

Comprehensive Conservation Management Plan Revision-DRAFT

Focus Areas, Objectives, Actions or Strategies and Performance Measures

NUTRIENT MANAGEMENT

Objective 1 - Monitor the effectiveness of the nutrient management law, program, regulations and Concentrated Animal Feeding Operation (CAFO) regulations, and suggest and implement any revisions as needed.

Action A. Annually assess and update information regarding Best Management Practice (BMP) implementation levels in the agriculture sector. Examples include:

Sub-Action A1. Determine acreage annually planted in cover crops in the watershed and progress toward the Pollution Control Strategy goal of 37,637 acres.

PM 1. Identify a point of contact who will provide an updated number to the Center for the Inland Bays annually.

Sub-Action A2. Determine the number of poultry manure storage sheds and other structural BMPs installed annually within the watershed.

PM 1. Identify a point of contact who will provide the numbers to the Center annually.

Sub-Action A3. Determine the annual number of tons of manure relocated or put into alternative use with the goal of 502 additional tons per year within the watershed.

PM 1. Identify a point of contact who will provide this number to the Center annually.

Sub-Action A4. Revise and update as needed any changes to the preceding action items.

Action B. Conduct a gap analysis to consider where we are now versus where we need to be, what financial and staff resources are needed, what regulatory or legislative changes are needed, and what is the political will and the will of affected citizens in the Basin.

Sub-Action B1. Develop an implementation plan containing milestones towards reaching where we need to be.

PM 1. Such an implementation plan is available to all who request it.

Sub-Action B2. Conduct a survey to determine the will of affected citizens.

PM 1. The results of the survey are available to affected legislators and the citizenry.

Action C. Decide where the implementation of best management practices (BMPS) would be the most effective and which BMPs should be promoted as the most effective/cost efficient for implementation.

Sub-Action C1. Develop a GIS database to target BMPs to the most effective locations on a whole watershed or on a sub-watershed basis, and identify if there is a concentrated need in a particular area.

PM 1. A GIS database is available to government planning agencies, state, county, and local.

Sub-Action C2. Develop commitments from potential cost share providers like the National Resource Conservation Service, Sussex Conservation District, DNREC, EPA or others to provide assistance for targeted practices.

PM 1. Number of practices funded and dollar value of assistance provided.

Action D. Secure and leverage funding for the BMPs.

Sub-Action D1. Conduct a workshop to identify funding sources.

PM 1. A list of potential funding sources is available for distribution.

Sub-Action D2. Utilize the DE DNREC Water Quality Improvement Project Sponsorship Program to increase funding for BMPs.

Action E. Promote/reward those in the agriculture sector who are good stewards of the environment and encourage others to follow in their footsteps.

Sub-Action E1. Provide a new level of recognition to those who are innovative with BMPs in protecting the watershed.

PM 1. Deserving members of the agriculture sector are recognized publically, including the smaller producers.

Sub-Action E2. Inform the public about their neighbors/members of the agriculture sector who are serving as good stewards of the environment.

Action F. Increase the focus on urban nutrient management plans through education and outreach to ensure that those in the non-agriculture sector applying fertilizers (such as landscape and lawn care professionals and private homeowners) are doing so responsibly and according to the law and regulations.

Sub-Action F1. Conduct a program to educate the general public and lawn-care and landscape providers on the potential benefits to the Inland Bays from a yard fertilization program that is environmentally responsible.

PM 1. Number of citizens attending a workshop on responsible fertilization programs.

WASTEWATER MANAGEMENT

Objective 1 - Examine, improve and update existing on-site wastewater treatment and disposal regulations and their enforcement.

Action A. Annually assess and update information regarding BMP implementation levels and regulatory initiatives in the onsite wastewater sector. For example:

Sub-Action A1. Ban permanent holding tanks (those in use 4 years or more) in the watershed if such has not already been done.

PM 1. A ban is in place and remains as such.

Sub-Action A2. Continue existing holding tank inspection program as required in existing regulations.

Sub-Action A3. Determine relative compliance with the DNREC regulation for properties utilizing an onsite wastewater treatment and disposal system (OWTDS) that are sold or otherwise transferred to other ownership.

PM 1. Estimate the percentage compliance with the regulations.

Sub-Action A4. DNREC should verify that all new and replacement OWTDS in the Inland Bays watershed are required to meet the performance standards as specified in the DNREC Inland Bays Pollution Control Strategy regulations.

PM 1. All new and replacement OWTDS are in compliance with the PCS.

