

**LOCAL AND STATE
BUFFER PERMITTING INFORMATION**

Georgia Department of Natural Resources

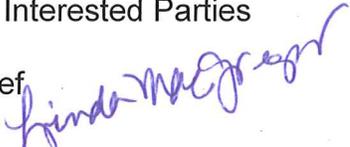
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July 24, 2012

MEMORANDUM

TO: Local Issuing Authorities and Other Interested Parties

FROM: Linda MacGregor, P.E., Branch Chief
EPD Watershed Protection Branch 

SUBJECT: Local and State Permitting and Buffer Variance Requirements for Dams

The intent of this memorandum is to clarify the permitting and buffer variance requirements for the construction and maintenance of dams, including "emergency" scenarios.

In general, land-disturbing activities associated with the construction and maintenance of dams are subject to the permitting and buffer variance requirements delineated in the Georgia Erosion and Sedimentation Act (GESA), the NPDES General Permits for Storm Water Discharges Associated with Construction Activity and the Rules for Erosion and Sedimentation Control. In addition, authorization may be required from the United States Army Corps of Engineers if the land-disturbing activities impact Waters of the United States, including jurisdictional wetlands and streams.

In all instances, regardless of exemptions, adequate erosion and sedimentation control measures (i.e., Best Management Practices) must be provided to protect the State's soils and waters.

Scenario 1 – Construction, maintenance and/or modification⁽¹⁾ of dams for recreational and/or stormwater management ponds where the disturbed area of the project (including any disturbed areas flooded by the impoundment) is equal to or greater than one (1) acre:

- In an area with a certified Local Issuing Authority (LIA), a local Land Disturbing Activity (LDA) permit is required.
- Coverage under the NPDES General Permits for Storm Water Discharges Associated with Construction Activity⁽²⁾ is required, which includes the submittal of a Notice of Intent (NOI), NPDES General Permit – Fee Form, and an Erosion, Sedimentation and Pollution Control Plan (Plan).
- In an area with no certified LIA, a fee of \$80 per acre disturbed⁽³⁾ must be paid to the Environmental Protection Division (EPD). In an area with a certified LIA, a

fee of \$40 per acre disturbed must be paid to EPD and a fee of \$40 per acre disturbed must be paid to the LIA. The NPDES General Permit fees are in addition to any LDA permit fees required by the LIA.

- In an area with a certified LIA, multiple copies of the Plan (as specified by the LIA) must be submitted to the LIA for review and approval or disapproval. In an area with no certified LIA regulating the project, a single copy of the Plan must be submitted to the EPD Watershed Protection Branch⁽⁴⁾ for review and a second copy of the Plan must be submitted to the appropriate EPD District Office prior to or concurrent with the NOI submittal.
- For projects with land disturbances equal to or greater than 50 acres, regardless of the existence of a certified LIA, a single copy of the Plan must be submitted to the appropriate EPD District Office.
- Buffer variance applications must be submitted to the EPD Watershed Protection Branch for review and approval or disapproval. Incomplete applications will be returned to the applicant.

Scenario 2 – Construction, maintenance and/or modification⁽¹⁾ of dams for **recreational and/or stormwater management ponds** where the disturbed area of the project (including any disturbed areas flooded by the impoundment) is less than one (1) acre and located within 200 feet of any perennial State Waters⁽⁵⁾:

- In an area with a certified LIA, a local LDA permit is required (O.C.G.A. § 12-7-17(8)).
- Coverage under the NPDES General Permits for Storm Water Discharges Associated with Construction Activity is **not** required if the project is not located within a larger common plan of development.
- In an area with a certified LIA, multiple copies of the Plan (as specified by the LIA) must be submitted to the LIA for review and approval or disapproval.
- Buffer variance applications must be submitted to the EPD Watershed Protection Branch for review and approval or disapproval. Incomplete applications will be returned to the applicant.

Scenario 3 – Construction, maintenance and/or modification⁽¹⁾ of dams for **recreational and/or stormwater management ponds “technically supervised” by the Natural Resources Conservation Service (NRCS)** where the disturbed area of the project (including any disturbed areas flooded by the impoundment) is equal to or greater than one (1) acre:

- A local LDA permit is **not** required (O.C.G.A. § 12-7-17(7)).
- Coverage under the NPDES General Permits for Storm Water Discharges Associated with Construction Activity⁽²⁾ is required, which includes the submittal of a NOI, NPDES General Permit – Fee Form, and an Erosion, Sedimentation and Pollution Control Plan.
- A fee of \$80 per acre disturbed⁽³⁾ must be paid to EPD.

- A single copy of the Plan must be submitted to the EPD Watershed Protection Branch⁽⁴⁾ for review and a second copy of the Plan must be submitted to the appropriate EPD District Office prior to or concurrent with the NOI submittal.
- Buffer variance applications must be submitted to the EPD Watershed Protection Branch for review and approval or disapproval. Incomplete applications will be returned to the applicant.

Scenario 4 – Construction, maintenance and/or modification⁽¹⁾ of dams for **recreational and/or stormwater management ponds “technically supervised” by the Natural Resources Conservation Service (NRCS)** where the disturbed area of the project (including any disturbed areas flooded by the impoundment) is less than one acre:

- A local LDA permit is **not** required (O.C.G.A. § 12-7-17(7)).
- Coverage under the NPDES General Permits for Storm Water Discharges Associated with Construction Activity is **not** required if the project is not located within a larger common plan of development.
- Project is **exempt** from the State-mandated buffer requirements (O.C.G.A. § 12-7-17(7)).

Scenario 5 – Construction of dams for **public drinking water reservoirs** where the disturbed area of the project (including any disturbed areas flooded by the impoundment) is equal to or greater than one (1) acre:

- A local LDA permit is **not** required (O.C.G.A. § 12-7-17(11)).
- Coverage under the NPDES General Permits for Storm Water Discharges Associated with Construction Activity⁽²⁾ is required, which includes the submittal of a NOI, NPDES General Permit – Fee Form, and an Erosion, Sedimentation and Pollution Control Plan.
- A fee of \$80 per acre disturbed⁽³⁾ must be paid to EPD.
- A single copy of the Plan must be submitted to the EPD Watershed Protection Branch⁽⁴⁾ for review and a second copy of the Plan must be submitted to the appropriate EPD District Office prior to or concurrent with the NOI submittal.
- Project is **exempt** from the State-mandated buffer requirements (O.C.G.A. § 12-7-17(11)).

Scenario 6 – Maintenance of **public drinking water reservoir dams and shorelines** where the disturbed area of the project is equal to or greater than one (1) acre:

- A local LDA permit is **not** required (O.C.G.A. § 12-7-17(11)).
- Coverage under the NPDES General Permits for Storm Water Discharges Associated with Construction Activity⁽²⁾ is required, which includes the submittal of a NOI, NPDES General Permit – Fee Form, and an Erosion, Sedimentation and Pollution Control Plan (Plan).
- A fee of \$80 per acre disturbed must be paid to EPD.

- A single copy of the Plan must be submitted to the EPD Watershed Protection Branch⁽⁴⁾ for review and a second copy of the Plan must be submitted to the appropriate EPD District Office prior to or concurrent with the NOI submittal.
- Project is **exempt** from the State-mandated buffer requirements (O.C.G.A. § 12-7-17(11)).
- Projects such as boat launches and docks (including access ways) are not considered maintenance projects. Buffer variance applications for these projects must be submitted to the EPD Watershed Protection Branch.

Scenario 7 – Maintenance of **public drinking water reservoir dams and shorelines** where the disturbed area of the project is less than one (1) acre:

- A local LDA permit is **not** required (O.C.G.A. § 12-7-17(11)).
- Coverage under the NPDES General Permits for Storm Water Discharges Associated with Construction Activity is **not** required.
- Project is **exempt** from the State-mandated buffer requirements (O.C.G.A. § 12-7-17(11)).
- Projects such as boat launches and docks (including access ways) are not considered maintenance projects. Buffer variance applications for these projects must be submitted to the EPD Watershed Protection Branch.

Scenario 8 - Maintenance of a **non-erodible drainage structure** on a dam, as defined in GESA (O.C.G.A. § 12-7-3(7)), and **technically supervised by NRCS** where the disturbed area of the project is equal to or greater than one (1) acre:

- A local LDA permit is **not** required (O.C.G.A. § 12-7-17(7)).
- Coverage under the NPDES General Permits for Storm Water Discharges Associated with Construction Activity⁽²⁾ is required, which includes the submittal of a NOI, NPDES General Permit – Fee Form, and an Erosion, Sedimentation and Pollution Control Plan.
- A fee of \$80 per acre disturbed must be paid to EPD.
- A single copy of the Plan must be submitted to the EPD Watershed Protection Branch⁽⁴⁾ for review and a second copy of the Plan must be submitted to the appropriate EPD District Office prior to or concurrent with the NOI submittal.
- Project is **exempt** from the State-mandated buffer requirements for non-trout waters (O.C.G.A. § 12-7-6(15)(A)(iv)).

Scenario 9 - Maintenance of a **non-erodible drainage structure** on a dam, as defined in GESA (O.C.G.A. § 12-7-3(7)), and **technically supervised by NRCS** where the disturbed area of the project is less than one (1) acre:

- A local LDA permit is **not** required (O.C.G.A. § 12-7-17(7)).
- Coverage under the NPDES General Permits for Storm Water Discharges Associated with Construction Activity is **not** required.

- Project is **exempt** from the State-mandated buffer requirements (O.C.G.A. § 12-7-17(7)).

