

WINNETKA VILLAGE COUNCIL LAKE MICHIGAN REGULATORY PERMITTING PROCESS

Chicago District Regulatory Branch

Soren Hall, Team Leader

10 January 2023

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OUTLINE

1. History of Lake Levels
2. Shoreline Protection Measures
3. USACE Statutory Authorities
4. Shoreline Permitting Process
5. Corps Public Interest Review
6. Lake Michigan RGP
7. Ordinary High Water Mark
8. Other Agency Reviews



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HISTORY OF LAKE LEVELS

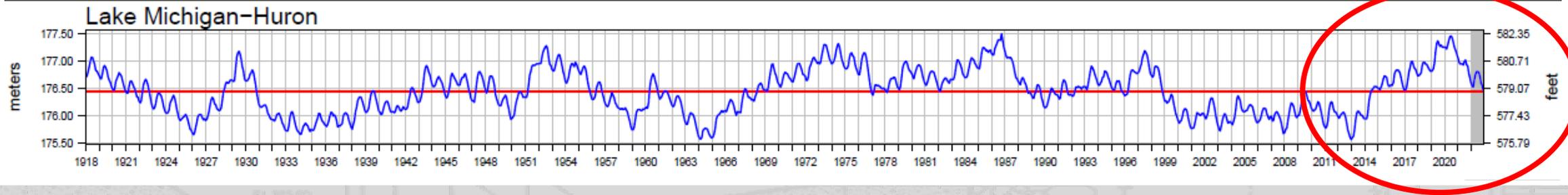
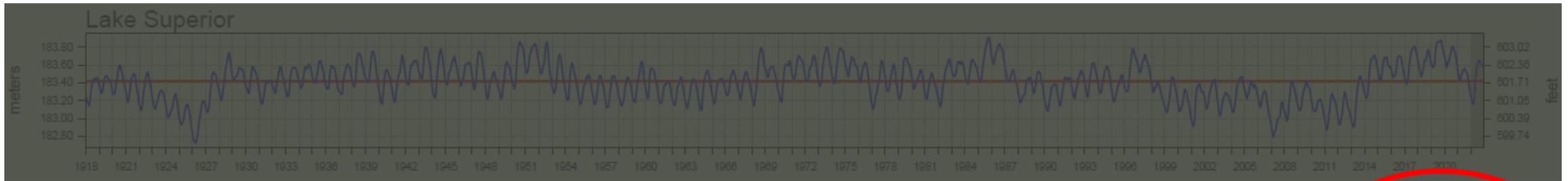
Long record of lake level fluctuations available

Monitoring and forecasts are handled by the Detroit District



Great Lakes Water Levels (1918–2023)

— Monthly Mean Level — Long Term Average Annual



HISTORY OF LAKE LEVELS

https://www.lre.usace.army.mil/Missions/Great-Lakes-Information/Great-Lakes-Information.aspx#ICG_ETH_22302

The screenshot shows the top navigation bar of the US Army Corps of Engineers Detroit District Website. It includes a search bar for "Detroit District" and a menu with items: About, Business With Us, Missions, Media, Library, Locations, Careers, Contact, and Coronavirus. Below the navigation bar, there are two main sections: "Quick Links" and "Great Lakes Information".

Quick Links

- Great Lakes Information (+)
- Great Lakes Basin Conditions
- Great Lakes Outflows
- Great Lakes Precipitation
- Great Lakes Update Articles
- Water Level Data
- Water Level Forecasts
- Lake Superior Regulation
- Lake Winnebago
- Coastal Program
- Flood Monitoring
- Contact Information
- Related Links

Great Lakes Information

[Collapse All](#) [Expand All](#)

- [Great Lakes water level data and forecasts, basin conditions, outflows, and other information relating to Great Lakes water levels](#)

Great Lakes Information

Click on a box below to view water level data, water level forecasts, basin conditions, outflows, or update articles.

Water Level Data

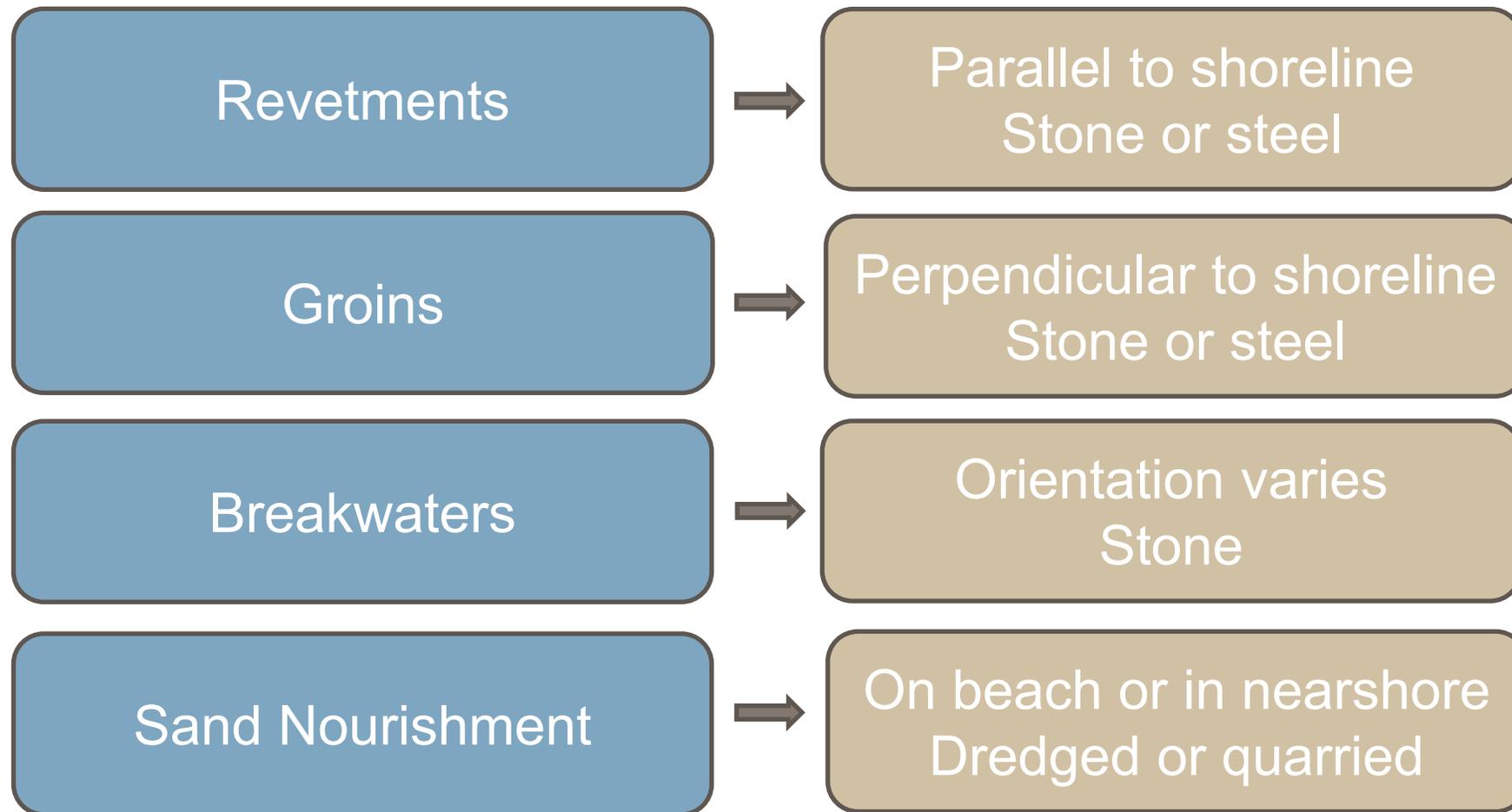
Click this box to view historical monthly mean lakewide average water levels, daily Great Lakes Water Levels Reports, water levels on the Detroit, St. Clair, and St. Marys Rivers, and links to NOAA water level gage data.

Water Level Forecasts

Click this box to view all Great Lakes forecast products, including the Weekly Water Level Update, the Connecting Channels Forecast, the Monthly Bulletin of Great Lakes Water Levels, and the Great Lakes Water Level Outlook.



SHORELINE PROTECTION MEASURES



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SHORELINE PROTECTION



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USACE STATUTORY AUTHORITIES

Section 10

All work regulated*

Over, under, or through regulated water

Basis for jurisdiction of smaller streams / wetlands

Section 404

Discharge of fill in waters of the U.S.**

Ex. Grading for residential development

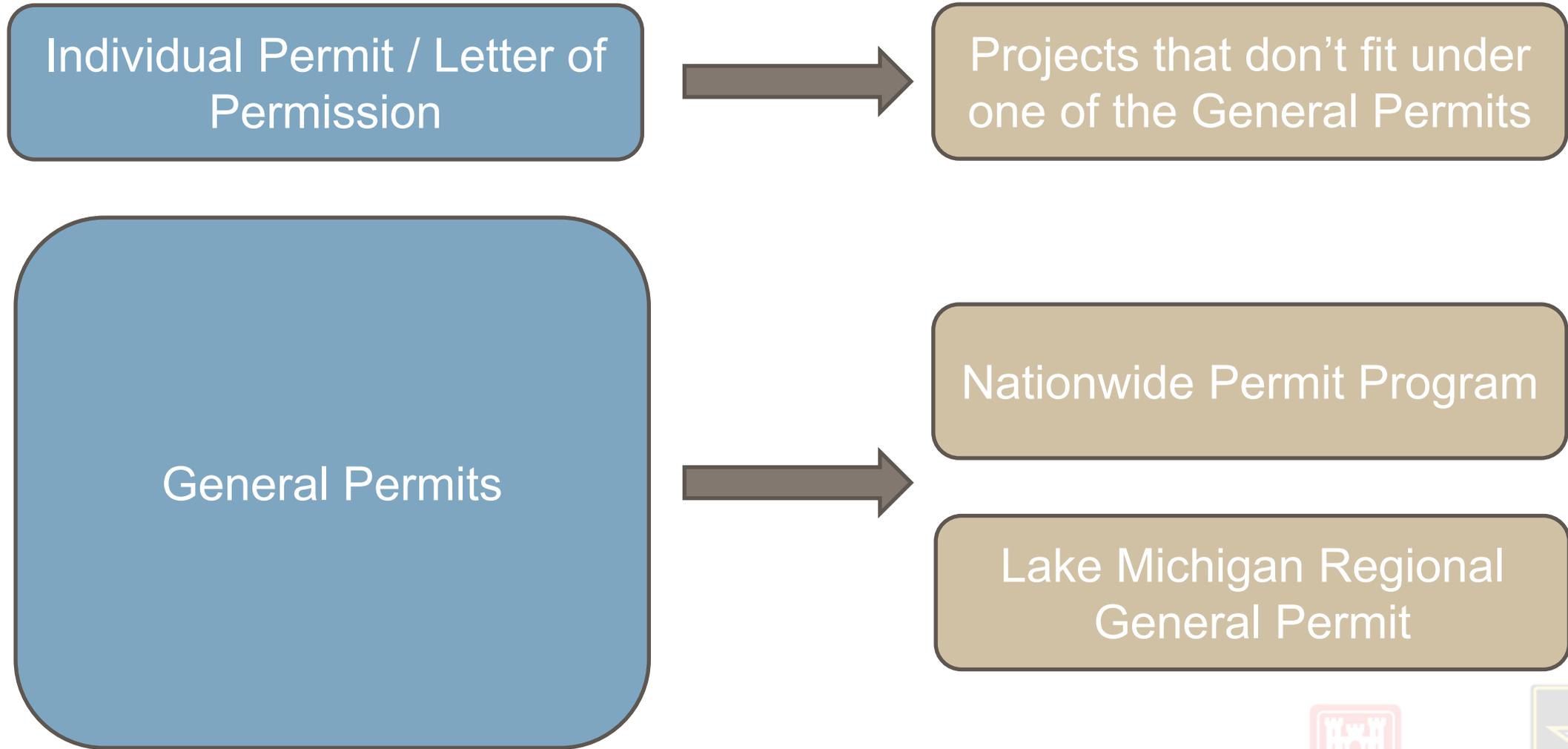
Ex. Road construction across stream



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SHORELINE PERMITTING PROCESS



