BIENNIAL STRATEGY REVIEW SYSTEM
Chesapeake Bay Program

Logic and Action Plan: Pre-Quarterly Progress Meeting (2022)

2025 WIP Outcome— By 2025, all practices and controls installed to achieve the Bay's dissolved oxygen, water clarity/submerged aquatic vegetation and chlorophyll-a standards as articulated in the Chesapeake Bay TMDL document.

2020-2021

Long-term Target: 2025 Total Nitrogen target load = 214.88 million lbs; 2025 Total Phosphorus target load = 13.314 million lbs; 2025 Total Suspended Sediment target load = 18,587 million lbs
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?*

Best Management Practice (BMP) implementation: Technical assistance with implementing, tracking, reporting, and verifying source control and mitigation practices	Convening a BMP Verification Ad-hoc Action Team An optimization framework and tool are under development in CAST to plan and target implementation The Chesapeake Bay Watershed Data Dashboard is available for use that provides comprehensive support for planning implementation, such as BMP targeting and monitoring trends analyses	A) Need additional technical assistance providers, and specificity on what assistance is needed, in the agricultural sector at the local scale B) Training to technical assistance providers on BMP verification and the Data Dashboard. C) An evaluation of BMP implementation and maintenance costs D) Updates needed to the BMP verification framework to recognize resource limited verification programs E) Funding for BMP Panels F) Getting new BMPs and associated efficiencies included in CAST G) Needs assessment to target implementation H) Targeting lands that produce disproportionate pollutant loads, incentivize treatment by selecting cost-effective control measures I) The current approach for crediting atmospheric deposition reductions to WIPs limits which reductions can be credited, and the duration of that credit	Provide more "boots on the ground" to address identified technical assistance needs expressed by the state and local jurisdictions (A, B,) [Ongoing] Consider expanding circuit rider type programs to deliver technical assistance. (A, B) [New] Develop BMP verification [Ongoing] and Data Dashboard training (B) [New] Continue to update implementation costs on a regular basis (C) [Ongoing] Potential refinements to the partnership's BMP Verification framework document, including potential approval of alternative verification methodologies and re-verification (D) [Ongoing] Reassess and update BMP credit durations as determined by the BMP verification ad-hoc action team and the WQGIT (D) [Ongoing] Understand how volunteers or citizen stewardship can be used	Number of staff increases or providers to deliver technical assistance Number of trainings for the Data Dashboard Number of BMP verification trainings provided (B) Updated costs in CAST 2021 Adoption of revisions to BMP verification framework document Completion and release of the optimization framework and tool Percent and number of BMPs verified per year Number of BMPs with lost credit due to inspection and maintenance lapse The CBP partnership to identify a mechanism or	Increased delivery of technical assistance to support and accelerate BMP implementation, particularly in the agricultural sector Revisions to BMP verification and panel protocols that adheres to a robust scientific process and framework while recognizing application challenges Increased adoption and targeting of cost effective BMPs implemented in high loading lands	Since 2020 there has been overall mixed success on the actions associated with Factor 1. For example, jurisdictions have made progress on expanding positions and funding for technical assistance (A) and have continued to increase implementation.

			to alleviate capacity shortfalls for BMP verification (D) [New] Request CBP partnership to explore funding to continue supporting BMP expert panels (E) [New] Potential refinements to the partnership's BMP Expert Panel Protocols (F) [New] Working with the CBP Communications Office, build awareness (e.g., communication materials, trainings) of natural resource BMPs (e.g., wetlands, forest buffers, and tree planting) with water quality co-benefits that are lagging in implementation (E, F) [New] Update CAST to incorporate optimization tools (C, G) [Ongoing] Increase number of CAST training and users with a focus on showing how to target BMPs (H) [Ongoing] Create an ad hoc group associated with the modelling workgroup to revisit the WIP atmospheric deposition	opportunities to fund BMP expert panels. Adoption of revisions to BMP Expert Panel Protocols Depending on resources and funding, start and finish at least one BMP expert panel process (F) Adoption and implementation of natural resource BMPs (via annual progress submissions) Adoption of an optimization tool into CAST Number of CAST trainings and number of times recorded trainings are used Allocation of funds toward most effective basins		

			crediting methodology, so that these practices can become part of the states' WIP reduction portfolio (I) [New]			

Factor	Current Efforts	Gap	Actions	Metrics	Expected Response and Application	Learn/Adapt
Funding for implementation: Assistance insource sectors to implement local-scale programs, plans, and practices. Likely emphasis on the agricultural sector.	Continued federal funding though EPA Grant Programs (CBIG, CBRAP, 319, SRF), Watershed Implementation Plan assistance, state programs, and USDA Farm Bill and NRCS grant programs Exploring pay for performance programs at various scales Learning from Conowingo WIP financing strategy	(A) Expanding opportunities to leverage funding and resources to increase on-the-ground implementation B) Lack of funding to reduce and prevent pollution and improve living resources C) Innovative technical and financial solutions and assistance to implement practices, plans, and programs	Increase awareness (e.g., providing presentations and resource materials to the CBP partnership) of the SRF program to increase coordination and leverage opportunities for NPS implementation (A, C) [New] Identify and discuss dedicated funding streams for technical assistance providers (A, B, C) [Ongoing] Continue to support implementing Phase III WIPs and 2-year milestones (A, C) [Ongoing] Identify lessons learned from the Conowingo WIP financing strategy and determine if there are opportunities elsewhere in the watershed (A, C) [New] Create pay for performance program proposal (A, C) [New] Identify full-scale regional case studies to bring to the CBP	Increased leveraging of available funding resources Increased funding for technical assistance delivery in the agricultural sector	Accelerated implementation in the agricultural sector Innovative financing approaches to attract private sector funding	

