NIAGARA ESCARPMENT OVERLAY ZONING GUIDE

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Prepared by:
Bay-Lake Regional Planning Commission

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ABOUT THE BAY-LAKE REGIONAL PLANNING COMMISSION

The Bay-Lake Regional Planning Commission was created in April 1972 under section 66.945 of the Wisconsin Statutes as the official area-wide planning agency for northeastern Wisconsin.

At the request of seven county boards within the region, Governor Lucey established the Bay-Lake Regional Planning Commission by Executive Order 35. In December 1973, Florence County joined the Commission, bringing the total number of counties within the region to eight.

The Commission serves a region in northeastern Wisconsin consisting of Brown, Door, Florence, Kewaunee, Manitowoc, Marinette, Oconto, and Sheboygan Counties. The Bay-Lake Region is comprised of 185 units of government: 8 counties, 17 cities, 39 villages, 120 towns, and the Oneida Nation of Wisconsin. The total area of the region is 5,433 square miles or 9.7 percent of the area of the State of Wisconsin. The region has over 400 miles of coastal shoreline along Lake Michigan and Green Bay and contains 12 major watershed areas that drain into the waters of Green Bay and Lake Michigan. The official Wisconsin Department of Administration 2009 population estimate of the region is 589,894 people or 10.4 percent of the State of Wisconsin's estimated population of 5,688,040 persons.

The Bay-Lake Regional Planning Commission has been assisting communities within its region with planning and implementation activities for more than 35 years.

Bay-Lake Region

Source: Bay-Lake Regional Planning Commission. 2010.

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FOREWORD

The *Niagara Escarpment Overlay Zoning Guide* ("*Guide*") was designed to help Wisconsin coastal communities delineate, develop, implement, and enforce Niagara Escarpment protection overlay zoning consistent with the laws of the state of Wisconsin. Although, the "target audience" for this Guide is Wisconsin communities with the Niagara Escarpment geologic formation, this Guide could be helpful to any community developing resource protection overlay zoning.

CONTENTS

The *Niagara Escarpment Overlay Zoning Guide* contains a foreword, six chapters, a bibliography, a glossary, an index, and a digital copy of the Guide in PDF format on CD-ROM.

The *Foreword* lists the contents of the Guide and explains its purpose and funding.

Chapter 1: Introduction offers a brief description and overview of the Niagara Escarpment and issues associated with it. An introduction to overlay zoning is also included in this chapter.

Chapter 2 provides specific information on land use issues associated with the Niagara Escarpment and describes the need for protection. It also provides a summary of protection methodologies.

Chapter 3 provides a process for determining the need for Escarpment protection and what those protections could include.

Chapter 4 describes the process for creating an overlay zoning ordinance and how to implement it.

Chapter 5 provides a description of additional protection measurers.

Chapter 6 includes a sample Niagara Escarpment Overlay Ordinance.

PURPOSE

While working with coastal communities and counties on the development of comprehensive plans, it became apparent that there are few protection mechanisms for the Niagara Escarpment in Wisconsin. A 2001 study of the Escarpment concluded the Niagara Escarpment area continues to see steady population growth and increases in development pressure, especially along the coastal Niagara Escarpment area adjacent to Green Bay, which has seen more rapid development. This sensitive shoreline ecosystem is vulnerable to misuse from improper land development and resource extraction. This Guide is intended to provide a background to Escarpment development issues and examples of protection mechanisms.

FUNDING

The *Niagara Escarpment Overlay Zoning Guide* was funded by the Wisconsin Coastal Management Program (WCMP) and the Bay-Lake Regional Planning Commission. The

WCMP is part of the Wisconsin Department of Administration, with financial assistance provided by the National Oceanic and Atmospheric Administration (NOAA), Office of Ocean and Coastal Resource Management (OCRM) under the Coastal Zone Management Act of 1972 (amended). The WCMP was established in 1978 to preserve, protect, and manage the resources of the Lake Michigan and Lake Superior coastline.

WISCONSIN GREAT LAKES COASTAL ZONE

Fifteen counties border the Great Lakes in Wisconsin. The coastal counties define the Wisconsin coastal zone. The coastal zone is a popular place to live and recreate in the state. Although the coastal zone accounts for only 19 percent of the area of the state, it holds 39 percent of Wisconsin's population.

The Lake Michigan coastal counties in southeastern Wisconsin (Kenosha, Racine, Milwaukee, and Ozaukee counties) are part of the Southeastern Wisconsin Regional Planning Commission. Of the fifteen Wisconsin coastal counties, those counties in southeast Wisconsin have the greatest population density with 1,218 people per square mile.

The Lake Michigan coastal counties in northeastern Wisconsin (Sheboygan, Manitowoc, Kewaunee, Door, Brown, Oconto, and Marinette counties) are part of the Bay-Lake Regional Planning Commission. These counties have a moderate population density of 101 people per square miles.

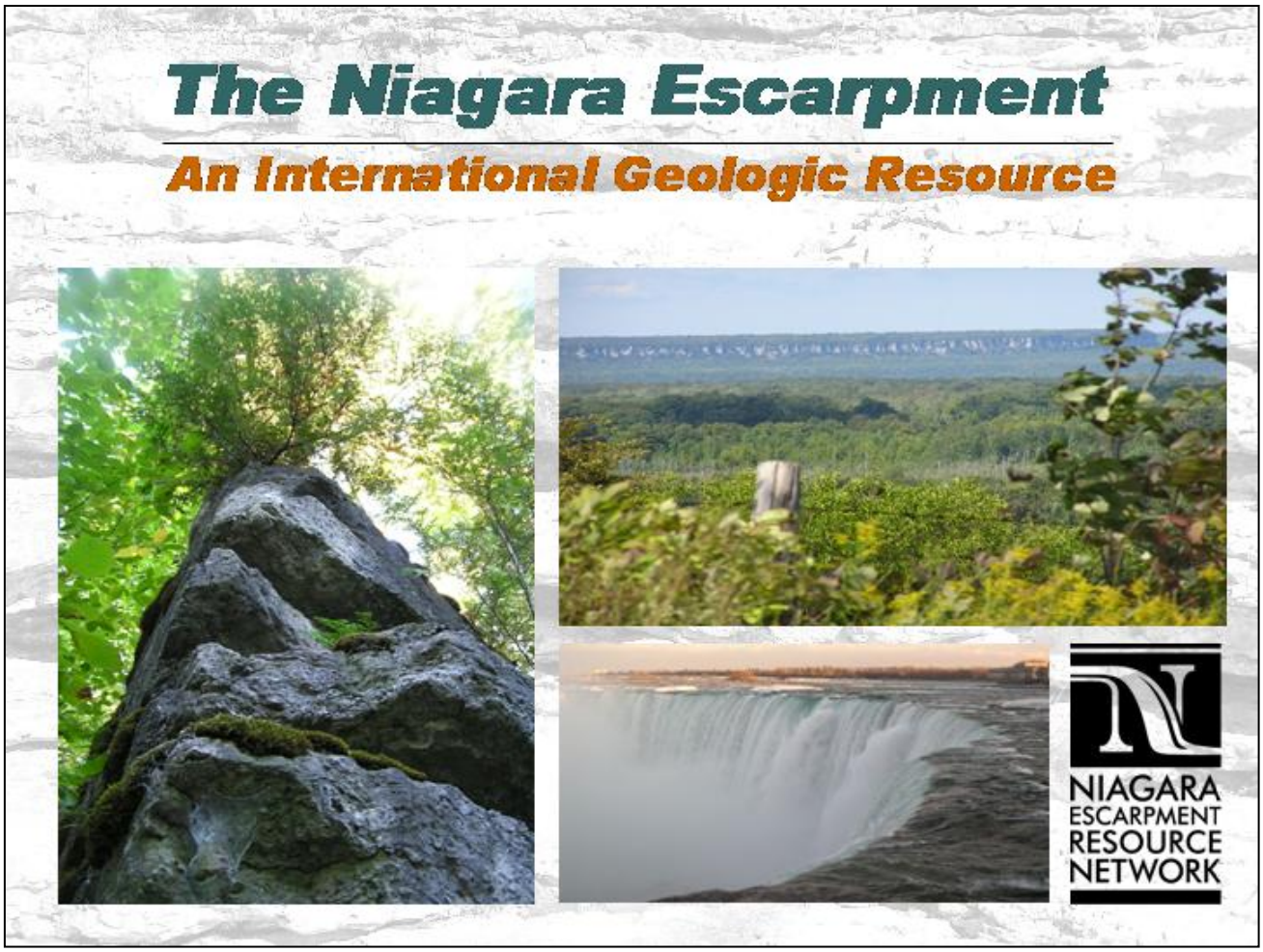
The Lake Superior coastal counties in northern Wisconsin (Iron, Ashland, Bayfield, and Douglas counties) are part of the Northwest Regional Planning Commission. These counties have a much smaller population density (17 people per square mile) compared to those of the Lake Michigan coastal counties (Hart, 1997).

Figure 1: Wisconsin Coastal Zone

Source: Bay-Lake Regional Planning Commission. 2010.

NIAGARA ESCARPMENT RESOURCE NETWORK

The Niagara Escarpment Resource Network (NERN) is comprised of a coalition of federal, state, and regional agencies; local and county governments; academia; non-profit organizations, and; individual landowners and citizens whose purpose is to provide a common forum for discussion and action which promotes the short and long term planning for the protection and conservation of this resource. NERN has been working since 2001 to protect the resources of the Niagara Escarpment through education and outreach efforts. More information can be found at *www.escarpmentnetwork.org*



CHAPTER 1: INTRODUCTION TO OVERLAY ZONING AND THE NIAGARA ESCARPMENT

BACKGROUND

Through funding from the Wisconsin Coastal Management Program, the Bay-Lake Regional Planning Commission created this guide for communities to use in developing protections for the sensitive resources of the Niagara Escarpment in Wisconsin. Though the most effective means for preserving the Niagara Escarpment is to direct future development away from it, it is unlikely that most communities would be able to do this. The Guide therefore focuses on the development of zoning overlays for Escarpment areas primarily along the Green Bay shoreline and its natural resources and viewsheds. This Guide provides instructions for communities to guide them through the delineation, development, implementation, and enforcement of a Niagara Escarpment protection overlay zone consistent with the laws of the state of Wisconsin.

A Niagara Escarpment protection overlay is a set of special considerations that apply only to the delineated Niagara Escarpment. Overlay zoning does not require the community to change the current principal zoning of an area; instead, it overlays the existing zoning and adds additional provisions in the area of the Niagara Escarpment. A Niagara Escarpment protection overlay requires the mapping of sensitive coastal and geologic resources associated with the Niagara Escarpment and requires all allowable land uses to take additional protective measures. The protection overlay can include site plan review requirements, construction restrictions, building setbacks, vegetative buffer zones, and buffers among other criteria to protect sensitive features such as shoreline areas, cliff faces, vegetation and habitats, ground and surface water quality, and viewsheds.

This guide directs communities through the steps of the development of a Niagara Escarpment protection overlay, including, most importantly, how to delineate the Niagara Escarpment, as well as how to define setbacks. The Guide provides information on erosion and stormwater control measures, enforcement tools, viewshed protection, critical habitat protection, and open space and public access considerations. The Guide also discusses the benefits of a Niagara Escarpment protection overlay and provides sample ordinance language and tips for building public support.

While the Guide is aimed at coastal communities with Eascarpment, it will also be applicable to those non-coastal Escarpment communities in the state wishing to preserve or protect the Niagara Escarpment.

THE NIAGARA ESCARPMENT

The Niagara Escarpment is different things to different people. Depending on where you live you may know it as "*the Bluff*" or "*the Ledge*." In Canada, terms such as "*the Cliff,*" "*the Mountain*," and "*the Giant's Rib*" are also common. However, the most common term used to describe the Niagara Escarpment is the "Ledge". The town of Ledgeview in Brown County, Ledge View Nature Center in Calumet County, and Ledge Park in Dodge County all make use of this term.

Technically, the Niagara Escarpment is a 650-mile long ridge going through portions of Wisconsin, Michigan, Ontario and New York. It is a sickle-shaped cuesta (a ridge with a steep face on one side and a gentle slope on the other) comprised of shales, limestone and dolostone rocks formed 400 to 500 million years ago under a warm shallow sea. Erosion has created much of what we see today.

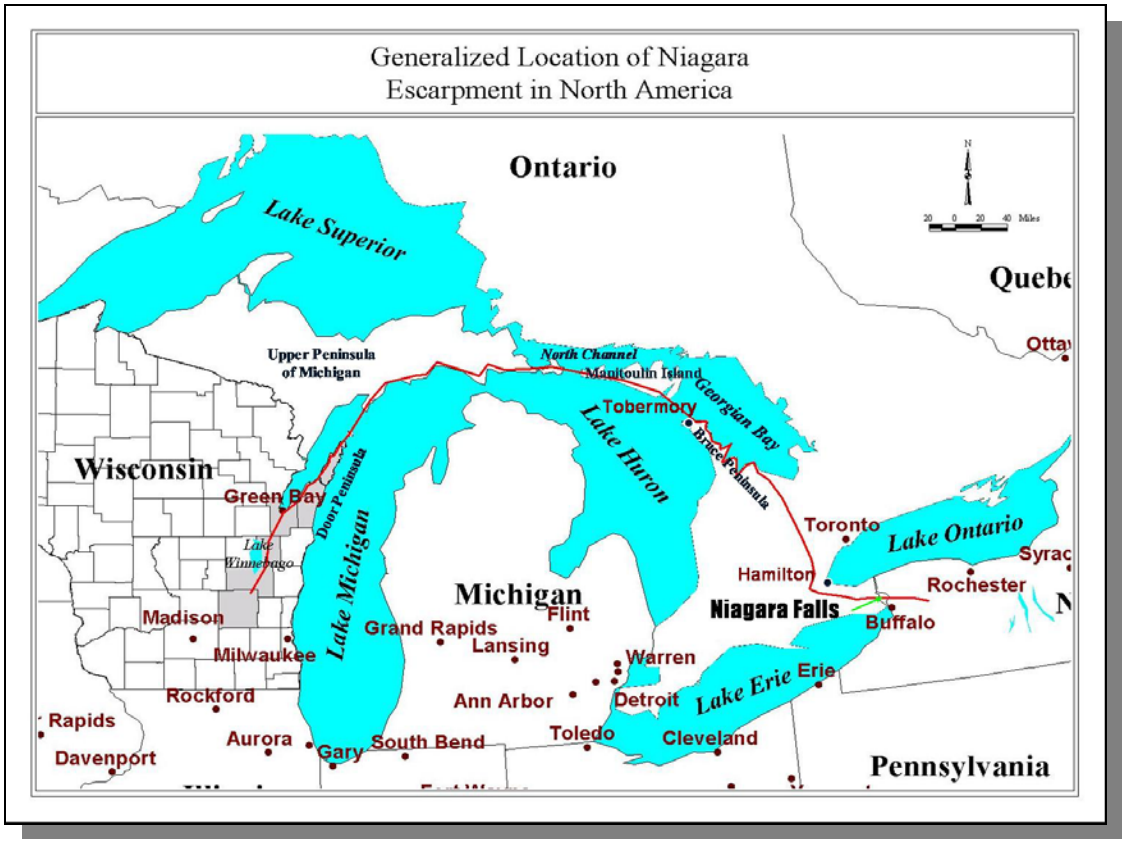
What is the Niagara Escarpment?

Some of the more common names for the Escarpment include:

- The Ledge
- The Ridge
- The Bluff
- The Escarpment
- The Cliff
- The Great Wall
- The Giant's Rib
- The Hill
- The Great Arc

As of the most recent population estimates (2009), more than 240,000 people live along the Escarpment in Wisconsin while nearly 3.5 million people live within 60 miles of the ledge in this state.

