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| **Management Approach 1:** | | | | | | | | | |
| **Key Action**  *Description of work/project. Define each major action step on its own row. Identify specific program that will be used to achieve action.* | **Performance Target(s)**  *Identify incremental steps to achieve Key Action* | **Partners**  **Responsible**  *Identify responsible partner for each step.* | **Geographic Location** | | **Timeline**  *Identify completion date (month and year) for each step.* | **Estimated Project Cost** *Best estimate total cost of project (need)* | **Available funding by Partner** | **Total**  **Available Funding**  *Roll up of estimated funding* | **Factors Influencing and/or Gap**  *ID related factor or gap in Mgmt. Strat* |
| 1. Update and refine the Chesapeake Bay Basin-wide Index of Biotic Integrity (“Chessie BIBI”) for streams | 1. Updating the database will be completed Nov 2015. The following remaining steps will be completed in 2016. 2. Metric and index calculations 3. Index sensitivity improved 4. Bioregion under-representation analysis 5. Genus-level metrics tested | ICPRB | Chesapeake Bay Watershed | | Steps 2-5: Apr 2016  Final report completed Sept 2016 | Currently funded |  |  | It is a biological endpoint that will reflect the improvements in stream health and function called for in the 2014 Chesapeake Watershed Agreement.10 At this time, the index needs to be updated with the most recent macroinvertebrate data. |
| 1. Establish 2008 baseline and approach for determining future trends (% change) | 1. Provide stream representation comparable to CBWM Phase 6 including 1st-4th order streams (also reconcile differences in scale from various sampling programs, 1:24K v 1:100k) 2. Develop method to express site-specific biological data as percent of stream miles with a passing rank in Chesapeake Bay watershed 3. Determine time period for the 2008 baseline and calculate baseline 4. Decide how trends (i.e., % change from 2008 baseline) should be determined from random sampling design data | (Suggested)  ICPRB  USGS  Technical Advisory Group | Chesapeake Bay Watershed | | Final report completed Sept 2016 | Currently funded |  |  | Chessie BIBI currently not reported in stream miles *(not included as a factor influencing or gap but necessary metric to be developed for outcome)* |
| 1. Determine and report progress | 1. Periodically acquire and process available stream data from Bay States and District of Columbia 2. CBP calculate and report % change in Chessie BIBI index | 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 | | Dec. 2017 | $20,000 |  |  | Undesignated responsible party and funding to track and report updated Chessie BIBI |
| 1. Identify practicable metrics consistent with BMP verification guidance to credit projects for N, P, and sediment load reductions and stream functional improvements for overall improvement in stream health, and incorporate these recommendations into BMP Verification Plans. | 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 | Chesapeake Bay Watershed | | January 2016 – onging (need to check with Verification Committee) | Funding for SHWG coordinator,  In-kind | NA | NA | Robust stream restoration monitoring to evaluate the potential functional lift or improvement in stream functions from BMP implementation |
| **Management Approach 2:** | | | | | | | | | |
| **Key Action**  *Description of work/project. Define each major action step on its own row. Identify specific program that will be used to achieve action.* | **Performance Target(s)**  *Identify incremental steps to achieve Key Action* | **Partners**  **Responsible**  *Identify responsible partner for each step.* | | **Geographic Location** | **Timeline**  *Identify completion date (month and year) for each step.* | **Estimated Project Cost** *Best estimate total cost of project (need)* | **Available funding by Partner** | **Total**  **Available Funding**  *Roll up of estimated funding* | **Factors Influencing and/or Gap**  *ID related factor or gap in Mgmt. Strat* |
| 1. Implement pooled monitoring approach throughout Chesapeake Bay watershed | 1. Provide input to existing pooled monitoring research program, including topics 2. Develop strategy for monitoring database/clearinghouse 3. 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 group and the Stream Health Work Group, participate in key expansion/development efforts. 4. Help organize and lead, with the Maryland Water Monitoring Council Monitoring Work Group and the existing CBT Pooled Monitoring advisory group, efforts to disseminate results, including but not limited to an annual forum to expose regulatory, practitioner, and manager audiences to regulatory- and practice-relevant research outcomes. 5. With the existing pooled monitoring advisory group, evaluate potential and develop a plan for expansion across the watershed\* | Ad-hoc Pooled Monitoring Committee facilitated by CBT  \*Maryland Stream Restoration Association representative (Scott Lowe) address expansion of effort Bay-wide.  VA DEQ interested  ICPRB Mike Mallonee as potential contact for database development inquires | | Maryland (current effort)  District of Columbia, Virginia interested jurisdiction  Potential Chesapeake Bay Watershed | **December 2017** |  |  |  | Sufficiency of data to demonstrate effectiveness of stream restoration practices  Investments in research to improve the body of knowledge surrounding restoration techniques and net benefit to stream and watershed health. |
