

VIRGINIA DEPARTMENT OF TRANSPORTATION

# LOCATION AND DESIGN DIVISION

## INSTRUCTIONAL AND INFORMATIONAL MEMORANDUM

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| GENERAL SUBJECT:<br><br>Stormwater Management   | NUMBER:<br><br>IIM-LD-251.2   |
| SPECIFIC SUBJECT:<br><br>The Purchase of Nutrient Credits to address<br>Post-Construction Water Quality Reduction<br>Requirements for Construction Activities | DATE:<br>January 21, 2015   |
|   | SUPERSEDES:<br><br>IIM-LD-251.1   |
| APPROVAL:   | B. A. Thrasher, P.E.<br>State Location and Design Engineer<br>Approved January 21, 2015 |

Changes are shaded.

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### CURRENT REVISION

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- 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.
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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

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- 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: [http://www.dcr.virginia.gov/soil\\_and\\_water/index.shtml](http://www.dcr.virginia.gov/soil_and_water/index.shtml)
  - "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 additional information, go to: [http://www.dcr.virginia.gov/soil\\_and\\_water/index.shtml](http://www.dcr.virginia.gov/soil_and_water/index.shtml)
  - 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

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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 linear projects, the siting of BMPs can often be challenging. This effort will become even more challenging with the new stormwater management technical criteria that will become effective for non-grandfathered projects on July 1, 2014. Dependent upon nutrient reduction requirements and the feasibility of onsite options, the use of offsite 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 Chesapeake Bay Watershed Nutrient Credit Exchange Program (Code§ 62.1-44.19:14 et seq.) and the Stormwater Nonpoint Nutrient Offset legislation (Code§ 10.1-603.8:1) allow regulated land disturbance activities to utilize offsite options to achieve post development

water quality criteria. This includes, under certain circumstances, the purchase of nutrient credits. 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:

[http://www.virginiadot.org/business/locdes/stormwater\\_management\\_regulations.asp](http://www.virginiadot.org/business/locdes/stormwater_management_regulations.asp).

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.

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## DETERMINATION OF APPLICABILITY

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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 reduction requirement is less than 10 pounds per year, or
3. Where the project does not meet the conditions noted in items 1 and 2, and at least 75% of the required phosphorus load reduction can be met onsite, the remaining load reduction (up to 25%) may be met through the purchase of nutrient credits. On a case by case basis, more load reduction (up to 100%) may be achieved through the purchase of nutrient credits by obtaining written approval from the DEQ. DEQ approval requires written documentation explaining the rationale for requesting higher levels of offsite load reductions. Where approval from the DEQ is required, the District Hydraulics Engineer shall provide all of the necessary documentation to the Project Manager and he or she shall forward the documentation to the VDOT State Stormwater Management Program Administrator. The VDOT State Stormwater Management Program Administrator will then coordinate with the DEQ Central Office to secure the necessary approvals.

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. **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 upstream 6<sup>th</sup> Order (12 digit) HUC as the project, or (with DEQ approval) within the same watershed, (i.e. basin / tributary) as the project, or
- Other offsite options, as approved by the DEQ.

## FEASIBILITY OF THE USE OF NUTRIENT CREDITS

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In determining the feasibility of the use of nutrient credits to satisfy a project's water quality requirements, the following items should be taken into consideration:

- The purchase of nutrient credits cannot be used to address water quantity control requirements.
  - Water quality requirements may be achievable within any onsite BMPs needed to meet water quantity requirements.
  - If the project discharges into a local watershed with an established nutrient related limitation, the use of nutrient credits may be considered provided such use does not preclude or impair compliance with the local limitation.
  - The purchase of nutrient credits must be utilized for meeting the water quality requirements for a land disturbing activity prior to requesting an exception from DEQ.
  - The cost of a pound of nutrient credit for phosphorus will vary. It is recommended that \$15,000 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.
  - As with other offsite options, 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.
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## NUTRIENT CREDIT BANK IDENTIFICATION

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Provided that a project successfully qualifies for the use of the purchase of nutrient credits, the project may utilize any certified Nutrient Credit Bank in the following order:

1. Located in the same or adjacent 4th Order (8 digit) HUC as that of the project. If an adjacent 4th Order HUC is to be used, it must be in the same basin/tributary as the project.
2. Where no Banks are located within the project's 4<sup>th</sup> Order HUC or adjacent 4<sup>th</sup> Order HUC, nutrient credits may be purchased from any Bank located within the same basin/tributary as the project.

The five basins/tributaries within the Chesapeake Bay Watershed where nutrient credit banks are authorized are the Potomac, Rappahannock, York, James, and Eastern Coastal.

