

## **Buffer Mitigation Guidance**

This guidance serves as a framework to provide predictability and consistency for development, review and approval of mitigation plans for buffer variances. It provides a method for determining mitigation requirements for variance applications. For the purpose of this Guidance, mitigation is those conditions, actions or measures taken to reduce the severity of the loss of buffer functions caused by the buffer intrusion.

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 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, 391-3-7-.05 DNR Rules on Buffer Variance Procedures and Criteria, or 391-3-7-.11 DNR Rules on Coastal Marshlands Buffer Variance Procedures and Criteria.

Ongoing and future buffer studies may lead to changes to this document.

### **When Mitigation is Required**

Mitigation is **required** for each of the 11 criteria in Section 391-3-7-.05(2)((a) – (k)) (Buffer Variance Procedures and Criteria) and for each of the 11 criteria in Section 391-3-7-.11((a) – (k)) (Coastal Marshlands Buffer Variance Procedures and Criteria). Criteria (h), (i), (j), (k)(1), and major impacts under (k)(2) in Section 391-3-7-.05(2) and Criteria (h), (i), (j), (k)(1) and major impacts under (k)(2) in Section 391-3-7-.11(2) require mitigation in accordance with the guidance described below. Mitigation for the remaining criteria is as described in 391-3-.05(7)(d)(1-10) and 391-3-.11(7)(d)(1-9). EPD staff will evaluate the applicant’s application to ensure that the proposed mitigation offsets the buffer impacts.

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. In addition, Variance by Rule activities in 391-3-7-.11(9) are not subject to these requirements.

## Mitigation Requirements

A buffer extending out from a buffered feature serves three main functions: (1) post-development total suspended solids and stormwater runoff reduction, (2) water quality protection and (3) aquatic/buffer habitat protection. The following mitigation requirements were established to address all three functions. All applicants applying for a buffer variance must comply with the following three components, as applicable:

### ***1. Post-Development Total Suspended Solids and/or Stormwater Runoff Reduction***

The applicant must use on-site minimum stormwater management standards that conform to guidance established in Section 4.2.3 of the Georgia Stormwater Management Manual (or “Blue Book”) to either retain the first 1.0 inch of rainfall on the site or intercept the stormwater runoff from the first 1.2” of rainfall and reduce average annual post-development total suspended solids (TSS) loadings by 80%.

If located within Georgia’s Coastal Nonpoint Source Management Area, 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 to reduce the stormwater runoff volume generated by the first 1.2” of rainfall. However, if the full 1.2” of stormwater runoff volume cannot be reduced due to site characteristics or constraints, it should be intercepted and treated to provide for at least an 80% reduction in TSS loads and a reduction in nitrogen and bacteria loads to the maximum extent possible.

**For major impacts under criteria (h), (k)(1) and (k)(2) in Section 391-3-7-.05 (2) and (h), (k)(1) and (k)(2) in Section 391-3-7-.11(2), justification must be provided and mitigation credits, preservation or restoration will be required as a substitute when post-development TSS and/or stormwater runoff reduction cannot be addressed on the site. Mitigation credits purchase, preservation and restoration must be in accordance with the Standard Operating Procedure in Appendix B, *Calculations for Buffer Credits, Preservation and Restoration Activities*.**

### ***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 the BMP Selection Guide, Table 4.1.3-1 of the Georgia Stormwater Management Manual. 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. The BMP or “treatment train” shall be designed to retain the first 1.0” of rainfall on site or at designated off site treatment area to the maximum extent practicable. If the entire 1.0 inch runoff reduction standard cannot be achieved, the remaining runoff from the 1.2 inch rainfall event must be treated by BMPs to remove at least 80% of the calculated average annual post-development TSS loading from the site. Please refer to Section 4.1.6.1 of the Blue Book for calculating removal rates of “treatment trains.” Should the applicant choose practices not listed in Table 4.1.3-1, 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 buffer variance application.

