

APPENDIX S: SHORELINE PROTECTION

PROVIDED BY: JIM LIVELY, AICP

MICHIGAN LAND USE INSTITUTE

PHONE: (231) 882-4723

DATE: AUGUST 2001

Model Language to Assist Local Governments in Adopting a

GREAT LAKES SHORELINE PROTECTION OVERLAY ZONE

A shoreline protection overlay is a set of special development considerations adopted by a local planning commission. It does not alter the underlying zoning. The overlay simply sits on top of the existing ordinance's land use requirements, and only applies in a legally defined shoreline zone. A shoreline overlay is a way for coastal communities to use existing zoning to 1) protect coastal property values by maintaining the attractive natural character, 2) prevent water pollution and damage to buildings by controlling erosion and 3) maintain the high quality of life on the shoreline by maintaining native vegetation and wildlife habitat.

A companion booklet titled "Yours to Protect - A Guide to Sensitive Shoreline Development" explains why a coastal community should adopt the components of this ordinance. It addresses the concerns of shoreline property owners, as well as how these regulations fit with other state and county regulations. It also details how to adopt an overlay amendment to an existing ordinance. If you would like a copy of this guide, contact the Michigan Land Use Institute.

Any model ordinance should only be considered as a template to assist a local government interested in adopting additional zoning provisions. It is generally not recommended to adopt entire model ordinance language verbatim - instead it should be used as a starting point. Most of the recommendations in this ordinance come from other communities where they have been successfully implemented into their local zoning ordinance. This document includes specific legal language that could be incorporated into a zoning ordinance. It also contains instructions, printed in italics, to help better understand how to adopt these provisions.

CONTENTS

I. 'DEFINITIONS' ARTICLE — Insert unique shoreline definitions, included in the overlay language, into your zoning ordinance's 'Definitions' article.

II. 'DISTRICT AND MAPS' ARTICLE — Add the shoreline protection overlay boundary into your 'Map' article.

III. 'GREAT LAKES SHORELINE PROTECTION OVERLAY ZONE' ARTICLE
Add a new article to your ordinance called 'Great Lakes Shoreline Protection Overlay Zone' as a new zoning district. This is 'model' language that communities should use as guiding principles.

IV. 'SITE PLAN REVIEW' ARTICLE — If your township already has a site plan section, it might be best for local officials to put the shoreline site plan review process additions into your existing site plan review article. These additions will simply supplement the existing language in the Site Plan Review section of your ordinance, to protect your community's valuable coastal resources.

ARTICLE I. DEFINITIONS

When adopting any technical zoning amendment it is important to include definitions of any terms introduced that have specific legal meaning. If those terms are not currently included in the definitions article of the existing ordinance, they should be added. The terms listed below are some that may be included in a shoreline overlay, and should be defined by the local community and added to the ordinance.

Foredune Crest

A foredune is the first dune landward of the ordinary high water mark, generally not stabilized with mature vegetation. The crest of the foredune is the highest elevation, and frequently changes over time due to wind erosion.

Mature Forested Vegetation

This can be defined as trees, generally grouped or in a line, of a minimum diameter at breast height (dbh). A dbh of 4 inches is a reasonable minimum size for most mature forested vegetation.

Ordinary High Water Mark

The ordinary high water is established legally by the U.S. Army Corps of Engineers for all of the Great Lakes. The 1986 lake level is generally considered the most reasonable high water mark to use for legal definitions.

Principle Structure

A principle structure is generally considered the structure necessary for the land use for which a permit is being requested, usually a house or commercial building. It is distinguished from accessory structures, which may include garages, sheds, storage buildings, or equipment structures.

Steep Bluff

A bluff is generally comprised of unsorted glacial till (sand, gravel, clay and cobbles) that rises from the beach. A minimum height for a bluff from the beach to the crest, is usually at least 10 feet. It may also be useful to define a minimum slope for a bluff to be considered steep. A slope of 25% may be a reasonable minimum, although bluffs are frequently much steeper.

