**Chesapeake Bay Watershed Agreement Management Strategy Development**

**Stewardship Goal**

**Local Leadership Outcome and Draft Strategy**

**December 2014**

**Executive Summary**

The long-term success of Chesapeake Bay restoration efforts will depend primarily on actions led by effective citizen stewards and local officials.  Building knowledge and capacity within this group will be critical.  More than 600 local conservation and watershed organizations in the Chesapeake Bay Region are educating and empowering citizens to restore and protect local streams and rivers. Building a larger, broader, and more diverse constituency of stewards is vital to achieving many of the Goals and Outcomes outlined in this Agreement. More importantly, the role and leadership of local elected and appointed officials is paramount in achieving the conservation and restoration goals of the new Bay Agreement.

On December 3, 2014 stakeholders including local appointed and elected officials, senior local government resource managers, members of the training community and many others participated in a workshop to discuss specific efforts, gaps, and recommended actions for increasing knowledge and capacity for local officials to more successfully manage natural resources.

This draft strategy reflects input from that December workshop and seeks to determine current knowledge and capacity, identify gaps, and create opportunities for empowering local officials within the Chesapeake Bay watershed to act.

**Outcomes and Baselines**

This Bay Agreement contains ten Goals for the conservation, protection and restoration of the Chesapeake Bay. The idea of “…*increasing the capacity and knowledge of local officials…”* resides under the Stewardship Goal. This Stewardship Goal statement is as follows:

*“Increase the number and diversity of local citizen stewards and local governments that actively support and carry out the conservation and restoration activities that achieve healthy local streams, rivers, and a vibrant Chesapeake Bay”.*

The local leadership outcome under the Stewardship Goal is as follows:

*“Continually increase the knowledge and capacity of local officials on issues related to water resources and in the implementation of economic and policy incentives that will support local conservation actions.”*

For the purposes of this management strategy, the term “local officials” includes elected and appointed officials and senior staff in local government. The Outcome calls for increasing local officials’ knowledge and capacity in two specific areas: (1) on issues related to water resources and (2) in the implementation of economic and policy incentives. Both are intended to support local conservation actions.

* According to LGAC members and signatory representatives, the local official’s knowledge of watershed issues and capacity to implement watershed restoration and protection initiatives varies quite dramatically throughout the watershed. The outcome measure has not been developed; therefore, currently there is no identified baseline (from outcome justification document).
* The development of a baseline involves multiple factors: the knowledge and capacity of local officials as well as current/existing programs and models (current existing programs may be included in current efforts and gaps). Baselines do not need to be exclusive of each other.
  + Baseline should be more oriented to current activities and management actions. Baselines are the methods for current efforts, and our planned work will increase the range of methods and make them work better.
  + Measuring the knowledge and capacity of local officials is difficult. This might be accomplished by a pre-work survey to measure the knowledge and capacity of local officials. People may be asked to self-determine their own knowledge.
  + Continually increasing the knowledge and capacity requires us to institute a system of learning for local officials (there is a turnover every couple of years).
  + Include an estimated number of educational programs, online resources, etc. Connect this back to the baseline of the range of methods for increasing knowledge and capacity.
  + Assess existing training programs for local officials that have a limited level of training. Consider increasing specificity for what should be included in the training.

**Jurisdictions and Agencies Participating in the Management Strategy**

As local implementation is key to the success of the Bay Agreement, several stakeholder groups have expressed support for increasing knowledge and capacity at the local government level. Based on incentive level and achieving successful approaches for building knowledge and capacity, participation among stakeholders will likely continue to be robust. However, because this strategy and others are not complete it is not possible to address which signatories will be part of implementation at this time. To date the following signatories have agreed participate in developing this Outcome:

* + State of Maryland
  + Commonwealth of Virginia
  + District of Columbia
  + Commonwealth of Pennsylvania
  + State of Delaware
  + Chesapeake Bay Commission
  + Federal Agencies: US Environmental Protection Agency, National Oceanographic and Atmospheric Administration, US Army Corps of Engineers, Fish and Wildlife Service

In addition to signatories listed above, many stakeholders, including interested members of the public have expressed interest via website in efforts related to development of the management strategy. At this stage of strategy development, it is not possible to determine which signatories and stakeholders will be participating in implementation of the strategy.

