LOUISIANA WATER QUALITY TRADING GUIDANCE

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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 Toolkit[1] template for WQT guidance was used to develop this document. The guidance template follows that of the National Network on Water Quality Trading (NNWQT) publication *Building a Water Quality Trading Program: Options and Considerations*[2].

[1] ACWA, *The Water Quality Trading Toolkit*. August 2016. Available at: https://www.acwa-us.org/toolkits/water-quality-trading-toolkit/.
[2] NNWQT, *Building a Water Quality Trading Program: Options and Considerations*. June 2015. Available at: http://willamettepartnership.org/publications/.

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List of Acronyms

ACWA	Association of Clean Water Administrators
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
NNWQT	National Network on Water Quality Trading
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
USC	U.S. Code
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 objectives[3]. EPA strongly supports WQT as a cost-effective mechanism, where both nonpoint and point source stakeholders can voluntarily participate, to maximize pollutant reduction efforts and improve water quality[4].

Trading can occur between point sources or between point and nonpoint sources. WQT allows one source to meet its regulatory obligations by using pollutant reductions created by another source(s) 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[5], CWA[6] requirements, and local requirements; and
- Implemented in a manner that:
  1. results in a net improvement of water quality;
  2. contributes to meeting water quality standards;
  3. does not cause or contribute to violation of water quality standards, or impairment of designated uses;
  4. does not create localized adverse impacts on water quality and existing and designated uses;
  5. is consistent with the antidegradation policy in Louisiana Administrative Code (LAC) 33:IX.1109.A;
  6. is consistent with local, state, and federal water quality requirements;
  7. results in long term improvement in water quality;
  8. increases the pace and scale of restoration and attainment of water quality standards; and
  9. assists in implementing total maximum daily loads (TMDLs).

[3] EPA, *Water Quality Trading Policy*, 68 Fed. Reg. 1608, p. 1609 (Jan. 13, 2003) (final policy) (hereafter "2003 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] EPA, *Updating EPA's Water Quality Trading Policy to Promote Market-based Mechanisms for Improving Water Quality* (hereafter "2019 EPA memorandum"), available at: https://www.epa.gov/sites/production/files/2019-02/documents/trading-policy-memo-2019.pdf.

[5] LAC 33:IX. Chapter 26, available at: https://www.doa.la.gov/osr/REG/1910/1910.pdf.

[6] Federal Water Pollution Control Act, 33 USC §1251, et. seq. (commonly referred to as "Clean Water Act", CWA).

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:* LAC 33:IX. Chapter 26 defines the essential components of each trade.
- *Trading guidance:* This document 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 will include all the specific details of the trading processes and performance standards. If there is an existing watershed trading framework, then the WQT plan may be based on it.
- *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. Developing a watershed trading framework is not necessary to participate in Louisiana's WQT Program, since every permittee's WQT plan will contain all the specific details of the trading processes and performance standards. Basically where multiple permittees within a watershed intend to trade, a watershed trading framework is a document designed to work in tandem with the permittees's WQT plans to expedite permitting and formalize a consistent process and unit of trade. Where a watershed trading framework exists, a permittee's WQT plan will incorporate the terms of the watershed trading framework.

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 the 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. The purpose of the WQT program is to allow both nonpoint and point sources to participate in trading to help achieve water quality goals at a lower overall cost than traditional regulatory approaches. Additional benefits of trading include creation of new revenue opportunities, wildlife habitat improvements, increased accountability, and new tools for tracking water quality improvements.

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,[7] is one of those tools. Trading is recognized in the Louisiana Revised Statute, R.S. 30:2074(B)(9)[8]. The Enrolled Act No. 371 (House Bill No. 423)[9] of the 2017 Regular

[7] *See generally* 2003 EPA Trading Policy *supra* note 3, at p 1610.
[8] Louisiana R.S. 30:2074(B)(9). Available at: http://www.legis.la.gov/Legis/Law.aspx?d=87135.
[9] Enrolled Act No. 371, Louisiana 2017 Regular Session, House Bill No. 423. Available at: http://www.legis.la.gov/legis/ViewDocument.aspx?d=1052305.

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.

In accordance with R.S. 30:2074(B)(9)(a), the LDEQ has adopted and promulgated LAC 33:IX. Chapter 26 to establish and administer a water quality trading(WQT) program as an inducement to reduce discharges of pollutants into waters of the state. The rule addresses appropriate standards for accountability, enforceability, provisions to ensure transparency and is written to be flexible so that trading may be authorized under various scenarios. The basis and rationale for this rule are to enact Act No. 371 of the 2017 Regular Session of the Louisiana Legislature which will protect water quality by promoting the reduction of pollutant discharges into state waters.

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). The conditions set forth in LAC 33:IX.3113.B.1 and 2607.C for public notice and the 30-day public comment period will apply when a point source submits a WQT plan to use credits to offset a discharge. LDEQ may amend the WQT plan or require amendments prior to approval. A WQT plan must be approved by LDEQ prior to inclusion in an LPDES application, application addendum, or request for permit modification. LDEQ will include documentation in the draft LPDES permit package referencing the trade. Although LPDES permittees covered under the general permitting system are not eligible to participate in WQT in Louisiana, permittees that are 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 water quality-based effluent limitations (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);
- 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 CFR (Code of Federal Regulations) §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 where an alternative pollution reduction strategy is pursued, 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 WQBEL. Absent a TMDL, existing state and local requirements and current conditions for nonpoint sources define the baseline for generating credits[10].