Sub-Action A5. Determine if we have met the goal of conversion of 2,359 individual on-site systems to central sewer. If not, determine when the goal will be met, or revise the goal.

PM 1. Number of conversions per year and percentage of non-converted remaining.

Objective 2- Examine the problem of potential emerging contaminants in the Inland Bays and devise and implement strategies for engaging the regulatory community and the general public in problem recognition and source reduction.

Action A. Conduct a symposium that identifies emerging contaminants and their sources including pharmaceuticals and their potential effects on the Inland Bays ecosystem.

PM 1. The symposium is held and the findings are conveyed to the general public.

Action B. For the contaminants with the highest potential for significant environmental impact, prepare briefing reports to define the problem and seek public support to effect source control or elimination. Potential partners in the information sharing process could include one or more of the following: the Center for the Inland Bays, Delaware Department of Natural Resources and Environmental Control, the State Division of Public Health, and/or the State University system in Delaware.

PM 1. Number of contaminants reported upon.

PM 2. All interested agencies are informed.

PM 3. Partners are identified and enlisted to assist with public information sharing and with addressing source elimination.

Action C. Determine the need for additional regulations or permitting to reduce the threat of these contaminants to aquatic resources in the Inland Bays.

Sub-Action C1. Request guidance from the U.S. Environmental Protection Agency on what emerging contaminants should be included in state water quality standards.

PM 1. The need for such guidance is acknowledged by EPA and a list of emerging contaminants to be tracked is sent to the State.

Sub-Action C2. Inform the general public about the potential threats, challenges, and solutions to the problem of emerging contaminants such as pharmaceuticals.

PM 1. A public service information campaign is developed and implemented by the Center or its partners highlighting the threat of emerging contaminants.

Objective 3 - Promote regional wastewater treatment and disposal systems within designated growth areas in the Inland Bays drainage system over multiple small systems outside of growth zones. When considering new wastewater treatment and disposal system proposals, ensure that due consideration is given to attaining Total Maximum Daily Loads (TMDLs) goals for receiving waters in the Inland Bays.

Action A. Wastewater utilities and the County and DNREC craft a working agreement regarding siting and performance of regional wastewater facilities within the Inland Bays drainage system.

PM 1. Such an agreement is signed by the parties in question.

Action B. Develop an Inland Bays drainage wastewater planning coordinating committee comprised of DNREC, County government, and utility industry representatives, and stakeholders that plans for and coordinates growth, wastewater services, and treatment and disposal based on the TMDLs of receiving waters and their current and projected nutrient loads.

PM 1. The coordinating committee meets and agrees on a meeting schedule.

Action C. Suggest incentives or disincentives that promote regional wastewater treatment and disposal systems over multiple small systems.

PM 1. The result is a decline in the number of application approvals for small systems.

Action D. Provide technical assistance to wastewater utilities to increase beneficial reuse of wastewater.

PM 1. All wastewater utilities and providers in the Inland Bays drainage system emphasize beneficial reuse of wastewater.

Action E. Require surface water assessments that clearly demonstrate how all proposed new wastewater treatment and disposal systems will meet the TMDLS for Inland Bays drainage water bodies ultimately receiving discharges.

PM 1. Regulations or permit requirements are implemented that require consistency with TMDLS.

Action F. Enforce the waters of Exceptional Recreational and Ecological Significance (ERES) provisions of the State Water Quality Standards in regards to requiring the least environmentally damaging discharge and/or disposal alternatives in the Inland Bays watershed.

PM 1. ERES provisions are given due consideration in every review of an application for discharge and/or disposal alternatives in the Inland Bays watershed.

Action G. Conduct a wastewater nutrient budget for the watershed to determine existing and projected total wastewater loads to water bodies relative to the TMDLS.

Sub-Action H1. Devise a strategy to reduce loads to meet the TMDLS.

PM 1. Nutrient levels in the Inland Bays waters decline.

Action H. Support research quantifying attenuation of nutrient loads from different types of large on-site wastewater systems at the point of discharge to entry into surface waters.

PM 1. The results of this research are available to permitting decision makers.

STORMWATER MANAGEMENT

Objective 1 - Complete the revision of the sediment and stormwater management regulations that reduce nutrient contributions from storm water in compliance with state TMDL provisions and insure their implementation.

Action A. Track acreage of impervious surfaces in the watershed and compensate for present and future coverage through:

Sub-Action A1. Encourage the awarding of grants to local government and home owners associations for retrofits, using projects that preserve open spaces and natural areas (Green Infrastructure projects). Provide assistance to towns to draft new ordinances that incorporate Green Infrastructure technologies.