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PUBLIC INTEREST REVIEW

Public/private shoreline access and usage

Littoral sand movement

Public notification procedures



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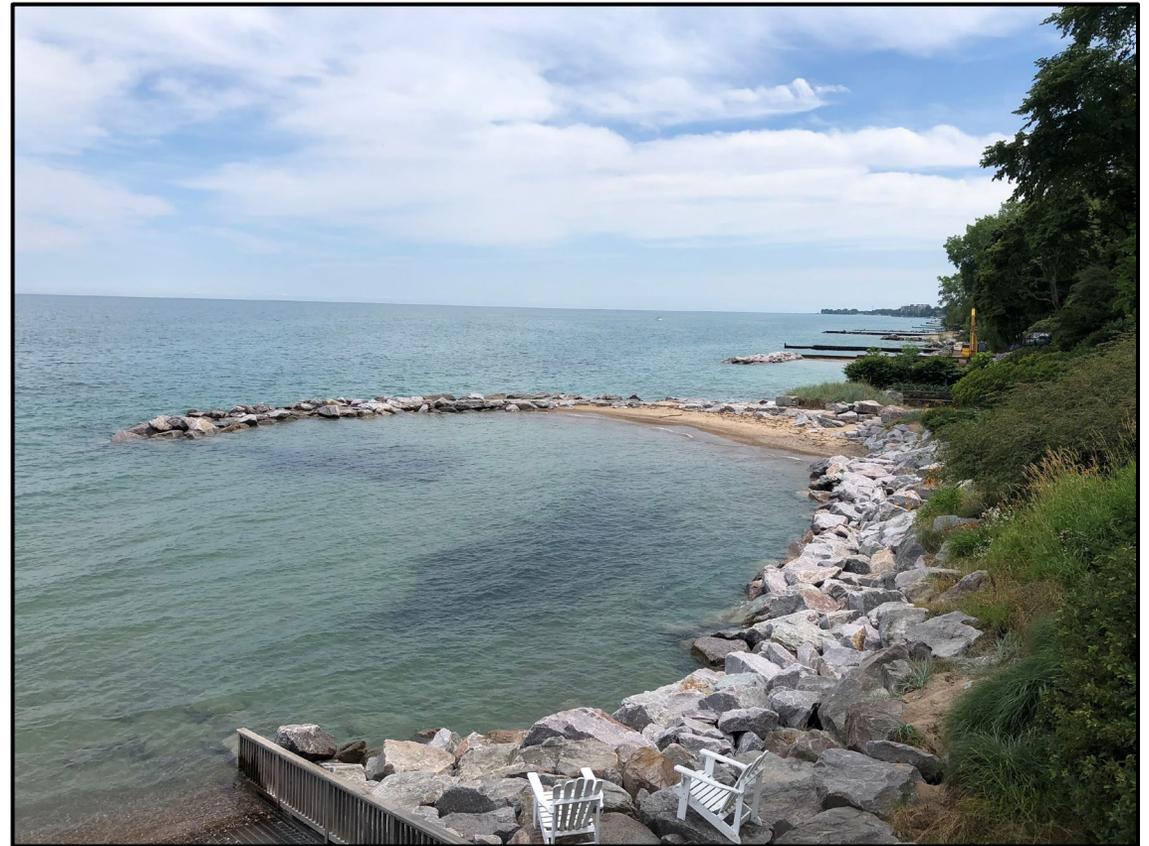
U.S. ARMY

LAKE MICHIGAN REGIONAL GENERAL PERMIT ¹⁰

Includes eight groups of activities

Most shoreline protection projects covered

Covers Lake and Cook Counties in Illinois



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ACTIVITIES COVERED

1. Installation, repair, and modification of permanent and seasonal piers/docks, boat ramps, boat hoists, and lifts.

2. Navigational and mooring aids;

3. Temporary recreational structures;

4. Installation, repair, and modification of shore protection;

a. Groins and breakwaters must be situated within **125 feet of the toe of the bluff...**

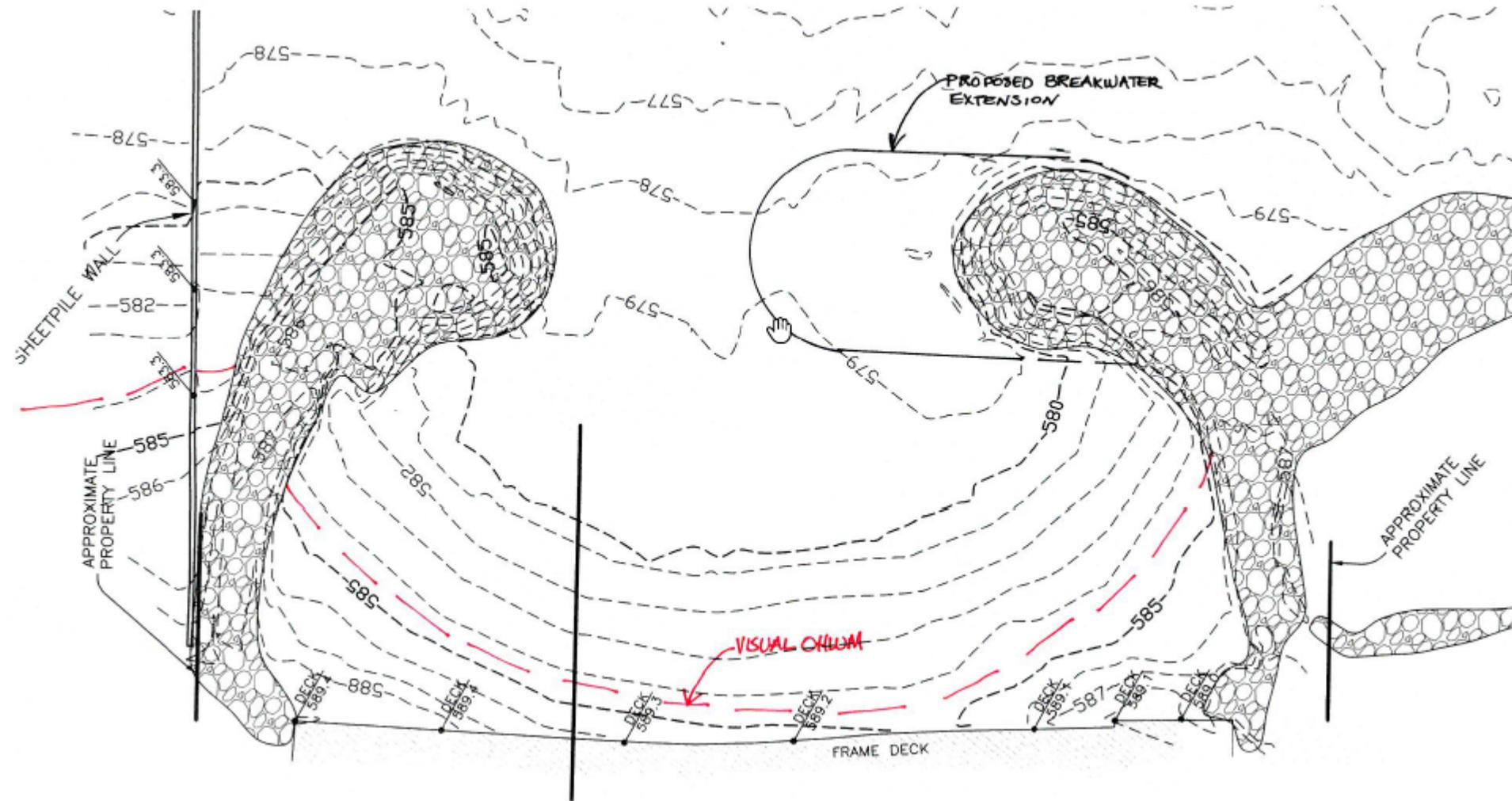
b. **Pre-fill sand at a volume of 120% of the calculated capture volume** of the proposed structure(s) must be provided in conjunction with the construction of the structure.



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DESIGN REQUIREMENTS



ORDINARY HIGH WATER MARK



Typical indicators of OHWM observed along Lake Michigan Shoreline:



- 1. Sediment sorting
- 2. Vegetation changes
- 3. Litter deposits
- 4. Slope change



ACTIVITIES COVERED (CONT.)

5. Beach nourishment;

6. Maintenance of **existing public harbors**, public access facilities, and navigational features required for maintaining existing function

7. In-water discharge of dredged material, including beneficial use of dredged material for beach nourishment, shore protection, or ecosystem restoration;

8. Temporary structures and minor discharges of dredged or fill material necessary for the removal of vessels (wrecked, abandoned, or disabled) or for the removal of constructed obstructions to navigation.



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OTHER AGENCY REVIEWS

Illinois Environmental
Protection Agency

401 Water Quality
Certification

Darren LeCrone

Local
Municipalities or
Counties

U.S. Fish and Wildlife
Service

Threatened and
Endangered Species

Shawn Cirton

Illinois Department of
Natural Resources /
Office of Water Resources

Costal Zone Management
Public Trust

James Casey



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QUESTIONS?

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Illinois Department of Natural Resources, Office of Water Resources Permitting on Lake Michigan

Stephen C. Altman, P.E., CFM

Division Manager

Illinois Department of Natural Resources

Office of Water Resources

Division of Resource Management

Illinois' Lake Michigan Shoreline

- 63 miles long.
- Chicago's lakefront is 22 miles long.
 - Consists of mainly parks and beaches.
- Illinois Beach State Park's lakefront including North Point Marina is 9 miles long.
 - Only near natural shoreline in Illinois.
- Illinois' Lake Michigan shoreline is probably the most urbanized/engineered shoreline in the Great Lakes.
 - Approximately 85% has some form of shore protection.

Chicago Office Permitting Boundaries

- The IDNR/OWR Chicago Office reviews applications for permit in the following areas.
 - Lake Michigan.
 - Chicago River Main Branch.
 - Chicago River North Branch Canal.
 - Chicago River North Branch south of North Avenue.
 - Chicago River South Branch north of Cermak Road.
 - Calumet River lakeward of the O'Brien Lock and Dam.

Authorities

- Authorization pursuant to the RIVERS LAKES AND STREAM ACT OF 1911 [615 ILCS 5] and,
- IDNR/OWR Part 3704 “Regulation of Public Water” Rules.

Public Trust

- Lake Michigan is a public body of water.
- The bed of Lake Michigan is held in trust for the people by the State of Illinois.

