

9.0 Purpose

The Town of Excelsior's landscape varies dramatically from rolling upland farm fields, scattered wetlands and streams to the steep forested bluffs of the Baraboo Range. This landscape provides recreational opportunities such as hiking and hunting. Public participation efforts reveal that preserving these natural features and productive agricultural lands as being critical to maintaining the desired agrarian and rural lifestyle of current residents. Additionally, public input has emphasized that water quality protection and improvement is crucial and should be considered a key planning issue. This section of Excelsior's plan highlights these and other important natural resource issues in the Town and provides a platform for the establishment and implementation of programs that ensure the protection of agricultural lands, water quality improvement and the general open space nature of the Town.



9.1 General Soils Information

Soil suitability is a key factor in determining the best and most cost-effective locations for new development. Problems that limit development and the placement of Private On-Site Wastewater Treatment Systems (septic systems) on certain soils may include poor drainage, erosion, steep slopes or high water tables. Soil suitability is also a key factor in determining agricultural productivity and suitability. Three major soil types dominate excelsior: Eleva-Boone-Plainfield, Urne, and Fayette series. General soils information can also be noted on *Map 9-2 General Soils Map*.

- ☐ **Eleva-Boone-Plainfield series** soils are distributed evenly throughout the town's uplands. The soils in this series typically are excessively drained, moderately rapid to rapidly permeable soils. These soils vary in use. Agriculture is the main use in the Plainfield series. The Boone series is usually wooded, however it can be used for agriculture if it is fertilized and irrigated. The Plainfield series is a suitable soil for septic systems. The Boone series is moderately suitable for septic systems with slope being the limiting factor. The Eleva series is generally not suited to septic tank absorption fields due to a shallow bedrock layer, however new septic technologies can be used.
- ☐ **Urne series** soils are somewhat excessively drained and are often found on convex ridge tops, concave side slopes, and valley floors of unglaciated sandstone uplands. This series consists of moderately rapid permeable soils and the available water content is low. Many of these soils are used for cultivation, and some for woodland. This soil is suited to trees. The Urne series is moderately suited to building because of frost action, and is poorly suited to septic tank absorption fields because of the depth to bedrock. This series is mapped with the Eleva-Boone-Plainfield category, as they are most similar to this series.
- ☐ **Fayette series** soils are mapped under the Baraboo-Rock Outcrop category, as they are most similar to this series. These soils are well drained and found on unglaciated uplands. Permeability is moderate with a very high available water capacity. The series is suitable to septic systems and buildings, unless the slope is too steep. The soils are primarily under agricultural production, and fairly suitable for that use. These soils are suited to trees.

9.2 Topography and Slope

The topography in the Town of Excelsior varies dramatically from rolling farm fields in the northern half of the Town to wetlands and streams to the steep forested bluffs of the Baraboo Range that dominate the Town's southern region.

9.3 Environmentally Sensitive and Significant Resources

The Town of Excelsior has identified environmentally sensitive areas as those having unique geology, important agricultural soils, surface and ground water resources, wetlands, native grasslands, Baraboo Range woodlands, scenic landscapes and vistas, habitat for native plant and wildlife communities, endangered and threatened species. Also worth careful consideration are lands having slopes greater than 12%, floodplains, wetlands, hydric soils, groundwater recharge areas (zones of contribution to municipal wells), and areas that contribute water recharge to Lake Virginia, the Baraboo River, Dell Creek, Copper Creek and Narrows Creek. The Town has further recognized that any future land uses could negatively impact these areas and should be managed utilizing a combination of restrictions on the frequency and density of residential development, site evaluations by the Town's Plan Commission, and careful application of the objectives and policies in this Plan. **Map 9-1 Environmentally Sensitive Areas** shows the location of the aforementioned components of this subsection with the exception of floodplain, which is shown on **Map 9-3 General Floodplain Areas**.

