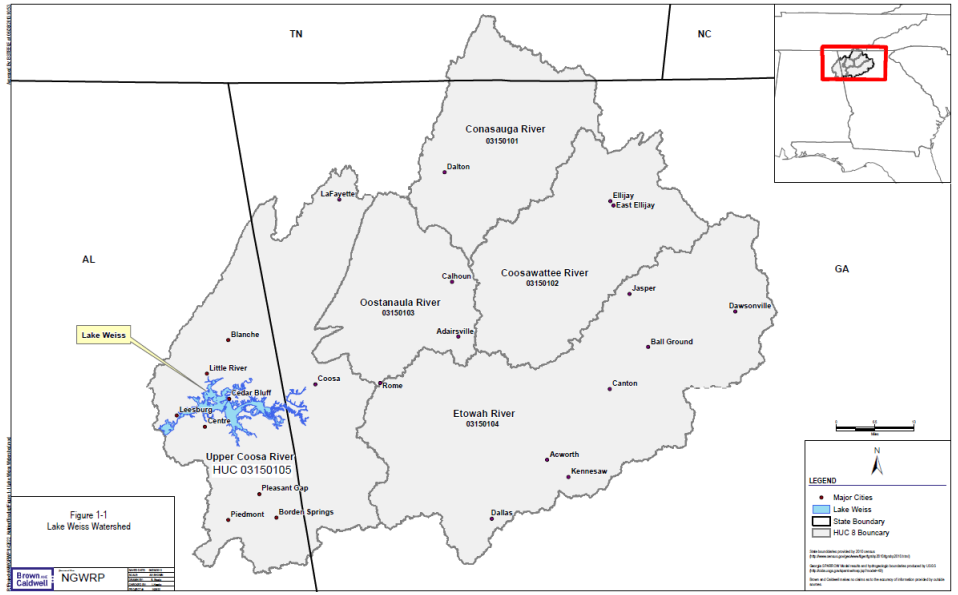
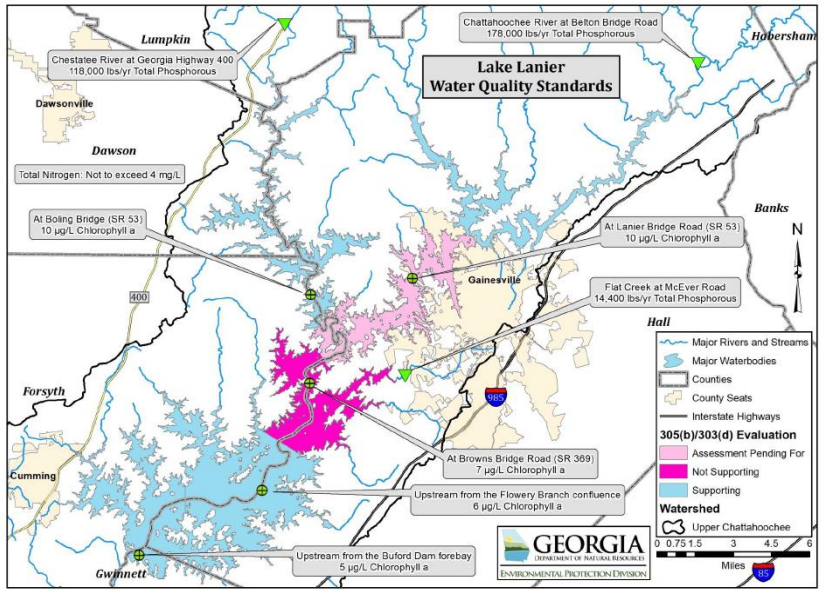
GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

