

Ecosystem-based Management in New York State: State Agency Program Review and Analysis

Draft Summary Report of Agency Guidelines and Recommendations



New York Ocean and Great Lakes Ecosystem Conservation Council

January 2009

New York Ocean and Great Lakes Conservation Council Members

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NYS Department of Environmental Conservation

NYS Department of State

NYS Department of Transportation

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Disclaimer: This document is a work in progress, developed and reviewed by the Council member agencies and subject to further revision and refinement based upon future developments and information.

Executive Summary

Legislative Context

New York's coastal ecosystems are critical to the state's environmental and economic health. In recognition of this, in 2006, the State Legislature adopted the New York State Ocean and Great Lakes Ecosystem Conservation Act (Act). This Act calls for adopting policies that will effectively conserve, maintain, and restore coastal ecosystems and thereby sustain the human and wildlife populations dependent on these resources.

Ecosystem-based management (EBM) provides a foundation for New York to identify effective actions to meet this mandate. An integrated approach to resource management that considers the entire ecosystem, including humans, EBM is a step removed from current management approaches which focus on a single species or water quality parameter. Instead, EBM focuses on interconnections and is guided by the six following principles:

1. Place-based focus
2. Scientific foundation for decision making
3. Measurable objectives to direct and evaluate performance
4. Adaptive management to respond to new knowledge
5. Recognition of interconnections within and among ecosystems
6. Involvement of stakeholders

A New York State Ocean and Great Lakes Ecosystem Conservation Council (Council) was created, which includes nine state agencies and authorities; each of the nine has programmatic and/or regulatory responsibilities that ultimately affect the quality of coastal ecosystems and the quality of life for all New Yorkers. The Council members were directed to advance EBM and weave the six guiding principles into their respective programs and activities.

Scope of the Agency Guidelines Project

In response to the legislative directive to advance EBM throughout the state, each of the nine Council members agreed to examine their relevant programs and identify how internal decision-making could be modified to better align their actions towards this holistic approach. Ultimately, the Council is tasked with identifying specific actions, both executive and

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legislative, needed to integrate and align EBM into the state's programs and policies.

A generic work plan was developed to guide the Council members through their efforts. Phase I of the agency guidelines assignment, which began in May 2007, was an inventory and assessment of agency activities, programs, laws and regulations to identify those most relevant to advancing EBM. From the inventory, Council members established a "select list" for further analysis; this analysis focused on opportunities to incorporate EBM policy and principles into daily activities.

Phase II of the generic work plan directed the Council members to examine their selected programs at an increasing level of detail to identify and describe specific opportunities to advance EBM. Recommendations for specific techniques and approaches resulted from this focused examination. Environmental scientists from EcoLogic LLC worked with the Council agencies commencing in February 2008 in reviewing selected programs and developing recommendations.

This report presents results of Phase III of the generic workplan; each Council member has provided an initial draft of guidelines for agency activities and programs to integrate EBM policy into their core programs and services. This draft report will be reviewed and revised, as needed, for incorporation into the Council's EBM report to Governor David A. Paterson and the New York State Legislature.

Highlights of the Agency Guidelines

Although the guidelines are specific to an agency and the programs it chose to examine, several overarching themes emerge. Some actions fall within the existing authority and mission of the agencies and can be undertaken with only minor changes in day-to-day operations while others will require statutory changes. Similarly, some actions can be implemented relatively quickly while others will require longer lead times. Many have implications on staffing and budget.

Taken together, the recommendations call for far greater interconnections, as measured on multiple scales. First, many recommendations call for enhanced interconnections between and among agencies: a strong commitment to collaboration is essential as the State moves towards integrating resource-based decision making and allocating limited funds to projects that best reflect EBM principles. Second, several recommendations call for improvements in stakeholder participation in decision-making, and better reporting of information to the broader community of New Yorkers. Third, there is a suite of recommendations that call for changes in the ways agencies guide development that will result in reduced pollutant loading to air, water, and land resources. Finally, several agency recommendations fall into a category of interconnections between actions and results, monitoring the environmental, economic and social impacts of actions, and devising ways to make the data accessible.

The New York State Department of Agriculture & Markets (DAM) examined four programs that exemplify the principles of EBM; these programs define locally-acceptable measures to preserve and enhance agricultural productivity while reducing any adverse environmental impacts. Key recommendations include incorporating EBM criteria into the Agricultural Environmental Management (AEM) report card, developing partnerships with other agencies to provide the outreach, training, and planning tools that municipalities need to manage growth and investing in staff and constituency training on EBM principles.

The New York State Department of Environmental Conservation (DEC) proposes to apply the model of the Hudson River Estuary program throughout the State's ocean and Great Lakes ecosystems. The Estuary Program implements EBM principles on an ecosystem scale through its active stakeholder outreach program, partnership with scientific and educational institutions, and inclusion of socio-economic metrics in resource management. Recognizing that the entire Great Lakes basin is too large a

management unit for implementing place-based strategies, DEC recommends creation of four action zones to serve as administrative units as well as forming a similar structure for the ocean. The need to define and monitor metrics of ecosystem health was also expressed by DEC. The agency recognized that municipalities need tools for better land use planning, and recommended a legislative change allowing local passage of a real estate transfer tax to fund local open space conservation acquisitions.

The New York State Department of State (DOS) examined a number of programs and identified opportunities to align planning practices and support to local government with the EBM principles. Key recommendations include regulating site design and construction in the State Building Code; more fully capturing building renovation in the Energy Conservation Code; revising coastal policies and using coastal consistency requirements to help enforce EBM objectives; revising the local boundary determination process to include descriptions of ecosystems of ecological effects; establishing periodic review of approved Local Waterfront Revitalization Program (LWRP) and expanding the LWRP as the local delivery mechanism for EBM and Smart Growth principles statewide in existing and future LWRPs.

The New York State Department of Transportation (DOT) is committed to advancing State environmental policies and objectives, promoting an environmental ethic throughout the Department and strengthening relationships with environmental agencies and groups. The agency will focus its continuing EBM efforts on the collaborative and interdisciplinary Smart Growth Initiative and Aquatic Connectivity efforts along with the agency's Integrated Vegetation Management program and Climate Change and Energy Efficiency Team.

The New York State Office of Parks, Recreation and Historic Preservation (OPRHP) as the steward of State Parklands, recognizes the tremendous opportunity to use an EBM framework to foster sound decisions related to management of resources within state parks for natural resource preservations as well as for recreational use. Master Plans prepared for individual parks as well as the Statewide Comprehensive Outdoor Recreation Plan will be expanded to incorporate the EBM principles. To ensure that all properties are managed in a sustainable manner, OPRHP will define measurable objectives for sustaining ecosystem services. This baseline assessment will be used to evaluate the impacts of recreational and operational activities. The EBM framework will also be used to set priorities for open space conservation. Connections to the broader ecosystem will be recognized and incorporated into decision-making. EBM principles will augment the Agency's research agenda, capital program, operations and other programs so as to enhance OPRHP's stewardship of natural resources within state park lands.

The New York State Energy Research and Development Authority (NYSERDA) will continue to focus on using innovation and technology to solve some of New York's most difficult energy and environmental problems in ways that improve the State's economy. NYSERDA will increase stakeholder input on specific projects and expand into other sectors, such as K-12 schools, to involve more stakeholders. The Authority is committed to examining impacts of alternative energy, climate change, and biofuel initiatives. NYSERDA is committed to assisting the Council's partners by providing assistance on energy and environmental issues surrounding multi-agency projects.

The New York State Office of General Services (OGS) wields a potentially massive influence on the environmental stewardship of the state because of its real property holdings, facility design and construction activities, and responsibility for ensuring availability of environmentally-preferred goods, services, and technology for purchase by state agencies and other authorized purchasers. Many OGS activities are already consistent with EBM principles due to ongoing sustainability initiatives. OGS staff and executive team comprehensively reviewed additional opportunities. They have recommended policy actions that advance EBM not only within their agency, but also across the state. Moreover, OGS stands ready to assist state agencies with the data management challenges associated with EBM implementation.

As the agency further incorporates environmental sensitivity into its operations, it also seeks to encourage adoption of EBM principles on the part of other stakeholders. OGS recommends that the state establish one or more “Excelsior State Seashore” preserves on Long Island, and “Excelsior State Shoreline” preserves at inland water bodies to protect wetland and aquatic ecosystems from degradation.

The New York State Department of Economic Development (DED) reviewed its Pollution Prevention and Waste Reduction and the Recycling Market Development Programs as part of its Agency Guidelines assignment. Based upon this review, DED will prioritize those projects in these two selected programs that result in environmental improvements and associated economic benefits.

The State University of New York (SUNY) has established the New York Marine Sciences Consortium (NYMSC) to serve as the voice of the ocean research and education community. This new organization of twenty-five degree-granting institutions and affiliates will ensure that best science informs policy; advocate for policies and resources that promote science-based stewardship of marine and coastal ecosystems; and promote interaction and collaboration among members to foster public awareness. The inaugural meeting of the Consortium was held in September 2008.

SUNY will also support research efforts by its faculty to improve EBM awareness, create research funding mechanisms, support and implement the recommendations in the Scientific Advisory Group’s Research Priorities Agenda, support the Great Lakes Research Consortium (GLRC) and the NYMSC and encourage both organizations to host an annual conference focusing on the status of New York marine and Great Lakes ecosystems.

These recommendations are just the beginning. The nine Council agencies are committed to examining additional programs and finding ways to work together on actions that transcend traditional boundaries.

A Brighter Future for Coastal Ecosystems under EBM

The Agency Guidelines define a path forward that will result in better governance, better stewardship of coastal ecosystems and a better future for generations of New Yorkers who depend on the services these ecosystems and their watersheds provide.