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 point source involved should conduct an analysis of pollutant loadings similar to LDEQ TMDL development process. The modeling results and/or other analysis would be part of a WQT plan; and
2. *New source, new discharge, or expanded discharge:* 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 without causing localized impacts, 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/TMDL Revision, any trading agreements made prior to the TMDL that are inconsistent with TMDL requirements will have to be modified. LDEQ encourages parties involved in pre-TMDL trading to contact LDEQ early in their process to ensure that future revisions to trading agreements do not create disincentives for early action towards pollutant reductions.

[10] *See generally* 2003 EPA Trading Policy, *supra* note 3, at p 1610.

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 standards[11].

EPA has confirmed that LDEQ has the authority and discretion to use alternative approaches as a new goal of the CWA §303(d) program[12] 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 time[13].

Under this alternative scenario, LDEQ may elect to place an impaired water on its category 5alt or 4b list instead of 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 will 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), credit characteristics (Section 6), calculation methodology (Section 4), and quantity of credits needed for a pollutant reduction. The WQT plan should also examine water quality conditions to identify the potential for any localized impacts (Section 3.1.2).

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[11] 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.

[12] 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.

[13] 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.

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, and how 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 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.[14]

LPDES permits may contain conditions on the use of certified credits that include the extent that the requirement of the permit may be satisfied with certified credits; when, and from what source, certified credits may be acquired by the permittee; and/or requiring periodic monitoring of installed BMPs to verify credit generation/water quality improvements.

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 components, as appropriate, and shall describe how they were derived:

- The pollutant(s) for proposed trading, the number of credits, and any credit generation milestones including a schedule for credit generation;
- The trading area, including justification and how it is protective of the relevant designated uses;
- The trading baseline, including identification of any applicable requirements that

[14] *See generally* EPA's *NPDES Permit Writer's Manual, supra* note 13.

apply within the trading area and shall be implemented to achieve baseline requirements. The WQT plan shall also identify sources of applicable regulation or law;

- The credit-generating projects, including quality and performance standards, and if necessary, additional criteria for project site design, maintenance, and stewardship;
- A description of the credit quantification methodology, including how pre- and post-project conditions are modeled or measured, the assumptions and inputs used to derive the number of credits, and how baseline will be accounted;
- Monitoring and reporting requirements, including parameters to be monitored, monitoring frequency, type of sample required, physical form of the report, and any other trading-related monitoring that may be required in addition to CWA monitoring requirements;
- The trading ratio(s), including description of the basis and assumptions supporting each trading ratio and whether it affects the size of the credit obligation or the number of credits generated from an individual trading project;
- Other mechanisms to mitigate risk of insufficient credit generation, including a reserve pool, insurance, performance bonding, etc. as well as justification for the selection and application of the given mechanisms;
- The credit life information, including when credits become valid, how long credits remain valid, renewability of credits;
- The requirements for review of project site implementation and performance, and the entity that will perform the review, the review frequency and content, and the performance standards that are evaluated; and
- Appropriate adaptive management where WQT plans shall include a description of how monitoring and other information may be used over time to adjust trading projects and under what circumstances.

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 projects, 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, such as agricultural producers and integrated coastal protection, 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 of the permitted effluent limit. As appropriate, a facility with unused facility capacity wishing to generate credits may be able to modify their permit to reduce the effluent limitations, thus eliminating the excess unused portions of the permitted effluent limit. This permit modification would have to be done prior to submitting a credit application. 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 projects. These projects may include USDA NRCS Conservation Practices (CPs) and Best Management Practices (BMPs), or integrated coastal protection projects[15], 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 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 calculated using the appropriate quantification method for a given eligible project, consistent with baseline requirements (Section 3.2.1.), and then adjusted by the appropriate trading ratios (Section 5.1).

[15] CPs and BMPs for land treatment will follow the United States Department of Agriculture-Natural Resources Conservation Service (USDA-NRSC) 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/.

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 (*S*ection 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. Nonpoint sources are not subject to LPDES permit requirements and/or enforcement actions. 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, which the point source uses to meet its effluent limits.

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 registry), as well as credit source recordkeeping and reporting (Chapter 8).

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 may be large or small, such as trading across a wide geographic area if the water body to be addressed drains a large area, or across a smaller area if the water body drainage area itself is small. The trading area will be established on a case-by-case basis and be documented through a proposed WQT plan subject to LDEQ approval, prior to being incorporated into a permit.

Relevant trading documents that define the trading area should include a visual map (with GPS coordinate reference points) and general description of the boundaries of the trading area with a clear link demonstrated between the credited pollution reduction and the permittee's point of compliance, and if applicable, a point of impact (such as a lake, estuary, or other water body). Trading areas must be based on sound science. A trading area helps ensure there are no localized impacts and that trades do not cause or contribute to a violation of water quality standards. 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

The 2003 EPA Trading Policy recognizes that trading of pollutants other than nutrients and sediments has the potential to improve water quality and achieve ancillary environmental benefits. Temperature impacts, fate, and transport are sufficiently understood to support some level of trading where water quality equivalence can be established through models, such as those used in TMDL development and other tools, supported by monitoring[16]. LDEQ considers nutrients, sediment, and temperature appropriate pollutants for trading. 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.