Factor	Current Efforts	Gap	Actions	Metrics	Expected Response and Application	Learn/Adapt
			partnership for presentation (C) [New] Discuss development of incentive structures, working with NRCS, to launch pay-for-performance programs (C) [New]			

Factor	Current Efforts	Gap	Actions	Metrics	Expected Response and Application	Learn/Adapt
Communication and coordination: Consistent efforts with diverse stakeholders. Other potential audiences include states and DC; local jurisdictions; and federal agencies such as USDA, DoD and EPA	The Diversity Equity, Inclusion, and Justice (DEIJ) Initiative Consulting with Tribes within the Bay watershed	A) Participation from under-represented groups in the WQGIT and source sector workgroups B) Clear and concise communication with the agricultural and urban communities C) Integrating the Partnerships social science strategy to support water quality goal implementation D) Strengthen coordination between federal, state, and local levels to accelerate implementation E) Coordinating efforts to achieve consensus-based decisions	Build on the work of the DEIJ Action Team and work with the relevant teams (Diversity, Communications) to identify and engage under-represented groups (A) [New] Obtain a list of potential members/nominees (e.g., LGAC) from under-represented groups to participate in the WQGIT and its source sector workgroups (A) [New] Identify a WQGIT representative(s) to participate on the Community Advisory Board and to help contribute to the DEIJ implementation plan (D, E) [New] Identify a WQGIT representative to engage and coordinate with LGAC as a means of information and knowledge exchange (D) [New] Create trainings in underserved agricultural areas on the Chesapeake Bay TMDL and WIPs	Number of tribal consultations Begin institutionalizing DEIJ approaches into WQGIT decisions Increased funding opportunities and awareness for underserved areas Incorporation of DEIJ principles in ranking criteria for implementation projects Achievement of objectives in social science strategy Number of meetings with LGAC Increased implementation in underserved areas as a result of engagement	Increased engagement from under-represented communities Greater understanding and application of social science in addressing implementation barriers	

Factor	Current Efforts	Gap	Actions	Metrics	Expected Response and Application	Learn/Adapt
			process, including an overview of funding opportunities (B, C, D) [New] Develop factsheets or webinars to explain local water quality trends for underserved areas of the watershed (B, D) [New] Develop a factsheet explaining opportunities to advance DEIJ values into grant funding opportunities (see fact sheet developed by the Wetlands Workgroup for an example) (C, D) [New] Help implement a CBP social science strategy (C) [New] Focus a GIT meeting to identify ways to strengthen coordination between all levels of government (D) [New]			

CAST and other model updates: Incorporating new science and data into models and decision support tools.	Drafted and now implementing the CAST workplan for 2021 A fine scale model of the Chesapeake watershed is being developed. The model will have 50 times more spatial resolution than the current Phase 6 CAST	A) Understanding and communicating how model update changes apply to milestone development and implementation C) Methods for identifying spatial variation in pollutant source areas and BMP effectiveness and implementing BMPs based on these spatial analyses D) Spatial resolution of the Chesapeake Bay TMDL accounting system E) How to assess progress toward nutrient targets using a common currency F) Understanding nutrient transformation and transport from land uses to receiving waters G) Constraints on Bay model to assess dissolved oxygen water quality attainment in the Bay's shallow waters I) Understanding how to use CAST to determine the number, type, and mix of BMPs that can be used to address new reduction planning targets	Implement and complete the CAST 2021 work plan (A) Identify a WQGIT representative to work with the Communications team to assist in explaining the various model updates(A) [New] Once CAST 21 is updated, create webinars for more novice users to explain changes (A) [New] Build in Partnership-approved products of the BMP Verification Ad-Hoc Action Team related to credit duration [New] Request that STAR and the Modeling Workgroup investigate methods to refine the spatial resolution of the TMDL accounting system, refine nutrient speciation accounting, and begin development of an estuarine model with improved shallow water simulation (D-G) [Ongoing] Understand the time it takes for different tidal segments to achieve water-quality standards to better understand responses to restoration	Finalization and release of CAST 2021 for application Release CAST 21 with new functionality to create and evaluate plans with BMPs at a finer scale Press release about model updates Number of CAST trainings	Updated decision support tool with the latest scientific information and data to support implementation efforts.	The actions associated with this Factor have been completed or are on track more than any other Factor in this plan. This is largely thanks to the partnership's efforts through the Modeling Workgroup, source sector workgroups and the CBP Modeling Team, among others. The ongoing delayed implementation of CAST21 is the main reason for two actions being considered Yellow, all other actions have been completed or are on track as part of Phase 7 Model development or future Phase 6 CAST updates. For the next iteration of the Logic & Action Plan, ongoing tasks will need to be modified to reflect Phase 7 Model Development or the workplan for the next CAST

			efforts in the watershed (G) Provide CAST and other training to interested stakeholders [Ongoing]			update (to be released in 2024). Additionally, better alignment is needed among these actions, their performance targets and timelines.