If these recommended actions are accepted, the results could include the following:

- *Effective partnerships between and among agencies and stakeholders.* State agencies and the citizens they serve will focus their collective efforts on common goals. Where coastal ecosystems and watershed boundaries extend beyond New York, First Nations, other states, the federal government, and Canada will be included. Agency staff will be empowered to work with their counterparts to share data, information, and tools needed to manage coastal ecosystems.
- *Informed citizens.* New Yorkers will understand the relationships between the decisions they make, both as individuals and as part of a community, and the quality of coastal ecosystems. This will come about as EBM partner agencies develop effective public information and outreach programs that put forth a consistent message. In addition, monitoring programs will be in place to measure the effectiveness of best management practices with the results regularly communicated to the public.
- *Municipalities have the training and tools to adopt effective land use regulations that effectively integrate EBM principles and practices into local land use management and decision-making.*

Municipal officials and boards will be able to make land use, transportation, and infrastructure decisions that guide growth in a manner that enhances the quality of life for this and future generations of New Yorkers. Development decisions will protect natural resources while providing for economic growth. Whenever possible, regional solutions will be sought.

- *Healthy coastal ecosystems.* As a result of these changes in agency policy, critical habitats in the coastal waters of Long Island and shoreline areas of Lake Ontario along with other inland waters will be preserved. Areas outside of the preserves will see improved water quality and habitat conditions, with reduced impact of invasive species. The coastal ecosystems will provide a reliable and sustainable harvest of fish, shellfish and other natural resources that sustain local economies. Recreation in and on the water will be enhanced.

Draft Recommendations for Legislative Action

- Create an administrative structure for EBM in the Great Lakes and the ocean that establishes “action zones” (used as administrative units), four for the Great Lakes and one for the ocean within which local place-based decision-making, planning and implementation can occur. *(Department of Environmental Conservation)*
- Pass the Community Preservation Act to give all municipalities in New York State the authority to raise revenue for open space protection through a local real estate transfer fee. *(Department of Environmental Conservation)*
- Enable the Clean Water State Revolving Loan Fund to be used by DEC to finance land acquisition. *(Department of Environmental Conservation)*
- Require State Agencies to synchronize the calendar for submittals, review and award of grant opportunities and align award decisions with the principles of ecosystem-based management. *(Department of State and others)*
- Regulate site design and construction in the Building Code and more fully capture building renovation in the Energy Conservation Code. *(Department of State)*
- Eliminate the “50% rule” in current energy legislation for the application of energy conservation standards to building renovations. *(Department of State)*
- Establish periodic review of approved Local Waterfront Revitalization Plans *(Department of State)*
- Establish “Excelsior State Seashore” preserves on Long Island, and “Excelsior State Shoreline” preserves at inland water bodies throughout the state to protect wetland and aquatic ecosystems from degradation. *(Office of General Services)*
- Increase the types of redeemable containers to decrease the amount of plastic and other bottles that litter our public lands and clog our waterways. *(Office of Parks, Recreation and Historic Places)*

Introduction

Ecosystem-based Management in New York State

Ecosystem-based management (EBM) in New York was initiated in response to serious concerns regarding how human actions are affecting coastal resources. Two commissions, the privately-funded Pew Oceans Commission and the congressionally-created U.S. Commission on Ocean Policy, concluded that a combination of human activities on land, along the coasts, and in the ocean are seriously affecting marine and coastal ecosystems and threatening the ability of these ecosystems to sustainably provide the benefits humans desire and need. Both commissions called for a more comprehensive, integrated, ecosystem-based approach to managing oceans and coastal resources; an approach founded on principles of sustainability, adaptation, and participatory governance using the best available science for decision-making (Pew Oceans Report & US Oceans Commission Report).

The Commissions painted a bleak picture of the interface of governance and resource sustainability. As summarized at a symposium at the Nichols Institute for Environmental Policy Solutions - Duke University in October 2005:

“Ocean governance today is fragmented, duplicative, inefficient, and in many cases, ineffective. Programs manage ecosystem components in isolation from one another when in fact they are interconnected. As a result, our oceans are in serious trouble. Complex problems often occur at an ecosystem level, but ocean and coastal management today is bounded by traditional political jurisdictions and sector-specific mandates that do not conform to ecosystem scales and configurations. For this reason, addressing complex ocean and coastal problems is unnecessarily difficult and often ineffective. We need an institutional structure that provides for effective responses at a regional ecosystem level.” (Nugent and Proftera 2006 pg. 3)

New York State responded to the call for an integrated approach to managing coastal and ocean ecosystems with Article 14 of the Environmental Conservation Law, entitled the New York Ocean and Great Lakes Ecosystem Conservation Act (Act). The Act recognized the importance of coastal ecosystems, set forth a policy for their protection, and defined guiding principles for their governance. In addition, it created the New York Ocean and Great Lakes Ecosystem Conservation Council (Council) to coordinate coastal management.

Nine members comprise the Council: the commissioners of agriculture and markets, economic development, environmental conservation, general services, parks, recreation and historic preservation, and transportation; the secretary of state; the president of the energy research development authority; and the chancellor of the state university of New York; or their respective designees. The nine agencies represented on the Council play a central role in shaping the future of New York’s natural and built environment, deciding how resources are extracted, and building capacity of its citizens to participate in critical decisions.

The policy of the State of New York shall be to conserve, maintain, and restore coastal ecosystems so that they are healthy, productive, and resilient and able to deliver the resources people want and need.

Council members agreed to participate in a detailed examination of their programs, activities, laws and regulations to determine how to best align their agencies with the guiding principles of EBM. This report summarizes the findings of the detailed examination.

Approach

Each Council agency designated key staff members to serve on the Agency Guidelines Steering Committee whose members were tasked with developing Agency Guidelines addressing how their respective programs, activities, laws, and regulations could be aligned with the mandate for EBM.

A generic work plan was developed to guide the Council members through their efforts. Phase I of the agency assignment, which began in May 2007, was an inventory and assessment of agency activities, programs, laws and regulations to identify those most relevant to advancing EBM. From the inventory, Council members established a “select list” for further analysis focusing on opportunities to incorporate EBM policy and principles into daily activities. Most Council agencies selected up to six programs for the detailed evaluation.

Phase II of the generic work plan directed the Council members to examine the select programs at a detailed level to identify and describe specific opportunities to advance EBM. Recommendations from this focused examination were developed through a prism of the six EBM guiding principles. For each program, the analysis examined current conditions (what does my agency do now?), opportunities for better alignment to EBM principles (what might my agency do differently?), and what changes were needed to overcome any obstacles to alignment.

The outcome of this evaluation was a series of recommendations for changes in how the agencies operate. Some recommended changes may be administrative, undertaken by agency staff without additional authorization. Other recommendations may require executive action; authority to make the change is vested within the agency and can be exercised by executive staff. Some recommended actions, particularly those transcending the authority of a single agency, may require legislative action for implementation.

This report presents the results of Phase III of the generic workplan; each Council member has provided an initial draft of guidelines for agency activities and programs to integrate EBM policy into their core programs and services. This report was then reviewed and revised for incorporation into the Council’s report to Governor David A. Paterson and the New York State Legislature.

Under contract with the Department of State, Division of Coastal Resources, environmental scientists from EcoLogic LLC of Cazenovia, NY worked with the Council agencies commencing in February 2008 supported members of the Steering Committee reviewed selected programs, developed recommendations and compiled draft versions of this report.

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Agency Guidelines

New York State Department of Agriculture and Markets (DAM)

Agency Mission

The mission of the New York State Department of Agriculture and Markets (DAM) is to foster a competitive food and agriculture industry that benefits producers and consumers alike. In light of this, DAM strives to promote a viable agricultural industry, foster agricultural environmental stewardship, and safeguard the food supply.

Programs Analyzed

The Department evaluated its programs and selected four that exemplify the principles of EBM; these programs reflect the need to define locally-acceptable measures to preserve and enhance agricultural productivity while reducing any adverse environmental impacts. Traditionally, DAM has worked primarily with agricultural producers, Soil and Water Conservation Districts, and agribusinesses. Stakeholders now include municipalities and counties as well to better integrate land use planning and protect the state's quality farmlands.

Highlights of the Analysis

(1) Agricultural Environmental Management (AEM)

AEM is a voluntary, incentive-based program to help farmers make cost effective, science-based decisions in order to meet business objectives while protecting and conserving the state's natural resources. This program, coordinated by the County Soil and Water Conservation Districts under the leadership of the State Soil and Water Conservation Committee, directs technical support and cost-sharing funds to producers based on their potential for affecting priority watershed areas. The program is designed to reflect local input and priorities. A Technical Subcommittee is in place to ensure that the AEM practices reflect current regulations and advances in science and engineering.

Challenges and Constraints

- The AEM program focus is primarily water quality. Districts have limited statutory authority to assist farms in broader EBM areas including air quality and bioenergy.
- Indicators of watershed and ecosystem health are needed along with a program to monitor effectiveness of best management practices.
- Staffing levels, training, funding for monitoring, and data management issues constrain EBM implementation.

Opportunities and Recommendations

- There is a need for increased funds to train District staff and conservation partners on EBM.
- Districts should obtain legislative authority to address ecosystem issues in addition to water quality issues.

- Staff and funds to expand research and data collection to address issues identified during AEM and EBM implementation should be augmented, including water quality, air quality, and bioenergy/ energy conservation.
- Data management systems to document the effectiveness of best management practices need to be better supported.

(2) Agriculture Non-Point Source Abatement and Control Grant Program (Ag NPS)

Ag NPS directs funds to farmers for implementing best management practices to mitigate water pollution from agricultural operations. Priorities for grants are allocated on a watershed scale, using the eleven-digit Hydrologic Unit Code. DAM relies on documentation from partner agencies, and the Agricultural Best Management Practice Catalog (the Catalog) captures research information and serves as the basis for practice selection.