**For major impacts under criteria (h), (k)(1) and (k)(2), in Section 391-3-7-.05 (2) and (h), (k) (1) and (k)(2) in Section 391-3-7-.11(2), justification must be provided and mitigation credits, preservation or restoration will be required as a substitute when water quality protection cannot be addressed on the site. Mitigation credits, preservation and restoration must be in accordance with the Standard Operating Procedure in Appendix B, *Calculations for Buffer Credits, Preservation and Restoration Activities*.**

### ***3. Aquatic/Buffer Habitat Protection***

To protect aquatic and buffer habitats, an applicant must comply with the following when applicable:

- a. Criterion (h) in Section 391-3-7-.05 (2) and (h) in Section 391-3-7-.11(2)
  1. Mitigation credits must be purchased in accordance with the USACE Section 404 Permitting requirements included in the published USACE Standard Operating Procedures, **or**
- b. Criterion (k)(1) in Section 391-3-7-.05(2) and (k)(1) in Section 391-3-7-.11(2) and major impacts under criterion (k)(2) in Section 391-3-7-.05 (2) and (k)(2) in Section 391-3-7-.11(2)
  1. Mitigation credits must be purchased in accordance with the Standard Operating Procedure in Appendix B, *Calculation for Buffer Credits, Preservation and Restoration Activities*, or
  2. Complete one of the following:
    - i. Preserve State waters buffer:
      1. 1.5 times the impacted area if the preservation occurs on-site
      2. 3 times the impacted area if the preservation occurs off-site
    - ii. Restore State waters buffer:
      1. 1.5 times the impacted are if the restoration occurs on-site
      2. 3 times the impacted area if the restoration occurs off-site

The preservation and/or restoration must be done permanently through a restrictive covenant. The land to be preserved or restored:

- Must contain native riparian species;
- Must be “multi-trophic;” i.e., have low growing grasses, forbs (non-woody flowering plants other than grass<sup>0</sup>, and other plants; small trees, bushes and shrubs AND canopy cover (medium to large trees);
- May be trimmed to provide “lines to sight” to provide a view of a house and/or surface water; however, an entire trophic layer must NOT be removed.
- Must be in accordance with EPD’s “Streambank and Shoreline Stabilization Guidance”.

It is preferred that these mitigation practices be done on site. However, they will often have to occur off site due to the nature of the project. If the mitigation must be done off site, it must remain within the same 10-digit hydrologic unit code (HUC) watershed as the buffer impact. For large projects covering multiple 10-digit HUC watersheds, the mitigation practices may be completed in any of the affected HUC-10 watersheds. The US Geological Survey, the Natural Resources Conservation Service, or EPD can provide maps and delineations of HUC-10 watersheds.

## **Additional Information**

### 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.” “There is established a 25 foot buffer along coastal marshlands, as measured horizontally from the coastal marshland-upland interface (Jurisdictional Determination (JD) Line), as determined in accordance with Part 4 of Article 4 of Chapter 5 of this title, the “Coastal Marshlands Protection Act of 1970”. On-site preservation mitigation areas must be permanently protected through a restrictive covenant as discussed above under “Mitigation Requirements”.

For a complete listing of the Buffer Variance Procedures and Criteria and Coastal Marshlands Buffer Variance Procedures and Criteria in the Rules for Erosion and Sedimentation (391-3-7), please go to: <http://epd.georgia.gov/existing-rules-and-corresponding-laws>.

### Coastal Nonpoint Source Management Area

Georgia’s Coastal Nonpoint Source Management Area is comprised of the first two tiers of counties that border the Atlantic Ocean. This 11-county area is also known as the *Coastal Management Program Service Area* and is synonymous with the area regulated by the Georgia Coastal Management Act. Counties include: Bryan, Brantley, Camden, Charlton, Chatham, Effingham, Glynn, Liberty, Long, McIntosh and Wayne.

### Coordination with Section 404 Permits

Applicants for a buffer variance under criterion (h) in Section 391-3-7-.05 of the DNR Rules on Buffer Variance Procedures and Criteria and (h) in Section 391-3-7-.11 of the DNR Rules on Coastal Marshlands 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.

### Impacted Area

The area of impact, as used in this document, includes 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) and 391-3-7-.11(2).

### 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, for a complete discussion of maintenance.

<http://www.atlantaregional.com/environment/georgia-stormwater-manual>

### 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.***

### Native Riparian Plant Species

Native riparian plant species should be species that are adapted to riparian forests, marsh edges, 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://extension.uga.edu/>

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

<http://offices.sc.egov.usda.gov/locator/app?agency=nrcs>

### 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.

### Wrested Vegetation

Wrested vegetation means the movement of water that removes soil, debris and vegetation, creating a clear demarcation between water flow and vegetative growth.

