



MEMORANDUM VILLAGE OF WINNETKA

COMMUNITY DEVELOPMENT DEPARTMENT

TO: ROBERT BAHAN, VILLAGE MANAGER
FROM: DAVID SCHOON, COMMUNITY DEVELOPMENT DIRECTOR
JIM BERNAHL, ENGINEERING DIRECTOR
DATE: NOVEMBER 9, 2023
SUBJECT: BLUFF STEEP SLOPE REGULATIONS &
CREATION OF LARGE LOTS THROUGH CONSOLIDATION

INTRODUCTION

On Tuesday, November 14, 2023, the Village Council is scheduled to hold a study session continuing its discussion regarding zoning and development regulations related to properties located on or near the bluffs of Lake Michigan (“lakefront properties”) as well as additional regulations regarding the consolidation of lots into a large lot. At the study session, staff and the Village’s coastal engineer, Caleb Barth with Baird Associates, will review the following draft ordinances that have been prepared at the direction of the Council:

- An Ordinance Amending Title 16 of the Winnetka Village Code and Chapters 17.30 and 17.50 of the Winnetka Zoning Ordinance Regarding Lot Consolidations (**Attachment 1**)
- An Ordinance Amending the Winnetka Zoning Ordinance to Establish Bluff Regulations for Development in the Steep Slope Area Along Lake Michigan (**Attachment 2**)

Staff has prepared these ordinances based on the majority consensus of the Council, as restated by the Village Manager at the September 19, 2023, Council meeting. These draft ordinances would represent a significant policy consideration for the Village with regard to regulation of lakefront properties.

Following the review of these draft ordinances, staff requests feedback and direction from the Council if it would like to proceed with the approaches outlined in the two ordinances to regulate steep slopes as well as regulate lot consolidations. Should the Council decide to move forward to adopt some type of steep slope development regulations or additional lot consolidation regulations, the Village Council would first hold a public hearing on the proposed regulations at a future Council meeting.

On Friday, November 3, 2023, a letter was mailed to lakefront property owners as well as property owners within 250 feet of those properties. (**Attachment 3**) The Village’s Lakefront Regulations webpage was also updated to include information regarding the November 14 study session. (www.villageofwinnetka.org/lakefront) and a link to the study session meeting materials, which includes the draft ordinances was added to that webpage.

The Village Council last discussed this issue at a study session on Tuesday, September 12, 2023 (the “September Study Session”). At that meeting, staff and the Village’s coastal consultant reviewed the following information:

- Description of bluffs in Winnetka and their role in the lakefront ecosystem
- Existing development conditions on privately-owned land along Winnetka’s lakefront
- Existing Winnetka zoning and development regulations overview
- Summary of North Shore communities zoning and development regulations overview
- Comparative bluff regulations with adjacent North Shore communities with the most similar bluff features to Winnetka – Glencoe & Kenilworth
- Potential purposes for steep slope regulations – applicable Comprehensive Plan goal as well as purpose statements from the recently adopted Permit Abeyance Period Ordinance.

At the conclusion of that meeting, the Council indicated an interest to ***further study and consider the following:***

- Zoning and subdivision code amendments that address the size of newly created consolidated lots to ensure that the character of a residential neighborhood is not adversely impacted by the scale of development that could occur on a newly created large lot.
- Use of the ordinary high-water mark as the new front lot line standard along the lake for zoning purposes, which standard would be more consistently applied over time, straightforward to understand, and effectively administered.
- Steep slope bluff regulations that can be reasonably applied to Winnetka and that look at limiting excavation into the bluff, providing minimum factors of safety for slope stability per planned land use, protecting adjacent property owners, and the impact to the environment. Review aspects of the Glencoe steep slope ordinance that allow certain structures such as stairs, decks, boathouses near/on the steep slope of the bluff subject to complying with geotechnical, structural, and coastal engineering standards. Any steep bluff regulations should promote best practices to ensure native vegetation for bluff stability, while removing non-native species that do not provide bluff stability as well as invasive species.

CONSOLIDATIONS RESULTING IN LARGE LOTS

As previously stated, the Village Council directed staff to further study zoning and subdivision code amendments that address the size of newly created consolidated lots to ensure the character of a residential neighborhood is not adversely impacted by the scale of development that could occur on the new lot.

Attachment 1 contains “*An Ordinance Amending Title 16 of the Winnetka Village Code and Chapters 17.30 and 17.50 of the Winnetka Zoning Ordinance Regarding Lot Consolidations.*” The draft ordinance would require special use approval to consolidate any number of lots that results in a lot in a single-family residential district that is greater than two times the minimum required lot size for the lot in question or two times the minimum required average lot width for the lot in question. The purpose of the ordinance would be to ensure that the proposed lot would not be inconsistent with the general lot size, the average lot width, or the character of properties located adjacent to or on the same block face of the subject lot.

The following table summarizes the minimum lot area requirement for each zoning district. Should an applicant request a lot consolidation that would result in a lot two times larger than these minimum amounts, the applicant would need to request special use approval and demonstrate that it complies with the Village’s special use standards. The two times the minimum lot area requirement was selected as the standard for when special use approval would be required as approximately 95% of the lots in the community are less than two times the minimum lot area of their respective zoning districts.

