Recommendations for Stream Restoration Protocols 2 & 3

WATERSHED TECHNICAL WORKGROUP

OCTOBER 1, 2020

The Stream Restoration Protocols

1. Prevented sediment

2. In-stream denitrification

3. Floodplain reconnection

4. The “tweener” Dry Channel RSC

Revisiting Stream Restoration

The USWG formed 5 groups to revisit the stream restoration expert panel report:

Group 1: Verifying Stream Restoration Practices (Approved June 2019)

Group 2: Outfall and Gully Stabilization Practices (Approved Sep. 2019)

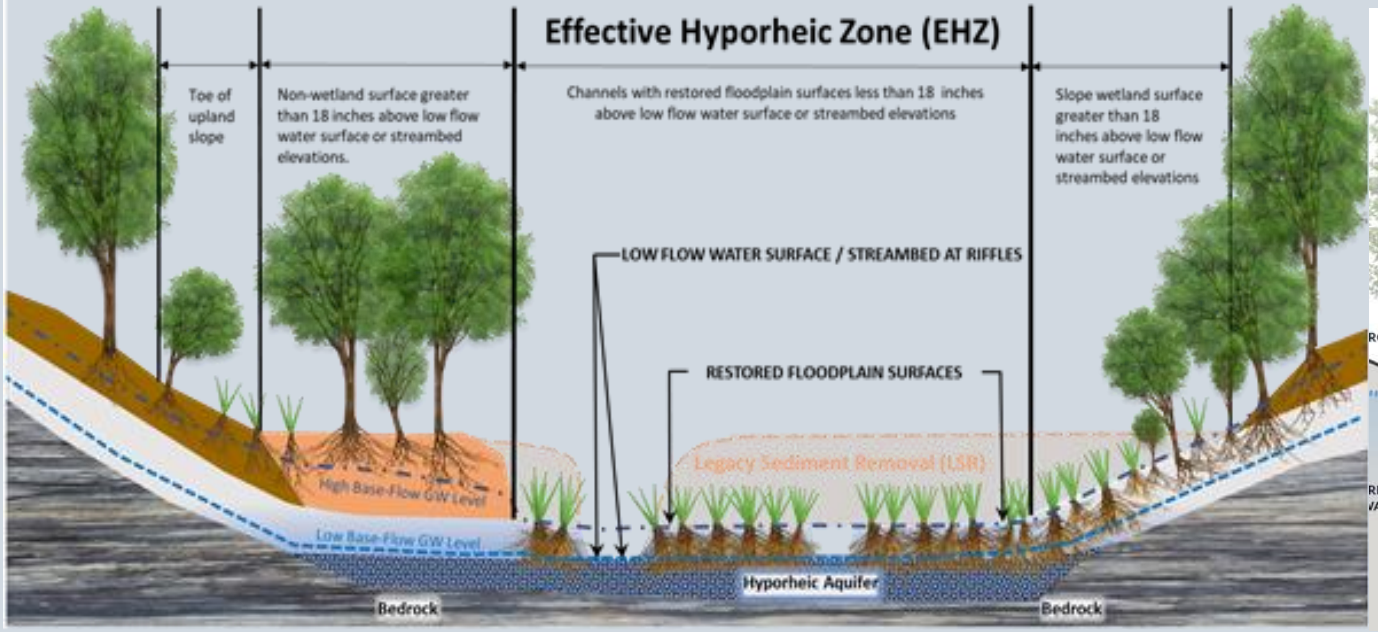
Group 3: Establishing Standards for Applying Protocol 1 (Approved Feb. 2020)