ARTICLE II. DISTRICTS AND MAPS

An overlay zone boundary is an area that is specifically mapped out and zoned with extra protective measures that coastal communities use to safeguard unique shoreline resources. The overlay zone boundary describes the geographic area in which the shoreline protection overlay requirements apply. The boundary shall be clearly drawn on the official zoning district map.

There are two approaches a township can implement into their zoning ordinance when creating a protective overlay zone boundary, which are described below. Be certain to only include the language from the boundary type selected.

Option 1: Resource-Based Variable Shoreline Protection Overlay Boundary

A resource-based variable boundary is a line based on a scientific inventory of natural shoreline features, such as wetlands, dunes, bluffs, critical habitat, etc. The resource-based variable boundary approach maps all important shoreline resources, and establishes the boundary line sufficiently landward of them (approximately 200 feet) to ensure that any development near these resources is within the overlay boundary.

Also, the resource-based variable boundary excludes areas that may be closer than 500 feet from the shoreline, if the area is less sensitive. The local unit of government generally conducts the resource inventory with the assistance of a qualified naturalist or biologist. This approach is more expensive, and requires more complex mapping, but is also more effective at protecting the resource, and fair to the property owner.

1. The Great Lakes Shoreline Protection Overlay Zone includes all land lying within the boundary depicted on the Official Zoning Map for (*insert local government name*). This boundary extends across all underlying zoning districts. The boundary was established based on a scientific inventory of coastal resources, which is available for review at the government office. The boundary is set at least 200 feet back from any sensitive resource, as delineated in the inventory.

Option 2: Fixed-Distance Shoreline Protection Overlay Boundary

A fixed-distance boundary is a line that is drawn parallel to the shoreline or ordinary high water mark at a fixed distance. It should extend across all zoning districts along the Great Lakes shoreline. The distance a community selects is discretionary, although 500 feet is generally recognized as a minimum distance to protect coastal features. This one-distance-fits-all boundary may leave some valuable shoreline resources unprotected if they fall further than the fixed distance from shore. However, this is the simplest and most inexpensive approach to establishing a shoreline overlay boundary.

2. The Great Lakes Shoreline Protection Overlay Zone includes all land lying within 500 feet of the 1986 U.S. Army Corps of Engineers High Water Mark, and as depicted on the Official Zoning Map for (*insert local government name*). This boundary extends across all underlying zoning districts.

ARTICLE III. GREAT LAKES SHORELINE PROTECTION OVERLAY ZONE

Section 1.1 Purpose and Intent

*When adopting shoreline protection zoning provisions, the community should clearly identify the goals and purpose of the new regulations. Ideally, the community master plan describes and supports the purpose statement for new zoning regulations. **If supporting language for shoreline protection is not contained in the community master plan, an amendment to incorporate it is recommended.** The language below describes many of the attributes shoreline communities value, but the wording that your community adopts should reflect local interests and issues.*

1. The provisions of the Great Lakes Shoreline Protection Overlay Zone are intended to protect the unique and sensitive natural environment of the lake shore areas adjacent to the Great Lakes in *(insert local government name here)*. Its purpose is based on the recognition that:
 - a) The economic and environmental well being and health, safety, and general welfare of *(insert local government name here)* is dependent on, and connected with the preservation of its Great Lakes shoreline areas;
 - b) The shoreline zone has unique physical, biological, economic, and social attributes;
 - c) Future land development and redevelopment should not be conducted at the expense of these attributes;
 - d) Property values will be enhanced when the natural features of the shoreline zone are preserved;
 - e) Pollution, impairment or destruction of the shoreline area and the adjacent bottomlands and waters of Lake should be prevented or minimized.

Section 1.2 General Requirements

This section describes the general requirements for conducting any land use changes in the Shoreline Overlay Zone. It gives the local zoning authority significant assurance that all other agencies have approved the necessary environmental reviews. This section allows local zoning officials to adopt the conditions of any other approved permits as a part of their own zoning permit approval. This means that if any other reviewing agency, such as the County Health Department, Michigan Department of Environmental Quality, or Soil Erosion Inspector places conditions on the approval of their permit, the local government can also enforce those same conditions as their own. This allows the local government to enforce the conditions of these other permits, which may be important in instances where state or county enforcement is not adequate.