The December 3 workshop brought together nearly 60 local officials, senior local government program managers and many other stakeholders. Most of the workshop participants agreed to continue to support outcome development and implementation efforts.

**Local Engagement**

* The nature of this outcome and resulting strategy is the building of knowledge and capacity of local officials: hence, there is a specific, critical role for local governments, local officials and associated local leaders. Additionally, watershed associations, NGOs, etc. play a critical role in reaching local officials and building this constituency for conservation action.

**Factors Influencing Ability to Meet Goal**

* The level of existing knowledge and capacity of elected officials on environmental issues and how those are incorporated into budget and capital planning issues.
  + Election cycles affect ability to meet our ultimate goal of increasing knowledge and capacity.
    - This could keep us from being able to fully achieve the outcome. There could be a focus on the newly elected official.
  + Local political will/local issues as well as competing local interests.
  + Wide variation of existing knowledge including policy approaches and local political processes.
* States’ lack of funds and prioritization mechanism(s) and pathways to enact conservation actions.
* An historic lack of focus on conservation and natural resources in concert with other local priorities.
* Local culture and societal norms relating to conservation actions.
* Community support for protection and restoration activities.
* Changing environmental conditions and linkages to Bay restoration efforts.
  + Climate change could increase our ability to achieve the outcome because more people are more aware of the need to address the issues to combat factors such as flooding.
* Knowledge management (defined as the ability to get the right information to the people who need it).
  + Lack of capacity at the local level to really understand how to use communication resources and tools.
* Ability to accurately measure and clearly communicate positive change in the watershed from a natural resource, economic, and cultural perspective to help support efforts to increase knowledge and capacity to do more.
* Green business and eco-tourism (e.g., fisheries) as an economic incentive for local political leaders to engage.
* The large geographic size of the watershed as well as the varied geography and complexity of the whole Bay watershed. This speaks to the need for specific, regional approaches to be developed.

**Current Efforts**

* Existing training programs such as Natural Resources Leadership Institutes (NRLI), LGAC and related Bay group meetings and associations that have required certification training programs,
* Peer to peer outreach and networking such as the Chesapeake Bay Watershed Forum, the Stormwater Partners Retreat, Ag Networking Forum, Environmental Finance Workshops, and Choose Clean Water annual meeting.
* Electronic applications that engage citizen (e.g., IM Rivers).
* Funder meetings to incentivize restoration work (e.g., Town Creek Foundation funded a meeting of local officials to look at funding TMDL load reduction restoration projects, [Water Resources Education Network](http://www.waterwisepa.org./) annual conference brings together past and future grantees, Ag forum).
* Soil and Water Conservation Districts led training and educational activities (not in DC, limited audience).
* Local programs such as the Watershed Stewards Academy (also geographically limited).
* Field learning opportunities such as LGAC tours, CBF “Farmers to the Bay”, other Bay Foundation field experiences and Allison Ferguson Foundation meaningful watershed trips.
* Municipal and city comprehensive plan and ordinance development.
* Certifications offered under municipal leagues and state associations (e.g., [MACo](http://umdrightnow.umd.edu/news/umd-provide-education-training-md-officials), VACo).
* Online resources (e.g., Chesapeake Bay Program website, Chesapeake Stormwater Network webinars, Chesapeake Stat/Bay Stat, Chesapeake Network)

