WATER-QUALITY BASED APPROACH TO CWA

- Promulgated under federal Clean Water Act
  - “fishable and swimmable waters”
  - “chemical, physical, and biological integrity”
- Delegated program via Georgia Water Quality Control Act

![Diagram showing the process of monitoring, assessing, developing, implementing, and establishing water quality standards.]

Establish Water Quality Standards
WATER QUALITY STANDARDS

- Designated uses
- Water quality criteria
  - Protect the designated use
  - Narrative and numeric
- Anti-degradation policy
  - Georgia has Tier 2 and Tier 3 waters
  - Anti-degradation analysis required
MONITORING

- >250 streams, lakes, estuaries
- Wetland monitoring
- Biological monitoring
- Fish Tissue monitoring
- Facility compliance monitoring
- Streamflow monitoring at 325 gages
- Groundwater monitoring at 177 wells
ASSESSMENT

• Water Quality in Georgia published every 2 years
  • List of waters supporting and not supporting designated uses
• The total number of assessed waters in the 2020 list is 2,777.
  • 1,153 (42%) are supporting
  • 1,373 (49%) are not supporting
  • 251 (9%) are assessment pending
TMDLS

- TMDLs are developed for waters on 303(d) list
- TMDL = Pollutant budget

\[ \text{TMDL} = \Sigma WLAs + \Sigma LAs + MOS \]
REDUCING POLLUTANT LOADS

- Point sources: permit limits
- Nonpoint sources: partnerships and grants
- Partnerships: NRCS, RC&Ds, state agriculture agencies
- Grants: 319(h), NRCS funds, state funds
TRADING – MULTISTATE CHALLENGES

- Chesapeake Bay
  - Largest TMDL developed by EPA
  - Pollution diet – nitrogen, phosphorus, and sediment
  - State watershed implementation plans and measurable commitments

- Gulf of Mexico
  - Hypoxia Task Force
  - State nutrient reduction strategies

Figure from Chesapeake Bay TMDL, 2010

Distribution of bottom-water dissolved oxygen, July 23 – July 30, 2018.
Data source: N. N. Rabalais, LSU & Louisiana Universities Marine Consortium; R. E. Turner, LSU
Funding source: NOAA, National Centers for Coastal Ocean Science.
TRADING – OTHER EXAMPLES

• Other TMDLs
  • Long Island Sound – Connecticut
    • Exclusively point-point trades
    • In 2008, 100 facilities had participated in trading. Approximately 80 of those were in this program.
  • Boise River – Idaho
    • Nutrient offset – Dixie Drain Phosphorus Removal Project
    • Plant upgrades coupled with nonpoint source treatment through constructed ponds

Figure from CDEEP presentation, 2014
NUTRIENTS – GEORGIA

- Lake Weiss TMDL (Alabama) – 2008
  - Reduce total phosphorus by 30% at the state line
  - Coosa Basin

Figure from Nutrient Trading in the Coosa Basin: A Feasibility Study, 2013
NUTRIENTS – GEORGIA

- TMDLs with explicit references to nutrient trading:
  - Lake Allatoona, chlorophyll a (2013)
  - Savannah River 5R (2015)
  - Carters Lake, chlorophyll a (2016)
  - Lake Lanier, chlorophyll a (2017)
REGIONAL WATER PLANNING
NUTRIENTS – GEORGIA

• 319(h) and state seed grant funded projects:
  • 2015 – Model Nutrient Monitoring and Implementation Plan for Soque River Watershed and Coosa-North Georgia Water Council
  • 2016 – Pilot Nutrient Trading Monitoring Project (City of Calhoun)
  • 2017 – Alternative Nutrient Permitting Strategy Development for the Coosa-North Georgia and the Savannah-Upper Ogeechee Water Planning Regions
SUMMARY OF THE 2019 TRADING STAKEHOLDER WORKSHOPS

- September 20, 2019, GAEPD published a Water Quality Trading Fact Sheet and announced a series of three stakeholder workshops to discuss the development of a nutrient trading framework.

- GA EPD held three stakeholder workshops: one in Dry Branch on October 16, one in Atlanta on October 23, and one in Calhoun on October 28.