1.2.1 Allowable Uses

1. All uses allowed in the zoning districts of this ordinance shall comply with the standards set forth in this section regulating activity within the Shoreline Protection Overlay Zone. These requirements shall be considered in addition to use restrictions or other applicable regulations for each zoning district. These requirements only apply to properties that fall within the Shoreline Protection Overlay Zone, as described in Article II and shown on the zoning districts map.
2. In the event that regulations imposed by this ordinance conflict with regulations of an underlying zoning district, the regulations established by this ordinance shall prevail to the extent of the conflict and no further.

ARTICLE III: CON'T

1.2.2 Requirements to Receive Land Use Permit

1. Prior to any construction, earth moving or removal of vegetation within the Great Lakes Shoreline Protection Overlay Zone, and **prior to the issuance of any Land Use Permit**, all of the following criteria must be met:

- a) A site plan meeting the requirements outlined in Article IV shall be submitted to the Zoning Administrator;
- b) A land use permit shall be withheld pending verification that the applicant has received all required county, state or federal permits, including but not limited to septic and water well permits; soil erosion and sedimentation control permits; wetland permits; flood plain and culvert permits; driveway permits; or building permits.
- c) This ordinance is intended to supplement, and not abrogate, the Michigan Department of Environmental Quality's authority over the review of applications and issuance of permits for construction activities under the provisions of the Sand Dune Protection and Management Act (Part 353, Natural Resources Environmental Protection Act, MCL 324.35301 et. seq); the Shore Lands Protection and Management Act, (Part 323, Natural Resources Environmental Protection Act, MCL 324.32301 et. seq.), the Endangered Species Protection Act (Part 365, Natural Resources Environmental Protection Act, MCL 324.36501 et. seq.), and the Wetland Protection Act (Part 303, Natural Resources and Environmental Protection Act, MCL 324.30301 et. seq.). If a permit or approval has been issued by the State of Michigan for a building, structure, or any grading, filling, earth moving, clearing, or removal of vegetation within the jurisdiction and scope of regulations set forth above, a copy of such permit shall be filed with the Zoning Administrator, and such permits or approvals shall be attached to and made a condition of performance for any permit issued under this Ordinance;

2. If all of the conditions above are met, a land use permit for the proposed activity shall be approved according to the requirements and standards of this Ordinance.

Section 1.3 Setback Requirements

The setback requirements suggested below are dependent on the shoreline resources found on the property. The shoreline type could be delineated and mapped by a Coastal Resource Inventory, and more specifically located on the applicant Site Plan. If a local government has not conducted a Coastal Resource Inventory, the burden to identify and delineate shoreline types and boundaries falls on the landowner applicant, who may need to contract for professional assistance.

1. All structures proposed to be built within the Great Lakes Shoreline Protection Overlay Zone shall be set back according to the requirements below, except for the following uses: pump houses, recreational docks, storm water and erosion control devices, picnic tables, benches, recreational watercraft, and stairways and walkways.
2. Within the Shoreline Protection Overlay boundary, the following setback requirements apply:
 - a) No structure shall be allowed within 75 feet of ordinary high water mark;
 - b) On lots with a line of mature forested vegetation within 100 feet of the ordinary high water mark, the lakeshore side of the principal structure shall be set back at least 20 feet landward from the edge of predominantly forested vegetation;

