BIENNIAL STRATEGY REVIEW SYSTEM
Chesapeake Bay Program

Logic and Action Plan: Pre Quarterly Progress Meeting

Stream Health – 2018-2019

*[NOTE: make sure to edit **pre**- or **post**- in the text above, to tell the reader whether this logic and action plan is in preparation for your quarterly progress meeting or has been updated based on discussion at the quarterly progress meeting.]*

Long-term Target: Continually improve stream health and function throughout the watershed. Improve health and function of 10 percent of stream miles above the 2008 baseline for the Chesapeake Bay watershed
Two-year Target: (increment of metric for success)

Instructions: Before your quarterly progress meeting, provide the status of individual actions in the table below using this color key.
Action has been completed or is moving forward as planned.
Action has encountered minor obstacles.
Action has not been taken or has encountered a serious barrier.

Additional instructions for completing or updating your logic and action plan can be found on ChesapeakeDecisions.

Factor	Current Efforts	Gap	Actions	Metrics	Expected Response and Application	Learn/Adapt
What is impacting our ability to achieve our outcome?	*What current efforts are addressing this factor?*	*What further efforts or information are needed to fully address this factor?*	*What actions are essential (to help fill this gap) to achieve our outcome?*	*What will we measure or observe to determine progress in filling identified gap?*	*How and when do we expect these actions to address the identified gap? How might that affect our work going forward?*	*What did we learn from taking this action? How will this lesson impact our work?*
Ecological Stressors & Factors	Joint meeting Urban Stormwater Work Group (USWG) and SHWG held June 4, 2018.	*Non-biological factors not considered for measures of stream health*	**1.3** Identify practicable metrics which are consistent with both BMP verification guidance to credit			

	USWG/SHWG GIT FY 2018 Proposal: "Bay-wide Forums to Promote Implementation of Enhanced Stream Restoration Practices." Submitted July 2018. Maryland Water Monitoring Council 24th Annual Conference: Science, Stewardship, and Citizen Involvement – Working Together for Clean Water. Session on Stream Restoration Monitoring. December 7, 2018.		projects for N, P, and sediment load reductions as well as stream functional improvements to use in assessing overall improvement in stream health. Incorporate these recommendations into BMP Verification Plans.			
			4.2.3 Provide recommendations for the water quality impairments associated with a TMDL that will achieve co-benefits as a result of addressing other stressors through restoration practice implementation			
	Maryland Water Monitoring Council 24th Annual Conference: Science, Stewardship, and Citizen Involvement – Working Together for Clean Water. Session on Stream Restoration Monitoring. December 7, 2018.	*Lack of approaches to address biological stressors identified by BSID*	**4.2.2** Provide recommendations for the water quality impairments associated with a TMDL that will achieve co-benefits as a result of addressing other stressors through restoration			

			practice implementation			
Within stream channel & floodplain Factors	Joint meeting Urban Stormwater Work Group (USWG) and SHWG held June 4, 2018. USWG/SHWG GIT FY 2018 Proposal: "Bay-wide Forums to Promote Implementation of Enhanced Stream Restoration Practices." Submitted July 2018.	*No BMP crediting efforts for functional improvements*	**1.3** Identify practicable metrics which are consistent with both BMP verification guidance to credit projects for N, P, and sediment load reductions as well as stream functional improvements to use in assessing overall improvement in stream health. Incorporate these recommendations into BMP Verification Plans.			
	USWG/SHWG GIT FY 2018 Proposal: "Bay-wide Forums to Promote Implementation of Enhanced Stream Restoration Practices." Submitted July 2018.	*Few resources offer a holistic view of stream restoration and BMP guidance – emphasis on sediment and nutrient reductions without consideration co-benefits*	**4.1** Implement recommendations from the STAC workshop report to establish a joint SHWG and USWG work group to develop guidance (e.g., via an expert panel) to align the stream restoration BMP protocols for nutrient and sediment loads delivered downstream with approaches to optimize improvements in			

			stream health and function (e.g., improve instream aquatic life to improve Chesapeake Bay BIBI). Include more consideration of existing habitat conditions so as to not degrade existing functions as a result of a BMP. Also use work group to address other technical issues identified in STAC Workshop on Sustainable Stream Restoration.			
			4.2 Provide recommendations for the water quality impairments associated with a TMDL that will achieve co-benefits as a result of addressing other stressors through restoration practice implementation			

