

VIRGINIA DEPARTMENT OF TRANSPORTATION

LOCATION AND DESIGN DIVISION

INSTRUCTIONAL AND INFORMATIONAL MEMORANDUM

GENERAL SUBJECT: Virginia Stormwater Management Program (Nutrient Credits)	NUMBER: IIM-LD-251.6
SPECIFIC SUBJECT: Application of the VSMP Regulations as it relates to utilization of Nutrient Credits as an off-site compliance option	DATE: April 29, 2022
	SUPERSEDES: IIM-LD-251.5
APPROVAL: Emmett R. Heltzel, P.E. State Location and Design Engineer Approved April 29, 2022	

Changes are shaded.

CURRENT REVISION

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- Changes were made in the following section:
 - DETERMINATION OF APPLICABILITY
 - PRE-EVALUATION PROCESS TO UTILIZE NUTRIENT CREDITS
 - PROCUREMENT OF NUTRIENT CREDITS FOR PROJECTS
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EFFECTIVE DATE

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- These instructions are effective upon receipt.
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ACRONYMS

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- ASD – Administrative Services Division
 - BMP – Best Management Practice
 - DCR – Department of Conservation and Recreation
 - DEQ – Department of Environmental Quality
 - EPA – Environmental Protection Agency

- HUC – Hydrologic Unit Code
 - IFB – Invitation for Bid
 - IIM – Instructional and Informational Memorandum
 - MS4 – Municipal Separate Storm Sewer System
 - SWM – Stormwater Management
 - SWCB – State Water Control Board
 - TMDL – Total Maximum Daily Load
 - VDOT – Virginia Department of Transportation
 - VSMP – Virginia Stormwater Management Program
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DEFINITIONS

- **Basin** – See tributary.
 - **Hydrologic Unit Code** – A watershed unit established in the most recent version of Virginia's National Watershed Boundary Dataset. For additional information, go to: <https://vadeq.maps.arcgis.com/apps/webappviewer/index.html?id=227927eefaf64c47853c081760077216>
 - **“Land Disturbing Activity” or “Land Disturbance”** – A manmade change to the land surface that potentially changes its runoff characteristics including any clearing, grading or excavation associated with the land disturbing activity.
 - **Tributary** – Those river basins for which separate tributary strategies were prepared pursuant to § 2.2-218 and includes the Potomac, Rappahannock, York, and James River Basins, and the Eastern Coastal Basin, which encompasses the creeks and rivers of the Eastern Shore of Virginia that are west of Route 13 and drain into the Chesapeake Bay. For areas outside of the Chesapeake Bay Watershed, "tributary" includes the following watersheds: Albemarle Sound, Coastal; Atlantic Ocean, Coastal; Big Sandy; Chowan; Clinch-Powell; New Holston (Upper Tennessee); New River; Roanoke; and Yadkin.
 - **Total Maximum Daily Load** – A regulatory term in the U.S. Clean Water Act, describing the maximum amount of a pollutant that a body of water can receive and still meet water quality standards.
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BACKGROUND

The VSMP regulations require water quantity controls to prevent downstream flooding and erosion and quality controls that limit the discharge of the nutrient phosphorus, a keystone pollutant. BMPs are installed in conjunction with development projects to meet water quantity and quality criteria. With the more stringent Part IIB Technical Criteria and spatial restrictions of linear projects, the siting of BMPs can often be challenging. The use of offsite compliance options, including the purchase of certified nutrient credits, may be a tool that can be used in addition to, or in lieu of, traditional onsite BMPs for achieving post-development water quality requirements. The purchase of nutrient credits may eliminate the need for the purchase of additional right of way or permanent easement and relieve the Department of future maintenance costs. The purchase of nutrient credits to address post-construction water quality

reduction requirements for construction activities **shall** be considered the preferred alternative when available and economically feasible.

Listed below are other offsite options that can be used to address post-construction water quality reduction requirements for construction activities:

- Participation in a local watershed comprehensive stormwater management plan, or
- Participation in a locality pro rata share program, or
- Use of other VDOT properties within the same or adjacent 8-digit HUC as the project, within the same basin / tributary as the project, or
- Other offsite options, as approved by the DEQ.

The use of these other off-site compliance options is outside the scope of this IIM.