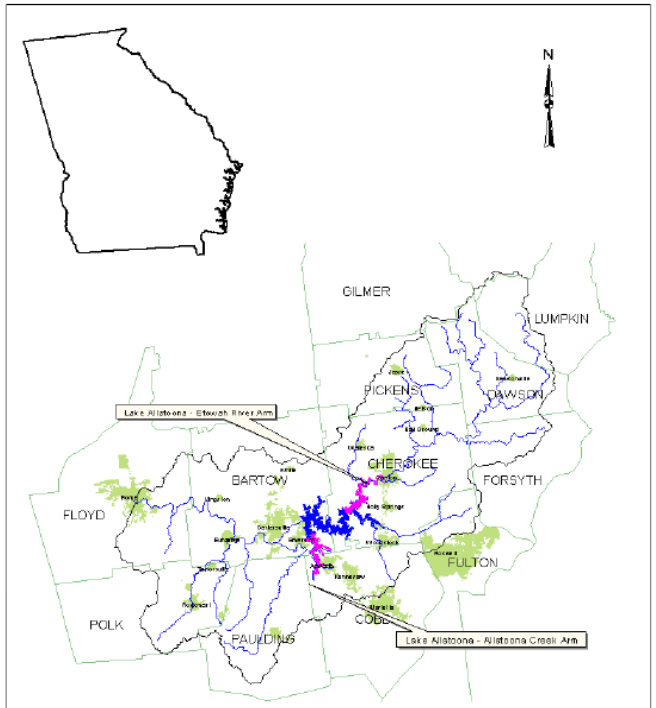
Water Quality Trading Draft Guidance

Meeting 3: Sections 6-12
September 16, 2021

WATER QUALITY TRADING





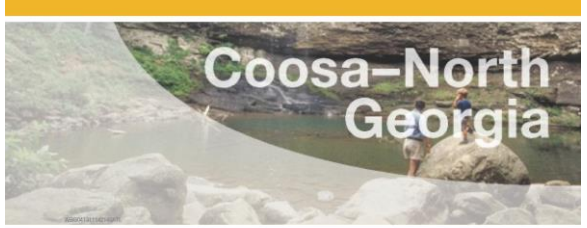


TMDL Evaluation - Chlorophyll a
Coosa River Basin

Figure 2. 303d Listed Streams in
HUC 03150104

Regional Water Plan

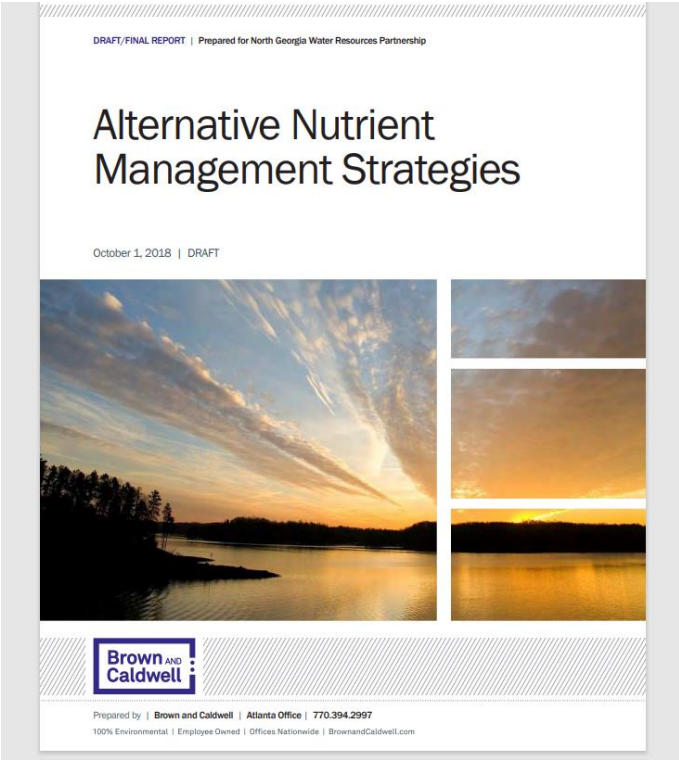
Regional Water Plan



Regional Water Plan

WATER QUALITY TRADING BACKGROUND

- 319(h) and state seed grant funded projects:
  - 2013 – Development of a Nutrient Trading Framework in the Coosa River Basin: A Feasibility Study of Nutrient Trading in Support of Lake Weiss TMDL
  - 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, EPD published a Water Quality Trading Fact Sheet. 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.
- Credit producers and credit buyers expressed concerns and cautious optimism about 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.