	R5	R4	R3	R2	R1
Minimum Required Lot Area – Interior Lot	8,400 sf	12,600 sf	16,000 sf	24,000 sf	48,000 sf
Minimum Required Lot Area – Corner Lot	8,900 sf	13,300 sf	16,800 sf	25,200 sf	50,400 sf

Table 1 – Minimum Required Lot Area by Zoning District

The following table shows the minimum average lot width requirement by zoning district.

	R5	R4	R3	R2	R1
Minimum Required Average Lot Width – Interior Lot	60 ft	60 ft	75 ft	100 ft	150 ft
Minimum Required Average Lot Width – Corner Lot	70 ft	70 ft	85 ft	115 ft	150 ft

Table 2 – Minimum Required Average Lot Width by Zoning District

The width of a lot can significantly impact the character of a block face in a neighborhood. The following images show varying lot widths and illustrate how allowing a lot width more than two times the minimum lot width could have a less than desirable impact on the character of a neighborhood. The first image is a block face located in the R-5 Single Family Residential District, and the second is a block face located in the R-2 Single Family Residential District. Seventy-three percent of all single-family residential lots are zoned one of these two zoning districts. Also, as a reminder, all the lots in the community with steep slopes are zoned the -R-2 District. (However, not all lots zoned R-2 are located along the lake. A significant number of lots are located in southwestern and western Winnetka.)

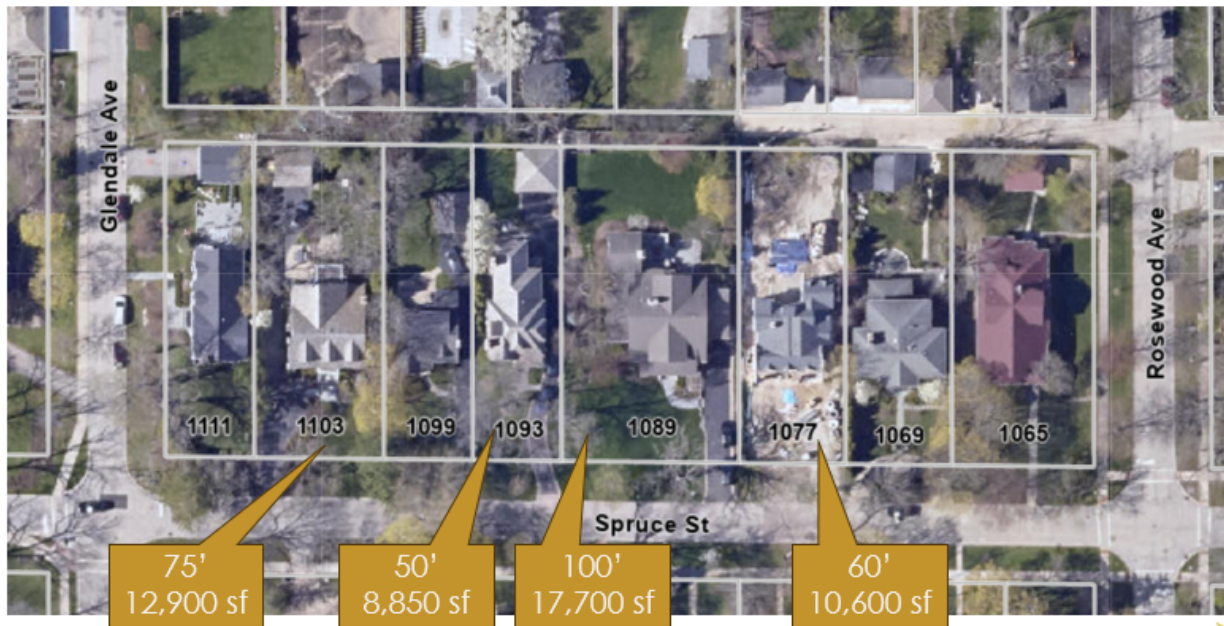


Figure 1 - R-5 Single Family District
Minimum Required Interior Lot Width – 60'; Minimum Required Interior Lot Area – 8,400 sf