Jurisdiction

- On Lake Michigan the IDNR/OWR regulates up to and including the toe of the bluff or the Ordinary High Water Mark, whichever is more restrictive.
- The current Ordinary High Water Mark on Lake Michigan is 581.5 ft. International Great Lakes Datum 1985 Adjusted (581.5 ft. IGLD-85).
- On Lake Michigan the IDNR/OWR issues a joint permit with the Illinois Environmental Protection Agency (IEPA).

IDNR/OWR Review

- The IDNR/OWR makes its evaluation, based on the type and magnitude of the activity and on the existing conditions of the body of water in the locality of the activity, of the potential of the activity to result in:
 1. An obstruction to, or interference with, the navigability of any public body of water;
 2. An encroachment on any public body of water;
 3. An impairment of any rights, interests or uses of the public in any public body of water or in the natural resources of; or
 4. Shoreline instability on other properties.

Allowable Projects

- Shore or bluff protection
- Beach nourishment
- Establishing a uniform shoreline
- Projects authorized by the General Assembly, to fill the bed of Lake Michigan (only provided to public agencies to serve public purposes).
- Dredging and open water disposal of dredge material.
- Construction of Harbors (only by public agencies and with the blessing of the General Assembly)
- Boat Ramps and Permeable Piers.

Types of Authorizations

- Permit Not Required.
- General Permit 1-LM
- Individual Permit

Permit Not Required

- Projects entirely above the toe of the bluff and the Ordinary High Water Mark of 581.5 IGLD-85.
- Maintenance of an existing permitted structure.
- This determination is made by the IDNR/OWR after reviewing a completed application form.
- No fee is required.

General Permit No. 1-LM

- Issued for minor shore protection projects that are parallel to shore.
- Can't exceed 300 ft. in length.
- Examples, include stone revetments or steel sheet pile bulkheads built at the toe of a bluff.
- Does not require a public notice.
- Does require IEPA sign off.
- A \$500 fee is required.

Quarrystone Revetment Winnetka, Illinois



Steel Bulkhead, Evanston, Illinois



Bulkhead w/Stone Revetment Glencoe, IL



Individual Permit

- All projects located at or below the toe of the bluff or the Ordinary High Water Mark 581.5 IGLD - 85, whichever is more restrictive and not covered by GP-1LM.
- Requires a 30 day public notice.
- IEPA sign off.
- Fees are either \$3,130 or \$5,000 depending on the proposed project.

Groin Field, Highland Park, IL



Stone Groin, Wilmette, IL



Stone Spur on the end of an existing steel sheet pile groin, Lake Forest, IL



Breakwater/Beach System, w/Boat Ramp Winnetka, IL



Chicago Lakefront 1990



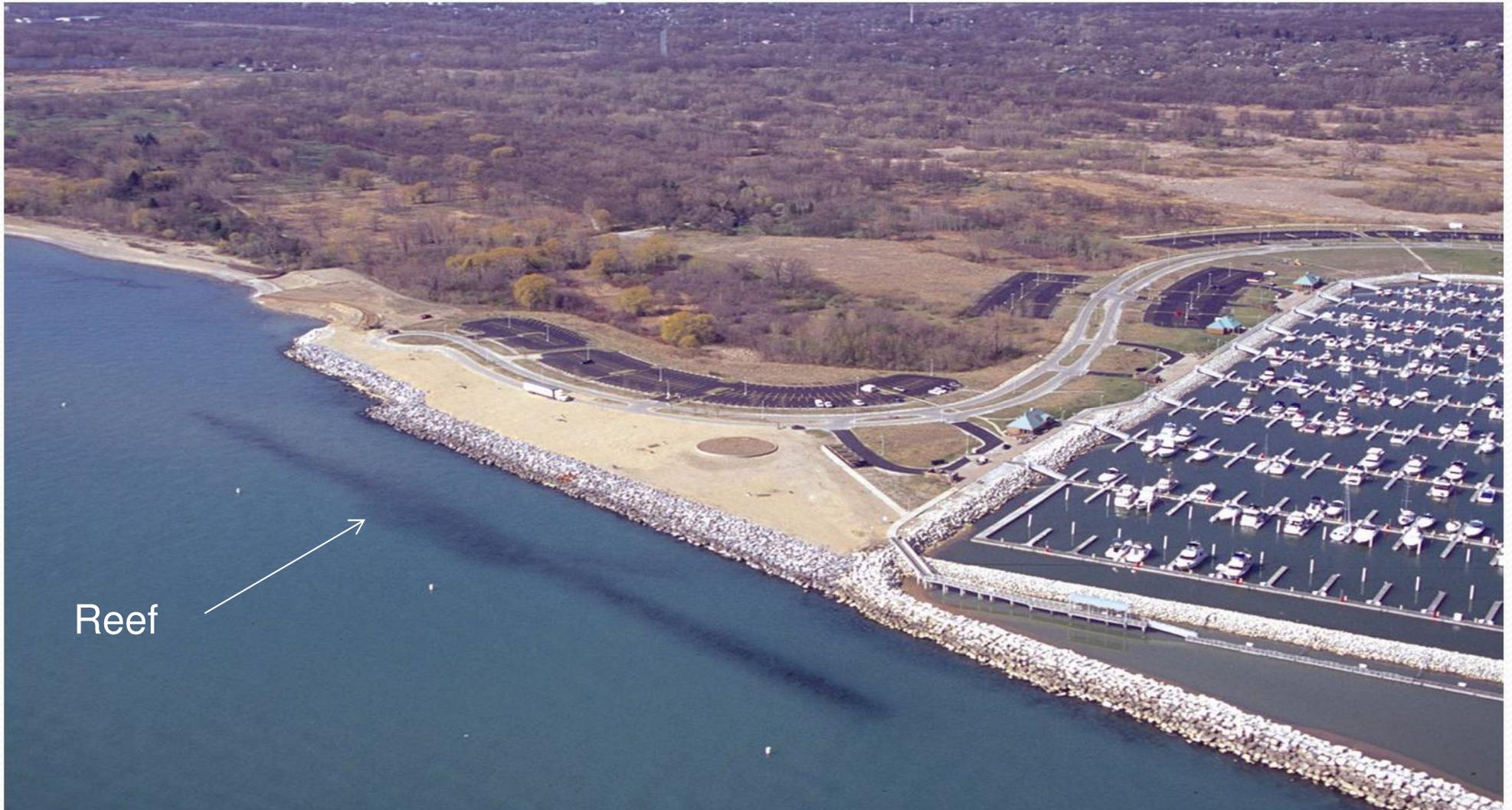
Chicago Lakefront 2000



North Ave. Beach, Chicago, IL



Revetment, Breakwater, Underwater Reef North Point Marina, Winthrop Harbor, IL



Reef

Application

- The application form “Protecting Illinois Waters” can be found at www.dnr.illinois.gov/WaterResources/Pages/PermitApplicationandInstructions.aspx.
- Joint application form used by the IDNR, U.S. Army Corps of Engineers and the IEPA.
- The application needs to be sent separately to each of the permitting agencies.

IDNR/OWR'S Guidelines for Shore Protection Projects

- Developed in 2008 by the IDNR/OWR, to help applicant's apply for shore protection projects.
- Guidelines not rules.
- Available at www.dnr.illinois.gov/WaterResources/Documents/Lake%20Michigan%20Permit%20Guidelines.pdf

Application

- Applicant's should send two copies of their application for permit to the IDNR/OWR's Chicago Office.
- Item 7. of the application Adjacent Property Owners should include; 10 neighbors south of the proposed project and 3 neighbors north.

Plans

- Full size plans are fine but one copy of 11" x 17" or smaller will be required.
- Plans should be to scale, cross-sections should show vertical and horizontal scale.
- Plans should clearly show the Ordinary High Water Mark (581.5 ft. IGLD-85) and reference the datum used (preferably IGLD-85).
- Plans should show existing and proposed conditions, adjacent property lines and a north arrow.
- A detailed location map, plan view and cross-sectional views will be required.

Additional Data

- A detailed explanation of the purpose and need for the project.
- An evaluation of the projects potential impacts in the area on:
 - Public uses, boating, swimming, wading and fishing.
 - Natural resources in the nearshore including fisheries, waterfowl, wildlife, and vegetation.
 - Adjacent property's shorelines.
 - The project's components that will minimize or mitigate any project-induced negative impacts.
- Approval in writing from adjacent property owners for any work proposed on or in front of their property.

Shore Parallel Revetments and Bulkheads

- Located at the toe of the bluff.
- As large as needed to protect the bluff.
- Clean material, quarrystone, steel, wood, etc.

Shore Perpendicular or Offshore Structures

- Should be the minimum size needed to provide adequate shore protection.
- The lakeward end of the structure should extend into Lake Michigan no further than 125 ft. measured from the toe of the bluff.
- All structures should provide pedestrian access over and across them at the landward side.

Pre-Mitigational Fill

- All structures with the potential to trap sand from the littoral drift must be pre-filled to 120% of their potential capacity with clean sand.
- The sand must be of the same grain size or larger.
- The sand must be placed immediately after the construction of the structures.
- Volume calculations and a plan view showing the location and volumes of sand placement, should be submitted with the application.

Monitoring

- All structures with the ability to trap littoral sediments will require monitoring to show they are performing as designed.
- Monitoring will consist of the following.
 - A pre-construction survey
 - A post construction survey, done within one month after construction.
 - A survey done one year after the post construction survey.
 - A Survey done five years after the original post construction survey.
 - Additional monitoring may be required.

Public Notice

- Issued for all Individual Permit reviews.
- 30-day comment period.
- Sent to federal, local and state governments.
- Sent to adjacent property owners, 10 south and 3 north and the Department's list of interested parties.
- Any objections received need to be responded to in writing by the applicant or their agent.
- The public notice period may be extended if warranted.

Permit Special Conditions

- The State of Illinois does not convey title to the permittee or recognize title of the permittee to any submerged lands of Lake Michigan.
- The permittee and the permittee's successors shall make no claim whatsoever to any interest in any accretions caused by the activity.

Closing

- A pre-application meeting is always a good idea.
- Make sure you apply to all three agencies.

