

Chapter 4

AGRICULTURAL, NATURAL, AND CULTURAL RESOURCES

The conservation and wise use of the agricultural, natural, and cultural resources of an area are vital to its sound development and to the continued ability of the area to provide a pleasant and habitable environment for life. This planning effort recognizes that the agricultural, natural, and cultural resources of the Village of Hartland study area are limited, and that any development needs to be properly adjusted to these resources to avoid serious environmental problems and to maintain resources for the future. A sound evaluation and analysis of the natural resource base is, therefore, particularly important to planning for the physical development of an area.

This chapter presents an inventory of the agricultural, natural, and cultural resource base of the Village of Hartland study area and includes descriptive information regarding soils, topography, scenic overlooks, water resources, vegetation, wildlife habitats, natural areas, and park and open space sites. Environmentally sensitive natural resources such as hydric soils, lakes, streams, floodplains, wetlands, woodlands, steep slopes, and wildlife habitat, generally occur in elongated areas of the landscape and are interdependent. The wise use and preservation of one resource is critical to the continued existence of others. Areas of concentrated natural resources have long been delineated by the Regional Planning Commission and have become widely known as environmental corridors. The environmental corridors encompass those areas in which concentrations of recreational, aesthetic, ecological, and cultural resources occur, and which, therefore, should be preserved and protected in an essentially open, natural state.

This element of the comprehensive plan was created by identifying the strengths, concerns, and weaknesses related to agricultural, natural, and cultural resources in the Village of Hartland. The Plan Commission, Village staff, and planning consultant evaluated the following list of items to gauge the impacts of agricultural, natural, and cultural resources within the community.

Agricultural, Natural, and Cultural Resources Strengths:

- There are significant natural areas within the Village and within close proximity
- Existing programs promote wellness, education, socialization, and recreation for all age groups
- On-going efforts to collaborate with community organizations and neighboring communities provide cultural and recreational programming
- Access to abundant potable water supplies
- The Village is rich in historic resources of State and National significance

Agricultural, Natural, and Cultural Resources Weaknesses:

- Lack of space to serve as a genuine Community Center
- Shortage of facilities in neighboring communities to accomplish or achieve programming objectives
- Structural conflicts exist between public schools community education objectives and programs, and Village sponsored programming

Agricultural, Natural, and Cultural Resources Concerns:

- Incomplete public utilization of open spaces
- Preservation of significant open spaces not designated for development
- Inability to resolve programming conflicts with public schools or community educators objectives and programs

SOILS

Soil properties exert a strong influence on the manner in which people use land. Soils are an irreplaceable resource, and mounting pressures upon land are constantly making this resource more and more valuable. A need exists, therefore, in any planning effort to examine not only how land and soils are presently used, but also how they can best be used and managed for future use. A soil survey of the Southeastern Wisconsin Region was completed in 1965 by the U.S. Department of Agriculture, Soil Conservation Service,¹ under contract to the Regional Planning Commission. The results of the survey are set forth in SEWRPC Planning Report No. 8, *Soils of Southeastern Wisconsin*, June 1966; and in five county reports subsequently published by the Soil Conservation Service. Soil survey information for the Village of Hartland study area is included in the *Soils Survey of Waukesha County*, published in June 1971. The soil survey data are definitive with respect to physical, chemical, and biological properties. The survey also includes interpretations of the soil properties for planning, engineering, agricultural, and resource conservation purposes.

Soil Suitability for Development Using Onsite Sewage-Disposal Systems

As shown in Map 4-1 and Table 4-1, approximately 3.5 square miles, or about 14 percent of the study area, are covered by soils unsuitable for the use of conventional onsite sewage-disposal systems, (i.e. septic tanks with underground disposal fields). These soils have low permeability rates, high or fluctuating water tables, high shrink-swell ratios, and may be located on steep slopes and be subject to flooding and surface ponding. The suitability of an additional approximately 10.3 square miles, or about 42 percent of the study area, cannot be determined without detailed site inspections. Such inspections would probably reveal additional lands that have underlying soils unsuitable for the use of absorption fields for septic tank effluent. As indicated in Table 4-1, only approximately 6.7 square miles, or about 28 percent of the study area, can be generally identified on the basis of the soil surveys as suitable for septic tank systems.

