Technical Requirements for the Reporting and Crediting of Riparian Forest Buffers in Scenario Builder and the Watershed Model

Presented to WTWG for Review and Approval: July, 2014

Background: In June, 2013 the Water Quality Goal Implementation Team (WQGIT) agreed that each BMP expert panel would work with CBPO staff and the Watershed Technical Workgroup (WTWG) to develop a technical appendix for each expert panel report. The purpose of this technical appendix is to describe how the Riparian Forest and Grass Buffers Panel's recommendations will be integrated into the modeling tools including NEIEN, Scenario Builder and the Watershed Model.

Q1. What are the reductions a jurisdiction can claim for Riparian Buffers in the Phase 6 Watershed Model?

A1. The expert panel recommended that the Phase 6 Model treat grass buffers in the same way as the Phase 5.3.2 Model. This means that each acre of grass buffer results in a land use change to hay without nutrients (or the comparable Phase 6 land use), and also reduces nutrients from upslope acres as described in the table below.

The panel recommended a slight change in the way forest buffers should be credited in the Phase 6 Model. The panel found that nitrogen reductions were greater along streams which are buffered on two sides rather than one. As shown in the table below, streams with forest buffers on both sides will receive an additional 4% reduction in nitrogen from upslope acres. The forest buffers will still be modeled as a land use change to forest, or the comparable Phase 6 land use (pg. 3-5).
No changes are recommended for the current Phase 5.3.2 Model.

Table 1. Upslope Reductions for Forest and Grass Buffers in Phase 6 Model	**Forest on one side of Stream**			**Grass on one or both sides of Stream**			**Forest on both sides of Stream**		
Hydrogeomorphic Region	**TN***	**TP****	**TSS****	**TN***	**TP****	**TSS****	**TN***	**TP****	**TSS****
Appalachian Plateau Carbonate Non Tidal	54	42	56	38	42	56	58	42	56
Appalachian Plateau Siliciclastic Non Tidal	54	42	56	38	42	56	58	42	56
Blue Ridge Non Tidal	34	30	40	24	30	40	38	30	40
Coastal Plain Dissected Uplands Non Tidal	65	42	56	46	42	56	69	42	56
Coastal Plain Dissected Uplands Tidal	19	45	60	13	45	60	23	45	60
Coastal Plain Lowlands Non Tidal	56	39	52	39	39	52	60	39	52
Coastal Plain Lowlands Tidal	19	45	60	13	45	60	23	45	60
Coastal Plain Uplands Non Tidal	31	45	60	21	45	60	35	45	60
Coastal Plain Uplands Tidal	19	45	60	13	45	60	23	45	60
Mesozoic Lowlands Non Tidal	34	30	40	24	30	40	38	30	40
Piedmont Carbonate Non Tidal	46	36	48	32	36	48	50	36	48
Piedmont Crystalline Non Tidal	56	42	56	39	42	56	60	42	56
Valley and Ridge Carbonate Non Tidal	34	30	40	24	30	40	38	30	40
Valley and Ridge Siliciclastic Non Tidal	46	39	52	32	39	52	50	39	52

*Forest and grass buffers reduce nitrogen loads from four upslope acres.
**Forest and grass buffers reduce phosphorus and sediment loads from two upslope acres.

Q2. Which projects qualify for the riparian buffer credits?

A2. The panel recommended that riparian buffers at least 35 feet in width could qualify for the reductions listed in the table above for the Phase 6 Model. All buffers less than 35 feet in width do not qualify for the upslope credit, and should instead be submitted to NEIEN under the BMP names, "Narrow Grass Buffers" and "Narrow Tree Buffers (page 12).

Q3. What credit will Narrow Grass Buffers and Narrow Tree Buffers receive in the Phase 5.3.2 Model and the Phase 6 Model?

A3. The panel recommended that Narrow Grass Buffers be simulated only as a land use conversion from agricultural land to hay without nutrients, or the comparable Phase 6 land use. The panel also recommended that Narrow Tree Buffers be simulated only as a land use conversion from agricultural land to forest, or the comparable Phase 6 land use. These narrower buffers may be submitted in the Phase 5.3.2 Model (page 12).

Q4. What should jurisdictions submit to NEIEN to receive credit for qualifying buffers in the Phase 6 Model?

A4. Jurisdictions should submit the following information to NEIEN to receive credit:

- BMP Name: Forest Buffer; Forest Buffer Double; Grass Buffer; Forest Buffer Narrow; Grass Buffer Narrow
- Measurement Names: Length; Width
- Location: Approved NEIEN geographies: County; County (CBWS Only); Hydrologic Unit Code (HUC12, HUC10, HUC8, HUC6, HUC4), State (CBWS Only)
- Date of Implementation: Year the project was completed

Q5. What should jurisdictions submit to NEIEN to receive credit for qualifying buffers in the Phase 5.3.2 Model?

A5. Jurisdictions should submit the following information to NEIEN to receive credit:

- BMP Name: Forest Buffer; Grass Buffer; Forest Buffer Narrow; Grass Buffer Narrow
- Measurement Names: Acres; Length (optional); Width (optional)
- Location: Approved NEIEN geographies: County; County (CBWS Only); Hydrologic Unit Code (HUC12, HUC10, HUC8, HUC6, HUC4), State (CBWS Only)
- Date of Implementation: Year the project was completed

Q6. Are(these cumulative or annual BMPs?

A6. All buffer BMPs are cumulative, and jurisdictions should report data to NEIEN only for the year the project was implemented.