Developing Our Coastlines

Four Michigan Communities Take Stock of Their Great Lakes Assets

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Michigan Environmental Council

Contents

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The Michigan Environmental Council is a coalition of 72 environmental and public health organizations with more than 200,000 individual members. For 26 years, MEC has provided a voice for Michigan's environment at the State Capital. In addition to serving as a clearinghouse for environmental information, MEC develops public policy, educates elected officials and the public, and provides training and support to member organizations.

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Why We Care

In Michigan, we explain where we live by showing the palm side of our right hand, four fingers together and the thumb spread wide. This "mitten" is the shape of the state's Lower Peninsula. Almost everything outside that mitten is blessedly fresh, translucent, deep, cool Great Lakes water. Michigan has 3,288 miles of such coastline – its share of a 10,900-mile Great Lakes coast that is longer than any ocean coast in the U.S. and second in total only to Alaska.

The coast is home of 600-foot tall sand dunes visible from outer space. It is where wetlands and marshes incubate a teeming brew of life that supports the lakes' ecology. It is where natural harbors of refuge and rivermouth lakes have become cornerstones of commerce and community.

The coast is where we fish and hunt, sail and swim. It is where we watch children build sandcastles, chase seagulls, and explore the limits of their imagination. It is the foundation for the jobs provided by many of our industries including automobiles and tourism. And it is the repository of 20 percent of the world's – *the* world's! – fresh surface water.

Coastal communities range from gritty urban centers like the port of Detroit where international freighters coexist with a world-class walleye fishery on the Detroit River, to rural stretches of forest and field where solitary hikers walk or fourth-generation farmers tend to cherry and blueberry orchards.

So water surrounds us. And water defines us. And this is why we care.

- *Brad Garmon and Hugh McDiarmid Jr., August 2006*

Developing Our Coastlines: Why Trends Concern Michigan Communities

In late 2005, the Michigan Environmental Council (MEC) undertook a project engaging citizens, advocates, experts and leaders in four key coastal communities around the state to encourage a better understanding of the issues facing Michigan's coastal landscapes. In addition to the normal concerns about water quality and water consumption, the work demonstrated a growing awareness that new development in coastal areas is a huge concern for coastal communities. This study provided important information and a window into the myriad state and local conversations currently underway about Michigan's coastal future.

To study, compare and contrast these concerns with the tools and policies being discussed and advanced at the state and local level is to see the true choices facing our state. The state's vision for itself as a coastal steward, and the effective allocation of public and private resources are at stake.

Although Michigan is fortunate to have a strong Coastal Management Program within the Department of Environmental Quality, there is no state entity that focuses on bringing the range of state economic development, transportation, and land use planning tools together to advance coastal conservation. Nor is there statewide coordination of policies and priorities. Numerous programs within the DEQ have some responsibility for the coastline, as well as programs carried out under the Department of Agriculture, and Department

of Natural Resources. These agencies and programs do not routinely coordinate activities. Lack of coordination exists at the local level as well, as each jurisdiction makes land use decisions independently of one another.

Many communities acknowledge the attraction of their share of coastline and the need to maintain its beauty and appeal. But these same communities, searching for ways in which to strengthen their tax base, often allow or encourage unsustainable and resource-consumptive sprawl development.

To make matters worse, several studies have shown gaps in zoning and a significant lack of planning resources at the local level in these communities. A 2001 Alliance of the Great Lakes study of planning efforts in cities and counties in communities bordering the Lake Michigan shoreline found that some lakeshore municipalities ignored the lake entirely in their land use plans and ordinances. Almost 40% of the jurisdictions providing information for the study either failed to address the lake, or did no more than mention its presence in their land use plans. Less than a quarter of plans reviewed were considered adequate, meaning that they included both goals and implementation steps for protecting Lake Michigan's water quality and ecosystem.

Michigan Sea Grant assessed planning efforts in Great Lakes communities throughout Michigan and found that nearly two out of three coastal communities lacked professional planning staff. As part of the effort, Michigan Sea Grant surveyed all "338 political divisions" in Great Lakes coastal communities and noted that it was "uncommon" for the communities to have "local regulations that define coastal-dependent economic uses and protect coastal natural resources such as dunes, wetlands and high-risk erosion areas." Michigan Sea Grant also noted "the lack of coordinated land use planning across coastal regions or ecosystems." According to the study "They [local units of governments] share coastal ecosystems, coastal issues, and coastal development opportunities but, given their legal mandate, their land use decision making focus is almost always local. One

key to better regional land use patterns and coastal sustainability would be the strengthening of communication and collaboration between coastal municipalities."

All of Michigan's coastal communities share a common dilemma; however. As new development sprawls rapidly along the coastline there are increasing risks to the

health and sustainability of its unique setting and natural assets.