Scenario 10 - Maintenance of a **non-erodible drainage structure** on a dam, as defined in GESA (O.C.G.A. § 12-7-3(7)), where the disturbed area of the project is equal to or greater than one (1) acre:

- In an area with a certified LIA, a local LDA permit is required.
- Coverage under the NPDES General Permits for Storm Water Discharges Associated with Construction Activity⁽²⁾ is required, which includes the submittal of a NOI, NPDES General Permit – Fee Form, and an Erosion, Sedimentation and Pollution Control Plan.
- In an area with no certified LIA, a fee of \$80 per acre disturbed must be paid to EPD. In an area with a certified LIA, a fee of \$40 per acre disturbed must be paid to EPD and a fee of \$40 per acre disturbed must be paid to the LIA. The NPDES General Permit fees are in addition to any LDA permit fees required by the LIA.
- In an area with a certified LIA, multiple copies of the Plan (as specified by the LIA) must be submitted to the LIA for review and approval or disapproval. In an area with no certified LIA regulating the project, a single copy of the Plan must be submitted to the EPD Watershed Protection Branch⁽⁴⁾ for review and a second copy of the Plan must be submitted to the appropriate EPD District Office prior to or concurrent with the NOI submittal.
- For projects with land disturbances equal to or greater than 50 acres, regardless of the existence of a certified LIA, a single copy of the Plan must be submitted to the appropriate EPD District Office.
- Project is **exempt** from the State-mandated buffer requirements for non-trout waters (O.C.G.A. § 12-7-6(15)(A)(iv)).

Scenario 11 – Maintenance of a **non-erodible drainage structure** on a dam, as defined in GESA (O.C.G.A. § 12-7-3(7)), where the disturbed area of the project is less than one (1) acre and located within 200 feet of any perennial State Waters⁽⁵⁾:

- In an area with a certified LIA, a local LDA permit is required (O.C.G.A. § 12-7-17(8)).
- Coverage under the NPDES General Permits for Storm Water Discharges Associated with Construction Activity is **not** required.
- In an area with a certified LIA, multiple copies of the Plan (as specified by the LIA) must be submitted to the LIA for review and approval or disapproval.
- Project is **exempt** from the State-mandated buffer requirements for non-trout waters (O.C.G.A. § 12-7-6(15)(A)(iv)).

Emergency Projects – The Safe Dams Unit will determine if the “damage to the dam or the area needing repair” presents a serious risk of failure of the dam that would require immediate action. Projects that are determined to be an “emergency” by the EPD Safe Dams Unit are not subject to the State-mandated buffer variance requirements.

However, if the disturbed area of an emergency project is equal to or greater than one (1) acre, permit coverage under Part IV(A)(6) of the NPDES General Permits for Storm Water Discharges Associated with Construction Activity is required.

In all instances, regardless of exemptions, adequate erosion and sedimentation control measures must be provided to protect the State’s soils and waters. If additional information is required, please contact Jan Sammons with the EPD Erosion and Sedimentation Unit at (404) 675-6240 or Tom Woosley with the EPD Safe Dams Unit at (404) 362-2678.

An information guide, *Building or Renovating a Pond in Georgia – A Pond Guide for Citizens*, is also available for landowners in Georgia who want to build a new pond or to renovate an existing pond. There are numerous laws and agencies regulating pond construction in Georgia. This document identifies the multiple agencies available that provide assistance in planning and designing ponds.

- (1) Draining a pond does not require a buffer variance from the EPD Watershed Protection Branch; however, a buffer variance application must be submitted for any encroachments within the State-mandated buffers or modifications to the pond, **such as breaching the dam**.
- (2) The NPDES General Permit forms are located on the EPD website, www.gaepd.org.
- (3) The disturbed acreage for a reservoir project includes any areas disturbed during clearing and subsequently flooded by the impoundment.
- (4) The EPD Watershed Protection Branch will review these Plans for deficiencies using the applicable Erosion, Sedimentation and Pollution Control Plan Checklist (including the delineation of State Waters and State-mandated buffers).
- (5) A certified Local Issuing Authority may enact a local Erosion and Sedimentation Control Ordinance that exceeds the acreage provisions of the Georgia Erosion and Sedimentation Act.



Streambank and Shoreline Stabilization Guidance

Streambank and shoreline stabilization that remediate erosion are important tools to restore and protect water quality in Georgia. Certain methods and practices are preferred to restore or protect ecosystem function and integrity. This document will discuss the preferred, acceptable and discouraged methods of streambank and shoreline stabilization. Stabilization methods in the first and second levels, or “Preferred” and “Acceptable”, do not need mitigation. Methods in the third, or “Discouraged” level will require mitigation in the form of additional nonpoint source protection and vegetative controls. Each section will list examples of methods or practices. In order to gain approval for the installation of practices from one level to the next, i.e. from “Preferred” to “Acceptable” or “Acceptable” to “Discouraged”; appropriate justification must be provided that additional buffer impacts are necessary. This document is meant as a guidance document, and does not contain the technical or design information necessary to successfully implement a stabilization project. Although this guidance document is intended to clarify Georgia Environmental Protection Division (EPD)’s rules and requirements for mitigation for stabilization measures, entities or projects not subject to EPD’s rules are encouraged to use this guidance. For information on design and specifications of stabilization practices, please refer to the list of additional resources at the end of this document.

Georgia’s Customer Service Initiative

On July 25, 2006, Governor Sonny Perdue kicked off the employee awareness phase of his Customer Service Initiative to elevate the level of customer service experienced by Georgians when interacting with their state government. The Initiative focuses on the theme of “Faster, Friendlier and Easier” service to customers.

As a part of these efforts, the NonPoint Source Program of the Georgia EPD was tasked with developing two documents: *Stream Buffer Mitigation Guidance*, and *Streambank and Shoreline Stabilization Guidance*. These documents will provide consistent guidance and recommendations for individuals planning to implement these types of projects.

Streambank and Shoreline Stabilization

Streambank and shoreline stabilization are tools to correct an existing problem with erosion. Some erosion is a natural part of a stream, shoreline, or lake system, and may not need any restoration other than minimal revegetation. Likewise, some streambank and shoreline restoration may occur naturally by removing a local stressor, for example by limiting livestock access to surface water. This may allow banks to naturally re-vegetate and stabilize; however, repairing sites affected by more extensive erosion is beneficial to water quality and aquatic habitat.

When addressing streambank or shoreline erosion, it is preferable to think on a watershed scale. Identifying upstream watershed activities may help to determine the underlying sources or causes of erosion downstream, such as stormwater runoff from urban or other impervious areas, wave action from boat traffic, and dam releases. If possible, these causes should be addressed to increase the likelihood of the streambank stabilization’s long-term success. For example, it may be possible to implement additional measures to address runoff from impervious surfaces through a watershed planning process, or the Total Maximum Daily Load (TMDL) Implementation process. You may also consider consulting with upstream and downstream neighbors to determine if they, too, have a similar problem and if they would like to



Stream Buffer Mitigation Guidance

This guidance serves as a framework to provide predictability and consistency for development, review and approval of compensatory mitigation plans for stream buffer variances. It provides a method for determining mitigation requirements for variance applications.

While this guidance is not intended for use as project design criteria, appropriate use of the methods described here should reduce uncertainty in the development of mitigation plans, and allow quicker review of applications.

These procedures should not be interpreted as a promise or guarantee that a project satisfying the criteria or guidelines presented will be assured a stream buffer variance. The Georgia Environmental Protection Division (EPD) Director has the responsibility to consider each project on a case-by-case basis and may determine in any specific situation that a buffer variance should be denied, modified, suspended, or revoked. This guidance does not preclude or modify any requirements in the Georgia Erosion and Sedimentation Act of 1975 O.C.G.A. 12-7 or 391-3-7-.05 DNR Rules on Buffer Variance Procedures and Criteria.

On-going and future stream buffer studies may lead to changes to this document.

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As a part of these efforts, the EPD NonPoint Source Program was tasked with developing two documents: *Stream Buffer Mitigation Guidance* and *Streambank and Shoreline Stabilization Guidance*. These documents will provide consistent and uniform guidance and recommendations for individuals planning to implement these types of projects.

When Mitigation is Required

As stated in Section 391-3-7-.05 (Buffer Variance Procedures and Criteria) of the DNR Rules for Erosion and Sedimentation Control, only 11 project categories (criteria 391-3-7-.05(2) a-k) exist for which the EPD Director will review a buffer variance application. For each project category or criterion, EPD staff will evaluate the applicant's need to mitigate impacts to the buffer. Whether mitigation is necessary for a variance applicant applying under criteria (a) through (g) will be determined by the project's potential impact. However, any applicant applying under criteria (h), (i), (j) or (k) is required to mitigate the buffer disturbance based on guidance described below. In addition, property owners may be required to mitigate for impacts that occurred without the issuance of a variance regardless of the project criteria. Please note that minor land disturbing activities, such as home gardening, home landscaping, etc. and other activities identified in EPD's *Minor Land-Disturbing Activity Guidelines* are not subject to these requirements.