Challenges and Constraints

- New and emerging science may not be in the Catalog
- Insufficient water quality data and information to track projects and evaluate effectiveness
- Implementation of Ag NPS occurs mainly at the County District level, which may not be contiguous with the watershed boundaries

Opportunities and Recommendations

- DAM would like to partner with USDA-NRCS to develop interim practice standards, allowing for certification of practices that have not been fully incorporated into the Catalog.
- Technical capacity to monitor, evaluate and adapt to emerging ecological research should be enhanced; EBM criteria need to be incorporated into the AEM report card.
- Watershed boundaries, not county lines, should be the basis for an AEM/Ag NPS staffing plan.

(3) Soil and Water Conservation Districts (SWCD)

The New York State Soil and Water Conservation Committee oversees the policies and functions of SWCD in partnership with university and agency representatives. Districts address local issues and opportunities related to all aspects of soil and water conservation. Each SWCD develops comprehensive strategic plans that establish long-term goals for addressing critical natural resource issues along with annual work plans that contain specific measurable actions.

Challenges and Constraints

- No state-wide consensus on the District's role in defining natural resource goals
- Reduced funding for water quality restoration and protection strategies and implementing local watershed projects

Opportunities and Recommendations

- The SWCD needs to develop staff able to assist with EBM implementation.
- The mini-grant program for local watershed projects and fostering EBM awareness should be restored.

(4) Agriculture and Farmland Protection Program (AFPP)

The AFPP, defined as “the preservation, conservation, management or improvement of lands which are part of viable farming operations, for the purpose of encouraging such lands to remain in agricultural production.” Presently, DAM has two primary programs available as part of its farmland protection program. Farmland Protection Planning Grants (FPPG) and Farmland Protection Implementation Grants (FPIG) provide matching grants to counties and municipalities to promote local initiatives for agricultural and farmland protection. The grants provide funding to develop county and municipal farmland protection plans and assistance payments to purchase development rights on farmland.

Challenges and Constraints

- Insufficient technical assistance from DAM to local governments or their project partners addressing farmland protection issues.
- Need an intermunicipal or regional approach that considers agricultural economic development
- Major delays in completing FPIG contracts.

Opportunities and Recommendations

- DAM will develop and promote planning tools for municipalities and counties to effectively protect viable agricultural land and agribusinesses.
- AFPP will be coordinated with the Division of Agricultural Protection & Business Development’s agricultural economic development specialist.
- Local government and land trusts will be added to the Department’s stakeholder group to provide feedback on FPIG.
- DAM will consider collaborating with the Department of State and the New York Planning Federation on a statewide discussion of planning for agricultural development.
- Permanent staff additions are needed to ensure that the AFPP responsibilities are met.
- DAM should work with the Department of State to cross-train staff on farmland protection policy and land use planning.

New York State Department of Environmental Conservation (DEC)

Agency Mission

DEC brings together in a single agency all state programs directed toward protecting and enhancing the environment. The Agency's mission statement is: "The quality of our environment is fundamental to our concern for the quality of life. It is hereby declared to be the policy of the State of New York to conserve, improve and protect its natural resources and environment and to prevent, abate and control water, land and air pollution, in order to enhance the health, safety and welfare of the people of the state and their overall economic and social well-being." DEC's goal is to achieve this mission by embracing the elements of sustainability - the simultaneous pursuit of environmental quality, public health, economic prosperity and social well-being, including environmental justice and the empowerment of individuals to participate in environmental decisions that affect their lives.

Programs Analyzed

Several areas, including Natural Resources Management, Water Quality Protection Programs, Air Quality Programs, Environmental Remediation and Materials Management, and Emerging Programs, were evaluated for opportunities to better align with EBM principles. DEC selected four programs for detailed analysis.

Highlights of the Analysis

1. *Great Lakes Regional Collaboration Strategy for Restoration and Protection of the Great Lakes Basin (the Strategy)*

The Strategy serves as a guide for federal agencies, the eight Great Lake states, non-governmental organizations, tribes and other stakeholders concerned with restoration and protection of the Great Lakes. It focuses on eight key EBM issues common to all localities: combating aquatic nuisance species, restoring native fish and wildlife species and habitat, improving the quality of coastal waters, eliminating toxic substances from water, rehabilitating Areas of Concern (AOCs), reducing non-point sources of nutrients and pollution, improving information management and performance indicators, and achieving more sustainable economic development practices.

Challenges and Constraints

- The entire Great Lakes basin is too large a management unit for effective implementation of strategies for protection and enhancement of the ecosystem's resources.
- Long-term monitoring and surveillance are needed to identify ecosystem status and trends.
- The State's approach to EBM needs to be synchronized with existing binational and basinwide plans.
- Continuing degradation of the lower food web in Lake Ontario and Lake Erie has significant implications for enhancing sustainable fisheries.
- Fisheries management practices may be in conflict in relation to restoring native species and enhanced sport fishery programs.

Opportunities and Recommendations

- Divide the Great Lakes basin into four administrative units or “action zones” within which local place-based decision-making, planning and implementation can occur.
- Develop more flexible funding strategies to support monitoring and communicating the results of that monitoring.
- Incorporate the Strategy’s priorities and objectives into NYS agency work plans, program budgets and resource allocations.

2. *Open Space Conservation Plan (OSCP)*

OSCP is the blueprint for the Land Acquisition Program (LAP) and provides a list of projects for acquisition of fee and easement across the state, and policy recommendations. Every three years the OSCP is revised, and a list is compiled of priority conservation projects that reflect an objective analysis of the State's resources, the knowledge and insight of professionals inside state agencies, and the ideas of the public, local government and the private sector. During the planning process, a Resource Value Rating System is used, which recognizes a variety of ecosystem interconnections and the value of ecosystem services that specific lands provide.

Challenges and Constraints

- Lack of systematic tracking and reporting on lands under protection
- Insufficient funds to place priority lands under protection.

Opportunities and Recommendations

- DEC will monitor and report the total number and size of conservation projects.
- The Agency will develop metrics to demonstrate how open space conservation benefits quality of life.
- Environmental justice efforts will be directed toward increasing participation and support of underserved communities.
- Acquisition projects will be prioritized in proximity to population centers.
- DEC will consider alternative funding strategies such as passage of the Community Preservation Act to give municipalities the authority to raise revenue for open space protection through a local real estate transfer fee.
- The Clean Water State Revolving Loan Fund should be used to finance land acquisition projects by DEC.

3. *Watershed Conservation Program (WRAPS)*

Watershed Conservation Strategies bring together stakeholders and partner agencies to focus natural resource management activities at a landscape level. The Strategies compile the best available science as a reference point for resource health in relation to outside influences on ecological processes, and as a basis for decision-making. Goals and measurable objectives are identified for the desired state of the basin, and strategies to achieve these benchmarks are prioritized.

Challenges and Constraints

- Lack of funds to support interagency watershed initiatives.
- Limited interagency approach and stakeholder involvement to effectively incorporate social and economic factors.
- Lack of measureable indicators to evaluate ecosystem health.
- Need monitoring to assess the effectiveness of strategies and whether adjustments are advisable.

Opportunities and Recommendations

- DEC will create four administrative “action zones” for Great Lakes ecosystem-based management: Lake Erie (including the Niagara River); Southwest Lake Ontario (including the Genesee River); Southeast Lake Ontario (including the Seneca, Oneida, and Oswego Rivers); and Northeast Lake Ontario (including the St. Lawrence and Black Rivers).
- Funding is needed to create an ecosystem monitoring program, complete resource inventories and implement strategies.
- Reconstitute the Interagency Team or a similar interagency group (including DEC and relevant State agencies and programs) to coordinate efforts to achieve EBM outcomes.
- Require scoring criteria for State grants to include EBM components and applicable grants to identify goals tied to human benefits will be required.
- Provide tools to help stakeholders interpret and make resource management decisions from NY Natural Heritage Program data will be provided.

4. *Hudson River Estuary Program (Estuary Program)*

The Estuary Program’s prime focus is “an integrated approach to management that considers the entire ecosystem, including humans”. The mission of the program is three-fold: conserve the natural resources for which the Hudson is legendary; promote full public use and enjoyment of the river; and clean up the pollution that affects our ability to use and enjoy the Hudson.

Challenges and Constraints

- Integrating key indicators of natural systems with indicators of social and economic health.
- Tracking land use change and demographics to evaluate cumulative impacts of state and local land use decisions
- Dealing with emerging issues such as invasive species and the effect of global climate change on hydrology and habitats.
- Lack of an ecosystem approach to restoration of signature fisheries (shad and sturgeon) beyond watershed boundaries
- Upland land use and development

Opportunities and Recommendations

- DEC will use the Estuary Program as a model for implementing EBM in the four watershed areas of the Great Lakes and the ocean.
- The Agency will expand the capacity of the observer network tracking environmental conditions.

Agency Guidelines and Recommendations

- There will be an investment in research and monitoring to define robust indicators of socio-economic condition.
- DEC will study habitat and migration of shad and sturgeon to determine how these species use the Hudson River Estuary and the actions needed to restore their numbers.
- Incentives and other planning tools will be utilized to reduce sprawl (e.g., revitalize urban areas; conserve farmlands, forests and wetlands).

New York State Department of State (DOS)

Agency Mission

The mission of the New York State Department of State (DOS) is to defend public safety, protect and develop a sustainable environment, strengthen local communities, and serve the business community. The Agency has the principal responsibility within State government for addressing issues related to land and water uses and development. Further, it exercises its responsibility indirectly through programs that support local governments with the tools and training they need.

Programs Analyzed

The DOS serves as the Executive Director of the Ocean and Great Lakes Ecosystem Conservation Council and worked with the Agency Guidelines Steering Committee to develop the workplan used to guide all nine agencies through an evaluation of opportunities for alignment with the EBM principles. DOS selected five programs for detailed review.

Highlights of the Analysis

(1) Appalachian Regional Commission (ARC)

The ARC is a federal/state planning and economic development program for the Appalachian region. The DOS Division of Local Government oversees the ARC in the State and coordinates three primary functions: updating State plans for the region, supporting three regional planning agencies, and recommending projects for implementation. The objective of the ARC is to achieve social and economic parity for the region with the nation. The ARC strategic plan for 2005 – 2010 focuses on sustainable economic development as the path towards reaching this objective with a model of “asset-based development” to guide progress in the region.