In order to advance more protective coastal conservation policies, the Michigan Environmental Council (MEC) began a project in 2005 to build on the heightened awareness of coastal land use issues, the work of the state's Coastal Management Program, and burgeoning local and regional Smart Growth land use planning initiatives, including Phase II requirements under the Clean Water Act. MEC sought to identify current local coastal land use issues and needs, in addition to opportunities for improving coordination and overall protection at the local and state levels. One important objective was to determine the strength of community support for a larger statewide emphasis on improving land use policies along Michigan's coastlines.

In the end, our analysis yielded a set of policy recommendations and actions. We believe they are critical to preparing Michigan for increased populations and preservation of our environmental assets while building a strategic and sustainable economic base.

Coastal Communities Attract Growth

Great Lakes coastlines, like ocean coastlines across the nation, are an increasing attraction for residential living, second homes, and retirement. People move close to water and the recreational activities typically associated with coastal communities such as boating, swimming, fishing, hiking, photography, and wildlife observation. The attraction also includes the beauty of the area's coastal assets such as rivers, lakes, wetlands and dunes. Population on all of the nation's coastlines, including those along the Great Lakes, is expected to increase.

According to the U.S. Commission on Ocean Policy, "Fifty-three percent of the nation's population lives in counties bordering the ocean or Great Lakes, although they cover only seventeen percent of the land. Another 3,500 people are added to those counties each day." A 2001 U.S Environmental Protection Agency (EPA) report on national coastal conditions noted the trend in Michigan: "As is the case with waterfront property all across the United States, Great Lakes shoreside properties in Michigan continue to receive a disproportionate amount of development pressure relative to inland development pressure in the state."

This was observed from within Michigan as well, with the Michigan Department of Environmental Quality Coastal Management Program describing its impacts in its 2001 Coastal Assessment: "Statewide, coastal areas are being developed at a faster rate than inland areas. Most [coastal] regions are experiencing development patterns which are land consumptive and costly to municipalities trying to keep up with the demand for increased services and infrastructure. The cumulative and secondary impacts of coastal growth throughout the state include conversion of farmland, forests, and open space to residential use, the loss or fragmentation of ecosystems and coastal habit, and degraded water quality due to increased stormwater, and surface run-off due to increased impervious surface cover."

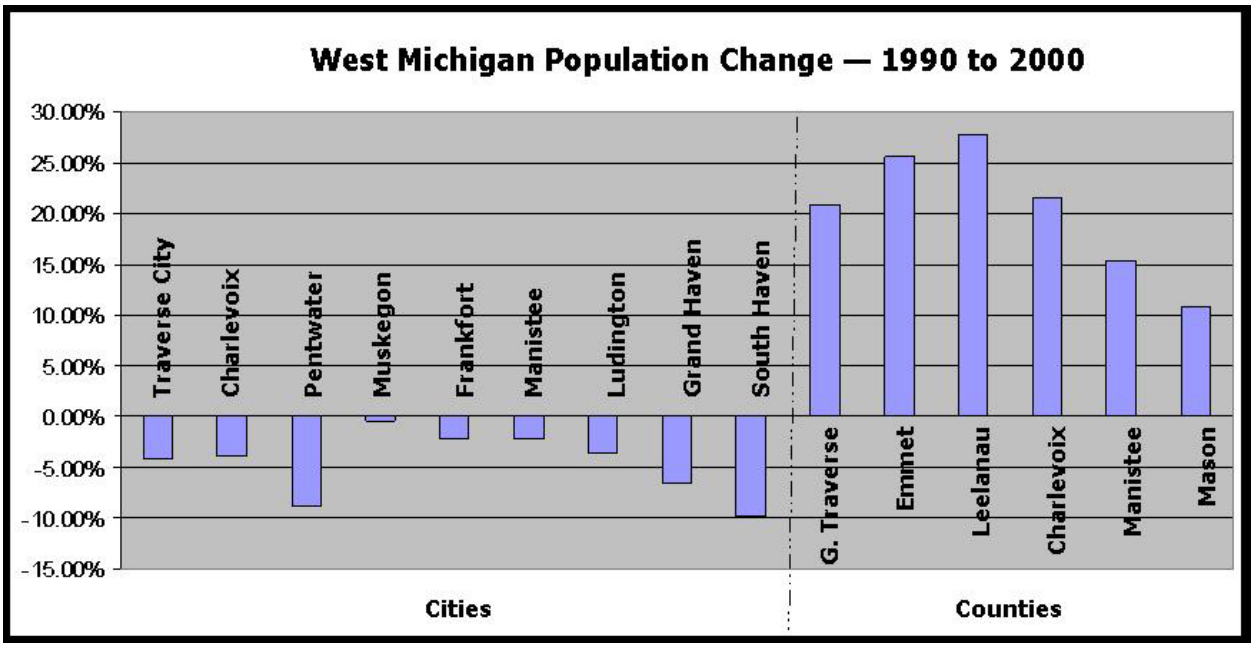
Additionally, well-documented land use trends evident throughout Michigan -- low density sprawl and a high rate of land consumption compared to population growth, population declines in cities, and loss of open space and farmland -- are intensified on Michigan's coastlines.