Figure 2: Generalized Location of the Niagara Escarpment



Source: Bay-Lake Regional Planning Commission, 2001.

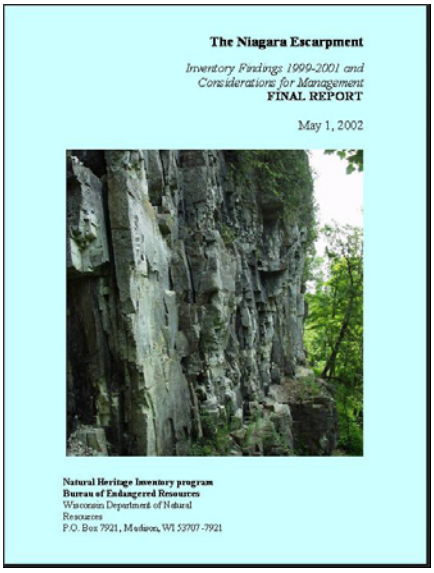
The Escarpment is ecologically rich with endangered and threatened resources and significant wetland areas, as well as historically and culturally rich with many archaeological sites and features. There is an abundance of unique eco-systems and natural communities including Alvar and cliff face communities of 1,000 year old cedars, oak savanna, and dwarf lake iris. Flocks of migratory birds, bats, endangered glacial relic land snails, and the Hines Emerald dragonfly use the Escarpment as habitat. The water features, including 14 lakes, 43 streams, 14 watersheds, with seven known waterfalls, add to the uniqueness of this area.

The cultural resources are numerous and include archeological sites, pictographs (rock art), mounds, petroglyphs, seven lighthouses, various lime kilns and caves, historic farmsteads, with over 500 historic sites, 37 of which are on the National Register.

Public lands include a federal wildlife refuge, five state parks, 25 state natural areas, 12 county parks, with the Ice Age Trail, Wild Goose Trail, and Fox River Trail, traveling through portions of this area.

In March 2001, the Bay-Lake Regional Planning Commission completed a study entitled, *An Inventory and Assessment of the Resources of the Niagara Escarpment in Wisconsin*. This study provided a comprehensive assessment of the Niagara Escarpment in Wisconsin. The study collected and assessed the types of physical, social, and regulatory data for the Wisconsin counties traversed by the Escarpment, and identified deficiencies in data and made recommendations for additional data gathering.

The study found that the Niagara Escarpment area continues to see steady population growth and increases in development pressure, especially along the Niagara Escarpment coastal area adjacent to Green Bay, which has seen more rapid development. This sensitive shoreline ecosystem is vulnerable to misuse from improper land development and resource extraction. Although this area has moderate to severe development limitations (NRCS), the Escarpment attracts residential and condominium development because of the great views it offers, even though foundations must often be blasted into the bedrock.



The WDNR identified the Niagara Escarpment as a significant "Legacy Place" in the *Wisconsin Land Legacy Report: An Inventory of Places to Meet Wisconsin's Future Conservation and Recreation Needs.* The WDNR further evaluated management opportunities and deficiencies in *The Niagara Escarpment Study: Inventory Findings 1999-2001 and Considerations for Management* in a report published in 2002.

In the WDNR Niagara Escarpment Study, ten threats to the biodiversity and sustainability of the Escarpment were highlighted.

This list of threats to the Escarpment provides some of the basis for the development of this Guide. The Escarpment is a critical natural and cultural resource in need of protection, with very few and largely inconsistent land use controls and protections in place.

Threats to the Niagara Escarpment

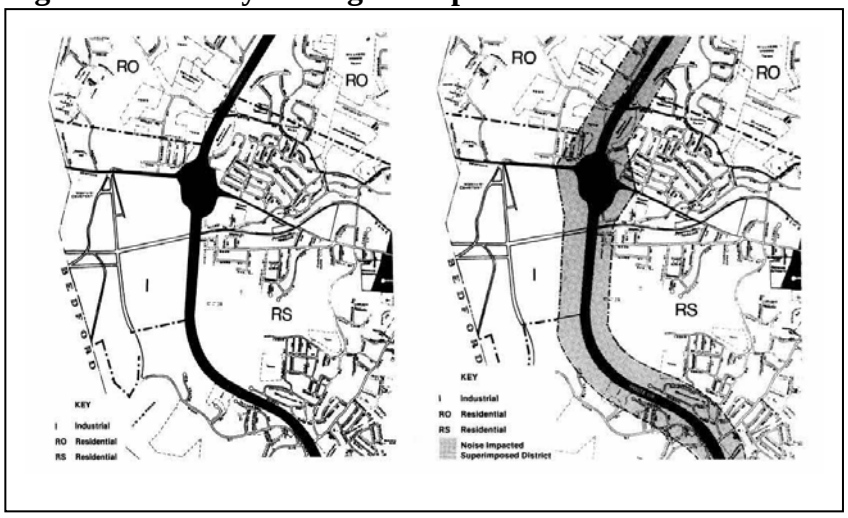
- **Land Use Issues/Conflicts/Problems**
- **Development**
- **Road Construction**
- **Mining, Quarrying**
- **Tower Area**
- **Recreation**
- **Invasive/Exotic Species**
- **Hydrologic Disruption**
- **Groundwater Contamination**

DESCRIPTION OF OVERLAY ZONING

Overlay zoning is a regulatory tool that creates a special zoning district, placed over an existing base zone(s), which identify special provisions in addition to those in the underlying base zone. The overlay district can share common boundaries with the base zone or cut across base zone boundaries. Overlay zoning does not have to follow property (parcel) boundaries. Regulations or incentives are attached to the overlay district to protect a specific resource or guide development within a special area.

Overlay districts can manage development in or near environmentally sensitive areas, such as groundwater recharge areas (e.g. to ensure water quality and quantity), special habitat (e.g. species or feature protection) or floodplains (e.g. prevent flood damage). Common requirements may include building setbacks, density standards, lot sizes, impervious surface reduction, and vegetation requirements. Structure requirements could include building floor height minimums and flood-proofing to high water level or other constructions requirements.

Figure 3: Overlay Zoning Example



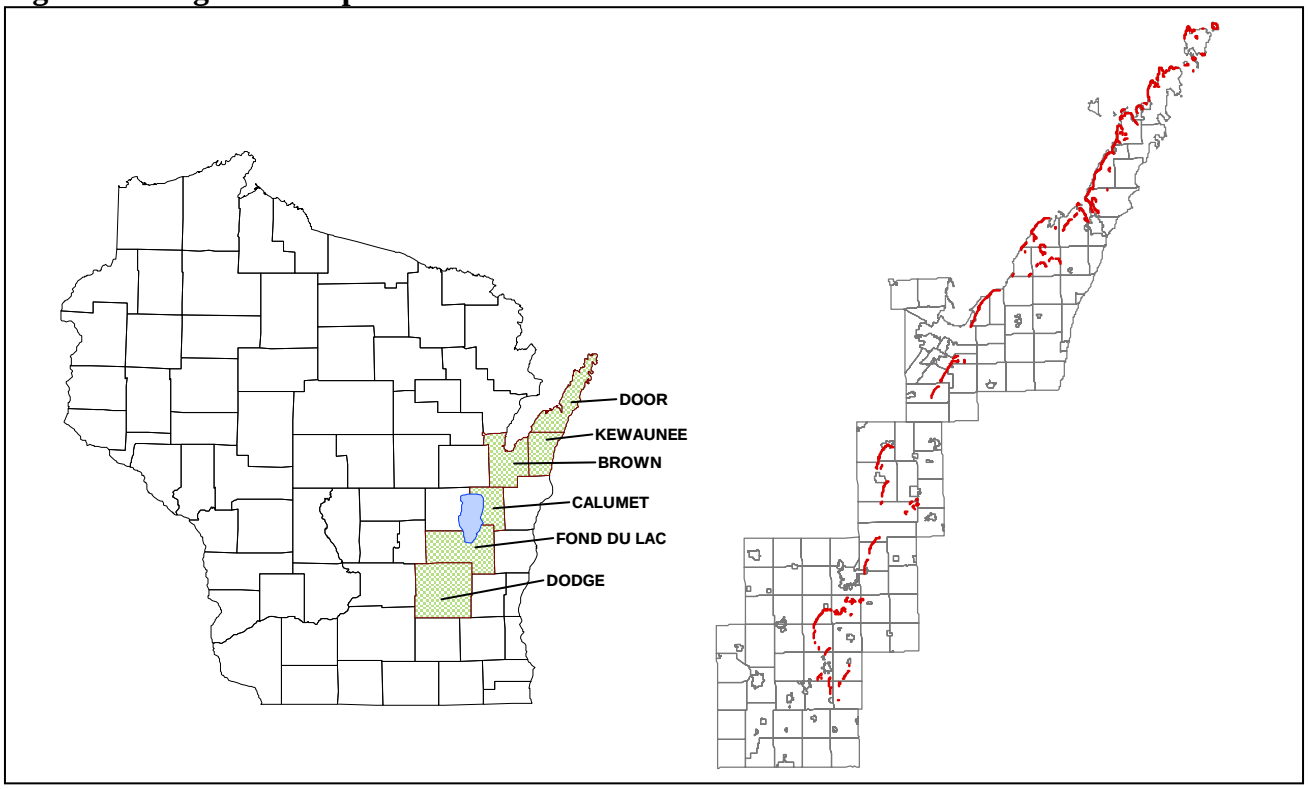
Source: Wisconsin Department of Transportation, 1992.

An example of overlay zoning: The map on the left features a highway bordered by three types of zoned land uses (industrial, residential (RO), and residential (RS)). The map on the right displays the same information, but also includes a superimposed "noise impact" district (shaded) that covers land within 500 feet of the highway. Rather than creating new, separate noise impact residential and industrial zones, the overlay provides planners with a legally and administratively efficient tool. (WisDOT 1992)

THE NIAGARA ESCARPMENT IN WISCONSIN

The Niagara Escarpment is a geologic landform that crosses state and national borders. It is a sickle-shaped cuesta (a ridge with a steep face on one side and a gentle slope on the other) that begins in western New York State and arches through the Great Lakes area, through central Ontario into Michigan, ending in south central Wisconsin. One side of the ridge has a gentle slope, a so called dip-slope that is essentially the surface of the rock layer. The other side is a steep bluff. The Escarpment makes up the entire Door Peninsula shoreline on the Green Bay side starting at the tip of Washington Island and continuing to the northeast side of the city of Green Bay before it turns more southerly and becomes covered with glacial till for several miles, then reappears in the towns of Ledgeview and Morrison in southern Brown County. It continues south forming the eastern bluffs of Lake Winnebago in Calumet and Fond du Lac counties before tapering off as the eastern edge of Horicon Marsh in Dodge County. Studies indicate that small sections of outcrops of the Escarpment may be found in portions of Waukesha County as well as in northern Illinois and Ohio.

Figure 4: Niagara Escarpment in Wisconsin



Source: Bay-Lake Regional Planning Commission, 2001.

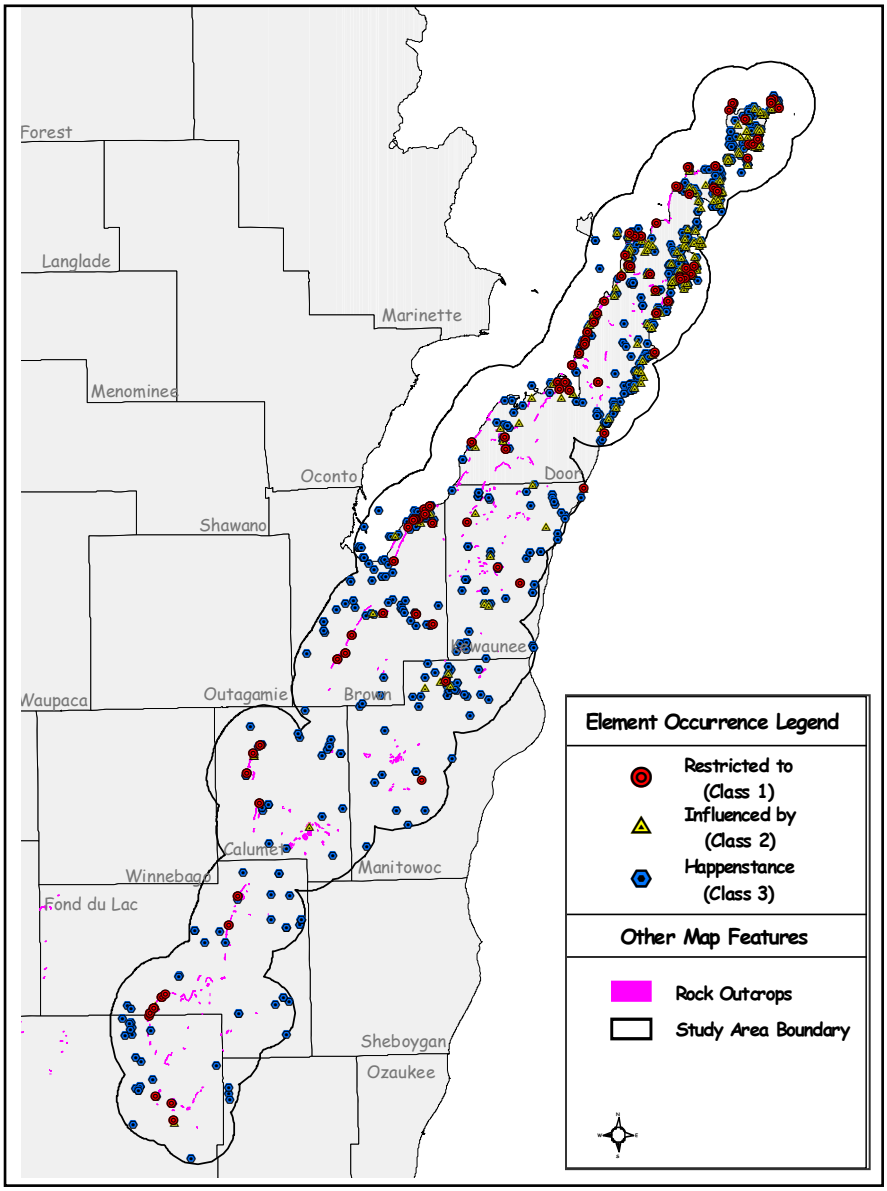
Composition of the Escarpment

The Escarpment consists primarily of dolomitic limestone, which is called Silurian Dolomite. The dolomite rock of the Niagara Cuesta does not solely exist in the Escarpment

cliffs above ground. Much of the dolomite lies underneath layers of sand gravel left by the last glaciation. The base of the Escarpment is typically composed of Maquoketa Shale, a highly impermeable shale bed overlain by glacial drift consisting mainly of lacustrine (old lakebed) and red clays. Surface water from the top of the Escarpment flowing down through the fractured system of joints to the impermeable clays at the base form the numerous springs found at the base of the Escarpment.

Underlying these glacial deposits is the Silurian Dolomite aquifer, which is an important regional aquifer along the western side of Lake Michigan. It consists of water stored in cracks and fractures located randomly throughout the rock. Fractured rock aquifers are particularly susceptible to dissolved and suspended contaminants. Any kind of residential, commercial, or industrial land uses that exist within close proximity of the aquifer recharge areas must be monitored as they are potential sources of groundwater pollution.

Figure 5: Occurrences of Rare Species and Natural Communities Along the Niagara Escarpment



Source: Wisconsin DNR, 2001.