LDEQ may use surrogate or indicator parameters in place of those that are inherently variable or difficult to monitor. This is consistent with the TMDL regulations that specify that TMDLs can be expressed in terms of mass per time, toxicity or other appropriate measure (LAC 33:IX.2707.D.1.f.iii). When a surrogate is allowed, LDEQ may also require monitoring to establish the accuracy of the surrogate in representing the parameter for trading purposes as well as its effectiveness at achieving the pollutant reduction.

2.5 Appropriate Credit-Generating Projects

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 projects. Some factors that may be considered include whether the BMP or project reduces the pollutant of concern and

[16] EPA, *Water Quality Trading Assessment Handbook*, (2004), available at https://nepis.epa.gov/Exe/ZyNET.exe/30005XSX.TXT?ZyActionD=ZyDocument&Client=EPA&Index=2000+Thru+2005&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5Czyfiles%5CIndex%20Data%5C00thru05%5CTxt%5C00000008%5C30005XSX.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=hpfr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL#.

improves water quality, and whether an adequate method exists to document the reduction generated from the BMP or project.

2.6 Environmental Justice and Equity Considerations

Environmental Justice is defined by both LDEQ and EPA as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic group should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations of the execution of federal, state, local, and tribal programs and policies." (see www.epa.gov and *Final Report to the Louisiana Legislature on Environmental Justice as mandated by 1993 La. Act 767*). LDEQ is committed to the promotion of environmental justice in all its programs, activities, and decisions. To this end, LDEQ does not discriminate on the basis of race, color, national origin, disability, age or sex in the administration of its programs or activities, in accordance with applicable laws and regulations. As a recipient of federal funding, LDEQ must adhere to Title VI of the Civil Rights Act of 1964 (42 U.S. Code (USC) §2000d et seq), as well as EPA regulations that implement Title VI. (Title VI at 40 C.F.R. Part 7). LDEQ does indeed adhere to all rules, regulations, laws, and standards throughout its operations, including when deciding whether or not to issue a permit to a particular applicant. All environmental LDEQ and EPA approved standards are presumptively sufficient to protect public health with an adequate margin of safety for the population within the area; therefore, there is no affected population which suffers "adverse" impact. At a minimum, a permitting or siting decision cannot be found to result in a "disparate impact" unless there is some documented adverse impact. (see Letter from Ann E. Goode, Director, EPA's Office of Civil Rights, RE: EPA File No. 5R-98-R5 (*Select Steele Complaint*) to St. Francis Prayer Center [Complainant] and Michigan Department of Environmental Quality [Recipient](Oct. 30, 1998) (dismissing Title VI complaint against the Michigan Department of Environmental Quality).

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. EPA policy recommends that states consider compliance history when evaluating participation in trading. LDEQ will review source participation on a case-by-case basis.

3.1 Eligibility for Buyers and Trades

Credits may be purchased for the purposes of meeting compliance obligations, restoration, and protection and maintenance of water quality. When determining eligibility, LDEQ will consider specific compliance factors, such as long-term operation and maintenance and the availability and cost of technology to meet permit limits. A WQT plan is only integrated into an LPDES permit if credits are bought for the purpose of meeting compliance obligations.

3.1.1 Meeting Technology-Based Effluent Limitations (TBELs)

A point source that has attained applicable TBEL requirements can obtain credits to achieve more stringent 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 projects conducted that cause or contribute to a violation of water quality standards except as allowed in regulatory mixing zones under a compliance schedule[17]. An LPDES permit may, when appropriate, specify a schedule of compliance[18]. 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) should be used 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 may 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. In a WQT plan submitted to LDEQ for review, compliance with anti-backsliding and antidegradation must be demonstrated (i.e. the permittee is still responsible for the same level of pollutant reduction) to be approved by LDEQ.

3.1.3 Compliance with Antidegradation

Regarding 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 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 believe 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.

[17] 2003 EPA Trading Policy, *supra* note 3, at p 1610.
[18] 2017 LAC 33:IX.2713.

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 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 water quality standards 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. Performance criteria may be project specific and will be detailed in accompanying documentation in project plans.
- *Projects need to be consistent with other requirements 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. EPA encourages the use of documented current conditions to provide a simple and

appropriate baseline where watersheds have no other legal requirements[19].

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). As appropriate, a facility with unused capacity wishing to generate credits would have to first modify their permit to reduce the effluent limitations, thus eliminating the excess unused portions of the permitted effluent limit, prior to submitting a credit application for trading. Further, any applicable TBELs must be met by the point source buyer prior to purchasing credits. Point source baseline levels need to be defined in a WQT plan.

2. Nonpoint Source Baselines
   Nonpoint source trading baselines should be set in a manner that considers any current federal, state, tribal, and local requirements and any existing abatement requirements derived from a TMDL or other water quality goal.

3. Expressing Baseline for Nonpoint Sources
   Nonpoint source baseline requirements will be expressed with consideration of a TMDL or by existing conditions. Figure 1 provides a decision tree that may be used to help set nonpoint source baselines that would apply to individual projects.