PM 1. Number and dollar value of projects or acres protected.

Sub-Action A2. Promote Green Streets projects (those that use Green Infrastructure in transportation right of ways) throughout the watershed using alternative sources of funding like a stormwater utility.

PM 1. Create a stormwater utility that generates funding for construction of stormwater structures.

PM 2. Number of projects implemented.

Sub-Action A3. Implement demonstration projects utilizing Green Infrastructure with an emphasis on higher performance and cost effectiveness.

PM 1. Number of projects that meet the desired criteria.

Sub-Action A4. Engage corporate and commercial partners to make Green Infrastructure a corporate practice in new and retrofitted projects.

PM 1. Number of firms adopting Green Infrastructure practices.

Sub-Action A5. Emphasize the headwaters of watersheds for Green Infrastructure and Green Streets projects.

PM 1. Number of projects that address headwaters.

Sub-Action A6. Implement/develop a lines and grades/drainage code for the watershed for developers.

PM 1. Sussex County adopts such a code.

Sub-Action A7. Urge planning and zoning authorities to adopt a ceiling on impervious surfaces in the watershed of 10%, with a preference for 5.5% or less in order to protect balanced indigenous populations of fish and aquatic invertebrates.

PM 1. Impervious surfaces in the watershed remain less than 10% of the total.

PM 2. A guidance document is produced that can be used by the County and local authorities.

Action B. Encourage and install rain gardens where appropriate. Continue the 1,000 Raingarden Program for the Inland Bays and promote the creation of a demonstration raingarden in every town.

PM 1. Number of additional rain gardens installed.

WATER QUALITY MANAGEMENT

Objective 1 - Review the Inland Bays Pollution Control Strategy and identify which provisions have not been implemented, revise and prioritize remaining provisions, and devise an implementation plan for these provisions, including the programs to fulfill TMDLs.

Action A. Produce annual progress reports to track progress in implementing the Pollution Control Strategy provisions.

PM 1. Annual reports are generated.

Action B. Work with partner agencies to verify provisions that have not been implemented and to help with revising and prioritizing remaining provisions.

PM 1. Annual reports are shared with partner agencies and remaining tasks are prioritized.

Action C. Identify the responsible agency or agencies for implementation of remaining provisions.

PM 1. Responsible agencies acknowledge their role.

Action D. Seek concurrence of that agency or agencies for implementation of remaining provisions and devise a schedule for implementation that includes interim goals and a time frame for completion.

PM 1. A completion schedule is generated for meeting remaining provisions.

Objective 2 - Review and revise State and local standards for ground and surface water protection.

Action A. DNREC reviews their technical standards for ground and surface water protection at five-year intervals.

PM 1. Such a review is available for inspection by Inland Bays cooperators.

Action B. Obtain and review county standards for ground and surface water protection.

PM 1. Such a review is available for inspection by Inland Bays cooperators.

Action C. Determine if there are any local ordinances that govern ground and surface waters protection.

PM 1. Local ordinances, if any, are incorporated into the standards for ground and surface water protection.

Objective 3 - Identify any transportation of contaminants from Indian River Power Plant (IRPP) to environmental receptors and the predicted effects of sea level rise and severe storms on this transportation.

Action A. Compile any evidence from DE DNREC and NRG and their consultants relative to the issue of transportation of contaminants from the fly-ash retention basin to surface waters.

PM 1. This evidence is made available to the partners of the Center for the Inland Bays.

Action B. Coordinate with the Delaware Sea Level Rise Committee established by DE DNREC to predict inundation scenarios for the Indian River Power Plant (IRPP) fly-ash retention basin, both from potential storm impact and from a predicted range of sea level rise scenarios (0.5-1.5 m between now and the year 2100) recommended by this Committee.

PM 1. The owners of IRPP (NRG) and DE DNREC acknowledge the predicted inundation scenarios due to ranges of predicted sea level rise and make this information available to the general public.

Action C. Recommend actions to NRG and DE DNREC to minimize the potential impact of sea-level rise on the release of potential harmful substances to surface waters adjacent to the IRPP.

PM 1. These recommended actions are conveyed to NRG and DE DNREC and action is taken to minimize the impact.

Objective 4 – Reduce nutrient input to residential canals and lagoons and discourage creation of any additional canals and lagoons that include dead ends.

Action A. Identify, reduce and/or remove greywater discharges from individual lots into tributaries, canals, and lagoons.