Watershed Based Factors	CWP & Carrol County. Continue study on "The Self-Recovery of Stream Channel Stability in Urban Watersheds due to BMP Implementation."	*Few resources offer a holistic view of stream restoration and BMP guidance – emphasis on sediment and nutrient reductions without consideration of co-benefits*	**4.1** Implement recommendations from the STAC workshop report to establish a joint SHWG and USWG work group to develop guidance (e.g., via an expert panel) to align the stream restoration BMP protocols for nutrient and sediment loads delivered downstream with approaches to optimize improvements in stream health and function (e.g., improve instream aquatic life to improve Chesapeake Bay BIBI). Include more consideration of existing habitat conditions so as to not degrade existing functions as a result of a BMP. Also use work group to address other technical issues identified in STAC Workshop on Sustainable Stream Restoration			

			4.2 Provide recommendations for the water quality impairments associated with a TMDL that will achieve co-benefits as a result of addressing other stressors through restoration practice implementation			
Policy and Administrative Factors	Stream Restoration Permit Committee: Preparing survey to assess progress and need to improve permit process and project outcomes related to functional lift. Joint meeting Urban Stormwater Work Group (USWG) and SHWG held June 4, 2018.	*Cumbersome and lengthy stream restoration project permit review processes across watershed*	**3.1** Develop a "Stream Restoration Permit Committee" of the Stream Health Work Group that brings practitioners, regulators and the regulated community together to resolve issues and find common ground to identify actions to streamline the stream restoration project permit review process			
Scientific Knowledge and Application of Research	ICPRB hosted workshop on April 5-6, 2018. Developing a 2008 Baseline for the CBP Stream Health Indicator.	*Lack of starting point for indicator comparison*	**1.1** Establish 2008 baseline and approach for determining future trends (% change)			

	Development of Baseline for Indicator via ICPRB Baseline Indicator workshop					
	ICPRB hosted workshop on April 5-6, 2018. Developing a 2008 Baseline for the CBP Stream Health Indicator.	*Frequency of data calls are insufficient for yearly reporting change in stream health*	**1.2.2** Determine and Report Progress **2.1.2** Implement pooled monitoring approach throughout Chesapeake Bay watershed			
	Joint meeting Urban Stormwater Work Group (USWG) and SHWG held June 4, 2018. USWG/SHWG GIT FY 2018 Proposal: "Bay-wide Forums to Promote Implementation of Enhanced Stream Restoration Practices." Submitted July 2018.	*No BMP crediting efforts for functional improvements*	**1.3,** Identify practicable metrics which are consistent with both BMP verification guidance to credit projects for N, P, and sediment load reductions as well as stream functional improvements to use in assessing overall improvement in stream health. Incorporate these recommendations into BMP Verification Plans **4.1** Implement recommendations from the STAC workshop report to establish a joint SHWG and USWG			

			work group to develop guidance (e.g., via an expert panel) to align the stream restoration BMP protocols for nutrient and sediment loads delivered downstream with approaches to optimize improvements in stream health and function (e.g., improve instream aquatic life to improve Chesapeake Bay BIBI). Include more consideration of existing habitat conditions so as to not degrade existing functions as a result of a BMP. Also use work group to address other technical issues identified in STAC Workshop on Sustainable Stream Restoration			
	Chesapeake Bay Trust: Restoration Research Grant Program.	*Lack of opportunity to discuss results and receive feedback for current pooled monitoring efforts*	**2.1.2** Implement pooled monitoring approach throughout Chesapeake Bay watershed			