[19] *See generally* 2019 EPA memorandum, *supra* note 4.

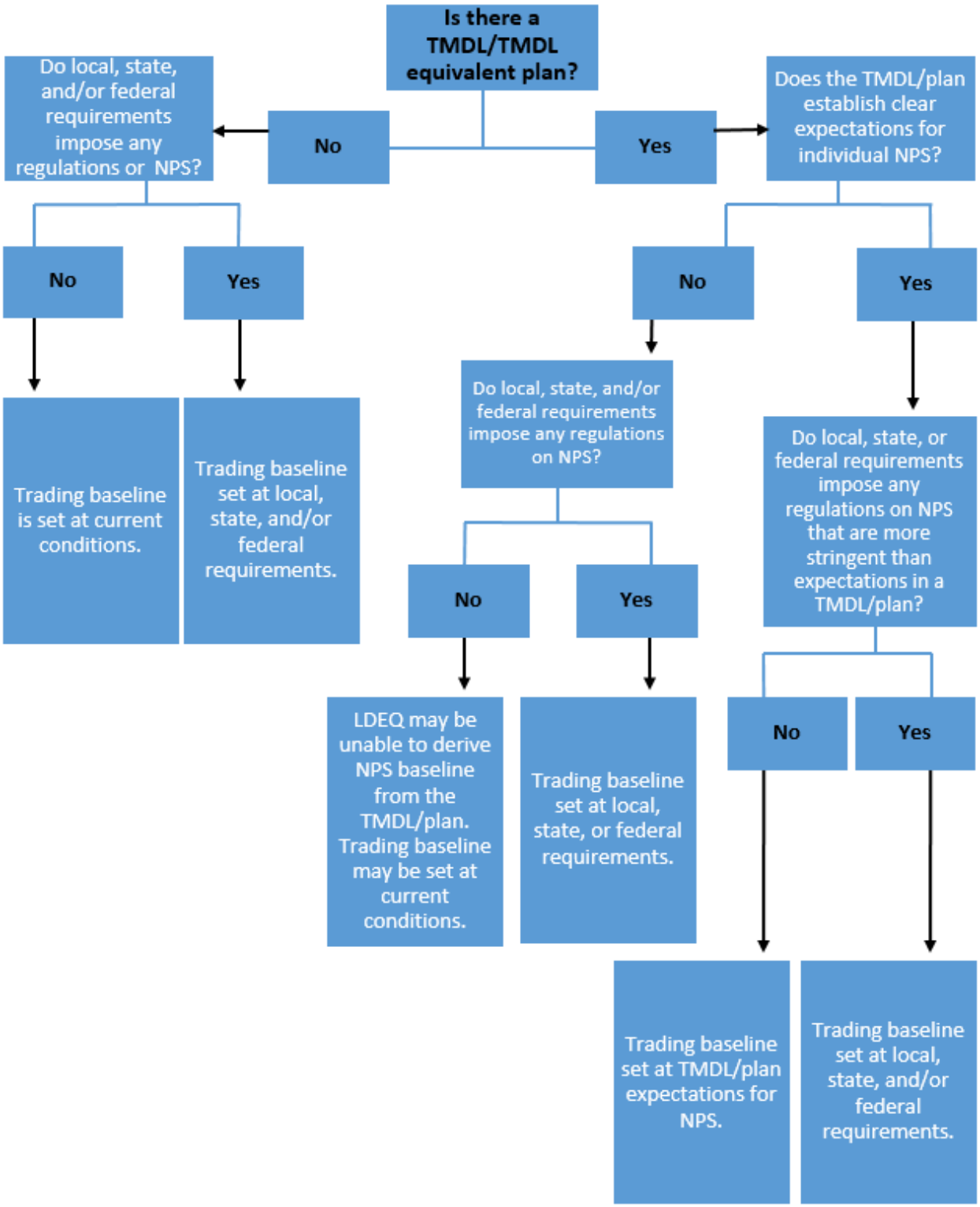

Figure 1: Options for Deriving Nonpoint Source Baselines (figure modified from National Network on Water Quality Trading document)[20].

[20] *See generally* NNWQT's *Building a Water Quality Trading Program: Options and Considerations*, *supra* note 2.

3.2.2 Scale of Applying Baseline for Nonpoint Sources

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

3.2.3 Project Timing (base year)

EPA indicates that existing practices could be reviewed for eligibility to generate credits on a 'look-back' basis if those activities are sufficiently documented[21]. The credit application should define the implementation timeframe, after which projects may be 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 projects 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 reduce pollutant run-off, including using those funds to install BMPs (e.g., a nutrient management plan or irrigation water management plan). Credit-generating projects may include water quality benefits obtained with public conservation funds unless otherwise prohibited by the terms and conditions of the public funded project.

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 submitting a project for WQT to ensure that the NRCS or Farm Service Agency (FSA) program requirements are consistent with the credit program.

3.2.5 Credit Stacking

Credit stacking allows credits for multiple environmental markets to be generated from a single project area. EPA indicates that if a single project can reduce pollutant discharges into waterways, reduce air emissions, and create wetlands or wildlife habitat, then the project proponent should be able to generate and sell credits within each of those markets. 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.