Factor	Current Efforts	Gap	Actions	Metrics	Expected Response and Application	Learn/Adapt
Water quality monitoring: Sustain and enhance monitoring and interpretation of results to help understand water quality response to management actions. It is important to demonstrate progress towards attainment of water quality standards.	Ongoing loads and trends project in the Chesapeake Bay nontidal monitoring network Ongoing work in the USGS/CBPO being undertaken by STAR and associated science partners	A) Monitoring trends and loads data into assessing progress toward outcome B) Translate monitoring findings to management implications, e.g., targeting source control and mitigation programs	Provide technical assistance to Bay jurisdictions to understand water quality monitoring trends in priority watersheds to further target implementation efforts (A) [Ongoing] Incorporate more monitoring trends and loads data into assessment of progress toward outcome (e.g., Bay Barometer) (A) [Ongoing] Use monitoring data to target practices to demonstrate success (B) [Ongoing]	Increased implementation in targeted areas to achieve water quality standards, using monitoring trends information Reporting from jurisdictions regarding how monitoring data is incorporated into decisions regarding implementation		

Factor	Current Efforts	Gap	Actions	Metrics	Expected Response and Application	Learn/Adapt
Using co-benefits as a catalyst to increase implementation by aligning with priorities and goals beyond water quality: characterization of benefits beyond water quality improvements associated with existing BMPs to identify new funding opportunities and opportunities to increase implementation	Projects underway to understand and quantify ecosystem services (e.g., Wetland Workgroup project to recognize the value of wetland protection and restoration to a variety of State initiatives and programs)	A) Understanding the science to support including co-benefits into BMPs, plans, and programs to achieve outcome B) Understanding the carbon sequestration and toxic contaminant retention from Bay restoration efforts. Link to carbon markets and private financial markets C) Understand and ascribe monetary value to cost savings from implementing projects with co-benefits D) Understanding how co-benefits (e.g., habitat, flood protection, carbon sequestration) can be used as a tool to access funding to increase implementation to help achieve outcome	Work with other GITs to develop funded projects that provide co-benefits and integrate climate resiliency, habitat protection, and reductions of contaminants into the implementation of water quality BMPs (A, B, D) [Ongoing] Work with financial experts to develop information that monetizes cost savings by implementing projects with co-benefits (C) [New] Develop a few specific examples as a demonstration using projects with low implementation levels (e.g., wetlands, tree planting, forest buffers) (C) [New] Use co-benefits as a tool to fund and accelerate BMP implementation efforts (D) [New]	Number of projects with WQ and other co-benefits. Quantification and integration of co-benefits into CAST and optimization decision support tools	Stronger cross-GIT coordination Increased understanding of those practices that have benefits beyond water quality. For example, living resources, public safety, property protection.	

Factor	Current Efforts	Gap	Actions	Metrics	Expected Response and Application	Learn/Adapt
Climate change tracking: understanding and allocating impacts of climate change induced watershed loads for 2022-2023 milestones.	Understanding and communicating climate resilient BMPs Describing how climate change impacts nutrient targets in 2035 and beyond	A) Understanding how to incorporate climate change impacts into 2022-2023 programmatic and numeric milestones B) Understanding changes in BMP effectiveness under climate changes (e.g., increase in temperature, changes in biological process rates, and BMP efficiencies C) Understanding potential changes in agricultural projections into the future based on adaptation to climate change D) Identification and promotion of climate projects with co-benefits E) How will federal facilities play a role in addressing needed climate reductions?	Integrate the STAC technical synthesis on climate resilient and adapted BMPs and management actions into communications to jurisdictions for meaningful decision-making (A, B, C) [Ongoing] Update Intensity-Duration- Frequency curves (IDFs) for all counties in the Chesapeake watershed and encourage the adoption and implementation of the updated IDFs for stormwater and other applications (A- D) [Ongoing] Work with the Federal Facilities Workgroup to determine federal role in meeting climate reductions (E) [New]	Specific and programmatic milestones to address climate effects Specific BMPs to address climate effects	Greater understanding of climate resilient BMPs to help mitigate climate effects	

ACTIONS – 2020-2021						
Action #	**Description**	**Performance Target(s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**	**Pre-QPM status & summary of feedback**
Factor 1: BMP Implementation						4 Green, 6 Yellow, 1 Red