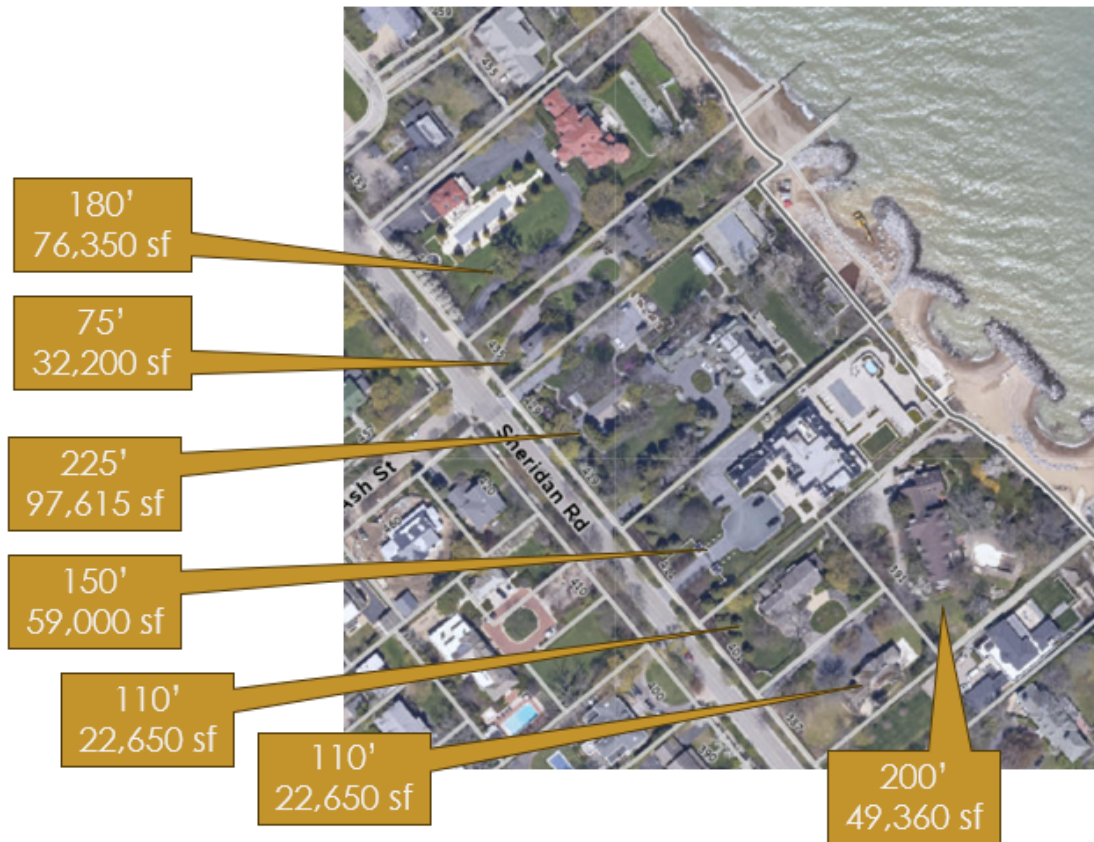


Figure 2 - R-2 Single Family District
Minimum Required Interior Lot Width – 100’; Minimum Required Interior Lot Area – 48,000 sf

Under the proposed ordinance, should an applicant request a lot consolidation that would result in a lot two times larger than these minimum amounts, the applicant would also need to request special use approval and demonstrate that the creation of the lot meets the Village’s special use standards.

Currently a request for approval of a special use located outside of the C2 Commercial Overlay District requires review by both the Plan Commission and the Zoning Board of Appeals prior to consideration by the Village Council. A plat of consolidation without any zoning variations currently only requires review by the Plan Commission. Given the special use request would be in association with a plat of consolidation, the draft ordinance amendment calls for only the Plan Commission to review and provide a recommendation to the Village Council regarding the special use associated with a plat of consolidation creating a large new lot. It should be noted, that if a zoning variation is required for the creation of the large new lot, that variation request would continue to be reviewed by the Zoning Board of Appeals in addition to the Plan Commission’s review of the plat of consolidation and special use.

The draft ordinance all provides that, in addition to considering the Village’s typical special use standards, the Plan Commission and Village Council could also “*consider such factors as, without limitation, the extent to which the proposed special use would be inconsistent with the general lot size, average lot width, or character of properties located adjacent to or on the same block face of the subject lot*”. The Village’s usual special use standards are as follows:

1. That the establishment, maintenance, and operation of the special use will not be detrimental to or endanger the public health, safety, comfort, morals, or general welfare;
2. That the special use will not be substantially injurious to the use and enjoyment of other property in the immediate vicinity which are permitted by right in the district or districts of concern, nor substantially diminish or impair property values in the immediate vicinity;
3. That the establishment of the special use will not impede the normal and orderly development or improvement of other property in the immediate vicinity for uses permitted by right in the district or districts of concern;
4. That adequate measures have been or will be taken to provide ingress and egress in a manner which minimizes pedestrian and vehicular traffic congestion in the public ways;
5. That adequate parking, utilities, access roads, drainage, and other facilities necessary to the operation of the special use exist or are to be provided;
6. That the special use in all other respects conforms to the applicable regulations of this and other Village ordinances and codes.

When the Plan Commission and the Village Council consider granting a special use permit request to consolidate any number of lots that results in a lot within a single-family residential district that is greater than two times the minimum required lot size for the lot in question or two times the minimum required average lot width for the lot in question, the Village Council would be authorized to impose certain conditions, including without limitation, any one or more of the following conditions:

- (i) the installation of additional landscaping on the lot;
- (ii) an increase in any minimum required yard or yards on the lot beyond what is required by the zoning ordinance;
- (iii) a restriction on the maximum gross floor area on the lot;
- (iv) a restriction on the maximum roofed lot coverage on the lot;
- (v) a restriction on the maximum total area of impermeable surfaces on the lot;
- (vi) a requirement to provide preliminary conceptual plans as are reasonably necessary to evaluate the proposed special use request; and
- (vii) restrictions to mitigate the impact of construction activity.

As the above conditions note, when requesting a plat of consolidation in conjunction with special use approval, the Applicant may be required to present preliminary conceptual plans for the lot in question so that the Plan Commission and Village Council can determine if the proposed plans would be consistent with the Village's special use standards.

STEEP SLOPE REGULATIONS

The Village Council requested staff to further study using the ordinary high-water mark as the new front lot line standard along the lake and to study the adoption of steep slope bluff regulations using Glencoe's steep slope ordinance as the base model to work from. Accordingly, as directed by the Village Council, **Attachment 2** contains *"An Ordinance Amending the Winnetka Zoning Ordinance to Establish Bluff Regulations for Development in the Steep Slope Area Along Lake Michigan."*

Lot Line Along Lake Michigan

As was discussed at the September study session, the Zoning Ordinance currently uses the water's edge along Lake Michigan as the front lot line. Given the changing water level of the lake even during a single year, the Council asked staff to study using the ordinary high-water mark as the front lot line for zoning purposes.