- Workshop format:
  - First half: introductions, a preliminary survey to gauge baseline knowledge and perspective, and a short presentation about water quality trading.
  - Second half: small group discussion, large group discussion, and final comments and questions.
STAKEHOLDER WORKSHOP CONCLUSIONS

- Both credit producers and credit buyers expressed concerns and cautious optimism on the concept of trading.

- Key areas of concern included:
  - Preventing hot spots,
  - Verifying BMP benefits (monitoring versus modeling),
  - Ensuring equity in who bears the costs,
  - Engaging stakeholders throughout the framework development process, and
  - Building a workable system, one that is simple to use while still protecting water quality.

- Following these workshops, EPD pulled together an internal workgroup to develop a full draft guidance document building on the previous 319(h) and seed grant work, TMDLs, and stakeholder workshops.
1. INTRODUCTION

Preventing and addressing water quality degradation is a difficult ecological, economic, and regulatory challenge that requires states and communities to rely on a diverse set of tools and strategies. Water quality trading is one tool that can be used to protect and restore Georgia’s waterways. Water quality trading generally involves the opportunity to earn water quality credits based on pollution reductions beyond those already required by law or regulation. These credits can be purchased by another entity to achieve less costly pollutant reduction than if the entity acted alone. The trade ultimately transfers an equal or greater water quality benefit to the receiving water, as measured by pollutant load reductions. This document provides a framework for the implementation of Georgia’s water quality trading program.
2. GUIDING PRINCIPLES FOR WATER QUALITY TRADING

Water quality trades must be consistent with the federal Water Pollution Control Act (CWA), the Georgia Water Quality Control Act, the Georgia Rules for Water Quality Control, and other relevant state and federal water quality regulations and implemented in a manner that:

1. Does not cause or contribute to violations of instream water quality standards;
2. Is consistent with antidegradation policies;
3. Provides accountability to confirm that agreed upon water quality benefits are delivered;
4. Results in long term protection or improvement in water quality;
5. Increases the pace and scale of restoration and attainment of water quality standards;
6. Assists in implementing Total Maximum Daily Loads (TMDLs) and attainment of water quality standards; and
7. Results in improved economic efficiencies in achieving water quality goals.
2. GUIDING PRINCIPLES FOR WATER QUALITY TRADING

In addition, trading must be consistent with the following guiding principles:

1. Be grounded in sound science;
2. Effectively accomplish regulatory and environmental goals;
3. Improve regulatory and economic outcomes;
4. Contain mechanisms for transparency and accountability that allow the Georgia Environmental Protection Division (EPD) and interested stakeholders to confirm that required water quality improvements are delivered; and
5. Not create localized adverse impacts to water quality.
3. AUTHORITY

The Environmental Protection Agency (U.S. EPA) has stated that the CWA provides authority for a variety of programs and activities to control pollution, including trading programs. The CWA and federal regulations provide authority to incorporate provisions for trading into National Pollutant Discharge Elimination System (NPDES) permits, TMDLs, and other EPD plans. This guidance is designed to ensure water quality trading in Georgia is consistent with the statutes, rules, and regulations that authorize implementation of the CWA in the state.
4. TRADING FRAMEWORK

Trading is implemented through a NPDES permit. Water quality trading may be used by Georgia NPDES permit holders to comply with water quality-based effluent limitations (WQBELs). All trades will involve at least one point source credit purchaser. **EPD is not contemplating trading exclusively between two or more nonpoint sources.** The NPDES permits provide permit limits and identify, as necessary, compliance schedules, antidegradation provisions, anti-backsliding provisions, and related federal provisions. The **NPDES permits will incorporate a trading plan as a permit condition** that contains details on implementing trades (see Appendix B for more information about trading plans).
4.1 TRADE TYPES

1. Point-Point: Trades between two or more permitted point sources where at least one permittee agrees to reduce the discharged pollutants beyond baseline levels. The permitted point sources can be owned by the same entity or by different entities.

   a. Trades between point sources owned by the same entity. If the permitted point sources are owned by the same entity, the permitted point sources will have permits reflecting the specific trades and containing all necessary conditions. In this scenario only, the entity will not be required to develop a trading plan; however, the guidelines outlined in this document will still apply. The entity will use the permitting process to provide relevant information, such as the trading area, to EPD for review and approval. Information about the proposed trade will be made available to the public through the public process associated with permit issuance.
4.1 TRADE TYPES