☐ Woodlands

A portion of Excelsior is covered by forest. Much of this forest is located along rivers and on slopes that are generally greater than 10%. This woodland pattern results from historical agricultural land uses that avoided land types that are difficult to place under cultivation. Riparian woodland areas are primarily composed of silver maple, aspen and box elder, while upland forests are primarily composed of red and black oak, hickory and a mixture of upland hardwood forests. These woodlands have been identified as important features that add to the Town's rural character.



☐ Rare Species Occurrences

The Wisconsin DNR's Natural Heritage Inventory program maintains information on the general location and status of rare, threatened or endangered plant and animal species. There are documented occurrences of rare or threatened species in much of the Town of Excelsior. **Map 9-1 Environmentally Sensitive Areas** shows general areas in Excelsior that could support or have at one time in history been identified as containing rare plant or animal species. These general areas are spread over a large portion of the Town. The DNR does not list specific areas where endangered species live for fear of purposeful harvest or destruction of them or their habitat.

Landowners seeking to know whether or not a specific parcel of land is host to endangered species must contact the Wisconsin DNR to fill out a NHI Endangered Resources Review Request. WDNR Reviewers communicate to the applicant any rare species, natural communities, or natural features tracked in the Natural Heritage Inventory database found in or near the proposed project area. Reviewers also explain whether additional steps should be followed to assure compliance with the Wisconsin Endangered Species Law. The Review letter may be necessary for other Department of Natural Resources permits, since it is illegal to take, transport, possess, process or sell any wild animal that is included on Wisconsin Endangered and Threatened Species List. In addition, it is illegal to remove, transport, carry away, cut, root up, sever, injure or destroy a wild plant on the Wisconsin Endangered and Threatened Species List. (see: <http://dnr.wi.gov/org/land/er/forms/index.htm#review>)

☐ Significant Natural Areas and Resources



There are a number of significant natural areas and resources in the Town of Excelsior. The plan calls attention to these natural areas, which, by their nature, connect the present day Town to the landscape that once dominated the area. This material, in part, is from the Natural Area Inventory of Sauk County Wisconsin, 1976, by William E. Tans, Botanist and Kenneth I.

Lange, Naturalist. Locations of each are noted on *Map 6-3 Community and Cultural Resources*.

- Ableman's Gorge Hemlocks and Ableman's Gorge Area: Parts of Section 29, includes wooded cliffs and boulder slopes facing north with the best Hemlock and Yew stand in Southern Wisconsin. Quartzite and conglomerate cliffs, section of Baraboo River and riparian floodplain habitat. Area includes Van Hise Rock.
- The Excelsior Township Pine Barrens, including the Van Zelst Pine Barrens, Section 21, a sand barren remote from Wisconsin River terraces, with Little Bluestem and jack pine, as noted in original land survey. Also, the Reedsburg School Forest, Section 21, a dry oak forest and sand barren; numerous additional sand blows in Section 22, with old jack pine forest and quartzite conglomerate.
- Narrows Creek Gorge and Vicinity, Section 31 and Section 6, in the northwestern corner of the Baraboo Hills, includes red and white pines on quartzite conglomerate, sandstone and Baraboo quartzite outcroppings, shaded cliff habitats, prairie remnant and lowland hardwoods along Narrows Creek. A Narrows Creek tributary in Section 6 flows through a largely undisturbed sugar maple-yellow birch-oak forest.
- Pine Knob, Section 17, an isolated sandstone knob with white pines, oaks and northern forest understory.
- The North Slope of the Baraboo Range, parts of Section 9, 10, 13, 14, 15, 22, 23 and Section 18, includes extensive oak forests on the north facing slope of the North Range of the Baraboo Hills, and dry oak forest on a hogback. Trilobites have been found. Ordovician dolomite caps some ridges, underlain by exposed upper Cambrian sandstone. Dry mesic forest of white pine, red maple and red oak is in Section 9.
- Fossil quarry in Section 25 has fossils in Lodi siltstone and dolomite.
- "Sand Marble" Hill in Section 11 has small, rounded sand concretions.