The disparity between population growth and land consumption is evident all around Michigan's shoreline. Monroe County, in southeast Michigan, is experiencing intense development pressure originating from the Metro Detroit area to its north, as well as from the Toledo area to its south. From 1990 to 2000, Monroe County's population grew by 9.2%, but the amount of land developed for residential use grew from 60,037 acres to 73,528 acres or an increase of 22.6%, almost three times the rate of population growth (U.S. Census).

Coastal counties along the state's west coast show high rates of population growth as well. From 2000 to 2004, the U.S. Census indicates that Benzie County's population grew by 9.2 percent, Grand Traverse County by 6.6 percent, Antrim County by 6.0 percent, and Emmet County by 5.9 percent, all rates that were considerably higher than those experienced in many inland counties.

The growth in coastal areas is not, however, progressing in a way that promotes protection of coastal values and resources; it is instead developing in a "sprawl" model that locates most new population in outlying fringe areas outside of traditional communities. (See graphic below. Source: U.S. Census Bukreau)

Michigan Sea Grant's 2002 Status of Planning and Zoning in Michigan's Great Lakes Shoreline Communities report pointed out that major cities in the state's coastal communities were following the trend of cities throughout the state – losing population to surrounding, suburbanizing rural areas



Mike Klepinger, the study's author, noted concerns about the heightened effect of the state's land use trends on shorelines. "Great Lakes shoreline properties continue to receive a disproportionate amount of development pressure compared with inland real estate. Michigan is following a low-density coastal land development pattern, with people moving out of cities and small towns to develop rural greenfields."

In addition to fragmentation of coastal habitat, especially wetlands and dunes, the "development threatens public access to coastal areas and the seclusion found in large, undeveloped tracts."

Uncoordinated and unmanaged land development was identified in the state as a problem as early as the 1970s, when then-Governor William Milliken advanced (unsuccessfully) several initiatives aimed at improving coordination of land use planning. In 1992 *Michigan's Environment and Relative Risk*, produced by a committee appointed by Governor John Engler, identified the lack of land use planning as one of the highest risks to the environment and quality of life in the state, causing the loss of open space and farm lands, degradation of waterways from pollution associated with development, loss of habitat and unique natural areas, and loss of scenery and beauty.

The Planning and Zoning Center's landmark 1995 *Michigan's Trend Future*, and final report, *Patterns on the Land: Our Choices, Our Future*, was influential in comprehensively defining and highlighting the land use trends that adversely affect the state's environment and quality of life. Numerous local and regional initiatives were also initiated throughout the state, including Southeast Michigan Council of Governments (SEMCOG) initiatives, Lakewide Area Management Plans (LAMPs) for the Great Lakes, the Lake St. Clair Management Plan, and county, regional, and watershed management and protection efforts.

Heightened discussions of land use trends in Michigan culminated in the establishment of the bi-partisan Michigan Land Use Leadership Council in 2003. The Council, comprised of 26 of the state's leading business, development, environmental and local government leaders, produced a report offering key principles for curbing harmful "sprawl," promoting state use of Smart Growth, and advocating an extensive set of recommendations to improve land use decision-making in Michigan.

The report included a section on coastal conservation and recommended that Michigan establish statewide policies to prioritize shoreline protection in conjunction with "compatible commercial and residential waterfront development and redevelopment." The Council encouraged local planning efforts and multijurisdictional efforts in coastal areas to work toward achieving enhanced public access and protection of viewsheds. The group also recommended the identification, protection, and restoration of habitat, protection and restoration of coastal biodiversity, and protection of coastal dependent uses. Improved and consistent enforcement of existing coastal zone regulations was encouraged, in addition to a call for the use of scientifically supported coastal conservation policies.

Unfortunately, even with this level of awareness, Michigan's coastlines are still at risk. With multiple state agencies and units of government overseeing numerous programs that have a connection to Michigan's coastline, there is a risk of fragmentation and inconsistent policies, priorities and strategies to protect coastal resources. Decisions about development within Michigan's coastal communities are made at the local government level by over 400 independent jurisdictions and entities—many of which have no professional planning expertise and lack the capability to fully assume the huge responsibility they bear for safeguarding the rare coastal resources of the Great Lakes.

Unique Coastal Habitats and Economies Are Under Pressure

Losses of coastal wetlands are already close to 95% in counties near Detroit and Saginaw Bay. Development also threatens the variety of species, or the biodiversity of species in coastal areas. The Nature Conservancy notes that coastal dunes contain the most diversity of any ecosystem in the Great Lakes. Unfortunately, the dune system that stretches from Berrien County up through northern Michigan coastal counties is increasingly fragmented due to increased development, Large lots are split and new development occurs; and large permanent homes replace decades-old shoreline cottages, leaving larger environmental "footprints" on the landscape. Less habitat for certain species in the dunes means that some species will either die out or relocate, leaving a less diverse set of plants and wildlife and weakening important interconnections within the shoreline coastal dune system.

