

Executive Summary

Desired State

The desired state is a Great Lakes Basin where human activities support a strong and vibrant economy, meeting societal and cultural needs in balance with a diverse and resilient ecosystem. This balancing of economic, societal and ecological needs is the practice of sustainable development. The definition of sustainable development from the United Nations' Brundtland Commission (UN 1987) is used for general reference: "*development that meets the needs of the present without compromising the ability of future generations to meet their own needs.*" This definition is generally consistent with the tribal planning perspective of considering the impacts of all decisions on the next seven generations.

Problem Statement

Building on the United Nations sponsored Millennium Assessment (UN, 2005) human reliance on the services provided by an ecosystem requires that we ensure the ecosystem's ability to recover and restore itself from that use. These "ecosystem *services*" are processes carried out by natural ecosystems that benefit human societies and economies. The UN report states that human changes to global ecosystems have resulted in substantial and largely irreversible losses to diversity and diminished the benefits that future generations obtain from some ecosystems. Within the Great Lakes Basin, this legacy is evidenced by the priority issues addressed by other Strategy Teams: invasive species; beach closings; toxic contaminants; Areas of Concern; nonpoint source pollutants, and; threatened habitat and species.

The sustainable development issue was examined with respect to six categories of services provided by the region's ecosystems: land use and development; agriculture and forestry; transportation; industrial activities; water infrastructure, and; recreation, tourism and fishery. An evaluation of current and future human activities in the Great Lakes Basin highlights trends that continue to draw on ecosystem services and economic competitiveness, including:

- loss of natural and agricultural lands to development at rates far exceeding population growth;
- leveling or decline in conservation tillage practices;
- fragmentation of privately owned forest lands into smaller tracts and decreasing levels of active management on public forest lands;
- increased demands on ecosystems for recreation;
- aging transportation infrastructure that impedes more efficient intermodal systems;
- an aged water and wastewater infrastructure unable to handle current demands;
- disconnected programs for planning and management of ecosystem services;
- practices and policy disincentives that deter sustainability, and;
- outdated perceptions of the region ("rust belt") which fail to promote the potential of its sustainable ecosystem services.

Recommendations

This Team identified actions to promote sustainable development practices aligned with six categories of services provided by Great Lakes ecosystems. The complete set of these actions is provided in the full report of the Sustainable Development Team (Appendix X) and are summarized by three major recommendations:

1. Adapt and maintain programs that promote sustainability across all sectors;
2. Align governance to enhance sustainable planning and management of resources, and;
3. Build outreach that brands the Great Lakes as an exceptional and competitive place to live, work, invest and play.

Each of these recommendations will be discussed and a subset of actions presented, with emphasis on near-term actions that can deliver measurable results. The final section will describe overarching issues, including research and indicator needs.

1. Adapt and maintain programs that promote sustainability across all sectors

The most important decisions impacting sustainability are made by individuals, whether as consumers of goods and services, owners of lands and businesses, or users of infrastructure. The sustainability of decisions made by consumers and users of ecosystem services may be influenced by a variety of factors, including public policies and market-based practices. However, the costs for ecosystem services provided to consumers rarely reflect their true value. For instance, the price of an item may include its materials, production and delivery costs, but not the costs of its disposal after use nor all ecological or societal costs associated with its creation or disposal. To compensate for this, programs to support sustainability across all sectors must include a combination of incentives (credits) for sustainable practices and disincentives (taxes) for non-sustainable practices to reflect their true costs. Programs are also needed to develop more efficient technologies or strategies to conserve resources, minimize adverse impacts, and maximize the services they provide. Examples of actions to create and maintain programs to promote sustainability across all sectors include:

Action	Lead
Modify current agricultural price support systems to encourage sustainable practices such as conservation tillage and buffer strips	Federal
Revise policies that result in public investments (e.g., tax policy, real estate policy, public infrastructure and services, economic development, land use and environmental protection) to give preference or additional funding attention to those projects and communities that encourage and practice sustainable actions	State and Local
Practice manufacturing and management that use resources more effectively and efficiently including life cycle assessment and product stewardship (i.e., green product design and consumption), pollution prevention, and increased recycling	Industry
Provide monetary incentives to reduce water demand on existing infrastructure through conservation practices, including sanitary reuse systems, storm water harvesting, multi-purpose piping systems and low-flow or dual flow flush toilets	Local
Refocus EPA water infrastructure funding guidance and criteria for EPA to promote conservation planning (e.g., priority for loans or grants to existing communities with plans and/or ordinances that reduce ground or surface water impacts)	Federal
Return a greater portion of fuel taxes paid by recreational boaters to support projects that restore ecosystem services	State
Develop additional technologies and strategies to eliminate the introduction and spread of invasive species via maritime commerce and other transportation modes	Federal
Promote sustainable forestry practices through private sector programs (e.g, Sustainable Forestry Initiative © SFI Program, American Tree Farm System, Forest Stewardship Council), tax incentives for keeping private lands in productive timber rather than development, and equal sustainable forestry standards for “green wood” from public and private forests	Industry, Private, Federal, State, & Tribal
Provide incentives (e.g., tax increment financing, real estate tax assessment freezes,	State and Local

funding for demolition and associated infrastructure repair or replacement) to encourage clean-up and redevelopment of brownfield sites, blighted properties, and historic structures around the Great Lakes, with priority given to those sites adjoining the Great Lakes waterways	
Provide incentives (e.g., grants, low-interest loans, or tax incentives) to develop renewable energy technologies, energy efficiency, and pollution prevention in the business sector	Federal and State
Require all new public buildings and major renovations over 50,000 square feet for state or municipal agencies, universities, community colleges and schools be LEED (Leadership in Energy and Environmental Design) certified	State, Tribal and Local
Adapt, adopt and certify “green” programs for energy conservation, marinas, industry, forests, and other ecosystem services	Industry, Private, Federal and State

Among the most critical actions necessary to promote sustainability is to eliminate or modify existing programs that encourage non-sustainable practices. For example, some tax laws and federal infrastructure aid programs inadvertently encourage urban sprawl and agricultural subsidies tend to discourage conservation tillage practices. Another group of actions represent existing incentive programs that have greater potential to promote sustainability, but are under funded or need to be modified for greater effect.

Numerous examples of sustainable practices have been successfully applied by municipalities and the private sector. The challenge is to encourage communities and regions to adapt and adopt sustainable practices for their specific suite of ecosystem services and/or to scale-up these practices into programs at a regional or business-sector level. One approach is to develop specific metric for sustainability, such as a set of standards for “green” marinas, sustainable forestry, or for sustainable urban, suburban and rural development. The integration of sustainable activities and cooperation within and among governmental jurisdictions is a key to success.

2. Align governance to enhance sustainable planning and management of resources

As a practice of balancing economic, societal and ecosystem needs, sustainable development faces a number of handicaps. While the Great Lakes ecosystems are not aligned by political boundaries, human management of ecosystem services is. Our ability to balance the three legs of the sustainable development stool is challenged by the disconnection between economic drivers and the planning and management of ecosystem services. It is further confounded by the absence of a common metric or currency to value these services. To address these handicaps, it is necessary to realign governance institutions to sustain ecosystem services and integrate the planning and management of these services. Examples of actions to realign governance to enhance sustainability are:

Action	Lead
Create a high-level, multi-agency, governmental steering body with the authority to provide leadership by promoting community and regional vision of sustainability; develop strategy; establish goals; propose, coordinate, fund and assess progress on actions and projects relating to sustainable development	Federal
Conduct a three-year Great Lakes Sustainable Development Demonstration to develop consistent, sustainable land use plans that are integrated with regional transportation plans and other public infrastructure plans. Support with existing, but focused federal and state program funds.	State, Local, Federal, and Tribal

Realign state, regional, and local agencies and programs to institutionalize regional sustainable land use, transportation and infrastructure planning and management based on the experience from the three-year demonstration	State and Local
Establish and network regional partnerships of Great Lakes promoters and preservers emphasizing stewardship (e.g., consider New York State Tug Hill Commission as a model)	Locals, Business and NGOs
Develop a comprehensive intermodal transportation plan for the Great Lakes transportation corridor recognizing the unique opportunities for waterborne transportation in the Great Lakes/St. Lawrence system	Federal
Create a regional Bio-Energy Task Force to develop a Great Lakes Regional Renewable Energy Policy	State, Industry, Federal, Tribal and Academia
Standardize and integrate reporting of ecosystem services and their values at the watershed level to better track and prioritize sustainable funding and policy decisions	Federal and State

It is recommended that the Great Lakes Regional Collaboration redefine its framework to become the prototype of a regional advocate for sustainable development. This represents a significant shift in focus, and may necessitate specific federal legislation and dedicated funding. This recommendation is an initial step toward the national advocate envisioned in the first action, above. The potential payback is for the Great Lakes to become a national, if not global laboratory for sustainable development, led by a Regional Collaboration that is future-oriented and actively engaged in promoting sustainable economic development in the region.