Mitigation Requirements

A buffer extending out from a stream serves three main functions: hydrologic, water quality, and aquatic/buffer habitat protection. The following mitigation requirements were established to address all three functions. All applicants applying for a stream buffer variance before impacting the buffer must comply with the following three components, as applicable:

1. Hydrologic Protection – The applicant must use on-site minimum stormwater management standards that conform to guidance established in Section 1.3 of the Georgia Stormwater Management Manual (or “Blue Book”). These practices reduce downstream bank and channel erosion; reduce downstream flooding; and by capturing run-off from the first 1.2” of rainfall ensure an 80% reduction in total suspended solids (TSS). If applicable the applicant must also use on-site minimum stormwater management standards that conform to the guidance established in the Coastal Stormwater Supplement to the Georgia Stormwater Management Manual. Under criteria (h) and (k), justification must be provided and mitigation credits will be required as a substitute when hydrologic protection cannot be addressed on the site. Mitigation credits must be purchased in accordance with the Standard Operating Procedure in Appendix B, *Calculation of Stream Buffer Credits*.

2. Water Quality Protection – The applicant must implement on-site best management practices (BMPs) that address common post-construction pollutants other than TSS. Practices used to address these other pollutants can be selected from Appendix A. The applicant must choose an appropriate BMP or “treatment train”; that is, a combination of BMPs, to fully address all pollutants of concern generated on site. For the first 1.2” of rainfall, the BMP or treatment train must result in at least 60% pollutant removal efficiency from the site run-off for each pollutant of concern. (Please refer to Section 3.1.6 of the Blue Book for calculating removal rates of treatment trains.) Should the applicant choose practices not listed in Appendix A, documented and proven pollutant removal efficiency rates must be submitted with the proposed practice and be accepted by EPD during the application review process. Developments with significant parking spaces and/or high-volume traffic areas must implement BMPs addressing oil and grease as pollutants. Pollutant removal efficiencies for these oil and grease BMPs must be included in the stream buffer variance application. Under criteria (h) and (k), justification must be provided and mitigation credits will be required as a substitute when water quality protection cannot be addressed on the site. Mitigation credits must be purchased in accordance with the Standard Operating Procedure in Appendix B, *Calculation of Stream Buffer Credits*.

3. Aquatic/Buffer Habitat Protection – To protect aquatic and buffer habitats, an applicant must comply with the following when applicable:

- a. Criterion (h) – Mitigation credits must be purchased in accordance with the USACE Section 404 Permitting requirements included in the published USACE Standard Operating Procedures.
- b. Criterion (k) - Mitigation credits must be purchased in accordance with the Standard Operating Procedure in Appendix B, *Calculation of Stream Buffer Credits*.

Additional Information

Impacted Area

The area of impact, as used in this document, includes stream buffer areas impacted by filling, piping, re-routing, other buffer impacts and/or other ecological effects relevant to DNR Rule 391-3-7-.05 (2).

Buffers

According to the Georgia Erosion and Sedimentation Act of 1975 O.C.G.A. 12-7-3(2), a buffer is defined as “the area of land immediately adjacent to the banks of State waters in its natural state of vegetation, which facilitates the protection of water quality and aquatic habitat.” There is an established 25 foot buffer along banks of all State waters, as measured horizontally from the point where vegetation has been wrested by normal stream flow or wave action, except where the EPD Director determines to allow a variance that is at least as protective as a 25 foot buffer of natural resources and the environment. There is an established 50 foot buffer, as measured horizontally from the point where vegetation has been wrested by normal stream flow or wave action, along the banks of any State waters classified as “trout streams.” On-site preservation mitigation areas must be permanently protected through a restrictive covenant.

For a complete listing of the Buffer Variance Procedures and Criteria in the Rules for Erosion and Sedimentation (391-3-7), please go to: http://www.gaepd.org/Documents/rules_exist.html

Maintenance

An essential component of a comprehensive stormwater management program is the ongoing operation and maintenance of the various components of the stormwater drainage, control, and conveyance systems. Failure to provide effective maintenance can reduce the hydraulic capacity and the pollutant removal efficiency of stormwater controls and conveyance systems. See Chapter 7, “Stormwater System Operations and Maintenance” of the *Georgia Stormwater Management Manual, Volume 1* for a complete definition of maintenance.

<http://www.georgiastormwater.com/vol1/gsmmvol1.pdf>

Native Riparian Plant Species

Native riparian plant species should be species that are adapted to riparian forests and/or stream edges in Georgia and the Southeast. The applicant should use the information in EPD’s *Streambank and Shoreline Stabilization Guidance* or contact either the local Cooperative Extension Office or National Resources Conservation Service (NRCS) Office to determine the most appropriate species for the area. The web site for the Georgia Cooperative Extension Service is:

<http://www.caes.uga.edu/extension/index.html>

Contact information for the NRCS district offices in Georgia can be found at:

<ftp://ftp-fc.sc.egov.usda.gov/GA/PI/areamap.pdf>

Restrictive Covenants

A restrictive covenant is one in which a property owner places permanent conservation restrictions on the property. A restrictive covenant prevents development and requires that the land be managed for its conservation values. Property owners should make allowances for any foreseeable circumstances (e.g., utility lines, power lines, road crossings, ditch maintenance, etc.) that may conflict with the inherent restrictions of the covenant.

For the USACE's "Restrictive Covenant Guidance," please go to:

<http://www.saw.usace.army.mil/wetlands/Mitigation/Documents/restrictive%20covenants8-03.pdf>

Mitigation Scheduling

As much as possible, mitigation should be done before or at the same time as the authorized buffer impacts. This can reduce loss of buffer functions and facilitate compliance. However, it is recognized that because of equipment availability, job scheduling and other factors typical of construction projects, it may be necessary to do mitigation during the overall project development, but after the buffer impacts. This is usually acceptable provided the time between impacts and mitigation is minimized and the mitigation is completed within one growing season after the adverse impacts have occurred. Credit purchase must occur at least 14 days prior to any land disturbance on site.

Wrested Vegetation

Wrested vegetation is vegetation that has been disturbed, moved, or removed by flowing water creating a clear demarcation between water flow and vegetative growth.

Coordination with Section 404 Permits

Applicants for a stream buffer variance under criterion (h) in Section 391-3-7-.05 of the DNR Rules on Buffer Variance Procedures and Criteria must also apply for and obtain a federal Clean Water Act (CWA) Section 404 permit from the USACE. EPD will review such variance applications at the same time the USACE is reviewing the Section 404 application. Mitigation for the buffer variance may include mitigation required for the Section 404 permit as well as mitigation required to address EPD's buffer variance rules.

Appendix A Pollutant Removal Efficiency Rates by Practices

Structural Control	Total Suspended Solids	Total Phosphorus	Total Nitrogen	Fecal Coliform	Metals
Stormwater Ponds	80	50	30	70*	50
Constructed Wetlands	80	40	30	70*	50
Bioretention Areas	80	60	50	~	80
Sand Filters	80	50	25	40	50
Infiltration Trench	80	60	60	90	90
Enhanced Dry Swale	80	50	50	~	40
Enhanced Wet Swale	80	25	40	~	20
Filter Strip	50	20	20	~	40
Grass Channel	50	25	20	~	30
Organic Filter	80	60	40	50	75
Underground Sand Filter	80	50	25	40	50
Submerged Gravel Wetland	80	50	20	70	50
Gravity (Oil-Grit) Separator	40	5	5	~	~
Porous Concrete	**	50	65	~	60
Modular Porous Paver System	**	80	80	~	90
Alum Treatment	90	80	60	90	75
Proprietary System	***	***	***	***	***

* If no resident waterfowl population is present

** Due to the potential for clogging, porous concrete and modular block paver systems should not be used for the removal of sediment or other coarse particle pollutants

*** The performance of specific proprietary commercial devices and systems must be provided by the manufacturer and should be verified by independent third party sources and data

~ Insufficient data to provide removal efficiency

Source: Georgia Stormwater Management Manual, Volume 2, Section 3.1-7

Appendix B Standard Operation Procedure Calculation of Stream Buffer Credits

The highest number of stream credits that any USACE approved mitigation bank can generate per square foot of stream restoration/preservation is 0.046 stream credits. This includes the restoration/preservation of the stream channel and associated stream buffer. Using this number as a basis, mitigation banks are encouraged to maximize the riparian areas (i.e., stream buffer areas) surrounding restored/preserved streams within the mitigation bank boundaries.

Since USACE mitigation banks are located off-site from potential buffer encroachments, a 2.5 multiplier is applied to the mitigation calculations. Therefore, this buffer mitigation alternative requires the procurement of 0.115 stream credits per square foot of stream buffer impact.

Example 1:

2500 sq ft of buffer impact X 0.046 credits per sq ft X 2.5 factor for off-site = 287.5 stream credits = **288 total stream credits**

To encourage the use of USACE mitigation banks in close proximity to the buffer encroachment, if the applicant purchases credits from a mitigation bank in the same 12-digit HUC, a multiplier of 0.9 will be placed on the number of stream credits needed to serve as mitigation for the proposed buffer impact. However, if the applicant purchases credits outside the 12-digit HUC, but within the larger 8-digit HUC, a multiplier of 1.0 will be placed on the number of stream credits needed to serve as mitigation for the proposed buffer impact. If the applicant purchases credits outside the 8-digit HUC, but within the Primary Service Area (PSA)/Secondary Service Area (SSA) serving the 8-digit HUC, a multiplier of 1.1 will be placed on the number of stream credits needed to serve as mitigation for the proposed buffer impact. Equivalent out of kind mitigation bank credits (i.e., wetland) will be considered if no stream mitigation credits are available in the PSA/SSA.