**Gaps**

* Funding for training to increase capacity and knowledge of local officials.
* Knowledge and assistance on how to access training funding.
* Knowledge about resources and a path for specific communication of natural resource issues.
* Dissemination of knowledge and information between jurisdictional agencies and local officials.
* Consistent and effective training opportunities.
  + Lack of knowledge or access to training opportunities (capacity and knowledge).
  + No Bay-oriented baseline curriculum for current training efforts.
  + Lack of natural resource focus in municipal association trainings.
  + Existing organizations, like planning commissions, are not being used to deliver natural resources-based training and information.
  + A need to expand training in environmental financing options.
* Sufficient, regionally accessible, consistent, formal peer to peer exchanges (e.g., mayor to mayor, watershed organizations, municipal managers, county farm organizations).
* Expanded peer to peer networking opportunities.
* Inclusion of local nonprofits in education and training of local officials.
* Identification of local champions to mentor and lead less informed but willing neighbors.
* Inter-jurisdictional cooperation within watersheds.
* Identification of incentives, drivers, and linkages/connections (i.e., economic, cultural, emotional, community voice leaders).
* Fully integrated and institutionalized asset management approach in watershed protection.
* Bay-wide natural resources-based certification program for officials and citizens.

**Cross Collaboration Among Management Strategies**

Most management strategies rely on the involvement or support of local officials. There is broad recognition that informing and educating local officials must be a priority if we are to be successful. There is also broad recognition that local officials will be quickly overwhelmed if there is not a unified approach to informing, educating and training. Therefore, we must review other management strategies to identify knowledge gaps or factors influencing that deal with local officials’ knowledge and capacity.

Collaborate with other workgroups to identify essential content and best mechanism(s) for knowledge transfer and capacity building. So far, cross collaboration opportunities have been identified with the following goal implementation teams:

Sustainable Fisheries

Habitat

Water Quality

Healthy Watersheds

Fostering Chesapeake Stewardship

* Environmental Literacy Workgroup

Diversity Action Team

**Actions, Tools or Technical Support Needed to Empower Local Government and Others**

* Targeted funding to increase local officials’ knowledge and capacity.
* Regionally targeted education and training opportunities.
* Program development Assistance for municipal leagues and associations with program development.
  + Sharing best ideas for legislation and innovative funding.
* Coordinated technical assistance program that engages entities best suited to meet a community’s needs, e.g. Environmental Finance Center, Center for Watershed Protection, Alliance for the Chesapeake Bay, etc.
* More frequent and complete communication directly to local governments and between local officials and stakeholders.
* Improved knowledge management for best practices in watershed restoration and protection (e.g., policies, finance and communication).
* Mentoring system for local officials utilizing retired local officials with institutional knowledge (long-term)
* Increased peer to peer networking and learning program.
* Formal peer exchange program to meet short-term needs, e.g. implementing tree canopy program, stormwater fee adoption, etc.
* Needs assessment for training and education prior to implementation (periodic).

**Management Approach**

Over the last several months, seven general approaches were identified as important focus areas to expand the knowledge and capacity of local officials. These seven approaches were developed by a group of local officials and educators. These approaches, while very specific in this draft strategy, warrant further discussion as to their feasibility and order of priority given the reality of limited resources. The seven approaches and additional supporting information are presented as follows:

1. Increase the frequency and consistency of training programs, both bay-wide and regionally, on environmental issues including the development of a bay-wide leadership institute for locally-elected officials and citizen stewards.
   * + Create a circuit rider of water resources leadership who would travel to existing leadership programs across the watershed.
     + Tie in the citizen stewardship programs with leadership programs.
     + There is a need to create these programs because of changing elections and agency knowledge loss when people retire.
     + Municipal online training center....NFWF funded and has a certification program, the portal for training, how do the leadership components link in
     + Need to address sustainable funding for these leadership programs.
     + Use volunteers that want to help do other things than build a rain garden to help keep these programs going and build capacity.
     + Look at models across the nation, Georgia has requirement for local official leadership training. Survey existing programs, pick models that work, determine what should be in each model that is specific for each jurisdiction.
     + There is a need for shorter and more compressed program for local officials.
     + Include train the trainer component.
     + Tie the training need for outreach to MS4 (stormwater) permit and have the leaders continue the outreach into the community.
     + Still must bring the younger generation link with the universities who will be future elected officials or open slots for visiting universities students to attend leadership sessions.
     + Increase direct farmer training by providing expanded funding to soil and water conservation districts.
     + Tie in the economic drivers to the institutes and sell it as a green jobs initiative.
     + Trained citizens become the advocates for stormwater financing innovation and utility fees.
     + Survey existing programs, pick models that work, determine what should be in each model that is specific for each jurisdiction.
     + Bring University-based Sea Grant Programs into the training program.
     + Tie training into the land grant universities.
     + Pull into the curriculum a focus on economic development to broaden the audience or participants likely to attend.
     + Emphasize economics and innovation in the training programs.
     + Identify the audiences for different type of programs....will be different for citizen stewards and elected officials and government staff.
     + Institute a Bay/Environmental Certification Program for locally-Elected Officials.
2. Increase the peer to peer networking opportunities for local elected officials to enhance engagement and mentoring.

* Develop a formal outreach program for cross collaboration between jurisdictions.
* Extend program to network through technical, professional, and volunteer groups.
* Institute an effort to measure the assets in communities to find ways to increase environmental efforts.
* Utilize early adopters to move peer to peer communication forward and to engage willing partners.

1. Expand the availability of online resources.

* Conduct a Bay-wide survey to determine what information is needed across the various jurisdictions.
* Better communicate the Chesapeake Stat and Bay Barometer web sites. Create a best practices clearinghouse on regional scales based on what works and what might be possible funding sources.
* Utilize the Chesapeake Bay Watershed Forum website to function as a complimentary information source.

1. Improve knowledge management and transfer cross the watershed.

* Provide funding for and subsequently conduct municipality “Visioning” sessions to identify local needs, expand natural resource knowledge and identify existing gaps.
* Increase collaboration regionally.
* Better identify local environmental organizations to assist knowledge management/transfer within local officials, particularly newly elected.
* Adopt knowledge management techniques to better address information and resource gaps among local officials.
* Provide funding for attendance at watershed forums or similar events.
* Better establish teaching/training relationship with local institutions of higher learning.

1. Establish best practices information for interaction with less engaged municipalities and local audiences.

* Increase awareness and engagement through dialogue about needs and concerns.
* Shift focus from TMDL to a context of an asset-based opportunity approach (perception that the TMDL cannot be achieved).
* Enhance motivation to broader economics and competitiveness.
* Tie flooding and other environmental issues to economic development and place making.
* Capitalize on local concerns/initiatives to promote environmental improvement.
* Attract and inspire private investors and workforce development to achieve mutually beneficial goals.
* Develop appropriate local messaging for local communities.
* Assure implementation of community vision already agreed upon.

1. Develop success metrics on the local leadership strategies.

* Develop success criteria for local leadership knowledge and capacity.
* Utilize pre and post training surveys to determine success.
* Evaluate the use of social media techniques.

1. Increase the amount and consistency of Pre K -12 Education on environmental issues with direct linkages to the bay environmental literacy outcome and management strategy. (Members of local leadership workgroup will support environmental literacy workgroup which directly addresses this suggested approach)
   * + Increase the amount of funding for Bay school districts to involve K-12 in meaningful watershed Education Experiences (MWEE’s). Increase the number of inquiry-based learning events.
     + Create key points of contacts in the schools to involve environmental education groups in the school system.
     + Utilize recycling programs in schools to retrain people to start considering conservation issues.
     + Develop program and work closely with outdoor schools - schools that allow each student to go to camp for one week and have meaningful outdoor/environmental experiences – to increase knowledge for conservation.
     + Incorporate more advanced technology, interactive games or applications into lessons/curriculum.
     + Marketing to increase the use of the Bay Backpack web site and other state education web sites.
     + Creating a database of resources teachers can use to plan different bay-related experiences for students. Bring innovation to the strategies for getting this information to teachers.
     + Create projects for students that incorporate cross-discipline work.
     + Increase professional development opportunities for educators.