As a reminder to the Council, what is designated as the lot line along the lake impacts the following zoning measurements and standards:

Zoning Measurements

- Lot Area
- Front Lot Line
- Lot Depth
- Average Lot Width

Zoning Standards

- Minimum Front Yard Setback (based upon front lot line)
- Minimum Required Total Side Yard (based upon average lot width)
- Maximum Gross Floor Area (based upon lot area)
- Maximum Roofed Lot Coverage (based upon lot area)
- Maximum Impermeable Lot Coverage (based upon lot area)

The draft ordinance defines the ordinary high-water mark (OHWM) as the line on the shore of Lake Michigan established from time to time by the U.S. Army Corps of Engineers. Unlike the water's edge which is always varying, the OHWM generally remains constant for a significant amount of time. The OHWM is currently set at the 581.5' elevation level, and the last time the U.S. Army Corps of Engineers adjusted the OHWM was with the update of the International Great Lakes Datum (1985) which was adopted and implemented in January 1992.

The images below are from 2017 and include contour lines from 2017. The yellow line is the OHWM, which is currently set at the 581.5' elevation for Lake Michigan by the U.S. Army Corps of Engineers. As these images indicate, for some lots the OHWM was under the water of the lake in 2017, while for others the OHWM was not. Also, for some lots the OHWM is lakeward of the water's edge, while for other lots the OHWM is landward of the water's edge. Switching from the water's edge to the OHWM, some lots may gain lot area for zoning purposes, while others may not or may lose lot area. As a reminder this phenomenon already occurs using the water's edge, as it is constantly changing. The red line in the images below shows the location of the current front setback requirement of 50 feet from the OHWM.



Figure 3 – Ordinary High-Water Mark on 2017 Aerial

The following images are of the same properties shown in the previous images. The images below include the 2017 contours, which are the most current topography data we have for the entire Village; however, the aerials are from 2022. As you will note in these images, the OHWM is in the same location, while the water level has changed.



Figure 4 – Ordinary High-Water Mark on 2022 Aerials

The draft ordinance would change the front lot line from the water's edge to the OHWM. As previously stated, the benefit is that the OHWM is a measurement that does not change frequently. Though it is a set measurement, it should be noted that the location of the 581.5 elevation on a particular property may change over time due to erosion/accretion from wave action along the shoreline. Also, as illustrated in the images above, given the location of the OHWM on properties along the lake varies from property to property, it is difficult to come up with a fixed setback requirement (e.g., 50 feet, 100 feet, 150 feet, etc.) using the OHWM as the front lot line from which to measure a required front yard setback requirement to limit development on the entire bluff. However, given the Council has expressed an interest in adopting regulations that limit development on the steep slopes of the bluff, steep slope regulations would be a more effective means of limiting development. The proposed amendments are written such that a lakefront property owner must comply with the steep slope regulations, which are being added as a zoning regulation, as well as all other Village zoning regulations, including the front yard setback requirement. Given the steep slope regulations would be the more restrictive, they would govern in nearly all instances along the lakefront.

Steep Slope Regulations

At the September Council study session, the Council directed staff to further study steep slope regulations for Winnetka's lakefront bluffs that look at limiting bluff excavation, limiting bluff erosion induced by development in and around the bluff, provide for minimum factors of safety per planned land use, protecting adjacent property owners, and the impact to the environment. The Council directed staff to incorporate features of the Glencoe steep slope ordinance, which limits construction to certain structures such as stairs, decks, boathouses on and near the steep slope of the bluff subject to meeting geotechnical and structural engineering standards. The Council also expressed an interest in having the steep slope regulations promote best practices to ensure the preservation and addition of native vegetation for bluff stability, while promoting the removal of non-native species, which do not provide bluff stability, as well as invasive species.

The draft steep slope ordinance is modeled on the Glencoe steep slope regulations as directed by the Council, which includes a mechanism for identifying a slope impact area, a steep slope zone, and a slope

transition area on each lot, which are all determined by slope formulas that take into consideration slope stability factors. The Village Council expressed an interest with this approach as the zones for each lot are based upon the specific aspects of the slope on a lot rather than a set measurement as some communities use. Given the varying heights and steepness of slopes in Winnetka, the Council found this approach most appropriate for the community. The following image, which was presented to the Village Council, at the September study session, shows the varying bluff heights and the varying steepness of the bluff slopes.

