

SUSTAINABLE DEVELOPMENT

I. 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.

II. 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.

III. Recommendations

This Team identified actions to promote sustainable development practices aligned with six categories of services provided by Great Lakes ecosystems. These include actions for all sectors of stakeholders, including federal, state, tribal and local governments, private business, industry and manufacturing, and nongovernmental organizations. 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 with a few examples of near-term actions that can deliver measurable results, most without a substantial new, fiscal requirement. 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.

Among the most critical actions necessary to promote sustainability is to eliminate or modify existing programs that actually encourage non-sustainable practices. For example, some state and local tax laws and federal infrastructure aid programs inadvertently encourage urban sprawl and should be modified to give preference or additional funding attention to those projects and communities that encourage and practice sustainable actions. Some federal agricultural subsidies tend to discourage conservation tillage practices, and need to be amended.

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. For example, changes to grant and tax incentive programs for brownfields to give priority for clean-up and redevelopment of sites adjoining the Great Lakes waterways. Another possible action is to expand incentives for development of renewable energy technologies, energy efficiency, and pollution prevention in the business sector.

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. For instance, state, tribal and local governments should be encouraged to require all new public buildings and major renovations over 50,000 square feet for public buildings be LEED (Leadership in Energy and Environmental Design) certified. Another approach is to recognize and reward industries with manufacturing and management practices 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.

An important tool in encouraging sustainable practice is to develop specific metrics for sustainability, such as a set of standards for “green” marinas, sustainable forestry, or for sustainable urban, suburban and rural development. When creating and applying “green” standards and metrics, 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.

Sustainable development should be part of the national agenda, with leadership from a national steering body and regional advocates to promote community and regional vision of sustainability, facilitate regional execution of national goals, and assess progress. 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. 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.

Another key to the realignment of governance to support sustainability is the integration of local and sub-regional 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. Recommend that the Great Lakes serve as a 3-year demonstration for development of consistent, sustainable land use plans that are integrated with regional transportation plans and other public infrastructure plans with support from existing, but focused federal and state program funds. Following this demonstration, state and local governments should realign agencies and programs to institutionalize the integration learned through the demonstration.

A final realignment that is critical is to apply sustainability principles to studies intended to address regional needs. Single-purpose studies to address economic development or ecosystem restoration are giving minimal consideration to related regional issues and needs. An ecosystem restoration plan that does not provide a path for economic development is as unsustainable as an economic development plan that fails to directly address ecological restoration and societal needs. Recommend there be a single, integrated, and comprehensive study of regional needs for intermodal transportation and the mitigation and prevention of invasive species (both aquatic and terrestrial) for the U.S. portion of the Great Lakes Basin.

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.

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 brand identity and system-wide marketing strategy for the Great Lakes. This strategy should draw on existing programs across the region to better disseminate information (e.g., RAPs, LaMPs, SOLEC, SMOC, etc) and provide specific actions for all stakeholder sectors. An example would be 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 byways, etc.).

The marketing and outreach strategy should enhance education to promote sustainable practices, such as project WET and Water Riches curriculum to educate K-12 children about water conservation practices and education and technical assistance to landowners on sustainable forestry practices. It should include outreach to promote manufacturing and management practices that use resources more efficiently. The strategy should renew agency and stakeholder commitments to existing partnerships that promote sustainability, like the state/federal partnership of the Great Lakes Dredging Team.

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.