STAKEHOLDER MEETINGS

- **Thursday, July 22, 2021, from 1 to 3 P.M.**

  This meeting will serve as the initial kick-off meeting and will include a summary of trading-related projects and the 2019 stakeholder process. The meeting will also include a targeted discussion of sections 1-5 of the draft document, which hold much of the framework for water quality trading.

- **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 6-12, 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.

We are here.

SUMMARY OF PREVIOUS MEETINGS

- **Water quality trading background**
  - Water quality standards and TMDLs
  - Water quality trading nation-wide
  - Previous work in Georgia
- **Sections 1-5**
  - Trading Framework
    - Point-point; point-nonpoint; offsets
    - Requirements, such as no double counting, no local adverse impacts
    - WQBELs
  - Conditions for Eligible Trades
    - Who can trade, what can be traded, and where can it be traded
    - Baselines and projects

SUMMARY OF PREVIOUS MEETINGS

- **Appendices B and C**
  - Trading Plan development
    - Pre-meeting requirements
    - Plan contents
  - Template permit language for credit generators and buyers for both point-point and point-nonpoint trades

SECTIONS 6-12

Trading plan implementation and compliance

6. QUANTIFYING CREDITS

6.1 Quantification of water quality benefits

6.2 Trading ratios

6.3 Applying ratios

6.1 QUANTIFICATION OF WATER QUALITY BENEFITS

6.1.1. Point-point trades

6.1.2. Point-nonpoint trades

6.1.1. POINT-POINT TRADES

For point-point trades, quantification will be based on an approved wasteload allocation (WLA) providing the WQBEL in the NPDES permit, with any modifications based on actual pollutant reductions including a sufficient factor of safety, if necessary. Resulting credits will be measured on a monthly, quarterly, or annual basis and reported on Discharge Monitoring Reports (DMRs), as applicable. Monitoring will be required to document the pollutant reduction and to ensure that unacceptable local impacts, such as harmful algal blooms or mussel toxicity, do not occur. This monitoring may include instream monitoring.

6.1.2. POINT-NONPOINT TRADES

For point-nonpoint trades, in situations where BMPs have not yet been installed, estimates of load reductions for the proposed BMPs must be calculated using the STEP-L model, verified by qualified professionals, and approved by EPD. An appropriate safety factor with conservative assumptions must be applied to account for uncertainty in the estimated benefit. These estimates are for planning purposes only. After BMP installation, a qualified professional must verify the installation, and the point source must submit proof of verification to EPD as specified in the trading plan. Credits generated by this BMP will be quantified based on load reductions measured through instream or in-field monitoring.

6.1.2. POINT-NONPOINT TRADES

If the nonpoint partner is utilizing an existing credit-generating BMP, quantification will be based on load reductions measured through instream or in-field monitoring. Additional site-specific monitoring to document the reduction and ensure that unacceptable local impacts, such as harmful algal blooms or mussel toxicity, do not occur will also be required.

Any instream, in-lake and in-field monitoring must be conducted using an approved monitoring plan. Results of this monitoring must be reported to EPD to verify anticipated load reductions. If data collected as part of the monitoring plan will be used for 305(b)/303(d) delisting purposes, a Sampling Quality Assurance Plan (SQAP) must be submitted to EPD for approval. EPD encourages trading partners to evaluate the feasibility of utilizing a SQAP when developing their monitoring plan. If monitoring does not demonstrate adequate pollutant reduction, additional credits may need to be purchased and a modification to the trading plan to increase trading ratios may be required.

6.2 TRADING RATIOS

Risk and uncertainty will be managed with trading ratios. 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 trading project is equal to or greater than the benefit 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: risk of project failure, BMP effectiveness, measurement uncertainty, attenuation of a pollutant between the locations of the credit generator and buyer, temporal variability, and pollutant equivalency. Ratio components and underlying assumptions must be clearly documented in the trading plan.

