BIENNIAL STRATEGY REVIEW SYSTEM
Chesapeake Bay Program

Logic and Action Plan: Post-Quarterly Progress Meeting

Stream Health– 2022-2023

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: Continually improve stream health and function throughout the watershed.

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?*
Lack of Knowledge regarding ecological stressors and factors affecting stream health	USGS is finalizing report on stressor identification and expected to be complete in early 2022 SHWG GIT-funded project "Management Approaches to Reduce Stressors of Stream Health" is underway and expected to be complete in early 2022	*Non-biological factors are not considered for measures of stream health. We need more information on how they can be utilized and addressed.*	**1.3** **4.1.3**	Creation of one or non-biological metric for assessing stream health will indicate progress in closing this gap.	The creation of a metric will likely be a long-term project, spanning several workplans. When we are able to create that metric and use it to assess stream health, it will allow us to assess a stream's condition more holistically.	Science needs aligned with external agency (USGS) supporting research to fill in knowledge gaps. GIT-funding further supported research to address knowledge gaps
		There is a lack of understanding regarding how a	**4.1.2**	The Stream Health Work Group will collaborate with USGS,	The work on summarizing a stream's response to	

	SHWG STAC workshop proposal for 2022/2023 on the "State of the Science" of stream health Next annual MWMC conference?	*management practice will affect the stressors identified by the Maryland Biological Stressor Identification Index.*		the Center for Watershed Protection, and other parties to compile information on a stream's response to management actions and use it to create a product document summarizing findings.	management actions will be ongoing as more actions are explored. Focusing effort on identifying stressors and quantifying stream response to management approaches will allow for a better understanding of how to effectively manage a stream.	
Lack of holistic consideration of stream health when considering BMP crediting	Ongoing research supported through the Chesapeake Bay Trust Restoration Research Grant Program (aka pooled monitoring approach) Wetland Workgroup is organizing a STAC workshop scheduled for March 2022 to consider systems approach for crediting	*There are no BMP crediting efforts for functional improvements in stream health. Currently the only BMP credits available are for sediment and nutrient load reduction.* *Few resources offer a holistic view of stream restoration and BMP guidance. They have an emphasis on sediment and nutrient reductions without consideration co-benefits*	**1.3** **4.1.1**	The Stream Health Work Group will collaborate with USGS and other partners to compile information on a stream's response to management actions and use it to create a product document summarizing findings. Results of pooled monitoring research. Results of Wetland Workgroup's STAC workshop considering a systems approach for crediting	The work in this area will be an ongoing effort and will continue as proposals are funded. Going forward, this may allow for new kinds of BMP credited stream restoration that were previously overlooked because they did not offer significant nutrient and sediment load reductions.	Future STAC workshop may directly address this topic. Research demonstrates effort in some cases to more directly address ecological needs of stream restoration; project in CBW still driven by BAY TMDL for water quality credits
Heavy administrative burden for stream	The Stream Restoration Permit Committee was formed and is	*Cumbersome and lengthy stream restoration project permit review*	**3.1**	The Stream Restoration Permit Committee will send out the stream permit survey at	The workgroup will use the results of this permit survey as an opportunity	SHWG appears to be a group most suitable to examine this

restoration projects	preparing a survey to assess progress and need to improve permit process and project outcomes related to functional lift.	*processes across watershed increases time to completion and decreases the number of projects that are able to succeed.*		regular intervals and the responses will be tracked anonymously. Survey results indicating actions reducing legal, technical, and administrative conflicts and resolution of identified issues will be considered progress to address this gap.	to reassess the needs of the group.	topic Baywide given its organizational representation of its membership (e.g. State agencies, consultants, researchers)
Need for a greater body of scientific research on stream restoration and applied stream health	USGS is finalizing report on stressor identification and expected to be complete in early 2022 SHWG GIT-funded project "Management Approaches to Reduce Stressors of Stream Health" is underway and expected to be complete in early 2022 SHWG is pursuing funding for the "Data Review and Development of Multi-Metric Stream Health Indicators" project. SHWG STAC workshop proposal for 2022/2023 on the "State of the Science" of stream health	*Due to the nature of state's protocols in collecting biological data for the Chessie BIBI, the frequency of data calls are insufficient for yearly reporting change in stream health.*	**1.2** **2.1.2** **3.2**	Creation of one or non-biological metric that can be used to supplement the data for Chessie BIBI for assessing stream health will indicate progress in closing this gap. Results of pooled monitoring research.	The creation of a metric will likely be a long-term project, spanning several workplans. When an additional metric(s) is created, it will allow us to have an annual view of how stream health is changing which will be useful in monitoring response to management actions and other local and watershed wide changes.	Aligning science needs with external organization was central to making progress, along with GIT-funding.