[21] *See generally* 2019 EPA memorandum, *supra* note 4.

Chapter 4: Quantifying Pollutant Reductions for Water Quality Credits

Quantification of pollutant reductions for water quality credits is presented in this chapter. Quantification includes a direct measurement of the pollutant reduced at the end of a pipe (point source) or direct measurement or estimation 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. EPA acknowledges that although nonpoint source discharges can be difficult to estimate due to natural variability, research has helped inform the effectiveness and performance in nonpoint pollution reduction technologies and practices, as well as technical mapping and robust modeling programs have become capable of evaluating resources at the edge-of-field and at the landscape scale. Further, EPA supports the use of scientifically defensible estimates of pollutant reductions in implementing market-based programs[22]. Different quantification methods may work better for different pollutant reduction projects in different watersheds. A credit application's 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 credit application 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 included in a credit application should articulate the documentation and information that is needed to accurately quantify pollutant reductions. LDEQ will review and evaluate the quantification method 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 by a permittee 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 WQT plan 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 the available credits for sellers or the 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 greater than the reduction that would occur if the point source installed treatment technology on site. Trading ratios may be used to account for variables associated with a trading project, including but not limited to the following: taking into account risk of project failure, BMP effectiveness, measurement uncertainty, attenuation of a pollutant between the locations of the generator and the user of credits, temporal variability, pollutant equivalency, and credit retirement for environmental benefit. LDEQ will review appropriate trading ratios, adapt ratios to local conditions and data availability, and evaluate the ratios through technical review. Thus, trading ratios may differ for each specific trade and will be set on a case-by-case basis.

[22] *See generally* 2019 EPA memorandum, *supra* note 4.

5.1 Trading Ratios

LDEQ will consider multiple types of ratios including uncertainty, delivery, reserve, retirement, and equivalency ratios. These ratios, as applicable (Section 5.2.2), are to be included into the WQT plan and used to establish the total trade ratio.

5.1.1 Uncertainty Ratio

Uncertainties in trading activities are predominantly associated with the challenges of accurately assessing and monitoring nonpoint source credit generation projects and their resulting pollutant load reductions. When loads cannot be directly monitored then a model is used. Average hydrology data takes into account wet and dry years, as well as extreme events. Trades between unmonitored sources require an uncertainty ratio in case any one year has a high variance with the average. 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.

5.1.2 Delivery Ratio

A delivery ratio is calculated for a specific trading area as defined in a WQT plan to account for pollutant attenuation due to the fate and transport characteristics of the specific pollutant being traded, the unique characteristics of the watershed (e.g., hydrology, vegetation), distance, and time. This type of ratio will be derived through watershed models.

5.1.3 Reserve Ratio

A reserve ratio will be used to insure against unforeseen credit losses by creating a credit reserve pool. These credits may be used as follows:

1. To cover the loss of certified credits from a project damaged by events arising from sudden and reasonably unforeseen events beyond the control of the person responsible for the maintenance of the project (e.g. due to weather induced project failure);
2. To compensate for a lack of readily available credits in the registry when purchased credits have become unavailable due to failure or underperformance of a project; and
3. Unused reserve credits will be retired at the end of the credit life to improve the overall water quality.

5.1.4 Retirement Ratio

A retirement ratio will be applied to protect against potential environmental degradation and to ensure a net improvement in water quality. Entities that cease to operate will be required to retire all of their credits.

5.1.5 Equivalency Ratio

An equivalency ratio will be used to account for differences in impact from different forms of the same pollutant, or for cross-pollutant trading when pollutants contribute to similar impairments within a water body (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. The delivery ratio, reserve ratio, retirement ratio, and, if applicable, 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. LDEQ may allow for two types of credits dependent on the credit baseline:

1. Long-term credit is given for reductions that go beyond the credit baseline. Long-term credits shall be available so long as the project that generates the credit is maintained and meets performance standards.
2. If a nonpoint source is subject to a TMDL/TMDL alternative plan load allocation baseline (Section 3.2.3), interim credits shall be available for up to five years. Interim credits are not restricted by the load allocation baseline and allow nonpoint sources the opportunity to receive the full benefits of implementing a pollutant reduction project. The use of interim credits can result in a greater reduction of load overall and accelerate attainment of water quality[23]. Interim pollutant reduction credits are generated for reductions that help achieve the credit baseline, and are available for a maximum of five years after which point they are replaced with applicable long-term pollutant reduction credits.

6.1.1 Credit Life and Value Calculation

Credit life will be determined in the credit application process and referenced in the WQT plan. Credits must be calculated using the best available science, tools, and methodologies. 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

[23] Wisconsin Department of Natural Resources, *A Water Quality Trading How to Manual*. 2013. Available at: http://dnr.wi.gov/topic/surfacewater/documents/wqt_howto_9_9_2013signed.pdf.

- 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. Credit-generating projects shall go through project review, be in place, and be producing water quality benefits during the same time period(s) defined for compliance in an LPDES permit or other regulatory instrument. Credits cannot be used outside their approved credit life. At the end of the credit life, unused credits will be retired to improve the overall water quality. LDEQ may renew credits where credit-generating projects are maintained and continue to function (See Section 6.2). If credits expire before the end of permit term, the LPDES permittee will need to submit a plan for remedy (See Section 8.4.1).