Unmanaged growth can be especially harmful to unique and fragile coastal resources. This kind of development fragments critical coastal habitat, displacing plants and wildlife, impairing entire ecosystems, and may lead to the extinction of species. Degradation and loss of habitat are leading causes in the loss of plant and wildlife species. Coastal habitats such as wetlands and marshes are important transitional areas between the water and land, and provide important spawning areas and nurseries for many species of Great Lakes fish.

Natural features are not the only victims of sprawl. Economic sectors feel strain as well. Agriculture is a longstanding feature of Michigan's Great Lakes coastal regions. Traditional farming provides a variety of benefits to coastal communities: Locally grown foods, open green space, land areas for rainwater and snow to recharge groundwater supplies, and habitat for plants and wildlife. Agricultural areas in Michigan, including those in coastal communities, however, are giving way to subdivisions and sprawling development at the rate of 38,900 acres per year, according to the American Farmland Trust. Many of Michigan's leading crops, such as cherries, peaches, blueberries, apples, and asparagus are grown in the rare microclimates found only in Michigan's coastal communities. Loss of these farmlands to sprawling development means fewer locally grown fruits and vegetables, and economic shortfalls within coastal communities and in the state.

Coastal Development Threatens Water Quality

The trend of low-density development on Michigan's coast also contributes to water pollution. The spreading of built surfaces across a watershed means more runoff, or nonpoint pollution, from impervious or hard surfaces such as parking lots, roads, driveways, and buildings. This is a leading source of pollution to rivers, streams, and lakes, degrading water quality by adding pollutants such as oil, grease, chemicals and dirt and debris. Large amounts of runoff can also cause erosion and raise the temperature of rivers and streams to unhealthy levels for fish and other aquatic animals. Allowing stormwater to run off into waterways instead of filtering into the ground decreases recharge to important groundwater aquifers, many of which are sources of drinking water.

Taking Stock of Coastal Assets: Four Communities

Michigan has had the foundation of a coastal conservation policy since the passage of the Great Lakes Shorelands Act in 1970, and following that, the Sand Dune Protection and Management Act, Goemaere Anderson Wetland Protection Act, and other state laws. Michigan's Coastal Management Program [now housed in the Environmental Science and Services Division of the Department of Environmental Quality] provides considerable support to many regional and local initiatives. That support includes research; updating of master land use plans and zoning in coastal communities; and production of planning guidebooks, educational materials and workshops. Additional efforts specific to coastal areas, such as the Michigan Dune Alliance's analysis of threats to Lake Michigan dunes and the establishment of the Detroit River International Refuge, have also been initiated to address the growing threat to coastal resources from land use.

Coastal land use again became the subject of controversy in the late 1990s, with a proposal to establish a network of wells along the Lake Michigan shoreline in order to directionally drill for oil and gas under the lake bottom. Michigan citizens were adamantly opposed to the practice; new directional drilling under the Great Lakes was eventually banned by the state legislature in 2001. However, the issue raised concern about the status of information on coastal resources and the state's policies regarding their protection.

The Michigan Environmental Science Board, charged by former Governor Engler to assess the impacts of directional drilling impacts on Great Lakes shorelines, found no comprehensive environmental inventories of coastal resources to delineate sensitive areas where drilling should not take place. The coastline became a state focus yet again in 2004 with a challenge to the legality of walking Great Lakes beaches, which was upheld by the Michigan Supreme Court in 2005.

2005 witnessed an increased focus on the resource impacts of Great Lakes water withdrawals and diversion, sparked largely by the establishment of water bottling facilities in Mecosta County. That facility, withdrawing groundwater, impacted local wetlands and surface water. Additionally, a resurgence of algal "blooms" in inland and near-shore waters of the Great Lakes in the summer of 2005 renewed interest in increasing protection for coastal resources from development and phosphate-based fertilizers.

Community Level Participation

Based on these issues, and coupled with the Michigan Environmental Council (MEC)'s ongoing work through the "Smart Growth for Clean Water" efforts launched in early 2005, the group initiated a new project that same year to build on increased statewide attention to coastal resource issues.

In partnership with local groups, MEC gathered information in order to obtain fresh viewpoints regarding current coastal concerns. MEC involved its member groups and other organizations in four communities, Muskegon, Petoskey, Monroe and Grosse Pointe Farms, considered fairly representative of the types of communities

on the coastline of the Lower Peninsula. Those who participated included a combination of member organizations and other groups in Michigan's coastal areas, and reflected an array of capabilities, interests and approaches.