1	Provide more "boots on the ground" support to address identified technical assistance needs expressed by the state and local jurisdictions Consider expanding circuit rider type programs to deliver technical assistance. Develop BMP verification and Data Dashboard training	Number of staff increases or providers to deliver technical assistance Number of trainings for the Data Dashboard and verification	Jurisdictions / WQGIT	Watershed-wide	2021+	Overall, jurisdictions have dedicated a lot of time and effort to expand technical assistance capacity and opportunities, but there is still a large need. BMP verification remains a challenge for responsible partners. The Data Dashboard continues to be enhanced. Staff turnover limited training opportunities for the Dashboard but is expected to increase again moving forward. Conclusion: Role of WQGIT itself is not well-defined in this space and with multiple items. This action may need to be split to better articulate the actions, performance targets and relevant responsible parties.
2	Continue to update implementation costs on a regular basis	Updated costs in CAST 2021	Jurisdictions/CBPO	Watershed-wide	2020-2021	CAST19 included an update to 2018 dollars, but recent inflation trends affect the cost of BMPs. Release of CAST21 remains paused at this moment. However, CAST users can edit cost profiles at any time within CAST when they create or edit their scenarios. Moving forward, this action may need to clarify what is meant by "regular basis" if this action is retained for the next two years.
3	Potential refinements to the partnership's BMP Verification framework document, including potential approval of alternative verification	Updated partnership's BMP verification framework	BMP Verification Ad-hoc Action Team (BMPVAHAT); Source Sector Workgroups; WQGIT	Watershed-side	2020-2021	The BMPVAHAT met for the first time in August 2020 and is working to complete its activities in coming months. Sector workgroups have worked to supplement or clarify their verification guidance in recent years. Efforts in the workgroups and in annual BMP progress reviews

	methodologies and re-verification					have brought to light some issues with the BMP Verification Framework. However, changes to the BMP Verification Framework document would be a larger effort than the BMPVAHAT could accommodate. The overall framework was approved by the PSC in 2014 and thus PSC agreement and approval would be expected for substantive alterations. While there has been significant effort from the workgroups and the BMPVAHAT, this action is considered Yellow given the difficulties that it has encountered. Also, the current performance target for an updated framework document is less than ideal considering the effort that would be needed to alter the framework document. The BMPVAHAT identified the major issues with the BMP Verification Framework, but no refinements were agreed upon by the membership. The major issues identified include: 1) Lack of access to federal data 2) Personnel to conduct verification 3) Access to operations within the states (producer can deny access). The BMPVAHAT did not have the expertise to address the issues of the BMP Verification Framework. The BMP Verification Committee and BMP Verification Review developed the body of the framework. A group with similar

						(if not exact) membership should be reconvened to discuss potential modifications.
4	Reassess and update BMP credit durations as determined by the BMP verification ad-hoc action team and the WQGIT	Final recommendations for BMP credit durations	BMP Verification Ad-hoc Action Team; Source Sector Workgroups; WQGIT	Watershed-wide	2020-2021	The BMPVAHAT worked with Ag, Forestry and Wetland Workgroups to consider possible changes to credit durations. Some proposals did not achieve consensus or are still underway. This is considered yellow given that progress has been made to update some credit durations, but with a significant amount of time and effort. There are mixed opinions about the importance of keeping this action for the next two years. BMPVAHAT still ongoing. Possible sunset Fall of 2022. Forestry & tree BMP credit duration extensions approved by the BMPVAHAT. Wetland BMP credit duration extension proposal still TBD. BMP partial credit proposal did not get partnership approval.
5	Understand how volunteers or citizen stewardship can be used to alleviate capacity shortfalls for BMP verification	Increased on-the-ground support of verification efforts	BMP Ad-hoc Verification Action Team	Watershed-wide	2020-2021	This action was never linked or communicated to the BMPVAHAT and is therefore considered Red. If retained or updated for the next two years this action should involve collaboration with the Stewardship GIT. Pilot programs or examples may be needed or should be identified if they already exist. This task was not included in the charge of the BMPVAHAT; therefore, no progress has been made. Membership of the BMPVAHAT would be unable to address this. Better suited for

						Stewardship WG, as it includes citizen science component and would involve funding to develop research methods and identify a pilot community.
6	Explore funding to continue supporting BMP expert panels	Funding delivered to initiate new BMP expert panels	WQGIT and Source sector workgroups	Watershed wide	2020-2021	Potential funding from EPA for future expert panels. Concerted effort should be made to ensure limited funding is going to highest priority items (ex. Water quality activities that also have habitat and climate benefits). Consideration: remove source sector WGs from responsible parties.
7	Potential refinements to the partnership's BMP Expert Panel Protocols	Updated BMP Expert Panel Protocol	WQGIT and Source sector workgroups	Watershed-wide		Revisions to the BMP Protocol have been underway since 2021. Approval of the revised Protocol will occur as early as the September 2022 WQGIT. Therefore this action is considered Green. Updated BMP Expert Panel Protocol approval by WQGIT is scheduled for September 2022.
8	Working with the CBP Communications Office, build awareness (e.g., communication materials, trainings) of natural resource BMPs (e.g., wetlands, forest buffers, and tree planting) with water quality co-benefits that are lagging in implementation	Adoption and implementation of natural resource BMPs (via annual progress submissions)	WQGIT and CBP Communications Office	Watershed-wide	2020-2021	Outcome attainability for wetland and forest buffers has been elevated over the last 2 years and PSC-requested workshops are occurring in summer/fall of 2022.
9	Update CAST to incorporate optimization tools	Adoption of optimization tool into CAST	Modeling Workgroup/WQGIT	Watershed-wide	2020-2021	On track for completion of optimization tool for CBP in 2025. Part of Phase 7 model development. Suggested edit of performance target: "Adoption of optimization tool." The tool