Unique Plant and Animal Life

During the last decade it was discovered that the oldest living trees in Canada are found along the Niagara Escarpment. Ancient White Cedar trees up to 1,800 years old can be found in the Escarpment cliffs of Southern Ontario. More recently, similar types of trees have been found growing on cliffs in Door County, and a 1,200 year old Red Cedar, the oldest in the world, was discovered in Brown County. These trees are reportedly the slowest growing organisms in scientific literature, taking hundreds of years to grow inches. At this time, the Niagara Escarpment is a priority study area for the Bureau of Endangered Resources of the WDNR who

completed a survey of the Escarpment in 2001. The results indicate that certain species of land snails live and depend on the Escarpment for the microclimate that it creates. At least two of these snail species are considered globally endangered. Rock Whitlow-Grass also grows on the cliffs and is found nowhere else in the world. The WDNR found nineteen other high quality examples of natural communities and rare species, including five species listed as threatened in Wisconsin. The Escarpment serves as an important corridor for both animals and birds and contains certain algae, fungus, and bacteria living in the rocks that are found at only one or two other locations in the world.

Cultural and Historical Resources

In contrast with the United States, the Niagara Escarpment has received a great deal of attention in Canada. In June of 1985 the Escarpment became the focal point of Canada's first large-scale environmental land use plan. The intent of the plan was to balance protection and conservation of the Escarpment with sustainable development. In 1990, the United Nations Educational Scientific, and Cultural Organization (UNESCO) named Ontario's Niagara Escarpment a World Biosphere Reserve which makes it a member of a network of the world's main ecological systems. Biosphere reserves, like the environmental land use plan, attempt to balance conservation and development and focus on continual monitoring activities to assess changes to the ecosystem. In the United States, particularly in Wisconsin, local land use plans are the primary tool available to strike this balance and protect the Escarpment and other significant land formations.

The State Historical Society of Wisconsin has identified more than 500 historic sites within the communities covering the Niagara Escarpment in Wisconsin. Many of these are historic structures providing examples of specific architectural styles though there are many archaeological sites scattered along the Escarpment.

In addition to historic structures, there are numerous cemeteries in nearly every community located along the Escarpment.

Archeological Sites

Numerous archeological sites have also been identified in association with the Niagara Escarpment, with concentrations of sites occurring along Green Bay. A number of these sites are listed on the National Register of Historic Places. A November 1978 archaeological survey of a two-mile wide corridor along the coast of Green Bay revealed a "rich and varied cultural heritage of the region".

Concentration of archeological sites have been documented on or near Little Sturgeon Bay and at the Renard Workshop Site in Door County, as well as the Red Banks district and the Point au Sable region in Brown County. Though other sites have been investigated along

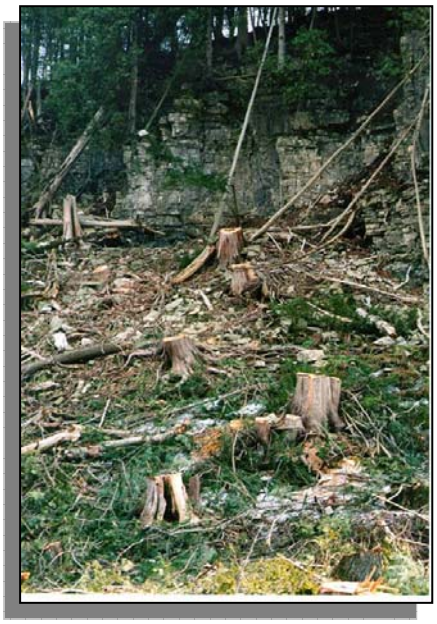
southern portions of the Niagara Escarpment (southern Brown, Calumet, Fond du Lac and Dodge counties), there have been no comprehensive investigations or studies of the areas adjacent to the Escarpment to document the status of these sites though specific examples are easily found in Fond du Lac and Dodge Counties. The immediate need for additional management of these resources is apparent.

IMPACT ASSESSMENT

While local plans and visions should dictate the need for overlay zoning in each community, an assessment of the issues and regulations that are in place is critical for ensuring that your community develops the protections it needs and wants.

In order for a community to develop protection tools, they must first undertake an impact assessment of the existing conditions and future threats to the Escarpment within their community. This assessment should include an inventory of land uses, the extent and type of development, the status of natural resources in the area, and an analysis of changes that have occurred in the community.

The Niagara Escarpment has been significantly impacted by development in a variety of ways. Because of the view from the Escarpment, a great deal of development has occurred along the top of its slope, especially in the northern part of the Door County peninsula, northeastern and southern Brown County, northern Calumet County, and eastern Fond du Lac County. Many of the impacts have been from residential development along the top of the Escarpment from both single-family development and multi-family condominium development. In southern stretches of the Escarpment, notably the towns of Glenmore and Ledgeview in Brown County, the town of Stockbridge in Calumet County, and the town of Eden in Fond du Lac, quarrying operations have had a significant impact on the Escarpment. Visual impacts along the Escarpment have been seen with cellular towers, television and radio towers, and the recent construction of large wind generation facilities.



As development occurs on the Escarpment, many indirect impacts occur, such as clearcutting of the vegetative cover to afford a better view. Although the view for the property owner is improved, the fragile soil cover on the Escarpment is left vulnerable to erosion from runoff as it flows down the slope at an increased rate. Another cause for concern is that new construction, or the replacement of older single-story buildings with large, two-story buildings on the Escarpment blocks the dramatic view for those traveling, and for those whose homes are farther back from the edge of the Escarpment. Construction at the top of the Escarpment also can affect the dynamics of the drainage patterns of the area and in turn, affect the unique habitat areas on the rock faces and base of the Escarpment. The development of golf courses has also had both a direct and indirect impact on the Escarpment. Large golf course developments are found immediately adjacent to the Escarpment in northern Door County

as well as eastern Fond du Lac County. In addition to development at the top of the Escarpment, construction at the base of the Escarpment can change drainage patterns of the streams to the bay and as a result, affects the unique habitat at the foot of the Escarpment.

Along the Niagara Escarpment, human activities and land uses take place in close proximity to features that provide relatively direct point source input routes for aquifer recharge. Dissolved and suspended contaminants can be moved rapidly across the land and into the subsurface with little or nothing to inhibit them. Affected water supply wells, springs, and surface water bodies are potential areas for groundwater contamination.

As mentioned earlier, the WDNR Niagara Escarpment Study identified ten threats to the biodiversity and sustainability of the Escarpment. In detail, these threats include:

1. **Land use issues/conflicts/problems:** Land use issues occur for a variety of reasons. Typically, these involve conflicts between opposing uses of land (recreational vs. industrial, residential vs. commercial, etc.).
2. **Development:** One of the greatest threats to the Niagara Escarpment is development. With an increasing population, more pressure is being placed on areas around the Niagara Escarpment. As development occurs on the Escarpment, many indirect impacts occur, such as clear-cutting of the vegetative cover to afford a better view. Although the view for the property owner is improved, the fragile soil cover on the Escarpment is left vulnerable to erosion from runoff as it flows down the slope at an accelerated rate, which also increases sediment loads to surface waters.

   Another cause for concern is that new construction, or the replacement of older single-story buildings with larger, two-story buildings on the Escarpment blocks the dramatic view for those traveling, and for those whose homes are farther back from the edge of the Escarpment. The additional development can change the drainage patterns along the face of the Escarpment due to compaction of the soil and underlying fractured bedrock.
3. **Road Construction:** New and expanding roads disrupt and have the potential to destroy the biodiversity and natural features of the Escarpment. The 1997 report, *Highway 57 Secondary Land Use Study* indicated that, "The increase in traffic capacity by adding two additional lanes to the facility will make living farther from the workplace more attractive to some individuals. Since a divided highway provides safer and more convenient travel conditions, the upgrading of State Highway 57 could expedite the growth of residential develop in the study area."

4. **Mining, quarrying:** Nonmetallic mining can have a significant impact on the environment. The Escarpment has an

abundant supply of gravel and crushed stone that when mined causes significant negative impacts to the environment with increased habitat destruction and fragmentation.

5. **Tower Area:** The elevation of the Niagara Escarpment makes it a desirable location for wind generators, cellular towers, television and radio towers. Towers may have a detrimental impact on bat and bird populations and scenic quality.
6. **Recreation:** Regional awareness and pride in the Escarpment has increased, creating a greater demand for recreational access to it. The increased popularity has resulted in heavy use of designated trails and the creation of unauthorized trails. All trails can serve as conduits for the introduction of invasive species. The development of golf courses has also had both a direct and indirect impact on the Escarpment.
7. **Invasive/exotic species:** As more people visit the Escarpment, the probability of a nonnative species being introduced increases. Invasive/exotic species displace or eliminate native species.
8. **Hydrologic disruption:** New construction can seriously alter springs, sinkholes, caves and other karst features. Construction can affect water discharge rates from springs, by changing water infiltration rates.
9. **Groundwater contamination:** Groundwater contamination has been an issue along the Niagara Escarpment for many years because of the karst nature of the landscape (such as sinkholes and fracture traces) that provide direct conduits to the groundwater. The Escarpment has many "pathways," which lead directly to groundwater with little or no filtration. Surface activities such as agriculture, road salting, and other non-point pollution can contaminate water by moving directly into the groundwater. Leaky septic and storage tanks can also create potential contamination problems.
10. **Administrative inconsistency:** The Escarpment runs for 650 miles across two countries, many states, and hundreds of municipalities. It is important to remember that the Niagara Escarpment is a unique natural system with state and international implications due to development.

This list of threats can be used as a basis for an assessment of the heath in your community. It can also be used a means to determine what level of protection is appropriate for the Niagara Escarpment in your community. Are the main pressures on the Escarpment from residential or road development? Has the Escarpment been identified in your comprehensive plan as a feature that should be protected? Is there a problem with groundwater or surface water contamination? Have wind generation facilities or are sand and gravel pits impacted

your view of the Escarpment? These and other questions need to be asked as you develop your Escarpment Overlay.

Much of the work that is undertaken as part of developing a comprehensive plan for a community can serve as the foundation for this analysis.

METHODS FOR PROTECTING THE NIAGARA ESCARPMENT IN WISCONSIN

While this Guide is intended to focus on the development of overlay zoning as a means of protecting the Niagara Escarpment, other methods of protecting the Escarpment can also be used. These include:

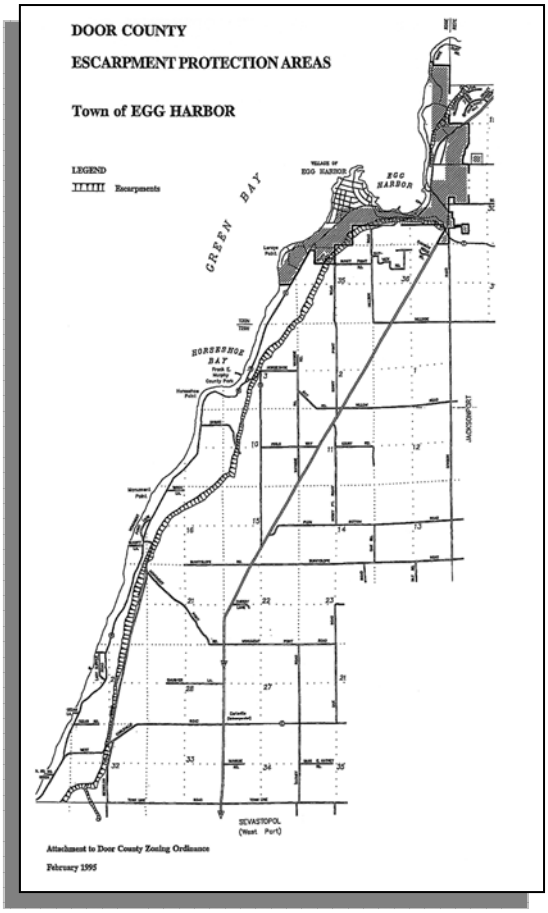
- Partner with local land trusts to protect the Escarpment. Provide information encouraging local landowners to pursue opportunities to protect their land by working with land trusts.
- Develop funding sources to purchase or transfer Property Development Rights (PDR & TDR programs) from property owners interested in preserving environmentally sensitive areas.
- Define the Niagara Escarpment as part of an environmental corridor to show those areas of the community with development restrictions in planning documents.
- Include the Niagara Escarpment in the definition of Environmentally Sensitive Areas (ESAs) in adopted sewer service area plans.
- Promote the unique geology of the Niagara Escarpment as a focal point for tourism-based activities as part of an eco-tourism program.
- Revise local zoning code to better protect and preserve the Niagara Escarpment.
- State resolutions of recognition such as Assembly Joint Resolution 1 that recognized the Niagara Escarpment and proclaimed the year 2010 as "Year of the Niagara Escarpment." Such recognition, and the events and activities surrounding the declaration, promotes awareness and education to the Niagara Escarpment.

More information on these and other protection measures can be found in Chapter 5 of this Guide.

ELEVATE YOURSELF IN WISCONSIN
2010 YEAR OF THE NIAGARA ESCARPMENT

CHAPTER 3: DETERMINING THE NEED FOR OVERLAY ZONING

WHY USE OVERLAY ZONING?



One of the primary functions of zoning is to implement your community's comprehensive plan in order to achieve the future vision of the adopted plan. Zoning provides a way to regulate existing land use types and activities in order to minimize land use conflicts. Zoning can be used to control the rate and density of development while reducing environmental impacts and preserving critical natural resources. Zoning ordinances and zoning maps delineate areas that your community has identified (through the planning process) as areas for groundwater, wildlife habitat, aesthetic character or open space preservation or enhancement. Since these features may cover many different areas of your community, an overlay zone allows your community to place additional conditions on development in these areas only. These protection areas are usually identified in the planning process as defining the character of your community; they are unique areas and features that provide an identity to your community. They are also areas that may have been identified for acquisition or targeted funding in order to preserve them.

In order to determine whether an overlay zoning ordinance is the most appropriate Escarpment protection measure, your community must first have a public discussion on what you are trying to protect and why you want to protect it. Table 1 can help guide you to the type of protection measures best suited to the goals and vision of your community related to Niagara Escarpment Protection. A description of each type of control follows the table.

COMMON USES FOR OVERLAY ZONING

Natural Resource Protection

Overlay districts can manage development in or near environmentally sensitive areas, such as the Niagara Escarpment, groundwater recharge areas (e.g. to ensure water quality and quantity), special habitat (e.g. species or feature protection) or floodplains (e.g. prevent flood damage). Common requirements may include building setbacks and other location requirements, density standards, lot sizes, impervious surface reduction, vegetation, and

specific site feature protection requirements. Structure requirements could include building floor height minimums and flood-proofing to high water level.

Development Guidance

Overlay zones may also be applied to protect historical areas or encourage or discourage specific types of development. Land within an historic overlay district may be subject to requirements that protect the historical nature of the area (e.g. buildings, sites, materials, façade design, or color).