Example 2:

2500 sq ft of impact X 0.046 credits per sq ft X 2.5 factor for off-site = 287.5 stream credits

287.5 stream credits X 0.9 in-watershed multiplier = 258.75 stream credits = **259 total stream credits**

Example 3:

2500 sq ft of impact X 0.046 credits per sq ft X 2.5 factor for off-site = 287.5 stream credits

287.5 stream credits X 1.0 in-basin multiplier = 287.5 stream credits = **288 total stream credits**

Example 4:

2500 sq ft of impact X 0.046 credits per sq ft X 2.5 factor for off-site = 287.5 stream credits

287.5 stream credits X 1.1 out of basin multiplier = 316.25 stream credits = **317 total stream credits**

If hydrologic and/or water quality protection components (see page 2 of this guidance) cannot be addressed on the site, justification must be provided and mitigation credits will be required as a substitute:

When applying under **criterion (k)**, a multiplier of 1.1 or 1.2 will be placed on the number of stream credits needed to serve as mitigation for the proposed buffer impact. If only one component cannot be addressed, use a multiplier of 1.1. If both components cannot be addressed, use a multiplier of 1.2.

Example 5:

2500 sq ft of impact X 0.046 credits per sq ft X 2.5 factor for off-site = 287.5 stream credits

287.5 stream credits X 1.1 out of basin multiplier = 316.25 stream credits

316.25 stream credits X 1.1 multiplier for hydrologic **or** water quality protection = 347.875 stream credits = **348 total stream credits**

Example 6:

2500 sq ft of impact X 0.046 credits per sq ft X 2.5 factor for off-site = 287.5 stream credits

287.5 stream credits X 1.1 out of basin multiplier = 316.25 stream credits

316.25 X 1.2 multiplier for hydrologic **and** water quality protection = 379.5 stream credits = **380 total stream credits**

When applying under **criterion (h)**, a multiplier of 1.1 or 1.2 will be placed on the number of stream credits needed to serve as mitigation for not addressing the hydrologic and/or water quality protection components. These stream credits are calculated by first determining the number of stream credits required according to the State's Standard Operating Procedure, *Calculation of Stream Buffer Credits*. The applicant then calculates the number of stream credits with the multiplier of 1.1 or 1.2 for not addressing hydrologic and/or water quality protection components. Lastly, the applicant calculates the difference between the two stream credit calculations. This difference is the amount of stream credits that must be purchased to offset not addressing hydrologic and/or water quality protection components.

Example 7:

2500 sq ft of impact X 0.046 credits per sq ft X 2.5 factor for off-site = 287.5 stream credits

287.5 stream credits X 1.1 out of basin multiplier = 316.25 stream credits

316.25 X 1.1 multiplier for hydrologic **or** water quality protection = 347.875 stream credits

347.875 stream credits – 316.25 stream credits = 31.625 stream credits = **32 stream credits**

Example 8:

2500 sq ft of impact X 0.046 credits per sq ft X 2.5 factor for off-site = 287.5 stream credits

287.5 stream credits X 1.1 out of basin multiplier = 316.25 stream credits

316.25 stream credits X 1.2 multiplier for hydrologic **and** water quality protection = 379.5 stream credits

379.5 stream credits – 316.25 stream credits = 63.25 stream credits = **64 stream credits**

For all projects, the applicant must identify and provide a rationale for the chosen bank as part of the stream buffer variance application. In addition, the applicant applying under criterion (k)(1) must provide a letter from the USACE documenting that the water body identified in the stream buffer application is not considered a jurisdictional water under Section 404 of the Clean Water Act.

All stream buffer impacts that are granted by EPD via a variance will have a discrete document number. This document number generated by EPD will be the reference for tracking the sale of stream credits and will be used to report sales of stream credits to the USACE. The mitigation bank from which the stream credits will be purchased has the responsibility of notifying the USACE of the credit transaction by way of inputting the credit transaction into the RIBITS system via the Internet.

Credit purchase must occur at least 14 days prior to any land disturbance on site. If the applicant purchases mitigation credits after this deadline, a multiplier of 1.5 will be placed on the number of stream credits needed to serve as incentive to comply with the aforementioned deadline. Once the transaction has been completed, the mitigation bank will provide the applicant with sales receipt verifying the transaction. This receipt shall be forwarded to EPD by return receipt certified mail (or similar service) by the applicant to document buffer mitigation compliance.

participate in a streambank or shoreline stabilization project. Although addressing the underlying causes of erosion may be beyond the scope of many streambank and shoreline stabilization projects, we encourage stabilization projects to fit within the larger context of overall watershed protection whenever possible.

Regardless of the purpose or magnitude of specific projects, funds for streambank and shoreline stabilization are limited. It is the intent of Georgia EPD to help and ensure that funds (from any source) are used as wisely as possible. Further, we want to minimize any investment in apparent solutions that will be destroyed in a short time. For more information about watershed planning and protection, contact your local government, Regional Development Center, Georgia River Network, Natural Resources Conservation Service (NRCS) or EPD.

A **stable stream** has the ability to maintain pattern and shape while transporting sediment without either aggrading or scouring the channel bed (Rosgen 1996). Eroding and failing streambanks are often the symptom of an unstable stream, and may be caused by excessive current stress on the streambanks. Frequently, the source or cause of the excessive current stress is increased volume and rate of flow due to runoff from impervious surfaces such as roads, parking lots, etc. Excessive current stress can be addressed by taking a natural channel design approach to re-stabilize the stream. The **natural channel design** approach uses stable reference streams as models to predict how to restore an unstable stream channel for a particular watershed. While extensive channel restoration may be outside the scope of many streambank and shoreline stabilization projects, using elements of natural channel design, such as rock or log current deflectors, can be an effective way to address streambank erosion. Directing excessive current stress away from streambanks also allows bioengineering approaches (i.e. stabilizing a streambank with native riparian vegetation) to be used with a higher degree of success. Streambank stabilization projects using bioengineering methods, or even hard armoring, have a high risk of failure when banks are stabilized with no regard for the natural pattern, profile and dimension of the stream channel.

Projects incorporating bioengineering practices using native riparian vegetation are preferred for stream and shoreline stabilization. However, certain structural components of stabilization are highly effective and occasionally necessary. This document lays out three levels of streambank and shoreline stabilization: non-structural ("**preferred**"), integrated ("**acceptable**") and structural ("**discouraged**") stabilization methods. Stabilization practices will be similar for streambanks and shorelines; however, design and installation specifications will differ; for example, to address conditions associated with wave action vs. high velocity stream flow. In some cases, sites may be subject to both wave and current action at different times. Therefore, engineering, design, implementation and maintenance are all critical to successful long-term stabilization. It is important to work with local consultants, watershed groups, NRCS, or UGA Cooperative Extension to determine what practices are applicable to your site. For information on design and specifications of stabilization practices, please refer to "Additional Resources" listed at the end of this document.

Permitting Information

Activities in or near streams or lakes may require permits from local, state and/or federal agencies. A brief summary of different permit types follows; however, you should contact the appropriate agencies before beginning any stabilization activities.

State of Georgia: Stream Buffer Variance Permitting

Land disturbing activities that take place within 25 feet of streambanks (or within 50 feet of trout streams) usually require a buffer variance under the Georgia Erosion and Sedimentation (E&S) Act. State regulations afford single-family residences some exclusion from the requirement for a stream buffer variance. Some landscaping, maintenance, repair of existing structures, fences and other related activities which result in minor soil erosion may qualify as a minor land disturbing activity and thus do not require a buffer variance. Construction, maintenance, and repair of structures outside the buffer, including backfilling up to the edge of the buffer, are not subject to buffer variances but may be subject to other permits. Construction of a streambank or shoreline stabilization project within the buffer and without a buffer variance, except for minor land disturbing activities, is in violation of O.C.G.A. 12-7-6(b)(15) or (16) in the E&S Act. Failure to maintain a stream buffer may require the issuance of a stop work order (O.C.G.A. 12-7-12(d)). For additional information on the E&S Act, what constitutes a minor land disturbing activity, and the process of obtaining a buffer variance from EPD, please visit EPD's website, <http://www.gaepd.org/>, or call the NonPoint Source Program of the Georgia EPD at 404-675-6240.

Permits may be required by:

- U.S. Army Corps of Engineers (ACOE)
- U.S. Fish and Wildlife Service
- DNR – Environmental Protection Division
- DNR – Coastal Resources Division
- DNR – State Historic Preservation Division
- Local governments (Cities, Counties)
- Other entities (Utilities, Authorities)

Please contact appropriate agencies BEFORE beginning any stabilization activities.

State of Georgia: Coastal Marshland and Shore Protection Act

Special permit requirements may apply in tidal waters and ocean shorelines of the State. The State of Georgia claims title for the public to ocean shorelines up to the ordinary high water mark and to all coastal marshlands except those that have been granted to individuals by the Crown or the State. Granted marshlands remain in the jurisdiction of the State due to the vital ecological functions performed by these wetlands. A Coastal Marshlands Protection Act permit is required for any project that involves removing, filling, dredging, draining or otherwise altering marshlands. A Shore Protection Permit is required for any shoreline engineering activity that alters the natural topography or vegetation of any area within the dynamic dune field or submerged shoreline lands of the State. Generally, projects may be permitted if they are water related or dependent on waterfront access; do not have a feasible alternative non-marshland site; do not harm or alter natural flow of navigational waters; do not increase erosion, shoaling channels or create stagnant pools; and do not interfere with public access or with the conservation of marine life, wildlife or other resources. A State revocable license may also be required for activities occurring in tidal areas. Marsh and Shore Protection Permits are coordinated with the U.S. Army Corps of Engineers (ACOE) when appropriate. For assistance in determining appropriate jurisdictional areas or for other information, please contact the Georgia Coastal Resource Division at 912-264-7218.