	USWG/SHWG GIT FY 2018 Proposal: "Bay-wide Forums to Promote Implementation of Enhanced Stream Restoration Practices." Submitted July 2018. CWP and Ecosystem Planning & Restoration Training: Assessing and Restoring Stream Functions, December 11, 2017	*Stakeholders lack training and awareness of restoration techniques and stream health*	**5.1** Provide training and education to diversity of stakeholders on stream restoration and stream health			
Partner Coordination		*Frequency of data calls are insufficient for yearly reporting change in stream health*	**1.2.1** Determine and Report Progress			
	Joint meeting Urban Stormwater Work Group (USWG) and SHWG held June 4, 2018. USWG/SHWG GIT FY 2018 Proposal: "Bay-wide Forums to Promote Implementation of Enhanced Stream Restoration Practices." Submitted July 2018.	*No BMP crediting efforts for functional improvements*	**1.3,** Identify practicable metrics which are consistent with both BMP verification guidance to credit projects for N, P, and sediment load reductions as well as stream functional improvements to use in assessing overall improvement in stream health. Incorporate these recommendations into BMP Verification Plans			

			4.1 Implement recommendations from the STAC workshop report to establish a joint SHWG and USWG work group to develop guidance (e.g., via an expert panel) to align the stream restoration BMP protocols for nutrient and sediment loads delivered downstream with approaches to optimize improvements in stream health and function (e.g., improve instream aquatic life to improve Chesapeake Bay BIBI). Include more consideration of existing habitat conditions so as to not degrade existing functions as a result of a BMP. Also use work group to address other technical issues identified in STAC Workshop on Sustainable Stream Restoration			

	Chesapeake Bay Trust: Restoration Research Grant Program. Pooled monitoring Restoration Award Program (CBT)	*Projects and Involvement from states on pooled monitoring opportunities (CBT)*	**2.1.1** Implement pooled monitoring approach throughout Chesapeake Bay watershed **2.1.3** Implement pooled monitoring approach throughout Chesapeake Bay watershed			
	USWG/SHWG GIT FY 2018 Proposal: "Bay-wide Forums to Promote Implementation of Enhanced Stream Restoration Practices." Submitted July 2018. CWP and Ecosystem Planning & Restoration Training: Assessing and Restoring Stream Functions, December 11, 2017 Stream Restoration Permit Committee: Preparing survey to assess progress and need to improve permit process and project outcomes related to functional lift.	*Inconsistencies between jurisdictions in stream restoration project permit review process*	**3.1** Develop a "Stream Restoration Permit Committee" of the Stream Health Work Group that brings practitioners, regulators and the regulated community together to resolve issues and find common ground to identify actions to streamline the stream restoration project permit review process			
	USWG/SHWG GIT FY 2018 Proposal: "Bay-wide Forums to Promote Implementation of	*Stakeholders lack training and awareness of restoration*	**5.1** Provide training and education to diversity of			

	Enhanced Stream Restoration Practices." Submitted July 2018. Joint meeting Urban Stormwater Work Group (USWG) and SHWG held June 4, 2018.	*techniques and stream health*	stakeholders on stream restoration and stream health			
Funding	Chesapeake Bay Trust: Restoration Research Grant Program. Pooled Monitoring advisory committee has goals of expansion	*Limited number of partners on pooled monitoring effort* 2 – USWG/SHWG GIT FY 2018 Funding proposal 6 – ICPRB HGIT FY2018 proposal	**2.1.2** Implement pooled monitoring approach throughout Chesapeake Bay watershed			

ACTIONS – 2018-2019					
Action #	**Description**	**Performance Target(s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**
Management Approach 1: Identify an appropriate suite of metrics to measure the multiple facets of stream health to complement the baywide Chessie BIBI					
1.1	Establish 2008 baseline and approach for determining future trends (% change)	1. Develop method to express site-specific biological data as percent of stream miles with a passing rank in Chesapeake Bay watershed 2. Determine time period for the 2008 baseline and calculate baseline 3. Decide how trends (i.e., % change from	ICPRB, USGS, Technical Advisory Group for Chessie BIBI update	Chesapeake Bay Watershed	• HGIT FY2018 Proposal - ICPRB proposal : "Strengthening the Stream Health Index in Chesapeake's Mid-Atlantic Coastal Plain" submitted July 2018

