OUTFALL AND GULLY STABILIZATION MEMO

WQGIT SEPTEMBER 9, 2019

REVISITING STREAM RESTORATION

The USWG formed 4 groups to revisit the stream restoration EPR:

- Group 1: Verifying Stream Restoration Practices – Approved 6/19
- Group 2: Outfall and Gully Stabilization Practices – Seeking Approval
- Group 3: Establishing Standards for Applying Protocol 1 – Memo Release this Week
- Group 4: Adjusting Protocol 2/3 to Capture Floodplain Restoration -- Ongoing

Table 1: Outfall Restoration Crediting Team

Name	Affiliation
Ray Bahr	MDE
Stephen Reiling	DOEE
Tracey Harmon	VDOT
Brock Reggi	VADEQ
Karen Coffman	MDOT SHA
Ryan Cole	MDOT SHA (alternate)
Elizabeth Ottinger	US EPA Region 3
Carrie Traver/Aaron Blair	US EPA Region 3
Alison Santoro	MD DNR
Ted Brown	Biohabitats
Chris Stone	Loudoun County, VA
Erik Michelsen	Anne Arundel County
Neil Weinstein	LID Center
Nick Noss	PA Turnpike Commission

PRIMARY PURPOSE

Addressing erosion driven by vertical incision.

Often caused by:

- Uncontrolled runoff upstream,
- Migrating nick points,
- Poor slope stabilization or energy dissipation structures.

Figure 2. Examples of Severe Outfall Erosion in the Headwater Transition Zone

1.

2.

3.

4.

QUALIFYING CONDITIONS

- The channel or gully slope below the source must exhibit predictive indicators for severe erosion or hill-slope failure and must be observed to be actively enlarging or degrading. These indicators are defined in Section 3.

- The project should utilize a comprehensive approach to stream channel design, addressing long-term stability and resiliency of the channel, banks, and floodplain.

- Each project must comply with all state and federal permitting requirements, including 404 and 401 permits, which usually contain conditions for pre-and post-project assessment and post construction monitoring.

- Before credits are granted, OGSPs will need to meet post-construction stability criteria and successfully establish needed vegetation. Projects should maintain or improve existing native riparian vegetation in the headwater stream corridor to the extent possible. Projects should follow regulatory agency guidance regarding compensation for any losses of forest, wetlands and sensitive habitats within project work areas.

QUALIFYING CONDITIONS

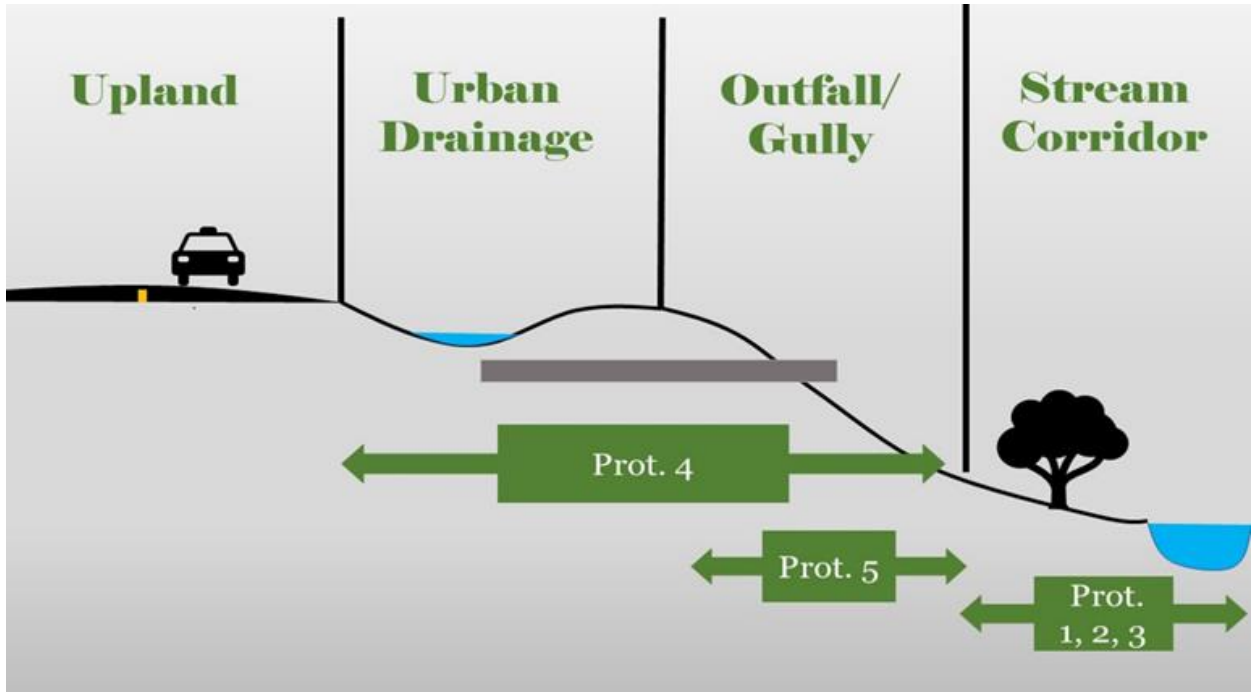
- Limited use of pipe systems are eligible for credit if they are needed to sustain channel stability and do not introduce new aquatic organism passage issues. Projects should always seek to improve passage of aquatic organisms where possible. Refer to Section 2 for criteria and limitations for acceptable projects.

- OGSPs do not need to meet the minimum project reach length that applies to downstream stream restoration projects (100 feet).

RELATIONSHIP TO OTHER STREAM RESTORATION PROTOCOLS

- Creates a new "Protocol 5"
- Cannot be combined with Protocol 1
- Can be combined with Protocols 2, 3 and 4.

WHERE DO THEY APPLY



- **Headwater Transition Zone**: The slope or channel that extends from an upland runoff source to the perennial stream network

- **Actively Eroding Headcuts**: Must meet more stringent qualifying conditions

OVERALL APPROACH

1. Define Existing Channel Conditions
2. Define Equilibrium Conditions
3. Calculate Total Volume of Prevented Sediment Erosion
4. Convert Total Sediment Volume to Annual Prevented Sediment Load
5. Determine Annual Prevented Nutrient Loads

REPORTING/TRACKING/VERIFICATION

- Same reporting as all other Stream Restoration BMPs
- Same Verification procedures as outlined for Protocol 1 by Group 1
- 5 year inspection cycle

REPONSES TO COMMENTS

- Stricter qualifying conditions for use of Protocol 5 on active headcuts in perennial streams
- Added "Potential Unintended Consequences" section

QUESTIONS?