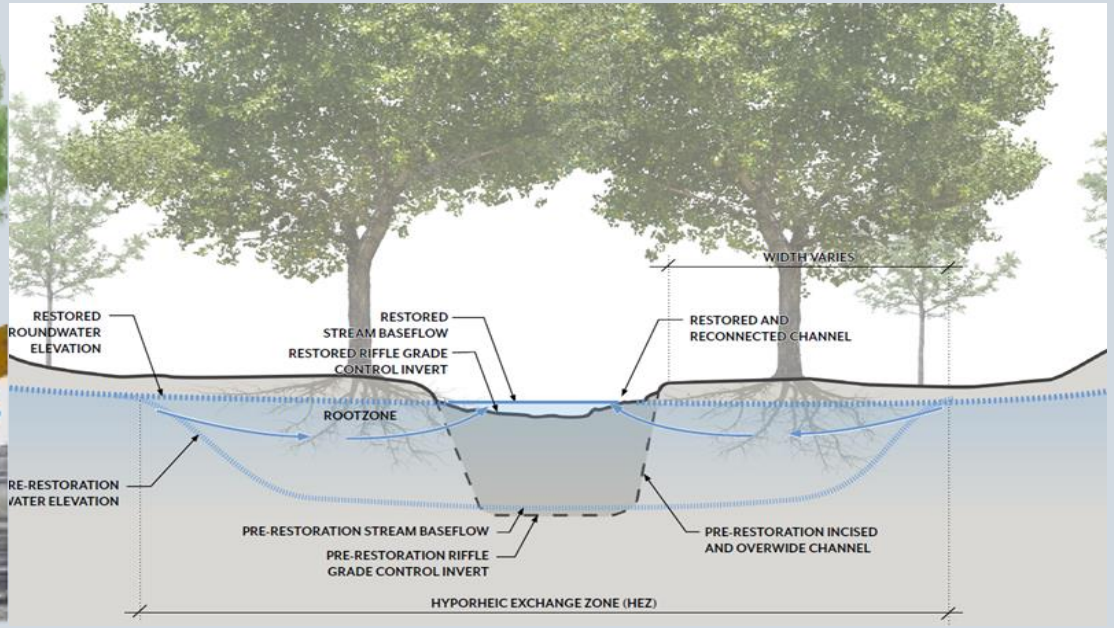
Group 4: Adjusting Protocol 2/3 to Capture Floodplain Restoration

“Team” 5: Floodplain Reconnection with Legacy Sediment Removal (Advisory to Group 4)

The Recommendations

- Definitions and qualifying conditions for two flavors of floodplain restoration: LSR and RSB

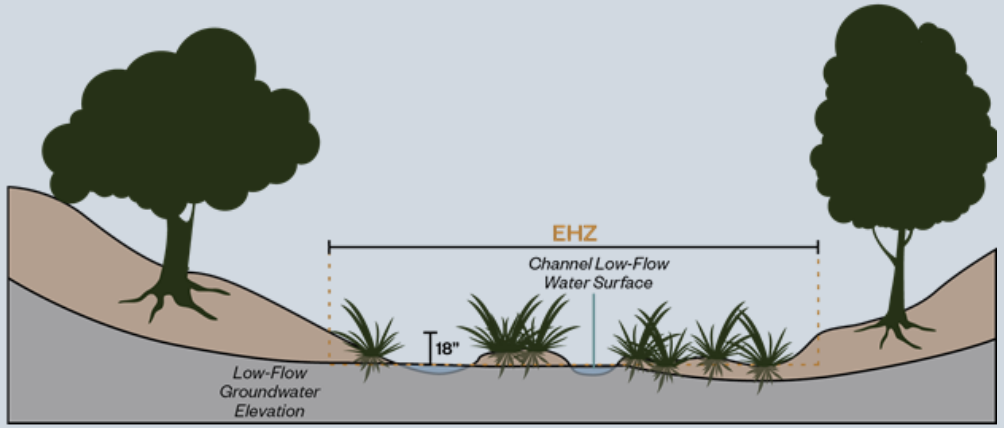


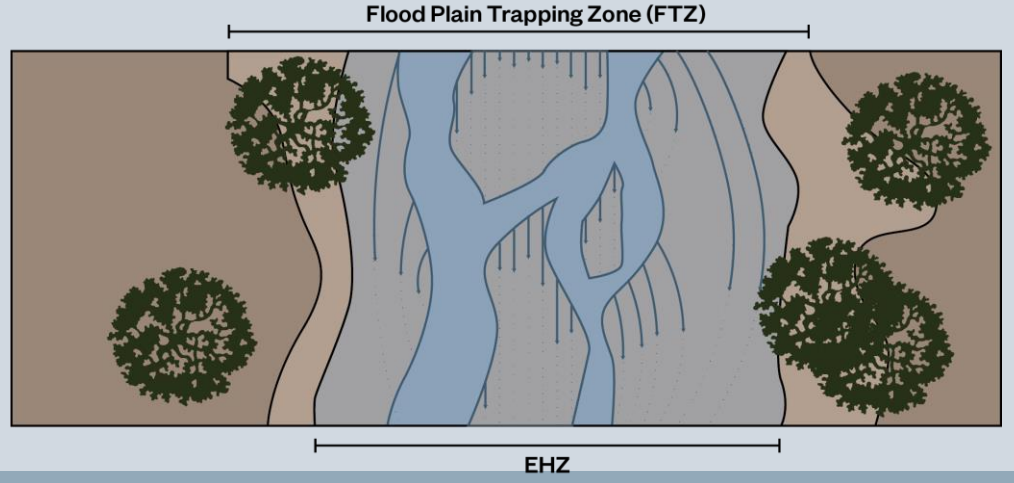


The Recommendations

Protocol 2:

- Replace the existing Hyporheic Box with an area-based “Effective Hyporheic Zone”.
- Replace the existing denitrification rate and adjust it based on site factors, such as seasonal streamflow, floodplain soil saturation and the underlying materials in the hyporheic aquifer
- Eliminate the bank height ratio (≤1) requirement, since these don’t typically apply to most low-bank FR projects.