ACTIONS – 2018-2019					
Action #	**Description**	**Performance Target(s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**
		2008 baseline) should be determined from random sampling design data			
1.2	Determine and Report Progress	1. Periodically acquire and process available stream data from Bay States and District of Columbia	Bay States and DC provide data; ICRPB work with monitoring staff and EPA CBP for QA process; EPA CBP report and track	Chesapeake Bay Watershed	1. Ongoing
		2. CBP calculate and report % change in Chessie BIBI index			2. Not Formally Begun
1.3	Identify practicable metrics which are consistent with both BMP verification guidance to credit projects for N, P, and sediment load reductions as well as stream functional improvements to use in assessing overall improvement in stream health. Incorporate	1. Stream Health Work Group continue to work with Habitat GIT to review future drafts of state Verification Program Plans to assure states incorporate Verification Committee recommendations	Suggested BMP Verification Committee, Habitat GIT, SHWG, state agencies (MD DNR Monitoring and Non-Tidal Assessment)	1. State representatives to report to SHWG on stream restoration BMP verification by December 2018	
		2. Recommend guidance for minimum stability monitoring and incorporate into BMP Verification Guidance		3. MDE will provide their existing guidance and share with other state representatives. Invited feedback	

ACTIONS – 2018-2019					
Action #	**Description**	**Performance Target(s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**
	these recommendations into BMP Verification Plans.			from other state representatives by December 2018	
		4. Document how higher-level performance monitoring assessment parameters (i.e., water quality and biology) will be assessed			
Management Approach 2: Provision of adequate funding and technical resources to support functional life in stream restoration projects, in addition to nutrient and sediment reductions.					
2.1	Implement pooled monitoring approach throughout Chesapeake Bay watershed	1. SHWG provide input to existing pooled monitoring research program, including topics for research and dissemination support of the effort/results	1. CBT lead on Pooled Monitoring Advisory Committee (members include MDE, USACE, FWS, MD DNR, MD SHA). SHWG lead(s) meet with CBT two times per year.	Maryland (current effort) District of Columbia, Virginia, and other interested jurisdictions (future, expanded effort)	Ongoing, as needed, yearly updates at the yearly forum. See the CBT website for updates throughout the year at https://cbtrust.org/restoration-research/

ACTIONS – 2018-2019					
Action #	**Description**	**Performance Target(s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**
		2. Working with the existing pooled monitoring effort, provide input on short- and long-term funding plan. Where appropriate as determined by the existing pooled monitoring advisory committee and the Stream Health Work Group, participate in key expansion/development efforts (e.g., proposed effort to support the MD MS4 permit monitoring requirements through the Pooled Monitoring Program).	3. Interested parties contact CBT to join pooled monitoring program. Ongoing Build on existing programs like Maryland Stream Restoration Association/ Maryland Water Monitoring Council representative	Potential other Chesapeake Bay Watershed funding partners/collaborators (future, expanded effort)	

ACTIONS – 2018-2019					
Action #	**Description**	**Performance Target(s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**
		3 CBT Pooled Monitoring advisory committee (with help from Maryland Water Monitoring Council Monitoring Work Group) will pursue efforts to disseminate results, including but not limited to an annual forum to share ongoing research information and receive feedback for that research with the audience focus of the regulatory, manager, and select practitioners for the regulatory- and practice-relevant research outcomes. This annual meeting is also used to gather and refine	3. CBT		

ACTIONS – 2018-2019					
Action #	**Description**	**Performance Target(s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**
		the top key restoration questions in the community for future study.			
		4. Develop strategy for monitoring database/clearinghouse	4 SHWG and CBT to discuss development of database/clearinghouse. December 2019		
Management Approach 3: Active and engaged participation by local communities with Federal and State partners is central to Bay restoration (See Management Strategy for full Approach).					