- c) On lots lacking a line forested vegetation within 100 feet of the ordinary high water mark (rocky or sandy beaches), all structures except those specifically exempted above shall be set back 100 feet from the 1986 High Water Mark.
 - d) On lots with a foredune, no structure shall be constructed within 25 feet of the crest of the first lakeward sand dune;
 - e) On lots with a steep bluff which begins within 100 feet of the 1986 High Water Mark all structures shall be set back at least 50 feet from the top of the bluff;
 - f) On lots with coastal wetlands, a setback of 75 feet shall be maintained from the wetland's edge.
3. If a greater setback is required under the provisions of any state or federal law than is required by this section, then such greater setback requirement shall apply. Where the imposition of the setbacks in the above table precludes the location of a dwelling or other primary structure, the applicant may request a variance. Any variance must be obtained from the Zoning Board of Appeals in accordance with Article (insert applicable number). **No variance shall be granted for any use or structure in violation of the intent and purpose of this Article.**

Section 1.4 Coastal Vegetative Buffer Zone Requirements

Maintaining a natural strip of vegetation along the shoreline is very important to maintaining the aesthetic character and ecological integrity of the shoreline. However, to be effective, it requires that property owners be made aware of the benefits of the buffer to prevent future vegetation removal. These provisions, while extremely important, are difficult to enforce over time. A local government should consider working with other local landowner education organizations to maintain an educational campaign about the benefits of vegetative buffers.

- 1. Vegetative buffer zones protect water quality and shoreline habitat, preserve scenic and aesthetic character, and control erosion and flooding. To preserve the fragile and transient nature of the coastal environment, a Coastal Vegetative Buffer Zone shall be maintained 100 feet landward of the 1986 Ordinary High Water Mark. The vegetated zone with native shoreline species shall serve as a natural transition between the shoreline and adjacent upland development.
- 2. Within the Coastal Vegetative Buffer Zone, natural vegetation shall be retained in a natural, undisturbed condition. Only minimal alteration of vegetation using selective pruning or thinning techniques necessary to obtain a view of the water shall be acceptable. Removal of trees, shrubs, ground cover and other native vegetation shall require review and approval of the Zoning Administrator to ensure impacts to the coastal resources are minimized.
- 3. The following standards apply to the Shoreline Setback Zone:
 - a) Vegetation removal shall be limited to that amount necessary for the development of the site. Protection of tree crowns and root zones shall be required for all trees planned for retention;
 - b) Vegetation shall be restored in areas affected by construction activities. New vegetation must be indigenous to the Great Lakes shoreline. Temporary vegetation, sufficient to stabilize the soil, may be required on all disturbed areas as needed to prevent soil erosion. To stabilize soil with root structures, stumps of trees cleared or harvested must remain undisturbed in the ground
 - c) Tree removal shall be limited to removal of fallen, dead or dangerous trees and selective cutting of trees (trees removed must be at least 10 feet apart) to provide a filtered view of the water. Cutting of trees on the parcel is limited to 30 percent, but clearings must be limited to 30 feet per 100 feet of the shoreline width. Those trees to be removed shall be so identified and approved by the zoning administrator.
- 4. In cases where native vegetation does not exist within a buffer zone, the landowner is encouraged to replant the buffer zone with native plant species.

ARTICLE IV. SITE PLAN REVIEW

Property owners already prepare site plans for other local officials, such as the county sanitarian and the soil erosion control officer. To protect valuable views and fragile shoreline resources, however, it is important for property owners within the Shoreline Protection Overlay Zone to conduct a more thorough site plan review. Such a site plan would map out where the applicant proposes to place structures, where there are plans to clear vegetation, where the unique natural features on the property are located, details of grading plans etc. The Site Plan requirements for residential applicants are not designed to be burdensome to the applicant, but are meant to give the zoning administrator or planning commission enough information about the intended activity to ensure that the natural integrity of the shoreline is protected.

Usually, commercial, industrial and other special uses are required to undergo a site plan review process. The shoreline protection overlay recommends that residential land uses also undergo site plan review. The standards and requirements outlined below are the minimum suggested for residential uses, and should not substitute for more strict existing requirements for commercial, industrial or special uses.