6.2 Project Expiration and Renewal

Where projects are continuing to function and are being properly maintained (Section 8.4), 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 ownership[24], LDEQ recognizes that 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 project 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.

[24] 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).

7.1 Eligible Project Quality Standards

The guidelines for how a project should be designed, constructed, maintained, and monitored over time are specific to the credit-generating project being implemented. 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 professional[25] 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 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

[25] 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.

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

1. A project developer (point source or nonpoint source) wishing to generate credits will submit to LDEQ a credit application for review showing anticipated credits to be generated, after which an initial project review is conducted.

2. 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

Project implementation will be confirmed via site visit by a relevant agency representative (LDEQ, LDAF, Soil and Water Conservation Districts (SWCD), or CPRA) before credits may be certified or issued. Review of project site implementation and performance, the entity that will perform the review, and the review frequency will be determined by the respective project design and management plan specific to each project. LDEQ may visit the site at any time throughout the life of the credit to confirm implementation.

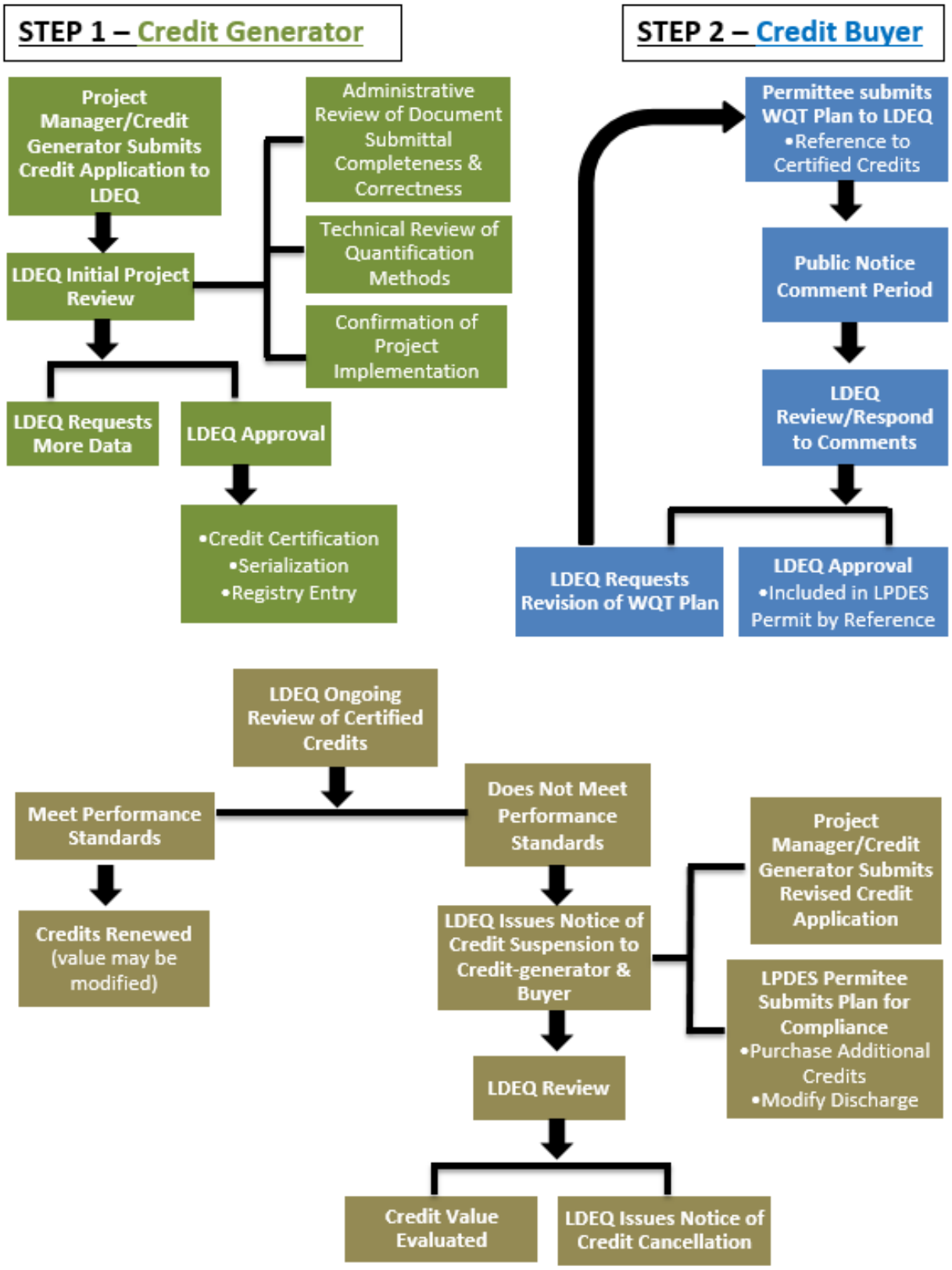

Figure 2: The Louisiana WQT Program Credit-Generating and Credit-Buying Process.