PM 1. Number of greywater discharges reduced or removed.

Action B. Filter runoff from roofs, driveways, and other impervious surfaces by means of rain gardens, filter strips, and buffer strips.

PM 1. Number of projects implemented.

Action C. Provide and disseminate educational material for homeowners on reducing lawn and garden fertilizer runoff into tributaries, canals, and lagoons. Encourage the public to use phosphate-free or low phosphate fertilizers.

PM 1. Nutrients in tributaries, canals, and lagoons show measurable progress toward attainment of TMDLs.

Action D. Using aerial maps and ground surveys, examine existing dead-end canals and lagoons to see if any could benefit from additional connectivity to provide tidal flushing to improve water quality.

PM 1. Candidate sites for additional tidal flushing are identified.

PM 2. The results are conveyed to partner agencies, local legislators and County and local officials who make planning decisions.

Objective 5 – Re-assess water quality monitoring efforts and develop and begin implementing a strategy to improve their effectiveness and efficiency.

Action A. Identify what information is being generated by on-going water quality monitoring programs in the Inland Bays watershed; including the responsible agency, funding source, monitoring schedule, parameters monitored, and accessibility of the data.

PM 1. Such a list is shared with Inland Bays cooperating agencies.

Action B. Identify gaps and research needs in geographical coverage or in the specific parameters monitored and make suggestions to the appropriate agency or agencies for improvement.

PM 1. Gaps and needs are conveyed to the appropriate agency as they are identified.

Action C. Direct new sources of funds that become available for monitoring purposes to address the gaps identified in Action B for this objective.

PM 1. Available new sources of funds to support monitoring are fully utilized.

Action D. Provide analysis of monitoring data for use in on-going and future management decisions.

PM 1. Such analysis is shared with Inland Bays partners.

Objective 6 – Update an estuary water quality and hydrodynamic model for the Inland Bays that will be of use to scientists and the general public.

Action A. Secure funding for updating a water quality and hydrodynamic model for the Inland Bays.

PM 1. Adequate funding is secured.

Action B. Investigate the potential use of on-line models.

PM 1. Savings are realized by use of existing on-line models.

Action C. Engage a contractor or agency to create and maintain the model.

PM 1. The model is updated and is being utilized by Inland Bays partners.

MANAGING LIVING RESOURCES AND THEIR HABITAT

Objective 1 - Promote recurrence of submerged aquatic vegetation.

Action A. Gather information on salinity and substrate preferences of eelgrass and minimum light penetration requirements and prepare a document for public dissemination that keeps the public informed of the benefits and importance of re-establishing eelgrass beds in the Inland Bays.

PM 1. A report is prepared that is published or otherwise disseminated to the public.

Action B. Map the bottom areas of the three bays that have suitable salinity, substrate, water quality, and light penetration characteristics to support eelgrass. Produce habitat suitability maps for eelgrass using existing data sources including water quality (nutrient concentrations, water clarity, macroalgae concentration, and salinity), bathymetry, current velocity, and boat traffic patterns.

Sub-Action B1. Using G.I.S. technology, plot suitable eelgrass areas in the 3 bays

PM 1. Such a plot becomes available for public use.

Action C. Convene interested partners and reach consensus on a course of action or plan of work for restoring eelgrass populations to the Inland Bays including how to protect planted areas.

PM 1. Interested partners are convened and a consensus is reached on a plan or course of action.

Action D. Plant plugs or weighted seeds of eelgrass based upon the plan of work identified in Actions A through C.

Sub-Action C1. Implement the plan of work.

Sub-Action C2. Plant plugs or seeds and fence off test areas to compare with non-fenced off areas.

Sub-Action C3. Monitor survival of test plots as well as open-area plantings.

PM 1. Number of square feet or acres of bottom planted, both in fenced off and open areas.

Action E. Determine salinity and substrate preferences for other potential rooted SAV (like horned pond weed or widgeon grass) within Bay tributaries to identify suitable candidates for planting.

Sub-Action D1. Determine which species have the most potential for planting.

Sub-Action D2. Map bottom areas of tributaries that have suitable salinity and substrate for candidate species of SAV.

Sub-Action D3. Share this knowledge with the public so that they are informed and may react to any plans for planting.

PM 1. The public is informed about the potential for restoring SAV to selected Inland Bays tributaries.

PM 2. The public has an opportunity to comment on restoration plans.
Sub-Action D4. Obtain plugs of SAV or seeds and plant within suitable areas of selected Inland Bays tributaries.

PM 1. Number of square feet or acres of bottom planted.