Site Plan Approval Standards

In order to legally review a site plan and require modifications, the ordinance must clearly state the standards against which the Site Plan will be reviewed. These standards must clearly follow the intent of the ordinance, not be arbitrary or capricious, and define the expectations of the reviewer as clearly as possible. These standards only apply to developments in the shoreline overlay boundary, and should be considered in addition to any site plan review standards in the existing ordinance.

In addition to Site Plan Review Standards set forth elsewhere in the *(insert name of local government)* Zoning Ordinance, the following standards shall be considered by the Zoning Administrator or Planning Commission when reviewing the Site Plan submission:

1. The Site Plan shall demonstrate that the impact to fish, birds, wildlife and native vegetation is minimized by preserving natural habitat;
2. The Site Plan shall demonstrate that erosion and sedimentation shall be prevented, and that the risk of structural loss due to future changes in lake levels is minimized;
3. The Site Plan shall demonstrate that the natural character and aesthetic values of the shoreline is maintained by minimizing the visual impact of the development;
4. Site development shall be fitted to the topography and soil so as to create the least potential for vegetation loss and site disturbance;
5. All structures shall be located to maintain an open and unobstructed view to the waterfront from adjacent properties, roadways and pedestrian ways, to the maximum extent possible

Site Plan Data Required

If a site plan is not required by the requirements of the underlying zoning district, one shall be submitted with an application for permit under this Ordinance. All applicants shall submit Site Plans that contain the following information:

- a) Two complete sets of plans that show the placement of any buildings or other structures, delineates a

perimeter line encompassing all proposed activities, and identifies the location and extent of the Shoreline Protection Overlay Zone boundary;

- b) All shoreline types and coastal resources should be identified, including bluff ridges, wetland boundaries, dune crest, ordinary high water mark, and tree line (as defined by trees with a minimum of 4" dbh), first landward boundary of native grasses, etc.;
- c) A description of outdoor lighting;
- d) A plan for controlling traffic to the lakefront, detailing construction and maintenance of paths, stairs or boardwalks;
- e) A Grading Plan that delineates areas of cut and fill, and identifies changes in topography and drainage. If the area to be graded exceeds 2,500 square feet the applicant shall submit a map showing the existing contours of the site and finished contours to be achieved by grading. Contours shall be sufficiently detailed to define the topography over the entire site (generally at two-foot intervals);
- f) Detailed drawings and descriptions of all temporary and permanent soil erosion and sedimentation control measures, and bank stabilization measures as submitted to the Soil Erosion Control Enforcement Officer;
- g) Detailed drawings delineating areas to be cleared of vegetation before and during development activities, with area calculations and descriptions of the vegetation to be removed, and detailed drawings and descriptions of proposed vegetation restoration for those same areas;
- h) Detailed drawings that show the location of existing structures on the property, as well as dwellings on neighboring parcels which may be obstructed from a lakefront view by the proposed development;
- i) The Site Plan shall identify the location of property, including a full tax identification number, location of the nearest public road intersection, a north arrow and map scale;
- j) The Site Plan shall include the name, address, professional status, license number (if applicable), and phone number of the person who prepared the plan;
- k) If the area to be cleared of vegetation exceeds (5,000 square feet) a Natural Features Inventory and Biological Survey of the area within a 25-foot buffer of the perimeter of proposed activity shall be required. The Survey shall include a summary of plant species, and especially identify any rare, threatened or endangered species, and identify the likelihood of any rare, threatened or endangered wildlife using the property. A qualified biologist shall prepare the survey.

Site Plan Review Procedures

To minimize the amount of review by the planning commission for small land use changes, it may be desirable to authorize the Zoning Administrator to conduct the Site Plan Review with the landowner.

1. On parcels with less than 120 feet of Great Lakes frontage, a permit for the construction of one single family dwelling, or accessory buildings or structures to a proposed or existing single family dwelling shall be subject to Site Plan review and approval by the Zoning Administrator. The Planning Commission shall review and approve permits for the construction of any commercial or industrial land use, or residential applications for more than one dwelling, or any other structure, or clearing and grading, or other earth removal activities on lots or parcels with more than 120 feet of Great Lakes frontage.