Appendix A  
Pollutant Removal Efficiency Rates by Practices

BMP	Stormwater Management & Treatment						
	WQ <sub>v</sub> / TSS	CP <sub>v</sub>	Q <sub>p25</sub> / Q <sub>f</sub>	Total Phosphorus	Total Nitrogen	Fecal Coliform	Metals
Bioretention Basins <sup>3, 5, 6</sup>	85%	❖	❖	80%	60%	90%	95%
Bioslopes <sup>7</sup>	85%	❖	X	60%	25%	60%	75%
Downspout Disconnects <sup>2</sup>	80%	X	X	25%	25%	N/A**	40%
Dry Detention Basins <sup>6</sup>	60%	X	✓	10%	30%	N/A**	50%
Dry Extended Detention Basins <sup>2</sup>	60%	✓	✓	10%	30%	N/A**	50%
Dry Wells <sup>2</sup>	100%	❖	X	100%	100%	100%	100%
Enhanced Dry Swales <sup>1</sup>	80%	❖	X	50%	50%	X	40%
Enhanced Wet Swales <sup>1</sup>	80%	❖	X	25%	40%	X	20%
Grass Channels <sup>1</sup>	50%	❖	X	25%	20%	X	30%
Gravity (oil-grit) Separators <sup>2</sup>	40%	X	X	5%	5%	N/A	N/A
Green Roofs <sup>2</sup>	80%	X	X	50%	50%	N/A**	N/A**
Infiltration Trenches <sup>10</sup>	100%	❖	❖	100%	100%	100%	100%
Multi-Purpose Detention Basins <sup>2</sup>	Varies	X	❖	N/A**	N/A**	N/A**	N/A**
Organic Filters <sup>2</sup>	80%	❖	X	60%	40%	50%	75%
Permeable Bricks/Blocks <sup>2</sup>	80%	❖	❖	50%	50%	N/A**	60%
Pervious Concrete <sup>2</sup>	80%	❖	❖	50%	65%	N/A**	60%
Porous Asphalt (excludes OGFC) <sup>2</sup>	80%	❖	❖	50%	50%	X	60%
Proprietary Systems <sup>2</sup>	Varies	Varies	Varies	Varies	Varies	Varies	Varies
Rainwater Harvesting <sup>2</sup>	Varies	❖	X	Varies	Varies	Varies	Varies
Regenerative Stormwater Conveyance <sup>8</sup>	80%	X	X	70%	70%	N/A**	N/A**
Sand Filters <sup>1</sup>	80%	❖	X	50%	25%	40%	50%
Site Reforestation/Revegetation <sup>2</sup>	N/A**	N/A**	N/A**	N/A**	N/A**	N/A**	N/A**
Soil Restoration <sup>2</sup>	N/A**	N/A**	N/A**	N/A**	N/A**	N/A**	N/A**
Stormwater Planters / Tree Boxes <sup>2</sup>	80%	X	X	60%	60%	80%	N/A
Stormwater Ponds <sup>2</sup>	80%	✓	✓	50%	30%	70%	50%
Stormwater Wetlands – Level 1 <sup>1</sup>	80%	✓	✓	40%	30%	70%	50%
Stormwater Wetlands – Level 2 <sup>4</sup>	85%	X	X	75%	55%	85%	60%
Submerged Gravel Wetlands <sup>2</sup>	80%	X	X	50%	20%	70%	50%
Underground Detention <sup>2</sup>	0%	✓	✓	0%	0%	0%	0%
Vegetated Filter Strips <sup>1</sup>	60%	❖	X	20%	20%	X	40%

✓ - BMP can meet the stormwater management or treatment requirement

❖ - BMP may meet the stormwater management or treatment requirement depending on size, configuration, and site constraints

X - BMP may contribute but is not likely to fully meet the stormwater management or treatment requirement

\* - Minimum drainage area of ten acres is required to maintain the permanent pool (unless groundwater is present).

\*\* - Helps restore pre-development hydrology, which implicitly reduces post-construction stormwater runoff rates, volumes and pollutant loads.

**Pollutant Removal References:**

1: Original Georgia Stormwater Management Manual, 2001

2: Previous Coastal Stormwater Supplement to the Georgia Stormwater Management Manual, 2009

3: Bioretention - Watershed Benefits. Low Impact Development Urban Design Tools. 04 April 2014.