James Kessen

Illinois Department of Natural Resources

Office of Water Resources

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160 N. La Salle Street, Suite S-703

Chicago, IL 60601

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VILLAGE OF WINNETKA

LAKEFRONT ZONING & DEVELOPMENT REGULATIONS

**Village Council Study Session
January 10, 2023**

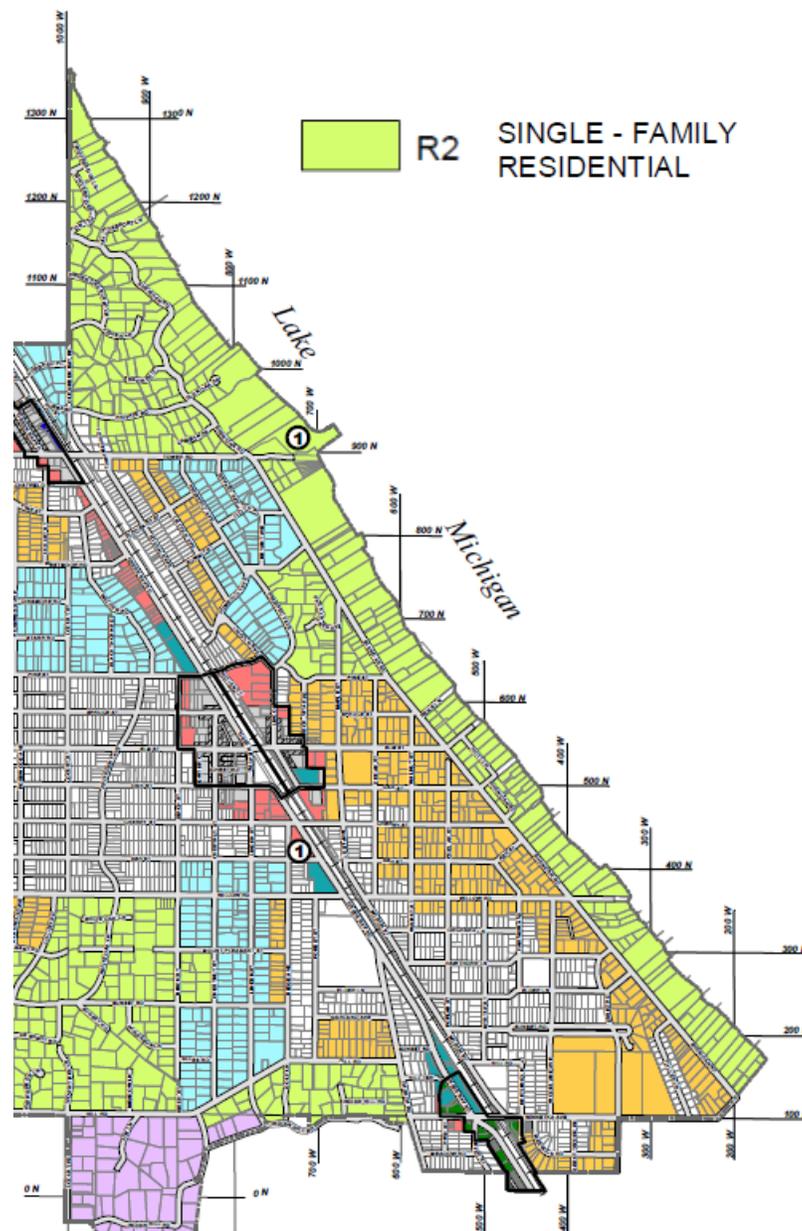




LAKEFRONT ZONING

R-2 Single Family Residential District

- **Permitted Uses**
 - SF Detached Dwellings & Accessory Structures
- **Special Uses**
 - Churches, Public & Private Schools, Library
 - Park District Uses
 - Essential Village Services

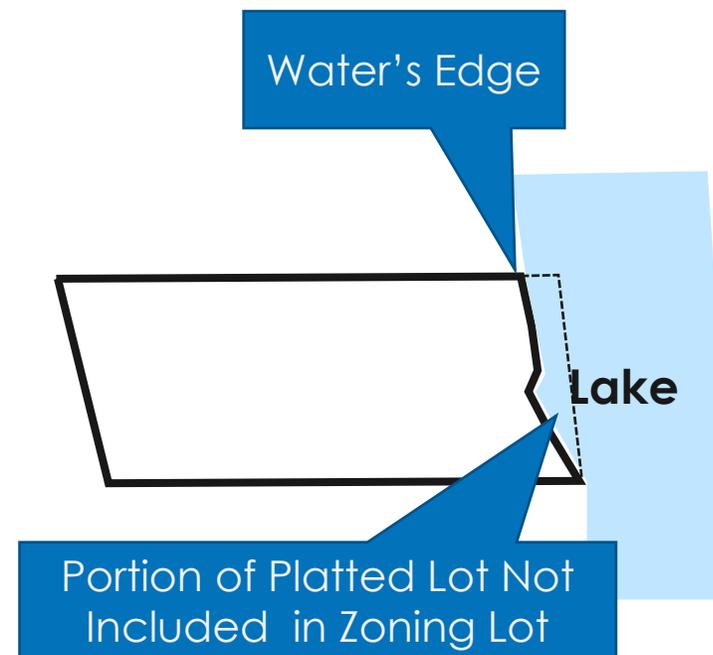




LOT; ZONING LOT - WINNETKA

“Lot” or “zoning lot” shall not include any part of a platted lot that lies beyond the water's edge of Lake Michigan or with the boundaries of any other river, lake or stream that is under the ownership and control of the state of Illinois.

***“lot area” shall not include any part of a platted lot that lies beyond the water’s edge of Lake Michigan.*”**

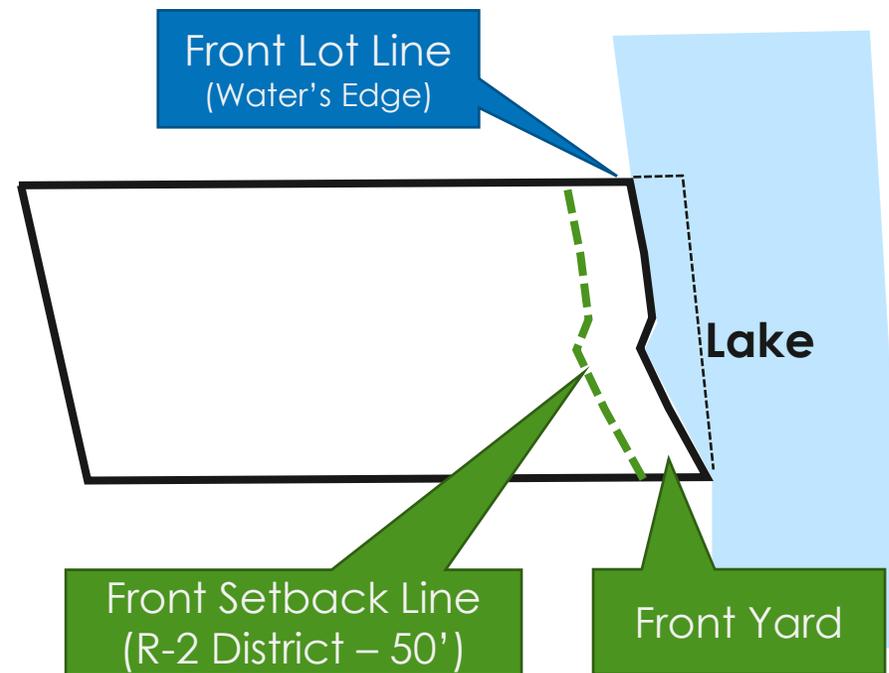




FRONT YARD & SETBACK

"Front lot line" means the front street line... **for lots abutting Lake Michigan**, the water's edge of the lake shall be deemed a "front lot line."

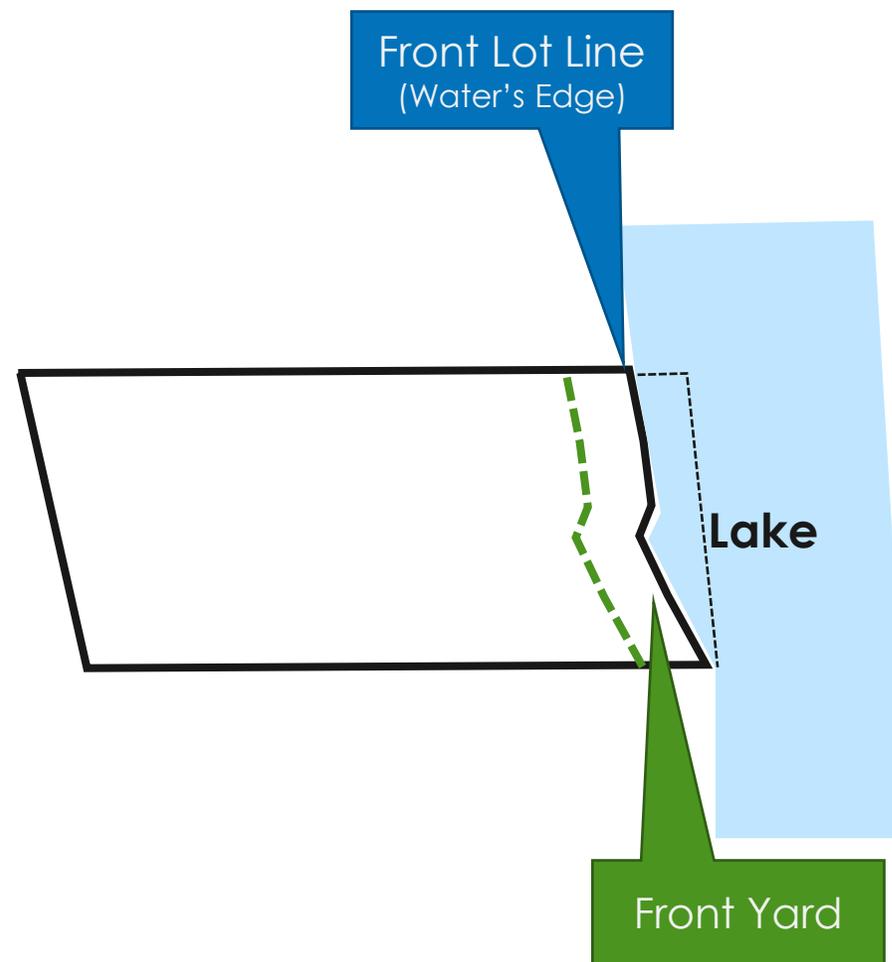
"Setback" means the minimum required horizontal distance between any lot line and a line drawn parallel to that lot line at a distance equal to the minimum required yard.





ACCESSORY STRUCTURES ALLOWED IN REQUIRED FRONT YARD

- Certain building elements with specific limitations (e.g., eaves, bay windows, chimneys, etc.)
- Fences & walls no more than 6.5' tall
- Walkways & stairs
- Open patios, open terraces, front porches
- Docks
- Boat launches without buildings/structures