Table 1: Potential Land Use Controls and Uses

Feature/Use	Primary Regulation	Controls	
Wildlife Habitat	Buffer/Setback	Buffer/Setback Ordinance	Environmental Corridor/ESA
	Use Restrictions	Zoning Ordinance	Environmental Corridor/ESA
Water Quality	Buffer/Setback	Shoreland/Floodplain Ordinance	Erosion Control Ordinance
	Use Restrictions	Zoning Ordinance	Environmental Corridor/ESA
	Area Restrictions	Subdivision Ordinance	Zoning Ordinance
Aesthetics	Clearing Restrictions	Tree Cutting Ordinance	Zoning Ordinance
	Buffer/Setback	Buffer/Setback Ordinance	Zoning Ordinance
	Use Restrictions	Zoning Ordinance	
Development		Zoning Ordinance	Shoreland/Floodplain Ordinance
Residential	Density	Subdivision Ordinance	Zoning Ordinance
	Setback/Buffers	Zoning Ordinance	Buffer/Setback Ordinance
	Access	Road/Street Ordinance	Official Map
	Type	Zoning Ordinance	
Commercial	Buffer/Setback	Buffer/Setback Ordinance	Zoning Ordinance
	Limitations	Zoning Ordinance	Subdivision Ordinance
	Type	Zoning Ordinance	
Roads	Width Requirements	Subdivision Ordinance	Zoning Ordinance
	Materials	Road/Street Ordinance	
	Location	Official Map	Environmental Corridor/ESA
	Access	Road/Street Ordinance	Official Map
Industrial – Mining	Buffer/Setback	Buffer/Setback Ordinance	Erosion Control Ordinance
	Limitations	Non-Metallic Mining Ordinance	Zoning Ordinance
	Type	Non-Metallic Mining Ordinance	Zoning Ordinance
	Reclamation	Non-Metallic Mining Ordinance	Zoning Ordinance
Recreational	Trail Development	Official Map	Outdoor Recreation Plan
	Buffer/Setback	Buffer/Setback Ordinance	Environmental Corridor/ESA
	Type (Active vs. Passive)	Zoning Ordinance	Outdoor Recreation Plan
	Connectivity	Official Map	Outdoor Recreation Plan

Source: Bay-Lake Regional Planning Commission, 2010.

BENEFITS OF A NIAGARA ESCARPMENT PROTECTION OVERLAY

A Niagara Escarpment protection overlay is a set of special considerations that apply only to the delineated Niagara Escarpment. Overlay zoning does not require the community to change the current principal zoning of an area; instead, it overlays the existing zoning and adds additional provisions in the area of the Niagara Escarpment.

The Niagara Escarpment protection overlay uses site plan review requirements, construction restrictions, building setbacks, vegetative buffer zones, and buffers among other criteria to protect sensitive features such as shoreline areas, cliff faces, historic & archaeological sites, ground and surface water quality and quantity, and viewsheds.

INVENTORY OF EXISTING CONTROLS

An inventory of existing land use controls should be conducted to make certain that they assist in implementing the future development plan of your community and provide for a set of well-coordinated, appropriate protections for the Niagara Escarpment in your community. This inventory should include a review of both planning documents and land use control ordinances. These controls are another part of the suite of tools that can be used to protect the resources of the Niagara Escarpment. A brief description of each is provided.

Planning Documents

Comprehensive Plans

The purpose of a Comprehensive Plan is to guide future growth, development and conservation within a community over a 20-year timeframe. Wisconsin's comprehensive planning law, Section 66.1001 ("Smart Growth") of the Wisconsin Statutes, establishes the content of comprehensive plans and actions that are required to be consistent with an adopted comprehensive plan for each community in the state. The plan establishes goals and objectives for nine elements of a comprehensive plan including: Issues and Opportunities; Economic Development; Community Facilities; Housing; Natural, Agricultural and Cultural Resources; Transportation; Intergovernmental Cooperation and Coordination; Implementation; and Land Use.

Wisconsin State Statute 66.1001 states that:

"Beginning on January 1, 2010, if a local governmental unit engages in any of the following actions, those actions shall be consistent with that local governmental unit's comprehensive plan:

(a) Official mapping established or amended under s. 62.23 (6).
(b) Local subdivision regulation under s. 236.45 or 236.46.
(c) County zoning ordinances enacted or amended under s. 59.69.
(d) City or village zoning ordinances enacted or amended under s. 62.23 (7).
(e) Town zoning ordinances enacted or amended under s. 60.61 or 60.62.
(f) Zoning of shorelands or wetlands in shorelands under s. 59.692, 61.351 or 62.231."

This means that any ordinances or regulations that relate to land use may need updating to ensure consistency with the community's adopted comprehensive plan.

Section 66.1001 also provides goals for Smart Growth that are encouraged to be included within community plans. Specifically, those goals related to resource protection of the Niagara Escarpment include:

- Protection of natural areas, including wetlands, wildlife habitats, lakes, woodlands, open spaces and groundwater resources.
- Encouragement of land uses, densities and regulations that promote efficient development patterns and relatively low municipal, state governmental and utility costs.
- Preservation of cultural, historic and archaeological sites.

- Encouragement of coordination and cooperation among nearby units of government.
- Balancing individual property rights with community interests and goals.
- Planning and development of land uses that create or preserve varied and unique urban and rural communities.

As part of the inventory of existing planning documents, your community should pay close attention to these goals to ensure that any new Escarpment protection overlays are consistent with your community's adopted plan.

Park and Outdoor Recreation Plans

Park and recreation plans detail the recreational opportunities, needs and potential of a community and provide a specifically stated recreation action program. The Wisconsin DNR reviews and approves the plans for a five-year period establishing eligibility for the community to apply for recreation related grants.

Most outdoor recreation plans are designed to:

1. Provide a basic document that identifies and details a coordinated park and outdoor recreation program to meet the needs and demands of the community's residents and visitors.
2. Promote and encourage the development of sufficient park and recreational facilities of high quality.
3. Identify and preserve sites of significant scenic, historical, archaeological, and natural characteristics.

Because the preparation of a park and outdoor recreation plan establishes the community's eligibility for the state Stewardship Fund, the plan can become an important part of the process for funding Escarpment preservation.

County Land and Water Resource Management Plans

Every county in the state is required to prepare and periodically update a Land and Water Resource Management Plan under the authority of Chapter 92 of Wisconsin Statutes to halt and reverse the depletion of the State's soil resources and pollution of its waters.

The plans identify the resource needs of the county, establish goals to meet those needs, and initiate a course of action to attain the goals. The intent of this plan is to form strategies and methods that discern the correct management plans to properly manage the landscape, and protect and improve water and other resources in the county.

Land Use Control Ordinances

Zoning Ordinances

The purpose of a zoning ordinance is to promote and protect public health, safety, aesthetics, and other aspects of the general welfare of the community. In order to accomplish this purpose, the ordinance regulates and restricts the use of property. The ordinance divides the community into districts for the purpose of regulating: 1) the location

and use of land, water, buildings, and structures, 2) the height and size of building structures, 3) the percentage of a lot that may be occupied, 4) the density of the population, and 5) the size of lots.

The Wisconsin enabling legislation requires that zoning ordinances be made in accordance with a comprehensive plan. This has been interpreted by planning professionals to mean that the zoning ordinance must be based on a comprehensive plan or land use plan and that the ordinance must seek to implement that plan.

Subdivision Ordinances

Subdivision or Land Division Ordinances regulate the division of land to promote public health, safety, aesthetics, and general welfare. The ordinance provides for minor land divisions, major land divisions, design standards and the dedication and improvement of a parcel of land to be developed.

A typical ordinance regulates the combining of two or more parcels of land into one parcel of 10 acres or less and the subdivision of land where the act of division creates five or more parcels or building sites that are less than 10 acres in size within a five-year period. The ordinance also regulates minor land divisions (certified survey map or commonly referred to as CSMs) where it is proposed to divide land into at least one but not more than four parcels or building sites of less than 10 acres. The ordinance also may contain design standards for streets, curb and gutter, sidewalks, drainage, erosion control, utilities, and easements that must be complied with in order for the subdivision to be approved by the community. The ordinance also contains requirements for park and public land dedication. The land division ordinance in conjunction with other tools provides a means of implementing the community's comprehensive plan.

Some communities have used their subdivision ordinances as a way to promote better land use policies without directly regulating the land use of each parcel. These ordinances may include additional goals for preserving the character of the community and its environs, conserving the value of the land and improvements placed thereon; providing the most appropriate environment for human habitation; encouraging commerce; protecting farming and open spaces; lessening congestion in the highways and streets; fostering the orderly layout and use of land; securing safety from fire, panic and other dangers; providing adequate light and air; discouraging overcrowding of land; protecting the community's wetlands and other natural features; preserving woodlands, native plants and animals; facilitating adequate provision of transportation, potable water supply and other public necessities; and facilitating division of large tracts of land into appropriate smaller parcels. These additional goals are enacted through site design standards and review.

Official Maps

Section 62.23(6)(b) of the *Wisconsin Statutes* provides that a town, village, or city may establish an official map for the precise designation of right-of-way lines and site boundaries of streets, roads, highways, parkways, parks, and playgrounds**.** The town, village, or city may also include on its official map the locations of railway rights-of-way, public transit facilities, and those waterways which have been included in a comprehensive

surface water drainage plan. Such a map has the force of law and is deemed to be conclusive with respect to the location and width of both existing and proposed streets, highways, waterways, and parkways and the location and extent of existing and proposed railway rights-of-way, public transit facilities, and parks and playgrounds shown on the map. It is important to note that in Wisconsin the official map enabling legislation is a subsection of the basic local planning enabling legislation, Section 62.23 is entitled "City planning," and as such is made applicable by references in other statutes to villages and towns as well as to cities.

An official map is intended to implement a town, village, or city master plan for streets, highways, parkways, parks and playgrounds, and drainageways. Its basic purpose is to prohibit the construction of buildings or structures and their associated improvements on land that has been designated for current or future public use.

Erosion Control Plans

Under s. 92.10, Wis. Stats., those counties that are designated as priority counties by the Department of Agriculture, Trade and Consumer Protection (DATCP) must prepare and adopt and enforce erosion control plans. The County Land Conservation Committee prepares plans to conserve long-term soil productivity, protect the quality of related natural resources, enhance water quality and focus on severe soil erosion problems.

Shoreland Ordinances

Shoreland ordinances have jurisdiction over all shorelands and identified wetlands in the unincorporated areas of a county. Incorporated communities are also required to adopt shoreland ordinances for these areas within their boundaries. Shoreland zones are those areas within 300 feet of a navigable river or stream, 1,000 feet of a navigable lake, pond or flowage or to the landward side of the 100-year floodplain, whichever distance is greater. Shorelands are often viewed as valuable recreational and environmental resources in both urbanized and rural areas. As a result, the State of Wisconsin requires that counties adopt shoreland/floodplain zoning ordinances to address the problems associated with development in floodplain areas. Development in these areas is strictly regulated but may be permitted with specific design techniques. The authority to enact and enforce these types of zoning provisions is set forth in Chapter 59.692 of the *Wisconsin Statutes* and Wisconsin Administrative Codes NR 115,116, and 117.

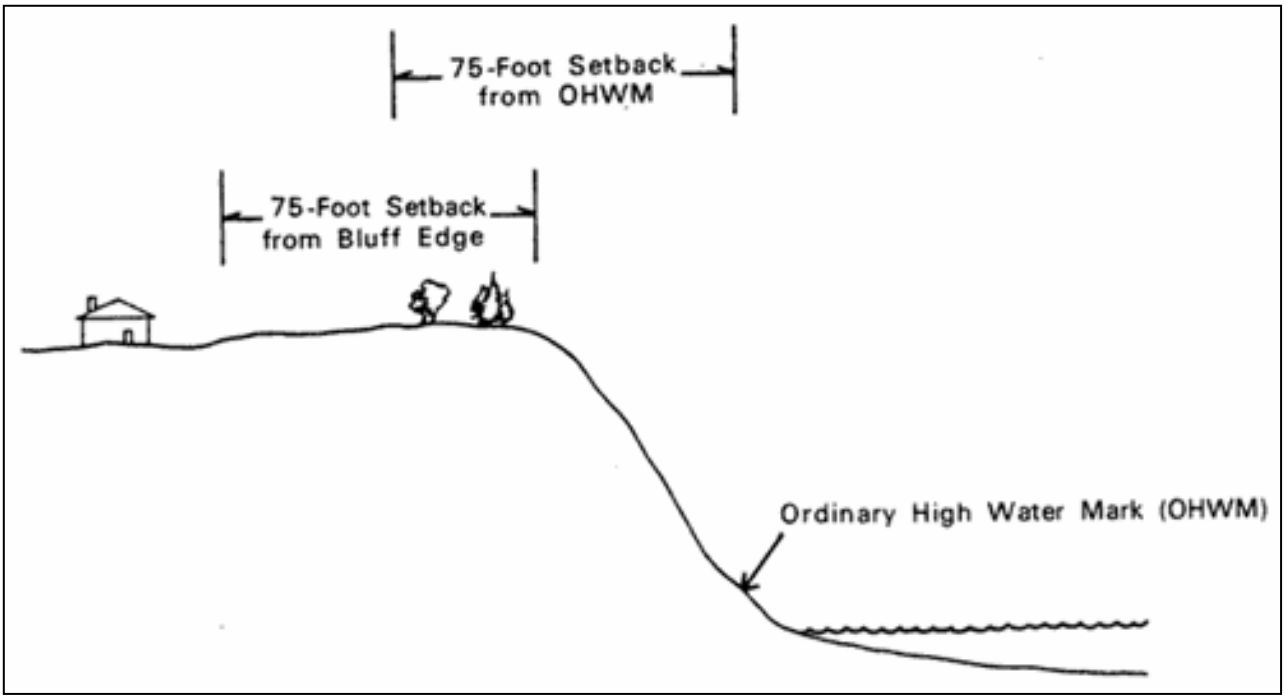
Floodplain Ordinances

Floodplains fall within the jurisdiction of Floodplain Zoning Ordinances. The areas regulated by this ordinance include all unincorporated portions of a county which would be covered by the regional (100-year) flood. The areas within the regional flood are designated as such, on F.E.M.A. Flood Insurance Rate Maps. Uses within areas designated as the regional floodplain are regulated through a permitting process.

Setback Ordinances

Setback Ordinances may be included in the Zoning Ordinance, or created as a separate ordinance by the community. A setback ordinance may be used to establish a buffer at a given distance from navigable water, wetlands, the top of a bluff or sensitive natural features. They are often used as an erosion control or habitat protection measure to ensure that the impacts of development are reduced. Many coastal communities have adopted setback ordinances to protect sensitive shoreline areas and prevent development on unstable slopes.

Figure 6: Two Types of Minimum Setbacks



Source: University of Wisconsin Sea Grant Institute, 2004.

CHAPTER 4: HOW TO DEVELOP AN OVERLAY ORDINANCE

Ideally, a zoning ordinance rests on the visions, goals and policies of a community-adopted comprehensive plan. Therefore, zoning should be developed during or after a successful planning process has been completed. Most zoning ordinances, however, have been developed without the benefit of a separate planning document.

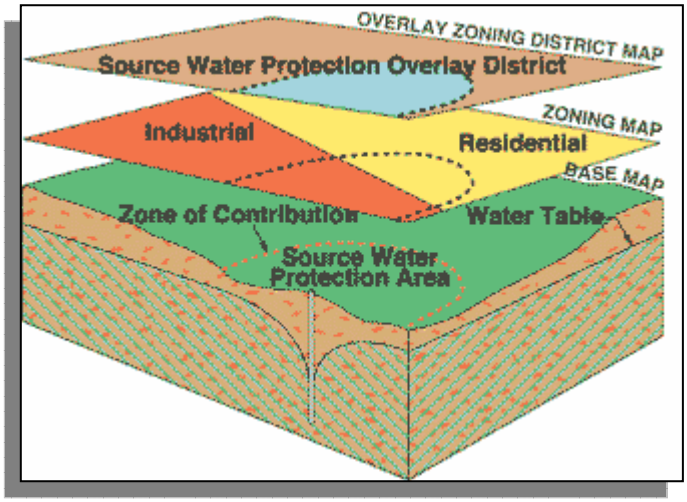
As of January 1, 2010, all zoning ordinances enacted or amended by a town, village, city, or county are required to be consistent with that local government unit's comprehensive plan. [Wis. Stat. 66.1001(3)]. This implies that a comprehensive plan is a prerequisite to enacting or amending a zoning ordinance after January 1, 2010.