☐ **Drainage Basins**

The Town of Excelsior is located entirely in the Lower Wisconsin River Basin, which drains approximately 4,940 square miles of south central and southwestern Wisconsin and is located within the Narrow Creek & Baraboo River, Copper Creek and Dell Creek watersheds. These watersheds eventually drain into the Wisconsin River, which can be located on *Map 9-5 Watershed Boundaries*. These boundaries can serve as a starting point for identifying non-point sources of pollution in the river system.

☐ **Floodplains**

The Federal Emergency Management Agency (FEMA) designates floodplain areas. These general floodplain delineations represent the areas adjacent to navigable waters potentially subject to a 100-year flood event (1% chance of occurring in any year). All areas subject to flooding are not necessarily reflected in mapped floodplains. The State requires County regulation of development in floodplains. Development is strongly discouraged in floodplains, to avoid both upstream and downstream property damage as well as reduced governmental costs in relation to disaster relief. Floodplain areas in Excelsior are located near creeks and rivers, particularly the Baraboo River and Narrows Creek. The FEMA maps should be referenced for official delineation and elevations of

floodplain boundaries. General Floodplain boundaries can be noted on **Map 9-3 General Floodplain Areas**.

☐ **Wetlands**

Wetland areas are important for aquifer recharge, flood control, groundwater and surface water quality improvement, and wildlife habitat. The majority of the Town's wetlands are associated with the Baraboo River and Narrows Creek. Also, small inclusions not included on the generalized map are common in the Baraboo Hills region. The greatest threat to these wetlands has been drainage for agricultural purposes.

All known wetland areas over 2 acres in size have been mapped and can be referenced on **Map 9-1 Environmentally Sensitive Areas**.

☐ **Groundwater Resources**

As in most of Sauk County, groundwater remains the major source of fresh water. In Excelsior, groundwater is supplied by the sandstone and dolomite aquifer prevalent in western Sauk County. This yields a reliable average of 400-500 gallons per minute.

The Town of Excelsior is the host watershed for all of the Village Rock Springs municipal water supply as identified by the zones of contribution on **Map 9-1 Environmentally Sensitive Areas**. The zones of contribution are identified areas where rainwater that falls to the surface will become groundwater and part of a community's potable water supply. The zones of contribution have been broken down into 5, 50 and 100-year time frames. This timeframe indicates that when rainwater falls to the surface and becomes groundwater, it will subsequently be utilized by the Village of Rock Springs. Identifying zones of contribution is the precursor to the establishment of a wellhead protection program. Wellhead protection aims to encourage or require compatible land uses in the zones of contribution areas to protect contaminants from entering the public water supply and to also ensure continued quantities of water.

The 5-year zone of contribution is entirely located within the corporate limits of the Village of Rock Springs, but the implementation of responsible land use provisions to protect groundwater supplies will remain important to a sustained and safe water supply for the Village.

☐ **Surface Waters of Excelsior**

The Town of Excelsior's surface water resources, including the Baraboo River, Lake Virginia, Copper Creek, Dell Creek, and Narrows Creek, are valued resources that Town residents have identified for priority protection. Farm fields and runoff in the watershed have been identified as problem areas that contribute to non-point source pollution.



☐ **Storm Water Management**

Managing storm water has a significant impact on the surface water resources in the Town of Excelsior. Currently, construction site erosion control is regulated by the State of Wisconsin Uniform Dwelling Code and is enforced by the Town's building inspector.

Chapter 22 Sauk County Land Division and Subdivision Regulations Ordinance requires a storm



water management plan for new subdivision and commercial development that is reviewed by the Sauk County Planning and Zoning Department.

☐ **Hilltops and Ridges**

Hilltops and ridges are important natural features that define the horizon of the Town. Large structures at the top of these features tend to be visually prominent—especially when these structures do not blend into the overall landscape in terms of color, material or style.