ZONING MEASUREMENTS & **STANDARDS DIRECTLY OR INDIRECTLY BASED UPON WATER'S EDGE**

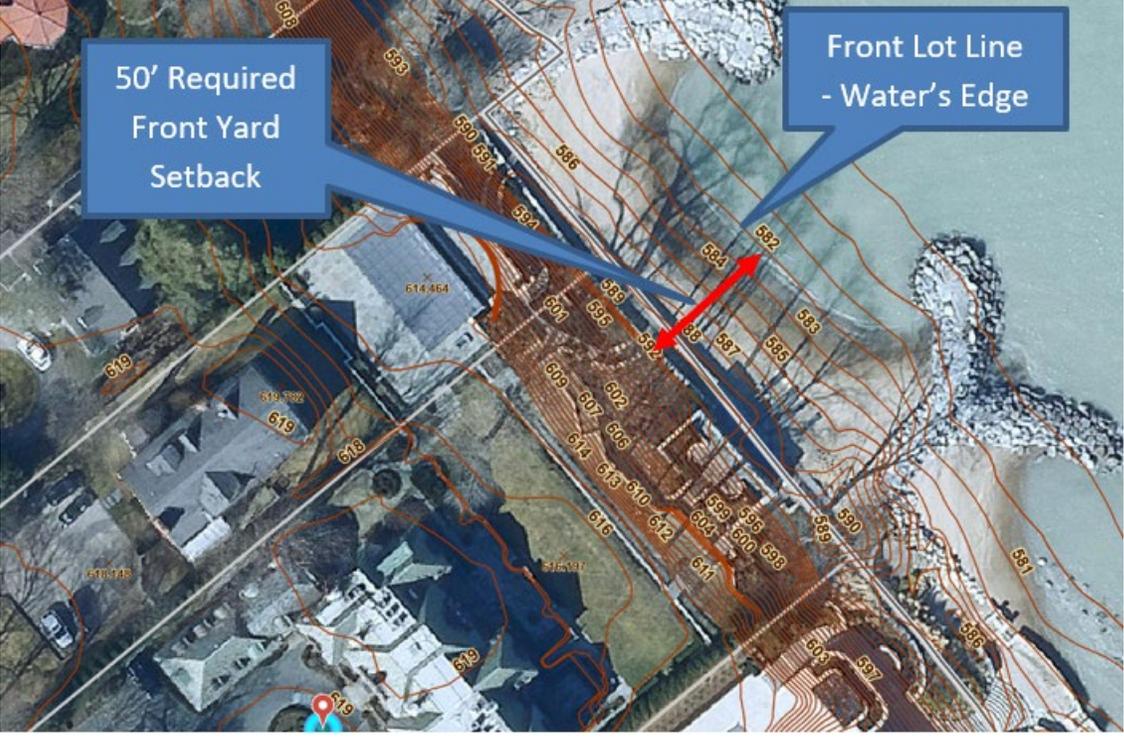
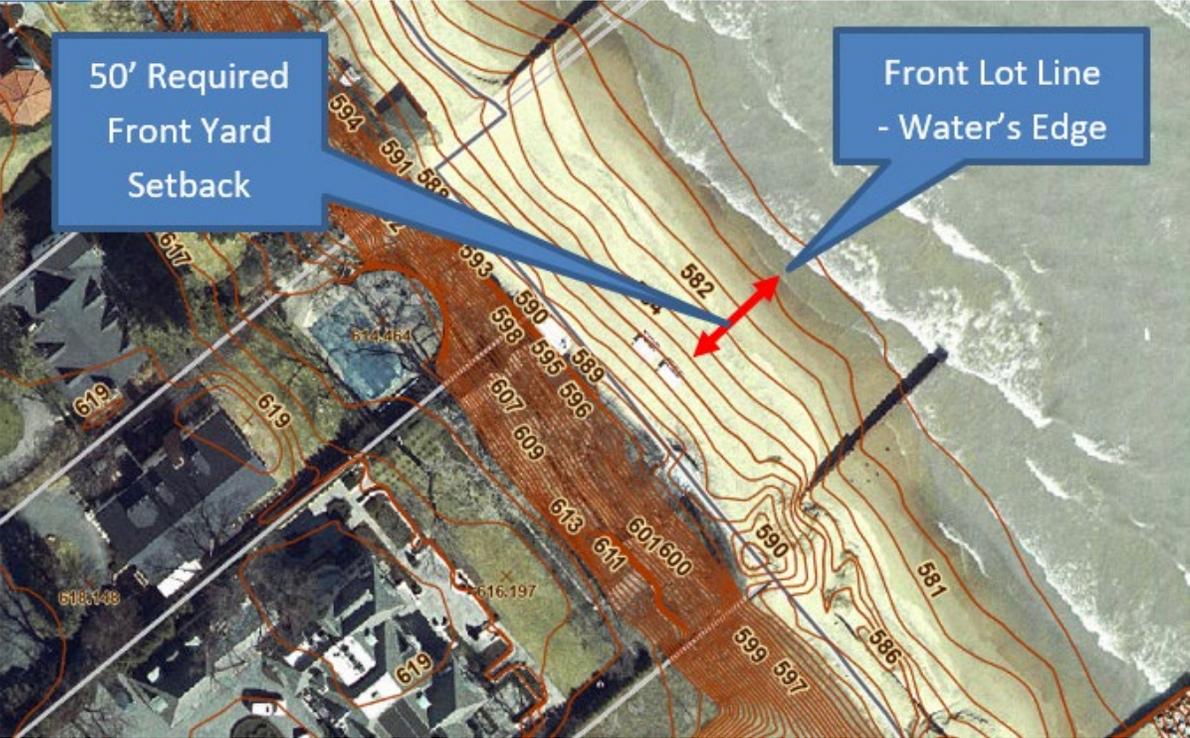
- **Lot Area**
- **Front Lot Line**
- **Lot Depth**
- **Average Lot Width** (based upon Lot Area & Lot Depth)
- **Minimum Required Front Yard Setback** (based upon Front Lot Line)
- **Minimum Required Total Side Yard** (based upon Average Lot Width)
- **Maximum Gross Floor Area** (based upon Lot Area)
- **Maximum Roofed Lot Coverage** (based upon Lot Area)
- **Maximum Impermeable Lot Coverage** (based upon Lot Area)



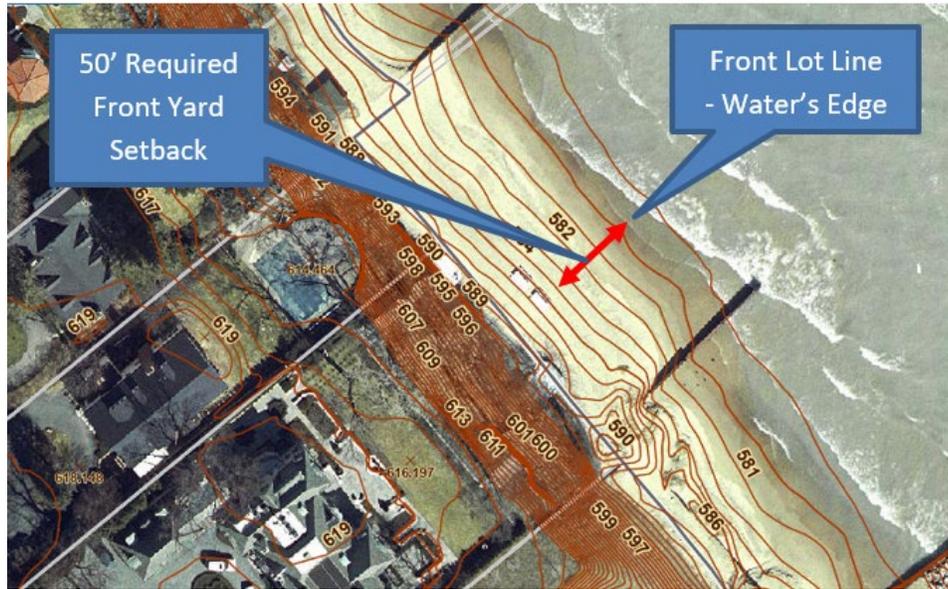
EXAMPLE OF HOW CHANGING LAKE LEVEL IMPACTS WATER'S EDGE AND FRONT LOT LINE

Lower Lake Level - 2005

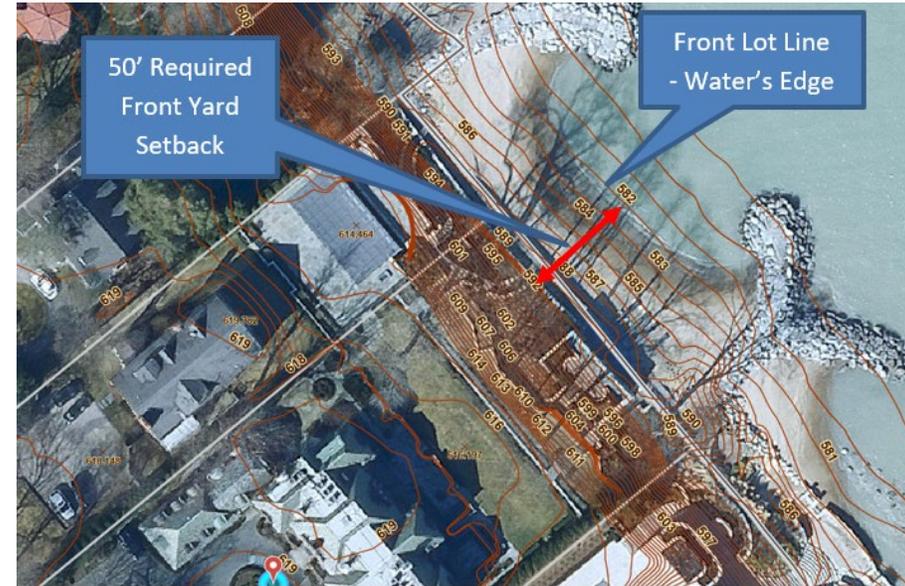
Higher Lake Level - 2020



Lower Lake Level - 2005



Higher Lake Level - 2020



Lower Lake Level (Date: Jan. 29, 2002)		Higher Lake Level (Date: Dec. 3, 2019)
75,675 sf	Lot Area	64,716 sf
507 ft	Lot Depth	442 ft
149 ft	Average Lot Width	146 ft
19,220 sf	Max Gross Floor Area	16,699 sf
18,918 sf	Max Roofed Lot Coverage	16,179 sf
37,837 sf	Max Impermeable Lot Coverage	32,358 sf
50 ft	Min Front Yard Setback (from water's edge)	50 ft
12 ft	Min Side Yard Setback	12 ft
44.78 ft	Min Total Side Yard Setback	43.8 ft





NORTH SHORE LAKEFRONT COMMUNITIES ZONING & DEVELOPMENT REGULATIONS

- Evanston
- Glencoe
- Highland Park
- Kenilworth
- Lake Forest
- Lake Bluff
- Wilmette





OTHER NORTH SHORE COMMUNITIES LAKEFRONT **LOT LINE** FOR ZONING PURPOSES

10

Water's Edge as shown on plat of survey (Rear Lot Line)

- Evanston
- Highland Park
- Kenilworth

Lot Line on Plat of Subdivision, if available (Rear Lot Line)

- Glencoe

Ordinary High-Water Mark (Rear Lot Line)

- Lake Forest

Mean Lake Level (Rear Lot Line)

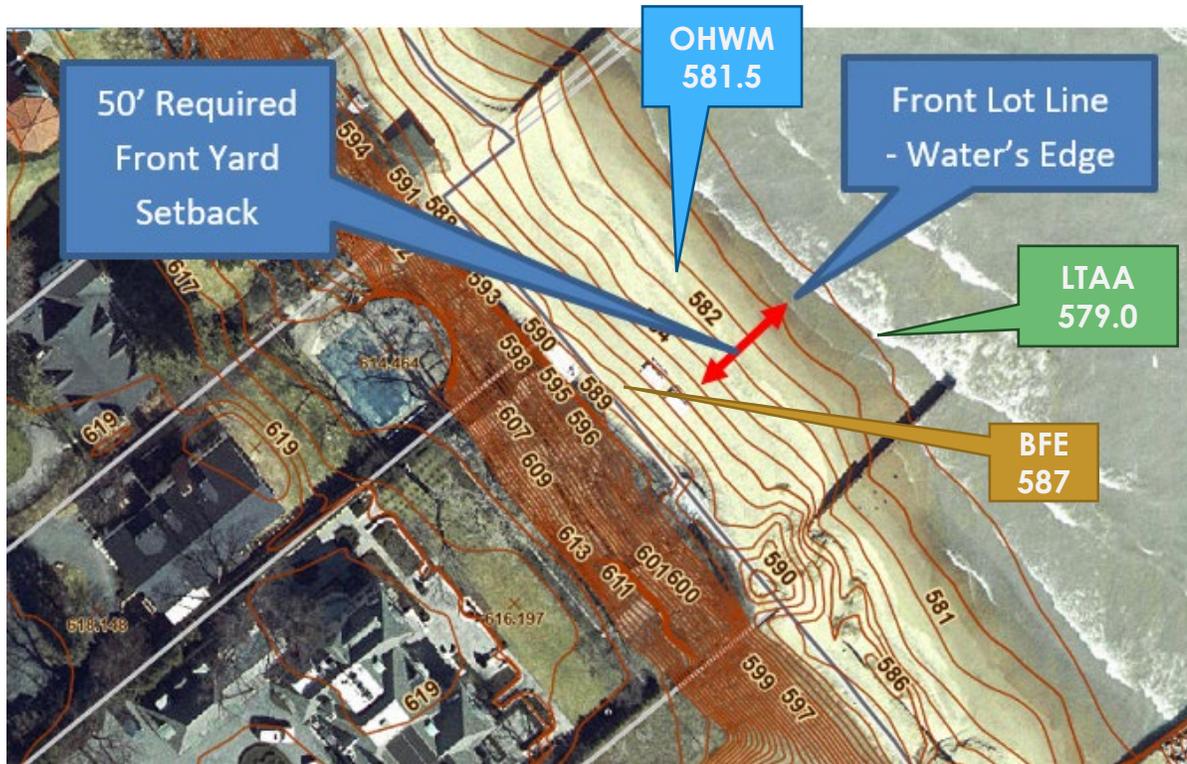
- Wilmette

Plat of Survey Submitted with Application (Rear Lot Line)

