fairly operate across watersheds as applied to different

²⁰ Louisiana Revised Statute (R.S.) 30:2025.

permittees. Project quality standards development also includes adaptive management to improve the elements of trading guidance, WQT plans, or any existing watershed trading frameworks, with new information over time. Therefore, LDEQ will update WQT plans as necessary to reflect new technologies, practices, and policy.

10.4 Incorporating Trading Program Updates

Changes in trading program processes and quantification methods must be reflected in the permittee's WQT plan. Trading program components included in an LPDES permit will generally remain fixed for the duration of the permit cycle and new trading program components would be incorporated in subsequent LPDES permit cycles. However, a general reopener clause will be included in an LPDES permit to allow LDEQ to incorporate modifications in the event that new information reveals severe flaws in a credit quantification methodology that would lead to discharges that cause or contribute to water quality violations.

10.5 Evaluating Program Effectiveness

Evaluating program effectiveness will aid in determining the measurable effect of the WQT program to water quality within the watershed and in the improvement of the program. Effectiveness monitoring involves systematic data collection and analysis to determine progress of the WQT program toward the achievement of water quality standards. Existing LDEQ programs, such as LDEQ's Ambient Water Quality Monitoring Network and the Water Quality Inventory, as well as programs of other agencies will aid in evaluating effectiveness of the WQT program. In general the Louisiana Water Quality Management Plan²¹ (WQMP) for LDEQ is primarily associated with water quality management, pollution control, and planning activities carried out by the state in its effort to implement the provisions of federal law under the CWA. The WQMP contains a wide range of information that is integrated in an assessment of both sources and impacts of water pollution, as well as the possible management alternatives available for resolution of the problems.

²¹ LDEQ Water Quality Management Plan is available at: <http://deg.louisiana.gov/page/water-quality-management>.

APPENDIX A: Glossary

- 303(d) List** - The list of impaired and threatened waters (stream/river segments, lakes) that the CWA requires all states to submit for EPA approval every two years on even-numbered years.
- 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.²² Adaptive management in WQT 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.²³
- Attenuation (pollutant)** - The change in pollutant quantity as it moves between two points, such as from a point upstream to a point downstream.
- Baseline** - 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 requirements.
- Base Year** - The date after which implemented BMPs become eligible to generate credits.
- Best Management Practices (BMP)**²⁴ - 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.²⁵
- 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.
- Clean Water Act (CWA)** - The CWA establishes a regulatory framework to protect water quality throughout the United States. The goal is to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters (USC 1251-1387)”.
- 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** – This is the total number of credits that a regulated entity must hold in its compliance ledger at particular points in time. In the case of LPDES 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 provided in LAC 33:IX.2713, a LPDES permit may, when appropriate, specify a schedule of compliance leading to compliance with the CWA and regulations. As defined in 33 USC § 1362(17) and 40 CFR § 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

²² 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>.

²³ Willamette Partnership ECAS 2013, *supra* note 198, at p. 48 in Appendix B.

²⁴ BMPs for land treatment will follow the USDA-NRCS Field Office Technical Guides (FOTG) found at <http://efotg.sc.egov.usda.gov>. Activities in the coastal area as defined by La. R.S. 49:214.2(4) will be consistent with or, in the alternative, not conflict with the Louisiana Coastal Master Plan, which can be found at <http://coastal.la.gov/our-plan/>.

²⁵ 2007 EPA Toolkit for Permit Writers, *supra* note 21, at p. Glossary-2 in Glossary.

(e.g., actions, operations, or milestone events) that lead a permittee to compliance with the CWA and regulations.

Conservation Practice (CP) - Practice through USDA NRCS for planning, designing or installing a practice.

The conservation practice standard developed by the state in which you are working should be used to insure that you meet all state and local criteria, which may be more restrictive than national criteria.

Contract - A legal document between a regulated entity and a project developer that describes the appropriate safeguards that must be in place to protect the project for the duration of the credit life.

Credit - A measured or estimated unit of pollutant reduction per unit of time at a specified location,²⁶ as adjusted by attenuation/delivery factors, trading ratios, reserve requirements, and baseline requirements.

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 Reserve Pool - A collection or bank of certified credits that are valid and available for immediate purchase and use.

Credit Stacking – This is 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.²⁷

Credit Value Calculation - A function of the appropriate quantification method that measures water quality benefits adjusted to baseline requirements and trading ratios.

Critical Period - The period(s) during which hydrologic, temperature, environmental, flow, and other conditions result in a water body experiencing critical conditions with respect to an identified impairment.

Designated Uses - A use of the waters of the state as established by the water quality standards provided in LAC 33:IX.1111. These uses include, but are not limited to, primary and secondary contact recreation, fish and wildlife propagation, drinking water supply, oyster propagation, agriculture, and outstanding natural resource waters.