9.4 Mineral Resources

Currently, the Town of Excelsior is home to three active mineral extraction sites. The Rock Springs quarry located on State Road 136 in Section 28, the Duck Farm quarry is located on State Road 23 in Section 7 and the Ault quarry is also located in Section 7 near the Duck Farm quarry. The Rock Springs quarry, owned by the Union Pacific Railroad, produces quartzite. Its final reclamation plan calls for allowing the quarry pit to refill “primarily with surface water to form a post-mining lake”¹. The Duck Farm quarry mines sand and gravel and has a final reclamation plan to grassland. The Ault quarry produces topsoil and sand; the final reclamation plan includes natural grassland on one portion and an agriculture/forestry business on another area. Preserving mineral deposits for future generations is important, as more development demands these raw materials. As a general reference, potential gravel deposits or areas that may support future mineral extraction operations are noted under *Map 9-4 Potential Gravel Deposits*.

9.5 Programs, Partnerships and Resources

Below are some examples of programs, partnerships and resources that provide assistance to landowners in the Town of Excelsior relative to land preservation and stewardship options.

- **The Nature Conservancy (TNC)** first came to the Baraboo Bluffs in the early 1960s at the request of local residents and university professors who knew how ecologically unique the area was and who wanted the Conservancy’s help in protecting the area. Today the Conservancy has 900 members in the Baraboo Hills area and is staffed out of a Baraboo Office. The Conservancy protects lands through education programs and work activities, Land/Forest Management Programs, voluntary agreements, acquisition of lands and through purchase of development rights.
- **Sauk County Natural Beauty Council**, which is administered by the Sauk County Department of Planning & Zoning, involves itself in projects such as environmental displays at local fairs and Earth Day events, the promotion and protection of significant environmental resources through resolutions and letters, sponsoring clean ups at the local landfills, and administering prairie burns and plantings.
- **Sauk County Department of Land Conservation** coordinates natural resource management and environmental enhancement activities within county boundaries and administers a variety of county, state, and federal initiatives. The Department places particular emphasis on soil conservation, water quality improvement, groundwater protection, flood control, non-point water pollution abatement, erosion control, wildlife habitat improvement, farmland preservation and animal waste management, and further strives to promote the awareness of natural resources and their value to the citizens of Sauk County. The Department is involved in the administration of Earth Day activities, and coordinates with school districts to teach children about natural resources and conservation.
- **Sauk County Department of Planning & Zoning** strives to protect and promote the health, safety and general welfare of all citizens and visitors of Sauk County and to protect Sauk

¹ Non-Metallic Mine Reclamation Plan for Rock Springs Quarry, p.5. Martin Marrietta Aggregates, 2003. Prepared by Pinacle Engineering, Inc. Osseo, Mn.

County's physical and natural resources through the professional administration and equitable enforcement of numerous Sauk County Codes and Ordinances. The Department places an emphasis on preparing communities, particularly Towns, for the future by protecting and enhancing the quality of life through education, state-of-the-art planning practices and code enforcement techniques. The Department also aids Towns in the development of Comprehensive Plans, plan updates, plan interpretation and plan implementation.