The Chesapeake Bay Watershed Nutrient Credit Exchange Program (Code of Virginia §[62.1-44.19:14](#) et seq.) allow regulated land disturbance activities to utilize offsite options to achieve post development water quality criteria. The purchase of nutrient credits cannot be used to address water quantity control requirements. Nutrient credits are generated by Nutrient Credit Banks through the construction of BMPs, or more typically, through land use conversion (e.g. converting crop land to forest). Nutrient Credit Banks are certified by the SWCB and regulated by the DEQ. For a map of current Bank locations, go to: [DEQ Nutrient Trading Data Viewer](#)

In order to utilize these certified nutrient credits, several steps must be performed. This IIM summarizes those steps and identifies other items to consider when determining the feasibility of using nutrient credits to satisfy water quality requirements.

DETERMINATION OF APPLICABILITY

In order for the project to qualify for the use of nutrient credits, the project must meet one of the following criteria:

1. The project area contains less than 5-acres of land disturbance, or
2. The post-construction phosphorus water quality reduction requirement is less than 10 pounds per year, or
3. At least 75 percent of the required phosphorous nutrient reductions are achieved onsite, or
4. In accordance with § [62.1-44.15:35 D 3](#) of the Stormwater Management Act, by petitioning to DEQ in writing demonstrating the following (i) alternative site designs have been considered that may accommodate onsite best management practices, (ii) onsite best management practices have been considered in alternative site designs to the maximum extent practicable, (iii) appropriate onsite best management practices will be implemented, and (iv) full compliance with post development nonpoint nutrient runoff compliance requirements cannot practicably be met onsite.

Where approval from the DEQ is required, the District Hydraulics Engineer shall forward the documentation to the State [Water Resources/MS4](#) Engineer. The State [Water Resources/MS4](#) Engineer will then coordinate with the DEQ Central Office to secure the necessary approvals. [Where DEQ consultation or determination is required, appropriate time should be allotted for planning purposes.](#)

If criterion #1, #2, or #3 are satisfied, reduction requirements may be achieved through purchase of nutrient credits without prior approval from DEQ.

The Nutrient Credit Use Flow Diagram included at the end of this IIM provides a simplified means of determining a project's eligibility for utilizing the purchase of nutrient credits.

Projects Utilizing the Part IIB Technical Design Criteria - phosphorus reduction requirements shall be applied independently within each 6th order HUC. If a project is discharging into two different 6th order HUCs, each off-site condition limitations documented in [9VAC25-870-69.B.3](#) (i.e. <5 acres or <10 pounds) can be applied independently to each Project's 8-digit HUC.

PRE-EVALUATION PROCESS TO UTILIZE NUTRIENT CREDITS

In determining the feasibility of the use of nutrient credits to satisfy a project's water quality requirements, a pre-evaluation must be completed by the District Hydraulics Engineer. This pre-evaluation must occur prior to the Public Hearing milestone to identify any limitations that could exist that would prevent or restrict the use of nutrient credits.

The guidelines below, which is adopted from DEQ's Guidance Memo No. GM21-2007 should be followed when determining if and where nutrient credits can be procured for a project/land disturbing activity:

- A. Review and verification that the selected project is not located in an area that would be in contravention of any local water quality-based limitations for the particular project. These limitations shall also include any surface waters that have an approved TMDL report addressing Phosphorus and Nitrogen associated with a construction activity.
- B. Review and verification there are certified Nutrient Credits banks that can service the project. Nutrient credit use is allowed for all basins statewide. However, not all basins have certified nutrient credit banks. The following criteria shall be followed:

1. Standard Credit Use

Review and verify that the project is not located in a local nutrient TMDL area and that discharges can be traced downstream to the first assessed stream without applicable impairments. This project is considered to be eligible for "standard credit use" and can

- a. Use nutrient credits generated in the same or adjacent 8-digit hydrologic unit code (HUC) within the same tributary of the project.
- b. If it is determined that no credits are available in the same or adjacent 8-digit HUC within the same tributary, then project may acquire the credits anywhere within the same tributary of the project.

However, under no circumstance may a project use credits generated in a separate tributary.