A theme that runs through several recommended actions is the integration of planning and management of ecosystem services, including land use, transportation, and water infrastructure. Existing programs for planning future ecosystem services are disjointed from the management of existing infrastructure. Federal and state funding programs are aligned by single purposes and do not foster integration.

3. Build outreach that brands the Great Lakes as an exceptional and competitive place to live, work, invest, and play

Outreach is necessary to promote sustainable behavior in consumers and users of ecosystem services. Marketing applies the same communication techniques to attract new development and users of these services. A combination of these tools is recommended to promote sustainable development in the Great Lakes Basin. Specific objectives of this outreach and marketing are to educate users and consumers on sustainable alternatives available and the consequences of decisions, build a sense of ownership and pride in regional ecosystems, and attract new residents and businesses to the region with abundant ecosystem services and a society where sustainability is practiced. Examples of outreach to brand the Great Lakes as an exceptional and competitive place to live, work, invest and play include:

Action	Lead
Develop a brand identity and system-wide marketing strategy for the Great Lakes	GLRC
Evaluate and draw on existing programs across the region to better disseminate information (e.g., Binational Toxics Strategy, SOLEC, SMOC, IJC, LaMPs and RAPs)	GLRC
Renew federal and state commitment to Great Lakes Dredging Team to provide outreach for environmentally responsible dredging and dredged material	Federal and State

management	
Joint state, tribal and local marketing of nature-based tourism, recreational fishing, and related development (e.g., Great Lakes recreational pass, expansion of Great Lakes circle concept of scenic by-ways, etc.)	State, Tribal and Local
Outreach to promote manufacturing and management practices that use resources more efficiently, including pollution prevention and increased recycling, incorporating life cycle assessment, and stewardship in product designs	Industry
Raise public awareness of the gap left by recent policy change to the Land and Water Conservation Fund (LAWCON) that eliminated funding incentives to state and local agencies for purchase and protection of open space to provide public access to watersheds	Locals and NGOs
Education and technical assistance to landowners on sustainable forestry practices	Federal
Enhance and implement education to promote conservation practices to reduce water demand on existing infrastructure (e.g., existing project WET and Water Riches curriculum to educate K-12 children about water conservation practices)	Local and Tribal

Marketing to promote growth of businesses and jobs in the Great Lakes region needs to be fully integrated with outreach that educates and promotes sustainable behavior. This represents a significant shift for some advocates for ecosystem restoration, but is critical to create a message that is progressive and focused. A Great Lakes Regional Collaboration, re-focused as described in the second recommendation, should take the lead in developing a marketing and outreach strategy for the region.

Overarching Issues

Sustainable development cuts across all other priority issues identified by the Governors and Mayors. It is future-oriented, and represents a sound platform for integrating efforts to protect and restore the ecosystem services provided by the Great Lakes. To promote sustainability and to integrate efforts toward other issues, this Team identified the following overarching needs.

Develop indicators and metrics for sustainability and a corresponding database to track and evaluate sustainability trends and progress toward goals. The development of such metrics and indicators would be national in scope, such as the ongoing effort by the Sustainable Water Resources Roundtable. A regional database of sustainability indicators should be established, building on the process initiated by SOLEC.

Provide resources to develop data on the economic, ecological and social costs and benefits of proposed actions to guide the analysis of their sustainability and prioritization for funding. This kind of data is critical to justifying immediate decisions as well as the development of a credible system of indicators and metrics.

Enhance research to develop more efficient technologies for manufacturing, energy production from alternate materials, and controlling the spread of invasive species, to name just a few.

Finally, an overarching issue that needs to be addressed is that of leadership. It is recommended that the Great Lakes Regional Collaboration be reformed to lead an effort that blends the missions of ecological restoration and economic development in a forward-looking manner, using the principles of sustainable development as the guidepost.