6.2 TRADING RATIOS

For point-point trades, the combination of all trading factors must result in an overall trading ratio of at least 1:1. For point-nonpoint trades, the overall trading ratio must be at least 1.2:1. Depending on the level of uncertainty, larger ratios may be necessary. Permittees should appropriately manage the risk of noncompliance or resource degradation by setting appropriate trading ratios.

EPD will review trading ratios as part of the trading plan review and may adapt ratios to local conditions and data availability. As a result, trading ratios may differ for each trade.

6.2 TRADING RATIOS

6.2.1 Uncertainty ratio

6.2.2 Delivery ratio

6.2.3 Equivalency ratio

6.2.4 Other ratios

6.2.1 UNCERTAINTY RATIO

Uncertainties in trading activities are predominantly associated with the challenges in accurately assessing and monitoring nonpoint source credit generating projects and their resulting pollutant load reductions. An uncertainty ratio will be applied to compensate for scientific uncertainty, including potential inaccuracies in estimation methods and variability in project performance. Uncertainty ratios may also be used to insure against credit losses from project damage arising from sudden and reasonably unforeseen events beyond the control of the responsible party for the project, such as severe weather.

Uncertainty ratios may be reduced for credits generated by trading projects placed on land in permanent conservation easement or publicly owned for conservation or educational purposes. This reduction in the uncertainty ratio may be appropriate due to the longer period of service that may be presumed due to the public ownership or conservation easement status.

6.2.2 DELIVERY RATIO

A delivery ratio is calculated for a specific trading area to account for pollutant attenuation due to the fate and transport characteristics of the specific pollutant being traded. It depends on the unique characteristics of the watershed (e.g., hydrology, vegetation), distance, and travel time.

6.2.3 EQUIVALENCY RATIO

An equivalency ratio is used to account for differences in impact from different forms of the same pollutant, such as such as biologically available phosphorous and bound phosphorous, or for cross-pollutant trading when pollutants contribute to similar impairments within a water body (e.g., TN and/or TP for BOD). It is assessed on a case-by-case basis.

6.2.4 OTHER RATIOS

Depending on the trading area, EPD may request the permittee consider other ratios, including those that incentivize restoration of priority areas, early action, and land conservation.

6.3 APPLYING RATIOS

Trading ratios will be applied separately to facilitate evaluation and possible adjustment as new scientific research becomes available. An uncertainty ratio will be applied at the time of credit estimation, prior to project certification and credit issuance. The delivery ratio and, if applicable, an equivalency ratio will be applied at the time of trade. Other ratios will be evaluated on a case-by-case basis.

7.0 CREDIT LIFE AND RENEWAL

7.1 Credit life

7.2 Project renewal and expiration

7.1 CREDIT LIFE

A credit life is the period from the date a credit becomes usable until such time as the credit is no longer valid. A credit life will not exceed one year (365 days). A project may function for more than one year and generate new credits annually. The same entity may purchase credits from the same project year after year, but credits cannot be stockpiled. Credit life will be determined in the credit certification process and referenced in the trading plan. EPD may consider setting the credit life as follows, provided it is consistent with applicable TMDLs, pollutant dynamics, and watershed dynamics:

- Covering one year, 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, or
- Covering a discrete season or month, with the seasonal credit life matched to critical periods in a TMDL or permit.

7.2 PROJECT RENEWAL AND EXPIRATION

If projects continue to function and are properly maintained, EPD will consider the continued inclusion of the projects in the applicable trading plans through subsequent permit reissuances. The credits generated by the project may be adjusted over time due to changes in baseline requirements or trading ratios. Annual generation of credits is limited to the useful life of the activity used to generate the credit. If the projects are no longer able to generate credits, the projects will be considered to have expired and credits will no longer be available for use.