The data in Table 4-1 and a comparison between Maps 4-1 and 4-2 shows that the development of the mound sewage-disposal system and other alternative systems may significantly increase the amount of area which may be able to accommodate development served by onsite sewage-disposal systems. It should be recognized that Maps 4-1 and 4-2 are intended to illustrate the overall pattern of soil suitability for onsite sewage-disposal systems. Detailed site investigations based on the requirements of Chapter Comm 83 (formerly ILHR 83)² of the *Wisconsin Administrative Code* are necessary to determine if the soils on a specific parcel of land are suitable for development proposed to be served by either type of onsite system. In general, areas covered by soils that are unsuitable for both conventional and mound sewage-disposal systems should not be considered for urban development unless public sanitary sewers are provided.

The soil ratings for onsite sewage-disposal systems presented on Maps 4-1 and 4-2 reflect the requirements of Chapter Comm 83 of the *Wisconsin Administrative Code* as it existed in 1998. The Wisconsin Department of Commerce adopted rules for governing onsite sewage-disposal systems in 2000 which increased the number of legal onsite sewage-disposal systems that could be used from four to nine systems. The Department envisions that other systems will also be approved in the future. This new rule significantly alters the existing regulatory framework and will increase the area in which onsite disposal systems may be utilized. The new rule, however, includes a provision that allows counties the option of waiting three years before implementing the new septic system rules and the use of the new types of systems. This provision would allow local governments more time to enact land use plans that will determine which areas may be developed with onsite sewage-disposal systems and to train inspectors on the different types of septic designs. Waukesha County delayed the use of these new septic technologies for new developments until January 1, 2003.

¹The U.S. Soil Conservation Service was renamed the U.S. Natural Resources Conservation Service in 1996.

²The State agency regulating private sanitary sewers changed from the Wisconsin Department of Industry, Labor, and Human Relations (ILHR) to the Wisconsin Department of Commerce (Comm) in 1996.

Soil Suitability for Residential Development Using Public Sanitary Sewer Service

Map 4-3 and Table 4-1 indicate that about 4.3 square miles, or about 18 percent of the study area, are covered by soils that would have severe limitations for residential development served by public sanitary sewer facilities. Such areas may also be considered poorly suited for residential development of any kind. The severe limitations are due to such soil properties as high or fluctuating water tables, slow permeability rates, erodibility on slopes, low bearing capacity, high shrink-swell potential, and frost-heave potential. These soils are found throughout the study area, but primarily in steeply sloped areas and in association with rivers, streams, floodlands, wetlands, and other low-lying areas. The development of these areas for residential use would likely require particularly careful planning and above average design and management to overcome the limitations; such developments may be expected to be more costly and difficult than developments in areas with more suitable soils. Soils shown on Map 4-3 as having slight or moderate limitations for such developments encompass approximately 16.2 square miles, or about 66 percent of the study area. The remaining soils encompassing about 3.9 square miles, or about 16 percent of the study area, are covered by mostly surface water or are soils that have not been classified.

Table 4-1

**SOIL SUITABILITY FOR SELECTED LAND USES
IN THE VILLAGE OF HARTLAND STUDY AREA**

Classification	Onsite Sewage-Disposal System				Residential Development with Public Sanitary Sewer	
	Conventional Systems		Mound Systems		Square Miles	Percent of Total
	Square Miles	Percent of Total	Square Miles	Percent of Total		
Unsuitable	3.5	14.3	2.8	11.5	4.3 ^a	17.6
Undetermined.....	10.3	42.2	3.7	15.1	--	--
Suitable.....	6.7	27.5	14.0	57.4	16.2 ^b	66.4
Other ^c	3.9	16.0	3.9	16.0	3.9	16.0
Total	24.4	100.0	24.4	100.0	24.4	100.0

NOTE: Soil suitability determinations for onsite sewage-disposal systems are based on the requirements of Chapter Comm 83 of the *Wisconsin Administrative Code* in effect prior to July 2003. Onsite investigations are essential to the determination of whether a specific tract of land is suitable for an onsite sewage-disposal system under current Comm 83 requirements.

^aIncludes soils having severe limitations for such development.

^bIncludes soils having slight or moderate limitations for such development.

^cIncludes surface water and disturbed areas for which no soil survey data are available.

Source: U.S. Natural Resources Conservation Service and SEWRPC.