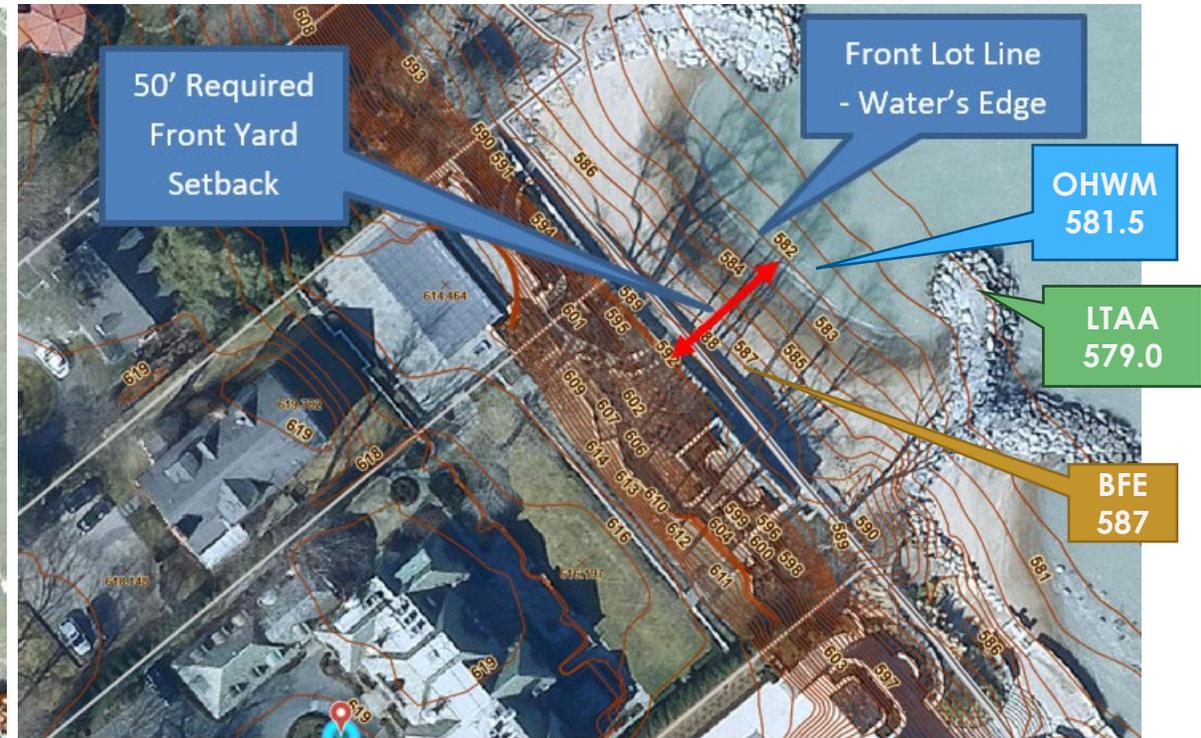
- Lake Bluff



Lower Lake Level - 2005



Higher Lake Level - 2020



OHWM – Ordinary High-Water Mark (581.5 for Lake Michigan - USACE)

LTAA – Long Term Average Annual Mean Water Level (579.0 for Lake Michigan - USACE)

BFE – Base Flood Elevation (587-594, varies along lakefront - FEMA)





OTHER NORTH SHORE COMMUNITIES LAKEFRONT - **LOT AREA** FOR ZONING PURPOSES

12

Only Two Communities Do Not Include the **Entire Lot Area** for Zoning Purposes.

Kenilworth

- Uses toe of the bluff as the eastern lot line for calculating lot area.

Lake Forest

- For the area of any non-table land, that is land with a slope of 10% or greater, only 50% of that land area counts as lot area for calculating the allowable building square footage.