4: The Next Generation of Stormwater Wetlands. EPA Wetlands and Watersheds Article Series (2008) Center for Watershed Protection

5: Bioretention Performance, Design, Construction, and Maintenance. North Carolina Cooperative Extension Service. Hunt, William. 2006

6: North Carolina Department of Environment and Natural Resources Stormwater Best Management Practices Manual. 2007

7: Washington State Department of Transportation (WSDOT) Highway Runoff Manual, 2011.

8: West Virginia Stormwater Management Design Guidance Manual, 2012

9: Georgia Department of Transportation (GDOT) Drainage Manual, 2014

10: Pollutant removal rates based on 100% infiltration with no underdrain

Source: Georgia Stormwater Management Manual, Volume 2, Table 4.1.3-1

**Appendix B**  
**Standard Operation Procedure**  
*Calculations for Buffer Credits, Preservation and Restoration Activities.*

Typically, the highest number of stream credits that any USACE approved mitigation bank can generate per square foot of stream restoration is approximately 0.046 stream credits. This includes the restoration 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 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:

$$2500 \text{ ft}^2 \text{ of buffer impact} \times 0.046 \text{ credits per ft}^2 \times 2.5 \text{ factor for off-site} = 287.5 \text{ stream credits} = \mathbf{288 \text{ stream credits}}$$

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 “in-watershed” 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, an “in-basin” 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, an “out of basin” multiplier of 1.1 will be placed on the number of stream credits needed to serve as mitigation for the proposed buffer impact.

Example 2:

$$2500 \text{ ft}^2 \text{ of impact} \times 0.046 \text{ credits per ft}^2 \times 2.5 \text{ factor for off-site} = 287.5 \text{ stream credits}$$

$$287.5 \text{ stream credits} \times 0.9 \text{ in-watershed multiplier} = 258.75 \text{ stream credits} = \mathbf{259 \text{ stream credits}}$$

Example 3:

$$2500 \text{ ft}^2 \text{ of impact} \times 0.046 \text{ credits per ft}^2 \times 2.5 \text{ factor for off-site} = 287.5 \text{ stream credits}$$

$$287.5 \text{ stream credits} \times 1.0 \text{ in-basin multiplier} = 287.5 \text{ stream credits} = \mathbf{288 \text{ stream credits}}$$

Example 4:

$$2500 \text{ ft}^2 \text{ of impact} \times 0.046 \text{ credits per ft}^2 \times 2.5 \text{ factor for off-site} = 287.5 \text{ stream credits}$$

$$287.5 \text{ stream credits} \times 1.1 \text{ out of basin multiplier} = 316.25 \text{ stream credits} = \mathbf{317 \text{ stream credits}}$$

**If post-development total suspended solids and stormwater runoff reduction 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:

$2500 \text{ ft}^2 \text{ of impact} \times 0.046 \text{ credits per ft}^2 \times 2.5 \text{ factor for off-site} = 287.5 \text{ stream credits}$

$287.5 \text{ stream credits} \times 1.1 \text{ out of basin multiplier} = 316.25 \text{ stream credits}$

$316.25 \text{ stream credits} \times 1.1 \text{ multiplier for hydrologic or water quality protection} = 347.875 \text{ stream credits} = \mathbf{348 \text{ stream credits}}$

Example 6:

$2500 \text{ ft}^2 \text{ of impact} \times 0.046 \text{ credits per ft}^2 \times 2.5 \text{ factor for off-site} = 287.5 \text{ stream credits}$

$287.5 \text{ stream credits} \times 1.1 \text{ out of basin multiplier} = 316.25 \text{ stream credits}$

$316.25 \times 1.2 \text{ multiplier for hydrologic and water quality protection} = 379.5 \text{ stream credits} = \mathbf{380 \text{ stream credits}}$

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 post-development total suspended solids and stormwater runoff reduction 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 post-development total suspended solids and stormwater runoff reduction 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 post-development total suspended solids and stormwater runoff reduction and/or water quality protection components.