| 1. Identify use and best application of current and research-based monitoring efforts to advance implementation of stream restoration practices and projects | 1. Hold Bay wide stream monitoring charrette to identify use and application of current regulatory and research-based monitoring efforts |  | | Chesapeake Bay Watershed |  |  |  |  | Investments in research to improve the body of knowledge surrounding restoration techniques and net benefit to stream and watershed health. |
| **Management Approach 3:** | | | | | | | | | |
| **Key Action**  *Description of work/project. Define each major action step on its own row. Identify specific program that will be used to achieve action.* | **Performance Target(s)**  *Identify incremental steps to achieve Key Action* | **Partners**  **Responsible**  *Identify responsible partner for each step.* | **Geographic Location** | | **Timeline**  *Identify completion date (month and year) for each step.* | **Estimated Project Cost** *Best estimate total cost of project (need)* | **Available funding by Partner** | **Total**  **Available Funding**  *Roll up of estimated funding* | **Factors Influencing and/or Gap**  *ID related factor or gap in Mgmt. Strat* |
| 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. Review and analysis of stream restoration permits and process (TBD) 5. Provide recommendations to Stream Health Work Group (and Bay Program Partnership) on priority actions to streamline stream restoration project permit review process | Stream Health Work Group/suggested membership of Committee  US ACE (North Atlantic Division)  EPA  MDE  VA DEQ, VMRC  Anne Arundel County  Fairfax County  PA DEP  DC DOEE  Other jurisdictional rep (DE, WV, NY) | Chesapeake Bay Watershed | | January 2016 - ongoing |  |  |  | Information needs to support innovative, effective design approaches to identify restoration potential and success for different land uses, stream types, and current and future site constraints, causes of impairment/stressors |
| 1. Work with federal, state regulatory agencies and local governments to develop streamlined process to evaluate WIPs, MS4 restoration plan or other relevant site analyses as sufficient documentation for alternative site analysis in support of stream restoration permits | 1. Convene Stream Health Restoration Permit Committee  2. Develop case study permit examples  3. Review criteria and guidance for site selection alternatives analysis  4. Review example WIPs and other watershed or site level analyses to provide information needs for site alternative analysis  5. Recommend guidance for using WIPs, or other documentation to satisfy site alternatives analysis requirement for permits  6. Identify steps to implement recommended guidance | MDE\*, MD DNR, DOEE, VADEQ interested  And/or  Stream Health Work Group/  - may be membership of Stream Restoration Permit Committee , representatives from MACO  \*MDE  (performance targets may differ as per 9/14/15 letter to MD Counties from MDE) | Maryland, Virginia, District of Columbia (interested)  And other  Chesapeake Bay jurisdictions pending | | January 2016 – June 2016 |  |  |  | Information needs to support innovative, effective design approaches to identify restoration potential and success for different land uses, stream types, and current and future site constraints, causes of impairment/ stressors |
| 1. Develop a streamlined permit review process, which does not require changes to existing Federal and state laws and regulations, for stream restoration projects. | 1. Convene Stream Health Restoration Permit Committee 2. Identify factors influence (e.g, laws, regulations, policies) that could influence a streamlined review process stream restoration projects. 3. Develop list of criteria to determine project qualifications for the streamline permit review process 4. Recommend guidance for a streamlined review process including timelines. 5. Establish a list of tools that could assist both regulators and permit applicants using the streamlined review process. 6. Identify steps to implement recommended guidance | MDE\*, DOEE, VADEQ interested  And/or  Stream Health Work Group/  - may be membership of Stream Restoration Permit Committee  \*MDE  (performance targets may differ as per 9/14/15 letter to MD Counties from MDE) | Maryland, Virginia, District of Columbia (interested)  And other  Chesapeake Bay jurisdictions pending | |  |  |  |  | Information needs to support innovative, effective design approaches to identify restoration potential and success for different land uses, stream types, and current and future site constraints, causes of impairment/stressors |