U.S. Army Corps of Engineers (ACOE) Nationwide Permits (NWP)

Nationwide permits are general permits that authorize specific types of activities which the ACOE has determined will have minimal impacts on the aquatic environment, individually and cumulatively, when conducted in accordance with the permit conditions (ACOE, 2007). For details on how to proceed for all NWPs, please see the ACOE website: http://www.usace.army.mil/cw/cecwo/reg/nationwide_permits.htm.

Nationwide Permit Number 13: BANK STABILIZATION

Application and/or notification to the ACOE may be required for streambank stabilization projects. Bank stabilization activities necessary for erosion prevention are covered under NWP 13 provided the activity meets **all** of the following criteria:

- a. No material is placed more than the minimum needed for erosion protection;
- b. The bank stabilization activity is less than 500 feet in length;
- c. The activity will not exceed an average of one cubic yard of material per running foot placed along the bank below the plane of the ordinary high water mark or the high tide line;
- d. No material is placed in any special aquatic site, including wetlands;
- e. No material is of the type, or is placed in any location, or in any manner, to impair surface water flow into or out of any wetland area;
- f. No material is placed in a manner that will be eroded by normal or expected high flows and,
- g. The activity is part of a single and complete project.

Bank stabilization activities in excess of 500 feet in length or greater than an average of one cubic yard per running foot may be authorized if the permittee notifies the District Engineer in accordance with the “*Notification*” General Condition 13, and the District Engineer determines a) the activity complies with the other terms and conditions of the NWP and b) the adverse environmental effects are minimal both individually and cumulatively. This NWP may not be used for the channelization of waters of the U.S.

Nationwide Permit Number 27: STREAM AND WETLAND RESTORATION

Application and/or notification to the ACOE may be required for stream and wetland restoration projects. Installation of instream structures for the purposes of restoration are allowed under the ACOE Nationwide Permit 27, which includes “the installation of current deflectors; the enhancement, restoration, or creation of riffle and pool sequences; [or] the placement of instream habitat structures.”

Protected Species Permitting

Please contact the U.S. Fish and Wildlife Service to determine if your project requires a permit related to threatened or endangered species at <http://www.fws.gov/permits/> or 404-679-4176.

Native Riparian Vegetation

A buffer consisting of **native riparian vegetation** is the most effective, and frequently the least expensive, way to protect the long-term ecological function of our streams and rivers. Native riparian streambank vegetation is critical for erosion and sediment control, soil regeneration, floodplain integrity, stream shading, biological inputs, and aquatic and terrestrial habitat. To be ecologically functional and effective at addressing erosion and nonpoint source pollution, native riparian vegetation must consist of NATIVE species, and those adapted to Georgia’s riparian forests and/or stream edges. Vegetation or practices such as installing lawn or non-native turf grass, invasive species or vegetation lacking multi-trophic level structure is not effective as functional native riparian vegetation. Native riparian vegetation should be “multi-trophic,” i.e., many layers with a mix of low-growing grasses, forbs (non-woody flowering plants other than grass), and other plants; small trees, bushes and/or shrubs; and canopy cover from medium to larger trees. If naturally occurring vegetation at a specific site is not multi-trophic (such as marshes, savannah areas, etc.), then restored or re-established vegetation should mimic the native vegetation of surrounding areas. Contact your local extension agent at 1-800-ASK-UGA1 or <http://www.caes.uga.edu/extension>, NRCS at <http://offices.sc.egov.usda.gov/locator/app>, or consult the “Additional Resources” at the end of this document for more information about native

plants of Georgia. The buffer may be trimmed to create “lines of sight” to provide views of structures and/or surface water and still remain effective; however an entire trophic layer should NOT be removed. For more information on trimming for lines of sight, see the *Riparian Buffer Modification and Mitigation Guidance Manual*, Section 3.1 at the following site: <http://www.cblad.virginia.gov/ripbuffstat.cfm>. Certain areas such as overhead utility lines, areas subject to FAA regulations, and areas related to military training and readiness may not be required to restore trees or large shrubs.

LEVEL 1: PREFERRED

Non-Structural and/or Bio-Engineering Practices

The water-land interface and riparian ecosystem are the most important links between upland and aquatic habitats. A fully functional riparian zone includes **native riparian vegetation** consisting of canopy cover, shrub, brush and small tree structure, grasses, forbs and other vegetation and root systems. This vegetation structure plays an important role in soil stabilization and regeneration, floodplain integrity, water quality, stream inputs, and both upland and aquatic habitat. Streambank and shoreline stabilization should maintain or re-establish functional native riparian vegetation. **A Level 1 stabilization project will require shorter EPD review time for a stream buffer variance.**

Key Components:

- Very effective in areas with limited exposure to strong currents or wave action.
- Revegetation of the stabilized bank with native riparian vegetation is primary result.
- Proper design, installation and maintenance are critical.
- No additional mitigation required if installed properly.
- Use of current deflectors may be appropriate (see info box below).

Examples of Practices:

- Wetlands or marsh creation or restoration
- Live Posts – posts made of large cuttings installed in streambanks in square or triangular patterns.
- Live Stakes – live branch cuttings that are tamped or inserted into the earth to take root and produce vegetative growth.
- Live fascines – a long bundle of branch cuttings bound together in a cylindrical structure and placed into trenches along the streambank.
- Brush layering – live branch cuttings laid in crisscrossed fashion between successive layers of soil on horizontal benches excavated into the streambank.
- Brush mattress – a combination of live stakes, fascines, and live branch cuttings installed to cover and protect streambanks and shorelines.
- Branch packing – live woody branch cuttings and compacted soil used to repair slumped areas of streambanks.
- Toe protection (coconut fiber roll) – cylindrical structure composed of coconut husk fibers bound together with twine woven from coconut fiber.
- Toe protection (jute-mat log) - cylindrical structure composed of jute and lengths of branch cuttings.
- Vegetated geogrid – live branch cuttings placed in layers with soil lifts wrapped in erosion control fabric.

Additional Information:

- The existing erosion or other problem in need of restoration must be documented.
- No additional justification for buffer impacts of these practices is needed.

Current deflectors: Strategically placed current deflectors re-direct flow away from banks or shorelines, thus reducing erosion. Use of a current deflector will allow a more preferred means of bank stabilization when combined with bioengineering and vegetation. Shape, size, materials used, and angle of the deflection are important characteristics to consider before incorporating current deflectors into a restoration project. Rock or log vanes, J-hooks, or other instream structures are ecological and effective practices when used appropriately. Installation of instream structures for the purposes of restoration are allowed under the ACOE Nationwide Permit 27 (see *Permitting Information*, previous section). Current deflectors may not be recommended for tidal areas. Current deflectors may be advisable if your site has:

- Inadequate distance to re-slope bank to a 2:1 or 3:1 grade
- Bank failure due to excessive current stress on the outer (cut) bank of a meander bend
- Bank failure due to a migrating channel
- High undercut banks due to a channel that is deeply incised and no longer connected to the floodplain
- Channelized and straightened streams in the evolutionary process of adjusting their pattern
- Evidence of a headcut that is migrating upstream
- Increased urbanization in the watershed resulting in an increase (rate and volume) in runoff to channel
- Frequent bank-full or near bank-full flows downstream of a dam

LEVEL 2: ACCEPTABLE

Integrated Practices (Vegetative and/or bio-engineering practices with one or more structural components)

Many of the practices listed in the previous section may be adapted to areas with higher velocity flows and/or wave action by the addition of a structural component. This is most often appropriate at the “toe” of the bank or shoreline, to prevent additional bank slumping. Again, non-structural and vegetative practices should be used whenever possible; therefore, in an integrated system, the structural components should be minimal, and should only be placed where necessary to ensure the long-term success of the stabilization efforts. Level 2 stabilization should maintain or re-establish functional native riparian vegetation. **A Level 2 stabilization project may require shorter EPD review time for a stream buffer variance.**

Key Components:

- Most stabilization projects on fast-flowing streams or in areas of wave action will be Integrated Practices.
- Integrated Practices use structural components as little as possible and only where necessary and appropriate. Re-vegetation is still the main goal..
- Use of stone or riprap to stabilize the toe of a streambank may be necessary; however, use of trees, logs, and rootwads is encouraged. In most cases, structural component should extend no higher than high water mark.
- Proper design, installation and maintenance are critical, including sizing and placement of structural components.
- No additional mitigation required if installed properly.
- Use of current deflectors may allow more preferred methods of stabilization (see *current deflectors*, previous section).

Examples of Practices:

- Joint planting - the insertion of live stakes in the spaces or joints, between previously placed rock riprap.
- Live cribwalls – a rectangular framework of logs or timbers constructed with layers of live plant cuttings that are capable of rooting.
- Vegetated gabions - wire-mesh, rectangular baskets filled with small to medium size rock and soil and laced together to form a structural toe or sidewall. Live branch cuttings are placed on each consecutive layer between the rock filled baskets to take root, consolidate the structure, and bind it to the slope.
- Tree, rootwad and log revetments – an armored bank constructed from trees, root wads or logs that are cabled together and anchored to the bank.
- Breakwalls used in conjunction with other soil bioengineering practices – logs or hay bales, lined up parallel to the shore to break wave action and to promote vegetative recovery of the shoreline.

Additional Information:

- The existing erosion or other bank shoreline problem in need of restoration must be documented.
- Additional justification is needed as to why and which structural components are more appropriate for this specific site. This may include assessing the critical flows at the site, including magnitude and frequency of bank-full and over-bank flows.