Example 7:

$2500 \text{ ft}^2 \text{ of impact} \times 0.046 \text{ credits per ft}^2 \times 2.5 \text{ factor for off-site} = 287.5 \text{ stream credits}$

$287.5 \text{ stream credits} \times 1.1 \text{ out of basin multiplier} = 316.25 \text{ stream credits}$

$316.25 \times 1.1 \text{ multiplier for hydrologic or water quality protection} = 347.875 \text{ stream credits}$

$347.875 \text{ stream credits} - 316.25 \text{ stream credits} = 31.625 \text{ stream credits} = \mathbf{32 \text{ stream credits}}$

Example 8:

$2500 \text{ ft}^2 \text{ of impact} \times 0.046 \text{ credits per ft}^2 \times 2.5 \text{ factor for off-site} = 287.5 \text{ stream credits}$

$287.5 \text{ stream credits} \times 1.1 \text{ out of basin multiplier} = 316.25 \text{ stream credits}$

$316.25 \text{ stream credits} \times 1.2 \text{ multiplier for hydrologic and water quality protection} = 379.5 \text{ stream credits}$

$379.5 \text{ stream credits} - 316.25 \text{ stream credits} = 63.25 \text{ stream credits} = \mathbf{64 \text{ stream credits}}$

Equivalent out of kind mitigation bank credits (i.e., wetland) will be considered if no stream mitigation credits are available in the PSA/SSA. Typically, the highest number of wetland credits that any USACE approved mitigation bank can generate per acre of wetland restoration is approximately 4 wetland credits. Since USACE mitigation banks are located off-site from potential buffer encroachments, a 2.5 multiplier is applied to the mitigation calculations.

Example 9:

$(2500 \text{ ft}^2 \text{ of impact} \times 4 \text{ credits per acre}) / 43,560 \text{ ft}^2 \times 2.5 \text{ factor for off-site} = 0.574 \text{ wetland credits} = \mathbf{0.6 \text{ wetland credits}}$

The additional credit calculation steps must be followed as shown in Examples 2 through 8 above.

If the buffer of a saltwater marsh is impacted, saltwater marsh credits must be purchased if they are available. The credits are calculated as shown in Example 9 above. The additional credit calculation steps must be followed as shown in Examples 2 through 8 above. If saltwater marsh credits are not available then wetland credits and/or stream credits can be purchased.

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 a 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.

**The following calculations must be used to calculate mitigation for preservation and restoration:**

**If post-development total suspended solids and stormwater runoff reduction and/or water quality protection components (see page 2 of this guidance) cannot be addressed on the sites that are mitigated by preservation and restoration, justification must be provided and additional preservation and restoration will be required as a substitute.**

**When applying under criterion (k), a multiplier of 1.1 or 1.2 will be placed on the square footage of preservation or restoration 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 10 for Preservation Criteria (k):

**On-site**

$$2500 \text{ ft}^2 \text{ of impact} \times 1.5 = 3750 \text{ ft}^2$$

$$3750 \text{ ft}^2 \times 1.1 \text{ multiplier for hydrologic or water quality protection} = 4125 \text{ ft}^2$$

$$3750 \text{ ft}^2 \times 1.2 \text{ multiplier for hydrologic and water quality protection} = 4500 \text{ ft}^2$$

**Off-site**

$$2500 \text{ ft}^2 \text{ of impact} \times 3 = 7500 \text{ ft}^2$$

$$7500 \text{ ft}^2 \times 1.1 \text{ multiplier for hydrologic or water quality protection} = 8250 \text{ ft}^2$$

$$7500 \text{ ft}^2 \times 1.2 \text{ multiplier for hydrologic and water quality protection} = 9000 \text{ ft}^2$$

Example 11 for Restoration Criteria (k):

**On-site**

$$2500 \text{ ft}^2 \text{ of impact} \times 1.5 = 3750 \text{ ft}^2$$

$$3750 \text{ ft}^2 \times 1.1 \text{ multiplier for hydrologic or water quality protection} = 4125 \text{ ft}^2$$

$$3750 \text{ ft}^2 \times 1.2 \text{ multiplier for hydrologic and water quality protection} = 4500 \text{ ft}^2$$

**Off-site**

$$2500 \text{ ft}^2 \text{ of impact} \times 3 = 7500 \text{ ft}^2$$

$$7500 \text{ ft}^2 \times 1.1 \text{ multiplier for hydrologic or water quality protection} = 8250 \text{ ft}^2$$

$$7500 \text{ ft}^2 \times 1.2 \text{ multiplier for hydrologic and water quality protection} = 9000 \text{ ft}^2$$