1. Point-Point: Trades between two or more permitted point sources where at least one permittee agrees to reduce the discharged pollutants beyond baseline levels. The permitted point sources can be owned by the same entity or by different entities.

   b. Generating credits. A point source can generate credits by reducing their discharge, either through a reduction in pollutant concentration or through a reduction in volume discharged or both. Credits can only be generated by a real reduction in pollutant loading from the baseline conditions (see section 5.4.1 for more information about trading baselines). Credits cannot be stockpiled; they must be used in the year they are generated.

   c. Buying credits. A point source can purchase credits generated by another point source located within the same trading area for the same time period, provided the purchasing point source’s discharge does not cause adverse localized impacts, such as harmful algal blooms or mussel toxicity. Credits cannot be stockpiled; they must be used in the year they are generated.

   d. Responsibility. Each point source is responsible for ensuring its discharge, adjusted by traded credits, meets its individual effluent limit. A pollutant trade does not relieve the responsibility of an NPDES permittee to comply with the terms of its permit.
4.1 TRADE TYPES

2. Point-Nonpoint: Trades between at least one permitted point source and one or more nonpoint sources that are reducing or plan to reduce their nonpoint pollutant loads beyond baseline levels;
   a. Planning. Many nonpoint source credits will be generated through the installation or implementation of new Best Management Practices (BMPs). Because these BMPs have not yet been installed or implemented, measuring realized load reductions will not be possible. In these scenarios, EPD requires the use of the STEP-L model to estimate the number of credits that will be generated. These estimates will be used in the development of a trading plan. Please note that STEP-L model results are only for planning purposes. Credits are only generated after the BMP is installed and load reductions occur. After BMP installation, the credits generated will be measured with monitoring.
4.1 TRADE TYPES

2. **Point-Nonpoint:** Trades between at least one permitted point source and one or more nonpoint sources that are reducing or plan to reduce their nonpoint pollutant loads beyond baseline levels;
   
   
   \[ \text{b. Generating credits. A nonpoint source creates a tradeable credit by implementing a trading project and measuring and documenting the resulting pollutant reduction consistent with a trading plan. As with point-point trades, credits must be consistent with NPDES requirements to be applied towards compliance with the point source's effluent limit. The credit amount is equal to the load reduction beyond baseline conditions. Several monitoring approaches may be used to quantify load reductions, including upstream/downstream monitoring, pre- and post-installation monitoring, BMP monitoring, or edge of project area monitoring. Credit-generating projects cannot include actions required by another NPDES permit (including compliance schedules), law, regulation, ordinance, or TMDL. Credits cannot be stockpiled; they must be used in the year they are generated.} \]

   \[ \text{c. Buying credits. A NPDES permittee may maintain or increase its actual pollutant discharge for a given time period by purchasing credits generated by a nonpoint source located within the trading area. Credits cannot be stockpiled; they must be used in the year they are generated.} \]

   \[ \text{d. Responsibility. When nonpoint source reductions are used to offset point source discharges, the point source retains full responsibility for the quantity and delivery of the credits purchased from the nonpoint source. The point source must ensure not only that the trade transaction is completed, but also that the nonpoint source credit generator has fulfilled their obligation and generated the expected credits. A pollutant trade does not relieve the responsibility of an NPDES permittee to comply with the terms of its permit.} \]
4.1 TRADE TYPES

3. Offset projects: similar to a point-nonpoint trade, however, in an offset project the permitted point source implements the nonpoint source project. The point source is expected to perform monitoring to the same level specified for nonpoint source credit generators to document credit generation.

4. Other types of trades approved by EPD on a case-by-case basis.
4.2 TRADING REQUIREMENTS – WATER QUALITY

1. Localized impacts must be avoided. If a discharge causes localized impacts that exceed narrative or numeric water quality criteria, a discharger may be deemed in noncompliance with the CWA and the Georgia Water Quality Control Act.

2. Any activity conducted to generate credits for trading must be consistent with Georgia’s antidegradation policy. Under Georgia’s antidegradation policy, trades cannot lower the existing quality of a water body.