LEVEL 3: DISCOURAGED

Structural Practices (Structural practices with limited or minimally functional vegetation, or no re-vegetation)

Structural practices such as rip rap, bulkheads and seawalls are a traditional and conventional method of hard-armoring streambanks and shorelines to address erosion. However, these practices tend to degrade the quality of aquatic habitat and contribute to downstream erosion over long periods of time. Also, such practices are frequently installed for aesthetic reasons, so it is difficult to evaluate when they are truly necessary to address erosion. Since newer technology and practices are now available, and many more contractors are familiar with new stream and shoreline stabilization practices, the use of such armoring is diminishing and should be discouraged. However, there are locations where hard armoring may be necessary.

Key Components:

- Appropriate only in cases of severe erosion or severe wave action.
- **MITIGATION:** For projects that require a buffer variance from EPD, mitigation will be required proportional to the area of the riparian buffer impacted.
- “Minimally functional” vegetation includes practices such as lawn or non-native turfgrass, invasive species (such as privet, kudzu, autumn olive, or other non-natives), or vegetation lacking multi-trophic level structure.
- Site must be evaluated for soil erosiveness, and the condition of adjacent banks and shorelines.
- Use of current deflectors may allow more preferred methods of stabilization (see *current deflectors*, previous section).
- Proper design, installation and maintenance are critical, including sizing and placement of stone.

Examples of Practices:

- Bulkheads and seawalls
- Riprap or other stone
- Non-vegetated revetments (concrete, stone, gabions)
- Other non-vegetated bank armoring

Additional Information:

- The existing erosion or other bank shoreline problem in need of restoration must be documented.
- Additional justification is needed as to why and which extreme structural components are more appropriate for this specific site and why non-structural bio-engineering or integrated practices are not being implemented. This may include assessing the critical flows at the site, including magnitude and frequency of bank-full and over-bank flows. Justification must also be provided as to why the site will not be re-vegetated.
- Examples where intense structural components MAY be justified include: potential loss of occupied dwelling, business, or school; threat to human safety; significant loss of property; threat or imminent loss of critical infrastructure such as bridges, pipelines, utility infrastructure or water intakes; threat or imminent loss of historic or cultural resources; or general public access and/or heavy recreational use.
- The applicant must indicate that transfer of streamflow or wave energy downstream or to neighboring locations will be minimized as much as is practical. This may include the use of return walls or wing deflectors.

MITIGATION FOR LEVEL 3 STABILIZATION

Mitigation required by the ACOE may be acceptable to comply with this requirement. For more information, please contact EPD's NonPoint Source Program at 404-675-6240.

If the area to be stabilized under Level 3 consists of less than 50 linear feet per single and complete project, as measured horizontally along the bank, the applicant must:

- Ensure any run-off from future impervious surface constructed **within 25 feet of the stabilization structure** does not flow untreated directly into surface water, excluding the stabilization structure itself and any boat ramps. This can be achieved through vegetative treatment or stormwater controls.
- Maintain or restore **native riparian vegetation** within the first 25 feet along **50%** of the stabilization structure, with special emphasis on restoring vegetation at the high water line or the water-land interface.
- Eliminate or minimize nonpoint source impacts **within 25 feet of the stabilization structure**, including fertilizers, pesticides and pet wastes.

If area to be stabilized under Level 3 is between 50 and 250 linear feet per single and complete project, as measured horizontally along the bank, the applicant must:

- Ensure any run-off from future impervious surface constructed **within 25 feet of the stabilization structure** does not flow untreated directly into surface water, excluding the stabilization structure itself and any boat ramps. This can be achieved through vegetative treatment or stormwater controls.
- Maintain or restore **native riparian vegetation** within the first 25 feet along **75%** of the stabilization structure, with special emphasis on restoring vegetation at the high water line and/or the water-land interface.
- Eliminate or minimize nonpoint source impacts **within 25 feet of the stabilization structure**, including fertilizers, pesticides and pet wastes.

If the area to be stabilized under Level 3 is greater than 250 linear feet or more per single and complete project, the applicant must:

- Ensure any run-off from existing or future impervious surface constructed on **the entire site** does not flow untreated directly into surface water, excluding the stabilization structure itself and any boat ramps, and all run-off generated on-site is addressed using practices that conform to the guidance established in the *Georgia Stormwater Management Manual* (Blue Book).
- Maintain or restore **native riparian vegetation** within the first 25 feet along **75%** of the stabilization structure, with special emphasis on restoring vegetation at the high water line and/or the water-land interface. If this mitigation is not feasible on-site, then buffer preservation or restoration off-site may be allowed (preferably within the same 12-digit hydrologic unit code (HUC) watershed but definitely within the same 10-digit HUC watershed).
- Eliminate or minimize nonpoint source impacts **within 25 feet of the stabilization structure**, including fertilizers, pesticides and pet wastes.

Additional Resources:

Streambank and Shoreline Restoration and Stabilization and Riparian Buffers

USDA Forest Service, *A Soil Bioengineering Guide for Streambank and Lakeshore Stabilization*, 2002.

USEPA, *National Management Measures to Control Nonpoint Source Pollution from Hydromodification*, DRAFT, 2006.

USEPA. Streambank stabilization documents. www.epa.gov/owow/nps/bestnpsdocs.html

GADNR-CRD, EMC Engineering, and Coastal RDC, *Georgia's Green Growth Guidelines*, Chapter 4: Streambank Stabilization, 2006.

<http://crd.dnr.state.ga.us/assets/documents/GGG4.pdf>

North Carolina Stream Restoration Institute, *Stream Restoration: A Natural Channel Design Handbook*.

GSWCC. *Guidelines for Streambank Restoration*. March, 2000.

http://gaswcc.georgia.gov/vgn/images/portal/cit_1210/60/20/31110081Guidelines_Streambank_Restoration.pdf

NRCS. Electronic Technical Guide. <http://www.nrcs.usda.gov/Technical/efotg/>

Palmer et al (2005) "Standards for Ecologically Sustainable River Restoration" *Journal of Applied Ecology*

Virginia Department of Conservation and Recreation, *Riparian Buffer Modification and Mitigation Guidance Manual*, 2002, <http://www.cblad.virginia.gov/ripbuffstat.cfm>

Watershed Planning

USEPA, *Handbook for Developing Watershed Plans to Restore and Protect our Waters*, 2005. http://www.epa.gov/nps/watershed_handbook/

TMDL Implementation Planning: EPD and Regional Development Centers

Georgia's Section 319(h) Nonpoint Source Implementation Grants

Native Vegetation

Georgia Native Plant Society – <http://www.gnps.org/>

Georgia Wildlife Federation Plant Index – <http://www.gwf.org/plantindex.htm>

Tennessee Valley Authority. *Landscaping with Native Shrubs in Utility Right-of-Ways*. 1998 <http://www.tva.gov/power/projects/plantnative.pdf>

Recommended Plantings for Coastal Streambanks. *Georgia's Green Growth Guidelines*, Chapter 4: Streambank Stabilization, 2006. (see above for website).

**GEORGIA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION**

**REVISED MARCH 2014 – ADDRESS CHANGE ONLY
APPLICATION FOR A 50-FOOT VEGETATIVE BUFFER ENCROACHMENT
ON DESIGNATED TROUT WATERS OF THE STATE**

(Required prior to conducting land disturbing activities within the State-mandated 50-foot buffer in accordance with the Erosion and Sedimentation Act of 1975, as amended, O.C.G.A. 12-7-6(b)(16))

Property Owner's Name (*Person*): _____

Company Name (*if applicable*): _____

Current Mailing Address: _____

Telephone: _____ E-Mail: _____

Contact Person's Name and Address: _____

Contact Person's Telephone: _____ E-Mail: _____

Contact Person's Company Name (*if applicable*): _____

Project Name: _____

Total Project Disturbed Acreage: _____

Type of Project: _____

Buffer Variance Criteria (*391-3-7.05(2)(a) – (k)*): _____

Location of Buffer Impacts:

City (*list only if the buffer impacts are located within jurisdictional boundaries of the municipality*): _____

County (*list only if the buffer impacts are located within jurisdictional boundaries of the county*): _____

GPS Coordinates (*decimal degrees*): Latitude: _____ Longitude: _____

Watershed Name and 8-digit HUC (*Hydrologic Unit Code*): _____

Detailed Directions to Project (*attach location map and USGS quad sheet*): _____

Name of State Water(s) Impacted: _____
(*if unnamed, indicate the first named State water that this tributary flows into*)

Total Area of Buffer Disturbance (*square feet*): _____

Total Length of Buffer Disturbance (*linear feet*): _____

Signature: _____

Date: _____

- 1) Pursuant to DNR Rule 391-3-7.05, buffer variance applications will be reviewed by the Director only where the applicant provides reasonable evidence that impacts to the buffer have been avoided or minimized to the fullest extent practicable and only for the following criteria:
- (a) The project involves the construction or repair of an existing infrastructure project or a structure that, by its nature, must be located within the buffer. Such structures include, but are not limited to dams, public water supply intake structures, detention/retention ponds, waste water discharges, docks including access ways, boat launches including access ways, and stabilization of areas of public access to water; or
 - (b) The project will result in the restoration or enhancement to improve water quality and/or aquatic habitat quality; or
 - (c) Buffer intrusion is necessary to provide reasonable access to a property or properties; or
 - (d) The intrusion is for gravity-flow sewer lines that cannot reasonably be placed outside the buffer, and stream crossings and vegetative disturbance are minimized; or
 - (e) Crossing for utility lines, including but not limited to gas, liquid, power, telephone, and other pipelines, provided that the number of crossings and the amount of vegetative disturbance are minimized; or
 - (f) Recreational foot trails and viewing areas, providing that impacts to the buffer are minimal; or
 - (g) The project involves construction of one (1) single family home for residential use by the owner of the subject property and, at the time of adoption of this rule, there is no opportunity to develop the home under any reasonable design configuration unless a buffer variance is granted. Variances will be considered for such single family homes only if construction is initiated or local government approval is obtained prior to January 10, 2005; or
 - (h) NOT APPLICABLE TO TROUT WATERS;
 - (i) NOT APPLICABLE TO TROUT WATERS;
 - (j) NOT APPLICABLE TO TROUT WATERS;
 - (k) The proposed land disturbing activity within the buffer is not eligible for a permit from the United States Army Corps of Engineers under Section 404 of the federal Water Pollution Control Act Amendment of 1972, 33 U.S.C. Section 1344, but includes required mitigation in accordance with the current EPD Stream Buffer Mitigation Guidance document, and involves:
 - (1) NOT APPLICABLE TO TROUT WATERS;
 - (2) stream buffer impacts due to new infrastructure projects adjacent to State waters (jurisdictional and non-jurisdictional Waters of the U.S.). This criterion shall not apply to maintenance and/or modification to existing infrastructure, which are covered under 391-3-7.05(2)(a).