ACTIONS – 2018-2019					
Action #	**Description**	**Performance Target(s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**
3.1	Develop a "Stream Restoration Permit Committee" of the Stream Health Work Group that brings practitioners, regulators and the regulated community together to resolve issues and find common ground to identify actions to streamline the stream restoration project permit review process	1. Identify members of the Stream Health Work Group to form the Committee 2. Develop meeting schedule 3. Review latest synopsis of permit issues, recommendations and actions 4. Provide recommendations to Stream Health Work Group (and Bay Program Partnership) on priority actions to streamline stream restoration project permit review process 5. Determine need work with federal, state regulatory agencies and local	Permitting Committee: USACE (North Atlantic Division, Baltimore, Norfolk), EPA, MDE, VA DEQ, VMRC, Anne Arundel County, Fairfax County, PA DEP, DC DOEE, Trout Unlimited, Other jurisdictional representatives (DE, WV, NY)	Chesapeake Bay Watershed	January 2016 – Ongoing Recommendations on 1-4 expected April 2018

ACTIONS – 2018-2019					
Action #	**Description**	**Performance Target(s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**
		governments to develop streamlined process to evaluate WIPs, MS4 restoration plans or other relevant site analyses as sufficient documentation for alternative site analysis in support of stream restoration permits			
Management Approach 4: Develop and Promote holistic stream restoration design guidelines that identify the level of degradation and improvement of stream functions and key stressors/factors limiting potential uplift.					
4.1	Implement recommendations from the STAC workshop report to establish a joint SHWG and USWG work group to develop guidance (e.g., via an expert panel) to align the stream restoration BMP protocols for nutrient and sediment loads	1. Identify work group facilitator and reps from SHWG and USWG. 2. Establish charge for work group 3. Establish list of expected outcomes and deliverables	Suggested SHWG reps USWG reps. to include USFWS, USACE Baltimore District, STAC, USGS, MDE	Chesapeake Bay Watershed	Co-chairs to reach out to USWG leads to define next steps. March 2018 Interim guidelines by December 2018

ACTIONS – 2018-2019					
Action #	**Description**	**Performance Target(s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**
	delivered downstream with approaches to optimize improvements in stream health and function (e.g., improve instream aquatic life to improve Chesapeake Bay BIBI). Include more consideration of existing habitat conditions so as to not degrade existing functions as a result of a BMP. Also use work group to address other technical issues identified in STAC Workshop on Sustainable Stream Restoration.	4. Develop timeline 5. Develop guidelines (interim and final) 6. Get approval from SHWG and USWG and the Water Quality and Habitat GITs			

ACTIONS – 2018-2019					
Action #	**Description**	**Performance Target(s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**
4.2	Provide recommendations for the water quality impairments associated with a TMDL that will achieve co-benefits as a result of addressing other stressors through restoration practice implementation.	1. Coordinate with representatives from State agencies involved in TMDL and MS4 Programs and Toxic Contaminants Work Group. 2. Review Biological Stressor Identification (BSID) Analysis, sediment TMDLs and MS4 permits and determine best approaches for addressing biological stressors identified by the BSID and classified as 4c can be addressed. 3. Identify stressors used by each jurisdiction and how they relate to stream functions (e.g. temperature, flow, sediment, chloride)	Monitoring and Non-Tidal Assessment as representative from SHWG with interest from VA DEQ, WV DEP, PA DEP, NY DEP FWS, MDE interested, USGS	Maryland, Virginia, Pennsylvania, District of Columbia	1. Invite representatives of Toxic Work Group to upcoming SHWG meeting / 2. MDE to present BSID approach at SHWG meeting Spring 2018/ 3. Dec 201
Management Approach 5: Work with CB partners to include the Enhancing Partnering, Leadership and Management GIT to enhance the capacity of local governments, organizations and landowners of beneficial stream restoration and maintenance practices.					

ACTIONS – 2018-2019					
Action #	**Description**	**Performance Target(s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**
5.1	Provide training and education to diversity of stakeholders on stream restoration and stream health.	1. SHWG membership provide updates at meetings with upcoming training 2. SHWG share recent research findings at meetings 3. SHWG Chair(s) attend LGAC meeting at minimum one time per year to discuss stream health and restoration. Coordinate with LGAC liaison. (e.g. Phase III WIP Fact Sheets) Offer and conduct additional training upon request. 4. Arrange for session at Mid-Atlantic Restoration Conference 5. Add training schedule to SHWG calendar or meeting minutes.	SHWG Membership	TBD based on training needs identified	Ongoing