	SHWG GIT-funded project "Management Approaches to Reduce Stressors of Stream Health" is underway and expected to be complete in early 2022 Wetland Workgroup is organizing a STAC workshop scheduled for March 2022 to consider systems approach for crediting	*No BMP crediting efforts for functional improvements.*	**1.2** **1.3** **4.1.2**	The Stream Health Work Group will continue to collaborate with USGS, Center for Watershed Protection, and other entities to compile research on a stream's response to management actions and use it to create a product document summarizing findings.	In the long term, the Stream Health Work Group would hope to see new BMP crediting efforts for functional improvements.	
Greater coordination between partners	Chesapeake Bay Trust: Restoration Research Grant Program. Pooled monitoring Restoration Award Program (CBT) Presenting about the Pooled Monitoring Initiative at conferences and to key groups to reach both a federal and state jurisdictional audience Addition of "Pooled Monitoring" option in	*Increased awareness of and involvement in projects from states on pooled monitoring opportunities.*	**2.1.1** **2.1.3**	In order to quantify progress towards addressing this gap, we will look at the number of partners in the pooled monitoring effort overtime. An increase in the number of partners and the overall amount of funding will be regarded as progress towards achieving this outcome. An increase in Restoration Research applications to CBT from organizations	Long term increased, involvement of Chesapeake Bay states engaged in the Pooled Monitoring Initiative will allow for greater awareness of projects/results, help refine key restoration questions, offer up potential restoration sites for research, apply to or spread the word about the Restoration Research Request for Proposals (RFP), and/or join the Pooled Monitoring Initiative as	Diverse membership of the SHWG beyond the State agencies has helped the SHWG make progress

	the draft MD MS4 permit.			outside of MD will also indicate progress.	a funding partner to increase our power and support more key research efforts together.	
	The Stream Health Work Group has developed the Stream Restoration Permit Committee and is preparing a 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**	The Stream Restoration Permit Committee will send out the stream permit survey at regular intervals and the responses will be tracked anonymously. An increase in positive answers will be considered progress to address this gap.	The workgroup will use the results of this permit survey as an opportunity to reassess the needs of the group.	
		Stakeholders lack training and awareness of current restoration techniques and stream health.	**5.1**	Progress on this outcome will be measured by documented updates to stream restoration design manuals and standard operating practice. There will be an emphasis on communication between jurisdictions in order to update these manuals and ensure best practices across state lines.	Updating restoration design manuals and encouraging collaboration between groups will be an ongoing project spanning several workplans. The science of restoration is always progressing and ensuring that stakeholders and practitioners are up to date will be an ongoing effort.	

Limited funds	Chesapeake Bay Trust: Restoration Research Grant Program. Pooled Monitoring Initiative has goals of expansion. SHWG FY2021 CBT project "Management Approaches to Reduce Stressors of Stream Health"	*Limited number of funding partners on pooled monitoring effort.*	**2.1.2**	In order to quantify progress towards addressing this gap, we will look at the number of partners in the pooled monitoring effort overtime. An increase in the number of funding partners and the overall amount of funding will be regarded as progress towards achieving this outcome.	The Pooled Monitoring Initiative is an ongoing effort and at this time, recruitment to join will also be ongoing. There is currently no limit set on the number of funding partners for this effort. As more participants join the effort, there will be a greater wealth of data and funds for use by the group which will allow for more work to be done.	Work funded indirectly through other agencies (e.g., USGS, ICPRB) to address actions in work plan or direct funding itself provided the means to advance actions.
		Limited grant funding for Chessie BIBI does not cover any unexpected barriers and expenses.	1.1	NA – It is difficult to measure progress towards anticipating problems because these problems may arise at irregular intervals.	The Stream Health Work Group will work with ICPRB to anticipate challenges associated with the Chessie BIBI and seek additional funding as necessary. This is an ongoing effort that the workgroup will work to support.	