NOTE: Projects that include “streambank or shoreline stabilization” (e.g., criterion (a)) or “streambank restoration” (e.g., criterion (b)) should adhere to the most current guidance documents: Streambank and Shoreline Stabilization Guidance, Guidelines for Streambank Restoration and Streambank and Shoreline Stabilization – Techniques to Control Erosion and Protect Property.

Projects reviewed under criterion (k)(2) should adhere to the most current EPD guidance document, Stream Buffer Mitigation Guidance, when applicable. All guidance documents are available on the EPD website, www.gaepd.org.

- 2) **Mail completed buffer variance application to:** Erosion and Sedimentation Control Unit
(Revised March 2014) Georgia Environmental Protection Division
2 Martin Luther King Jr Drive SW, Suite 1462
Atlanta, GA 30334

NOTE: APPLICATIONS MUST BE ON THE MOST CURRENT FORMS PROVIDED BY EPD.

- 3) **Address all items on the attached Buffer Impact Checklist and submit the completed checklist and other pertinent information with the buffer variance application to EPD.**

NOTE: INCOMPLETE APPLICATIONS WILL BE RETURNED TO THE APPLICANT.

- 4) **Within 60 days of receipt of a complete buffer variance application, EPD will either provide written comments to the applicant or propose to issue a buffer variance. EPD may request additional information related to the project necessary to effectively evaluate the buffer variance application. When EPD proposes to issue a buffer variance, the application process will continue in the following order:**

- (a) EPD will send out a public advisory to all citizens and groups that requested to receive advisories.
- (b) The applicant will then publish a single public notice in the correct legal organ of each county where the buffer disturbance will occur (http://georgiapublicnotice.com/pages/legal_organs). The applicant's public notice must include the following:
 - 1) Description of proposed buffer encroachment;
 - 2) Location of the project;
 - 3) Location where the public can review site plans; and
 - 4) Statement that public comments should be submitted within 30 days to: Program Manager, NonPoint Source Program, Georgia Environmental Protection Division, 2 Martin Luther King Jr Drive SW, Suite 1462, Atlanta, GA 30334.

NOTE: The applicant can publish a public notice(s) only after EPD has issued a public advisory for the proposed buffer variance.

- (c) The applicant must forward the ***“original newspaper sheet with the public notice and published date”*** to EPD to confirm that the public notice has been published. A *“copy of the public notice”* is also acceptable only when accompanied by a sworn affidavit from the legal organ's notary public.

NOTE: Failure by the applicant to complete items 4(b) and 4(c) will delay EPD review and approval.

- (d) The public must have 30 days from the date of publication of the public notice in the legal organ to comment on the proposed buffer variance.

BUFFER IMPACT CHECKLIST

Pursuant to DNR Rule 391-3-7.05, all buffer variance applications must include the following information. All narrative descriptions, calculations and documentation must be provided on the Buffer Impact Checklist form below or in a separate report. All plans, letters from Local Issuing Authorities, copies of USACE permit applications and supporting documentation, and site maps should be submitted as attachments:

Y/N/NA

- (1) Narrative description of the project, with details of the buffer disturbance, including estimated length of time for the disturbance and justification for why the disturbance is necessary.
- (2) Calculation of total area (square feet) and length (linear feet) of buffer disturbance.
- (3) Letter from the Local Issuing Authority (LIA), when applicable, stating that the LIA has visited the site and determined the presence of State waters that require a buffer and that a stream buffer variance is required as per the local erosion and sedimentation control ordinance.
- (4) For projects within the buffer of or upstream and within one **linear** mile of impaired stream segments on Georgia's "305(b)/303(d) List Documents (Final)," documentation that the project will have no adverse impacts relative to the pollutants of concern and if applicable, documentation that the project will be in compliance with the TMDL Implementation Plan(s).
- (5) For all **minor buffer impacts*** (as defined in DNR Rules 391-3-7.01), a **Re-Vegetation Plan** with a descriptive narrative as described in the EPD guidance document, Streambank and Shoreline Stabilization, and/or a plan for permanent vegetation as per the Manual for Erosion and Sedimentation Control in Georgia.
- (6) For all **major buffer impacts*** (as defined in DNR Rules 391-3-7.01), a **Buffer Mitigation Plan** with a descriptive narrative addressing impacts to critical buffer functions based on an evaluation of existing buffer conditions and predicted post buffer conditions pursuant to DNR Rule 391-3-7.05(7).
- (7) For variance requests under DNR Rules 391-3-7.05(2)(k)(2), the application must include documentation that the project will mitigate buffer disturbances based on the EPD guidance document, Stream Buffer Mitigation Guidance, addressing post-development total suspended solids (TSS), stormwater runoff reduction, water quality protection and aquatic/buffer habitat protection.
- (8) Narrative description of the shape, size, topography, slope, soils, vegetation and other physical characteristics of the property.
- (9) Any other reasonable information related to the project that may be deemed necessary to effectively evaluate the variance request.
- (10) **Site Map** that includes locations of all State waters, wetlands, floodplain boundaries and other natural features, as determined by a field survey.
- (11) **Erosion, Sedimentation and Pollution Control Plan** with a dated and numbered detailed **Site Plan** delineating the locations of all structures, impervious surfaces, and the boundaries of the area of soil disturbance, both inside and outside of the buffer. Submit only the cover sheet and the sheets of the Erosion, Sedimentation and Pollution Control Plan that pertain to the buffer impacts.

NOTE: THE EXACT AREA OF THE BUFFER TO BE IMPACTED MUST BE ACCURATELY AND CLEARLY INDICATED ON THE PLANS.

- (12) **Stormwater Control Plan** once site stabilization is achieved, when required by a local stormwater ordinance.

BUFFER IMPACT CHECKLIST

Pursuant to DNR Rule 391-3-7.05, all buffer variance applications must include the following information. All narrative descriptions, calculations and documentation must be provided on the Buffer Impact Checklist form below or in a separate report. All plans, letters from Local Issuing Authorities, copies of USACE permit applications and supporting documentation, and site maps should be submitted as attachments:

NOTES:

Minor Buffer Impact, as defined in DNR Rules 391-3-7.01, means an impact that upon completion yields no additional above ground, man-made materials or structures within the buffer, and maintains the original grade, and results in less than 5,000 square feet of buffer impacts per stream crossing and/or less than 5,000 square feet of buffer impacts per individual area of encroachment for each project.

Major Buffer Impact, as defined in DNR Rules 391-3-7.01, means any impact that does not meet the definition of **Minor Buffer Impact**.

**GEORGIA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION**

**REVISED MARCH 2014 – ADDRESS CHANGE ONLY
APPLICATION FOR A 25-FOOT VEGETATIVE BUFFER ENCROACHMENT
ON DESIGNATED WARM WATERS OF THE STATE**

(Required prior to conducting land disturbing activities within the State-mandated 25-foot buffer in accordance with the Erosion and Sedimentation Act of 1975, as amended, O.C.G.A. 12-7-6(b)(15))

Property Owner's Name (*Person*): _____

Company Name (*if applicable*): _____

Current Mailing Address: _____

Telephone: _____ E-Mail: _____

Contact Person's Name and Address: _____

Contact Person's Telephone: _____ E-Mail: _____

Contact Person's Company Name (*if applicable*): _____

Project Name: _____

Total Project Disturbed Acreage: _____

Type of Project: _____

Buffer Variance Criteria (391-3-7.05(2)(a) – (k)): _____

Location of Buffer Impacts:

City (*list only if the buffer impacts are located within jurisdictional boundaries of the municipality*): _____

County (*list only if the buffer impacts are located within jurisdictional boundaries of the county*): _____

GPS Coordinates (*decimal degrees*): Latitude: _____ Longitude: _____

Watershed Name and 8-digit HUC (*Hydrologic Unit Code*): _____

Detailed Directions to Project (*attach location map and USGS quad sheet*): _____

Name of State Water(s) Impacted: _____

(*if unnamed, indicate the first named State water that this tributary flows into*)