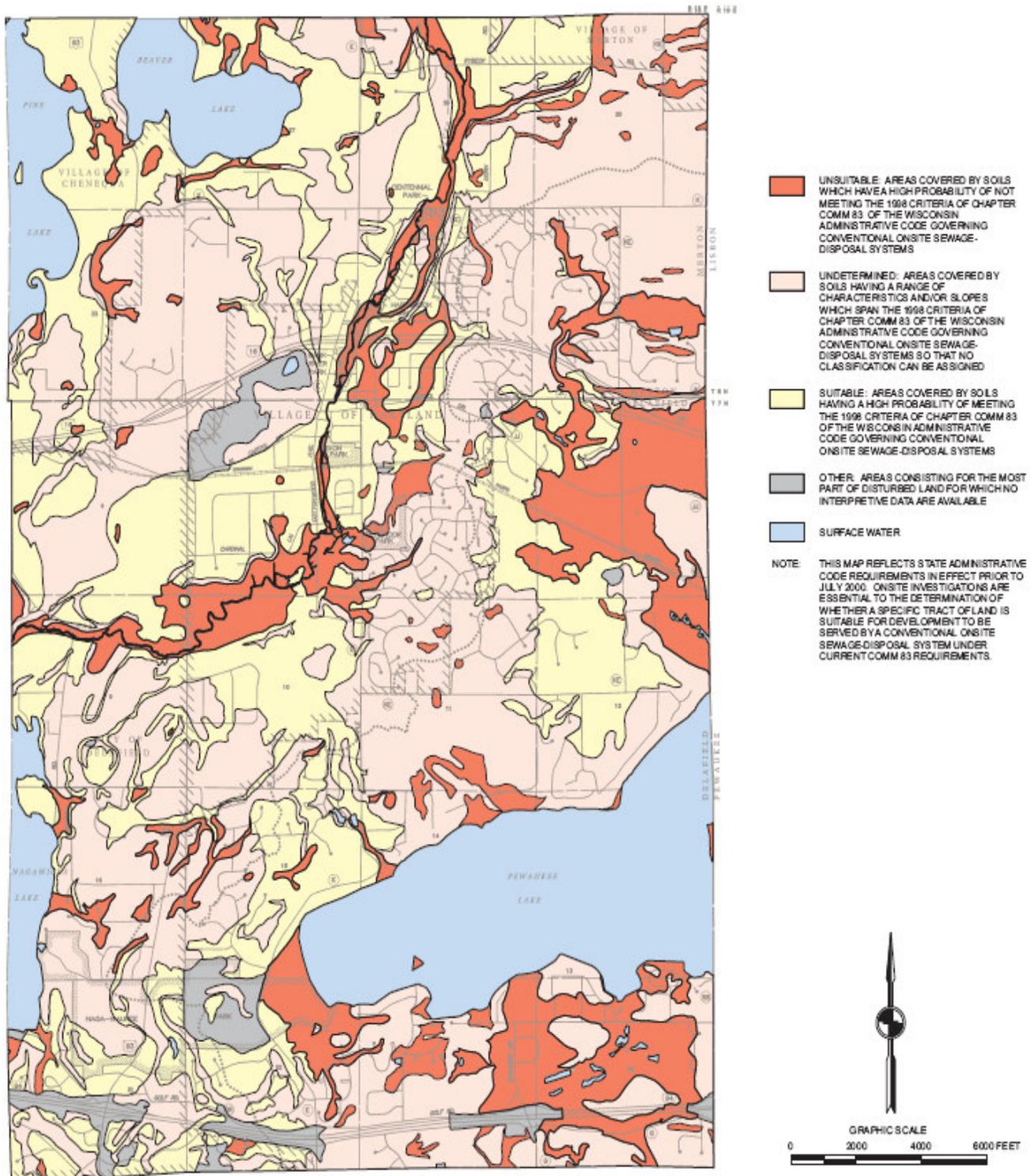
Soil Suitability for Agriculture

Much of the outlying area in the Village of Hartland study area is covered by soils that are well suited for the production of crops. Such farmland has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when properly treated and managed. Soil suitability for agricultural use within the study area, based on the U.S. Natural Resources Conservation Service classification system, is shown on Map 4-4. Table 4-2 provides a description of each soil class. Generally, Class I and II soils are considered National Prime Farmland, and Class III soils are considered Farmlands of Statewide Importance.