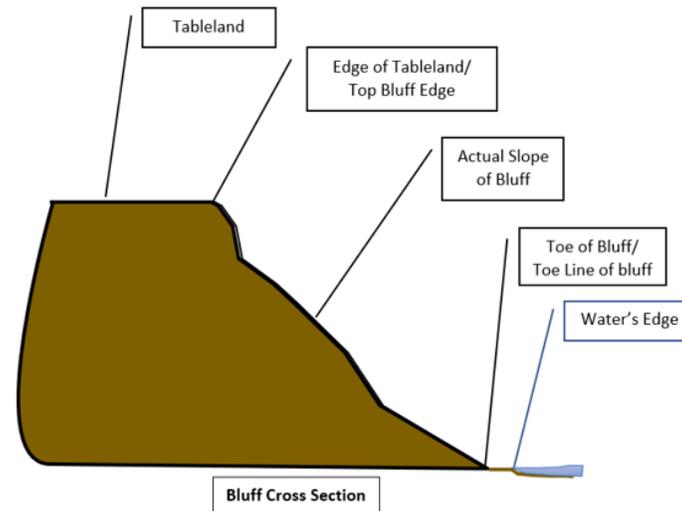
OTHER NORTH SHORE COMMUNITIES STEEP SLOPE/BLUFF REGULATIONS

Have Steep Slope Regulations

- Glencoe
- Highland Park
- Kenilworth
- Lake Bluff
- Lake Forest

Do Not Have Steep Slope Regulations

- Evanston
- Wilmette





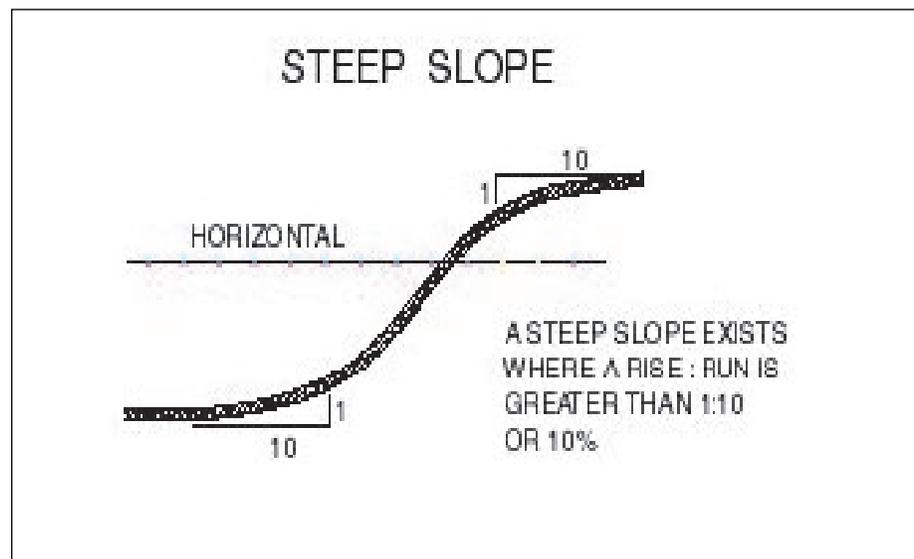
OTHER NORTH SHORE COMMUNITIES DEFINITION OF STEEP SLOPE

10% (1V:10H) or Greater

- **Glencoe**
- **Highland Park**
- **Kenilworth**
- **Lake Forest**

20% (2V:20H) or Greater

Lake Bluff

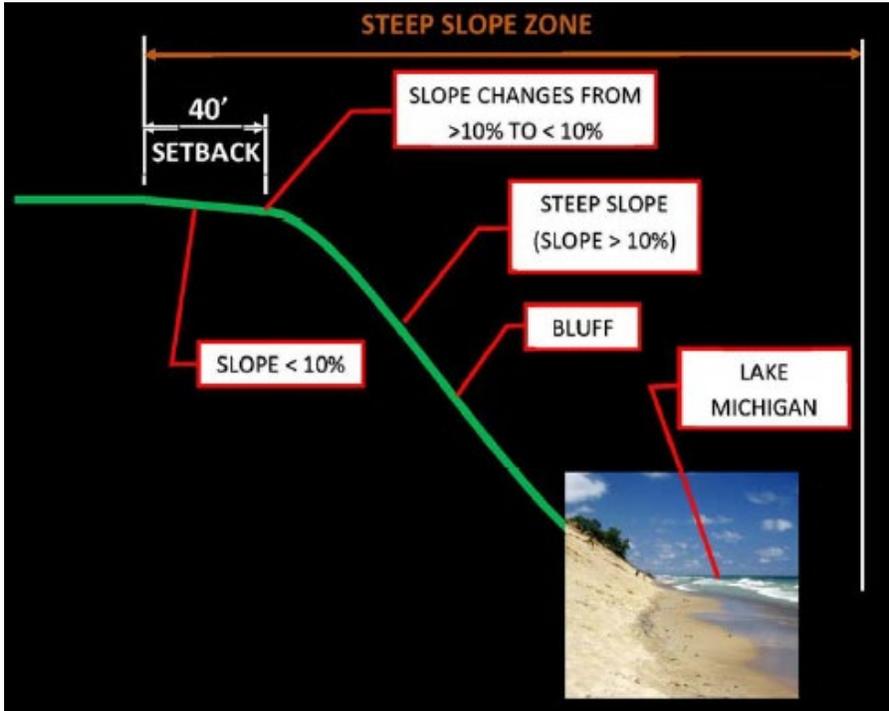




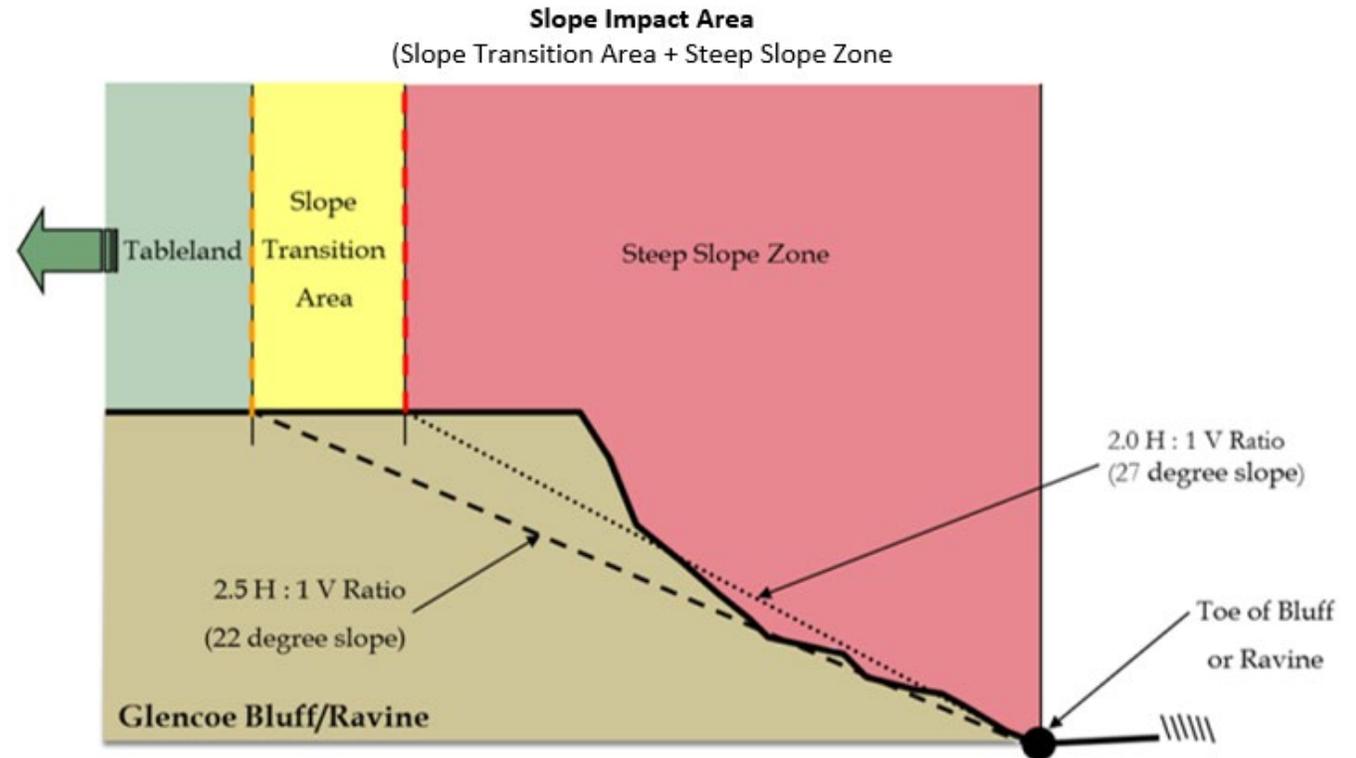
OTHER NORTH SHORE COMMUNITIES

DEFINITION OF STEEP SLOPE ZONE/BLUFF PROTECTION AREA

Highland Park



Glencoe





OTHER NORTH SHORE COMMUNITIES

HOW CLOSE BUILDINGS CAN BE BUILT TO STEEP SLOPE ZONE

Table 4 – Minimum Setback from Top of Steep Slope/Bluff Area

	Table 4 – Minimum Setback from Top of Steep Slope/Bluff Area
Glencoe	<ul style="list-style-type: none">Allows buildings & structures on tableland & within the Slope Transition Area with conditions.
Highland Park	<ul style="list-style-type: none">Allows improvements on table land up to 40' from top edge of bluff steep slope.
Kenilworth	<ul style="list-style-type: none">Allows improvements on table land up to 35' from top edge of bluff.
Lake Bluff	<ul style="list-style-type: none">Allows improvements on the table land up to 40' from top of bluff edge
Lake Forest	<ul style="list-style-type: none">Allows any structure or building foundation up to 75 feet to the bluff area





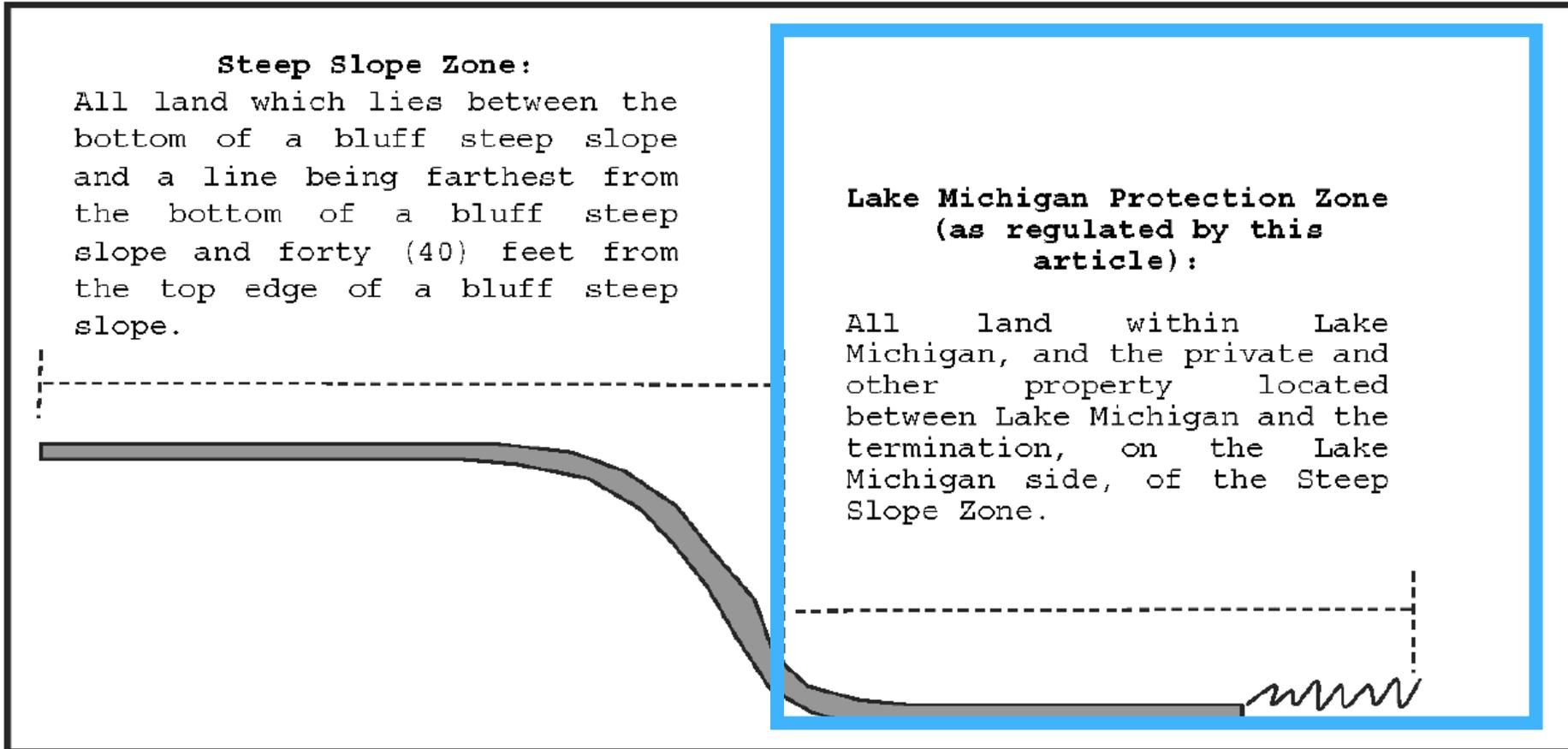
OTHER NORTH SHORE COMMUNITIES CONSTRUCTION ALLOWED WITHIN STEEP SLOPE AREA/ BLUFF PROTECTION ZONE

	Glencoe	Highland Park	Kenilworth	Lake Bluff	Lake Forest
Slope stabilization & erosion control (e.g., Retaining walls)	X	X	X	X	X
Structures on existing foundations	X	X	X		
Cantilevered balconies	X				
Bridges	X	x	X		
Lifts	X	X	X	X	
Decks (Often with limitations)	X		X		
Patios		X			
Walkways	X	X	X		
Steps	X	X	X		
Fences	X	X	X		
Boat Houses	X				
Accessory Buildings (less than 150 sf)			X		
Utility Service Lines	X	X	X	X	X



OTHER NORTH SHORE COMMUNITIES DEVELOPMENT REGULATIONS FOR ACTIVITY WITHIN LAKE

Only Highland Park





QUESTIONS?





VILLAGE OF WINNETKA

LAKEFRONT ENGINEERING REGULATIONS

**Village Council Study Session
January 10, 2023**





SHORELINE DATA

- 112 total Lakefront Properties
- 8 parcels owned by the Park District
Centennial Park, Elder Park, Lloyd Park, Maple Street Park, and Tower Road Park
- 2 parcels owned by the Village of Winnetka along with utility ROW.
Power Station and Water Plant
- The remainder of the properties are privately owned, and are single-family homes



Winnetka Lakeshore Properties

112 properties





SHORELINE DATA

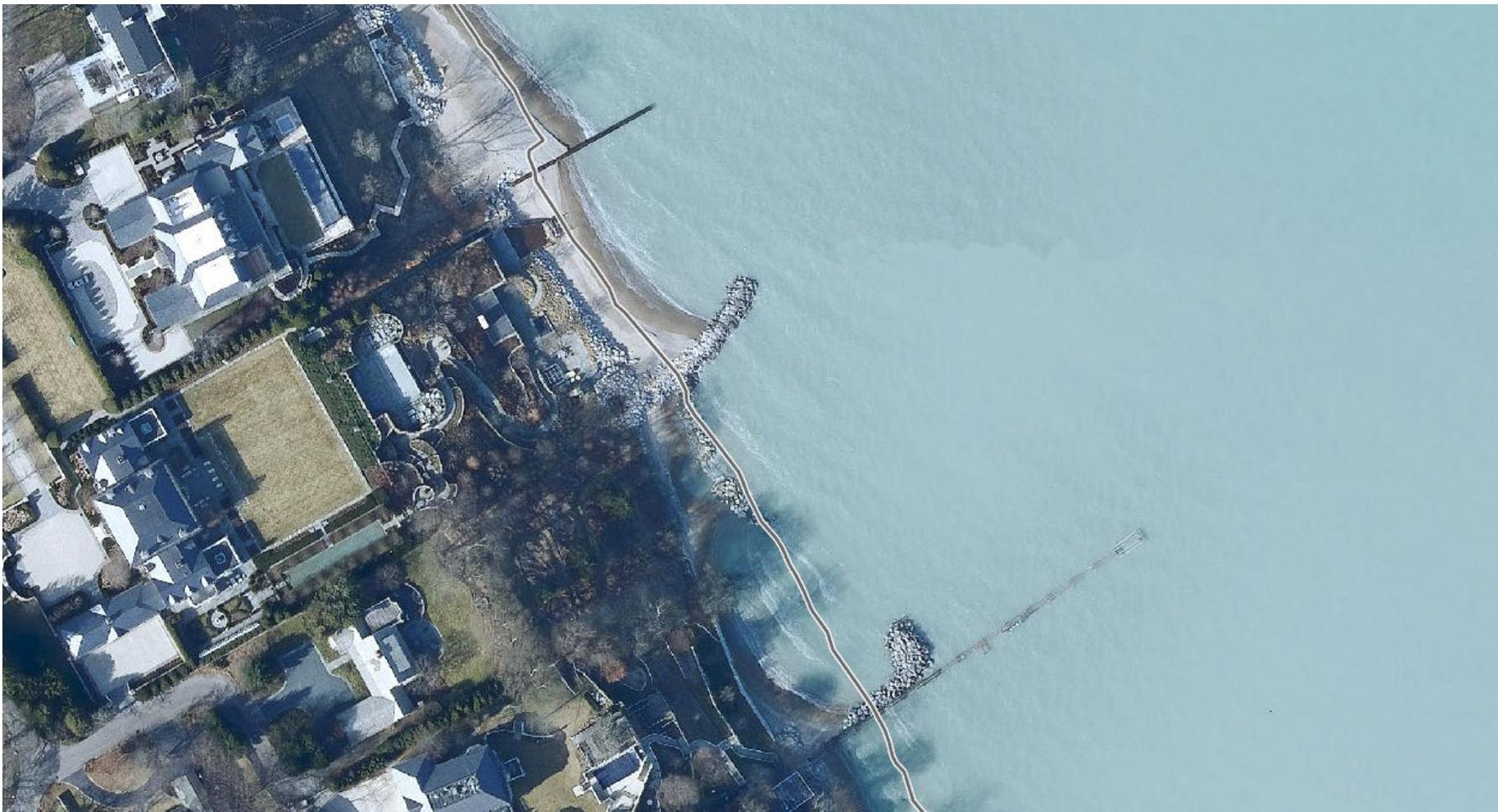
- This map shows some of the permitted Shoreline Protection Projects since approximately 2007.
- It includes both Army Corps and Village records
- Many structures in the lake may date back prior to 1970.





