Scientific and Technical Advisory Committee
May 6-7, 2014
Workshop Agenda
Sheraton Hotel, Annapolis, MD

Designing Sustainable Stream Restoration Projects within the Chesapeake Bay Watershed:

Workshop Objective: Create agreement among practitioners, regulators, and scientists on a common language and assessment methods for designing sustainable stream restoration projects that improve the functional elements of stream health to address water quality, climatological impacts, physical and biological components within the stream and adjacent riparian zone.

Description of Workshop:
There is a need to create understanding and agreement among practitioners on a common language and methods for designing sustainable stream restoration projects that improve the functional elements of stream health to address water quality, climatological impacts, physical and biological components within the stream and adjacent riparian zone. Understanding and agreeing on the major elements of stream function will allow stream restoration practitioners to create functional lift and sustain the biodiversity of riparian ecosystems and aquatic organisms during stream restoration. This common understanding on language, methods, and major elements of stream function is also intended to assist the regulatory community to better understand restoration efforts undertaken to implement the Clean Water Act.

This workshop will specifically target stream restoration practitioners, regulators, and scientists who are designing, building, permitting or studying stream and riparian ecosystems. The workshop will address:

1) Creating a common understanding and common language among restoration practitioners, regulators, and scientists;
2) Establish a uniform process for characterizing the degree of functional lift and/or loss of biological, chemical, and physical processes associated with the various stream restoration approaches;
3) Engage the stream restoration community within the Chesapeake Bay watershed and provide a document from which to continue to build a consensus and guidance on stream restoration that will help to facilitate the implementation of the TMDL WIP Strategies.

It is important to note that the focus of the workshop is at the restoration site level. All discussions and recommendations will be on what should happen at a specific restoration site and not how that site was selected or on what other watershed restoration activities should be undertaken. While prioritization of site locations and restoration activities are critical in the success of restoring a watershed, this workshop will focus on what should happen at a stream restoration site after it has gone through this prioritization process.

The workshop planning committee has drafted a "straw man" of a stream restoration uniform process. The "straw man" process follows typical stream restoration processes used currently,

but focuses on function-based assessments and the use of quantifiable objectives throughout the entire project process, including monitoring. The "straw man" consists of four broad steps: 1) setting goals and objectives, 2) selecting function-based assessment parameters, 3) determining restoration potential, and 4) translate into design objectives and monitoring performance standards. A brief description of this process along with additional steps is described in the attachment, entitled "Function-based Stream Restoration Project Process." The workshop is centered on receiving feedback from workshop participants on this "straw man" process. The first part of the workshop will be presentations that provide background information and definitions of the common terms used in the "straw man" process. Then there will be breakout sessions where workshop participants will have the opportunity to discuss each broad step in the "straw man" process. Each group will then report out the results of their discussions to all workshop participants. The workshop will close by discussing research needs and next steps. Ultimately, all of the information gathered from the workshop will be made into recommendations on what and how a uniform stream restoration process should be developed.

AGENDA AT A GLANCE	
9:00 to 9:15	Welcome and Introduction
9:15 to 11:15	T-1: Setting the Stage - The Need for Stream Function Assessments
11:15 to 11:30	Break
11:30 to 12:30	T-2: Organization of Stream Functions into a Framework - Assessment Parameters, Measurement Methods, and Performance Standards
12:30 to 1:30	Lunch
1:30 to 2:30	T-3: Application of Stream Functions Pyramid Framework
2:30 to 2:45	Break
2:45 to 4:45	T-4: "Straw man" Function-based Stream Restoration Project Process
4:45 to 5:00	Recap
8:30 to 9:00	Day 2 Overview and Instructions
9:00 to 10:00	T-5: Setting Goals and Objectives and Identifying Problems
10:15 to 10:30	Reconvene for T-5 Report Out
10:30 to 10:45	Break
10:45 to 12:30 Lunch 1:30 to 2:30	T-6: Selecting Function-based Assessment Parameters, Measurement Methods, and Performance Standards
2:30 to 2:45	Reconvene for T-6 Report Out
2:45 to 3:45	T-7: Determining Restoration Potential and Functional Uplift
3:45 to 4:00	Reconvene for T-7 Report Out
4:00 to 5:00	T-8: Synthesis Session. Research need and Next Steps

DETAILED AGENDA
DAY 1

Welcome and Introduction (15 minutes)
Nick DiPasquale (Director, Chesapeake Bay Program) and Bill Stack (CWP/CBPO)

Track 1: Setting the Stage - Stream Functions - Margaret Palmer (SESYNC), Jack Dinne (COE), Bill Seiger (MDE), Dave Goerman (PADEP)
Track Recorder: S. Drescher (CWP)
Track Length: 2 hours

Track Purpose and Outcome: Demonstrate and educate on the need for common language and assessment methods for designing sustainable stream restoration projects

1. Overview from synthesis of stream restoration projects. (Margaret Palmer) (50 mins)
    a. What does it mean to restore a stream?
    b. Case studies and link to goals, requirement (as applicable), methods of assessment, and outcomes.
    c. Overview of assessment approaches