Objective 2 - Halt the continued loss of non-tidal wetlands and reverse these loss trends by promoting projects to mitigate for previously lost wetlands.

Action A. Using GIS and other identification and mapping technologies, identify candidate sites for re-creation of freshwater and tidal wetlands. Possible targets include agriculture lands with hydric soils that were prior wetlands. Examine soil types to find those most suitable for wetland restoration.

Sub-Action A1. Use the updated Green Infrastructure map provided to the Delaware Ecological Network.

PM 1. Numbers and acreage of sites identified.

Action B. In accordance with the Inland Bays Pollution Control Strategy of 2008, create or restore 4,147 acres of wetlands on areas previously converted to cropland.

PM 1. The PCS goal of 4,147 acres is met.

Action C. The Center or its partners will review County buffering requirements between land subject to development and wetlands and primary and secondary water features and serve in an advisory capacity to the County on improvements to better protect the Inland Bays for the legacies of our children and grandchildren so that they may enjoy the natural resources that previous generations have enjoyed.

PM 1. The review is completed.

PM 2. A meeting is held with the County to convey recommendations on improvements.

Action D. The Center and its partners will encourage the planting of trees and other plants adjacent to all wetlands.

PM 1. Number of trees or other plants or acres of trees or other plants planted.

Action E. The Center and/or its partners will promote bringing freshwater wetlands under State jurisdiction and permitting.

PM 1. A legislative sponsor is found and legislation is prepared to bring freshwater wetlands under State jurisdiction.

PM 2. Such legislation is passed and signed by the Governor and regulations to protect freshwater wetlands are proposed and implemented.

Action F. Protect and enhance/restore/create additional freshwater and/or tidal wetlands each year based on the analysis from Action A.

PM 1. Number of acres enhance/restored/created per year.

Objective 3 - Provide access for native diadromous fish to upstream areas historically utilized as spawning and/or nursery sites.

Action A. Conduct a suitability assessment of each of the initial dams on Inland Bays tributaries to determine suitability for restoration of native migratory species, considering ownership of present impediment structures, cost of any structures to be installed or removal of existing structures, and the maintenance requirements of any structure to be installed.

PM 1. The suitability assessment is finished.

Action B. Select a suitable candidate and methodology for a site and initiate restoration efforts.

Sub-Action B1. Monitor success of the restoration effort by sampling the relative abundance of migratory fishes by-passing the migration barrier.

PM 1. Number of target migratory fishes that by-pass the migration barrier, or the percentage of the target spawning run that by-passes the barrier.

Action C. Select a second candidate site and initiate restoration efforts.

Sub-Action C1. Monitor success of restoration effort by sampling the relative abundance of migratory fishes by-passing the migration barrier.

PM 1. Number of target migratory fishes that by-pass the migration barrier or the percentage of the spawning run that by-passes the barrier.

Objective 4 - Eliminate once through cooling at the Indian River Power Plant.

Action A. Track progress of IRPP compliance with DNREC agreements for removal of Unit 3 water withdrawals by January 1, 2014.

PM 1. The only water being withdrawn at IRPP is to compensate for evaporative loss at the cooling tower.

Objective 5 – Develop a shellfish restoration and management program for the Inland Bays that furthers recreational opportunities and creates jobs.

Sub-Objective 5A. - Increase the acreage of approved shellfishing waters.

Action A. Examine water quality data for the Inland Bays for the past 5 years to determine if any areas could be added 1) to those waters seasonally approved for shellfish harvest and 2) to those waters approved for shellfish harvest on a year-around basis.

PM 1. Number of acres added to approved areas or to seasonally approved areas.

Action B. Determine the sources of contamination that presently constrain the opening of additional shellfishing areas.

PM 1. A listing of the sources of contamination is available for public scrutiny.

Action C. Develop a strategy to address contaminant source reduction so that additional shellfishing areas may be opened.

PM 1. The strategy is available to be shared with the public and with regulatory and permitting agencies.

Sub-Objective 5B. Enhance and increase populations of Eastern oysters (*Crassostrea virginica*) in the Inland Bays.

Action A. Create additional hard bottom areas suitable for oyster recruitment or planting of oyster spat. Criteria to consider include depth, salinity, flow, avoidance of navigational channels, ability to protect planted grounds, avoidance of productive hard clam areas, and the existing bottom substrate.

PM 1. Acres of suitable hard bottom areas created.

Sub-Objective 5C. Promote and encourage a shellfish aquaculture program in the Inland Bays.

