**Stream Health Logic Table and Work Plan**

**Primary User:** Goal Implementation Teams, Workgroups, and Management Board | Secondary Audience: Interested Internal or External Parties

**Primary Purpose:** To assist partners in thinking through the relationships between their actions and specific factors, existing programs and gaps (either new or identified in their Management Strategies) and to help workgroups and Goal Implementation Teams prepare to present significant findings related to these actions and/or factors, existing programs and gaps to the Management Board. | Secondary Purpose: To enable those who are not familiar with a workgroup to understand and trace the logic driving its actions.

**Reminder:** As you complete the table below, keep in mind that removing actions, adapting actions, or adding new actions may require you to adjust the high-level Management Approaches outlined in your Management Strategy (to ensure these approaches continue to represent the collection of actions below them).

**Long-term Target:**  Improve the health and function of ten percent of stream miles above the 2008 baseline.

**Two-year Target:** 600,000 stream feet restored

\*Notes:

* This example contains information in those columns that are currently **optional** to complete (Metrics, Expected Response, and Adapt/Learned). It is meant to illustrate how these columns could be used, if groups have the corresponding information and would like to provide or document it. The information in these columns is not representative of the direction of the Stream Health workgroup.
* This example does not include all factors listed in the Stream Health Management Strategy, but uses the information provided in the first iteration of the logic table in this new format. In addition, this example focuses on those factors that had specific actions associated with them. The SRS Planning Team will look at ways to represent more holistically the factors identified in the Management Strategy that might not be addressed through work plan actions.

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| --- | --- |
| KEY: Use the following colors to indicate whether a Metric and Expected Response have been identified. | |
| Metric | Specific metrics have not been identified |
| Metrics have been identified |
| Expected Response | No timeline for progress for this action has been specified |
| Timeline has been specified |