The benefit of having prepared a comprehensive plan is that it provides guidance for the zoning ordinance. Without the plan, developing the zoning ordinance will be more difficult and, once complete, the ordinance may be more vulnerable to attack. As with any planning process, implementation of the ordinance and monitoring its effectiveness is always a critical component. With respect the Niagara Escarpment, it is crucial that your plan states clearly, or at least alludes to the use of zoning as a method for Escarpment protection. Citizen involvement is also crucial.

DEFINITION OF AN OVERLAY ZONE

An overlay zone is created by your community by identifying a special resource or development area and adopting new provisions that apply in that area in addition to the provisions of the zoning ordinance. The provisions of an overlay district can be more restrictive or more expansive than those contained in the underlying zoning district.

The term "overlay district" refers to the superimposition of the new district's lines on the zoning map's district designations. Overlay zones build on the underlying zoning, by establishing additional or stricter standards and criteria; the standards of the overlay zone apply in addition to those of the underlying zoning district.



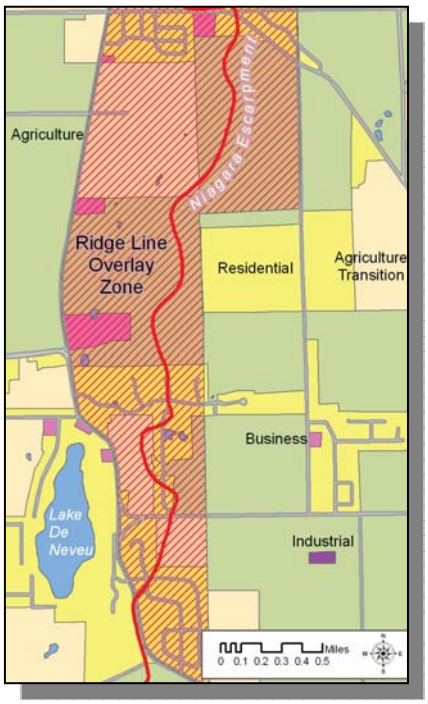
Overlay zones create a framework for conservation or development of special geographical areas. In a special resource overlay district, overlay provisions typically impose greater restrictions on the development of land, but only regarding those parcels whose development, as permitted under the zoning, may threaten the viability of the natural resource. In a development area overlay district, the provisions may impose restrictions as well, but also may provide zoning incentives and waivers to encourage certain types and styles of development. Overlay zone provisions are often complemented by the adoption of other innovative zoning techniques, such as floating zones, special permits,

incentive zoning, cluster development and special site plan or subdivision regulations, to name a few.

WHEN TO USE A ZONING OVERLAY

An overlay ordinance may be adopted by your community to encourage appropriate development in a specific area or when the zoning ordinance is considered to be inadequate to protect a particular resource area. Instead of changing the provisions of the zoning, applicable to all land parcels in the area, the overlay zone is adopted to establish special provisions applicable to those parcels that have particular development constraints or potential.

The overlay district is often used as a technique for conserving a fragile natural resource area such as a wetland resource area, watershed or bluff feature, such as the Niagara Escarpment. The underlying zoning may permit the subdivision of all land in such an area for residential purposes, a plan which, if implemented, might destroy the resource area. To accomplish a more appropriate land use pattern, an overlay district can be adopted that contains special clustering or setback provisions, to protect environmentally constrained areas. Additional provisions can be added that are not typically found in zoning ordinances such as grading, landscape restoration, and limitations on the development of steep slopes.



Within their zoning ordinances, communities may use overlay zones to protect particular natural or cultural features, such as historic districts, steep slopes, waterfronts, scenic views, agricultural areas, aquifer recharge area, wetlands, watersheds, or downtown residential neighborhoods.

For example, an overlay zone can be instituted for a specific neighborhood to preserve its character and design by encouraging new construction, and additions to existing buildings, that are compatible with the neighborhood's building types and character. An overlay zone can also be designated in areas to promote mixed-use development, such as near community centers. Additionally, municipalities can use overlay zones in existing low density, single use areas to encourage mixed-use or higher density development.

Overlay districts can be used to both further development and conserve resources of the community. For example, the locality can adopt a conservation area overlay district in one or more environmentally constrained areas and a development area overlay district along a transportation corridor to provide for greater, and more cost-effective development patterns. Adopting both overlay districts simultaneously provides needed tax revenue, housing, jobs and commercial activity while protecting the quality of life and the environment through the conservation of threatened natural resource areas. A variety of techniques can be employed to accomplish the objectives of both overlay districts; a

developer, for example, can be given zoning incentives in the development district in exchange for purchasing a conservation easement on land in the conservation district.

When development and conservation areas overlap municipal borders, communities can enter into intergovernmental agreements to adopt and enforce compatible overlay zones. In this way, the efforts of one community to achieve appropriate land uses along a shared transportation corridor or in an intergovernmental natural resource area can be enhanced greatly.

Overlay zoning is intended to protect the public health and safety by minimizing development in areas prone to unwanted soil erosion and groundwater contamination, and on sites difficult to develop in a safe manner, and promote the general welfare by preserving unique and valuable geologic and other natural resource features, particularly those associated with the Niagara Escarpment. The regulations of overlay zoning are based on an adopted comprehensive plan.

The authority required to determine the legitimacy of an overlay district is similar to zoning in general. Zoning is legitimized by statutory enabling authority and police power that is used to protect public health, safety, and general welfare. Courts have tended to favor the rights of local authorities to make decisions regarding ordinances, except cases in which the actions of authorities have been proven arbitrary. The burden of proof always lies with the property owner contesting the public action.

PURPOSE OF A NIAGARA ESCARPMENT OVERLAY ZONE

Overlay ordinances outline a specific purpose, define the area that will be affected, describe the review process, criteria, and the role and authority of the review board. Overlays often include regulation of signage, setbacks, parking requirements, floor-area ratios, form-based requirements, trade-off incentives, and any other techniques required to meet the goals laid out by the overlay's statement of purpose. It should be based on a comprehensive plan that calls for protection of natural resources and the unique geologic features found within the community.

The purpose of a Niagara Escarpment overlay zone is to conserve natural resource objectives without unduly disturbing the expectations created by the existing zoning ordinance. Though the existing zoning provisions may properly regulate the relevant district, in general, more specific and targeted provisions may be needed to address specific land use objectives related to preserving the Escarpment and protecting its resources. The overlay zone establishes land use regulations that must be enforced by local authorities under the terms of the law or ordinance adopting the overlay district.

PREPARING A DRAFT ORDINANCE

The process for preparing an Escarpment Overlay Ordinance begins with the plan commission who drafts a zoning ordinance, often with help from specialized professionals, such as a municipal or county planner, an attorney, or a consultant. Sometimes, a special project advisory committee is created to develop the ordinance. The special committee may include some of the staff from the community, interested citizens, or other interest groups.

The regulations of overlay zoning are based on a shared community vision, arising from the comprehensive planning process.

Using the results of the planning process with defined community objectives will provide guidance for the preparation of a draft zoning overlay ordinance. A zoning ordinance special committee can also make detailed recommendations for the ordinance beyond what may have been generally recommended by a comprehensive plan as long as they are not in complete opposition to the goals of the plan. Remember, every use that is regulated, every permit that is required, every special exception that is listed creates an administrative burden somewhere down the road.

CREATING AN ZONING OVERLAY ORDINANCE

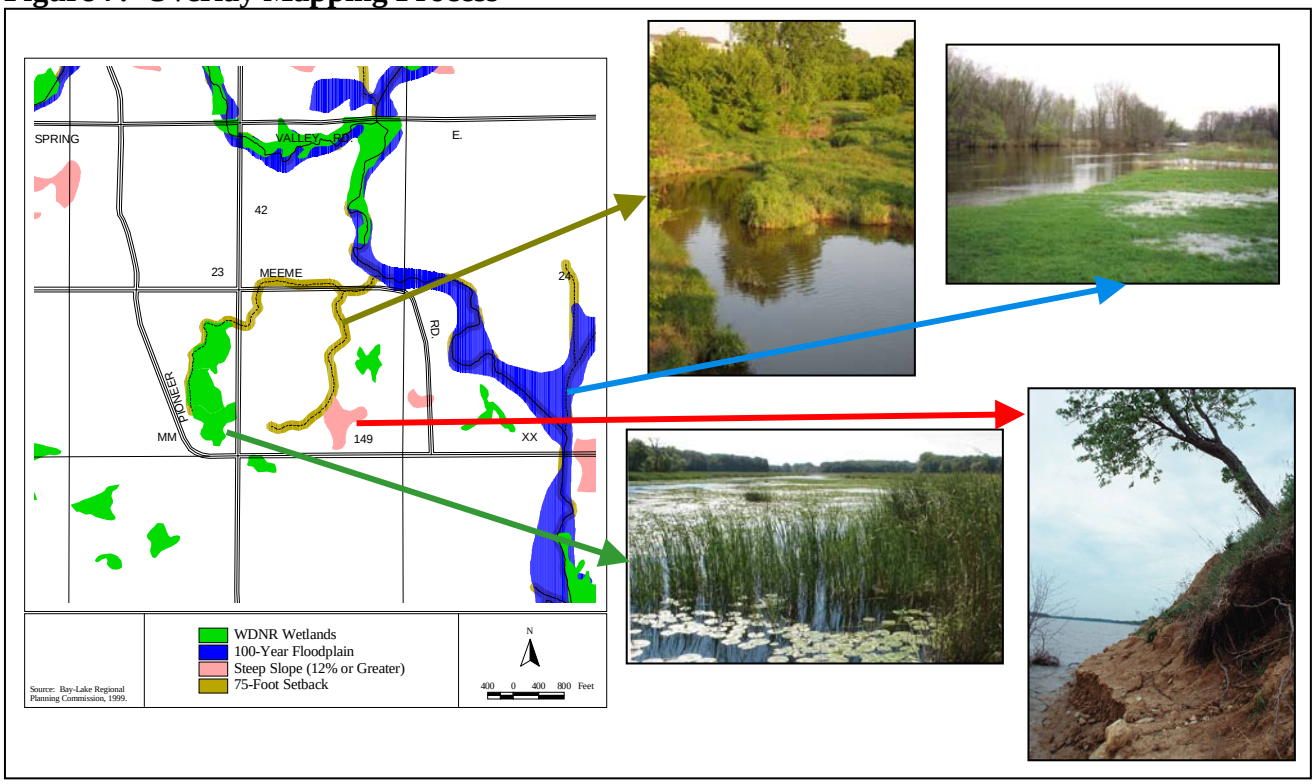
Any governmental unit with the power to create zoning districts can create an overlay district. There are three basic steps to creating an overlay district:

1. **Define the purpose of the district.** The district should have a clearly defined purpose e.g. to protect drinking water, preserve historical character, minimize erosion from storm water runoff, etc.
2. **Identify the areas that make up the district**. Mapping district boundaries will depend on the natural or cultural resources and the geographic areas that relate to achieving the purpose of the district. For example, if the purpose of the zone is to protect groundwater, important groundwater recharge areas and areas prone to pollution, such as fractured bedrock or areas with a high groundwater table should be mapped.
3. **Develop specific rules that apply to the identified district**. In a groundwater recharge district for example, provisions may restrict development or require development guidelines that capture and filter water runoff.

It is critical that the zoning provisions offer clear guidance to both property owners and the governing body charged with approving proposals. Zoning requirements must be applied equally over all properties within the district. The ordinance not only must comply with any state and federal regulations, but must also be consistent with the goals, objectives, and policies of the municipality's comprehensive plan.

It is important that the local governing body involve the public to clarify issues and explain the reasons behind mapping district boundaries. An educational program targeting developers and affected property owners will help increase awareness and compliance with the new requirements.

Figure 7: Overlay Mapping Process



Source: Bay-Lake Regional Planning Commission, 2009.

The procedures for adopting an overlay district are the same as for adopting a zoning or rezoning provision. The overlay provisions, as well as changes to the zoning map, must be approved by the local governing body for adoption, per the applicable statutory process.

The ordinance text and map should be easy to understand and use. District boundaries on the map should be precise, careful, and easy to interpret. Wherever possible, district lines should follow recognizable features. Color works much better than black-and-white shading schemes but may be more difficult and expensive to reproduce.

Finally, maps should be referenced in the text and should be capable of being changed when map amendments are passed. This is most easily accomplished when maps have been drafted on a computer using GIS. Digital maps also have the advantage of being reproducible at a variety of scales and sizes.

ORDINANCE ADMINISTRATION

Your overlay zoning ordinance should also address several administrative matters.

- A plan commission must be in place or must be created by local ordinance. The plan commission is responsible for preparing the plan, developing the ordinance, evaluating the performance of the ordinance, developing proposed changes to the ordinance and processing amendment proposals.

- A board of adjustment or appeals must also be created by the zoning ordinance. The ordinance must deal with the composition of the board, procedures for board activities, and should note the process for appealing board decisions.
- The ordinance must define land use activities that require permits, procedures for processing applications for permits and for challenging decisions made during the processing. The ordinance also needs to outline the enforcement process, including penalties and legal consequences.
- The ordinance must set forth the procedures for handling special exceptions or conditional uses.
- The ordinance should set forth procedures for processing amendment proposals fees for applications.

Consideration of the overlay district standards can be incorporated into the existing subdivision or site plan review process for large-scale residential developments and most commercial development. Because smaller-scale development will often require only a building permit, it may be necessary to include provisions for a streamlined form of site plan review for these projects. This review could be administered by a municipal board or commission or by a zoning administrator or building inspector. Long-term compliance can be addressed in the existing procedures for current zoning compliance.

COMMUNITY INPUT ON DRAFT ORDINANCE

The Wisconsin Statutes prescribe procedures to be followed when the plan commission has tentatively settled on a draft of a new zoning overlay ordinance. The formal statutory proceedings should not be initiated until the commission is relatively sure that the draft is going to have a reasonable reception. Thus, the commission will usually want to take a preliminary draft out into the community for discussions and informational presentations, and to circulate it for review and comment. This informal review process may cause the commission to revise the preliminary draft.

When seeking community input on the draft zoning overlay ordinance, it is important to keep in mind that the public and the public's elected representatives will seldom accept a zoning proposal that they do not understand, at least in broad dimensions. Time must be allowed for the story to be told, for the public to absorb the story, and respond, and for more interaction, as necessary.

To push the project on a fixed timetable will be viewed as a "railroad job" and will be resisted regardless of merit. On the other hand, there are equal dangers in going too slow. A new ordinance or revision project that grinds on for many months or even years becomes stale. The effort loses momentum and becomes a target for nitpicking and delays.

Finally, keep in mind that the public wants to know what the zoning says for their lands and their neighborhood. People become frustrated if that question is not answered. Presentation of a zoning text without a map keeps the question from being answered. Presentation of a text and map may still leave questions unanswered if a property is in a

district where nearly all land use possibilities are made special exceptions or conditional uses. An attempt to win public support for a zoning ordinance cannot be made in ways that fail to answer the question, "What does it mean for my land?"; nor should avoid the question, "What does this do for the community as a whole?"

Along the Niagara Escarpment, overlay zoning will outline specific actions to take to protect the Escarpment and its resources. In general, an Escarpment Overlay Ordinance:

- ✧ Will typically not prohibit development of the Escarpment, but would require proper engineering and erosion control.
- ✧ Will prohibit most development of those portions of the entire Escarpment corridor comprised of slopes 20 percent or greater with unstable soils.
- ✧ Will prohibit most development of those portions of the Escarpment comprised of slopes 12 percent or greater adjacent to lakes, rivers, streams or wetlands
- ✧ Will prohibit development in those portions of the Escarpment where there is identified critical habitat or sensitive natural communities.
- ✧ Will limit the extent of development in order not to impact the aesthetics of the Escarpment.
- ✧ Would offer incentives for permanent protection and/or public access.