MEC and its partners solicited anecdotal local input on coastal land use concerns or utilized current management and planning documents in order to plan public forums to gather more specific feedback. The results suggest:

1. *Coastal communities demonstrate a high interest in coastal protection*

Attendance and participation at the coastal forums demonstrated a strong interest from citizens, groups, and local officials in protecting Michigan's coast, and considerable enthusiasm for undertaking local protection efforts. During presentations and discussions, participants of all forums stressed the need to expand educational efforts and increase the amount of citizen involvement in coastal protection programs. Many attendees had been unaware of the specific land use issues facing coastal areas, and suggested a broader awareness effort aimed at publicizing coastal protection needs and initiatives. One representative of a local group commented: "We need to get better at reaching people 'in the middle.'" Others said, "We need savvy environmental education to grab people's attention, draw them in and get them connected."

2. *Coastal communities share common land use concerns.*

There have been sharp differences in the way development on the east and west coastlines of Michigan has occurred. Because the east coastline was developed earlier in the state's history, there tends to be more industrial development located, in many cases, directly on shoreline properties. While there has been some industrial development along the west Michigan coastline in places such as Muskegon, more of the shoreline has been developed as urban areas, rural communities, and tourism destinations.

Information from the surveys and forums shows that even though a few coastal communities have specific issues not shared by the entire coast, such as flooding in eastern Michigan that they share far more in common. Examples include, loss of wetlands and coastal habitats, stormwater runoff, and lack of land use planning coordination across jurisdictions. There was a high degree of concern for the loss of coastal wetlands and a sense of urgency to protect remaining wetlands. In Monroe and Grosse Pointe Farms, in particular, specific coastal wetlands were identified as needing immediate attention such as restoration and/or protection measures. Reducing stormwater runoff to improve water quality was the primary land use issue discussed in the Petoskey forum, but also was a top concern in the other three forums and tied to other issues raised, such as bacterial pollution.

These concerns will likely need to be addressed before long since many coastal communities face the prospect of meeting the requirements of the federal Clean Water Act's Phase II rules and reducing stormwater runoff from municipal sewer systems and construction and industrial sites. Improving the coordination of planning between jurisdictions was one solution commonly agreed upon in all the forums that would assist in addressing all of the issues raised relating to coastal land use. In Muskegon, for example, forum

participants pointed to the Muskegon Area Wide Plan as a notable success in achieving land use coordination among the county's jurisdictions and as one way that coastal land use could be improved.

3 *Public awareness of the impact of land use trends is growing, but understanding of Smart Growth strategies and tools lags behind.*

Overall, there was a noticeable level of public awareness of the adverse impacts of current land use trends, mostly evident in communities with active citizens and community groups. Although it varied depending on the particular forum audience, those communities with local or regional land use planning efforts under way also appeared to have higher levels of land use knowledge. There seemed to be an understanding that unchecked development was the root cause of many concerns in the coastal communities, however, knowledge of the methods for better managing growth in coastal areas was not as evident.

4. *Coastal community conservation and environmental organizations provide a valuable "infrastructure" for implementing improved coastal resource protection.*

A number of the groups (and individuals) participating or involved in the project had not been actively involved in either land use or coastal issues prior to the forums, so the issue of coastal land use was relatively new. However, those groups were able to see new connections between the issues they had traditionally worked on, such as water quality and open space protection, and coastal land use trends and issues. Beyond these newer groups, there are a number of community organizations that already have a strong interest and programming related to land use planning and sprawl. Combined, this makes for a viable community level network through which to work toward improved coastal land use.

5. *Communities support increased coastal protection measures and increased state level coordination.*

A frequent comment on surveys and at the forums focused on support for increased protection of Michigan's coastlines through a more coordinated state approach. A majority of respondents in the Muskegon and Monroe surveys recommended that the state adopt a coastal land use policy, saying it would "increase continuity among land use in neighboring communities," "focus attention on the issue and coordinate efforts and regulations throughout the state," and "provide equal protection of the shoreline around the state and not just where there might be strong local ordinances."

One respondent noted: "Local government is too easily swayed." The need for a more coordinated approach to coastal protection at the state level was noted by speaker Mike Klepinger of Michigan Sea Grant at the Lake St. Clair forum, who suggested that the state at minimum adopt land use guidelines for use by local authorities along the extensive coastline. This could be accomplished by consensus through a series of facilitated local public forums.

Coastal Land Use Forums

Working with MEC, the partner groups coordinated public forums to expand on the issues and concepts identified through informal surveys or management plans.

Muskegon

Coastal land use issues identified in Muskegon included degradation and loss of coastal wetlands, invasive species, protection of groundwater, and concerns relating to development and mining in coastal dunes. In West Michigan, threats to coastal dunes from development and mining were a high priority. (Dunes along Lake Michigan stretch from Illinois and Indiana, up along the coastline in northern Lower Michigan.) Construction in the dunes disrupts sensitive "microclimates," can cause erosion, and displace wildlife. Sand mined from coastal dunes is used mainly in foundries to make castings for the automotive industry. The dunes issue in Muskegon was underscored by a long term and ongoing high profile sand dune mining case and several dune development proposals.