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## PROCUREMENT OF NUTRIENT CREDITS FOR PROJECTS

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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 Bank prior to the beginning of land disturbance. Typically, the nutrient credits should be secured prior to the public participation stage of the plan development process in order to ensure their availability 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) or a sole source procurement process (where only one Bank is available from which to purchase). Nutrient credits may be purchased based on a project's specific need, or may be purchased in bulk for future use as the need arises. In either case, the VDOT State Stormwater Management Program Administrator will coordinate the procurement process with ASD. For project specific purchases, the project's budget will be debited at the time of purchase. When purchased in bulk, the Central Office will finance such purchases initially, with project budgets being debited when a project specific determination of need is established and credits are assigned.

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## PROCUREMENT PROCESS

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Once it is determined that the use of nutrient credits is the most feasible means to address the water quality requirements for a project, the District Hydraulics Engineer shall provide written notification of such to the Project Manager and he or she shall forward the notification to the VDOT State Stormwater Management Program Administrator. The following information is to be provided:

- Project Number
- UPC Number
- Project Location (County/City)
- Project Latitude and Longitude
- Project 4<sup>th</sup> Order HUC
- Land Disturbance (acres)
- Amount Of Nutrient Load Reductions Achieved Onsite, (pounds/acre/year)
- Amount of Nutrient Credits Needed To Be Purchased (pounds/acre/year)

The VDOT State Stormwater Management Program Administrator will determine the availability of nutrient credits for use in satisfying the water quality requirements for the project and will notify the Project Manager of their determination. Where nutrient credits are available, the VDOT State Stormwater Management Program Administrator will secure from the Project Manager a project charge code for the purchase. The VDOT State Stormwater Management Program Administrator 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.

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## RECORDKEEPING AND REPORTING

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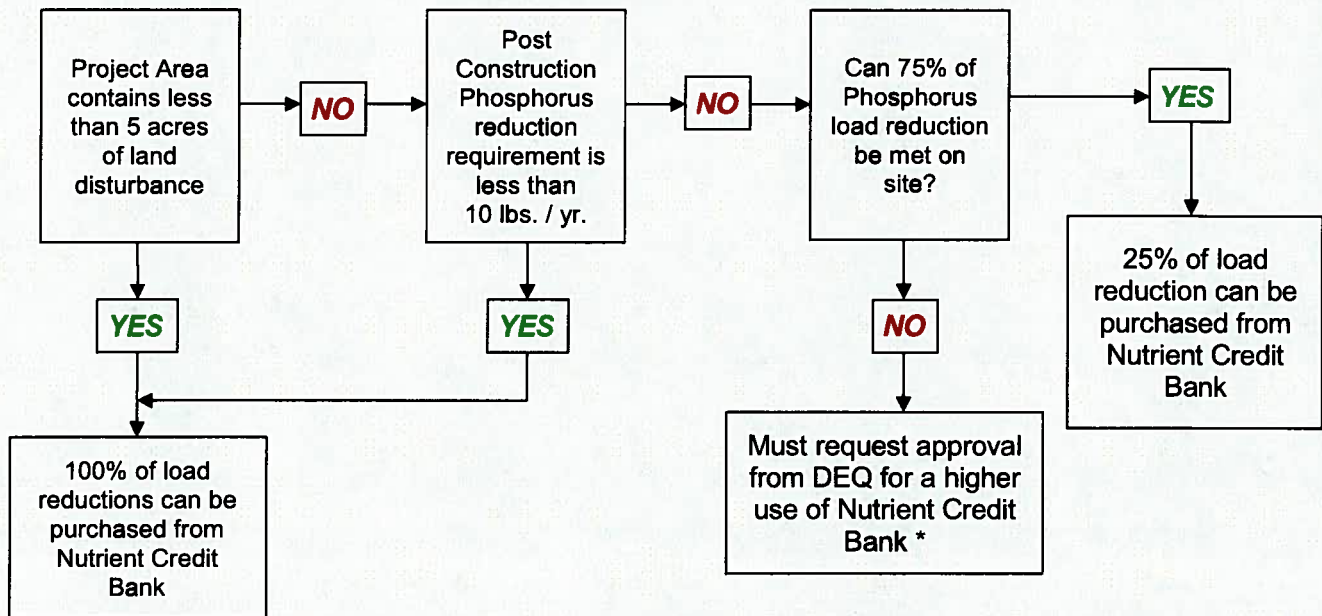
VDOT is required to submit an annual report to the DEQ that identifies the nutrient credits purchased during the reporting year. The reporting period is from July 1st to June 30th.

When the purchase of nutrient credits is being used to satisfy the water quality requirements for a project, the Project Manager with the assistance of the District Hydraulics Engineer shall identify such on the LD-445 form when registering for coverage under the VSMP Construction Permit. 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 the LD-445D form for termination of VSMP Construction Permit coverage.

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## NUTRIENT CREDIT USE FLOW DIAGRAM

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\* See Item #3 under "Determination of Applicability"