The Recommendations

Protocol 3

- Replace the “upstream” method of using rainfall-runoff models to determine the proportion of stream flow that is diverted into the floodplain, with a “downstream” method that uses scaled, representative USGS gauge stations to calculate overbank flow.
- Use updated non-tidal wetland BMP removal rates to determine % efficiency
- Remove the upstream watershed to floodplain surface area ratio reduction.

Tracking and Reporting

There are no changes to how Protocols 2 and 3 are reported to CBPO:

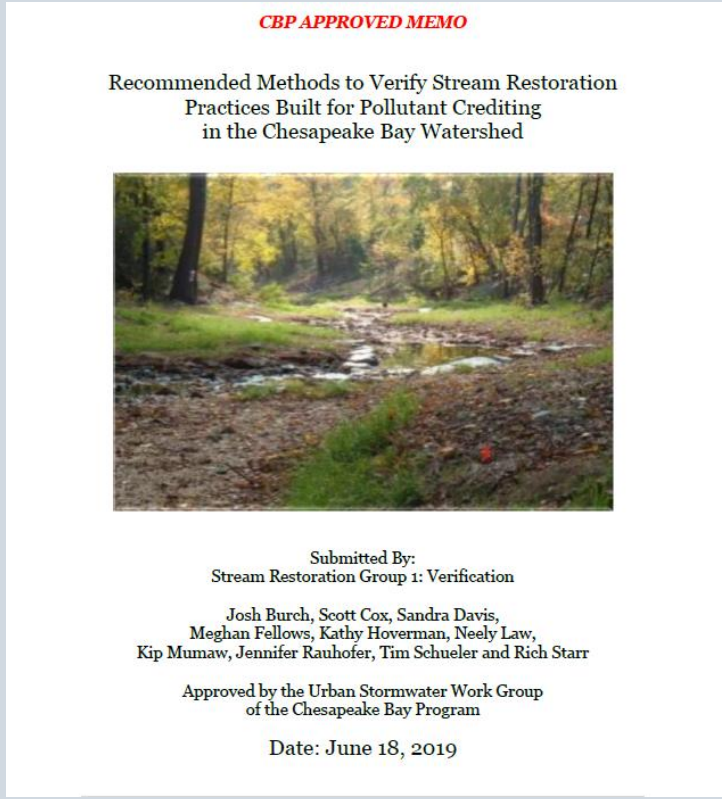
BMP Name: Stream Restoration

Final Calculated Reductions: Protocol 2 lbs TN; Protocol 3 lbs TN; Protocol 3 lbs TP; Protocol 3 lbs TSS

Project Location: Qualifying NEIEN geographies including: Latitude/Longitude; or County; or County (CBWS Only); or Hydrologic Unit Code (HUC12, HUC10, HUC8, HUC6, HUC4, State (CBWS Only)

Date of Implementation: Year

Verification Recommendations consistent with Group 1 memo (approved June 2019)



CBP APPROVED MEMO

Recommended Methods to Verify Stream Restoration Practices Built for Pollutant Crediting in the Chesapeake Bay Watershed

Submitted By:
Stream Restoration Group 1: Verification

Josh Burch, Scott Cox, Sandra Davis, Meghan Fellows, Kathy Hoverman, Neely Law, Kip Mumaw, Jennifer Rauhofer, Tim Schueler and Rich Starr

Approved by the Urban Stormwater Work Group of the Chesapeake Bay Program

Date: June 18, 2019

Alignment with CAST

Protocol 3 uses CAST to determine the loads delivered to the floodplain for removal crediting (Appendix H)

- Step 1. Determine the Land-River Segment where your project is located using the Chesapeake Bay Watershed Model Phase 6 Map Viewer.
- Step 2. Generate a “Loads Per Unit” Report for your LR Segment
- Step 3. Download the report.
- Step 4. Filter the table for the “Stream Bed and Bank” LoadSource to find the loading rate (lbs/mile of stream)
- Step 5. Determine the total linear miles of stream upstream of the project reach. This can be done in-house by the practitioner, or CAST has a “Stream Layer” available for download.
- Step 6. Multiply the miles of stream upstream of the project by the loading rates from the downloaded report to determine the loads delivered to the project.

Plans to integrate a tool into CAST that performs this calculation for you.

Questions?