2. Local Nutrient TMDL Credit Use

If a project is located in the Chesapeake Bay watershed and is also located in a local nutrient TMDL area with a nutrient TMDL that is more stringent than the Chesapeake Bay TMDL (i.e., has a higher required percent nitrogen and/or phosphorus reduction requirement for developed lands) or if a project is located in Southern Rivers watersheds (i.e., outside of the Chesapeake Bay watershed) and within a local nutrient TMDL area, then the project's discharge must be traced downstream to the limits of the local nutrient TMDL area.

- a. If the project's discharge reaches applicable impaired waters within the local nutrient TMDL area, then credits may only be acquired upstream of where the project's discharge reaches applicable impaired waters.
- b. If the project's discharge does not drain to applicable impaired waters within the local nutrient TMDL area, then the project may follow the same rules for standard credit use (same or adjacent 8-digit HUC within the same tributary).

The TMDL Report for the local nutrient TMDL should be reviewed to determine if the local nutrient TMDL's required nitrogen and/or phosphorus percent reduction requirements for developed lands are greater or lesser than the Chesapeake Bay TMDL nutrient reduction requirements for developed lands seen below:

L2 Scoping Reductions for Chesapeake Bay TMDL		
	Total Nitrogen	Total Phosphorus
Impervious	9%	16%
Pervious	6%	7.25%

3. Impaired Water Credit Use

If the project is located outside of a nutrient TMDL area, then the project's discharge must be traced downstream to the first assessed waters. If the first assessed waters are applicable impaired waters, then credit acquisition shall be made in accordance with the following hierarchy:

- a. Upstream of where the discharge reaches impaired waters, if credits are available;
- b. Within the same 12-digit HUC, if credits are available;
- c. Within the same 10-digit HUC, if credits are available;
- d. Within the same 8-digit HUC and within the same tributary, if credits are available;
- e. Within an adjacent 8-digit HUC and within the same tributary, if credits are available; or
- f. Within the same tributary.

The Nutrient Credit Flow Diagram included at the end of this IIM provides a simplified means of determining where nutrient credits can be procured for a project/land disturbing activity.

The Virginia Department of Environmental Quality State Wide Nutrient Watershed Impairment Map is available at: [DEQ Nutrient Trading Data Viewer](#)

PROCUREMENT OF NUTRIENT CREDITS FOR PROJECTS

Where the purchase of nutrient credits is proposed to satisfy water quality compliance for a VDOT project, they must be secured through purchase from an approved Nutrient Credit Bank prior to the beginning of land disturbance.

Typically, the nutrient credits should be secured prior to the public hearing stage of the plan development process in order to ensure their availability / compliance when project construction begins.

The credits will be secured using the ASD's IFB procurement process (where more than one Bank is available from which to purchase) Nutrient Credits may be purchased based on a project's specific need. In either case, the State Water Resources/MS4 Engineer will coordinate the procurement process with ASD. For project specific purchases, the project's budget will be debited at the time of purchase.

The cost of a pound of nutrient credit for phosphorus will vary. It is recommended that the District Hydraulics Engineer contact the State Water Resources/MS4 Engineer to verify the cost per pound, (a onetime charge) be used when making a comparison of the cost of the purchase of nutrient credits to the cost of onsite BMPs or other offsite options.

The District Hydraulics Engineer shall provide written notification of such to the Project Manager and he or she shall forward the notification to the State Water Resources/MS4 Engineer. The following information is to be provided on the latest version of the [LD-453](#) form:

- Project Number
- UPC Number
- Project Location (County/City)
- Project Latitude and Longitude (in decimal degree)
- Project 8-digit HUC
- Land Disturbance (rounded to the nearest one hundredth of an acre)
- Amount Of Nutrient Load Reductions Achieved Onsite, (pounds/acre/year)
- Amount of Nutrient Credits Needed To Be Purchased (pounds/acre/year)
- Documentation of the Pre-evaluation process

The State Water Resources/MS4 Engineer will determine the availability of nutrient credits for use in satisfying the water quality requirements for the project and will notify the District Hydraulics Engineer of their determination. Where nutrient credits are available, the State Water Resources/MS4 Engineer will secure from the District Hydraulics Engineer a project charge code for the purchase. The State Water Resources/MS4 Engineer will then begin the process of securing the necessary nutrient credits. Once the procurement process is completed, the Project Manager and the District Hydraulics Engineer will be notified of the name of the Bank from which the nutrient credits were purchased so that it can be included with other required information in the appropriate sections of the SWPPP General Information Sheets associated with the land disturbing activity.