8.2.3 Required Project Documentation for Credit Buyer

The credit buyer should submit the following documentation as part of the WQT plan:

- Proposed trading area map(s) showing the location(s) where credits are being generated and the location of the buyer's facility and its discharge location(s), as well as any impaired areas of concern.
- A narrative that includes all specific details of implementing a trade and performance standards that adequately describe the pollutant, credit units and characteristics (renewal/expiration dates), and calculation methodology; and includes a justification of trading area that incorporates delivery ratio(s) and examines water quality conditions to identify the potential for any localized impacts.

8.2.4 Required Project Documentation for Credit Seller

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

- Proof of ownership/legal control over project site
- Project design and management plan (Section 7.2)
- Map of project location
- Pictures of project implementation
- Data files and/or model outputs used for credit quantification method
- Stewardship documents (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 registry as certified credits.
2. Nonpoint Sources
   After the Initial Project Review where LDEQ confirms a nonpoint source's credit eligibility, LDEQ will provide a nonpoint source with a Credit Certificate. At that time, credits will be issued and included in the LDEQ registry. 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

8.4.1. Point Source Credits

Certified 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.

8.4.2. Nonpoint Source Credits

To verify that certified 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.

8.5 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 taking operational actions to maintain compliance (e.g., the permittee reduces its discharge, a permit modification request, 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.

8.6 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.

8.7 Credit Registry

A credit registry may include documenting the certification, location, renewal/expiration date, maintenance report (as applicable), and status of credits (available/purchased). A registry with these characteristics allows participants to easily find the locations of available credits for specific pollutants. LDEQ is responsible for maintaining the credit registry 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 registry and showing credit balances for credit-generating projects and for permittees;
- Reconciling all trades in the trading area to ensure credits are not used more than once; and
- Making trading information readily available to regulatory agencies and the public.

8.8 Public Availability of Information on Projects

By maintaining the credit registry, LDEQ ensures that an accounting of all trades and credits is available to the relevant agencies and the public. The credit registry 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.

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 policies[26].

[26] Louisiana Revised Statute (R.S.) 30:2025.

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 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 program processes 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 improvements. 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 Plan[27] (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.

[27] LDEQ, *Water Quality Management Plan*. Available at: https://www.deq.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. 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.

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)[28] - Schedules of activities, prohibitions of practices, maintenance procedures and other management practices designed to prevent or reduce the pollution of the waters of the state, including treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge, or waste disposal, or drainage from raw material storage. 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.[29]

BMP/Project Effectiveness - The quantitative/qualitative evaluation of source pollution reduction after implementing a BMP(s)/project that is measured over time and accounts for any decrease in pollution capture due to natural and/or anthropogenic phenomenon.

BMP Quality Standards - Specifications for the design, implementation, maintenance, and performance tracking of a particular BMP to ensure the estimated water quality benefits of an eligible project are achieved and allow for verification that the BMP is performing as described in an approved WQT plan.

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)".

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

[28] *Supra* note 15.

[29] EPA, *Water Quality Trading Toolkit for Permit Writers*. 2007. Available at: https://www.epa.gov/npdes/water-quality-trading-toolkit-permit-writers.

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 (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, modeled, or estimated unit of pollutant reduction per unit of time that represents the specific pollutant reduction generated by a BMP at a specified location, as adjusted by attenuation/delivery factors, trading ratios and baseline requirements as appropriate.

Credit 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.

Credit Life - The period from the date a credit is certified and becomes available for use by a permittee (i.e., its "effective" date), to the date that the credit is no longer valid (i.e., its "expiration" date).

Credit Project - Activities undertaken for the purpose of generating credits by point or nonpoint sources, including, but not limited to, installing advanced treatment technology, curtailing discharges, and BMPs.

Credit Reserve Pool - Credits that are currently being generated and that have been reviewed, certified and registered and are available for trade during the credit life.

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.

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 USC §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).

Eligible Project - Implementation of a pollutant management strategy. This may include nonpoint source land treatment BMPs, integrated coastal protection projects[30], as well as point source practices, modifications, or technology installation to reduce its pollutant discharge 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.

Load Allocation (LA) - As defined in 40 CFR §130.2(g), this is the portion of a receiving water's loading

[30] *Supra* note 15.

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.

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."[31]

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.[32]

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

[31] EPA, *Nonpoint Source Program and Grants Guidelines for States and Territories*, p. 7, (2013), *available at* https://www.epa.gov/sites/production/files/2015-10/documents/319-guidelines-fy14.pdf.

[32] NRCS, *Conservation Practice Standard: Nutrient Management, Code 590*, pp. 6-7 (2012), *available at* http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1046896.pdf.

for.[33]

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.[34]

Point of Compliance - For point sources discharging to surface waters, this is the location at which compliance shall be measured in accordance with limits specified in the LPDES permit.

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

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 Design and Management Plan (Operation and Maintenance Plan) - The document that details A) how the proposed credit-generating project 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

[33] *See generally* EPA's *Water Quality Trading Toolkit for Permit Writers*, *supra* note 28.

[34] EPA, *Multimedia Strategy for Priority Persistent, Bioaccumulative, and Toxic (PBT) Chemicals*, (2011). Available at: https://nepis.epa.gov.