A sample Escarpment Overlay zoning ordinance is included in Chapter 6 of this document.

IMPLEMENTING THE OVERLAY

When reviewing a project of any size in the overlay zone, it is important that the development be consistent not only with the goals and objectives of the overlay but with the long-term goals and strategies of the overall municipal comprehensive plan.

The procedures for adopting an overlay district are the same as for adopting a zoning or rezoning provision. Once relevant studies have been completed, the district identified and its substantive provisions drafted, public notice must be given and a public hearing held. The provisions of the overlay district law or ordinance can contain special techniques or procedures for accomplishing its objectives such a site plan or subdivision standards, clustering permission, or a floating zone. Compliance with environmental review provisions of state law and conformance with the comprehensive plan are also required. Following the adoption of the overlay district, your community should make appropriate notations on its zoning map to provide effective notice of its applicability.

PUBLIC AND COMMUNITY SUPPORT

It is important for a community to be aware of the level and source of support it has and work on acquiring help where gaps are identified. The more a community understands its issues, concerns, and capabilities, the more it can develop a planning process that embodies the community's values and generates support for the process and its results.

Public support is essential to ensure the success and longevity of planning implementation. The following questions should be addressed when developing strategies to garner public support:

- What kinds and levels of public support are necessary to make the implementation of your overlay ordinance successful and sustainable?
- What public relations activities will you engage in to promote the effective long-term implementation the ordinance?
- How will you create opportunities for the public to share information?
- How will you connect and interact with the public and organizations to improve public awareness of Escarpment issues?

Active, ongoing involvement by interested and affected parties is key to any protection ordinance's success. It is important to include broad public involvement in the ordinance development process. It is essential to build coalitions and reach consensus about development concerns, issues, and goals related to protection of the Escarpment. The broader the base of support for the ordinance, the greater the chance it will be accepted.

Involving the public throughout the process will provide the opportunity to educate the public about Escarpment protection. Public involvement can often be challenging, the following are some tips to encourage participation from the public:

- Ensure all meetings are open to the public and publicly posted in advance of the meeting.
- Allow time for public comment at each meeting.
- Hold open houses and public informational meetings throughout the process.
- Release informational articles to local newspapers, and involve the media and encourage them to report on activities throughout the process.
- Include a public review process for the draft ordinance.
- Public involvement can also be encouraged through events such as workshops and focus group sessions.

LIMITATIONS AND CONCERNS

In adopting an overlay district ordinance or law, your community must address several issues:

1. Your community should consider whether its objectives can be met by simply amending the underlying zoning ordinance. It may be that the provisions of the zoning ordinance create a valid base line for development still applicable to a large number of parcels in the area but that the overlay district is needed for a significant number of special circumstances.
2. Your community must be cautious that the provisions contained in the overlay district are sufficiently specific to provide clear guidance or incentives to the owners

of properties and any administrative body involved in approving proposals. The Court of Appeals has warned that standards governing the issuance of special permits may not be so general as to allow unchecked discretion on the part of a planning or zoning board. Where the authority to issue special permits and land use approvals is retained by the local legislature, the standards can be less specific, but their application must not be arbitrary and capricious.

3. The overlay district's burdens must be imposed on as uniformly as possible under the circumstances. Recent U.S. Supreme Court decisions warn against singling out particular property owners to bear public burdens unreasonably.
4. The provisions of the district must be reasonably related to the accomplishment of the law's objectives. If the overlay district prohibits the use of significant portions of a landowner's property, the courts may search for a close relationship between the impacts of the development of the property and the regulation that restricts that development.

CHAPTER 5: OTHER PROTECTION MEASURES

While zoning and land use controls play an essential role in the protection of the Niagara Escarpment, they function the most effectively when they are used in combination with other means of protecting the land.

ECO-TOURISM/GEO-TOURISM

Economic development plays an important part in the future of every community. Many people view economic development activities to be at odds with preservation of resources dues to the costs of preservation and the removal of lands for future development. The unique geology of the Niagara Escarpment provides a focal point for tourism-based activities and can be further promoted as part of an eco-tourism program. The heightened awareness of the Escarpment and its ecology plays a key role in protecting it.

LAND TRUSTS

Land trusts are non-profit organizations that help protect land for public benefit. There is no legal definition of "land trust"; it is a term used to describe organizations that, in pursuit of conservation missions, own land, hold conservation easements or both. These organizations permanently protect important natural, recreational, scenic, historic and working lands in their communities. Land trusts are community focused protecting local swimming holes, scenic features and open parkland that may never attract state or national resources for protection. Their volunteers and members determine the missions of land trusts.

The following are land trusts covering the Niagara Escarpment corridor:

Door County Land Trust
P.O. Box 65
Sturgeon Bay, WI 54235
(920) 746-1359
Contact: Dan Burke, Executive Director

Glacial Lakes Conservancy
P.O. Box 258
Kohler, WI 53044-0258
(920) 273-1143
Contact: Vickie Hall, Executive Director

Ice AgeTrail Alliance
2110 Main Street
Cross Plains, WI 53528
(800) 227-0046
Contact: Mike Wollmer, Executive Director

Northeast Wisconsin Land Trust
14 Tri-Park Way Bldg. 1
Appleton, WI 54914
(920) 738-7265
Contact: Deborah Nett, Executive Director

ENVIRONMENTAL CORRIDORS

Many planning activities require delineation of environmental features as environmental corridors. Environmental corridors protect local water quality and wildlife habitat through identification and preservation of environmentally sensitive areas. They can be used as a means of controlling, moderating, and storing floodwaters while providing nutrient and sediment filtration. Environmental corridors can provide fish and wildlife habitat, recreational opportunities, and serve as buffers between land uses while improving the aesthetics of the community. The Bay-Lake Regional Planning Commission standardized its definition of environmental corridors to include wetlands, water features, floodplains, natural and scientific areas, woodlands, parks and recreation areas, areas of steep slope, exposed rock outcrops and other unique natural features which overlap or are contiguous. The concept of a corridor is based on the delineation of environmental features adjacent to waterways and water related resources and can serve as a wildlife corridor as well.

Figure 8: Bay-Lake Regional Planning Commission Environmental Corridors

Source: Bay-Lake Regional Planning Commission, 2010.

PURCHASE OF DEVELOPMENT RIGHTS (PDR)

Purchase of Development Rights is an incentive based, voluntary program with the intent of permanently protecting productive, sensitive, or aesthetic landscapes, yet retaining private ownership and management. In this program, a landowner sells the development rights of a parcel of land to a public agency, land trust or unit of government. A conservation easement is recorded on the title of the property that limits development permanently. While the right to develop or subdivide that land is permanently restricted, the landowner retains all other rights and responsibilities associated with that land and can use or sell it for purposes allowed in the easement.

TRANSFER OF DEVELOPMENT RIGHTS (TDR)

Transfer of Development Rights is similar to PDR as it is a voluntary, incentive-based program that allows landowners to sell development rights from their land to a developer or other interested party who then can use these rights to increase the density of development at another designated location. While the seller of development rights still owns the land and can continue using it, an easement is placed on the property that prevents further development. A TDR program protects land resources at the same time providing additional income to both the landowner and the holder of the development rights.

This land use management technique can support local comprehensive planning goals and facilitate Watershed Based Zoning proposals by transferring development potential from sensitive subwatersheds to subwatersheds designated for growth. The principle of TDRs puts to creative use the premise that ownership of land entails certain property rights and therefore individual rights can be bought and sold to accomplish various community planning objectives.

CONSERVATION SUBDIVISIONS

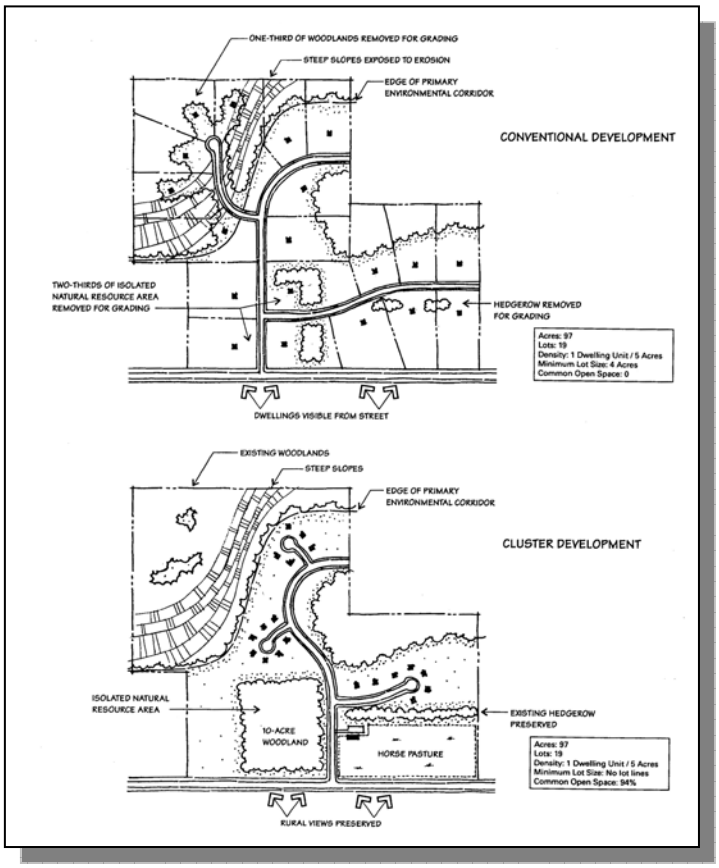
Conservation subdivisions, also known as conservation or cluster developments, refer to developments which are designed to have minimal impact on the landscape, and which include some conservation of acreage within the subdivision.

The underlying zoning and subdivision ordinances are modified to allow buildings (usually residences) to be grouped together on part of the site while permanently protecting the remainder of the site from development. This type of development provides great flexibility of design to fit site-specific resource protection needs. Conservation design creates the same number of residences under current community zoning and subdivision regulations or offers a density bonus to encourage this type of development. There is a savings in development costs due to less road surface, shorter utility runs, less grading and other site preparation costs. Municipalities also experience lower long-term maintenance costs for the same reasons. The preserved land may be owned and managed by a homeowners association, a land trust or the municipality.

CONSERVATION EASEMENTS

A conservation easement is a legal agreement between a landowner and a land trust that permanently limits use of the land in order to protect its conservation or cultural values. Conservation easements are perpetual – they are recorded on the deed to the property. All future holders of the land are bound by the restrictions of the easement. Easements can be written to allow farming and the building of limited structures or can limit or disallow future development of any kind to protect plants, wildlife, and other ecological values. In addition to the ecological and cultural benefits, easements may provide landowners with income tax, estate tax, gift tax, and property tax benefits.

Figure 9: Cluster Subdivision



Source: SEWRPC, 2010.

CHAPTER 6: SAMPLE ESCARPMENT OVERLAY ORDINANCE

The following sample ordinance is an example of a robust Niagara Escarpment Overlay protection tool. The sample includes protections for the Escarpment itself as well as associated resources. Your community can choose to pull out those sections of the sample ordinance that are not appropriate for your area.

There are numerous places in this document where blanks must be completed. The community must fill in references to the ordinance number and to other ordinances. After filling in those blanks and putting in ordinance references, publishing a Class 2 public hearing notice, and conducting the hearing, this ordinance may be adopted by the municipality's governing body.

Niagara Escarpment Overlay District

Section 1. **Purpose.** The Niagara Escarpment Overlay District is hereby established as a district which overlaps and overlays existing base zoning districts, the extent and boundaries of which are as indicated on the official zoning map for the {*City/Village/Town/County*} and described in Section (9)(a). Overlay districts provide for the possibility of superimposing certain additional requirements upon a basic zoning district without disturbing the requirements of the basic district. The uses of the underlying standard zoning district shall remain in force.

Section 2. **Intent.** The Niagara Escarpment Overlay District is intended to protect the public health and safety by minimizing development in areas prone to unwanted soil erosion and groundwater contamination, and on sites difficult to develop in a safe manner, and promote the general welfare by preserving unique and valuable geologic, archaeological and historic sites, and other natural resource features of the {City/Village/Town/County}. The regulations of the Escarpment Overlay District are based on a shared community vision defined within the comprehensive planning process that calls for protection of natural resources and unique geologic features found within the {City/Village/Town/County}.

Section 3. **General Protection Policies.** It is the policy of the {City/Village/Town/County} that the beneficial functions, structures, and values of critical areas be protected, and, further, that potential dangers or public costs associated with inappropriate use of such areas be eliminated or reduced by reasonable regulation. The standards of the Escarpment Overlay District represent a balance between individual and collective interests. In striking that balance, the {City/Village/Town/County} recognizes that, because of the wide variety of types of developments, and the relationships between them and their natural environments, it is neither possible nor advisable to establish inflexible critical areas protection standards. The reviewing body may permit deviations from these standards only if it is determined that such deviations will satisfy the purposes set forth in Sec. (1). In considering the appropriate course of action to follow when allowing deviations from the standards of Sec. (13)(b), the preferences set forth below are established to guide development actions; they are in no particular order, and may be

mixed to achieve maximum critical areas protection while facilitating reasonable use of property:

a. Avoid the impact altogether by not allowing a particular action unless no reasonable, noncritical area alternatives are available;
b. Avoid the impact by directing the particular action to noncritical areas on the same site, which may require deviation from the physical or dimensional requirements of this Ordinance (such as setbacks or lot dimensions);
c. Minimize the impact by limiting the degree or magnitude of the action;
d. Rectify the impact by repairing, rehabilitating or restoring the affected critical area.

Section 4. **Triggering Applications.** The regulations of this Ordinance apply in all zoning districts, and are triggered whenever an application for any of the following actions is filed (hereinafter referred to as "triggering applications") and it is found that such action is taking place on a parcel of real property containing a designated critical area or its buffer:

a. Any permit or action set forth in Chapter ____ of the {*City/Village/Town/County*} Code of Ordinances;
b. Any permit required by Chapter ____ of the {*City/Village/Town/County*} Subdivision Ordinance;
c. Clearing and grading permits, or permits for any other "development" activity, as that term is defined in Chapter ____, Definitions.

Section 5. **Exemptions.** The following activities are specifically exempt from the provisions of this Ordinance, whether or not such activity requires the submission of a triggering application:

a. Existing and ongoing agricultural activities.
b. Normal and routine maintenance and operation of existing irrigation and drainage ditches, swales, canals, detention facilities, wastewater treatment facilities, landscape amenities, farm ponds, fish ponds, manure lagoons and livestock water ponds; provided that such activities do not involve conversion of any critical areas not being used for such activities to another use;
c. Construction, maintenance, operation and repair or replacement of existing utility facilities and associated rights-of-way, including reasonable access roads;
d. Site investigative work in conjunction with the preparation of a land use application submittal, such as surveys, soil logs, percolation tests and other related activities;
e. Maintenance, operation, reconstruction of or addition to existing roads, streets, and driveways;
f. Any projects for which application(s) have been submitted prior to the adoption of this Ordinance.

Section 6. **Applicability.** These requirements shall be in effect in all zoning districts. No application involving a designated critical area shall be approved unless it is determined to be in compliance with this Ordinance. The standards of this Ordinance shall be applied in addition to other applicable requirements of the Code of Ordinances. Whenever other requirements of the Code of Ordinances conflict with the requirements of this Ordinance, the most stringent requirements shall govern. In instances where a proposal involves a parcel of real property with more than one critical area the standards that pertain to each identified critical area shall apply. Compliance with this Ordinance shall not remove any obligations with respect to applicable provisions of any other federal, state, county or {City/Village/Town/County} regulation.