Challenges and Constraints

- Lack of coordination between grant programs funding projects in the Appalachian region
- Program outcome uses only a single metric, economic parity; other indicators of human well-being and ecosystem health are not considered.

Opportunities and Recommendations

- DOS will update the ARC strategic plan to incorporate EBM and Smart Growth principles into the “asset-based development” framework.
- The Agency will coordinate grant awards to more effectively leverage funds for priority projects.
- Regional planning councils should be involved in EBM activities.
- Additional metrics are needed to measure progress.

(2) Building and Energy Conservation Code

The DOS, Division of Code Enforcement and Administration, develops and maintains the State’s Uniform Fire Prevention and Building Code and State Energy Conservation Construction Code and

maintains comparability with national standards. In addition, Division staff professionals provide technical guidance, training, and certification of local enforcement officials.

Challenges and Constraints

- Type and manner of construction, which are beyond the purview of the current code
- Restriction by 50% rule of energy conservation standards in renovation
- Required demonstration of a 10-year payback period for energy conservation in new construction

Opportunities and Recommendations

- DOS will train the large (5,000+) network of building inspectors on EBM-related issues.
- DOS will add requirements to the Uniform Code for site management to control runoff.
- DOS will consider eliminating the “50% rule” in current energy legislation for the application of energy conservation standards to building renovations.
- The “10 year pay back rule” for requiring the adoption of new technologies to reduce energy consumption will be changed.
- DOS will develop performance measures, particularly for the Energy Code, that focus on outcome.

(3) Local Government Efficiency Grant Program (LGEGP)

LGEGP is an incentive-based grant program for municipalities to increase the efficiency of local government. Ecosystems do not follow municipal boundaries, and their management requires cooperative actions of responsible local governments. The program provides grants for merger, consolidation, and dissolution of municipalities and for the consolidation or sharing of services between two or more municipalities.

Challenges and Constraints

- Predecessor grant program, SMSI, experienced far greater requests for funding than funds available
- Lack of coordination with other funding to municipalities for infrastructure projects

Opportunities and Recommendations

- DOS will establish a priority for shared services to manage a shared ecosystem.
- Grants will be coordinated with other State local government funding programs.
- In funding decisions, DOS will consider EBM-related metrics such as smart growth, public benefit, and resource protection in addition to cost savings.

(4) Local Waterfront Revitalization Program (LWRP)

LWRP provides financial, technical, and regulatory assistance to cities, towns and villages for the comprehensive management of coastal or waterfront areas. The municipalities establish an action agenda for how lands and water will be developed and used. There is a requirement for meaningful public participation during plan development.

Challenges and Constraints

- Project boundaries are municipal, not watershed or ecosystem-based
- Limited access to recent relevant scientific information
- Lack of coordination with other grant programs
- Lack of follow-up to determine if objectives have been met

Opportunities and Recommendations

- Boundaries will be defined to incorporate ecosystems.
- DOS will improve internal training and coordinate with scientists.
- Grant announcements, calendars and reviews will be coordinated.
- DOS will add measurable objectives; monitor and report periodically.

(5) Coastal Policies and Consistency

The DOS reviews proposed State or Federal actions within the defined coastal region for consistency with forty-four policies. The primary focus is to protect coastal ecosystems while allowing human uses and sustainable development.

Challenges and Constraints

- Reviews triggered by a proposed state or federal action; general development not evaluated
- Stakeholder involvement at the end of the process through a Public Comment period
- Inconsistent coordination with the three National Estuary Programs
- Inland boundary of coastal zone does not always capture ecosystem boundary
- Limited staff to address all EBM components
- Lack of systematic tracking of projects and outcomes
- Incompatible timeframes and comment periods with permits and SEQR

Opportunities and Recommendations

- DOS will apply federal consistency to NEPs and State estuary and Great Lakes programs.
- The stakeholder engagement process will be reevaluated.
- The inland coastal boundary will be reevaluated.
- The Agency will train and augment consistency review staff.
- There will be an improved database of consistency decisions, which will include indicators of outcome.
- The review process will be coordinated with other agency decision-making processes.

New York State Department of Transportation (NYSDOT)

Agency Mission and Guiding Principles

NYSDOT has demonstrated its strong environmental stewardship ethic over the last decade. The principles of Ecosystem Based Management are consistent with and complement the **New York State Department of Transportation's mission**: *"It is the mission of the New York State Department of Transportation to ensure our customers - those who live, work and travel in New York State -- have a safe, efficient, balanced and environmentally sound transportation system."*

New York State Department of Transportation (NYSDOT) is the state's largest public works agency. As such, the Department recognizes its obligation and responsibility to the people of New York State to protect, improve and enhance the environment in the course of its business of planning, building and maintaining a transportation system.

NYSDOT's guiding principles serve as the foundation for the investment priorities included in the new capital program as well as for future programs.

- **Preservation of Transportation Assets:** Proven asset management principles such as balanced preventive maintenance and capital investments are the key to preserving the system. Priorities will be determined by the functional importance of an asset, regardless of who owns the asset.
- **Support for the State's Economic Vitality and Quality of Life:** Investments should improve the State's economy and the quality of life for all New Yorkers. Investment decisions should reflect better linkages between transportation and land use planning.
- **Enhanced Mobility for People and Goods:** Increased travel reliability and the provision of appropriate modal choices and access for the traveling public are essential purposes beyond asset preservation.
- **Stewardship for the State's Environment:** Investments should enhance and protect the human, natural and built environment, and they should give priority to conserving non-renewable energy resources, as well as reducing fuel emissions and greenhouse gases.
- **Safety for the Traveling Public:** Investments should support efforts to reduce fatalities and serious injuries and to improve management of risks across all modes.

Agency Programs

Transportation corridors play an important role in ecosystem conservation. Considering that there are approximately 113,000 centerline miles of state and local highways in New York State, there is a tremendous opportunity for ensuring that transportation planning and spending is done in a manner consistent with protecting New York's diverse ecosystems.

NYSDOT's transportation goals are fully consistent with and support key statewide priorities for economic development, energy efficiency and promoting smart growth. In fact, progress toward achieving these transportation goals is essential to accomplishing the State's priorities. These priorities include:

- Promote economic development, supported by cost-effective investments in existing and new transportation infrastructure.
- Promote energy efficiency in support of lower costs, and reductions in energy usage and greenhouse gas emissions.
- Encourage smart growth statewide through State support for improved land use planning.

NYSDOT has several established programs that are consistent with and incorporate the principles of ecosystem based management. These programs include the Environmental Initiative, Context Sensitive Solutions (CSS), Public Involvement, Scenic Byways, Green and Blue Highways, and Environmental Research. NYSDOT's established environmental organizational structure, with environmental and landscape architecture staff throughout the Department, ensures that the range of environmental issues are addressed throughout its transportation activities.

NYSDOT has received recognition for its proactive environmental stewardship efforts. NYSDOT has won multiple American Association of State Highway and Transportation Officials (AASHTO) and Federal Highway Administration (FHWA) national awards for its environmental stewardship efforts, and thus, gained unprecedented endorsement as a leader in the delivery of environmentally sound transportation services.

As is evident from past and present performance, NYSDOT recognizes its critical role in balancing natural and human environments. NYSDOT is exploring several initiatives that may complement and benefit from New York State's Ecosystem Based Management efforts, including Smart Growth, Aquatic Connectivity, Integrated Vegetation Management and Climate Change/Energy Efficiency.

Smart Growth Initiative

The NYSDOT is taking a more active role in land use and transportation planning. The expected results could significantly enrich the State's communities by making more effective transportation investments, enhancing sustainable economic development and improving the quality of life in its communities, which are consistent with EBM principles.

Challenges and Constraints

- Many communities lack the resources or technical expertise to undertake comprehensive planning that addresses the transportation factor.
- Communities in New York are trying to balance economic growth with sustainable development. They need to consider if a proposed project is likely to contribute to the overall well-being of that community.

Opportunities and Recommendations

The NYSDOT Smart Growth Initiative is an excellent example of a program that benefits from a multi-agency collaborative approach. Currently, NYSDOT is represented in the Governor's Smart Growth Council which is tasked with encouraging smart growth statewide through support for improved land use planning. In essence, the goal is to help local communities plan for sustainable development and make the best use of natural resources in the region.

The Department has developed a Smart Growth web site as part of this initiative. The web site provides direct links to NYSDOT activities and programs relating to transportation and land-use in our communities; to planning tools and information provided by the Department and other organizations; and to potential sources of funding.

Though NYSDOT is primarily focused on the transportation connection to land use, the Department and other agencies support efforts that involve preserving natural environments and the cultural heritage of communities; creating a range of housing opportunities and choices; fostering economic development through tourism and attracting and maintaining businesses; and designing communities to promote healthier lifestyles.

- *Recommendation:* Future collaborative "smart growth" efforts among the state agencies could be enhanced by recognizing the EBM goal of preserving the coexistence of healthy, fully

functioning ecosystems and human communities. At NYSDOT, this may involve expanding our training to communities on smart growth planning to include information on EBM principles, for increased awareness and application to their own comprehensive planning efforts.

- *Recommendation:* As part of the Smart Growth Council, NYSDOT will seek opportunities to facilitate sound land use planning. NYSDOT has developed a technical assistance program for interested municipalities. This program will also support smart growth by encouraging redevelopment and by supporting a full range of multimodal transportation, including rail and public transportation.

Aquatic Connectivity

New York State Department of Transportation, in coordination with NYS Department of Environmental Conservation, has formed an interagency, interdisciplinary team to address aquatic connectivity. The Interagency Aquatic Connections Team (InterACT), formed in November 2006, is comprised of ten agencies that are committed to ensuring that stream crossings are designed, installed and maintained in a manner that protects the ecological integrity of aquatic systems, while accommodating practicable technology, engineering criteria and human safety.