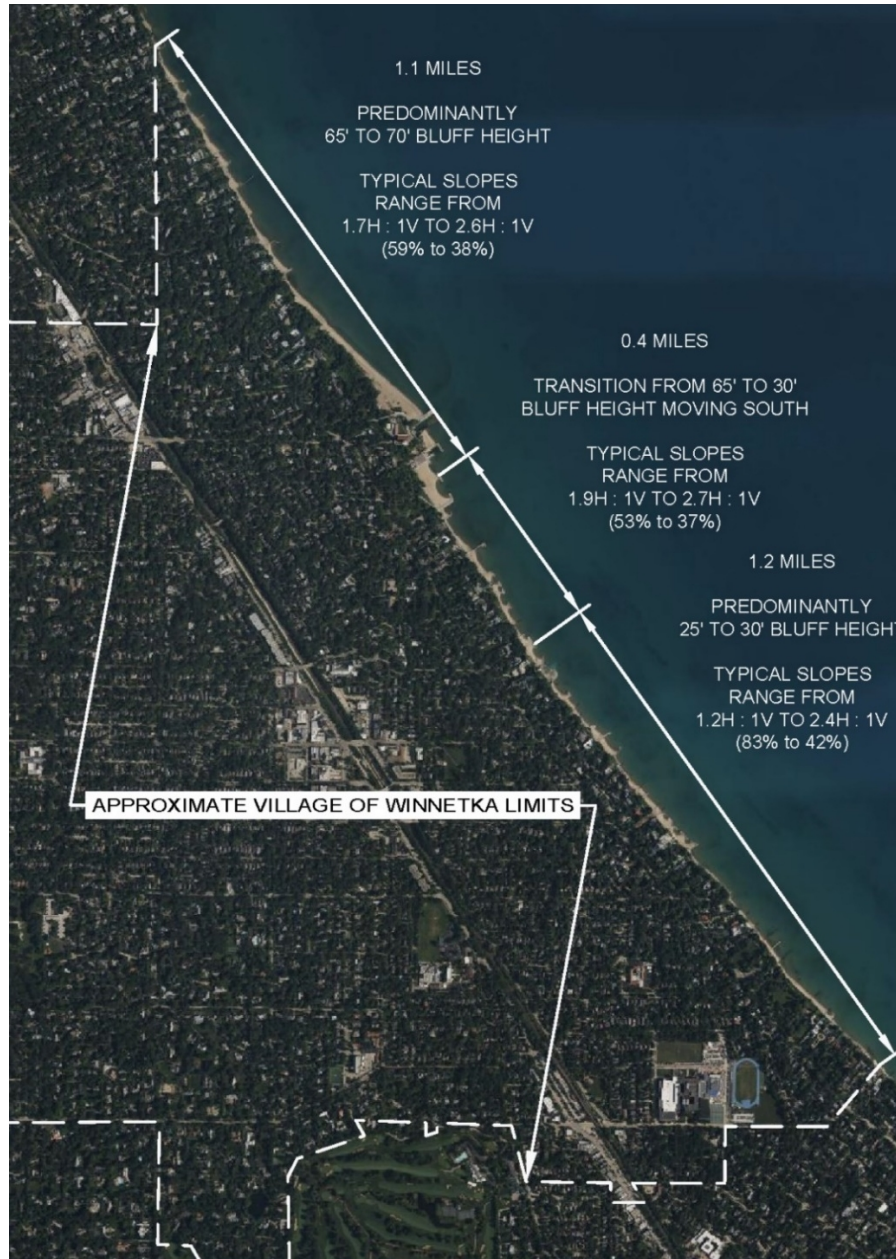


Figure 5 – Varying Bluff Heights and Steepness of Bluff Slopes

Determining Regulated Bluff Areas. The draft ordinance includes the following key slope definition regulations, which are illustrated in the image below.

- Bluff
- Table Land
- Toe of the Bluff
- Steep Slope Line
- Steep Slope Zone
- Slope Transition Area
- Slope Impact Area

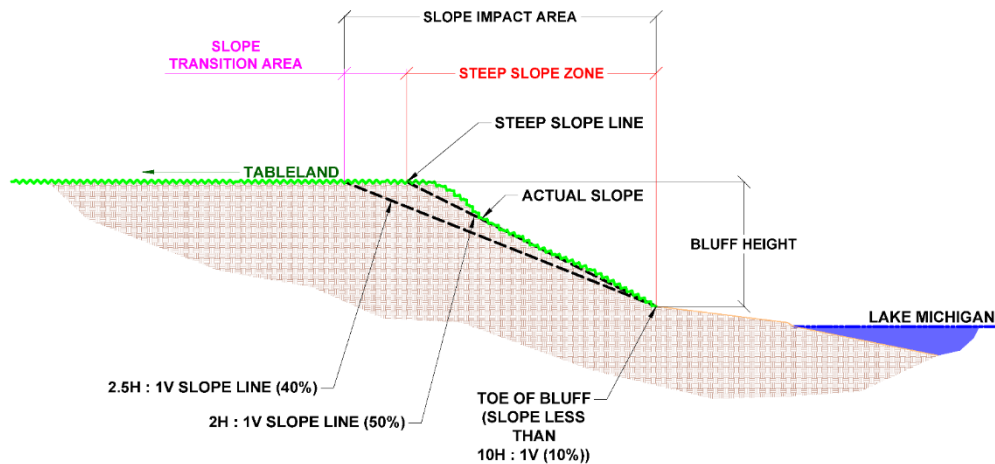


Figure 6 – Illustration of Steep Slope Regulation Terminology

The draft ordinance only allows certain structures within the steep slope zone; however, it allows any structure within the slope transition area subject to certain conditions and standards. In either the steep slope zone or the slope transition area, which together is the slope impact area, development must meet applicable geotechnical and structural engineering standards as noted in the draft ordinance.

Varying Bluff Heights and Slope Grades. When Caleb Barth, the Village coastal engineer consultant, reviewed the Glenoce ordinance with the Village Council in September, he included images of how the areas included in a slope impact area, the steep slope zone and the slope transition area will vary from lot to lot depending upon the height of the bluff and the steepness of the actual bluff slope. To refresh the Council’s memory, we are providing those images once again on the following pages. The three images include:

- A. A bluff that is 70 feet tall and has a slope of 2H:1V (27 degrees or 50%),
- B. A bluff that is 30 feet tall and has a slope of 2H:1V (27 degrees or 50%), and
- C. A bluff that is 70 feet tall and has a slope of 1.5H:1V (33.8 degrees or 67%)

As you will note on the images on the following page, with **bluffs with the same slope steepness but the height of one bluff taller than the other** (Comparison of Figure 7 and Figure 8):

- the steep slope zone extends a little farther back on the table land than it does on a bluff not as tall, and
- the slope transition area also extends farther back on the table land than it does on a bluff not as tall.