Action A. Form a team of state and federal regulatory representatives from the agencies having jurisdiction over shellfish aquaculture in the Inland Bays including representation from the Delaware Center for the Inland Bays, Dept. of Agriculture, University of Delaware Sea Grant, Delaware Development Office, an Inland Bays recreational resource user group, interested members of the General Assembly, commercial clamming interests, and the Delaware Shellfish Advisory Council, and others as appropriate.

PM 1. Number of team meetings held.

Action B. Research shellfish aquaculture programs in other East Coast estuaries to determine which technology might be most feasible for implementation in the Delaware Inland Bays using native species.

PM 1. List of available technologies with recommendations for Delaware's Inland Bays.

Action C. Convene potential stakeholders and outline regulatory/statutory requirements for small-scale aquaculture production in the Delaware Inland Bays.

PM 1. A meeting is held among potential stakeholders.

Action D. Recommend statutory/regulatory changes needed to allow a shellfish aquaculture program in Delaware's Inland Bays.

PM 1. Legislation is drafted and introduced.

PM 2. Legislation passes and regulatory authority is conveyed.

PM 3. Enabling regulations are promulgated.

Action E. Invite participation from the general public to initiate privately-owned shellfish aquaculture enterprises in the Inland Bays.

PM 1. A private entity initiates steps to establish an aquaculture business in the Inland Bays.

PM 2. Jobs are created in a new industry for Delaware.

Objective 6. Identify and monitor the spread of potentially harmful invasive terrestrial and aquatic species within the watershed and initiate steps to control these species.

Action A. Review recommendations of the Delaware Invasive Species Council and available literature on invasive species and compile a list of species of concern in the Inland Bays watershed.

PM 1. A literature review is conducted.

PM 2. A report is prepared and disseminated to appropriate regulatory agencies and jurisdictions.

Action B. Plot the known distributions of species of concern in the watershed.

PM 1. A plot is prepared for public distribution.

Action C. If needed, support implementation of new laws and regulations designed to curb the spread of potentially harmful invasive species.

PM 1. The legislative/and/or regulatory process is engaged to provide the required oversight to prevent or limit further spread of harmful invasive species in the watershed.

PLANNING FOR CLIMATE CHANGE

Objective 1 - Integrate projected sea level rise into land use planning and proposed development to protect shore zone ecosystems and bay water quality.

Action A. Work with local communities to incorporate sea level rise into comprehensive plans using 0.5 to 1.5 m of projected sea level rise by the year 2100.

PM 1. Number of local communities on the Inland Bays watershed that include projected impacts of sea level rise in their comprehensive planning process.

Action B. Using maps of projected sea level rise, identify potential problems in the Inland Bays to be considered by land use planners and others with responsibility for resource management and protection. Such problems could include:

- 1) Flooding of existing infrastructure.
- 2) Permanently flooding existing marshes.
- 3) Raising below-ground water tables and increasing salinities in groundwater, rivers, and bays.
- 4) Shifting breeding areas and altering food sources for important aquatic life.
- 5) Shifting of dominant species because of sea-level rise.

- 6) Contaminating water supply aquifers.
- 7) Release of sequestered toxics from disposal sites due to inundation.
- 8) Salt intrusion effects on existing vegetation, both terrestrial and aquatic.
- 9) Flooding out remaining septic systems.
- 10) Compounding the drainage issues from tax ditches which may serve as conduits for sea level rise.
- 11) Loss of present beach areas.

Action C. Consider implementing the recommendations of the State Sea Level Rise Advisory Committee when they become available.

PM 1. Number of citizens informed about the likely effects of sea level rise through personal contact or social media.

Action D. Re-evaluate State Resource Areas and existing tidal wetlands in public ownership to calculate how much additional resource would be needed to allow for marshes to migrate inland because of anticipated sea level rise.

PM 1. Number of additional acres that would need to be acquired or put into conservation easement.

Action E. Promote the use of living shorelines rather than hard structures for shoreline stabilization because the former better accommodates sea level rise than the latter. DNREC and other permitting agencies should increase their emphasis on living shorelines in their permitting process.

Sub-Action E1. Conduct a demonstration project in the Inland Bays that employs living shorelines rather than hard structures for shoreline stabilization.

PM 1. Number of projects or linear feet or miles of projects employing living shorelines.

Action F. Track shifts of dominant aquatic species in the Inland Bays potentially caused by climate change/global warming through the use of previous and recent surveys of aquatic organisms.

PM 1. Generation of list of species affected that is regularly updated.