**Local Engagement**

As stated above, this Bay Agreement outcome directly targets the knowledge and capacity of local officials. Local engagement will be ongoing. The necessary resources to achieve the above seven approaches will be requested. In addition, the specific points below will be incorporated into this effort:

* Integrate with other appropriate outcomes/management strategies to meet needs in underserved communities.
* Incentivize the underserved community to achieve greater knowledge and capacity (e.g., scholarships to the local leadership academy).

**Monitoring Progress**

For this outcome, there is no current baseline established. Prior to beginning this effort, success criteria will be established and metrics in place to determine progress. The following tools and resources have been identified to assist in progress monitoring.

* Utilize surveying instruments such as before and after training surveys
* Consider basic tracking using number of contacts and meetings.
* Utilize social network diagrams technique and social media for determining progress
* Implement case study approach highlighting successful models through time.
* Track the number of people going through the leadership academies as one mode of progress monitoring.
* Use the Chesapeake Stormwater Network annual survey of members to assess programming.
* Determine the different mechanisms for the different categories of local officials (e.g., elected vs. senior staff)
* Count how many exchanges happened, how many commitments made and completed
* Number of people within community, number of collaborative groups within community that became involved since the strategy completion
* Count the number of municipalities that have built-in requirements for certification or training
* Track the number of Local officials/mentors upon graduation of the program and track how many maintain their mentorship

**Assessing Progress**

Progress in the building of knowledge and capacity in local officials will be assessed every two years. At our December workshop, many officials agreed to participate in this initial effort to determine success and assess progress criteria, hence direct involvement with our target audience is existing. Throughout the initial assessment period, local officials will be a part of the process to determine how progress is determined including criteria, scope, scale and adaptive management techniques utilized. It is anticipated that this strategy may require 1 or more two year cycles to fully determine whether the initial effort has been successful.

**Adaptively Manage**

Following the first two year review period and based on the information obtained through surveys and other assessment criteria, programmatic changes will occur to maximize the effectiveness of the methods utilized for local leadership knowledge and capacity building program success.

**Biennial Work Plan**

Appendix A

Chesapeake Bay Decision Framework

Purpose: The decision framework is designed to address two issues: the need for transparency and accountability in the Bay program; and a need to effectively implement adaptive management. In both cases, developing and documenting a rationale for all activities that links them clearly and logically to the program’s goals is essential. The decision framework is intended to facilitate the development and articulation of that logic by providing a structure for: identification of goals; reasoned development of strategies; purposeful design of monitoring; and planning for effective assessment of efficacy.

The decision framework is a tool for development of the essential logic that must underpin any successful environmental management program. Simply providing input for each step outlined in the framework will not guarantee a sound or well-reasoned logic. That can only arise from the conscientious efforts of those identifying and pursuing program goals. The framework is simply a structure for consistent presentation and effective coordination of all its activities.

What follows is a brief summary of the purpose of each of the seven steps in the framework and some guidance on the key characteristics of appropriate input.

Executive Summary

Purpose: The executive summary should provide an overview of the management strategy’s essential information. It should be designed to be read alone without the accompanying report and briefly outline the key information and findings. It is usually written last so that it accurately reflects the final content of the strategy.

Articulate program goals/outcomes

Purpose: Without an explicit, unambiguous goal/outcome it is impossible to know precisely what is being sought and therefore whether any of the planned activities are justified.

Key characteristics: The statement should identify a measurable outcome. Preferably it should be realistic and attainable within a practical time period. But there is no reason it cannot be aspirational. The key is that it must be explicit. Terms like “healthy” or “sustainable” or “natural” are open to endless debate, and therefore not particularly useful in goal statements. If they are used, it is essential that there be an accompanying statement that defines them in terms of measurable parameters. For example, “clean” waters might be defined as those meeting all water quality standards, “natural” conditions might be defined as specific parameters matching those in a particular reference site.