Total Area of Buffer Disturbance (*square feet*): _____

Total Length of Buffer Disturbance (*linear feet*): _____

Signature: _____

Date: _____

- 1) Pursuant to DNR Rule 391-3-7.05, buffer variance applications will be reviewed by the Director only where the applicant provides reasonable evidence that impacts to the buffer have been avoided or minimized to the fullest extent practicable and only for the following criteria:
- (a) The project involves the construction or repair of an existing infrastructure project or a structure that, by its nature, must be located within the buffer. Such structures include, but are not limited to dams, public water supply intake structures, detention/retention ponds, waste water discharges, docks including access ways, boat launches including access ways, and stabilization of areas of public access to water; or
 - (b) The project will result in the restoration or enhancement to improve water quality and/or aquatic habitat quality; or
 - (c) Buffer intrusion is necessary to provide reasonable access to a property or properties; or
 - (d) The intrusion is for gravity-flow sewer lines that cannot reasonably be placed outside the buffer, and stream crossings and vegetative disturbance are minimized; or
 - (e) Crossing for utility lines, including but not limited to gas, liquid, power, telephone, and other pipelines, provided that the number of crossings and the amount of vegetative disturbance are minimized; or
 - (f) Recreational foot trails and viewing areas, providing that impacts to the buffer are minimal; or
 - (g) The project involves construction of one (1) single family home for residential use by the owner of the subject property and, at the time of adoption of this rule, there is no opportunity to develop the home under any reasonable design configuration unless a buffer variance is granted. Variances will be considered for such single family homes only if construction is initiated or local government approval is obtained prior to January 10, 2005; or
 - (h) For non-trout waters, the proposed land disturbing activity within the buffer will require a permit from the United States Army Corps of Engineers under Section 404 of the federal Water Pollution Control Act Amendment of 1972, 33 U.S.C. Section 1344, and the Corps of Engineers has approved a mitigation plan to be implemented as a condition of such a permit; or
 - (i) For non-trout waters, a plan is provided for buffer intrusion that shows that, even with the proposed land disturbing activity within the buffer, the completed project will result in maintained or improved water quality downstream of the project; or
 - (j) For non-trout waters, the project with a proposed land disturbing activity within the buffer is located in, or upstream and within ten linear miles of, a stream segment listed as impaired under Section 303(d) of the federal Water Pollution Control Act Amendment of 1972, 33 U.S.C. Section 1313(d) and a plan is provided that shows that the completed project will result in maintained or improved water quality in such listed stream segment and that the project has no adverse impact relative to the pollutants of concern in such stream segment; or
 - (k) The proposed land disturbing activity within the buffer is not eligible for a permit from the United States Army Corps of Engineers under Section 404 of the federal Water Pollution Control Act Amendment of 1972, 33 U.S.C. Section 1344, but includes required mitigation in accordance with the current EPD Stream Buffer Mitigation Guidance document, and involves:
 - (1) piping, filling or re-routing of non-trout waters that are not jurisdictional Waters of the U.S.; or
 - (2) stream buffer impacts due to new infrastructure projects adjacent to State waters (jurisdictional and non-jurisdictional Waters of the U.S.). This criterion shall not apply to maintenance and/or modification to existing infrastructure, which are covered under 391-3-7.05(2)(a).

NOTE: Projects that include “streambank or shoreline stabilization” (e.g., criterion (a)) or “streambank restoration” (e.g., criterion (b)) should adhere to the most current guidance documents: Streambank and Shoreline Stabilization Guidance, Guidelines for Streambank Restoration and Streambank and Shoreline Stabilization – Techniques to Control Erosion and Protect Property.

Projects reviewed under criteria (h), (i), (j) or (k) should adhere to the most current EPD guidance document, Stream Buffer Mitigation Guidance, when applicable. All guidance documents are available on the EPD website, www.gaepd.org.

- 2) **Mail completed buffer variance application to:** Erosion and Sedimentation Control Unit
(Revised March 2014) Georgia Environmental Protection Division
2 Martin Luther King Jr Drive SW, Suite 1462
Atlanta, GA 30334

NOTE: APPLICATIONS MUST BE ON THE MOST CURRENT FORMS PROVIDED BY EPD.

- 3) **Address all items on the attached Buffer Impact Checklist and submit the completed checklist and other pertinent information with the buffer variance application to EPD.**

NOTE: INCOMPLETE APPLICATIONS WILL BE RETURNED TO THE APPLICANT.

- 4) **Within 60 days of receipt of a complete buffer variance application, EPD will either provide written comments to the applicant or propose to issue a buffer variance. EPD may request additional information related to the project necessary to effectively evaluate the buffer variance application. When EPD proposes to issue a buffer variance, the application process will continue in the following order:**

- (a) EPD will send out a public advisory to all citizens and groups that requested to receive advisories.
- (b) The applicant will then publish a single public notice in the correct legal organ of each county where the buffer disturbance will occur (http://georgiapublicnotice.com/pages/legal_organ). The applicant’s public notice must include the following:
- 1) Description of proposed buffer encroachment;
 - 2) Location of the project;
 - 3) Location where the public can review site plans; and
 - 4) Statement that public comments should be submitted within 30 days to: Program Manager, NonPoint Source Program, Georgia Environmental Protection Division, 2 Martin Luther King Jr Drive SW, Suite 1462, Atlanta, GA 30334.

NOTE: The applicant can publish a public notice(s) only after EPD has issued a public advisory for the proposed buffer variance.

- (c) The applicant must forward the **“original newspaper sheet with the public notice and published date”** to EPD to confirm that the public notice has been published. A **“copy of the public notice”** is also acceptable only when accompanied by a sworn affidavit from the legal organ’s notary public.

NOTE: Failure by the applicant to complete items 4(b) and 4(c) will delay EPD review and approval.

- (d) The public must have 30 days from the date of publication of the public notice in the legal organ to comment on the proposed buffer variance.

BUFFER IMPACT CHECKLIST

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Y/N/NA

- (1) Narrative description of the project, with details of the buffer disturbance, including estimated length of time for the disturbance and justification for why the disturbance is necessary.
- (2) Calculation of total area (square feet) and length (linear feet) of buffer disturbance.
- (3) Letter from the Local Issuing Authority (LIA), when applicable, stating that the LIA has visited the site and determined the presence of State waters that require a buffer and that a stream buffer variance is required as per the local erosion and sedimentation control ordinance.
- (4) For projects within the buffer of or upstream and within one **linear** mile of impaired stream segments on Georgia's "305(b)/303(d) List Documents (Final)," documentation that the project will have no adverse impacts relative to the pollutants of concern and if applicable, documentation that the project will be in compliance with the TMDL Implementation Plan(s).
- (5) For all **minor buffer impacts*** (as defined in DNR Rules 391-3-7.01), a **Re-Vegetation Plan** with a descriptive narrative as described in the EPD guidance document, Streambank and Shoreline Stabilization, and/or a plan for permanent vegetation as per the Manual for Erosion and Sedimentation Control in Georgia.
- (6) For all **major buffer impacts*** (as defined in DNR Rules 391-3-7.01), a **Buffer Mitigation Plan** with a descriptive narrative addressing impacts to critical buffer functions based on an evaluation of existing buffer conditions and predicted post buffer conditions pursuant to DNR Rule 391-3-7.05(7).
- (7) For variance requests under DNR Rules 391-3-7.05(2)(h),(i), (j) and (k), the application must include documentation that the project will mitigate buffer disturbances based on the EPD guidance document, Stream Buffer Mitigation Guidance, addressing post-development total suspended solids (TSS), stormwater runoff reduction, water quality protection and aquatic/buffer habitat protection.
- (8) For variance requests under DNR Rules 391-3-7.05(2)(i) and (j), the application must include the following:
 - (a) Documentation that post-development stormwater management systems conform to the minimum standards for water quality, channel protection, overbank flood protection and extreme flood protection as established in the Georgia Stormwater Management Manual or the equivalent and if applicable, the Coastal Stormwater Supplement to the Georgia Stormwater Management Manual.
 - (b) Documentation that existing water quality will be maintained or improved based on predicted pollutant loadings under pre- and post-development conditions as estimated by models accepted by EPD.
 - (c) For projects within the buffer of or upstream and within ten **linear** miles of impaired stream segments on Georgia's "305(b)/303(d) List Documents (Final)," documentation that the project will have no adverse impacts relative to the pollutants of concern as estimated by models accepted by EPD and if applicable, documentation that the project will be in compliance with the TMDL Implementation Plan(s).

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Y/N/NA

- (9) For variance requests under DNR Rule 391-3-7.05(2)(h), a copy of the permit application and supporting documentation as submitted to the United States Army Corps of Engineers (USACE) under Section 404 of the federal Water Pollution Control Act Amendment of 1972, 33 U.S.C. Section 1344.
 - (10) For variance requests under DNR Rule 391-3-7.05(2)(k)(1), the application must include documentation from the USACE verifying the water bodies identified in the application are **non-jurisdictional** Waters of the U.S. under Section 404 of the Clean Water Act.
 - (11) Narrative description of the shape, size, topography, slope, soils, vegetation and other physical characteristics of the property.
 - (12) Any other reasonable information related to the project that may be deemed necessary to effectively evaluate the variance request.
 - (13) **Site Map** that includes locations of all State waters, wetlands, floodplain boundaries and other natural features, as determined by a field survey.
 - (14) **Erosion, Sedimentation and Pollution Control Plan** with a dated and numbered detailed **Site Plan** delineating the locations of all structures, impervious surfaces, and the boundaries of the area of soil disturbance, both inside and outside of the buffer. Submit only the cover sheet and the sheets of the Erosion, Sedimentation and Pollution Control Plan that pertain to the buffer impacts.
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