						will not be integrated into CAST and will have its own user interface.
10	Increase number of CAST training and users with a focus on showing how to target BMPs	Number of CAST trainings and number of times recorded trainings are used (H)	CBPO Modeling Team	Watershed-wide	2020-2021	CAST trainings/webinars happen on a monthly basis and communication about trainings has increased. Targeting BMPs is a regular topic that is covered. See "Targeting Reductions" webinar as example. Other targeting resources available as well. Potential improvements: partner with CBPO Communication Team to get the word out about trainings on social media, etc.
11	Create an ad hoc group associated with the modeling workgroup to revisit the WIP atmospheric deposition crediting methodology, so that these practices can become part of the states' WIP reduction portfolio	Modeling framework for crediting air deposition as part of the WIPs and Bay TMDL	WQGIT and Modeling Workgroup	Watershed-wide	2021+	Task completed. Updated the Community Multiscale Air Quality (CMAQ) Airshed Model tool review and accepted by the Modeling WG in July 2022. Methods expected at end of Summer 2022.

ACTIONS – 2020-2021						
Action #	**Description**	**Performance Target(s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**	**Pre-QPM status & summary of feedback**
Factor 2: Funding for Implementation						2 Green, 2 Yellow, 3 Red
1	Increase awareness (e.g., providing presentations and resource materials to the CBP partnership) of the SRF program to increase coordination and leverage opportunities for NPS implementation	Increased leveraging of available funding resources	EPA	Watershed-wide	2020-2021	EPA hosted four presentations in 2020 and two in 2021 on using the Clean Water State Revolving Fund (CWSRF) program to reduce nutrients and sediment through nonpoint source implementation. EPA and NRCS held a local workshop on July 29, 2021, where successful approaches for using CWSRF to fund

						agriculture conservation practices was showcased. In 2022 EPA, MD and DE conservation districts held webinars to share success stories and discuss opportunities to use CWSRF to finance agriculture conservation practices. EPA is conducting research to identify successful approaches for marketing and using CWSRF for agricultural conservation practices. EPA and the CBP partnership should continue to communicate the benefits of using of the CWSRF program to implement nonpoint source practices to meet partnership goals. EPA should complete its research on successful marketing approaches and the CBP partnership should use the lessons learned to communicate the use of CWSRF funds to achieve its implementation goals. Continued engagement, collaboration and information sharing between state partners and EPA CWSRF staff will be valuable for improving access to loan funding. Research suggests that conservation partners may be unaware of the needs and barriers that underserved producers face when accessing loan funding. Recommend additional outreach conducted in partnership with USDA and NRCS underserved farmer programs, local community food justice/urban agriculture

						organizations and Tribal partners may improve access to financing.
2	Identify and discuss dedicated funding streams for technical assistance providers	Increased funding for technical assistance delivery in the agricultural sector	WQGIT and Budget and Finance Workgroup	Watershed-wide	2020-2021	Jurisdictions have continued to enhance and expand programs available to support technical assistance. Some federal funding may be only temporary or could vary year to year. This remains a relevant need going forward. The WQGIT and Budget/Finance Workgroup have not collaborated to discuss or identify such funding streams. This would be considered Red, but balances to a Yellow considering progress by the jurisdictions as well as through the LGAC and Local Leadership Workgroup.
3	Continue to support implementing Phase III WIPs and 2-year milestones	Increased implementation	EPA (grant funding) and other funders	Watershed-side	2020-2021	EPA continues to provide funding through the jurisdictions' Bay grants on an annual basis. Most Effective Basin funding and the new Infrastructure funding provides an increase in funding to support WIP and milestone implementation. Lastly, funding has been increased for NFWF's Small Watershed Grants and Innovative Nutrient and Sediment Reduction Grants. Discussions are ongoing about potentially streamlining grant reporting requirements. Also, the match requirement has been waived for the first year under the infrastructure grants.
4	Identify lessons learned from the Conowingo WIP financing strategy and determine if	Increased funding to support BMP implementation,	WQGIT	Watershed-wide	2020-2021	[GAP, feedback needed]

	there are opportunities elsewhere in the watershed	particularly in the agricultural sector				
(6)	Create pay for performance program proposal					This action was not numbered or assigned values in the other columns. Following a March 2020 Finance and Investment Forum the WQGIT utilized available consulting to assist with proposals to explore pay for performance approaches in the watershed. Initial proposals were unsuccessful, but some jurisdictions and NGO partners have continued to pursue pay for performance approaches in parts of the watershed. While there has been progress at a state level, we consider this to be Red for the WQGIT given the lack of specificity and the need to significantly update this action if retained for the next two years.
(7)	Identify full-scale regional case studies to bring to the CBP partnership for presentation					This action was not numbered or assigned values in the other columns. There have been some "success stories" and other examples from inside and outside the watershed presented over the past two years, primarily at the workgroups. This action is considered Yellow given the lack of clarity for what case studies would be most useful.
5	Discuss development of incentive structures, working with NRCS, to launch pay-for-performance programs	Creation of a pay-for-performance program(s)	WQGIT	Watershed-wide	2020-2021	[GAP, feedback needed]