There are times when someone other than VDOT (e.g., Design Build contractor, locality, etc.) purchases nutrient credits to satisfy water quality requirements on projects involving VDOT owned or operated roadways/facilities (existing or future). In these instances, the purchaser

must complete a “Nutrient Credit Assignment Form” to transfer the ownership of such nutrient credits from the purchaser to VDOT. This form must be signed and submitted to the appropriate District Hydraulics Engineer. The District Hydraulics Engineer will upload this information into the Central Office Nutrient Credit submittal database.

The “Nutrient Credit Assignment Agreement Instructions” and “Assignment Agreement” are available at the following link:

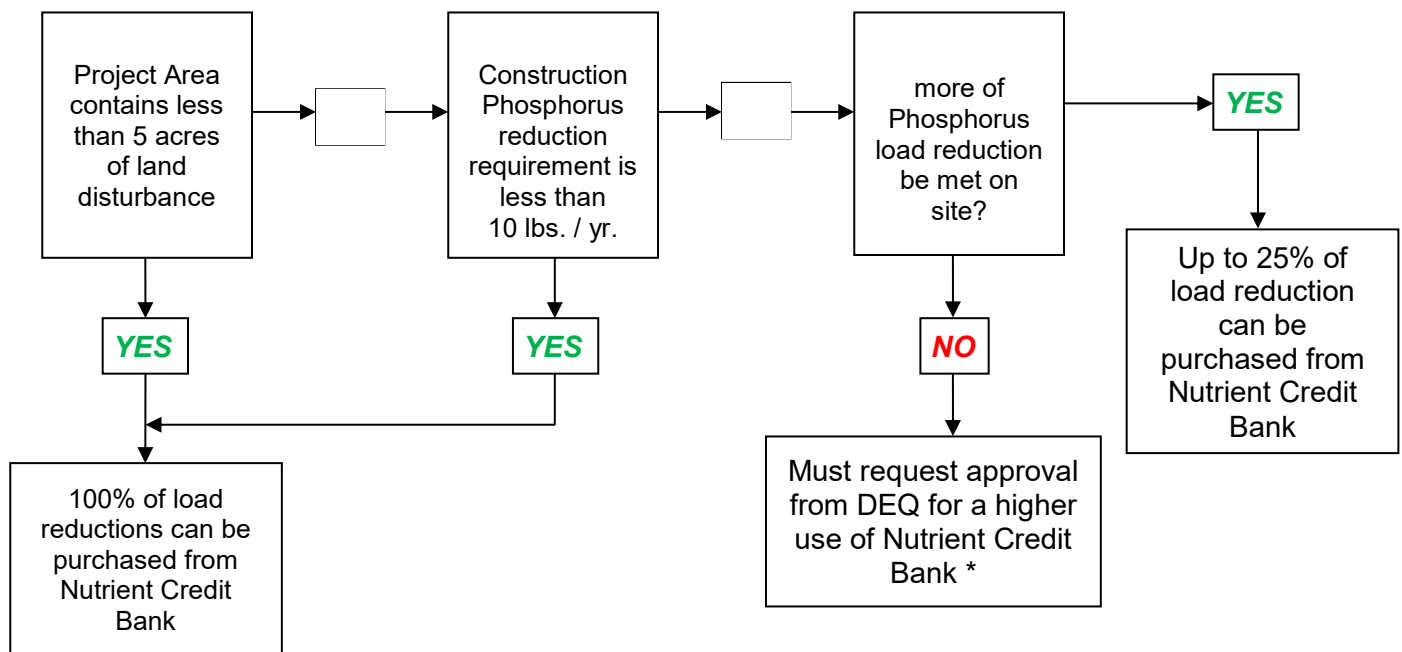
https://www.virginiadot.org/business/locdes/nutrient_credits.asp

RECORD KEEPING AND REPORTING

VDOT is required to submit an annual report to the DEQ that identifies the nutrient credits purchased during the reporting year. The reporting period is from July 1st to June 30th.