Action G. Include climate change/sea level rise information in our outreach and education efforts with the general public.

PM 1. Climate change/sea level rise is included in CIB outreach and education efforts.

COORDINATING LAND AND WATER USE DECISIONS

Objective 1 – Involve all levels of government; state, county, and local; and obtain commitments for coordination of land use decisions that minimize environmental impact, allow attainment of TMDLS, and maximize protection of existing aquatic natural resources in the watershed.

Action A. Designate the Inland Bays watershed as a ‘Critical Environmental Area’ or equivalent designation and manage the watershed for nutrient reductions consistent with TMDL load reductions or reductions attributed to best available technologies.

PM 1. Designation of the Inland Bays watershed as a ‘Critical Environmental Area’ or equivalent designation.

PM 2. Full implementation of TMDL load reductions.

Action B. Request that the State, County and municipal representatives to the Center for the Inland Bays Board of Directors sign a letter of understanding that their agencies’ land use decisions will try as much as physically and financially possible to minimize environmental impact to and protect existing aquatic resources in the watershed.

PM 1. Such a letter is drafted and signed by appropriate agencies represented on the CIB Board of Directors.

Objective 2 - Provide maximum protection of waterways, groundwater, natural areas, open space, tidal and non-tidal wetlands, and State Resource Areas and encourage additional acquisitions or conservation set-asides and protection.

Action A - Review the County Comprehensive Plan in regard to setbacks and buffer zones and suggest revisions as needed to protect and enhance aquatic resources and recreational uses of these resources and to make it consistent with the Inland Bays CCMP.

PM 1. Recommendations are delivered to the County.

Action B. Buffers shall be clearly demarcated, designated, and recorded on final site plans or final major subdivision plats and demarcated on the ground with signs or other kinds of markers.

PM 1. Number of plans or plats with buffers included.

Action C. Maintain land presently classified as open space under County or municipal ordinances or codes to minimize nutrient loading to the Inland Bays estuary.

PM 1. Number of acres maintained for minimization of nutrient loading to the Bays.

Action D. Through outreach and education, encourage the planting of trees and other native plants adjacent to all waters and wetlands. Discourage the planting of exotic trees and other non-native plants.

PM 1. Acreage of shorelines or wetland areas planted and thus protected.

PM 2. The public is informed about why they should avoid planting exotic trees and other non-native plants and use plant native species instead.

Objective 3 – Update and implement the Inland Bays Water Use Plan.

Sub-Objective 3A. Promote low impact water use activities.

Sub-Objective 3B. Focus on waterway safety and channel marking.

PM 1. The Water Use Plan as written in 1999 is updated and revised.

PM 2. The updated Plan is accepted by the CIB Board of Directors.

OUTREACH AND EDUCATION GOALS

Objective 1 - To increase the visibility of the Delaware Center for the Inland Bays and its partners' accomplishments toward implementing the mission and the Comprehensive Conservation and Management Plan (CCMP).

Action A. Assess brand/image and related graphics, tag lines, etc. to determined effectiveness in promoting widespread recognition of the program and garnering support for it.

Sub-Action A1. Establish socio-economic indicators to monitor and report on the impact of outreach and public involvement activities.

PM 1. The increase in the number of people enrolled as "Friends of the Bays."

Sub-Action A2. Conduct surveys to gather baseline data on citizen perceptions and understanding of the CIB and issues of concern in the Basin.

PM 1. The increase in financial support of the CIB provided by citizens and businesses.

Action B. Annually identify high priority work plan/CCMP issues(s) that would benefit from a media/marketing campaign to promote specific behavior changes and promote support for our program.

Sub-Action B1. Develop an education/outreach plan for major CIB projects.

Action C. Promote and reinforce the CIB mission by representing the CIB at statewide and local events and programs and public meetings.

PM 1. Staff are appointed to advisory committees with partner organizations, statewide task forces, and roundtables on issues of concern to our mission.

Action D. Seek opportunities to partner with environmental and non-profit organizations, chambers of commerce and other entities on projects and issues of mutual interest and concern.

PM 1. Projects are established with partners such as DE Sea Grant, DE Coastal Programs, DE Nature Society, sister National Estuary Programs, towns, and civic and business organizations.

Action E. Provide quarterly reports/publications to the CIB Board of Directors, STAC and CAC members and the CIB volunteers to inform and empower them in the promotion and implementation of the CIB mission.

PM 1. The CIB Board of Directors, STAC, CAC, and CIB volunteers stay informed about the CIB mission and accomplishments.

