

## **ARTICLE 14**

### **BLUFF PROTECTION OVERLAY DISTRICT**

#### **490-1900 Legislative findings**

The Common Council makes the following findings relating to the bluffs and ravines commonly found along Lake Michigan:

- (1) Bluffs along Lake Michigan are dynamic landforms shaped by ongoing erosion, storm events, fluctuating lake levels, groundwater movement, and natural shoreline processes. These forces can cause sudden or gradual loss of land and pose risks to public health, safety, and property.
- (2) Development placed too close to a bluff edge increases the likelihood of structural instability, foundation failure, slope collapse, and accelerated erosion, thereby creating hazardous conditions that can be prevented through appropriate land-use regulations.
- (3) The bluffs along Lake Michigan serve important ecological functions, including stormwater filtration, habitat provision, and shoreline stability. Unmanaged encroachment of development into bluff-top areas can degrade these natural resources and reduce the resilience of the shoreline.
- (4) High lake levels, intensified storm events, and rapidly changing climatic conditions have increased the frequency and severity of bluff erosion along Lake Michigan.
- (5) Bluff failures can impose significant public costs, including emergency response, public-infrastructure damage, shoreline stabilization expenditures, and long-term environmental impacts. Establishing clear setbacks and development standards reduces the financial burden on taxpayers and promotes responsible land use.
- (6) Protecting bluff stability is in the best interest of both current and future residents and helps preserve the natural beauty, recreational value, and economic importance of the Lake Michigan shorelines.
- (7) Based on these findings, the community determines that regulating the location, design, and intensity of development near bluff edges and ravines is necessary to protect public safety, prevent avoidable property loss, preserve natural shoreline processes, and promote the general welfare.

#### **490-1901 Boundary of district**

Land located within the setback areas described in this article constitute the bluff protection overlay district. The extent of the overlay district is defined on a parcel-by-parcel basis as development is proposed.

#### **490-1902 Setback from Lake Michigan bluffs**

Except as set forth in subsection C below, all buildings and structures in the Lake Michigan bluff area must be set back the greater of the following distances:

**(A)** A distance equal to a slope ratio of 2.5 feet horizontal distance to every one (1) foot vertical distance, measured horizontally from the toe of the bluff, calculated using the most severe angle of slope as determined by a registered professional engineer or a surveyor and approved by the Zoning Administrator, and based on the graph in Exhibit 14-1. The setback (X) is measured from the top edge of the bluff. Measurement of the stable slope angle setback shall be made from the toe of the bluff perpendicular to the shoreline. There shall be 2 measurements for every 100 feet of shoreline at points not less than 50 feet apart. The setback shall be a line connecting these two points, or such line extended. The land between the top edge of the bluff and the setback line constitutes the bluff setback area.

**(B)** A minimum setback of 75 feet from the edge of the bluff.

**(C)** Accessory structures may be placed within the bluff setback area, subject to the following:

- (1) The part of the structure that is nearest to the bluff shall maintain a minimum setback of 40 feet from the top of any bluff. Structures required for riparian access are excluded from this setback.
- (2) The total floor area of all accessory structures located within the bluff setback area will not exceed 200 square feet. Structures required for riparian access are excluded from this calculation.

- (3) The wall height of any structure shall not exceed 10 feet.
- (4) The structure shall not be placed on pilings, piers, frost walls, or a foundation.
- (5) The structure may not include interior plumbing or any alternative (non-plumbing) system designed to collect, treat, or dispose of wastewater or human waste.

#### **490-1903 Setback from Lake Michigan deep ravines**

Except as set forth in subsections C and D below, all buildings and structures in the Lake Michigan deep ravine area must be set back the greater of the following distances:

**(A)** A distance equal to a slope ratio of 2.5 feet horizontal distance to every one (1) foot vertical distance measured horizontally from the toe of the ravine, calculated using the most severe angle of slope, as determined by a registered professional engineer or a surveyor and approved by the Zoning Administrator, and based on the graph in Exhibit 14-1. The setback (X) is measured from the top edge of the ravine. There shall be sufficient measurements points to represent said ravine. The setback shall be a line connecting all points, or such line extended. The land between the top edge of the ravine and the setback line constitutes the setback area for deep ravines.

**(B)** A minimum setback of 75 feet from the edge of the deep ravine.

**(C)** When a detailed subsurface investigation report by a Wisconsin registered geotechnical engineer indicates that a ravine is a stable formation, the setback shall be as recommended in the report, subject to a minimum setback of 40 feet from the edge of that particular ravine, provided that the ravine has not been determined to be navigable.