3. Trades cannot authorize backsliding unless one of the exceptions in CWA §402(o) and 40 CFR §122.44(l) applies. Anti-backsliding generally prohibits the renewal, reissuance, or modification of an existing NPDES permit that contains effluent limitations, permit conditions, or standards that are less stringent than those established in the previous permit. Trading to meet water quality standards with a less stringent effluent limitation is not backsliding, provided the permittee is responsible for the same level of pollutant reduction.
4.2 TRADING REQUIREMENTS – CREDIT USE

4. A credit cannot be traded before it is generated through a pollutant reduction.

5. Once a credit is traded, the same load reduction cannot be traded again, even if for another purpose.

6. The same load reduction on the same area of land cannot be sold to offset the impacts of two different credit buyers.
4.2 TRADING REQUIREMENTS – VERIFICATION

7. Mechanisms used to verify project implementation and performance may include site inspections, project review and certification, monitoring, trade information tracking (registry), and recordkeeping and reporting.

8. Verification of trading project performance must be conducted by a qualified professional. Additional verification may be required by EPD based on results of periodic trading plan reviews and other compliance activities.

9. If EPD or the permittee determines a trading project is not producing the expected reduction, the credit for that time period may be nullified or reduced, and the permittee’s effective discharge adjusted accordingly.
4.2 TRADING REQUIREMENTS – WQBELS

10. Water quality trading may **not** be used to meet federal secondary treatment requirements or Technology Based Effluent Limits (TBELs) as defined in the CWA unless expressly authorized by the underlying effluent guidelines. Trading may be used for WQBELs, where appropriate.

Point sources may use trading to meet effluent limits in both the short-term and long-term. While trading is often contemplated as a long-term tool for achieving efficient water quality benefits, under certain circumstances, point sources may wish to engage in trading on a temporary or short-term basis. EPD will evaluate the proposed duration of trading during the evaluation of the trading plan.
5. CONDITIONS FOR ELIGIBLE TRADES

This section identifies who can participate in trading, which water quality parameters can be traded, where can trading occur, and how is trading implemented.
5.1 WHO CAN PARTICIPATE IN TRADING?

Trading participants may include:

- municipal or industrial NPDES permittees,
- farms,
- mitigation banks,
- conservation organizations, or
- others EPD determines to be qualified to participate in trades.
5.2 WHICH WATER QUALITY PARAMETERS CAN BE TRADED?

Water quality parameters eligible for credit trading include

- Nitrogen,
- Phosphorus,
- Oxygen-demanding substances
- Others may be approved by EPD on a case-by-case basis, such as sediment

Pollutants with the potential to threaten public health directly, such as toxins, metals, or bacteria, will not be considered for trading.
5.3 WHERE CAN TRADING OCCUR?

Discharges to the following water bodies are eligible for credit generation and trading. The categories identified correspond to the water bodies’ water quality listing assessment in Georgia’s Water Quality in Georgia report, available on EPD’s website.

1. Water bodies in attainment of their water quality standards (Category 1), both those that are not covered by a TMDL and those that are covered by a TMDL;
2. Impaired waters pending a TMDL (Categories 5 and 5R);
3. Impaired waters with a TMDL (Category 4a); and
4. Water bodies where a TMDL alternative, an EPD-approved Water Quality Management Plan, or an EPD-approved Watershed Protection Plan are incorporated in a point source NPDES permit.

Please note that discharges to Tier 3 outstanding natural resource waters or Tier 2 high quality waters with scenic river and/or wild river designated uses are not eligible for water quality trading.
5.3.1 DEFINING A TRADING AREA

Trading areas establish the geographic boundaries within which trades can occur and specify a defined point where water quality goals must be met. The permittee must delineate a trading area in such a manner that fully addresses the risk of localized or downstream water quality impairments or negative impacts. The proposed trading area will be submitted to EPD for review and approval in the trading plan. Because the trading area significantly affects all aspects of the trading plan, EPD strongly recommends parties interested in trading schedule an initial trading meeting with EPD for preliminary review and approval of the proposed trading area (see section 9.1 and Appendix B for more information).
5.3.1 DEFINING A TRADING AREA

Trading areas must be:

1. Clearly delineated in the trading plan, including a description and map of the trading area.
2. Consistent with the water quality objectives of any applicable TMDL, TMDL alternative, or other EPD-approved plans.
3. Delineated such that pollution reduction in one part of a watershed can be linked to water quality improvement at a point of concern. Generally, inter-basin trading is inappropriate, but EPD may approve such a trade in specific, scientifically defensible situations.
5.3.1 DEFINING A TRADING AREA