The statement should be sufficiently explicit, or well enough defined, that anyone reading it would have no doubt about what the aspiration is.

Jurisdictions and agencies participating in the strategy

Purpose: This section includes a brief description of the jurisdictions and agencies’ role and level of participation.

Describe factors influencing goal and outcome attainment

Purpose: In order to know what must be done to attain the specified goal or outcome, it is necessary to know how the ecosystem operates, and therefore, what has to be managed. Ideally, a well-developed ecosystem model would always be available to answer these questions. This is almost never the case, and ultimately a sophisticated model or even a really well-informed understanding of the system is not essential before management efforts can begin. It is entirely possible to learn while doing, and that is exactly what most environmental management programs must do. The key to constant improvement, however, is to be explicit about the beginning understanding. When the starting point is identified, monitoring can identify consistent or inconsistent behavior and thus inform subsequent adjustments of the understanding.

The initial understanding is also what justifies the initial management actions. Accountability demands openness about the certainty of management action efficacy. It is acceptable to take actions in the face of significant uncertainty, as long as there is reasonable assurance that the action was considered in light of all that is known about the system.

Key Characteristics: The decision framework suggests a starting point for this assessment that is relatively unsophisticated, and not terribly time consuming. The idea is that qualitative and conceptual understandings are sufficient to start a process that should be iterated frequently and hopefully with increasing sophistication as understandings increase. In the first iteration, it is most important to identify factors in both the natural and human systems that could affect the ability to attain the desired outcome. The objective is to be as complete as reasonably possible. The framework suggests facilitating this identification by considering factors that might fall under the broad categories of biological, chemical, physical, geological, and human factors. Sub-categories are also suggested in an effort to promote comprehensive consideration. Input from CBP advisory committees should be requested to ensure completeness.

Identification of factors is a process that can easily wander into levels of sophistication that rapidly exceed the utility of an initial assessment. In the first iteration “lumping” is preferable to “splitting” in factor identification.

Once identified, all factors should be rated for both their importance in affecting goal attainment, and the ability to be managed. This is a simple articulation of the rationale for any management strategy. Program accountability would expect that all important factors would be managed if the goal was to be attained. This can also be a test of goal practicality. If there are factors critical to goal attainment that are also difficult or impossible to manage, the practicality of the goal may be suspect.

Assess current management efforts and identify gaps

Purpose: Once critical factors influencing goal attainment are identified, the next step is to identify and assess ongoing management efforts. For factors currently under some management, the efficacy of the management with respect to the goal should be assessed. The objective is to determine if the ongoing management effort is sufficient to achieve the goal, or whether enhancement is necessary. Factors that are not being managed will require development of a new strategy.

Key Characteristics: In the initial iteration of this assessment, there is no need and perhaps no basis for a detailed evaluation of existing management efforts. The first objective is to identify needs for new management efforts and opportunities for coordination of existing efforts. In time, monitoring will develop the basis for more rigorous evaluation, and a more robust rationale for any revisions necessary.

Develop management strategy

Purpose: Management strategies are the actions that the program will undertake to address the factors affecting goal and outcome attainment. In many programs, strategy development is accomplished through some form of logic modeling or results chain development. There are many versions of this practice, and there are a variety of tools to facilitate the undertaking. None of them are explicitly called for in the decision framework, in the expectation that it is possible to develop well-reasoned strategies without those methods.

Key Characteristics: Strategies should all be directly tied to the critical factors. Anything not linked to a critical factor has little reason to be part of the program, in so far as it is thus not addressing a program goal or outcome.

Strategies should be described in terms that make them measurable. There are two things that should be considered in this context:

First is a description of the management action called for by the strategy. What exactly is going to be undertaken? Evaluators refer to this as the “intervention.”

Second is the desired outcome. What should happen as a result of the intervention? Both the intervention and the outcome should be observable and measurable.