ACTIONS – 2020-2021						
Action #	**Description**	**Performance Target(s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**	**Pre-QPM status & summary of feedback**
Factor 3: Communication and Coordination						1 Green, 3 Yellow, 4 Red
1	Build on the work of the DEIJ Action Team and work with the relevant teams (Diversity, Communications) to identify and engage under-represented groups Obtain a list of potential members/nominees (e.g., LGAC) from under-represented groups to participate in the WQGIT and its source sector workgroups	Increased engagement from under-represented communities	WQGIT, DEIJ Action Team, and LGAC	Watershed-wide	2020-2021	The WQGIT leadership reached out to underrepresented groups for at-large member nominations but received none. Item should list Diversity WG as a partner, not DEIJ action team and LGAC (since they are only local gov leaders). The Diversity WG keeps record of groups that are run by underrepresented/traditionally excluded identities. Will be turned into ArcGIS layer.
2	Create trainings in underserved agricultural areas on the Chesapeake Bay TMDL and WIPs process, including an overview of funding opportunities	Increased funding opportunities and awareness for underserved areas Increased implementation in underserved areas as a result of engagement	AgWG, WQGIT, and DEIJ Action Team	Watershed-wide	2021-2021	The AgWG was unaware of this task, so no progress has been made on this action. Communication has been critically lacking in agricultural areas related to all CBP matters. Given discussions regarding ag data that have grown with each CAST update, it is imperative that CBP dedicate more time and resources to effectively communicating with ag stakeholders. [Note: a 2021 STAC workshop focused on "overcoming the hurdle" for ag producers and the partnership can build on those social science lessons to include a focus on underserved areas or communities. The workshop report is expected soon.]

3	Develop factsheets or webinars to explain local water quality trends for underserved areas of the watershed	Increased implementation in underserved areas as a result of engagement	USGS and CBP Communications Office	Watershed-side	2020-2021	Challenges associated with this action item relate to scale (underserved areas are typically identified at census block scale, while monitoring network is operated at 100 sq mile stations or larger. Might make more sense to use modeling or targeting tool for this item. Performance target does not match action item and should be readjusted.
4	Develop a factsheet explaining opportunities to advance DEIJ values into grant funding opportunities (see fact sheet developed by the Wetlands Workgroup for an example)	Increased funding opportunities and awareness for underserved areas	WQGIT, DEIJ Action Team, and CBP Communications Office	Watershed-wide	2020-2021	The WQGIT has not produced its own factsheet. Many partner agencies have already begun to advance DEIJ in their work. The 2022 Diversity workgroup GIT funding project (FY2022 scope #3 "Equitable Grant Funding in the Chesapeake Bay Watershed") is working on convening funders and under resourced to share these resources, best practices and opportunities. There has been progress by partners and the CBP, though the WQGIT itself still needs to determine the role it can play.
5	Help implement a CBP social science strategy	Achievement of objectives in social science strategy	CBPO and WQGIT	Watershed-wide	2020-2021	In order to evaluate and determine next steps for social science integration, a GIT funding project was put forth to fund a social science assessment of the partnership to determine gaps, opportunities and needs that align with social science theories and tools. The assessment will be complete in Fall/Winter 2022. Once the recommendations in

						the final report are identified, perhaps WQGIT could work to implement or support a particular action. This is TBD.
6	Identify a WQGIT representative(s) to participate on the Community Advisory Board and to help contribute to the DEIJ implementation plan	Begin institutionalizing DEIJ approaches into WQGIT decisions	WQGIT	Watershed wide	2020-2021	The DEIJ Implementation Plan was completed in December 2021. A DEIJ Coordinator is currently being contracted to support associated CBP-wide DEIJ needs in the DEIJ Strategy and Plan. The WQGIT did not specifically identify representatives as called for in this action, though individual WQGIT participants likely engaged in discussions through other CBP groups or meetings. This action will need to be modified for the next two years now that the Implementation Plan is in place and the DEIJ Coordinator will soon be in place.
7	Identify a WQGIT representative to engage and coordinate with LGAC as a means of information and knowledge exchange	Number of meetings with LGAC	WQGIT	Watershed-wide	2020-2021	There has been steady interactions at a staff level (WQGIT and LGAC coordinators) through internal local engagement team. More intentional or strategic coordination at a staff level may be the best path forward, which suggests the performance metric may need to change.
8	Focus a GIT meeting to identify ways to strengthen coordination between all levels of government	Increased coordination on restoration efforts	WQGIT	Watershed-wide	2020-2021	This has not been done and it would require extensive collaboration with federal, state and local partners to support a meaningful meeting or series of meetings.