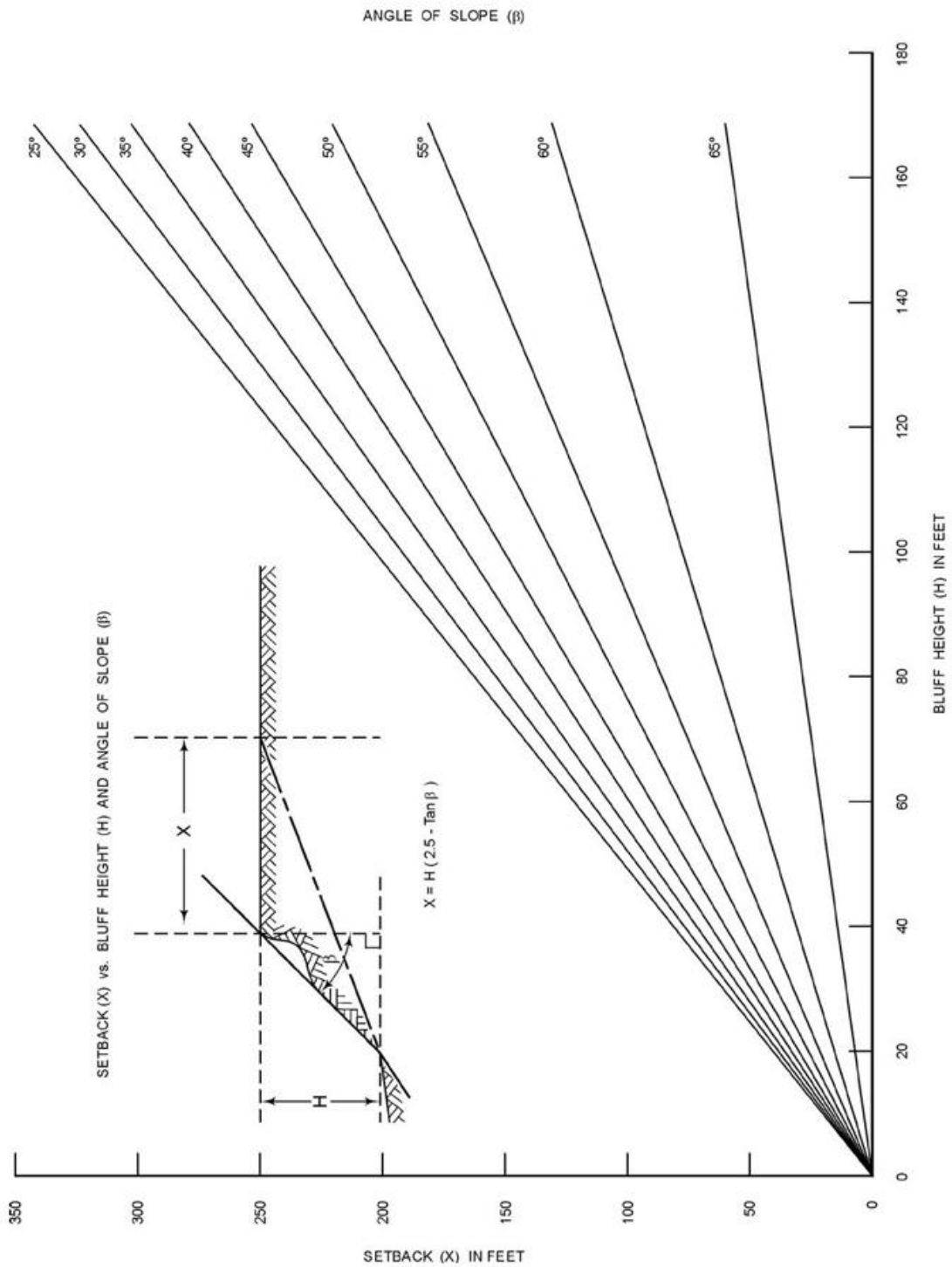
**(D)** Accessory structures may be placed within the ravine setback area, subject to the following:

- (1) The part of the structure that is nearest to the ravine shall maintain a minimum setback of 40 feet from the top of any ravine, provided the ravine is not navigable. Structures required for riparian access are excluded from this setback.
- (2) The total floor area of all accessory structures within the ravine setback area will not exceed 200 square feet. Structures required for riparian access shall be excluded from this calculation. When the provisions of subsection (C) above are used to reduce the setback from the edge of a ravine, subject to a minimum setback of 40 feet from the edge of that particular ravine, there shall be no limitation on the total floor area of accessory structures.
- (3) The wall height of any structure may not exceed 10 feet.
- (4) The structure may not be placed on pilings, piers, frost walls, or a foundation.
- (5) The structure may not include interior plumbing or any alternative (non-plumbing) system designed to collect, treat, or dispose of wastewater or human waste.

#### **490-1904 Setback From Lake Michigan shallow ravines**

If the shallow ravine is not navigable, all buildings and structures in the Lake Michigan shallow ravine area shall be set back a minimum of 40 feet from the edge of the shallow ravine.

Exhibit 14-1. Calculated setback distances for bluffs and deep ravines



490-1905 through 490-1999 reserved