The use of nutrient credits is to be documented in the appropriate section of the SWPPP General Information Sheets associated with the land disturbing activity. Upon completion of the project, the appropriate information regarding the purchase of nutrient credits shall be reported on Form [LD-445D](#), Section III, for termination of VSMP Construction Permit coverage.

NUTRIENT CREDIT USE FLOW DIAGRAM



* See Item #4 under “Determination of Applicability”

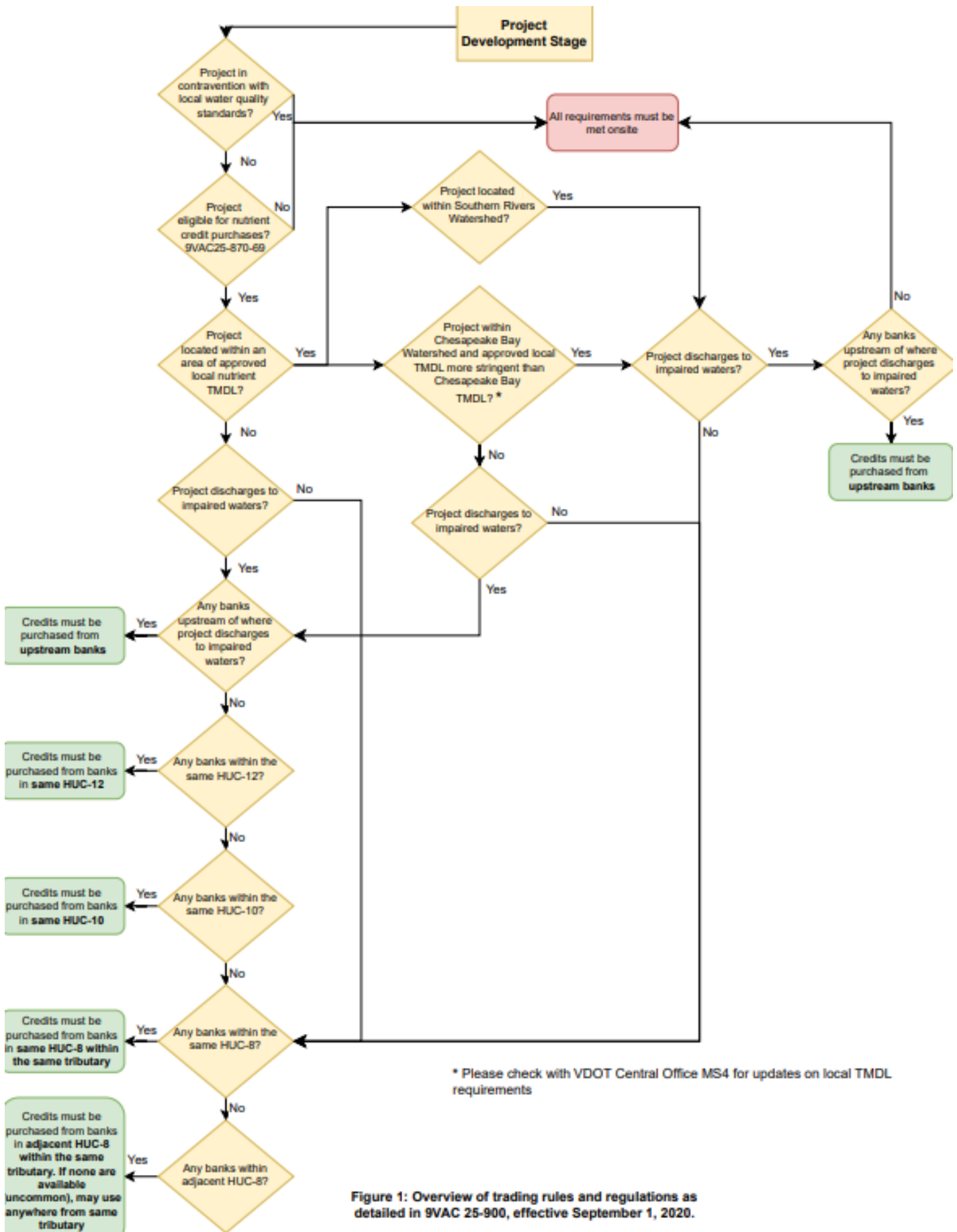


Figure 1: Overview of trading rules and regulations as detailed in 9VAC 25-900, effective September 1, 2020.