Matt Cooper, scientist from Grand Valley State University's Annis Water Resource Institute, explained the values of coastal wetlands and described his research on the effects of development on coastal wetlands. Preliminary findings indicate degradation to wetlands from adjacent development. Groundwater quality and quantity was also a topic of interest in Muskegon, where historical industrial contamination has impacted drinking water sources, eliminating some aquifers from use. Because of this, stormwater runoff problems caused by increased development in the area are a concern, as loss of recharge could further reduce groundwater supplies. Non-native invasive plants and aquatic species were also highlighted as a top land use concern. Recommendations from forum participants focused on ensuring local government support for the Muskegon Area Wide Plan (a countywide Smart Growth effort), strengthening local zoning, and promoting a broader overall education focus, to highlight the economic and quality of life benefits of the coast.

Petoskey

The primary focus in Petoskey was on the problem of stormwater runoff, one of the top priorities of the Little Traverse Bay Watershed Management Plan. Attendees of the northern Michigan event discussed the issue and over 20 specific recommendations in the management plan to address stormwater and improve zoning. Forum participants advocated for increased citizen activism in the area, improving communications with regulatory agencies and developers, and promoting education about protection measures and alternative approaches to protecting water and land resources.

Monroe

The Ecology Center solicited coastal land use concerns through an Internet survey and also coordinated a public forum in Monroe to focus on land use concerns related to Lake Erie. The main topics were Monroe County coastal issues and topics specific to the Detroit River International Wildlife Refuge, which encompasses a considerable section of the area's coastline. Monroe County's draft comprehensive coastal management plan was highlighted. It showed the high diversity of the coastline

and numerous ecologically significant areas identified for future restoration and protection efforts. The Detroit River International Refuge, at the intersection of two major migratory bird flyways – the Atlantic and Mississippi flyways, was highlighted as major effort to protect coastal habitat, especially since Monroe County and southern Wayne County have been singled out as important for the birds, fish, wildlife, habitat and economies they support. Forum recommendations focused on the need to strengthen the capacity of local environment and conservation organizations and increase citizen participation in coastal land use issues.

Grosse Pointe Farms

Hosted by Clean Water Action, this forum focused on coastal issues identified in the Lake St. Clair Comprehensive Management Plan. Topics included habitat conservation and restoration, stormwater management, shoreline sedimentation and accretion, and tools such as local ordinances, conservation easements, native landscaping, and environmentally friendly lawn care.

Participants noted that specific coastal ponds in Grosse Pointe Farms were immediately threatened, observing that a local "emblem" for the community, the frog, was threatened as the community's frog population declines due to loss of wetlands.

The forum also highlighted Michigan Sea Grant's study of coastal community planning, and presented ways in which local government could fill the gaps in protection. Noted especially at the Lake St. Clair forum was the need for stronger efforts at the community level. For example, passage of wetland and buffer ordinances, conservancy millages, and countywide fertilizer ordinances, and programs such as the Lake Safe Lawn Care sticker program, which helps to identify fertilizers that do not harm water quality.

Participants in the forum recommended stronger local programs and ordinances, increased enforcement of coastal protection measures, and improved coordination of local efforts with state level programs.

Rising to the Challenge: How Can We Improve Coastal Development in Michigan?

Michigan has had the good fortune of hosting many visionary leaders who have helped to establish key legislation and programs focused on preserving important coastal assets, including laws to provide protection for sand dunes, wetlands, inland lakes and streams and shorelands. Michigan is a longtime participant in the federal Coastal Zone Management Program, and receives almost $3 million annually in federal funds for coastal programs, much of which is redistributed to coastal communities for projects intended to protect, conserve and appropriately develop coastal resources. Acquisition and protection of coastal areas is also a priority for the state's Natural Resources Trust Fund, as applications with Great Lakes shoreline are given priority for funding.

On a broader scale, it is clear that improving land use in Michigan is becoming a high profile topic and numerous local and regional "Smart Growth" efforts are underway.

Many local governments rely almost solely on so-called "large lot zoning" (i.e., one or

two acres required for each new residence) as a means of protecting water quality. New research from the U.S. Environmental Protection Agency (EPA) shows that relying only on low-density development to accommodate new growth can be worse for water quality than providing a mix of high-density development coupled with open space protection.

New research from the EPA about the use of large lot zoning should be studied for its implications in Michigan. The premise of the new research is that requiring large lot development does not address the issue of population growth, as development pressure continues in a region. When large lots are cleared and compacted and planted with lawns and outbuildings, as often happens in Michigan, zoning ordinances based on minimum lot sizes can actually increase the amount and extent of impervious surfaces. This interrupts the naturally functioning water filtration process and makes stormwater nearly impossible to plan for and manage.