Four subcommittees have been established to address the overall charge. These committees have representation from the ecology and engineering communities. The Ecological Performance Standards Subcommittee charge is to identify those characteristics and processes of streams to be achieved, restored, or maintained when a stream crossing is constructed or replaced. The Engineering Design and Specifications Subcommittee will develop necessary design guidance to meet the ecological performance standards. The Outreach and Education Subcommittee will develop a strategy for delivery of the products of the other InterACT subcommittees, and the Regulatory Streamlining Subcommittee is working to develop regulatory tools that minimize processing time and facilitate compliance for projects that meet the new design standards and protocols.

Challenges and Constraints

- Considering funding limitations, NYSDOT will enhance aquatic connectivity at stream crossings but will not compromise safety and operational reliability.
- There is not enough information available on New York waters to prioritize which streams have the most significant ecological resources which require enhanced culvert work.
- There is limited information available on culvert location and condition to permit systematic decisions on replacing or repairing culverts.

Opportunities and Recommendations

- NYSDOT will actively cooperate with other agencies to identify key ecological resources that require protection or restoration.
- NYSDOT will use the InterACT process to ensure that ecological decisions are made in a manner that ensures transportation safety and operational reliability are maintained.
- NYSDOT will continue efforts to update its database on culverts to support ecological, safety and operational concerns.

Integrated Vegetation Management (IVM)

NYSDOT's goal is to provide highway roadsides that are safe, environmentally friendly and aesthetically pleasing. To meet this goal, NYSDOT and its contractors use Integrated Vegetation Management (IVM), which includes mowing, tree/brush cutting, selective use of herbicides and growth regulators,

cultural/biological controls, alternatives to herbicides, and close coordination of maintenance, design and construction on capital projects.

The steps in and spirit of IVM are almost identical to the six components of EBM. IVM is a balancing act. It must protect the safety of highway users and the operability of the transportation system. It must also avoid or minimize impacts to ecosystems, including water quality, soil stability, habitat for ground-nesting migratory birds and other wildlife, farms next to the roadside, private property and settings of historic buildings.

Challenges and Constraints

- Existing program guidance needs to be updated to reflect new challenges such as invasive species management.
- Some IVM elements, such as herbicide use or removal of trees, can be controversial. IVM offers a basis to support controversial decisions as an appropriate balance of environmental, operational and safety concerns.

Opportunities and Recommendations

- NYSDOT will update its IVM policy and guidance to reflect changes since it was last issued in 1999.
- NYSDOT will continue to investigate new vegetation management products and techniques, increase the resources available to roadside vegetation managers.

Climate Change and Energy Efficiency

To help New York's transportation sector understand and address issues related to climate change and to provide leadership for other transportation agencies in the State, the Department has formed a Climate Change/Energy Efficiency Team. The team is addressing both greenhouse gas emission reduction and adaptation to effects of climate change.

Challenges and Constraints

The related issues of climate change and energy efficiency are expected to have profound effects on all sectors of the economy, including the transportation sector.

Opportunities and Recommendations

One of the goals of this effort is to develop strategies for adapting to climate change effects on the transportation infrastructure. A number of possibly strategies have been identified including:

- Identify adaptation issues unique to New York State and the Northeast;
- Establish a framework of commonly accepted assumptions (commonly accepted projections of climate change impacts will support more consistent adaptation decision making);
- Identify strategies to move adaptation forward by identifying resources within and outside of NYSDOT to address adaptation issues, partnering with other infrastructure stakeholders to take full advantage of information generated by others, and encouraging bold innovative solutions based on balanced information on costs and risks. One of the Team's workgroups is currently involved with two multi-agency initiatives, the Sea Level Rise Task Force and the New York City Climate Change Adaptation Task Force. Some of the work involved with these initiatives includes identifying high risk areas and/or infrastructure.

General Challenges, Constraints and Recommendations

Challenges and Constraints

- No agency acting on its own can effectively implement an ecosystem based management approach. Cooperation is necessary to manage human activities and to ensure the coexistence of healthy, fully functioning ecosystems and human communities. Environmental stewardship is most effective through collaboration between agency staff to develop innovative approaches, provide environmental benefits, and offset the environmental impacts resulting from transportation and other development activities.
- There are numerous obstacles that constrain collaboration among agencies. To truly tap into the expertise and resources of the state agencies, programmatic mechanisms such as Memorandums of Understanding (MOU) with the EBM Council agencies are needed.
- Ecosystem benefits are not free and not everything can be done. Each decision needs to consider the associated cost and the value of the resource. Though an agency may support the principles of Ecosystem Based Management, their funding sources are intended for their core missions. Budget constraints require balancing the agency's needs. Progress could be assured if funding is provided to the Council agencies.
- Innovative technologies, such as geospatial tools, contribute to ongoing collaborative efforts that facilitate environmentally sustainable transportation systems. EBM decision support tools have the potential to greatly improve the available data during project planning and design, facilitating informed decisions that consider the sensitive environmental issues early in the process.

Opportunities and Recommendations

Multi-disciplinary teams of engineers, environmental scientists, landscape architects, and program managers are most effective to ensure that the project team can make well-informed, fiscally wise, balanced, and environmentally sensitive decisions, resulting in sustainable ecosystems.

- *Recommendation:* As an active Council member, NYSDOT will build on the Council's interagency and interdisciplinary structure to facilitate multi-agency collaboration for the collective benefit of the agencies and the environment. NYSDOT will continue its active participation in several interagency panels and councils that complement the efforts of the New York Ocean and Great Lakes Ecosystem Conservation Council.
- *Recommendation:* The Council should develop funding mechanisms, resource-sharing agreements, and other tools to streamline the collaborative processes. NYSDOT would utilize these mechanisms to enhance its collaborative efforts.
- *Recommendation:* EBM principles could be incorporated in agency programs. Progress could be assured if funding is provided to the Council agencies. NYSDOT would use appropriated EBM funds provided to the Council agencies to incorporate ecosystem based management into their activities while continuing to meet their core missions and the needs of the People of the State of New York.
- *Recommendation:* NYSDOT would apply EBM geospatial tools and technologies developed by the Council to encourage consideration of landscape-level environmental issues early in planning and to identify important conservation areas. NYSDOT would consider such information in its project planning, design and mitigation efforts to streamline consideration of environmental challenges in the development of transportation projects and operations.

New York State Office of Parks, Recreation and Historic Preservation (OPRHP)

Agency Mission

The mission of the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) is to provide safe and enjoyable recreational and interpretive opportunities as well as responsible stewardship of the park system's natural, historic, and cultural resources. The OPRHP provides significant outdoor recreation opportunities throughout the State.

Programs Analyzed

OPRHP initially identified all of the Agencies bureaus and significant programs (40 plus) as well as identified the Commissioner Priorities. Of the Agency's program and bureaus over 20 program areas were suited to integrating EBM principles. Of these, six were subject to an in-depth analysis of how EBM could best be incorporated; these five (or six) programs are summarized herein. An integrated set of constraints and recommendations are presented that reflect the overall evaluation of the agency's initiatives and programs.

Highlights of the Analysis of Selected Programs

(1) Master Planning

Master plans are completed for parks or sites under OPRHP protection. The current Master Plan initiative calls for completing 5 Master Plans per year for 5 years. Other plans such as Resource Management and Trail Plans are also included in the planning initiative. Master Plans include both an inventory of existing natural, cultural, historic and scenic resources and an assessment of future needs. Plans are developed in the context of the social and economic conditions and needs of the surrounding communities. Timelines and estimated costs for improvements are included. Each master plan is a working document; plans are regularly reviewed in light of new information, changing needs and priorities, and resource character. Public input is actively sought during the Master Plan development process.

(2) Statewide Comprehensive Outdoor Recreation Plan (SCORP)

In contrast to the Master Plans, which address individual parks or sites, the SCORP addresses the State's supply and demand for outdoor recreation and sets forth priorities for preserving open space and enhancing recreational facilities and opportunities. Priorities are defined using quantitative metrics of trends, constraints, and land and water resources as well as providing overall guidance and policy for recreational development throughout the state including local and municipal recreational development. SCORP is updated on a five-year cycle and is related to Land and Water Conservation fund eligibility. Project selection, goals and processes are re-evaluated each year to better respond to short-term changes. In SCORP 2009-2013, a Connections Chapter references the importance of connections between areas to preserve and enhance natural resources, including coastal areas. Also in the 2009-2013 document, a policy with related action strategies was added calling for explicit examination of ecosystem connectivity and use of EBM principles in decision-making. OPRHP seeks the guidance and advice of a broad range of stakeholders including recreation professionals, government officials, interest groups and citizens from every part of the State in development and review of SCORP.

(3) Agency Environmental Policy

OPRHP recognizes the need to strengthen policies related to ecosystem management which are consistent with the Agency mission statement. These environmental policies will set the framework and provide direction for present and future agency decisions and actions in regard to the management of natural resources and environmental quality. Actions related to mowing, management of native and invasive species, vegetation management, wildlife management and stream protection and enhancement are examples of the types of environmental policies the Agency can develop to provide specific guidance.

(4) Open Space Conservation and Connectivity

Existing and emerging policies for determining open space conservation priorities were examined. The acquisition of property provides an opportunity to connect areas separated by different ownership and uses. Decisions on open space conservation are based in part on the recommendations in the Open Space Conservation Plan (OSCP), ownership and ease of acquisition, recommendations from Agency staff, and input from the public. Interconnections between ecosystems will be assessed using a biodiversity connectivity model.

(5) Environmental Management Bureau

The mission of the Environmental Management Bureau (EMB) is to assist OPRHP in its responsible stewardship of the valuable natural, historic, and cultural resources as well as providing safe and enjoyable recreational and interpretive opportunities for all NYS residents and visitors. EMB has three general focus areas: 1) environmental compliance, 2) environmental health, and 3) natural resource stewardship. EMB's dedicated employees have training and experience in environmental science, natural resource protection and environmental impact analysis. EMB and EMB programs such as water quality and invasive species, embody the principles of EBM by seeking to use scientific information, employing adaptive management that is guided by monitoring and new information, and recognizing the connections between land, air and water, while seeking local knowledge to protect and preserve Parks in valuable ecosystems.