Also, with **bluffs of the same height but the slope of one bluff steeper than the other** (Comparison of Figure 8 and Figure 9):

- the steep slope zone extends farther back on the table land than it does on a bluff slope not as steep; and
- the slope transition area remains the same depth as that of a bluff not as steep; however, it extends farther back on the table land due to the increase depth of the steep slope zone.

The reason behind these observations is that as a slope gets taller and steeper, the bluff slopes become less stable and thus the area of the steep slope zone and overall slope impact area becomes larger.

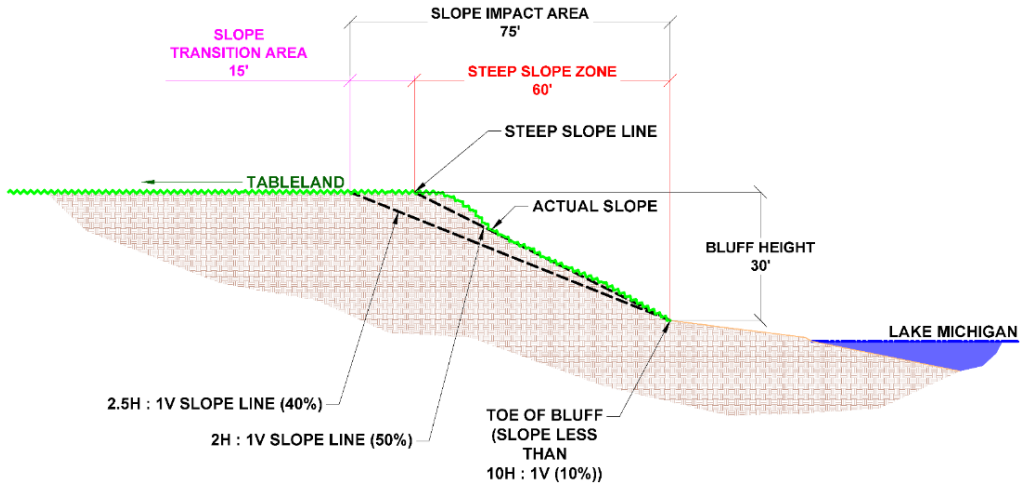


Figure 7 - 30-Foot Bluff Height & 2H:1V Actual Slope (27 degrees)

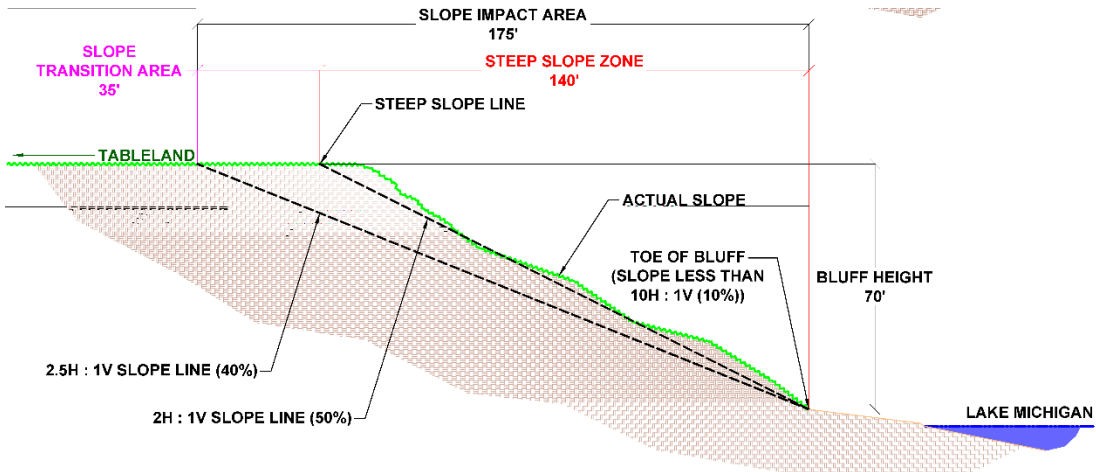


Figure 8 - 70-Foot Bluff Height & 2H:1V Actual Slope (27 degrees)

