

## **Responses to Questions received regarding the Stream Restoration Expert Panel Report**

**Submitted to WTWG on 08062014**

**Q1: Only a portion of the sediment and nutrients that are eroded from a stream bank make their way to a watershed outlet. The panel opted to account for this attenuation of sediment in the Prevented Sediment during Stormflow Protocol by reducing the eroded streambank sediment estimate by an attenuation factor. Should this attenuation factor also be applied to nutrients?**

Answer 1 from Modeling Team: The expert panel provided median nutrient concentrations associated with streambank sediment. The Modeling Team supports applying those concentrations to the estimated mass of sediment reduced at the watershed scale after the attenuation factor has been applied. If approved, this will be clarified in the report.

**Q2: Should the In-Stream Denitrification Protocol be capped at 40% of the total nitrate load entering the stream, or 40% of the total nitrogen load entering the stream?**

Answer 2 from Modeling Team: This protocol specifically deals with the denitrification within the stream. Denitrification impacts only the nitrate portion of total nitrogen. Nitrate is modeled separately in the Watershed Model, and thus the Modeling Team supports capping the load reduction at 40% of the nitrate entering the stream. If approved, this will be clarified in the report.

**Q3: Is it possible for the aggregated load reductions to be greater than the modeled loadings for a segment where the project is reported?**

Answer 3 from Modeling Team: To avoid a situation where estimated load reductions using the protocols exceed estimated loads in the Watershed Model from any given land-river segment, the Modeling Team supports capping the load reductions from these practices at the estimated loads in the Watershed Model for each land-river segment. If approved, this will be clarified in the report.

**Q4: Occasionally the report and appendix use the term “interim,” to describe reductions for practices that are reported without adequate information to use the protocols, and occasionally the documents use the terms “default” or “non-conforming.” Is the interim stream restoration rate still interim?**

A4: No. The revised interim stream restoration rate described in Table 3 of the report is the approved rate for all practices that are not reported with adequate information to use the protocols. It is also the approved rate for planning scenarios. This will be clarified in both documents.

**Q5: The report states that projects are 50% effective in reducing streambank erosion within the stream reach. The report goes on to state that sites with better monitoring data may be able to demonstrate a greater effectiveness, and should be allowed to use this higher efficiency. Should reductions from all projects be capped at 50% of the incoming load regardless of site-specific calculations to minimize the potential of exceeding available modeled loadings?**

A5: The panel elected to allow jurisdictions to monitor a site and report greater reductions if the data supported them. Specifically, this was an option that would allow the Pennsylvania DEP to take credit for high reduction efficiencies documented at the Big Spring Run Project. This option also promotes additional monitoring which is critically needed. Additionally, the Modeling Team is recommending that reductions from stream restoration projects be capped at the land-river segment loading rates to avoid the potential of exceeding modeled loads.

**Q6: The complexity of the protocols may lead jurisdictions to report only the default, non-conforming values for credit. Is there a benefit in looking at differences in default rates between physiographic provinces?**

A6: The panel considered looking at how stream restoration practices differed across physiographic provinces, but there was not enough supporting data to define different default rates.

**Q7: The Credit for Floodplain Reconnection Volume requires localities to estimate nutrient loads entering a stream reach. These nutrient loads are dependent upon upstream changes in the landscape including BMP implementation, land use changes, population changes, etc. Will jurisdictions be required to re-assess nutrient loads entering a stream reach in order to verify the nutrient reductions in the future?**

A7: The report will be adjusted to recommend that as part of the verification process, localities and jurisdictions should consider changes that have occurred to the landscape for any BMPs such as stream restoration that require estimates of watershed loads.

**Q8: Is it possible that allowing credit under all protocols could lead to “double-counting” reductions in nitrogen?**

A8: No. The panel considered all protocols to be additive. Protocol 1 applies to reductions in sediment-bound nitrogen from streambank erosion during stormflow, while Protocol 2 applies to denitrification only during baseflow and Protocol 3 applies to reductions in nitrogen during stormflow.

**Q9: If a regenerative stormwater conveyance system is installed at the end of stream, does a jurisdiction receive credit for the entire length of the stream?**

A9: No. Only the portion of the stream where restoration has been applied will receive credit using the protocols. Please note that dry channel regenerative stormwater conveyance systems do not receive credit under the new stream restoration protocols. They are considered a stormwater performance standard and receive credit based upon the total acres and volume of water treated.

**Q10: Why was credit determined on a linear-foot basis and not a per acre treated basis?**

A10: Most of the scientific studies express stream bank erosion on a linear foot basis. Protocol 3 does however account for the acres or area of floodplain that is reconnected.

**Q11: Why were the default, non-conforming rates changed during the test drive period?**

A11: The default rates were based on stream sediment and nutrient loadings from data collected by Baltimore City and literature studies. A conservative adjustment was applied to the values from the studies. However, during the 6-month test drive period, the panel realized the adjustment was ONLY applied to TP and not to TN and TSS. Therefore the rates for TN and TSS has to be adjusted. Additionally, the WTWG and Modeling Team recommended adjusting the sediment reduction defaults to account for attenuation of sediment in the watershed.