ACTIONS – 2020-2021						
Action #	**Description**	**Performance Target(s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**	**Pre-QPM status & summary of feedback**
Factor 4: CAST and Other Model Updates						5 Green, 2 Yellow, 0 Red
1	Implement and complete the CAST 2021 work plan	Finalization of CAST 2021 for management application	WQGIT	Watershed-wide	2021	Achieved. View the final CAST21 workplan here. Workplan for the next CAST update is in development and was previewed at the WQGIT in June 2022.
2	Identify a WQGIT representative to work with the Communications team to assist in explaining the various model updates and their impacts and benefits, as well as release an article/press release about the updates	Increased understanding of CAST updates and impacts to restoration efforts	WQGIT and CBP Communications Office	Watershed-wide	2020-2021	This could reasonably be considered as Green, since communication materials have been developed for CAST19 and CAST21, although not with assistance from an "identified WQGIT representative." The current status of CAST21 also contributes to this as a Yellow. If retained and modified for the next Logic and Action Plan, this action will
3	Once CAST 21 is updated create webinars for more novice users to explain changes	Increased understanding of CAST updates and impacts to restoration efforts	WQGIT and CBP Communications Office	Watershed-side	2020-2021	This is considered Yellow given the current delayed status of CAST21. However, there are always archived webcasts and other helpful resources available to CAST users of all skill levels, in addition to the "contact us" feature on the CAST site. If any WQGIT members have specific groups of "novice users" in mind they are welcome to reach out to WQGIT Leadership or CBP staff to explore possibility of specialized training opportunities.
4	Build in Partnership-approved products of the BMP Verification Ad-	Finalization of CAST 2021 for	BMP verification ad-hoc action team and WQGIT	Watershed-wide	2020-2021	The BMPVAHAT approved the extension of forest and tree BMP credit durations, which will be

	Hoc Action Team related to credit duration	management application				incorporated into CAST-2021 once released/approved. Wetland credit durations are still pending approval in the BMPVAHAT as of August 2022.
5	Request that STAR and the Modeling Workgroup investigate methods of refining the spatial resolution of the TMDL accounting system, refine nutrient speciation accounting, and begin development of an estuarine model with improved shallow water simulation	Release CAST21 with new functionality to create and evaluate plans with BMPs at a finer scale	STAR and Modeling Workgroup	Watershed-wide	2020-2021	On track to be completed by December 2025. Should be split up into three different actions/tasks: 1) methods of refining the spatial resolution of the TMDL accounting system; 2) refine nutrient speciation accounting; and 3) begin development of estuarine model with improved shallow water simulation. Modeling WG is currently working on tasks 1 and 3 and will be working on task 2 somewhere between 2023-2025.
6	Understand the time it takes for different tidal segments to achieve water-quality standards to better understand responses to restoration efforts in the watershed	Release CAST21 with new functionality to create and evaluate plans with BMPs at a finer scale	STAR and Modeling Workgroup	Watershed wide	2020-2021	On track, but completion of this task for Phase 7 will not be until 2026. Suggested rewording: "Release Phase 7 dynamic watershed model and estuarine model with new functionality to address lag times in the watershed and estuary."
7	Provide CAST and other training to interested stakeholders	Increased understanding of CAST updates and impacts to restoration efforts	WQGIT and CBPO Modeling Team	Watershed-wide	2020-2021	Completed/ongoing. Individual state meetings as well as WQGIT meetings dedicated to knowledge transfer. Ongoing training opportunities available.

ACTIONS – 2020-2021						
Action #	**Description**	**Performance Target(s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**	**Pre-QPM status & summary of feedback**
Factor 5: Water Quality Monitoring: Sustain and enhance monitoring and interpretation of results to help understand water quality response to management actions						3 Yellow

1	Provide technical assistance to Bay jurisdictions to understand water quality monitoring trends in priority watersheds to further target implementation efforts	Increased implementation in targeted areas to achieve water quality standards, using monitoring trends information	USGS, STAR, and WQGIT	Watershed-wide	2020-2021	ITAT has been active showcasing the tributary summaries. USGS led jurisdictional meetings to interact with states and provide technical assistance. USGS produced an interactive presentation document to help explain factors affecting trends with an emphasis on response to management efforts. Providing technical assistance to Bay jurisdictions will help with integrating monitoring data into their decision making and will help inform priorities for analysis on watershed-estuary integration topics. More support from partners is needed to hold these jurisdictional meetings.
2	Incorporate more monitoring trends and loads data into assessment of progress toward outcome (e.g., Bay Barometer)	Reporting from jurisdictions regarding how monitoring data is incorporated into decisions regarding implementation	EPA, USGS, and Jurisdictions	Watershed-wide	2020-2021	EPA continues to work closely with USGS and other partners on incorporating the latest monitoring and trends information; the latest update (through 2020) was the inclusion of this information into EPA's evaluation of the 2020-2021/2022-2023 milestone evaluations. Discussions are ongoing amongst the partnership on additional ways to use monitoring data to measure progress. While monitoring data is used to inform the partnership's suite of modeling tools, there are continued concerns with relying solely on the model to measure progress towards 2025 WIP outcome attainment. In addition, discussions are underway to more

						closely align the 2025 WIP outcome and the Water Quality Standards and Attainment Monitoring outcome. Overall, partners have mixed views about the status of this action. Partners have noted that there are still needs for better incorporation of community monitoring or participatory science data, among other potential data sources that may be underutilized. However, there have been extensive and significant efforts to synthesize and communicate responses and trends, with multiple examples and noteworthy publications from CBP partners, so overall this is considered to be Yellow. This will certainly remain a need over the next two years.
3	Use monitoring data to target practices to demonstrate success	Increased implementation in targeted areas to achieve water quality standards, using monitoring trends information	Jurisdictions	Watershed-side	2020-2021	This action is missing responsible parties (e.g., USGS) that can offer technical assistance and support for jurisdictional partners. Some jurisdictions have shared noteworthy examples of how they apply monitoring and modeling data to target priority areas, but there is still a need, particularly for improved targeting tool, better understanding of how to separate various potential influences, detangling differences in long- and short-term trends, and achieving benefits for multiple outcomes. Overall, this is considered

						as Yellow and will likely remain in the plan for the next two years, with some improved alignment of the action, responsible parties, and objectives.