Objective 2 - To educate and inform stakeholders (residents, school children, landowners, visitors, farmers, business owners, and other resource users) in the watershed about their impacts on water quality in the Bays and how they can help improve water quality.

Action A. Develop and deliver watershed education programs for children in the watershed.

Sub-Action A1. Direct the James Farm Outdoor Education Program to reach approximately 800 students annually.

Sub-Action A2. Direct our partnership with the City of Bethany Beach to provide watershed education activities weekly at the Bethany Beach Nature Center to reach approximately 500 children and their family members annually.

Sub-Action A3. Direct the work of the Schoolyard Habitat Coordinator to oversee the partnership with the Indian River School District to create Schoolyard Habitats and bring a Schoolyard Habitats Program to all the schools in the Inland Bays watershed.

PM 1. All schools in the watershed have a schoolyard habitat program and /or become a "Greener School for Delaware."

Action B. Administer and coordinate a Speakers Bureau.

Sub-Action B1. Promote the Speakers Bureau in the community to identify opportunities to meet with and inform various stakeholder groups.

Sub-Action B2. Develop programs and visual presentations for the use of the Speakers Bureau in presenting to community groups

Objective 3 - Communicate with stakeholders through a variety of media; to promote public involvement and influence behaviors, attitudes and actions to foster stewardship.

Action A. Administer and maintain an engaging, active website as a primary vehicle for disseminating CIB information.

Sub-Action A1. Continue to develop the Inland Bays website to invite and attract increased citizen engagement in our work; incorporating social marketing opportunities and enhanced use of media including video and Power Point presentations.

Sub-Action A2. Use 'Constant Contact' to maintain regular communication with Board and Board Committees, volunteers, Friends of the Bays, and elected and public officials.

Sub-Action A3. Maintain a 'Facebook' page and "Youtube" page that is linked to the website.

Action B. Edit and disseminate an informative, engaging newsletter and annual report.

Sub-Action B1. Publish and distribute a newsletter three times annually.

Sub-Action B2. Publish and distribute an annual report.

Action C. Create and disseminate printed marketing materials targeted to priority issues for the Inland Bays such as brochures, postcards, flyer exhibits and signage to address specific education/outreach needs for presentation and distribution to target audiences.

PM 1. Number of printed marketing materials distributed during a year.

Action D. Maintain relationships with local media outlets and reporters and regularly disseminate press releases and photos for their use.

Objective 4 - To engage more stakeholder support through increased partnerships and volunteerism.

Action A. Direct a volunteer program that provides citizens a formal track to partner with the CIB.

Sub-Action A1. Maintain regular contact with volunteers and invite their assistance or projects.

Sub-Action A2. Provide training, recognition and the opportunity for increased level of engagement.

Action B. Involve volunteers and stakeholders in demonstration projects that model desired changes in practices.

PM 1. Number of volunteers participating increases each year.

Sub-Action B1. Continue to work with partners to create demonstration rain gardens in communities throughout the watershed to raise awareness about stormwater pollution and to work toward 1000 rain gardens in the Inland Bays watershed.

Objective 5- Participate in regional and statewide initiatives to establish the CIB as an important partner and resource on issues and projects aligned with our mission.

Action A. Share expertise and information with other programs and partners through participation on advisory boards and presentations at conferences and workshops.

Action B. Provide information to state, county and local public and elected officials about issues and concerns impacting the Inland Bays and its watersheds.

Sub-Action B1. Provide timely updates on issues of concern via 'Constant Contact'

Sub-Action B2. Invite local elected and public officials to Board of Directors meetings and selected CIB events.

Sub-Action B3. Work with partners to sponsor informational forums for local decision-makers, legislators and others.

Sub-Action B4. Participate in events at Delaware Legislative Hall where appropriate.

PM 1. CIB staff are invited to serve on advisory committees, task forces, and roundtables.

Objective 6 - To communicate environmental results so as to raise citizen awareness about state of the Inland Bays and its watershed.

Action A. Publish and disseminate a "State of the Inland Bays Report" every five years.

Action B. Publish the results of Inland Bays environmental studies or projects on the website.

Action C. Provide new information to the media.

Action D. Report environmental results in newsletters and other publications.

Action E. Communicate with Congressional delegation and staffers.

Sub-Action E1. Attend the annual spring meeting of EPA's National Estuary Programs in Washington, D.C.

Sub-Action E2. Meet with congressional delegations as appropriate.

PM 1. Surveys demonstrate that awareness and understanding of the watershed is growing among citizens in the watershed.