| 1. Establish minimum stability monitoring requirements for restoration projects | 1. Convene Stream Health Restoration Permit Committee 2. Identify minimum stability monitoring assessment parameters and standards 3. Document how higher level performance monitoring assessment parameters (i.e., water quality and biology) will be assessed 4. Recommend guidance for minimum stability monitoring and incorporate into BMP Verification Guidance 5. Identify steps to implement recommended guidance | K. Mantay (South River Federtion lead coordination of action (FWS, MDE, Severn River Keeper interested involved.  VA DEQ, DOEE interest to participate | Chesapeake Bay Watershed | |  |  |  |  | Sufficiency of data to demonstrate effectiveness of stream restoration practices |
| **Management Approach 4** | | | | | | | | | |
| **Key Action**  *Description of work/project. Define each major action step on its own row. Identify specific program that will be used to achieve action.* | **Performance Target(s)**  *Identify incremental steps to achieve Key Action* | **Partners**  **Responsible**  *Identify responsible partner for each step.* | **Geographic Location** | | **Timeline**  *Identify completion date (month and year) for each step.* | **Estimated Project Cost** *Best estimate total cost of project (need)* | **Available funding by Partner** | **Total**  **Available Funding**  *Roll up of estimated funding* | **Factors Influencing and/or Gap**  *ID related factor or gap in Mgmt. Strat* |
| 1. Establish joint SHWG and USWG work group as per STAC recommendation to develop guidance (e.g., via an expert panel) optimize stream restoration projects to reduce excess nitrogen, phosphorus, and sediment loads delivered downstream, as well as benefit instream aquatic life to improve Chesapeake Bay BIBI. . Also use work group to address other technical issues identified in STAC Workshop on Sustainable Stream Restoration. | 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 4. Develop timeline 5. Get approval from SHWG and USWG | Suggested  Possible STAC lead  SHWG reps  USWG reps. | Chesapeake Bay Watershed | | January 2017 | Funding for SHWG coordinator,  In-kind | NA | NA | Uniform design process for stream restoration that can measure change in stream functions and/project success based on a project goals and objectives. Specific to the Bay TMDL, a design process for restoration projects to reduce nutrient and sediments loads delivered downstream while at the same time ensuring optimal habitat conditions restored. |
| 1. Review and provide recommendations for the water quality impairment listing and TMDL process to determine the best way to address impairments categorized as 4c (pollution) which are typically associated with habitat impairments | 1. Coordinate with  reps from MDE (Water Sc involving TMDL and MS4 Programs. 2. Review Biological Stressor Identification (BSID) Analysis, sediment TMDLs and MS4 permits to determine best way for biological stressors identified by the BSID and classified as 4c can be addressed. 3. Work with other states to address issue | Suggested  Liaison from SHWG  VA DEQ, WV, PA DEP, FWS, MD DNR, MDE interested | Maryland, Virginia, Pennsylvania, District of Columbia | | December 2017 | Funding for SHWG coordinator, In-kind | NA | NA | Targeting procedures for cost-effective restoration actions and design approaches that will achieve both water quality and biological functional improvement |
| 1. Provide stream training to regulators and practitioners | 1. Convene joint Stream Health and Urban Stormwater Work Group (see also Strategy 4, Action 8) 2. Identify priority training needs 3. Secure funding for training and training provider (tech lead) 4. Develop training workshop(s) content 5. Identify steps to implement recommended training | Joint work group/identify training provider | TBD based on training needs identified | | Ongoing |  |  |  |  |
| **Management Approach 5:** | | | | | | | | | |
| **Key Action**  *Description of work/project. Define each major action step on its own row. Identify specific program that will be used to achieve action.* | **Performance Target(s)**  *Identify incremental steps to achieve Key Action* | **Partners**  **Responsible**  *Identify responsible partner for each step.* | **Geographic Location** | | **Timeline**  *Identify completion date (month and year) for each step.* | **Estimated Project Cost** *Best estimate total cost of project (need)* | **Available funding by Partner** | **Total**  **Available Funding**  *Roll up of estimated funding* | **Factors Influencing and/or Gap**  *ID related factor or gap in Mgmt. Strat* |
| 1. Provide training and education materials to local officials on stream restoration and health | 1. USC work with PA Local Technical Assistance Program (LTAP) to disseminate Upper Susquehanna Coalition Emergency Stream Intervention initiative 2. SHWG provide input on stream health to Local Leadership Work Group to assist with development of curriculum for watershed protection and restoration | USC (pending discussion)  Local Leadership Work Group/Cross-GIT Coordinator | Chesapeake Bay Watershed | | Placeholder pending further discussions with USC and LLWG | Pending future funding |  |  |  |