Michigan’s Regulatory Approach to Critical Dune Protection

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ABSTRACT

Michigan’s Critical Dune Area (CDA) program protects approximately 74,000 acres of the state’s most fragile dunes through a regulatory approach by: avoiding impacts to steep, unstable slopes; minimizing vegetation removal; minimizing contour changes; and identifying alternative site designs that reduce impacts associated with developmental, recreational, and horticultural activities. The CDA program, which requires permits for most construction projects and terrain alterations, is administered by staff of the Michigan Department of Environmental Quality’s Land and Water Management Division under the authority of Part 323, Sand Dune Protection and Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

BACKGROUND

In 1989, the Michigan legislature amended the Sand Dunes Protection and Management Act (1976 PA 222) with the passage of PR 146 and PA 147. These amendments broadened the scope of the original act to include regulation of residential, commercial, and industrial development in designated critical dunes. This is now Part 353, Sand Dunes Protection and Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

Legislative findings within the act (MCL 324.35302) include:

(a) The critical dune areas of this state are a unique, irreplaceable, and fragile resource that provide significant recreational, economic, scientific, geological, scenic, botanical, educational, agricultural, and ecological benefits to the people of this state and to people from other states and countries who visit this resource.
(b) Local units of government should have the opportunity to exercise the primary role in protecting and managing critical dune areas in accordance with this part.
(c) The benefits derived from alteration, industrial, residential, commercial, agricultural, horticultural, and the recreational use of critical dune areas shall occur only when the protection of the environment and the worth of the critical dune areas for the benefit of the present and future generations is assured.

Critical Dune Area Locations and Regulated Activities

Political Townships Containing Designated Critical Dune Areas

Regulated activities include:
- New house
- Additions (first floor)
- Driveway
- Well
- Septic system
- Garage
- Swimming pool
- Deck
- Porch
- Sand removal
- Terrain alteration
- Utilities
- Vegetation removal
- Fencing

PIC Maps Available on Internet

Utilization of Geographic Information Systems (GIS) and Global Positioning Systems (GPS)

GIS technology utilized in critical dune protection includes:
- Three-dimensional GIS (ArcGIS 3-D Analyst)
- Global Positioning System (GPS) technology

CHALLENGES

Many challenges arise when regulating sand dunes that are held in private ownership including:
- Limited field staff time/resources
- Staff can’t always catch violations
- Staff cannot pursue compliance/enforcement issues as much as we would like
- General fund cuts have required substantial permit fee increases
- Statutory language only (no administrative rules)
- Not written in plain English that is easy for public to understand
- Open to interpretation/database
- Handling small parcels
- The state must issue permit for building on small parcels lots of record which pre-date the statute or face the potential for a “hacking”
- The penalization into small lots can seriously fragment the dune ecosystem
- While Part 353 provides for review of subdivision proposals, specific criteria (e.g. minimum lot size, density) do not exist.

PROHIBITED USES IN A CDA (SECTION 324.35316)

Unless a variance is granted the following cannot be permitted:
- Structure on slopes between 25% and 33 1/3%, unless sealed plans are provided.
- Structure on a slope steeper than 33 1/3%.
- Contour change likely to increase erosion, decrease stability, or more extensive than required.
- Structural practices likely to increase erosion, decrease stability, or more extensive than required.
- Vegetation removal likely to increase erosion, decrease stability, or more extensive than required.
- Use not in the public interest. Must consider:
- Availability of feasible and prudent alternative locations or methods, or both, to accomplish the benefits expected from the use.
- Impact to the critical dune area, and the extent to which the impact may be minimized.
- Structure on the lakeward side of the dune crest; if located within 100', the following must be demonstrated.
- Use will not destabilize the critical dune.
- Contour changes and vegetation removal limited to those that are essential.
- Access from landward side.
- Reestablished with indigenous vegetation.
- Construction techniques/methods mitigate dune impacts.
- Dune crest not reduced in elevation.

FIELD REVIEW

During site inspection field staff:
- Delimit dune crest
- Measures distance from crest to proposed structures
- Measures inclinon of slopes to be impacted
- Documents vegetation impacted by proposal
- Determines whether impacts are more extensive than necessary

Recent efforts have been made to minimize impacts by:
- Regulating all dune proposals
- Regulating all appurtenant structures over steep slopes only through special exception
- Limiting length and width of driveways
- Locate home close to access
- Locate foundation footprint area
- Minimize disturbance outside of building footprint
- Minimize vegetation removal
- Locate well and septic close to dune
- Eliminate new impacts from swimming pools, tennis courts, landscaping, etc.

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