ACTIONS – 2022-2023					
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 bay-wide Chessie BIBI					
1.1	Provide recommendations on reporting the Chessie BIBI metric to document improvement in stream health consistent with the Agreement Outcome.	1. ICPRB and USGS report on the Chessie BIBI in stream miles and/or catchment scale. 2. SHWG to provide recommendations on units to report Chessie BIBI (miles, catchment, both).	ICPRB, USGS, US EPA CBPO	Chesapeake Bay Watershed	April 2022
1.2	Determine and Report Progress	1. ICRPB, USGS and EPA CBPO provide recommendations for organization responsible to periodically acquire and process available stream data from Bay States and DC. 2. Acquire and process available stream data from Bay States and District of Columbia for the period of 2018 – 2023. Next call for data 2024) 3. CBP calculate and report % change in Chessie BIBI index. US EPA CBPO will publish and disseminate results.	ICPRB, USGS, US EPA CBP Data Team, STAR	Chesapeake Bay Watershed	June 2023

ACTIONS – 2022-2023					
Action #	**Description**	**Performance Target (s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**
1.3	Identify additional parameters/metrics to describe and quantify stream health to complement existing biological indicators (e.g., Chessie BIBI).	1. Consolidate and summarize existing Bay Program, USGS and other relevant research on stream metrics to include databases associated with the Chessie BIBI, USGS, Chesapeake Bay Healthy Watersheds Assessment 2. Complete Phase 3 of the "Management Approaches to Reduce Stressors of Stream Health" (Action 4.1) 3. Submit funding request to support Phase of the "Management Approaches to Reduce Stressors of Stream Health" work plan.	SHWG, Healthy Watersheds GIT, USGS	Chesapeake Bay Watershed	June 2024
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	Support 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 prior to issuance of the request for proposal	CBT lead on Pooled Monitoring Initiative (Pooled Monitoring Advisory Committee members include e.g., MDE, USACE, USEPA, FWS, MD DNR, MDOT SHA, MS4 funding partners such as Anne Arundel County). SHWG lead(s) meet with CBT two times per year.	Maryland (current effort) District of Columbia, Virginia, and other interested jurisdictions (future, expanded effort) Potential other Chesapeake Bay	Annual December 2022 December 2023 See the CBT website for updates throughout the year at https://cbtrust.org/re

ACTIONS – 2022-2023					
Action #	**Description**	**Performance Target (s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**
		2. Provide input on short- and long-term funding at the request of Chesapeake Bay Trust to support opportunities to expand /develop efforts (e.g., to other Bay Program jurisdictions) of the research program.	Chesapeake Bay Trust Pooled Monitoring Initiative; SHWG	Watershed funding partners/collaborators (future, expanded effort)	storation-research/
		3. Identify selected research findings and/or their application beyond the research study to present at SHWG meeting(s), providing an opportunity to ask new questions, clarify the current state of scientific knowledge, and refine the top key restoration questions in the community for future study.	3. SHWG, The Chesapeake Bay Trust's Pooled Monitoring Initiative (with help from Maryland Water Monitoring Council Stream Restoration Monitoring Sub-Committee and Maryland Stream Restoration Association)	Chesapeake Bay	Annual (December 2022, 2023)
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).					
3.1	Develop a "Stream Restoration Permit Committee" of the Stream Health Work Group that brings	1. Identify members of the Stream Health Work Group to form the Committee 2. Develop meeting schedule	Permitting Committee: USACE, MDE, MDNR, VA DEQ, and Consultants	Chesapeake Bay Watershed	Form committee by April 2022 Implement survey by December 2022