As these impacts spread out throughout each watershed, they can result in approximately three times more runoff across a watershed than that from high-density development coupled with the use of open space protection measures. This suggests that communities would be better served by planning for higher density developments with open space protection throughout an entire watershed.

The EPA examined stormwater runoff from three hypothetical communities with different development densities (one house per acre, four houses per acre, and eight houses per acre) to determine the comparative differences.
This analysis demonstrated:

- The higher-density scenarios generate less storm water runoff per house;
- For the same amount of development, higher-density development produces less runoff and less impervious cover than low-density development; and
- For a given amount of growth, lower-density development impacts more of the watershed.

"Taken together, these findings indicate that low-density development may not always be the preferred strategy for protecting water resources. Higher densities may better protect water quality (with proper open space planning)—especially at the lot and watershed levels. To accommodate the same number of houses, denser developments consume less land than lower density developments. Consuming less land means

creating less impervious cover in the watershed. EPA believes that increasing development densities is one strategy communities can use to minimize regional water quality impacts." (From USEPA, Protecting Water Resources with Higher-Density Development, 2006)

Another key land use tool and important complement to the use of higher density development with open space protection is the maintenance of "green infrastructure" and use of an approach to stormwater management termed "Low Impact Development," or LID. Green infrastructure is the "natural" infrastructure consisting of open space, fields, and wetlands that provide important functions related to stormwater runoff, such as infiltration sites for groundwater recharge and filtering of pollutants. LID approaches attempt to coordinate human needs with natural hydrology by allowing precipitation and the resulting runoff to filter through the ground rather than being channeled off to waterways by traditional stormwater conveyances. LID relies on the maintenance of green infrastructure, wetlands and native plant species, and use of techniques such as bioretention systems, rain gardens, and permeable paving materials.

Recommendations for State Policy Makers

Based on the input received at the MEC coastal land use forums and through interviews and research conducted with partnering organizations, sponsors and speakers, MEC developed the following set of recommendations we believe should be considered by state and local leaders:

1. Update and revive the 'environmental areas' clause of the Great Lakes Shorelands Act to reestablish existing designations and designate new "environmental areas" where shoreland marshes and fish and wildlife habitat should qualify for protective use regulations. Conduct the comprehensive coastal inventories recommended by the Michigan Environmental Science Board to ensure the delineation of sensitive coastal assets. (DEQ Coastal Management Program)

2. Implement the Michigan Land Use Leadership Council recommendations regarding coastal resources and protection, including developing state land use goals, visions and tools to curb sprawl and manage growth. Coordinate a series of goal-setting forums around the state to gather public input. (Legislature, Universities)

3. Create and maintain a coastal resource repository of studies, programs, and projects relating to the state's coastal resources in order to have a "one-stop" clearinghouse for citizens, groups, elected officials and local governments on current coastal statistics, trends and programs. (DEQ Coastal Management Program)

4. Create a standing committee to improve coordination between the land use, water quality, coastal protection and open space preservation programs, including Coastal Management Program, CREP, Trust Fund, 319, CMI, Water Bureau, Total Maximum Daily Loads (TMDLs), Soil Erosion and Sediment Control (SESC), Compliance and Enforcement, Surface Water Assessment, Monitoring, the Clean Water State Revolving Loan Fund, Strategic Water Quality Initiative Fund programs, and Wetlands Protection. (Governor)

5. Implement proposed expedited permit category for voluntary wetland and ecological restoration projects, in partnership with Ducks Unlimited, Inc., DNR, MDA, U.S. Fish and Wildlife Division, and the NRCS. (DEQ Land and Water Management Division)

6. Update the Nonpoint Source (NPS) Management Plan as recommended by the NPS Reengineering Committee. The updated plan should be developed by December 2006 and updated every five years thereafter. It should include a description of the NPS priorities for long-term resource allocation, coordination with other programs, and the prioritization of enforcement activities in relation to local assistance programs. (DEQ Water Bureau)

Recommendations for Local Government and Community Leaders

1. Organize/assist with citizen forums to formulate state land use goals for the coastline; review coastal land use goals of other states. (MEC, environment and conservation organizations, universities.)

2. Designate targeted priority growth and open space protection areas to help guide growth and ensure permanent protection and public access to waterfront areas. (Local government)

3. Establish a local water users committee to evaluate the status of current water resources, water use, and trends within the watershed, and assist in long-term water resources planning to limit subsurface water withdrawals and protect coastal resources. A water users committee may be composed of all registrants, water withdrawal permit holders, and local government officials within the watershed. (Local government)

4. Enact Smart Growth planning tools such as mixed-use zoning, Planned Unit Developments, Low Impact Development, and other techniques to direct most new growth into areas with established infrastructure (for example, infill development, brownfields). Examine the potential for cooperative planning agreements with neighboring jurisdictions to coordinate planning and land use ordinances with regional targets for coastal development, public access and resource protection. (Local government)

5. Undertake community education efforts to protect local coastal resources. Create and transfer educational programs related to storm drain dumping, pesticide and herbicide application, phosphate reduction, water conservation, and "green" landscaping, i.e., use of native plant species, creation of rain gardens. (Community and watershed organizations)

6. Enact comprehensive coastal protection ordinances. (Local government) *See Appendix.

Recommendations for Additional Research

Continue to support research on the effects of current and future development on coastal resources. Legislature (funding), DEQ Coastal Management Program, (guidance), Universities (research).