4. Delineated such that the point of discharge is upstream of the point of concern.
   a. Trading areas may extend downstream of the NPDES discharge or most downstream location of nonpoint source loading, provided that the point of discharge or area of nonpoint source loading is upstream of the point of concern (option A).
   b. Trading areas may be established upstream of the point source discharge location if needed to prevent the potential for localized impacts developing above the point of concern (option B) or,
   c. Within small watersheds, the trading area may be established at a different place downstream to protect a sensitive waterbody, such as a lake or estuary (option C).
5.4 HOW IS A TRADE IMPLEMENTED?

Point and nonpoint sources can implement trading projects to generate credits. Only projects implemented after a trading baseline is established are eligible to generate credits. Specific information about trading baselines and trading projects is provided in this section.
5.4.1 TRADING BASELINES

A trading baseline is a snapshot of the conditions within the trading area coupled with legal requirements at the time of the waterbody's assessment. Establishing a baseline is necessary to quantify the current pollution loading to the receiving water from specific sources. These data can then be used to quantify the credits that can be generated through various trading projects. EPD will establish trading baselines for each proposed trading area using:

1. Any applicable pollution control requirements that need to be implemented to meet baseline requirements prior to generating credits. BMPs required to meet baseline requirements and BMPs used to generate additional water quality benefits and credits may be installed simultaneously. For nonpoint source projects in watersheds where a load allocation (LA) reduction is required to meet the TMDL, a portion of the pollutant reduction may be available as credits for trading. EPD will determine the specific portion based on the required LA reductions in the TMDL.

2. Federal, state, and local regulations that establish requirements for the project.

3. A selected baseline year that specifies when credit-generating activities begin. Typically, the baseline year will not be earlier than the year of NPDES permit issuance that authorized the trading plan.
5.4.1 TRADING BASELINES

Baseline requirements will be developed for a specific watershed and applied to the individual sites intended for credit generation. EPD may choose to modify a trading baseline to comply with a TMDL, a TMDL alternative, an EPD-approved Water Quality Management Plan, or an EPD-approved Watershed Protection Plan incorporated in a NPDES permit. Only projects implemented after the baseline year is established are eligible for generating credits.
5.4.2 TRADING PROJECTS

Not all project types may necessarily generate credits, and some project types might not be eligible for inclusion in a trading plan. The following are not eligible to generate credits:

1. Activities that generate a pollutant load greater than current conditions. Projects must generate pollutant reductions beyond current conditions to be eligible for credit generation.
2. Activities already required by federal, state, or local regulation.
3. Activities required to make a site eligible for NRCS (Farm Bill) assistance, including actions taken to ensure compliance with wetlands and highly erodible land conditions.

EPD will consider various factors to evaluate the appropriateness of trading projects, such as whether the project reduces the pollutant load and improves water quality and whether an adequate method exists to document the reduction generated from the project. More information about trading project evaluations is provided in Section 8.0 and Appendix B.
QUESTIONS AND DISCUSSION
NEXT MEETINGS

• **Thursday, August 19, 2021, from 1 to 3 P.M.**
  This meeting will focus on the implementation specifics (trading plan development and permit language) related to the framework outlined in sections 1-5 of the draft document. These implementation specifics are housed in Appendices B and C.

• **Thursday, September 16, 2021, from 1 to 3 P.M.**
  This meeting will focus on a discussion of sections 6-11, which are primarily concerned with credit generation, tracking, and compliance and enforcement.

• **Thursday, October 14, 2021, from 1 to 3 P.M.**
  This meeting will serve as a wrap-up discussion summarizing the stakeholder process and feedback received by EPD, answering open questions, closing out any items that required additional information, and describing next steps.
CONTACT INFORMATION

Questions or comments
Anna Truszczynski
Anna.Truszczynski@dnr.ga.gov
470-384-7440

Written comments may be sent to EPDComments@dnr.ga.gov or mailed to Environmental Protection Division, Watershed Protection Branch, Suite 1152 East Tower, 2 Martin Luther King, Jr., Dr., Atlanta, GA 30334.

If you choose to e-mail your comments, please include the words “Water Quality Trading” in the subject line to help ensure that your comments will be forwarded to the correct staff.