Designee - A person or entity that has been officially chosen to do something or serve a particular role.

Discharge Monitoring Report (DMR) - 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 EPA.

Discharge Point - 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 USC § 1362(7)). A discharge of a pollutant is defined in 33 USC § 1362(12).

Effectiveness Monitoring - The systematic data collection and analysis to determine the progress of a given WQT 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 USC § 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).

²⁶ See 2007 EPA Toolkit for Permit Writers, *supra* note 21, at p. Glossary-2 in Glossary.

²⁷ See WP & TFT 2014, *supra* note 206, at § 5.3.2.

Eligible Project - Implementation of a pollutant management strategy. This includes nonpoint source land treatment BMPs, integrated coastal protection projects²⁸, as well as point source practices, modifications, or technology installation to reduce its pollutant discharge below its TBELs by a particular amount for a particular period of time.

Environmentally Sensitive Area - As defined in LAC 33:IX.2105, an area with unique ecological features which may suffer irreversible damage from even small changes in the environment. This includes, but is not limited to, floodplains, wetlands, prime agricultural lands, aquifer recharge areas, coastal zones, habitats of rare or endangered species, wild and scenic rivers, etc.

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

Impaired Water Body - An impaired water body is one that is polluted. A state's TMDL "Impaired Waters List" is a list of the state's waters that fail or are threatened to fail the state's water quality standards, even after the installation of pollutant controls.

Initial Project Site Screening - 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. An initial project site screening includes, at the least, an assessment of pre-project conditions and an assessment of anticipated post-project conditions.

Integrated Coastal Protection - As defined by La. R.S. 49:214.2(11), means plans, projects, policies, and programs intended to provide hurricane protection or coastal conservation or restoration, and shall include but not be limited to coastal restoration; coastal protection; infrastructure; storm damage reduction; flood control; water resources development; erosion control measures; marsh management; diversions; saltwater intrusion prevention; wetlands and central wetlands conservation, enhancement, and restoration; barrier island and shoreline stabilization and preservation; coastal passes stabilization and restoration; mitigation; storm surge reduction; or beneficial use projects.

Ledger - *See also* Registry. This is defined as a service or software that provides a ledger function for tracking credit quantities and ownership; accounting summaries that cover primarily transactional information.

Load Allocation (LA) - As defined in 40 CFR § 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 - *See also* Environmentally Sensitive Area. This happens when a localized concentration of pollution 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 (which provides for the conservation of species that are endangered or threatened throughout all or a significant portion of the range, and the conservation of the ecosystems on which they depend) or the presence of those species critical to the structure or function of the ecosystem, 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.

²⁸ BMPs for land treatment will follow the USDA-NRCS Field Office Technical Guides (FOTG) found at <http://efotg.sc.egov.usda.gov>. Activities in the coastal area as defined by La. R.S. 49:214.2(4) will be consistent with or, in the alternative, not conflict with the Louisiana Coastal Master Plan, which can be found at <http://coastal.la.gov/our-plan/>.

Louisiana Pollutant Discharge Elimination System (LPDES) Permit - Louisiana's Water Quality Regulations (LAC 33: Chapter IX) require a permit for the discharge of pollutants from any point source into waters of the state of Louisiana. LDEQ became a state delegated to administer the NPDES Program in August of 1996.

Margin of Safety (MOS) - A required component of TMDL development designed to account for uncertainty in load and waste load allocation calculations.

Mixing Zone - 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. As defined in LAC 33:IX.1115.C, mixing zones are those portions of water bodies where effluent waters are dispersed into receiving waters mix and not areas where effluents are treated.

Nonpoint Source - As defined in LAC 33:IX.107 as a diffuse source of water pollution that does not discharge through a point source but instead flows freely across exposed natural or man-made surfaces such as agricultural or urban runoff and runoff from construction, mining, or silvicultural activities 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.”²⁹

Nutrient Management Plan - 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.³⁰

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 water body. This second use is the more common use of offset. (Note: EPA considers both types of offsets to be trading programs); 3) (*verb*) to compensate for.³¹

Permittee - This includes any entity with a discharge approved or pending approval under state- or federally-issued permit (e.g., LPDES permit). This document focuses on point source permittees seeking or granted permission to purchase water quality credits as a means of permit compliance, point sources may also be credit-generators and sellers of credits.

Persistent Bioaccumulative Toxics - 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.³²

Point of Concern - Generally the most downstream point within the trading area, pollution reductions should occur above the point of concern.

²⁹ U.S. Environmental Protection Agency, *Nonpoint Source Program and Grants Guidelines for States and Territories*, p. 7, note 2 (2013), available at <https://www.epa.gov/sites/production/files/2015-10/documents/319-guidelines-fy14.pdf>.