Conclusion

There is no question that Michigan's Great Lakes coastline is an exceptional asset to the state, its citizens, the economy, and overall quality of life. The state is fortunate to have a strong beginning framework for addressing coastal protection, active public interest in improving statewide land use decision-making, and engaged and informed citizenry and groups who are willing to do the work necessary to improve decision-making specific to coastal resources. More is needed, however. Gaps in the framework need to be filled, statutes need to be enforced, and a more coordinated, comprehensive state-level focus on coastal assets should be built upon the existing framework.

Advocates must continue to focus on coastal land use issues, regional growth strategies, and influencing state-level policy on land use in order to promote a stronger focus on coastal policy and protection. The work of the Coastal Management Program to stimulate and support coastal initiatives, training and programs must continue and be strengthened. Most importantly, funds to support existing programs within the Michigan Department of Environmental Quality must be maintained and increased if possible, in order to ensure the effective implementation of existing coastal initiatives and the adoption of new strategies deemed essential for protection of Michigan's precious coastal resources.

Partners

Muskegon County Environmental Coordinating Council (MCECC) was established and administered by the local Chamber of Commerce after a countywide visioning process in the late 1980s. Made up of local government officials, consultants, lawyers, environmental and conservation groups, and the county health department, the group is now a private nonprofit organization, with one part-time staff person. It prefers an educational approach and has implemented several small projects, such as developing and disseminating a recycling brochure. www.mcecc.org

Timberland Resource Conservation and Area Development Council (Timberland) is housed in an office in Comstock Park, near Grand Rapids, but its service area encompasses eight counties, several along West Michigan's coastline. It is a public/private nonprofit organization, organized under USDA. The organization implements numerous local and regional projects, relying on a small staff and collaborating organizations. In Muskegon it provides staff support to the Muskegon Lake Public Advisory Council.
www.natureandpeople.org

Tip of the Mitt Watershed Council (TOTMWC), a member of MEC, focuses on protecting Northern Michigan's waterways and has a sizeable professional staff, technical expertise, and a strong policy presence at the state and regional levels.
www.watershedcouncil.org

Pickerel-Crooked Lakes Association, co-host of the Little Traverse Bay/Petoskey forum, is an all-volunteer lakes association that works to protect Pickerel and Crooked Lakes primarily through educational efforts. The group has also been involved in preservation efforts, working in partnership with local land trusts.
www.northquest.com/pcla

Ecology Center, a member of MEC, is a long standing, well-staffed advocacy organization with a strong local and regional

focus on grassroots community organizing around the issues of environmental justice, health, toxics, automobiles and land use. The land use focus has primarily been in Washtenaw County; attempts to organize on the eastern coastline are relatively recent. www.ecocenter.org

UAW Region 1A Toxic Waste Squad was a co-sponsor of the Lake Erie/Monroe effort and assisted in publicizing the survey and forum. It is a committee formed under the auspices of UAW Region 1A Director, Jimmy Settle, and housed in the offices of Local 898 in Ypsilanti to advocate on behalf of concerns of local UAW members on issues related to toxic waste. The committee is composed of representatives of local unions within Region 1.

Immaculate Heart of Mary Office of Justice, Peace, and Sustainability, Sisters of the Immaculate Heart of Mary, hosted the Lake Erie/Monroe forum at their Motherhouse. The Sisters at IHM have had a long history of work in the peace and justice movement and in 2003, completed a renovation of theirs Motherhouse with sustainability as a guiding concept.

River Raisin Institute, a co-sponsor of the survey done for the Lake Erie/Monroe area and co-host for the forum was organized by the IHM Sisters in 2004 to focus on local educational and sustainability programming. It has a full-time executive director and part-time administrative staff and is housed in the IHM Sisters Motherhouse in Monroe.

Clean Water Action, a member of MEC, is a national organization with several program offices in Michigan, including one located in Clinton Township whose staff participated in this project. The group has professional and organizing staff, a strong grassroots organizing approach for water issues, and a significant emphasis on promoting state and national policy reforms. www.cleanwateraction.org/mi

Macomb County MSU Extension Office, was a co-host of the Lake St. Clair/Grosse Pointe Farms forum. Extension agent Terry Gibbs served as facilitator for the forum. MSU Extension offices are an extension of MSU and are established at the county level to provide educational programming on agriculture, natural resources, children, youth and families, and community and economic development.

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