- **County Land & Water Resource Management (LWRM) Plan Implementation** is a cost share and technical assistance program to landowners installing best management practices. These programs help to reduce soil erosion, protect water quality and conserve county-identified natural resources. Landowners can contact Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) for more information.
- **Wisconsin Forest Landowner Grant Program** is a State program administered by the Wisconsin Department of Natural Resources Bureau of Forestry, which provides assistance to private landowners to protect and enhance their forested lands, prairies and waters. Landowners must receive written approval from the Department of Natural Resources (DNR) and be identified as the landowner in a Forest Stewardship Plan or in the process of applying for plan development. Qualified landowners may be reimbursed up to 65% of cost of eligible practices.
- **Community Financial Assistance (CFA)** is a Wisconsin Department of Natural Resources program that administers grants and loans to local governments and interested groups to develop and support projects that protect health and the environment, and provide recreational opportunities.
- **Partnership for Fish and Wildlife Management**, a US Fish and Wildlife Services program, assists with the restoration of wetlands, grasslands, and threatened and endangered species habitat through a cost share program. Any privately owned land is potentially eligible for restoration under this program.
- **Wetlands Reserve Program (WRP)** is a voluntary program that provides technical and financial assistance to eligible landowners to address wetland, wildlife habitat, soil, water, and related natural resource concerns on private lands in an environmentally beneficial and cost-effective manner. The program provides an opportunity for landowners to receive financial incentives to enhance wetlands in exchange for retiring marginal land from agriculture. The program offers three options inclusive of a permanent easement, 30-Year Easement or a Restoration Cost share Agreement.
- **Wildlife Habitat Incentives Program (WHIP)** is a voluntary program that encourages the creation of high quality wildlife habitat to support wildlife populations of national, state, tribal, and local significance. Through WHIP, the NRCS provides technical assistance to landowners and others to restore and maintain upland, wetland, riparian, and aquatic habitats on their property.
- **Managed Forest Law Property Tax Program** is a DNR program that provides tax incentives for approved forest management plans. The MFL can ease the burden of property taxes for forest landowners with at least 10 acres of woods that meet specific requirements. The program is intended to foster timber production on private forests while recognizing other values of forests.
- **Forestry Incentive Program** provides cost sharing for landowners with no more than 1000 acres for tree planting, site preparation, timber stand improvements, and related practices on non-industrial private forest lands. This is a federal NRCS program administered by the Wisconsin Department of Natural Resources.
- **National Wildlife Turkey Federation** has a variety of programs to benefit wild turkey habitat, management, conservation and education.

- **Pheasants Forever** provides assistance with habitat restoration through five major programs: food plots, nesting cover, woody cover, land purchase and wetland restoration projects.
- **Prairie Enthusiasts** is a private nonprofit organization committed to the protection and management of native prairie and savanna in the Upper Midwest, providing educational activities and opportunities to aid landowners in the identification and management of prairie remnants. Work parties assist with brush clearing and removal of invasive species.
- **Aldo Leopold Foundation** strives to promote the protection of natural resources and to foster an ethical relationship between people and land. Programs involve restoration and land protection through partnerships with more than 30 organizations and educational programs for private landowners and public land managers.
- **Baraboo Range Preservation Association (BRPA)** is a land trust that works to preserve and protect the qualities and culture of the Baraboo Range through promotion of ecologically responsible land use.

9.6 Natural Resources Goal, Objectives and Policies:

Natural Resources Goal:

Protect, preserve and enhance the Town's natural resources, including geology, soils, surface and ground water, open space, woodlands, wetlands and grasslands, native plant and animal communities and habitats, wildlife, and endangered and threatened species. Encourage wise use and sustainable recreational, aesthetic, scientific, and economic use of resources.

Natural Resources Objectives:

NRO-1 Preserve and manage the forest canopy of the wooded areas in the Town with an emphasis on the Baraboo Range.

NRP -1a Manage forests using sustainable harvesting and stewardship practices in the Town.

NRP -1b Work to conserve the Baraboo Range and other outstanding natural resource features in the Town, consistent with this plan's objectives and policies.

NRO-2 Manage roadside vegetation throughout the town to protect wildlife during nesting season and to limit the spread of invasive species.

NRO-3 Preserve clean water resources and employ policies and practices that will eliminate and/or minimize water contamination.

NRO-4 Protect endangered and threatened species of indigenous plants and animals.

NRO-5 Discourage or prevent the introduction and/or spread of invasive or exotic species and work to eradicate or control them.

NRO-6 Encourage the enhancement of wildlife habitat.

NRO-7 Protect/maintain scenic vistas and views.

NRO-8 Encourage lighting standards to minimize light glare from trespassing onto neighboring properties and the night sky, except for normal agricultural practices.