2. Regulatory Issues associated with stream restoration (Jack Dinne, Bill Seiger, David Goerman) (70 mins)
    a. Federal
    b. State

Track 2: Organization of Functions into a Framework, Objectives, Assessment Parameters, Measurement Methods, and Performance Standards - Will Harman (Stream Mechanics)
Track Recorder: Lisa Fraley-McNeal (CWP)
Track Length: 1 hour

Track Purpose and Outcome: Introduce Stream Functions Pyramid Framework and define common terms within framework

1. Organization of stream functions into a hierarchical order: Hydrology, Hydraulics, Geomorphology, Physicochemical, and Biological
2. Assessment parameters
3. Measurement methods
4. Performance standards

Track 3: Application of Stream Functions Pyramid Framework - Will Harman (Stream Mechanics)
Track Recorder: Lisa Fraley-McNeal (CWP)
Track Length: 1 hour

Track Purpose and Outcome: Provide a stream restoration process following the Stream Functions Pyramid Framework.

1. How to apply stream functions and goals and objective setting to stream restoration projects.

Track 4: "**Straw man" Function-based Stream Restoration Project Process**
Track Facilitator: Rich Starr (USFWS)
Track Recorder: Reid Christianson (CWP)
Track Length: 2 hours

Track Purpose and Outcome: Introduce the "straw man" function-based stream restoration project process and obtain feedback

1. Introduce "straw man"
    a. Programmatic/Project Goals and Objectives
    b. Watershed Assessment
    c. Site Level Functional
    d. Restoration Potential
    e. Design Objectives
    f. Restoration Design Approach & Design Alternative Analysis
    g. Design
    h. Monitoring
2. Break out to discuss "straw man"
3. Report out

Recap from Day One and what will happen on Day 2 Bill Stack - (15 minutes)

DAY 2

Day 2 Overview and Instructions - Rich Starr (30 minutes)

Track Facilitators: J. Winters, N. Law, S. Lowe, L. Craig, G. Yagow
Track Recorders: M. Ellis, S. Kemp, S. Drescher, R. Christianson, L. Fraley-McNeal

Track 5: Setting Goals and Objectives and Identifying Problems

Track Length: 1 hour 15 minutes

Track Purpose and Outcome: Discuss typical stream problems and identify typical stream restoration programmatic goals, design goals, and design objectives that address stream problems (e.g., TMDLs, stabilization, biological, Non-TMDL WQ, etc)

Definitions:
Programmatic Goal - typically describes the funding driver for a program or agency
Design Goal – describes the purpose of the project and does not need to be quantitative
Design Objective - describes how the project goals are achieved and must be quantifiable

1. Break out groups
2. Report out

Track 6: Selection of Function-based Assessment Parameters

Track Length: 2 hours and 30 minutes

Track Purpose and Outcome: Define and identify commonalities on what are assessment parameter and identify function-based assessment parameters (by functional category and project goals), and their potential measurement methods and performance standards.

Definitions:
Function-based Assessment Parameter – a functional assessment parameter expresses a rate that directly relates to a stream process and a structural assessment parameter describes a stream condition at a point in time and should be representative of a function. While assessment of a functional parameter is almost always preferred, it is not always feasible due to projects costs and timeframe constraints. Since the focus of this workshop is on developing guidelines for stream restoration project implementation and these constraints are common for stream restoration projects, function-based assessment parameters, which includes both functional and structural measurements, will be discussed.
Measurement Method – quantifies and describes function-based parameters
Performance Standard – refers to benchmarks against which actual performance is measured

1. Break out groups
2. Report out

Track 7: The Determination of Restoration Potential/Functional Uplift and Constraints/Limiting factors

Track Length: 1 hour and 15 minutes

Track Purpose and Outcome: Define and identify commonalities on what are restoration potential and functional uplift based on differing watershed conditions (e.g., forested, rural, agricultural, urban).

Definitions:

Restoration Potential – Highest level of restoration that can be achieved on a given stream reach. The process for determining restoration potential starts with project design goals. If the project design goal is only to achieve channel stability, then any restoration potential (e.g., biological) beyond stability need not be determined. After the desired level of restoration is set, the potential to achieve that level is based on watershed conditions, results of the function-based assessment, project constraints, stressors reference performance standards and ("cause and effect" analysis) and which stressors are constraints to recovery potential that cannot be overcome.

Functional uplift – the amount of change, in a positive direction, to a function as a result of restoration activities.

1. Break out groups
2. Report out

Track 8: Synthesis Session: Research Needs and Next Steps

Track Facilitators: Bill Stack and Rich Starr

Track Recorder: Natalie Gardner, CRC

Track Length: 1 hour

Track Purpose and Outcome: Develop list of next steps and research needs.

Next Steps in the Process for Designing Sustainable Stream Restoration Projects: The final interactive session will feature a facilitated discussion to identify critical research needs and the development of a document from which to continue to build consensus and guidance for a comprehensive scientific design process that allows practitioners to communicate to managers, regulators, and other stakeholders on how the stream restoration design approach will meet project goals and objectives given watershed and site constraints.