Map 4-4 shows that Class I soils encompass about 1.7 square miles, or about 7 percent of the study area. Areas identified on Map 4-4 as Class II encompass about 9.5 square miles, or about 39 percent of the study area. Areas identified as Class III encompass about 3.2 square miles, or about 13 percent of the study area. Additional areas are covered by soils rated Class IV or lower if un-drained and Class II or Class III if drained. Approximately 0.7 square mile, or about 3 percent of the study area, have been drained and therefore fall into the Class II or III rating. As a result, in all about 15.1 square miles, or about 62 percent of the study area, are covered by Class I, II, or III soils.

MAP 4-1

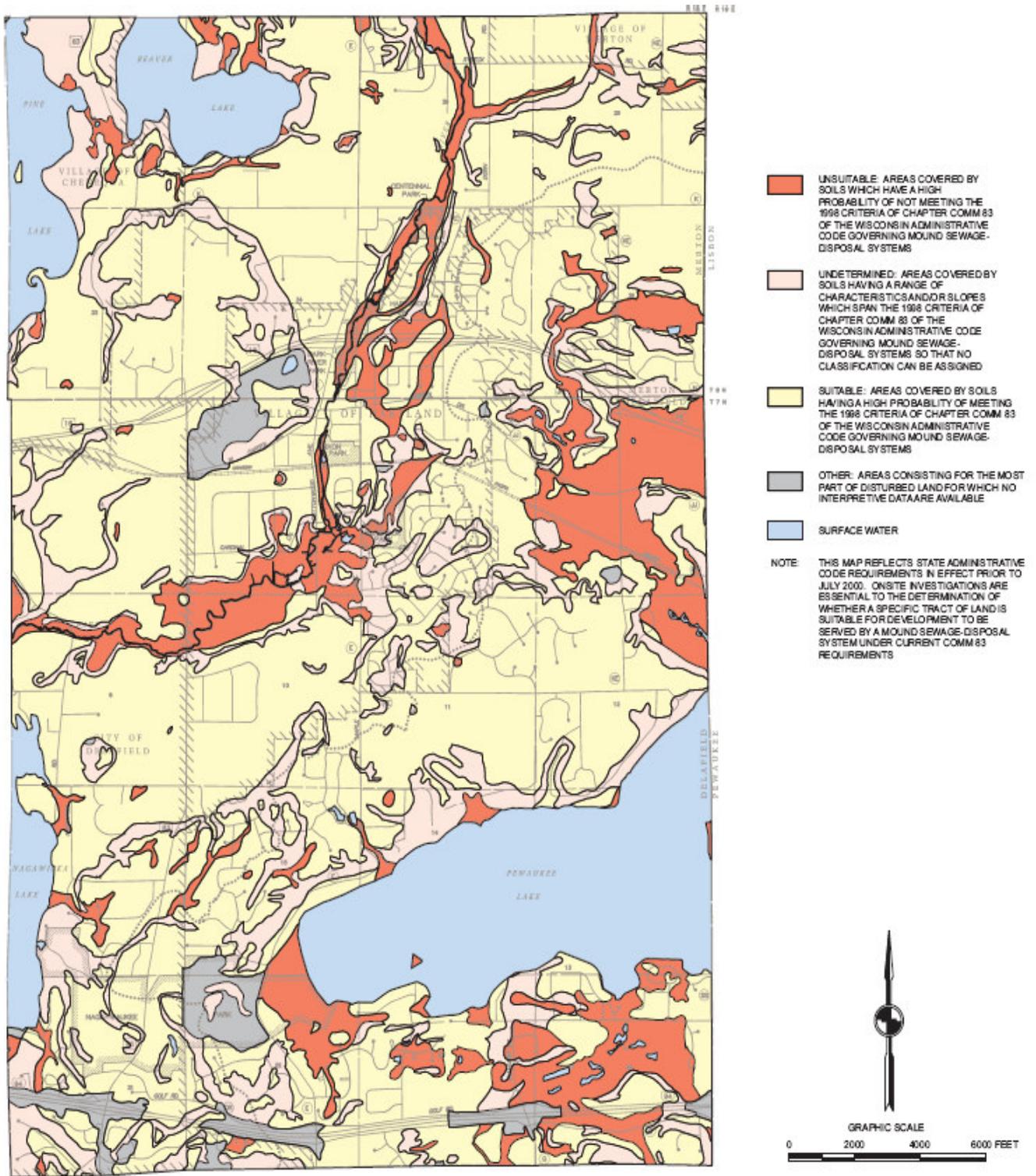
SOIL SUITABILITY FOR THE CONVENTIONAL ONSITE SEWERAGE DISPOSAL SYSTEMS
IN THE VILLAGE OF HARTLAND STUDY AREA: 1998



Source: U.S. Natural Resources Conservation Service, Wisconsin Department of Commerce, and SEWRPC.