ACTIONS – 2022-2023					
Action #	**Description**	**Performance Target (s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**
	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	3. Develop and distribute survey 4. Summarize survey results and provide recommendations to Stream Health Work Group (and Bay Program Partnership) on priority actions identified from the survey			Provide summary of survey results in April 2023
3.2	Engage with under-served, under-represented communities to increase participation in stream health concerns	1. Develop a one-page plain-language document on stream health and communities, written specifically for the targeted audience to assist in communicating with those communities 2. Identify communities based on EPA's Environmental Justice Screening Tool 3. Meet with community representatives to discuss the SHWG's goals and understand and document their concerns 4. Share findings with LGAC	SHWG, Communications Workgroup, GIT 5, GIT 6, LGAC, others	Chesapeake Bay Watershed	Communication Document complete by June 2022 Community Meetings complete by December 2023
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.					

ACTIONS – 2022-2023					
Action #	**Description**	**Performance Target (s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**
4.1	Collaborate with USGS as a part of their new Science Plan to investigate and define stream stressors and their management to improve stream health. This collaboration will be in order to better understand what factors lead to functional uplift and which may lead to degradation.	1. Stream Health Work Group will collaborate with USGS to conduct a literature review and survey of Bay jurisdictions to determine what stressors and drivers are most affecting stream health and responsible for causing impairment of streams consistent with state-defined 303(d) listings.	USGS will be responsible for conducting the initial review of literature on stream health stressors and will report out to the Stream Health Work Group. The SHWG membership/state representatives or referred colleague will facilitate implementation of the survey.	Chesapeake Bay Watershed	Work is underway and expected to be complete by December 2021
		2. Determine which stressors, as identified by work with USGS, can be changed through management activities, especially those management activities that align with practices identified in the new jurisdiction Watershed Implementation Plans (WIPs) to reduce nutrient and sediment delivery to the Bay	SHWG, USGS, Center for Watershed and Protection, Technical Advisory Group for CBT/GIT project "Management Approaches to Reduce Stressors of Stream Health"		Work is underway and expected to be complete by March 2022; ongoing

ACTIONS – 2022-2023					
Action #	**Description**	**Performance Target (s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**
		3. Following the implementation of management efforts, identify how stream health is changing and how it can be better characterized through both biological and non-biological metrics	Responsible parties for phase 3 (Action 4.1.3) will be determined upon GIT funding and completion of phases 1 and 2. Tentative RPs: SHWG, USGS, and others may include ICPRB		December 2024; ongoing
4.2	Develop report and recommendations on the State of Science for Stream Restoration and impacts on stream health	1. Form Planning Committee for STAC Workshop 2. Submit request for STAC workshop on the "State of the Science" stream restoration workshop 3. Plan and execute STAC workshop on the "State of the Science" stream restoration if funded	SHWG, STAC, MWMC, MSRA, USWG, Forestry WG		December 2023
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.					
5.1	Improve communications and understanding of stream health	Develop summary documents of the results of the "Management Approaches to Reduce Stressors of Stream Health" reports as part of Action 4.1	SHWG, CBPO Communications Team/Indicators Coordinator/Data Team	Bay-wide	December 2024

ACTIONS – 2022-2023					
Action #	**Description**	**Performance Target (s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**
5.2	Committed cooperation and coordination with other groups within the Chesapeake Bay Program to assure shared resources and information and further the goals of the Chesapeake Bay Watershed Agreement	1. Have one member of the stream health workgroup other than the staffer, attend in person or listen in on the work group meetings of other relevant work groups and goal teams 2. Workgroup members/interested parties who are involved with other workgroups, will share updates during the Stream Health Workgroup Meetings on any relevant projects/activities being done by those workgroups.	Stream Health Work Group Membership, CBP GIT members	Chesapeake Bay Watershed	Ongoing