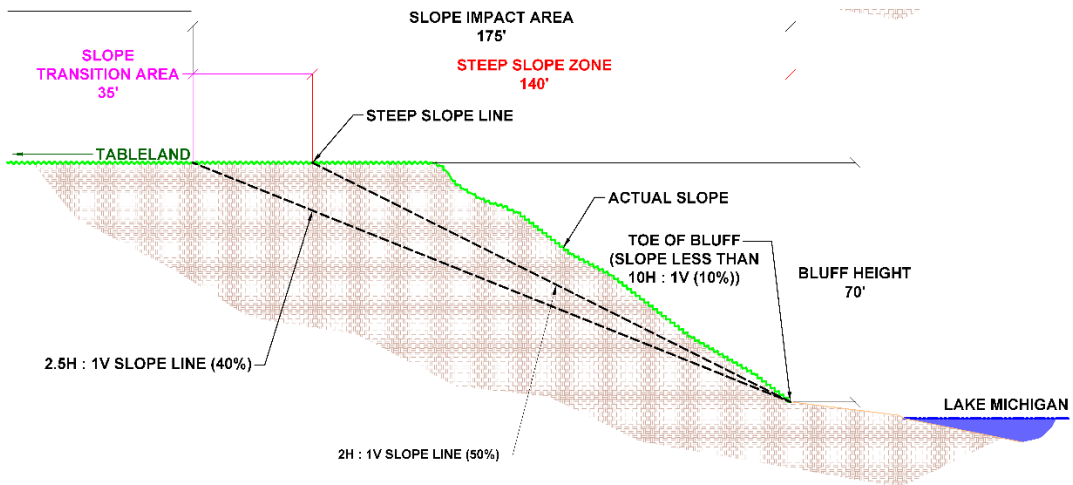


Figure 9 - 70-Foot Bluff Height & 1.5H:1V Actual Slope (33.8 degrees)

One additional factor about a bluff slope is that it may be made up of “compound slopes,” rather than the one steady slope, or a simple slope. A compound slope is a slope composed of two or more distinguishable slopes with different grade angles.

The image below illustrates a compound bluff slope and what the slope impact area, steep slope zone, and slope transition area would look like. As illustrated below, this compound slope has a gentler slope that is greater than 10% (10H:1V) and then a steeper slope much greater than 10%. The steep slope zone includes both the gentler slope area and the steeper slope area, the latter which is determined by the application of the steep slope line, which is a 2H:1V slope line (27 degrees or 50%).

DETERMINING SLOPE IMPACT AREA FOR BLUFF WITH COMPOUND SLOPE

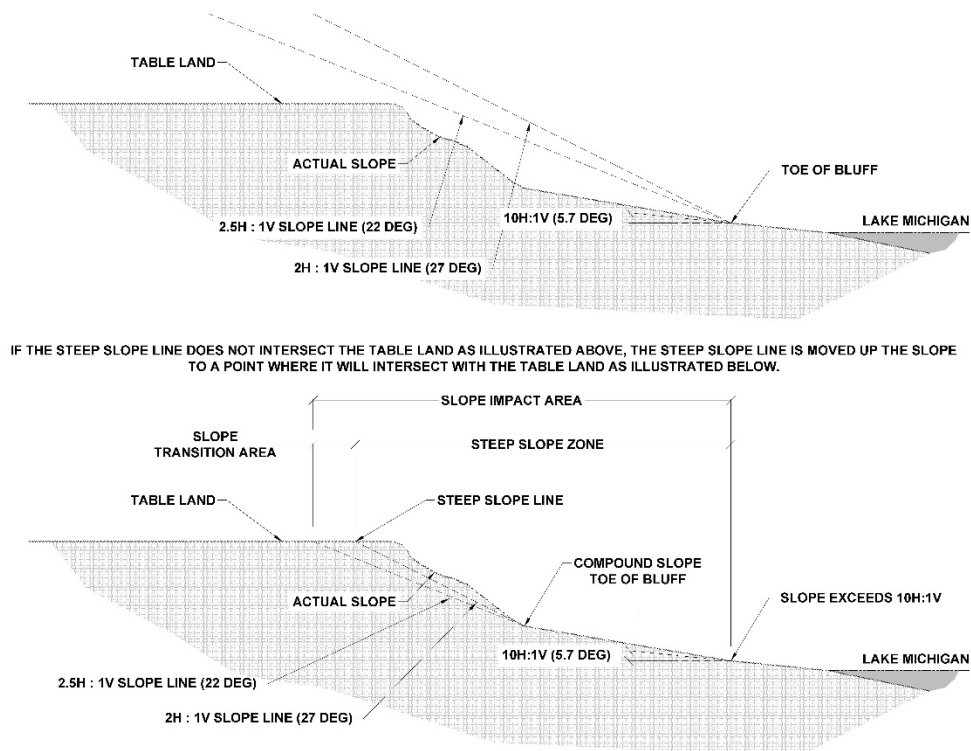


Figure 10 – Compound Slope Impact Area, Steep Slope, and Slope Transition Area

Given this and other aspects of the slope protection method included in the draft ordinance, it is difficult to illustrate the potential impact on each lakefront property without individually looking at each property, parcel by parcel. Staff have explored with our GIS mapping consultant creating maps to help visualize where the slope impact area, consisting of the steep slope zone and the slope transition area, would fall on each lakefront property. Preparation of such maps would take approximately a month or more for the GIS consultant and Village staff to complete should the Council request that these be created.

Council should note the limits of these maps. The first is that our database only includes topographical lines from 2017, so they do not reflect changes to the topography that property owners have made to their lots since 2017. Also, the placement of the topographical lines on top of aerial photographs has some limits in terms of its accuracy. If the Council requests the creation of these maps, we wanted to let the Council know that the maps would be our best estimate and an approximation of where the slope impact area, steep slope zone, and slope transition area fall on a lot.

Based upon the visual survey results staff shared with the Village Council in September and which are included below, there are several properties along the lakefront that contain structures located within the steep slope zone that would not have been allowed had the proposed ordinance been in place when the construction of those structures was undertaken. If the proposed ordinance is adopted, these existing structures would be considered legally non-conforming, which means that they could remain but would be subject to the legally non-conforming regulations in the Village Zoning Ordinance.