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 projects 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.[35] 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 - Public funds that are targeted to support voluntary natural resource protection and/or restoration. Examples include, but are not limited to, USDA cost share programs, EPA section 319 grant funds, U.S. Fish and Wildlife Service Partners for Wildlife Program funds, and state wildlife grants, and state restoration grants. Public funds that are not considered public conservation funds include: public loans intended to be used for water quality infrastructure projects (e.g., Clean Water State Revolving Funds and USDA Rural Development Funds), and utility sewer stormwater and surface water management fees

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

[35] Willamette Partnership & The Freshwater Trust*, Draft Regional Recommendations for the Pacific Northwest on Water Quality Trading,* §5.3, (2014). Available at: http://willamettepartnership.org/wp-content/uploads/2014/09/PNW-Joint-Regional-Recommendations-on-WQT_ThirdDraft_2014-08-05_full1.pdf.

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 project or BMP that ensures that the estimated ecosystem service benefits at a project site are actually achieved through implementation.

Quantifiable - The amount, rate, and characteristics of a discharge reduction that can be measured through an accurate, reliable, and replicable method, procedure, or set of calculations established by an applicable requirement or approved by LDEQ.

Quantification Method - Scientifically-based method for determining the load reduction associated with a given credit-generating project 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 projects. Modeling is also frequently used to predict attenuation of pollutants.

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

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 - A centralized and easily accessible public ledger wherein credit information and accompanying documentation is stored to document credit issuance, transfer, and holdings.

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.

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 criteria[36].

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)).

- **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).[37] 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 Ratios - Numeric values used to adjust the credits generated for a seller and the credits available to meet the obligation of a buyer. Trading ratios account for factors such as, but not

[36] *See generally* LDEQ's *Water Quality Management Plan: Volume 4*, *supra* note 26.

[37] EPA, 2006 Integrated Reporting Guidance. Available at: https://www.epa.gov/sites/production/files/2015-10/documents/2006irg-report.pdf.

limited to, in-stream attenuation or uptake of a pollutant between the locations of the generator and the user of credits, different forms or types of a pollutant, risk of BMP failure, uncertainty as to BMP performance, and net environmental benefit.

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 comparision with other model outputs, literature values, and/or expert judgement.

Verification - *See also* Project Review.

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 water quality improvement that can be reasonably attributable to BMPs (for point source-to-nonpoint source trades) or wastewater treatment technologies or practices (point source-to-point source trades) installed at a site. 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 or Trade - A transaction that involves the sale or other exchange, through a contractual agreement, of water quality credits generated from one location that have been verified, certified, and registered, and used at another location within a trading area.

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 statewide 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 - An area of land that drains all waters and rainfall to a common outlet such as a lake, river, stream, or other waters.

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 Interested Stakeholders and Contributors

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Andrea Calvin, Adaptation Strategies
Jeff Churchwell, Northeast Louisiana Power Cooperative
Steve Chustz, CSRS Inc.
Ryan Clark, The Water Institute of the Gulf
Sidney Coffee, America's WETLAND Foundation
Chris Coreil, U.S. Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS)
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Cullen Foley, The Nature Conservancy (TNC)
Brittany Fontenot, RES
Jeremy Franklin, LDEQ-OES-WTPR
Angelina Freeman, Coastal Protection and Restoration Authority of Louisiana (CPRA)
David Gatz, ExxonMobil
Karen Gautreaux, TNC
Roger Gingles, LDEQ-OEA

Henry Graham, Louisiana Chemical Association
Tyler Gray, Louisiana Mid-Continent Oil and Gas Association (LMOGA)
Richard Greig, RES
Lindsay Gouedy, Sparta Groundwater Commission
Scott Guilliams, LDEQ-OES-WTPR
Adam Haddox, Louisiana Pulp and Paper Association
Denise Hamilton, EPA-Region 6
Tiffany Hammond, RES
Michael Hare, RES
Ron Harrell, Louisiana Farm Bureau Federation
Andrew Harrison, Harrison Law, LLC
Chris Hartley, USDA-Office of Environmental Markets
Eric Hillman, BASF Corporation
Beth Hitt, TestAmerica
Russel Honore', The Green Army
Rachael Hunter, Comite Resources
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Lisa Jordan, Tulane Environmental Law Clinic (TELC)
George Kelly, RES
Duncan Kemp, CPRA
Aimee' Killeen, Providence Engineering and Environmental Group LLC
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Sara Krupa, LDNR
Tita LaGrimas, Trabede Environmental Services
Brittany Lancon, RES
Aaron Landry, JMB Companies
Austin Langley, Entergy
Gregory Langley, LDEQ-OSERC
Brian LeBlanc, LSU Sea Grant and School of Plant, Environment, and Soil Sciences
Mackenzie Ledet, Stonehenge
Harold Leggett, PPM Consultants
Ronnie Levy, LSU Ag Center
Sarah Mack, Tierra Resources
Doug MacNair, Environmental Resources Management
Angela Marse, LDEQ-OEC-ENF
Taylor Marshall, Restore the Earth Foundation
Haywood Martin, Sierra Club
Richard Metcalf, Metcalf Consulting
Nathan McBride, LMOGA
Jonathan McFarland, LDEQ-OEA-WPAD
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Shane Miller, LDEQ-OEC-SUR
Megan Moore, LDEQ-OSECR
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