³⁰ 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.

³¹ 2007 EPA Toolkit for Permit Writers, *supra* note 21, at p. Glossary-4 in Glossary.

³² See EPA, *Multimedia Strategy for Priority Persistent, Bioaccumulative, and Toxic (PBT) Chemicals*, (2011). 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).

Point Source - As defined in LAC 33:IX.107, 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, 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.

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.

Project - Activities that 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 Project 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 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 or other project is consistently achieving the desired water quality improvements.

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.

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 (Ongoing) - 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 WQT 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 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.³³ Although multiple credit values are produced, the sale of one credit has a corresponding reduction in the proportion of all other credits.

Protocols - 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 - 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.³⁴ Examples include Farm Bill Conservation Title cost share and easement programs, 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.³⁵ 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 the State or a municipality, or a parish. As defined in LAC 33:IX.107, this includes any devices and systems used in the treatment (including 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 providing treatment.

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.

³³ See WP & TFT 2014, *supra* note 206, at § 5.3.1.

³⁴ See Oregon Interagency Recommendations on Public Funds, *supra* note 204.

³⁵ See Willamette Partnership ECAS 2013, *supra* note 198, at p. 15.

- 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.
- Registration (of Credits)** – This is 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 also* Ledger. This is defined as 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 CWA. Typically, these entities are regulated via permits, but may also be regulated under operating licenses or judicial/administrative consent decrees.
- 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 a special condition in a permit.
- 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 water body.³⁶
- 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)** – This is 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.
- 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.
- Subsegments** - Delineations primarily based on natural watershed boundaries, but also take into account site-specific conditions, such as dams, levees, weirs, etc., that require unique water quality standards and criteria³⁷.
- Technology-Based Effluent Limitation (TBEL)** - This represents the minimum level of control that must be imposed in a permit based on effluent limitations and standards promulgated under Section 301 of the CWA or new source performance standards promulgated under Section 306 of the CWA, on case-by-case effluent limitations determined under Section 402(a)(1) of the CWA, or on a combination of the three, in accordance with LAC 33:IX.3705.
- Total Maximum Daily Load (TMDL)** - As defined in 33 USC § 1313(d)(1)(C), and 40 CFR § 130.2(i), as well as in relevant state regulations. A TMDL is the calculation of the maximum amount of a pollutant a water body can receive and still meet applicable water quality standards (accounting for seasonal variations and a margin of safety (MOS)), including an allocation of pollutant loadings to point sources (waste load allocations (WLAs)) and nonpoint sources (load allocations (LAs)).

³⁶ See Willamette Partnership ECAS 2013, *supra* note 198, at p. 50 in Appendix B.

³⁷ LDEQ Water Quality Management Plan: Volume 4. 2014. Available at http://deq.louisiana.gov/assets/docs/Water/WQMPVolume4_9-9-14_final.pdf.

- **Pre-TMDL Scenario:** A regulatory environment in which a water body 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 WQT plan. LPDES 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.
- **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 rule).³⁸ A state may provide for the use of WQT in a 4b watershed plan or strategy.

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 Guidance - A state's statute, rule, policy, guidance, or other documents articulating how WQT should occur within that state.

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 (Equivalency) - The factor applied to pollutant reduction credits to adjust for trading different pollutants or different forms of the same pollutant.

Trading Ratio (Reserve) – This is 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 (Retirement) - The factor applied to pollutant reduction credits to accelerate water quality improvement. These excess credits are taken out of circulation (retired) to accelerate water quality improvement.

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.

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.

Verification – See also Project Review.

³⁸ See 2006 Integrated Reporting Guidance, *supra* note 63, at pp. 53-56.

Waste Load Allocation (WLA) - As defined in 40 CFR. § 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 BMP or other project 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 LAC 33:IX.1113, water quality criteria are elements of water quality which set general and numerical limitations on the permissible amounts of a substance or other characteristics of state waters, General and numerical criteria are established to promote restoration, maintenance, and protection of state waters, A criteria for a substance represents the permissible levels for that substance at which water quality will remain sufficient to support a designated use.

Water Quality Standard - As defined in LAC 33:IX.107, a definite numerical criterion value or general criterion statement or policy statement promulgated by the administrative authority to enhance or maintain water quality, and to provide for, and fully protect, a designated use of the waters of the state. 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 USC § 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. Where sources within a specific category or subcategory of dischargers are subject to WQBELs imposed in accordance with LAC 33:IX.2707, the sources in that specific category shall be subject to the same WQBELs.

Water Quality 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 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.

Water Quality 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.

Watershed Trading Framework - Watershed-level document that contains the specific details of implementing a trade as it applies to multiple permittees trading within a watershed.

APPENDIX B: List of Contributors

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