8.0 TRADING PROJECT REVIEW, CERTIFICATION, AND TRACKING

All new trading projects must undergo review and certification as described in the trading plan before credits are issued. Project review and certification must be conducted by qualified professionals, and project certification for a new trading project must include the following components:

1. Confirmation that all required project documentation has been provided;
2. Confirmation that a project review has been successfully completed; and
3. Signed attestation certifying the number of available credits that are estimated annually over the life of the trading project by the designated signatory of the NPDES permittee.

8.0 TRADING PROJECT REVIEW, CERTIFICATION, AND TRACKING

Most trading projects will result in immediate water quality improvements. Credits may be issued as soon as these projects are installed if the project has been overseen and designed by a qualified professional. If construction or modification of a facility, structure, or BMP is involved, a qualified professional must conduct a final inspection upon completion of construction prior to the release of credits. For projects that take time to mature (e.g., restored wetlands or riparian planting), credits can be released in phases or a ratio can be used to account for the time lag.

9.0 INCORPORATION OF TRADING INTO NPDES PERMITS

A permit operating under this guidance will 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, TBELs, or other guidelines are typically expressed as a specific mass effluent limit per a specific time period and expressed in terms of concentration.

9.0 INCORPORATION OF TRADING INTO NPDES PERMITS

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

2. Monitoring 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 EPD. Trading-related monitoring may be required in addition to, but not instead of, the monitoring obligations under the CWA. Any additional trading-related monitoring will be included in the trading plan.
3. Reporting Requirements. The reporting section of a permit details the how the measured effluent discharge and credits will be reported on the Discharge Monitoring Reports (DMRs) and Operating Monitoring Reports (OMRs).

9.0 INCORPORATION OF TRADING INTO NPDES PERMITS

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

4. Special Conditions. Special conditions will apply. Special conditions of a permit supplement numeric and narrative 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. The permits may contain conditions on the use of credits that include: a. the extent that permit requirements may be satisfied with credits; b. when, and from what source, credits may be purchased by the permittee; and c. periodic monitoring to verify credit generation and water quality improvements.

9.0 INCORPORATION OF TRADING INTO NPDES PERMITS

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

5. Trading plan. With the exception of point-point trades between point sources owned by the same entity, each facility or permittee interested in participating in trading must first develop a trading plan that specifies the details of the trading area, trading projects, and trade implementation procedures to be followed by that facility or permittee. The trading plan must be consistent with this guidance and approved by EPD. The trading plan will be incorporated in the NPDES permit and will be subject to public notice and comment during the permit issuance or modification process. If negative downstream water quality impacts are identified, the trading plan will be updated accordingly. Guidance on trading plan development is included in Appendix B.

9.1 INITIATING THE TRADING PROCESS WITH EPD

Permittees interested in engaging in trading must explicitly indicate their interest to EPD by submitting a written Notice of Interest to the Wastewater Regulatory Program. EPD will not initiate any trading-related analysis without the explicit request from the permittee. For permittees interested in trading, the Notice of Interest should include the following information for EPD to review:

1. Proposed trading area (map preferred),
2. List of TMDLs or watershed-based plans for waterbodies within the proposed trading area,
3. Pollutant(s) to be traded,
4. Potential projects,
5. Potential partners, and
6. Trading plan outline.

9.1 INITIATING THE TRADING PROCESS WITH EPD

Upon review of the Notice of Interest and supporting information, the Wastewater Regulatory Program will schedule an initial meeting with the permittee, the Wastewater Regulatory Program, and the Watershed Planning and Monitoring Program.

Based on a preliminary review of the information provided, EPD will determine whether trading is feasible given the facility's operations and affected receiving waterbodies. If trading is feasible, the permittee will have the responsibility of identifying potential partners with which to engage in trading. Only once trading is determined to be feasible and potential partners are identified and engaged should the permittee develop a trading plan for EPD's review and approval.

9.2 DOCUMENTATION OF TRADING IN PERMITS

The Watershed Planning and Monitoring Program will issue WLA following standard procedures to meet water quality standards. The NPDES permits based on the WLA will include permit limits to meet water quality standards, monitoring requirements, reporting requirements, the trading plan, and special conditions to document the trade. The number of credits generated or needed will be estimated and documented in the trading plan. The realized number of credits generated or purchased will be based on monitoring data and reported to EPD.