It is useful to consider the time over which interventions should produce observable outcomes. This information is critical to the design of the monitoring program.

Develop monitoring program

Purpose: Monitoring is necessary to answer two basic accountability questions: Are we doing what we said we would do? Is the outcome what is expected and desired? This should include how the progress toward the outcome will be monitored and any resources needed to implement the monitoring program.

Key Characteristics: There should be a direct link between the monitoring program and the strategy, which should be clearly tied to the goal and outcome statements. In this way the rationale for the monitoring should be very clear. As noted above the monitoring should have two specific purposes: 1) to document that the strategy is being implemented as planned; and 2) to determine if the system is responding as expected. The parameters or indicators monitored should be clearly identified and the frequency of monitoring should be based on what will be necessary to document status and trends in the context of any system variability.

In some strategies it may be necessary to propose a third type of monitoring metric. The logic of the decision framework is based on clear identification of the underlying understanding about the ecosystem. In some cases this will be little more than a hypothesis. In these cases the assumptions about system processes should be explicit, but identified as assumptions. It can be important for adaptive management to include monitoring to assess the accuracy of these assumptions. It is possible that monitoring of an intervention and an outcome will not be sufficient to assess underlying assumptions and this will impede efforts to enhance management efficacy. At this point, the goal team will need to re-evaluate and re-group its suggested strategy.

Assess performance

Purpose: The strategy should have an approach for how, and how often, the progress will be assessed and should include actions taken as well as the results of the monitoring. For both accountability and adaptive management it is essential to evaluate the performance of the management effort. Two assessments are needed:

For accountability the question is whether the management intervention was effectively delivered. This is typically a very simple and straightforward assessment. Did we do what we said we needed to do when we said we needed to do it?

For adaptive management it is important to know if the system responded as expected. Did the outcomes appear at the level and at the pace expected?

Key characteristics: The assessment of performance should occur in two phases: before the management even begins, and then intermittently after commencement. The initial assessment is really an expression of the understanding of how the system operates and the certainty surrounding that understanding. The way this is identified is by specifying what the monitoring program is expected to show over time. When the strategy is developed and the monitoring parameters are identified, program managers should clearly identify the trajectory of monitored values they anticipate. This reflects their current understanding of how the system behaves and when they expect to attain the goal.

Program managers should also provide a clear identification of the variation around the expected system trajectory they believe would be consistent with the system behavior matching their expectations. This envelop of reasonable uncertainty reflects their confidence in the initial understanding of system behavior. It must be explicit over the time period to anticipated goal attainment, because it also establishes the criteria for performance assessment at interim points. For example, if the consensus expected system response to an intervention is +15% in two years, and the confidence in that expectation is that it will actually be somewhere between +5% and +30%, then the thresholds for deciding the intervention is working as expected are effectively established. For adaptive management, this is setting the decision criteria for “staying the course” or revising the strategy.

Manage adaptively

Purpose: This step is about how the assessment of progress will lead to changes in actions or interventions and when the outcome itself needs to be changed and under what conditions. In order to constantly improve the effectiveness of the management program, there must be a process for continually reducing the uncertainty in management strategies. The decision framework attempts to enable this by promoting explicit identification of the understanding that drives management efforts, and detailed prediction of expected system behavior based on that understanding. Well-designed monitoring then enables constant assessment of the accuracy of that understanding and informs revision of the understanding to increase the certainty of the actions in the next iteration. The CBP Management Board will oversee management strategy implementation with annual reviews to ensure that actions are being implemented and are staying on track.

Biennial Workplan

Purpose: This section contains commitments, actions and resources that each of the jurisdictions, federal agencies and partners is providing to help achieve each of the outcomes they are supporting as well as biennial {targets and} outputs that are related to meeting the outcomes. The workplan should follow the same two-year schedule as jurisdictions’ two-year milestones and the content of Management Strategy workplans should align with the content of jurisdictions’ two-year milestones as much as possible.