SHORELINE DATA

4



Winnetka, and surrounding municipalities, consist of almost entirely developed shorelines, with existing groins, breakwaters, and armored shores



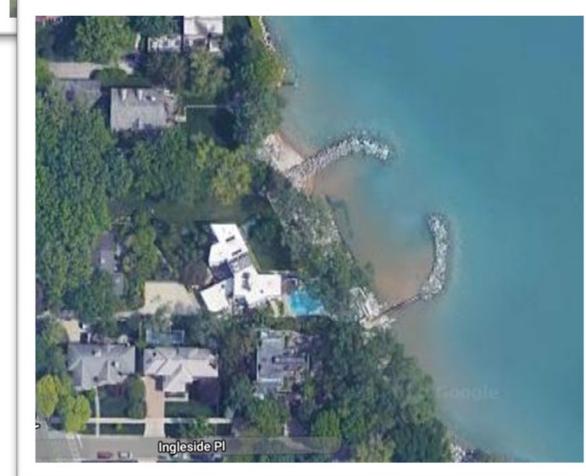
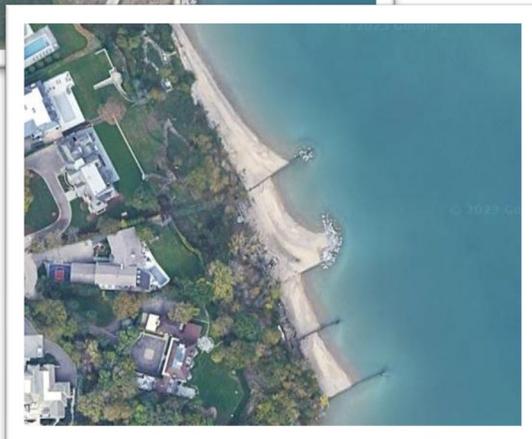
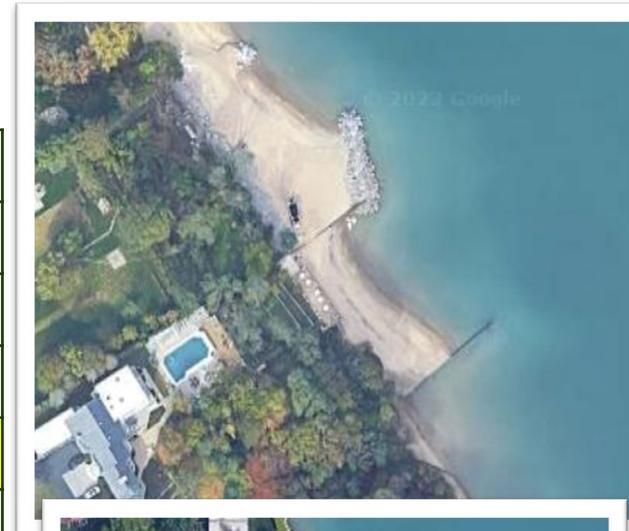
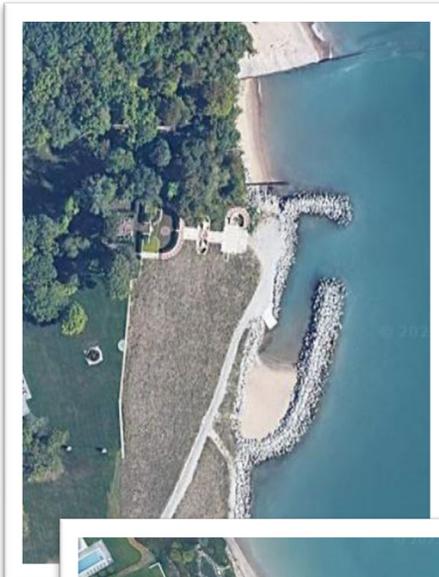


SHORELINE DATA – IN-WATER STRUCTURES

Lake Forest

Glencoe

	# of Groins	# of Breakwaters
Evanston	5	8
Kennilworth	5	1
Wilmette	8	7
Winnetka	25	16
Glencoe	19	3
Highland Park	72	10
Lake Forest	36	8
Lake Bluff	20	7



Highland Park

Evanston



PERMITTING PROCESS

- Code Provisions
 - Stormwater Management Code
 - Title 15, Chapter 15.26
 - Flood Hazard Protection Ordinance
 - Title 15 Chapter 15.68
- Engineering Design and Inspection Policy Manual
- MWRD WMO Guidelines - Floodplain





PERMITTING PROCESS – DRAINAGE & GRADING

7



- The entire lot must be captured by an on-site storm sewer system
- Detention is not required if the entirety of the site is discharged to the Lake
- Stormwater discharges must be taken to the toe of the bluff in a controlled manner to prevent erosion of the slope
- Water must be captured on the table land and is not allowed to sheet flow over the top of the bluff.
- Appropriate erosion control is needed throughout construction and permanent erosion control must be installed as needed.





PERMITTING PROCESS

Floodplain Requirements

- Structures must be elevated to the FPE, which is the BFE + 2 ft
- This also applies to accessory buildings





PERMITTING PROCESS

Bluff Requirements

- A geotechnical and structural engineering plan is required for all structures on or adjacent to the bluff
- The geotechnical engineer and structural engineer must certify that the slope will be stable and reasonably safe from failure, both during construction, as well as at the completion of the project.





COORDINATION WITH PERMITTING AGENCIES

10

- Construction adjacent to the Lake requires permits from the Illinois Department of Natural Resources (IDNR), the Illinois Environmental Protection Agency (IEPA), and the U.S. Army Corps of Engineers (USACE).
- If an IDNR, IEPA, and USACE permit are required, the Village requires those permits be obtained before the Village will issue a permit for the project.
- If an IDNR, IEPA, and USACE permit are not required, a letter of determination that no permit is required must be submitted to the Village before any permits are issued.





COORDINATION WITH PERMITTING AGENCIES

11

- MWRD requires permits for projects along the Lake for the following
- Development activities:
 - Qualified storm sewer construction
 - Potential or actual wetland impacts
 - Potential or actual impacts to riparian areas
 - Construction or reconstruction of outfalls to the Lake
 - Construction of or modifications to habitable structures
- Permits for work under the MWRD's jurisdiction must be obtained or have a letter of determination that no permit is required and submitted to the Village prior to the issuance of a Village permit.





WATER QUALITY

- IEPA National Pollutant Discharge Elimination System (NPDES) Program regulates stormwater discharges from municipal storm sewer systems (MS4s).
- The Village has an approved NPDES MS4 Permit, and it is annually reviewed by the IEPA.
- The permit authorizes discharges of stormwater from MS4s as defined in 40 CFR 122.26 (b)
 “...storm water runoff, snow melt runoff, and surface runoff and drainage.”
- Applicant must develop a stormwater management plan that includes best management practices and measurable goals.





COMMUNITY COMPARISONS

Steep Slope Ordinances

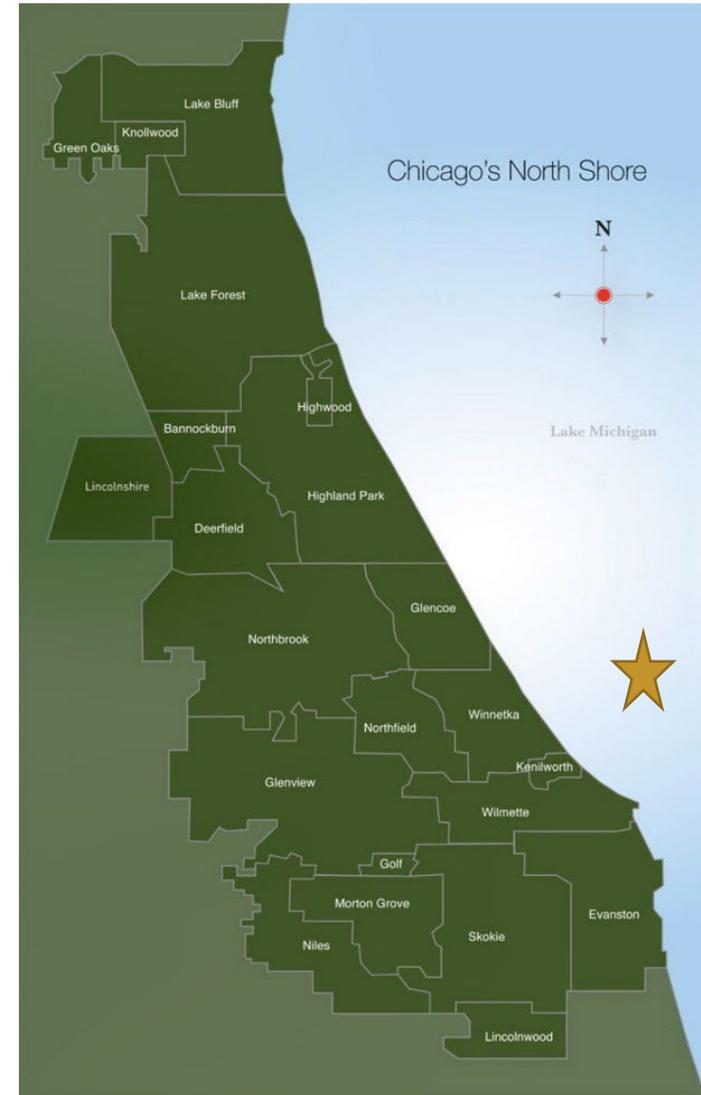
- Glencoe
- Highland Park
- Kenilworth
- Lake Forest
- Lake Bluff

Lake Front Overlay Zone

- Highland Park

Only Floodplain Regulations

- Evanston
- Wilmette





OTHER STUDIES

14

IDNR - Illinois Coastal Management Program

- Work in partnership with IEPA, NOAA, USACE
- 309 Assessment every five years
- Coastal Clean Waters Program
- Shoreline Management Working Group

<https://www2.illinois.gov/dnr/cmp/Pages/default.aspx>