9.2.1 POINT-POINT TRADES

If two or more point sources engage in trading, then the facility generating the credit will have a WLA for the traded pollutant larger than the amount to be discharged. This may be the result of the facility having higher levels of treatment than needed to meet the limit or flows lower than the permitted level. The difference between the WLA and the discharged amount would result in generated credits. The credit-generating facility's permit would require monitoring of the discharged flows, traded pollutant, and monthly reporting of the discharge data on their DMRs and/or OMRs.

The facility purchasing the credits would be given effluent limits in their NPDES permit necessary to meet water quality standards. These effluent limits would be lower than the level at which the facility could discharge, provided that the facility purchased sufficient credits to account for that difference between the discharged and the permitted pollutant loads. The credit purchasing facility's permit would require monitoring of the discharged flow, traded pollutant and monthly reporting of the discharge data, and purchased credits on the DMRs and/or OMRs.

9.2.1.1 BUBBLE PERMITS

If the trade is made between facilities within the same trading area, a bubble permit or watershed permit may be issued. The bubble permit would provide a single overall permit limit for the pollutant being traded. However, the facilities under the bubble permit would also retain individual permits with effluent limits and permit conditions for the pollutant to avoid localized hot spots.

9.2.2 POINT-NONPOINT TRADES

If the trade is between nonpoint and point sources, the facility purchasing the credits would be given a WLA, permit limits, and permit requirements like the credit purchasing facility described in 9.2.1.

10.0 COMPLIANCE AND ENFORCEMENT

A failure to implement the applicable trading plan and meet the required effluent limits and credit purchases will constitute a permit violation. Compliance will be ascertained through the permittee's DMRs, OMRs, annual reports, and all other reports required by the permit, which must demonstrate that the permittee has secured an adequate credit balance to meet its established effluent limits. The demonstration may include monitoring reports, BMP installation verification documentation, and proof of credit purchase.

1. For point source projects, permittee compliance information must be reported on the DMR and in annual reports. EPD will review DMRs, OMRs, and annual reports as part of standard compliance evaluations of NPDES permittees.
2. For nonpoint source projects, the permittee will report compliance information on DMRs and in annual reports as instructed by the permit to ensure that it has secured an adequate credit balance to meet permit obligations. The NPDES permittee will ensure that each project that is actively generating credits is reviewed at least annually. The review will ensure that the project remains viable and that the project design and maintenance plan has been followed. Records of the review must be maintained by the NPDES permittee and submitted with their annual report.

10.0 COMPLIANCE AND ENFORCEMENT

The Watershed Compliance Program will review all trading-related compliance documents to verify that sufficient credits were purchased to meet the limits as specified in the permits. The review will be conducted on a monthly and quarterly (for seasonal limits) or annual (for final verification) basis.

As part of routine site inspections, EPD may elect to inspect any component of trading projects listed in a permittee's trading plan. EPD must be granted access to all trading projects for both document review and site inspections. The site inspection may include water quality sampling. NPDES permittees are responsible for ensuring that they purchase sufficient credits to meet effluent limits. A failure to purchase sufficient credits to meet effluent limits will constitute a permit violation. Any compliance matters or enforcement actions will be taken by EPD with the NPDES permittee consistent with EPD enforcement policies and guidance.

11.0 EPD INTERNAL COORDINATION

Three programs within EPD are involved in various stages of the development, implementation, and tracking of trading plans. These programs are the Wastewater Regulatory Program (WRP), the Watershed Planning and Monitoring Program (WPMP), and the Watershed Compliance Program (WCP). The Nonpoint Source Program (NPSP) may provide some technical support during the review of trading plans involving point-nonpoint trades. Due to the NPSP limited role, they do not have a stand-alone section and are instead included in the WRP section.