(6) Park Operations

Operation and management of the more than 200 state park facilities impacts the quality of the experience of the park visitor as well as the condition of natural and cultural resources. Operations include such actions as mowing, solid waste management, facility location and construction, trail construction and special events.

Challenges and Constraints

- Managing State Parklands for multiple use
 - Understanding the status of ecosystems so that recreational and operational impacts on natural resources can be evaluated
 - Ensuring that activities in and uses of resources are sustainable, so that ecological health is maintained
- Adopting policies that provide direction for present and future agency decisions and actions in regard to the management of natural resources and environmental quality

- Increasing connectivity between and among ecosystems recognizing that State park lands are often part of a larger contiguous ecosystem
- Fostering cooperation among appropriate governmental organizations, the public, special interest groups and the private sector
- Responding to the need for unified ecosystem-based policies on resource management within parks
- Placing Ecosystem-based Management principles which guide agency's program and operations.

Opportunities and Recommendations

- Integrate EBM into master planning process for State Parklands
 - a. Adopt a uniform template for master plans that includes EBM principles
 - b. Incorporate local stakeholders' knowledge
 - c. Enhance the use of scientific studies and Ecosystem-based Management planning tools
 - d. Evaluate the larger landscape setting of the park or historic site
 - e. Address threats to adjacent buffer lands that could degrade the park's scenic qualities or natural or cultural resources
 - f. Identify "green design" and sustainability elements appropriate for each park and historic site
 - g. Consider environmental education and interpretation opportunities early in the planning process
- Integrate EBM into open space conservation decisions
 - Evaluate candidate parcels in context of the surrounding area
 - Use the biodiversity connectivity model to inform acquisition decisions
 - Encourage protection and/or acquisition of critical connectors, buffers and greenways
- Integrate EBM into agency strategies
 - Establish a research agenda that will inform EBM decisions and enhance ecosystem management capabilities
 - Develop a schedule of implementation for the formation of agency environmental policy or set of policies
 - Establish benchmarks for evaluating the health of ecosystems; monitor and evaluate their response to recreational pressure
 - Maintain an inventory of the extent and nature of ecosystems under protection
 - Continue work to integrate other Agency programs such as capital projects and grants so that they better align with EBM principles to ensure protection of ecosystems
- Strengthen connections between OPRHP and other partners for open space and recreational planning
 - Facilitate regional coordination and cooperation to address complex resource issues that cross political and jurisdictional boundaries
 - Evaluate strategies such as land purchases, conservation easements, engagement in local land use planning, and creating connections to other protected lands
 - Work with DEC's Open Space Conservation Program to focus on ecosystems
- Expand stakeholder involvement in planning and acquisition decisions

- Through education and interpretive programs, reconnect people with nature and empower the public with a greater role in environmental protection and sustainability
- Utilize public involvement to mobilize support to help Parks address obstacles that are impeding acquisition and protection of important parcels of lands
- Enhance coordination and communication between the Planning and Environmental Management Bureaus
- Provide targeted training in Ecosystem-based Management to operation and maintenance staff as well as other staff throughout the agency
- Many of the programs in the Environmental Management Bureau are consistent with EBM. Identify, however, the programs that can be modified to enhance EBM within the bureau.

New York State Energy Research and Development Authority (NYSERDA)

Agency Mission

The mission of the New York State Energy Research and Development Authority (NYSERDA) is to use innovation and technology to solve some of New York's most difficult energy and environmental problems in ways that improve the State's economy. NYSEERDA places a premium on objective analysis as well as collaboration, reaching out to solicit multiple perspectives and share information. It enables the State to prepare for and respond to emerging issues relating to the environment, energy, and economy.

Programs Analyzed

NYSERDA examined one program in detail as it considered how to more closely align its actions with the EBM principles.

Highlights of the Analysis

(1) Environmental Monitoring, Evaluation and Protection Program (EMEP)

EMEP is designed to increase understanding and awareness of the environmental impacts of energy choices and emerging energy options and provide a scientific, technical foundation for formulating effective, equitable, energy-related environmental policies and resources management practices. The programs primary goals are to enhance understanding of the nature and characteristics of energy-related pollution and its impact on the environment and human health; and characterize sources of energy-related pollution and define cost-effective policies to mitigate impacts and opportunities for emissions reduction. A Program Advisory Group with representatives from State and Federal agencies, utility organizations, and other public interest organizations guides the EMEP program. A Science Advisory Committee assists EMEP in developing its research plan and provides periodic review of critical research.

Challenges and Constraints

- Additional emphasis on stakeholder involvement
- Define the spatial boundaries of potential impact of emissions.

Opportunities and Recommendations

- NYSEERDA will increase stakeholder input on specific projects and expand into other sectors, such as K-12 schools, to involve more stakeholders.
- The Authority will examine impacts in the State and the broader region of projects related to alternative energy, climate change, and biofuels.
- NYSEERDA will support environmental accountability through analysis of long-term-monitoring records and modeling.
- There will be joint consideration of greenhouse gas impacts and direct health and ecologic impacts of pollution sources.
- NYSEERDA resources will help other organizations fulfill their EBM approaches by providing assistance on energy and environmental issues surrounding multi-agency projects.

New York State Office of General Services (OGS)

Agency Mission

The New York State Office of General Services (OGS) manages and leases real property, designs and builds facilities, contracts for goods, services and technology, and delivers a wide array of support services. The agency provides government and nonprofit agencies with innovative solutions, integrated service, and best value, in support of cost-effective operations and responsible public stewardship. OGS has specific responsibilities for certain state lands and properties that cast the agency in the role of an environmental steward; the agency is pursuing numerous initiatives to enhance that role. OGS has incorporated many EBM principles into its existing policies and business practices. In some cases, the connection between OGS activities and the health of the state's watersheds and coastal ecosystems is obvious and direct, while in other cases the relationship is indirect.

Programs Analyzed

The Agency formed a management team to prepare the Agency Guidelines report, which is appended in full. The team reviewed existing information and consulted with key program staff as they completed the assignment. Consequently, several dozen staff members, including the entire executive team, were exposed to the general principles and concepts of EBM as the analysis and reporting were completed. OGS examined in detail how the basic philosophy, principles, and practices of EBM are already substantially integrated in several Agency programs, and discussed how they can become even better integrated in the future. In addition, OGS developed a set of policy actions and recommendations for advancing implementation of EBM not only within the agency, but also across state government. Finally, the legal framework for OGS' activities, especially as related to environmental protection, is outlined within their report.

Highlights of the Analysis

Policy Context

The Office of General Services operates under requirements set forth in various New York State laws and the Official Compilation of Codes, Rules and Regulations of the State of New York (NYCRR). In addition to these mandates, OGS is subject to several pertinent executive orders. In April 2008, Governor Paterson enacted Executive Order 4, entitled "Establishing a State Green Procurement and Agency Sustainability Program." This order establishes the Interagency Committee on Sustainability and Green Procurement, co-chaired by the Commissioners of OGS and DEC. The Committee is charged with developing lists and specifications for procurement of commodities, services and technology that will achieve enumerated environmental objectives. The order also charges each state agency and authority with developing and implementing a Sustainability and Environmental Stewardship Program, and with assigning an employee to serve as a Sustainability and Green Procurement Coordinator. The order further establishes the Sustainability and Green Procurement Advisory Council, an eleven-member body composed of experts in diverse fields, to advise and assist the Interagency Committee on Sustainability and Green Procurement. Implementation of EO 4 requires broad OGS staff participation from many program areas, as well as cooperation with other agencies and authorities and outside experts as the state moves toward increased sustainability of its operations.

OGS is also actively involved in the continued implementation of Executive Orders 111 ("Green and Clean State Buildings and Vehicles") and 142 (Directing State Agencies and Authorities to Diversify Transportation Fuel and Heating Oil Supplies through the Use of Bio-Fuels in State Vehicles and

Buildings). Furthermore, OGS was instrumental in carrying out the mandate in Executive Order 134 by providing guidance to state agencies for the selection and procurement of cleaning products that minimize the risks of harmful effects to occupants of and visitors to state office buildings, improve indoor air quality, and reduce water and ambient air pollution. These executive orders help establish New York as a pioneer in sustainable operations, and have influenced other states as they move toward greener government.

Programmatic Review

- 1) *Land Management: including a) State-owned underwater lands; b) Transfer of environmentally-sensitive underwater lands; c) Real property inventory and management program*

Land Management is a key OGS business function. Public Lands Law requires OGS to maintain a real property inventory of state lands. This inventory serves as an aid for the overall management of those lands by the state. OGS also administers the State of New York's lands that are under water. (These lands consist of those bodies of water that are owned "in the Sovereign capacity" and do not include certain privately owned bodies of water.) OGS has the right to transfer jurisdiction of state-owned underwater lands to another state agency for the purpose of protecting environmentally sensitive state-owned land. The permitting process and transfer of jurisdiction over state-owned underwater lands calls upon OGS to serve the public interest, known as "the public trust."

Challenges and Constraints

- A formal public trust policy is not currently in place with respect to the Underwater Lands Program; such a formal policy would assist in making the program more consistent with EBM.
- Public trust rights need to be preserved whenever trust lands are conveyed to private and public entities through grants, leases, easements, and licenses.
- OGS and its partners needs more comprehensive mapping of New York State's waterfront.
- Adjacent upland owners may hold riparian rights over underwater land under consideration for transfer, and this may create a competing interest with public trust considerations.
- The current OGS lands inventory falls short, due mostly to a failure in the proper reporting of assets by other state agencies.
- Statutory mandate does not require the inventory to include state-owned underwater lands. The absence of state underwater lands from the current inventory limits its usefulness in implementing EBM principles.