	Beach House	Boat-house	Gazebo	Patio/ Decks/ Terrace	Pool/ Hot tub	Pool House	Principle Structure (Portion)	Other Accessory Structures	Tram	Steps/ Walkways
# of Times Observed on a Lot	3	16	1	46	12	3	18	2	5	70
% of All Lots on Which Feature Observed	3%	18%	1%	52%	13%	3%	20%	2%	6%	79%

Table 3 – Visual Survey Results of Structures on the Steep Slopes of Privately-Owned Property

Development in the Steep Slope Zone. As previously stated, and as currently drafted, the proposed ordinance would **allow limited development in the steep slope zone, which is summarized as follows:**

- a) Decks no larger than 50 square feet, unless exceptional engineering is provided.
- b) Retaining walls when necessary for stabilization, that do not increase or create tableland, and backfilling only allowed for stabilization.
- c) Stairs no more than 5 feet wide with landings no more than 50 square feet.
- d) Mechanical or electrical lifts, which do not obstruct the flow of light and water.
- e) Fences that comply with all other Village codes.
- f) Rebuilt or remodeled existing structures but only on a suitable existing foundation, with plans prepared by a licensed architect or engineer, and the structure footprint cannot be increased.
- g) Cantilevering of the principal structure with no more than a four-foot extension over the steep slope unless otherwise limited by the code. The cantilevering cannot block natural sunlight or alter natural stormwater drainage in a way that jeopardizes slope stability.
- h) Boat houses with the width limited to accommodate two boats, height limited to one-story and no taller than 15 feet, and the Engineering Director’s determination that the structure will not impact slope stability.

The draft ordinance **would allow any development in the slope transition that is otherwise authorized under Village codes and that provides exceptional engineering in terms of geotechnical and structural design.**

The Village would classify “exceptional engineering” as the demonstration by licensed professional engineers, and other design disciplines as deemed necessary by the Director of Engineering, to confirm the design and existing field conditions meet requirements. The professionals shall confirm that proposed improvements shall not fail, cause harm to the public or neighboring properties, provide proper factor of safety, or otherwise improve upon existing conditions for stabilization.

Development Standards. The draft ordinance identifies development standards for the slope impact area, which includes both the steep slope zone and the slope transition area. The standards include items related to:

1. Safety and control of steep slopes.
2. Construction techniques to enhance bluff stabilization.

3. Hydrological controls.
4. Vegetation maintenance and revegetation.
5. Filing, grading, and earth moving.

Plan & Permit Requirements. The ordinance also identifies plans and other agency permits required for permit applications for work within the slope impact area, including but not limited to such items as:

1. Plans that identify slope impact area, slope transition area, the steep slope zone, toe of the bluff and OHWM.
2. Description of proposed means & methods for the work.
3. Engineering plans.
4. Subsoil investigation report.
5. Grading plan.
6. Hydrological control plan.
7. Vegetation plan.

General Steep Slope Stabilization Standards. The draft ordinance also includes general standards related to steep slope stabilization in the slope impact area, which are summarized as follows:

1. Timely repair of storm drainage lines.
2. Prohibition of depositing garbage, construction debris or landscaping material.
3. Prohibition on swimming pool discharge.
4. Authorized structures may be repaired, maintained & altered.
5. Landscape maintenance permitted.
6. Restoring bluff after engaging in maintenance, repair & construction.
7. Emergency activities allowed to secure unstable slopes.
8. Tree removal per existing code requirements & for slope stability.

Appeals. The draft ordinance allows an applicant to appeal the Engineering Director's decision. Such appeals first go to the Village Manager, and if an applicant wishes to further appeal the Engineering Director and Village Manager's decisions, they may appeal to the Village Council.

Variations. A property owner can seek variation from otherwise applicable zoning regulations affecting such owner's property. To the extent that the steep slope regulations materially restrict the ability of a property to be developed or materially increase the cost of such development, the Zoning Board of Appeals may determine that the effects of this Chapter can, in appropriate circumstances, constitute a practical difficulty or unreasonable hardship.

Special Use Approval. The draft ordinance includes a provision that if a development that requires a special use permit and includes construction activity that does not comply with the requirements of the steep slope ordinance, the Village Council may grant exceptions to the regulations set forth in the steep slope regulations as part of granting the special use permit. As a reminder, all properties in the community with lakefront are currently zoned the R-2 Single Family Residential District. Special uses allowed in the R-2 District are as follows: (1) churches, public and private schools, and libraries; (2) Park District uses; and (3) essential Village services.

Enforcement and Corrective Measures. The draft ordinance also includes enforcement and corrective actions that the Director of Engineering can take to enforce provisions of the ordinance.

SUMMARY AND NEXT STEPS/POLICY DIRECTION

After hearing from staff, the Village's coastal engineer consultant, and the public, and after the Council's discussion, staff requests if additional information is desired, Council feedback on the draft ordinances, and Council policy direction regarding its continued interest in considering Code amendments for (a) creating a special use process for lot consolidations for the creation of large lots and (b) creating steep slope regulations.

ATTACHMENTS

- Attachment 1: DRAFT - An Ordinance Amending Title 16 of the Winnetka Village Code and Chapters 17.30 and 17.50 of the Winnetka Zoning Ordinance Regarding Lot Consolidations
- Attachment 2: DRAFT - An Ordinance Amending the Winnetka Zoning Ordinance to Establish Bluff Regulations for Development in the Steep Slope Area Along Lake Michigan
- Attachment 3: Letter to Property Owners Along & Near the Lakefront