Section 7. **Identification of Protection Areas.** Upon submittal of triggering application, the Permit Issuer shall determine the probable existence of critical areas on the parcel involved in the application. The Permit Issuer shall review and consider the most appropriate, publicly available information in determining the probable existence of critical areas, including, but not limited to, the following:

a. Large scale (1" = 200') topographic maps;
b. USGS 7.5-minute topographic quadrangle maps;
c. 1" = 400' aerial photographs;
d. "Wisconsin Wetland Inventory" maps prepared by the Wisconsin Department of Natural Resources;
e. {*City/Village/Town/County*} Comprehensive Plan - Adopted _____.

Section 8. **Requirement of Private Studies/Other Information.** The Permit Issuer may also conduct field investigations with permission of the landowner, and may require private studies be conducted by the applicant, including, but not limited to, the following:

a. Topographic surveys prepared by and certified by a Wisconsin registered land surveyor at a contour interval of not less than two (2) feet.
b. Field surveys of trees and/or plant material compiled by a landscape architect, forester, arborist, biologist or botanist with a professional degree in one of those fields of endeavor.

Section 9. **Niagara Escarpment Critical Area.** The purpose of regulating the Niagara Escarpment area is to promote safe conditions by preventing development that requires the placement of roads on steep inclines, to protect the integrity of groundwater resources subject to pollutant infiltration through crags in the bedrock surface, to preserve the area as a unique, visually prominent geologic feature that contributes to the diversity of landscape of the {City/Village/Town/County}, and to preserve the functions of the Escarpment area as a critical wildlife corridor.

a. **Regulated Area.** A buffer area extending XX feet in each direction (total buffer width = XX feet) from the ridgeline of the Niagara Escarpment as generally depicted in the {*City/Village/Town/County*} Comprehensive Plan. The term ridgeline is defined as

the ground line located at the highest elevation of the ridge, within the buffer area, and running parallel to the long axis of the ridge.

b. **Prohibited or Regulated Activities.**

1. All quarrying, sand and gravel pits, and other nonmetallic mining activities are prohibited in the Regulated Area.
2. No telecommunication tower locating in the Regulated Area shall be located within five thousand (5,000) feet of an existing telecommunication tower; said distance to be measured by a straight line from the base of the nearest existing tower to the base of the proposed tower site.
3. No portion of any building or structure shall be constructed to extend above the highest point of the ridgeline nearest to the building site unless the proposed construction will be screened from public view from below by existing mature vegetation.
4. Existing mature vegetation along the ridgeline shall be preserved to the greatest extent possible.
5. Significantly visible rock outcroppings shall be preserved and incorporated into site design to the greatest degree possible.
6. Grading shall create a naturally-sloped effect that conforms to the topography of the site. Disturbed areas shall be replanted with common vegetation.

c. **Exception for Existing Lots of Record.** Nothing in Sec. (9) shall prevent one one-family detached home from being built on any legal lot existing on the effective date of this Ordinance, provided it complies with the other development standards of this Ordinance, any grading ordinances presently in effect, and the development standards of the underlying zone. Where provisions may conflict, the most restrictive shall apply.

Section 10. **Steep Slope Critical Area.** The purpose of regulating steep slope areas is to promote safe conditions by preventing development that requires the placement of roads on steep inclines, minimizing erosion and negative visual impacts by preserving natural grades of the land, protecting visually prominent natural features by preserving ridgelines and other significant natural topographical features of hilly areas within the {City/Village/Town/County}.

a. **Regulated Area.** Any properties or portions thereof that have an average slope of fifteen (15) percent or greater shall be subject to the provisions of this subsection.

b. **Prohibited or Regulated Activities.**

1. All quarrying, sand and gravel pits, and other nonmetallic mining activities are prohibited in the Regulated Area.

2. No buildings, structures, driveways, private roads or roads to be dedicated to the public shall be constructed upon portions of any site where the true slope is twenty-five (25) percent or greater.
3. No buildings or structures shall be constructed on a site unless its access road (on or off-site) can be built so that no length of said road has a slope of greater than twenty-five (25) percent.
4. No portion of any building or structure shall be constructed to extend above the highest point of the hill or bluff upon which said development is taking place unless the proposed construction will be screened from public view from below by existing, mature vegetation.
5. No telecommunication tower locating in the Regulated Area shall be located within five thousand (5,000) feet of an existing telecommunication tower; said distance to be measured by a straight line from the base of the nearest existing tower to the base of the proposed tower site.
6. On lots with an average slope of fifteen (15) percent to thirty (30) percent, impervious surface shall not exceed ten (10) percent of the gross lot size.
7. Removal of existing mature vegetation shall be minimized to the greatest extent possible.
8. Grading shall create a naturally-sloped effect that conforms to the topography of the site. Disturbed areas shall be replanted with common vegetation.

c. **Exception for Existing Lots of Record.** Nothing in Sec. (10) shall prevent one one-family detached home from being built on any legal lot existing on the effective date of this Ordinance, provided it complies with the other development standards of this Ordinance, any grading ordinances presently in effect, and the development standards of the underlying zone. Where provisions may conflict, the most restrictive shall apply.

Section 11. **Woodlands Critical Area.** The woodlands of the {City/Village/Town/County} significantly contribute to the scenic attractiveness of the {City/Village/Town/County} and provide habitat for numerous species of plant and animal life. The purpose of these regulations is to perpetuate the existence of woodlands.

a. **Regulated Area.** Areas or stands of trees whose total combined canopy covers an area of one (1) acre or more and at least fifty (50) percent of which is composed of canopies of trees having a diameter at breast (DBH) of at least ten (10) inches; or any grove consisting of fifteen (15) or more individual trees having a DBH of at least twelve (12) inches whose combined canopies cover at least fifty (50) percent of the area encompassed by the grove. No trees grown for commercial purposes should be considered a woodland.

b. **Prohibited or Regulated Activities.**

1. Clearing of trees shall be permitted for building footprints, driveways and sites for onsite sewage disposal systems. Building footprints may be cleared a distance of twenty-five (25) feet from the exterior walls of principal buildings and fifteen (15) feet from accessory buildings. Selective pruning of remaining trees shall be permitted, provided that seventy (70) percent of the original canopy is left intact.

2. Selective pruning of woodlands shall be permitted, provided that seventy (70) percent of the original canopy is left intact.

3. Clearcutting on contiguous land under single ownership shall be permitted, provided that the clearcut area not exceed the lesser of ten (10) acres or thirty (30) percent of woodlands in any ten-year period. An area clearcut for commercial purposes shall not be converted or developed for another use within seven (7) years from the date clearcutting was completed.

4. Other sound forestry practice techniques (as defined in Chapter 46, Wisconsin Administrative Code) recommended by a qualified forester are permitted if designed to protect or enhance the woodlands.

c. **Exception.** Exceptions to these restrictions may be granted upon a showing of special needs or circumstances of the landowner.

Section 12. **Sinkholes.** Sinkholes provide easy opportunity for contaminated surface water to enter the {City/Village/Town/County} groundwater system. Since many people in {City/Village/Town/County} rely on groundwater for drinking water, human health and public welfare will benefit by minimizing opportunity for entry of contaminated surface water into sinkholes. The purpose of these regulations is to reduce entry of contaminant-bearing surface water into sinkholes.

a. **Applicability.** Each of the following shall be subject to requirements of sub. (d):

1. Sinkholes where the sinkhole opening is 1 square foot or greater in size.

2. Sinkholes where the area bounded by the associated sinkhole depression is 100 square feet or greater in size.

3. Sinkhole channels or the sinkhole channel cross-sectional area is 3 square feet or greater in size.

b. **Determination.** Sinkholes, particularly sinkhole openings, can appear suddenly at the ground surface or disappear. Because sinkholes are not necessarily permanent features on the ground surface, the location of sinkholes on a lot shall be determined by the lot owner at time of zoning permit application, professional engineer, geologist or similar professional, or by a Code Administrator at time of lot inspection while processing the zoning permit application.

Note: Some sinkhole openings and sinkhole depressions receive sufficient surface water to cause formation of an eroded channel in the ground to form. This section also places regulations upon those channels of the size specified in par. (b), sub. (3).

c. **Requirements.** The requirements of either sub. (1) or (2) shall be met.

1. The following items shall not be placed within 100 feet of sinkhole openings, sinkhole depressions, or sinkhole channels:
    i. Buildings.
    ii. Surface water discharge pipes or channels that drain into a sinkhole opening, sinkhole depression, or sinkhole channel.
    iii. Petroleum products storage facility.
    iv. Wastewater treatment and disposal systems.
    v. Sanitary landfills.
    vi. Salvage yards.
    vii. Parking lots.
    viii. Livestock manure storage facilities.
    ix. Livestock barnyards and feedlots.
    x. Fertilizer distribution plants.
    xi. Animal shelters.
    xii. Kennels.
2. Alternative Critical Area Protection Plan. It is recognized that in some instances, there may be other methods of groundwater protection regarding sinkholes such as drainage diversion, berming, filling the sinkhole, etc. A landowner may devise and submit an alternative protection plan for the prevention of groundwater contamination through sinkholes. Such plan must be approved by the _____ and shall specify the measures to be undertaken. If approved, the applicant shall adhere to the requirements of the alternative protection plan rather than the requirements of sub. (1).

Section 13. **Application Processing When Critical Areas are Present**

a. **Conditional Use Permit Required.** Any action taking place on a parcel of real property containing a designated critical area requires that the applicant apply for, and be granted a Conditional Use Permit under the procedures set forth in Chapter ___ of the Code of Ordinances. If the triggering application is an application for a Conditional Use Permit, such application shall be sufficient to satisfy this requirement.

b. **Submission Requirements.** Applicants shall submit the following information along with the application for a Conditional Use Permit:

1. Ten (10) full size copies of a "Critical Areas Protection Plan" prepared on tracing cloth, reproducible drafting film, or paper of good quality at a map scale as appropriate that correctly shows the following information:
    i. A drawing legend at appropriate scale with the date of preparation, north arrow, and designation of existing and proposed contours at a minimum two (2) foot contour interval.

ii. The location of the proposed development activity.

iii. The names, addresses and telephone numbers of the owners, Subdividers, lessee and/or developer(s) of the property and of the designer of the plan.

iv. The boundary line of the site with dimensions, indicated by a solid line, and the total land area encompassed by the site.

v. The location of any existing or proposed lot lines, right-of-way lines and easements.

vi. The location and dimensions of all permanent easements on the subject property and boundary lines adjacent to the site.

vii. The location and extent of any existing critical area features defined and described in Sec. 9, 10, 11 and 12 above. Each individual resource area on the site shall be graphically and numerically shown on the Critical Areas Protection Plan.

viii. Graphic and numeric illustration shown on the Critical Areas Protection Plan of those existing critical areas features (in square feet or acres) that will be disturbed and those that will be preserved. Numeric data may be shown in tabular form with labeled reference to specific areas designated on the Critical Areas Protection Plan.

ix. Graphic illustration and notes relating to how the protection/mitigation measures set forth in Sec. (3)(a-d) will be achieved.

c. **Application Processing.** If the procedures governing the triggering application require Planning Commission or Board of Appeals review, the Critical Areas Protection Plan shall be reviewed, and protection standards applied, by the applicable decision-making body concurrent with the triggering application. In all other cases, the Critical Areas Protection Plan shall be reviewed, and protection standards applied, by following the procedures for Site Plan Review set forth in Chapter _____ of the Code of Ordinances.

d. **Required Findings.** In addition to addressing the decision criteria of the underlying triggering application, the decision-making body shall also determine how the Critical Areas Protection Plan meets the protection standards set forth in Sec. (3) or, when deviation from the standards is permitted, how the plan achieves maximum critical areas protection while facilitating reasonable use of property.

Section 14. **Setbacks from Bluffs and Escarpments.** To prevent undermining and erosion of shoreland bluff areas and to improve resistance to the negative impacts of climate change, and, to protect structures from destruction by changing rock conditions and protect scenic and natural resources, the following standards have been developed and apply to the construction or placement of new buildings on all bluffs where the construction grade is 50 feet or higher above the surface water elevation; and to all

escarpments with a slope of 12% or greater, as measured from the escarpment base to the escarpment crest.

a. All new structures which require excavation shall be setback 125 feet from both the base and the ridgeline of the slope. A variance from the setback shall not be given unless a geotechnical study has been submitted indicating the variance to allow a reduced setback will not result in undue erosion, earthen material falling on the structure, or result in the structure being situated on an unstable slope within 77 years of the construction of said structure.
b. **Runoff management.** Stormwater shall be diverted away from the bluff slope or escarpment slope utilizing the following:
    1. A berm shall be constructed landward of the bluff ridgeline or on the plateau side of the escarpment crest to try to minimize undue runoff and erosion. The berm shall extend horizontally across the width of the lot and shall be of such height as to prevent runoff over the bluff ridgeline or escarpment crest.
    2. Prior to construction of the new structure, and prior to any land disturbance activity, the land owner shall submit a plan, designed by a professional engineer, indicating how storm water will be managed on the site to prevent adverse runoff over the bluff ridgeline or escarpment crest and to prevent undue infiltration near the bluff ridgeline or escarpment crest. No construction or disturbance of the site shall commence until the plan has been approved by the county.
    3. All downspouts shall be directed away from the bluff ridgeline or escarpment crest.
c. **Infiltration and undermining management.** To prevent added infiltration which can lead to undermining of the slope, the following shall be restricted:
    1. Sanitary waste disposal systems, wells, and rain gardens are prohibited between the principal structure on the lot and the bluff ridgeline or escarpment crest.

Section 15. **Site Requirements.**

a. No roads or driveways shall be placed on slopes of 30-39% unless the roads or driveways are placed parallel to the escarpment face. No roads or driveways shall be placed on slopes of 40% or greater.
b. The clearing of trees located within the Escarpment Critical Areas shall be permitted for:
    1. Building footprints.
    2. Sites for wastewater disposal systems.
    3. Driveways.
    4. The area on a lot extending not more than 25 feet from the exterior walls of principal buildings and 15 feet from accessory buildings.

c. In the area on a lot lying between 25 feet and 100 feet from the exterior walls of principal buildings, selective clearing is permitted provided that:
    1. No more 30% of this area on the lot shall be cleared.
    2. The clearing of the 30% described above shall not result in strips of cleared openings of more than 30 feet in any 100 foot wide strip nor create a cleared opening strip greater than 30 feet wide.
    3. In the remaining 70% of this area, cutting and pruning shall leave sufficient cover to screen vehicles, dwellings, and other structures.

d. In the area on a lot lying more than 100 feet from the exterior walls of principal buildings, and for lots which contain no principal buildings, selective clearing shall be permitted provided that within Escarpment Critical Areas there shall be no cleared area greater than 5,000 square feet, and provided that the shade of the remaining trees over 15 feet in height covers at least 70% of the wooded land surface on the lot.

e. Pruning of trees is permitted; except that trees shall not be pruned completely clear of branches above a height equal to 1/2 the height of the tree.

f. In addition, the woodlands located within Escarpment Critical Areas shall also be subject to the requirements of Sec. (11), Woodlands.

g. Unless further restricted in Sec. (16), Height Requirements, no structure shall exceed 35 feet in height, or have a height greater than the height of the highest tree on the lot, whichever is lowest. In the event there are no trees on the lot, the height limitation shall be as identified in Sec. (16), Height Requirements.

h. The placement of a structure on an escarpment shall also be subject to the requirements of Sec. (14), Setbacks from Bluffs and Escarpments.

i. The maximum impervious surface on the lot shall be 25%.

j. Unmarked graves, effigy and burial mounds shall not be intentionally disturbed, and, all runoff shall be diverted away from any known grave, effigy and burial mound.

Section 16. **Height Requirements.**

a. **Height limitation.** Except as provided in pars. (b) through (e), the Escarpment height limitations identified in Sec. (15), no building or structure shall exceed 35 feet in height above the grade elevation.