Opportunities and Recommendations

- OGS will incorporate the concept of EBM into the agency's mission statement and strategic goals and issue explicit guidelines and a framework for EBM implementation.
- OGS will position the agency's State-Owned Real Property Inventory Program for use as a centralized database and management tool in the statewide implementation of EBM.
- The State of New York should establish one or more "Excelsior State Seashore" preserves on Long Island, and "Excelsior State Shoreline" preserves at inland water bodies throughout the state to protect wetland and aquatic ecosystems from degradation.

- 2) *Facilities Management: including a) Energy and water conservation; b) Using energy from renewable sources; c) Stormwater management; d) Green cleaning*

OGS owns and operates approximately nineteen million interior square feet of office buildings and related facilities. Building managers implement practices that consider the building occupants' needs, the facility age and condition, and the relative costs and benefits of resource-saving practices. OGS audits energy use in specific buildings to identify conservation opportunities and is increasing the use of energy efficient lighting and upgraded heating, cooling, and ventilation (HVAC) systems in many facilities. Currently, DEC has designated two OGS facilities as subject to the preparation and implementation of a storm water management plan. OGS has developed guidelines for green cleaning for schools and state agencies, and lists of approved cleaning products. OGS has implemented green cleaning products and practices in its custodial programs and promotes these practices among all state agencies.

Challenges and Constraints

- OGS must continuously improve its systems and techniques for monitoring energy and water consumption to identify and pursue resource conservation opportunities.
- Getting cooperation from building tenants and other partners such as landlords in implementing energy and water-saving practices requires a constant effort.
- Start-up costs for using renewable energy can be significant, which results in resistance to increasing the share of energy purchased from renewable sources.
- There is limited availability of renewable energy.
- There is a long payback period for renewable energy generation infrastructure.
- Many people perceive that green cleaning products cost more and lack understanding of the dangers of traditional cleaning products and practices. There is natural organizational resistance to changing longstanding practices.

Opportunities and Recommendations

- OGS will expand efforts to deliver education and outreach efforts regarding energy conservation, recycling, green cleaning, and other practices that represent EBM.
- State agencies should work together to increase the impact of educational efforts on sustainability.
- The agency will increase its use of performance measures and data analysis, in conjunction with other agencies, to monitor the impact of OGS and statewide practices and programs that directly or indirectly affect New York's watersheds and coastal ecosystems.
- The Governor and Legislature should consider directing additional resources to enable the acceleration of state agencies' renewable energy projects.

3) *Design and Construction of Facilities: including a) Use of Leadership in Energy and Environmental Design (LEED); b) Internal green building council; c) Construction waste management*

OGS uses the Leadership in Energy and Environmental Design (LEED) Registered Project Checklist for new construction, renovations, and existing buildings. Construction waste recycling practices have been incorporated into contracts to ensure they are followed and are also required for tenant renovation projects performed by in-house staff. The Green Building Council, consisting of architects, engineers, designers, estimators, facility planners, and administrators from OGS interested in sustainable building design, interprets and applies the guidelines set forth in Executive Order 111 to their building design and construction activities and projects.

Challenges and Constraints

- Sustainable building projects can be more expensive for OGS' client agencies.

- The agency has a need for more LEED-accredited staff to accelerate sustainable design and construction.
- On-site separation for recycling of construction waste can be complicated.

Opportunities and Recommendations

- The agency will help its stakeholders understand the benefits of major investments in increasing the sustainability of the state's capital assets.
- OGS will increase education of government agencies regarding construction waste management.

4) *Leasing Services*

OGS oversees a portfolio of approximately 600 leases for roughly 16 million square feet of office space on behalf of state agencies. OGS implemented a Green Leasing Program promoting energy-efficient and environment-friendly practices in each new or renewed lease. OGS recently issued four Requests for Information (RFIs) on its website and in the State Contract Reporter with green lease requirements with projects totaling more than one hundred twenty thousand square feet of lease space. These efforts will expand to subsequent lease projects.

Challenges and Constraints

- Landlords may not be interested in environmental protection.
- Terms and conditions in existing leases are not amenable to change to incorporate green practices and considerations.
- Leases, as a product of negotiation, may have inherent limitations as a vehicle for EBM.
- Standard lease terms must be continually developed to adapt to marketplace changes.

Opportunities and Recommendations

- OGS will actively promote and encourage green practices, such as the use of green cleaning and maintenance products, in all state-leased facilities.
- To monitor the impact of practices and programs that directly or indirectly affect New York's watersheds and coastal ecosystems, OGS will increase the use of performance measures and data analysis, in conjunction with other agencies.
- As sustainable practices and products become more mainstream, landlords and tenants will move toward voluntary adoption of greener practices. OGS will share its growing expertise with landlords and building occupants to assist with this transition.

5) *Procurement Services*

The OGS Procurement Services Group (PSG) develops and enters into numerous centralized state contracts specifically planned to promote environmentally sound business practices and environmentally sensitive purchasing by the state. Consistent with Governor Paterson's new Executive Order 4, OGS and partner agencies are developing priority categories of commodities, services, and technologies, and developing specifications to ensure that environmental considerations are evaluated when procurement decisions are made. It is hoped that increasing the volume of demand for environmentally preferable commodities, services and technology will stimulate the vendor community to increase availability and lower prices.

Challenges and Constraints

- The agency procurement staff must learn to draft specifications for new contracts that reflect the availability of increasingly sustainable products
- In an era of “greenwashing,” staff must expend considerable time verifying bidders’ sustainability claims.
- Available OGS resources with which to implement EO 4 are limited.

Opportunities and Recommendations

- OGS will increase training of state, local and eligible nonprofit procurement coordinators in sustainable purchasing, with ecosystem-based management principles incorporated into such training.

6) *Fleet Services*

The Alternative Fueled Vehicles Program (AFVP) addresses the need to restore, preserve, and protect the state’s valuable environmental resources. Consistent with EO 111, EO 142, and the federal Energy Policy Act, AFVP assists state entities in replacing light-duty vehicles with AFVs in increasing annual percentages. AFVP collaborates with OGS Procurement Services Group to make alternative fuels and vehicles available on state contracts. The program also helps agencies implement strategies to improve vehicle fleet fuel efficiency and reduce emissions when operating medium- and heavy-duty vehicles. Working with the Clean Fueled Vehicles Council, AFVP is developing a critically important statewide alternative fueling infrastructure. Finally, it collects compliance data from all state agencies, authorities and universities for reporting to the federal government and NYSERDA. AFVP has participated in a demonstration project with American Honda to test the cold weather performance of a Honda FCX hydrogen fuel cell vehicle.

Challenges and Constraints

- Manufacturers have decreased production of new model AFVs and Compressed Natural Gas (CNG) vehicles, curtailing availability for purchase by state agencies.
- Supply and availability of biofuels presents a challenge in meeting mandates set by executive orders.
- AFV initiatives require additional funding.

Opportunities and Recommendations

- New York should continue to be proactive in ensuring that AFVs and fuels are available to the fleet.
- Expansion of alternative fuel availability beyond state government to the general public should continue to be pursued.
- New York State should maintain its leadership role in the AFV arena by continuing to explore new technologies.

Department of Economic Development (DED)

Agency Mission

Together with the Empire State Development Corporation, the New York State Department of Economic Development (DED):

- Advises the Governor and Legislature on all major economic development issues and decisions;
- Develops state economic development strategies;
- Provides technical and financial assistance to businesses through a network of regional offices;
- Coordinates the efforts of other State agencies, authorities and organizations, as well as local governments, on actions which affect the State's economy, and;
- Promotes tourism

State economic development programs are administered by the Department of Economic Development working in conjunction with the Empire State Development Corporation. ESD has offices located in Albany, Buffalo, New York City, Troy, Rochester, Syracuse, Utica, Binghamton, New Windsor, Plattsburgh, Hauppauge, Watertown and Elmira.

Programs Analyzed

DED evaluated its programs and selected two that have both environmental and economic components. These programs are Pollution Prevention and Waste Reduction and the Recycling Market Development Program.

Highlights of the Analysis

Pollution Prevention and Waste Reduction

Pollution Prevention and Waste Reduction is a cooperative program between the Department of Economic Development, the Department of Environmental Conservation, and the Environmental Facilities Corporation. The program coordinates existing funding opportunities and other services of the three agencies to assist businesses in developing environmentally benign operations.

Challenges and Constraints

- Work to turn environmental challenges into market opportunities for glass, industrial waste, paper, plastics, tires and wood.
- Evaluation of projects using EBM principles.

Opportunities and Recommendations

- Consider partnering with Department of Environmental Conservation and Environmental Facilities Corporation to direct funds towards projects that meet EBM principles and guidelines.
- Provide information on projects that assess, develop or demonstrate new technologies or new products for pollution prevention and waste reduction.
- Consider including EBM guidelines and principles in project ranking criteria.
- Prioritize projects that result in substantive environmental improvements and associated economic benefits.

Recycling Market Development Program

The Department is the lead agency in developing New York's recycling industries and creating programs to help municipalities and businesses develop uses for secondary materials. Eligible projects expand the capacity to recycle, increase the volume of material recycled, and enhance the value of the processed material or finished product from which it is made.

Challenges and Constraints

- Creation of statewide recycling investment priorities

Opportunities and Recommendations

- Consider staff training to evaluate projects to assist with EBM implementation.
- Consider including EBM guidelines and principles in project ranking criteria.
- Prioritize projects that result in substantive environmental improvements and associated economic benefits.

State University of New York (SUNY)

Agency Mission and core competencies

The mission of SUNY is to provide to the people of New York educational services of the highest quality, with the broadest possible access, in a complete range of academic, professional and vocational postsecondary programs. The State University of New York includes 64 geographically dispersed campuses and comprises the nation's largest comprehensive system of public higher education with a total enrollment of more than 414,000 students. SUNY is involved in local research initiatives as well as projects that extend around the world. The SUNY system is an economic engine for business and industry development in New York and the majority of the University's alumni reside and pursue careers in communities across New York State, contributing to the State's economic and social vitality.