1. WATERSHED PLANNING AND MONITORING PROGRAM

The WPMP establishes water quality standards (WQS). WQS include specification of designated uses, water quality criteria to protect those designated uses, and an antidegradation policy. WQS require that all waters be free from toxic substances discharged from municipalities, industries, or other sources, that produce turbidity, color, odor, or other objectionable conditions in amounts, concentrations, or combinations that are harmful to humans. WQS also require that all waters be free from turbidity that results in a substantial visual contrast in a water body due to a man-made activity.

1. WATERSHED PLANNING AND MONITORING PROGRAM

The WPMP performs the water quality modeling and analysis necessary to determine appropriate WLAs for wastewater point source discharges to protect the designated use of the receiving waterbody. The WLAs establish the WQBELs found in wastewater NPDES permits. Discharge limits protect instream water quality standards by ensuring that all waters be free from toxic substances discharged from municipalities, industries, or other sources, in amounts, concentrations, or combinations that are harmful to humans and/or aquatic life. A new WLA is required for all NPDES permittees interested in trading.

2. WASTEWATER REGULATORY PROGRAM

The Wastewater Regulatory Program reviews permit applications and supporting documents and makes recommendations to the EPD Director regarding the issuance of NPDES permits. Permits include effluent limits to ensure compliance with applicable water quality standards.

All NPDES permittees interested in trading must request a new WLA. The WLA provides the WQBELs to which a permittee must adhere, and these limits are reflected in the NPDES permit. These WQBELs are determined using available monitoring data, flow data, and water quality modeling. They also consider the potential impacts of a discharge under low flow conditions on downstream users. The WLA will be a point of coordination between the WPMP and the WRP. Following the receipt of a Notice of Interest and WLA request, the WRP will schedule an initial meeting with the applicant, the WRP, and the WPMP. Depending on the specifics of the proposed trading plan, the NPSP may participate in the initial meeting to provide feedback and review the proposed nonpoint source BMPs.

2. WASTEWATER REGULATORY PROGRAM

All new or expanding domestic and non-domestic discharges require the submission of an antidegradation analysis. This analysis must contain a socioeconomic demonstration and alternatives analysis to justify the necessity of lowering local water quality to accommodate important economic or social development in the area in which the water is located. The report must consider technical feasibility and economic viability for any practicable alternatives considered that may result in degradation of water quality. If a new or expanding discharger is interested in trading, trading plans will be developed to be consistent with antidegradation requirements.

Trading plans will be incorporated into the NPDES permit and subject to a 30-day public notice period. This period allows for input from the public and any entity that may be affected by the proposed trading plan. A public hearing may be held if the EPD Director finds a significant degree of public interest in a draft permit.

3. WATERSHED COMPLIANCE PROGRAM

After a permit containing a trading plan is issued, the Watershed Compliance Program will review DMRs, OMRs, annual reports, and all other reports required by the permit, to determine wither the permittee has secured an adequate credit balance to meet its established effluent limits. If the permittee has not secured an adequate credit balance to meet its established effluent limits, the WCP will initiate standard escalating enforcement procedures and compliance assistance to return the facility to compliance. The permittee may need to revisit their trading plan and make appropriate changes to ensure sufficient credits are purchased in the future. Review of the trading plan may occur with the WRP, the WCP, and/or the WPMP, depending on the specific situation.

12.0 TRADING PROGRAM EVALUATION

The goal of water quality trading is to improve water quality and restore Georgia's waterways. To ensure the goal is met, the trading program must undergo routine evaluation as trading plans are implemented and data become available to assess trading efficacy.

Approved trading plans will be reviewed whenever a related NPDES permit is renewed or modified or if there is a change in circumstances that affects elements of the trading plan. The credit buyer and/or seller will maintain records of credit generation and purchases consistent with the trading plan and permit requirements. These records must be available for review by EPD upon request. Review may result in modification of trading areas, adjustment of credits or trading ratios, or other elements of trading plans, consistent with this guidance. The trading plan may also be updated to respond to changing conditions or meet water quality objectives.

QUESTIONS AND DISCUSSION

NEXT MEETING

- **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.