| Factor | Current Efforts | Gap | Actions (critical in bold) | 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 achieve our outcome?* | *Optional: Do we have a measure of progress? How do we know if we have achieved the intended result?* | *Optional: What effects do we expect to see as a result of this action, when, and what is the anticipated application of these changes?* | *Optional: What did we learn from taking this action? How will this lesson impact our work?* |
| Scientific and Technical Understanding: Development of separate metrics for impervious surface, forest, farm, and wetland conversion at a resolution sufficient to inform county-level decisions. | The Geospatial Award will result in 1m resolution monitoring of forest, farmland, and impervious surface change every 4-5 years. | No affordable method exists to track wetland conversion and change.  QL-1 or QL-2 LiDAR data are needed throughout the watershed. | [1.1](#_1.1), [1.2](#_1.2), [1.3](#_1.3), [1.4](#_1.4), [1.5](#_1.5), [1.6](#_1.6) Continued full support of the Geospatial Award. |  |  |  |
| Scientific and Technical Understanding: Methodology to quantify impacts to water quality, habitats and healthy watersheds, and communities. | Impacts to water quality have been addressed via CAST. | Impacts to habitats, healthy watersheds, and communities. | [2.1](#_2.1), [2.2](#_2.2), [2.3](#_2.3)  Management elevation of importance of this outcome. |  |  |  |
| Public Engagement: Development of a plan to communicate findings with the public, elected officials and the Bay Program. | Launch of the Chesapeake Bay Land Change website including development of land change forecasts. | No work done on the development of a Local Engagement Strategy that will integrate and disseminate results of land use methods and metrics outcome and land use options evaluation outcomes. | [3.1](#_3.1), [3.2](#_3.2) |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| WORK PLAN ACTIONS | | | | | |
| Green – action has been completed or is moving forward as planned. Yellow - action has encountered minor obstacles.  Red - action has not been taken or has encountered a serious barrier. | | | | | |
| Action # | **Description** | **Performance Target(s)** | **Responsible Party (or Parties)** | **Geographic Location** | **Expected Timeline** |
| Management Approach 1: Monitor the rate of conversion of forests, wetlands, and farmland, (and the rate of impervious surface change). | | | | | |
| 1.1 | Design and implement a manual, stratified sampling approach at the county level and assess land cover change from high resolution imagery circa 2009-2013. | Acquire NAIP imagery for 2009, 2013 | USGS, CBPO GIS Team | Prince George's County, MD | Spring 2018 |
| Design sampling framework | USGS, CBPO GIS Team | Watershed counties | Winter 2019 |
| Classify samples using Land Image Analyst or other software | CRC Staffers/ Interns | Prince George's County, MD | Summer 2019 |
| 1.2 | Assess land use change throughout the Bay Watershed and Bay States from the early 1980's through mid-2010's using the CBP 2013 high-res land use coupled with the Land Change Analysis and Monitoring Program Database and National Land Cover Database, the NRCS National Resources Inventory, and the USFS's Forest Inventory and Assessment data. | Work with CBP GIS Team to assign and completed task | USGS, CRC Staffers | Watershed counties | Summer 2019 |
| 1.3 | Assess difference in high resolution land cover maps at the County level. | Quantify change between two independently classified high-res land cover datasets. | CRC Staffers/ Interns | Prince George's County, MD | Summer 2019 |
| Compare with results from 1.1. | USGS, CBPO GIS Team | Summer 2019 |
| 1.4 | Investigate options for monitoring "hot spots" of land change every two years | Review literature of the science and technologies associated with remote sensing and image interpretation as well as consultation with remote sensing professionals | Chesapeake Conservancy | Watershed counties | Fall 2019 |
| Provide recommendations on the most effective and efficient approach |
| 1.5 | Monitor "hot spots" of change | Assess "hot spots" of change from 2013/14 - 2017/18 - 2019/20 - 2021/22 | Chesapeake Conservancy | Watershed counties | Summer 2019, Summer 2021, and Summer 2023 |
| 1.6 | Map and ReMap High-res land cover/use: 2013/14; 2017/18; 2021/22 | Using the best available methods, map high-res land cover/use wall-to-wall every four years, remapping previous years in the process. | Chesapeake Conservancy, University of Vermont | Watershed counties | Summer 2020, Summer 2023 |
| Management Approach 2: Quantify the impacts of land conversion on water quality, healthy watersheds, and communities. | | | | | |
| 2.1 | Quantify impact of land conversion on water quality (explaining changes in nutrient and sediment that relate to monitored and modeled land conversion) | Assess the impact of future 2025 land use scenarios (Land Policy BMPs) on nutrient and sediment pollutant loads | USGS, CBPO GIS Team | Watershed counties | Fall 2018 |
| Assess the impact of future 2050 land use scenarios on nutrient and sediment loads | Summer 2019 |
| 2.2 | Quantify impact of land conversion on healthy watersheds, wildlife, and stream habitats | Identify specific components of "health" and "habitat" to be evaluated and collect data, 1985- 2015 | CBP Habitat and Healthy Watersheds GITs | State-identified healthy watersheds and habitats of interest | Spring 2020 |
| Analyze observed changes in land cover/use relative to changes health and habitat metrics (1985 - 2015) | USGS, CBPO GIS Team | Fall 2020 |
| Forecast changes in land cover/use through 2050 and relate to potential changes in health and habitat metrics | USGS, CBPO GIS Team | Spring 2021 |
| 2.3 | Quantify impact of land conversion on communities | Identify specific components of "communities" to be evaluated. | LGAC, LGEI, LUWG, CCP | Watershed counties | Spring 2020 |
| Conduct literature review on the relationship between land change and community components. | TBD? | National | Fall 2020 |
| Forecast changes in land cover/use through 2050 and relate to potential changes in communities | USGS, CBPO GIS Team | Watershed counties | Spring 2021 |
| Management Approach 3: Communicate the results to the public, elected officials, and to the Bay Program. | | | | | |
| 3.1 | Link the results of the Land Use Methods and Metrics Outcome Land Use Options Evaluation Workplan | Participate in the development of a Local Engagement Strategy that will integrate and disseminate results of land use methods and metrics outcome and land use options evaluation outcomes | LGAC and CBP Local Leadership Workgroup | Watershed counties | Spring 2021 |
| 3.2 | Chesapeake Bay Land Change website | Launch Phase 6 land use data website | USGS, CBPO Web Team | Watershed counties | Summer 2017 |
| Testing, refinement, expansion | USGS, CBPO Web Team |
| Develop land change forecasts | USGS, LUWG |