ACTIONS – 2020-2021						
Action #	**Description**	**Performance Target(s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**	**Pre-QPM status & summary of feedback**
Factor 6: Using Co-Benefits as a catalyst to increase implementation by aligning with priorities and goals beyond water quality						4 Yellow
1	Work with other GITs to develop funded projects that provide co-benefits and integrate climate resiliency, habitat protection, and reductions of contaminants into the implementation of water quality BMPs	Number of projects with WQ and other co-benefits.	WQGIT	Watershed-wide	2020-2021	General status for Factor 6: There has been steady internal effort by CBP staff to improve available resources and communicate the value of co-benefits, which may be better described as "multiple benefits" or "beyond environmental benefits." Additionally, jurisdictional partners have continued to develop their own programs and tools that approach restoration work through the lens of Terminology aside, the WQGIT is not the sole or primary driver of this work and is not well-suited to track progress toward the stated performance metric that applies for all four actions under this factor. Multiple benefits associated with BMP implementation remains a cross-GIT science need. For the next two years the WQGIT should consider how to refine and articulate its role to support these actions and how it might be able to track these

						efforts through existing partnership resources or reporting structures.
2	Work with financial experts to develop information that monetizes cost savings by implementing projects with co-benefits	Number of projects with WQ and other co-benefits.	WQGIT	Watershed-wide	2020-2021	See above.
3	Develop a few specific examples as a demonstration using projects with low implementation levels (e.g., wetlands, tree planting, forest buffers)	Number of projects with WQ and other co-benefits.	WQGIT	Watershed-side	2020-2021	See above. Additionally, the CBP Communications Team has created a valuable database of case studies for stories that demonstrate "Beyond Environmental Benefits" available at: https://gis.chesapeakebay.net/casestudies/
4	Use co-benefits as a tool to fund and accelerate BMP implementation efforts	Number of projects with WQ and other co-benefits.	WQGIT	Watershed-wide	2020-2021	See above.

ACTIONS – 2020-2021						
Action #	**Description**	**Performance Target(s)**	**Responsible Party (or Parties)**	**Geographic Location**	**Expected Timeline**	**Pre-QPM status & summary of feedback**
Factor 7: Climate Change Tracking						1 Green, 2 Yellow
1	Integrate the ~~STAC~~ technical synthesis on climate resilient and adapted BMPs and management actions into communications to jurisdictions for meaningful decision-making	Specific and programmatic milestones to address climate effects. Specific BMPs to address climate effects	STAC and Jurisdictions	Watershed-wide	2020-2021	Report completed as of February 2022 and available here [Corrective note: the synthesis report is not a STAC document] Communication and next steps associated with the report are ongoing. While the report is completed, additional effort is needed to acquire and build desired information into modeling and decision-making tools. Therefore, this is considered as Yellow. The next iteration of the Logic and Action Plan

						will need to refine and modify this action. WQGIT members have also noted that there are a lot of local governments tackling climate resiliency in a variety of ways, and that perhaps the WQGIT or other CBP groups may have an interest to capture and share these approaches to benefit local partners.
2	Update Intensity-Duration-Frequency curves (IDFs) for all counties in the Chesapeake watershed and encourage the adoption and implementation of the updated IDFs for stormwater and other applications	Quantification and integration of co-benefits into CAST and optimization decision support tools	Modeling Workgroup and the WQGIT	Watershed-wide	2020-2021	A major GIT-funding project was completed to develop updated IDF curves; the report is available here. An online tool was also developed and can be viewed here. Adoption of this information to enhance design standards is the next step. The role of the WQGIT and USWG to support that jurisdiction-led process would need to be articulated in the next iteration of the Logic and Action Plan.
3	Work with the Federal Facilities Workgroup to determine federal role in meeting climate reductions	Specific and programmatic milestones to address climate effects. Specific BMPs to address climate effects	WQGIT and Federal Facilities Workgroup	Watershed-side	2020-2021	In 2021 the Executive Council signed the Directive 21-1: Collective Action on Climate Change. Since then the partnership has developed a Climate Directive workplan that includes a list of partners' related efforts as well as actions that federal agencies will pursue to address the wide-ranging impacts of climate change on the environment and communities. The Directive and workplan encompass far more than water quality, but the extensive list of actions needs to be recognized here. In 2020, the Federal Facilities Workgroup discussed the question of how extra pounds of nutrients and sediment to be reduced resulting from climate impacts would affect federal planning goals. It was decided the workgroup would defer the question until

						other issues related to establishing methods for calculating equitable federal planning goals are resolved. This is considered yellow given the significant effort associated with the partnership-wide Climate Directive and progress by individual partners, though the discussions over federal planning targets are ongoing.

Totals: 13 Green, 19 Yellow, 8 Red