Integration of EBM through education, research, advising, and creating collaborations.

The foundation of an ecosystem-based approach to management is a firm scientific understanding of how ecosystems function. SUNY scientists and researchers have been crucial in building our knowledge of marine and aquatic science, as well as those community and economic issues that are important for the successful implementation of ecosystem-based management. Without knowledge of the interconnections and feedbacks between all components of the system, we cannot make accurate predictions of impact, evaluate the risks associated with human-induced or natural perturbations of the environment, or develop and implement management practices and governance systems that will assure the existence of important ecosystem functions and services into the future.

Education

Improved understanding is the cornerstone of adaptive management and the faculty and students of SUNY will continue to educate New Yorkers about EBM as a way to achieve sustainability in our economies, communities, and natural environment. Through classes in the marine science program at Stony Brook University, the College of Environmental Science and Forestry in Syracuse, and other degree programs focused on marine and aquatic science, social science, and economic development, SUNY teaches ecosystem-based management and encourages citizens to rethink traditional, fragmented approaches to managing the complex and interrelated challenges facing our marine and aquatic ecosystems. By facilitating thought and research into EBM, SUNY is educating New Yorkers about the importance of ecosystem-based management and is training the next generation of scientists that will likely staff New York State organizations and work on EBM initiatives worldwide.

Research

SUNY researchers will continue to improve our understanding of ecosystems and evaluate the efficacy of EBM initiatives through research, monitoring, and assessment. Ongoing projects by SUNY scientists are already examining the social, economic, and ecosystem consequences of ecosystem-based management. The SUNY scientific community has been on the forefront of shaping EBM science and has been a driving force for implementing EBM policy worldwide. In 2005, many SUNY scientists were among the first to sign on the Scientific Consensus Statement on Marine Ecosystem-Based Management, which highlighted the need for immediate implementation of EBM in marine systems and has become one of the cornerstone documents defining EBM. SUNY faculty and students are actively involved in research on the EBM demonstration project in Great South Bay. This effort involves creating an ecosystem model of Great South Bay and installing state-of-the-art environmental sensors that will provide a web-based continuous data stream of observations of its waters. SUNY researchers study not just the science of how

ecosystems work, but also how EBM can best be implemented, and how communities can communicate notions of value to policymakers and negotiate consensus among stakeholders that have different priorities. In support of the New York Ocean and Great Lakes Ecosystem Conservation Council's plan to implement ecosystem-based management in New York's coastal waters, SUNY plans to expand our focus on EBM in our educational and research programs through active and continued involvement in EBM projects.

Advising

The Scientific Advisory Group (SAG) was composed of largely of SUNY scientists from a range of disciplines, including ecologists, physical oceanographers, environmental engineers, biologists, social scientists, and economists. The group identified issues in need of further research to enhance EBM in New York's Ocean and Great Lakes ecosystems and created a research and monitoring priorities plan. Going forward, SUNY researchers will play a key role in tackling the issues the SAG identified and work closely with New York State agencies to generate and facilitate research projects in support of EBM.

SUNY researchers will be part of the science advisory committee (SAC) which the SAG recommended be established as a permanent component of the New York State EBM program. SUNY experts will provide guidance in understanding conflicting information, help identify future research needs, and help identify those areas where EBM can be rapidly implemented. SUNY scientists will also support policymakers as they evaluate and incorporate alternative management methods and evaluate alternative governance approaches, by providing scenario evaluations, integrated analysis, and alternative analytical approaches.

Creating collaborations

A successful EBM strategy is characterized by an oversight system that uses data to constantly assess the continued effectiveness of management strategies in achieving ecological, social, and economic goals. Therefore, SUNY will work on fostering communication among scientists, managers, policy makers, and citizens by translating scientific research into decision support and information products for resource managers and the Council. SUNY will support informed discussion of ocean and aquatic issues by providing scientific synthesis and assessment. SUNY researchers, through the SAC, will sponsor and participate in annual conferences at which scientists, stakeholders, and managers discuss current research, its practical applications, and EBM implementation in New York's marine and Great Lakes ecosystems. In this way, the research community will assist decision makers and managers in communicating and disseminating results to stakeholders, local municipalities, the media, and the general public.

SUNY is also leading the charge to form the New York Marine Sciences Consortium, an association of educational institutions that will be the voice for the marine science community as the state begins reshaping its policies for stewardship of aquatic environments. The consortium will be a mechanism that supports EBM research and facilitates communication between citizens, scientists, students, and agencies on the topic of EBM. The New York Marine Sciences Consortium will work closely with the Great Lakes Research Consortium, an organization of educational institutions in New York and Ontario dedicated to collaborative research and education on the Great Lakes, to ensure scientific efforts in the state are focused on EBM. Collaboration between institutions will help all New York universities educate students and the public about the need for a sustainable approach to managing our aquatic resources. The consortium's annual conference will be a forum for the exchange of knowledge and information about our marine ecosystems and resources.

Programs Analyzed

The State University of New York at Stony Brook chose to develop the New York Marine Sciences Consortium (NYMSC). The inaugural meeting of the Consortium was held in September 2008.

(1) New York Marine Sciences Consortium

NYMSC will serve as the voice of the ocean research and education community. This new organization of twenty-five degree-granting institutions and affiliates will ensure that best science informs policy; advocate for policies and resources that promote science-based stewardship of marine and coastal ecosystems; and promote interaction and collaboration among members to foster public awareness.

Challenges and Constraints

- The size and diversity of member institutions
- Sustainable funding
- Effective partnerships and coordination with ongoing efforts including monitoring

Opportunities and Recommendations

- NYMSC will adopt effective bylaws.
- The Consortium will seek support for remote monitoring systems operated by regional associations.
- Through NYMSC, SUNY will support legislation that will focus attention on marine ecosystems.
- Students and the public will be educated about the need for a sustainable approach to managing aquatic resources.
- There will be multi-institutional partnerships created to apply for funding.
- NYMSC will exchange knowledge and information and build new collaborations through an annual conference and website.

Recommended Actions

- Support research efforts by SUNY faculty to improve our knowledge of ecosystems and ecosystem-based management and create appropriate mechanisms for funding such research.
- Create a permanent scientific advisory panel to assist the Council in assuring that the best scientific information available is brought to bear upon the implementation of EBM in New York.
- Support and implement the recommendations in the Scientific Advisory Group's Research Priorities Agenda as included in the report.
- Provide support to the Great Lakes Research Consortium (GLRC) and the newly created New York Marine Sciences Consortium (NYMSC) and use these organizations to foster collaborative research efforts and promote education.
- Encourage the GLRC and NYMSC to each host an annual conference that focusing on the status of New York marine and Great Lakes ecosystems. Such forums would be open to scientists, managers, agency professionals, and the stakeholder communities to increase general knowledge and provide for exchange of ideas.

Discussion and Next Steps

Agency response to EBM guideline assignment

In general, Council agencies directed staff and/or consultant resources towards completing the tasks outlined in the generic work plan for this assignment. The process provided an opportunity for the Council agencies to examine their programs with respect to EBM and Smart Growth principles and an understanding that change in New York's approach to managing coastal resources is necessary.

Common themes

Taken together, the agency guidelines submittals reflect several common themes. The Council agencies are in general agreement in their analysis of what is needed to better integrate the principles of ecosystem-based management into their activities, programs, regulations and policies. Details vary across agencies given the different missions and resources.

While a few agencies suggested developing new programs for EBM implementation, most suggested adapting existing programs and reinforcing elements of EBM principles.

Five common themes in the Council Agency submittals are listed below.

1. Increased funding: While this is seen as essential for EBM implementation, it must be viewed in the context of the overall austere New York State budget situation. The form and amount of that funding varies; in some cases, it would be directed to supporting additional staff members to implement the program. In other agencies, funds would be directed to program implementation with existing staff. The near-term cost of EBM implementation could accrue to sources in addition to state taxpayers. In the long term, EBM could save money by promoting sustainable practices.
2. Need for training: Staff members require initial and continuing training for EBM implementation. This recommendation will affect multiple levels of central office, regional and district staff.
3. Information: All agencies mentioned the need for enhanced data and information management as a crucial part of their EBM implementation. This involved data acquisition and sharing, database management, mapping and GIS tools, and data quality. It is also related to a focused research agenda to develop and disseminate the science needed for EBM. Finally, several agencies acknowledged the need for monitoring and modeling to evaluate the effectiveness of investment in EBM. Metrics, to assess the health of the coastal ecosystems and the viability of communities they support, need to be developed, measured, tracked, and reported.
4. Stakeholder participation: Increased involvement of the public, especially at the local level, in resource management decisions was recommended in every agency report. The need for public education and outreach on the impact of land use decisions on coastal resources was viewed as essential.
5. Better coordination: For EBM to be successful, agencies felt there needed to be increased coordination both within and among agencies. Increased information sharing would help this as well as formalized MOUs and agreements at the State level. In the discussion of interconnections, every agency mentioned current collaborative arrangements with other agencies. However, a

more formal and institutionalized structure with respect to those interconnections is recommended.

Recommendations

1. More detail regarding timeline and budget for EBM implementation. The Council agency reports outline steps for implementation. However, additional detail of timelines and associated costs is needed, especially in light of current economic conditions.
2. Additional program plans. The programs selected for this iteration of EBM implementation was, by design, focused on agency programs that were already reasonably aligned with EBM. Finding additional programs that fit into EBM principles might prove more challenging. Agencies should be encouraged to determine programs where the fit with EBM might not be as obvious. Alternately, focusing EBM implementation on new programs is a possibility.
3. Legislative actions: Most agencies did not specify which legislative or administrative actions needed to occur. For EBM implementation to be successful, agencies need to have a legislative framework in which to work.
4. Redefine administrative boundaries: Many agency reports suggested redefining regulatory and administrative areas on a watershed basis instead of municipal jurisdictions. This is a significant challenge and will need support from agencies as well as legislative bodies.