    Note: The applicant is encouraged to avoid erecting tall structures near the county's stopover sites. The applicant is encouraged to work with the Wisconsin Department of Natural Resources to avoid interfering with migration patterns. In addition, if near a municipally owned airport there may be stricter height regulations in effect, as administered by the municipality.

b. **Exemptions.** The following shall be exempted from the height requirements of this section:
    1. Architectural projections such as spires, belfries, parapet walls, domes, chimneys, and

2. Cupolas, provided that such cupolas do not exceed 64 square feet in floor area, including stairwells, are not higher than eight (8) feet above the adjacent roof ridge, and contain no living quarters.
3. Agricultural structures such as silos and grain storage buildings, provided such structures are used solely for agricultural purposes.
4. Special structures such as elevator penthouses, grain elevators, observation towers in parks, communication towers, electrical poles and towers, and smoke stacks.

c. **Public or Semi Public Facilities,** such as schools, churches, monuments, libraries, governmental offices and stations, may be erected to a height of 60 feet provided that all required setbacks and yards are increased by not less than 1 foot for each foot the structure exceeds 35 feet in height.

REFERENCES

Publications

An Inventory and Assessment of the Resources of the Niagara Escarpment in Wisconsin. Bay-Lake Regional Planning Commission, 2001.

Guide to Community Planning in Wisconsin. Ohm, Brian, 1999. Department of Urban & Regional Planning, University of Wisconsin-Madison/Extension.

The Niagara Escarpment Study: Inventory Findings 1999-2001 and Considerations for Management. Wisconsin Department of Natural Resources, 2002.

Wisconsin Land Legacy Report: An Inventory of Places to Meet Wisconsin's Future Conservation and Recreation Needs. Wisconsin Department of Natural Resources, 2006.

Zoning, Struck, Kevin, 2006. University of Wisconsin Extension.

Websites

- Association of Wisconsin Regional Planning Commissions (AWRPC) – includes links to all nine state of Wisconsin regional planning commissions:
  http://www.awrpc.org/

- Center for Land Use Education (CLUE) – resource links:
  http://www.uwsp.edu/cnr/landcenter/topics.html

- Community Planning Resource Website – a service of the Land Information and Computer Graphics Facility:
  http://www.aqua.wisc.edu/cpr/

- League of Wisconsin Municipalities - list of municipal ordinances:
  http://www.lwm-info.org/index.asp?Type=NONE&SEC={A1916F9D-23CB-4978-9743-BAE51CA2E890}

- Lakeshore Natural Resource Partnership (LNRP) – a non-profit organization providing education and coordination to support local community efforts that maintain and improve the health of natural resources in the Lakeshore Basin since 2003.
  www.lnrp.org/

- Natural Resources Conservation Service
  http://www.wi.nrcs.usda.gov/

- Niagara Escarpment Resource Network (NERN) – a non-profit program of the Lakeshore Natural Resource Partnership comprised of a coalition of federal, state, and regional agencies; local and county governments; academia; non-profit organizations, and; individual landowners and citizens. NERN promotes the protection and conservation of the Niagara Escarpment.
  http://escarpmentnetwork.org/

- Smart Communities Network, Land Use Planning Tools:
  http://www.smartcommunities.ncat.org/landuse/tools.shtml

- University of Wisconsin – Sea Grant Institute:, Coastal Natural Hazards:
  http://seagrant.wisc.edu/coastalhazards/

- US Fish and Wildlife Service – Midwest Region:
  http://www.fws.gov/midwest/maps/wisconsin.htm

- Wisconsin Coastal Management Program:
  http://www.doa.state.wi.us/section.asp?linkid=65&locid=9

- Wisconsin Department of Administration, Division of Intergovernmental Relations:
  http://www.doa.state.wi.us/index.asp?locid=9

- Wisconsin Department of Natural Resources:
  http://dnr.wi.gov/

- Wisconsin Geological and Natural History Survey:
  http://www.uwex.edu/wgnhs/

- Wisconsin Historical Society:
  http://www.wisconsinhistory.org/

- Wisconsin State Law Library - list of local ordinances and codes by community:
  http://wilawlibrary.gov/topics/ordinances.php

DEFINITIONS

The following definitions have been compiled to assist with the interpretation of the Niagara Escarpment.

Aggregate - means gravel, sand, clay, earth, shale, stone, limestone, dolostone, sandstone, marble, granite, or rock other than metallic ore.

Agricultural Use - the land, building or structure used for the purpose of animal husbandry, horticulture, beekeeping, dairying, fallow, field crops, fruit farming, fur farming, market gardening, pasturage, poultry keeping, mushroom farming or any other farming use and may include growing, raising, small-scale packing and storing of produce on the premises and other similar uses customarily carried out in the field of general agriculture.

Annually - shall mean the calendar year from January 1 to December 31.

Biosphere Reserve - an international designation of recognition from the United Nations Educational Scientific and Cultural Organization (UNESCO) under the "Man and Biosphere Program" that recognizes the unique natural features and ecological importance of the area regulated by the Niagara Escarpment Plan.

Bluff - Land with a slope of 20% or more where the construction grade is 50 feet or higher above the surface water elevation if adjacent to surface water, or, 50 feet above the base of the bluff if not adjacent to surface water. For purposes of this chapter a bluff is not an escarpment.

Carrying Capacity - capacity of a site to support a use without substantial negative impact on environmental features such as water quality, natural vegetation, soil, wildlife population and visual attractiveness.

Cluster Subdivision – see Conservation Subdivisions.

Compatible - where the building, structure, activity or use blends, conforms or is harmonious with the Escarpment's ecological, physical, visual or cultural environment.

Conservation - the wise management of the environment in a way which will maintain, restore, enhance and protect its quality and quantity for sustained benefit to humans and the environment.

Conservation Subdivision - also known as conservation or cluster developments, refer to developments which are designed to have minimal impact on the landscape, and which include some conservation of acreage within the subdivision.

Cuesta - A persistent ridge, reflecting erosion resistance, with a gentle slope on one side and a steep slope (the escarpment) on the other.

Cultural Landscape - a cultural landscape is the product of human activity over time in modifying the landscape for their own purpose, and is an aggregation of human-made features such as a village, farmland, waterways, transportation corridors, and other artifacts.

Cumulative Effect - The effect on the Escarpment environment as a result of the incremental impacts of development when considered in conjunction with other past, present and possible future actions, occurring over a period of time and area.

Domestic Purposes - those purposes for the property owner's use and not for sale to the public.

Easement - a negotiated interest in the land of another which allows the easement holder specified uses or rights without actual ownership of the land.

Ecological(ly) - the sum total of all the natural and cultural conditions which influence and act upon all life forms including humans.

Endangered Species - any indigenous species of fauna or flora that, on the basis of best available scientific evidence, is indicated to be threatened with immediate extinction throughout all or a significant portion of its range.

Escarpment - 1 : a steep slope in front of a fortification. 2: a long cliff or steep slope separating two comparatively level or more gently sloping surfaces and resulting from erosion or faulting.
- *Merriam-Webster*

Escarpment - A long, continuous cliff or relatively steep slope facing in one general direction. It commonly marks the position of a resistant rock unit".
- *Geography of Wisconsin and Upper Michigan* - Paull, 1977

Escarpment Brow (Edge) - the uppermost point of the Escarpment slope or face. It may be the top of a rock cliff, or where the bedrock is buried, the most obvious break in slope associated with the underlying bedrock.

Escarpment Crest - Also referred to as Ridgeline. The highest elevation of any exposed bedrock outcropping or talus slope associated with an escarpment.

Escarpment Environment - the physical, natural, visual and cultural heritage features associated with the Escarpment landscape.

Escarpment Related Landforms - the physical features of the land associated with the Escarpment and created by erosion, sedimentation and glaciation, often including such features as moraines, lakes, river valleys, beach ridges, drumlins and kames.

Escarpment Slope (Face) - the area between the brow and toe of the Escarpment and usually characterized by a steep gradient. Where the rise occurs in the form of a series of steps, the slope also includes the terraces between the steps.

Escarpment Toe (Base) - the lowest point on the Escarpment slope or face determined by the most obvious break in slope associated with the bedrock or landforms overlying the bedrock. The lowest elevation of any exposed bedrock outcropping or talus slope associated with the escarpment.

Essential - that which is deemed necessary to the public interest after all alternatives have been considered.

Existing Use - the use of any land, building or structure.

Floodplain - the area, usually lowlands, adjoining a water course which has been, or may be covered by flood water.

Forest Management - the management of forests for the production of wood and wood products, and to provide outdoor recreation, to maintain, restore or enhance environmental conditions for wildlife, and for the protection and production of water supplies.

Groundwater Infiltration/Recharge Area - an area where the porous nature of the surficial materials allows significant percolation of water into the groundwater system.

Headwaters - the source area of a stream.

Karst - A special type of landscape that is formed by the dissolution of soluble rocks, including limestone and dolomite.

Karst Feature – landscape features caused by dissolution of soluble rocks. Includes fractures, sinkholes, caves, pitted bedrock, seeps, springs.

Land Trust - non-profit organizations that help protect land for public benefit. There is no legal definition of "land trust"; it is a term used to describe organizations that, in pursuit of conservation missions, own land, hold conservation easements or both.

Lot - means a parcel of land;
(a) described in a deed or other document legally capable of conveying an interest in land, or
(b) shown as a lot or block on a registered plan of subdivision.

Mineral Resources - sand, gravel, shale, limestone, dolostone, sandstone, and other mineral materials suitable for construction, industrial, manufacturing and maintenance purposes, but does not include metalliferous minerals, fossil fuels, or non-aggregate industrial minerals such as asbestos, gypsum, nepheline syenite, peat, salt and talc or mine tailings.

Municipality - a city, village, town, or county.

Municipal Park or Open Space - any park or open space area owned and managed by a local or county government.

Natural Environment - the air, land and water or any combination or part thereof, of the state of Wisconsin.

Niagara Escarpment - A discontinuous bedrock-controlled, geomorphologic feature composed of any and all outcrops that form a rock ridge or series of ridges at the bedrock surface along the 'western' edge of the Silurian ('Niagaran') outcrop belt."

-- J. Kluessendorf, D. Mikulic, 2000

Niagara Escarpment Resource Network (NERN) - a non-profit program of the Lakeshore Natural Resource Partnership comprised of a coalition of federal, state, and regional agencies; local and county governments; academia; non-profit organizations, and; individual landowners and citizens. NERN promotes the protection and conservation of the Niagara Escarpment.

Open Landscape Character - the system of rural features, both natural and human-made which makes up the rural environment, including forests, slopes, streams and stream valleys, hedgerows, agricultural fields, etc.

Overlay Zone - a special resource or development area with new provisions that apply in that area in addition to the provisions of the zoning ordinance. Overlay zones build on the underlying zoning, by establishing additional or stricter standards and criteria; the standards of the overlay zone apply in addition to those of the underlying zoning district.

Pit - means land or land under water from which unconsolidated aggregate is being or has been excavated, and that has not been rehabilitated, but does not mean land or land under water excavated for a building or other work on the excavation site or in relation to which an order has been made under sub-section 1(3) of the Aggregate Resources Act.

Preservation - the maintenance of natural or cultural heritage features in their current or original form, and the maintenance of the natural environment to allow natural processes to continue undisturbed by human intervention.

Property - real property, including all buildings and structures thereon.

Protection - ensuring that human activities are not allowed to occur which will result in the unacceptable degradation of the quality of an environment.

Public Agency/Body - any Federal, State, County or Municipal agency and includes any commission, board, authority or department, established by such agency exercising any power or authority.

Quarry - means land or land under water from which consolidated aggregate is being or has been excavated and that has not been rehabilitated, but does not mean land or land under water excavated for a building or other work on the excavation site.

Rare Species - any indigenous species of flora or fauna that is represented in the state by small but relatively stable populations, and/or that occurs sporadically or in a very restricted area of the state or at the fringe of its range, and that should be monitored periodically for evidence of a possible decline.

Recreational Development - those activities and associated tourism facilities designed to provide recreational and tourism opportunities for the use of local residents and the travelling public.

Rehabilitation - after extraction, to treat land so that the use or condition of the land is restored to its former use or condition, or is changed to another use or condition which is compatible with adjacent uses (e.g., restoration of land from which aggregate has been extracted).

Ridgeline – the ground line located at the highest elevation of the ridge and running parallel to the long axis of the ridge.

Scarp - The steep slope formed as the edge of a bed of outcrops **–** as opposite to the dip which is the slope formed by the surface of the bed."

- *The Practical Geologist* (Dixon, 1992)

Sediment Control Device - a structure which traps and filters sediment.

Setbacks - a buffer at a given distance from navigable water, wetlands, the top of a bluff or sensitive natural features.

Sinkhole - A natural depression in a land surface communicating with a subterranean passage, generally occurring in limestone regions and formed by solution or by collapse of a cavern roof.

Source Area - areas of obvious groundwater discharge (e.g., springs and prominent seeps), recharge areas and wetlands which serve as the origin or source of surface or ground water systems.

Stream/Watercourse - is a feature having defined bed and banks, through which water flows at least part of the year.

Steep Slope – generally, an area with an average slope of fifteen (15) percent or greater subject to instability or erosion.

Subdivision Ordinances - regulate the division of land to promote public health, safety, aesthetics, and general welfare. The ordinance provides for minor land divisions, major land divisions, design standards and the dedication and improvement of a parcel of land to be developed. see also Cluster Subdivision and Conservation Subdivision

Talus Slope - the slope created by the mass of broken rock which accumulates at the base of the cliff face along the Escarpment. An area located at the base of an exposed bedrock outcropping of an escarpment that is comprised of loose rocks or other debris which has separated from the outcrop face.

Threatened Species - any indigenous species of fauna or flora that on the basis of the best available scientific evidence, is indicated to be experiencing a definite non-cyclical decline throughout all or a major portion of its range, and that is likely to become an endangered species if the factors responsible for the decline continue unabated.

Trail Activities - recreation oriented to trails, (e.g., bicycling, horseback riding, cross-country skiing, hiking, snowmobiling).

Unstable Slopes - slopes which are or may be subject to erosion such as mass movement, slumping, landslides, mudflows or rock falls.

Viewshed/vista - the natural environment that is visible from one or more viewing points; a distant view.

Vulnerable Species - any indigenous species of fauna or flora that is particularly at risk because of low or declining numbers, occurrence at the fringe of its range or in restricted areas or for some other reason, but is not a threatened species.

Watershed Management - the analysis, protection, development, operation and maintenance of the land, vegetation and water resources of a drainage basin.

Wetlands - lands that are seasonally or permanently covered by shallow water, as well as lands where the water table is close to or at the surface. In either case the presence of abundant water has caused the formation of hydric soils and has favoured the dominance of either hydrophytic or water tolerant plants. The four major types of Wetlands are swamps, marshes, bogs, and fens.

Wildlife Habitat - areas of the natural environment where plants, animals, and other organisms, excluding fish, survive in self-sustaining populations, and from which they derive services such as cover, protection, or food.

Wildlife Management - the management of wildlife habitats for the purposes of sustaining the quantity and quality of wildlife.

Zoning Ordinance - regulates and restricts the use of property through establishment of districts for the purpose of regulating: 1) the location and use of land, water, buildings, and structures, 2) the height and size of building structures, 3) the percentage of a lot that may be occupied, 4) the density of the population, and 5) the size of lots.

Zoning Overlay - a special resource or development area with new provisions that apply in that area in addition to the provisions of the zoning ordinance. Overlay zones build on the underlying zoning, by establishing additional or stricter standards and criteria; the standards of the overlay zone apply in addition to those of the underlying zoning district.

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