MAP 4-2

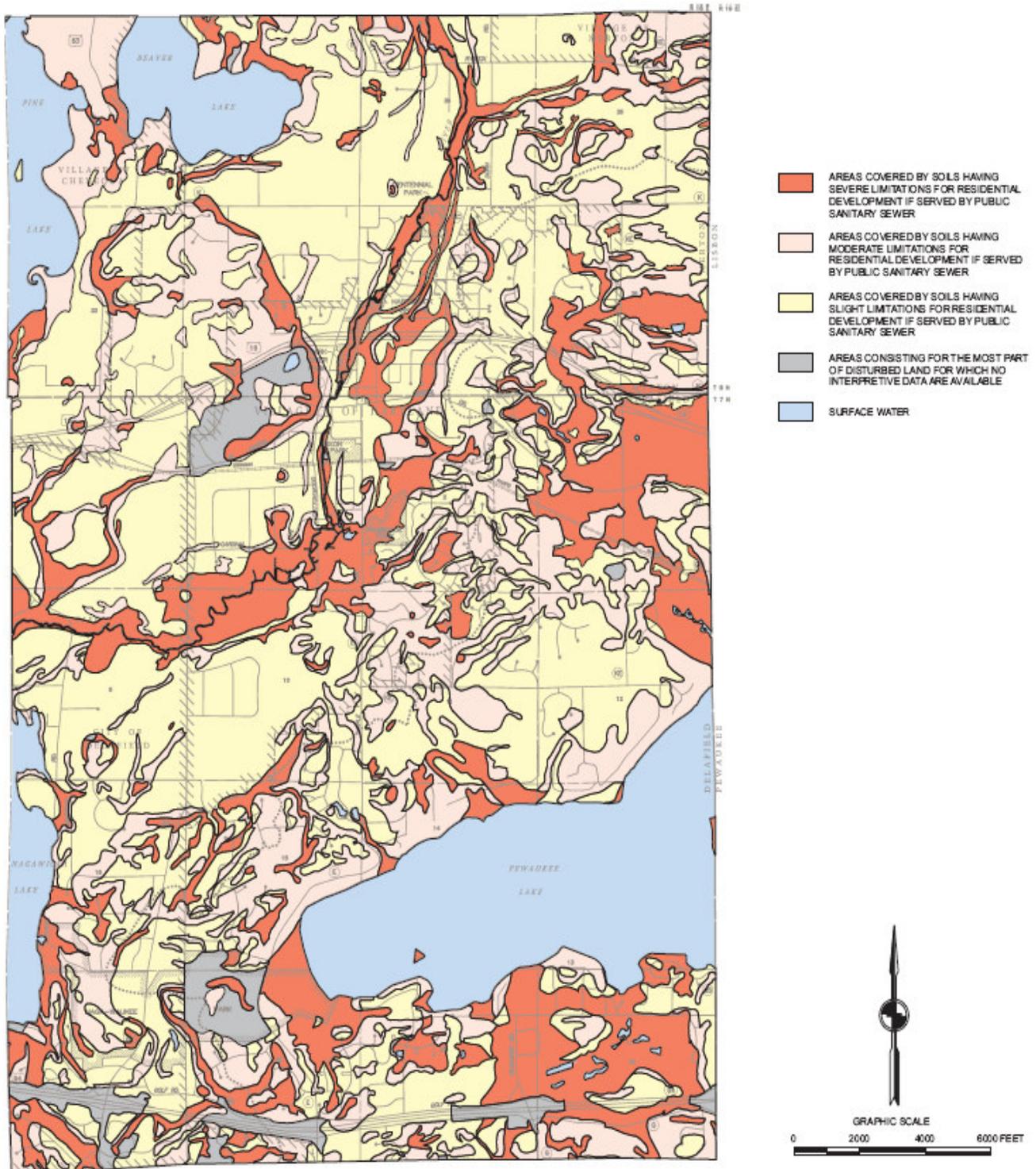
SOIL SUITABILITY OF MOUND DISPOSAL SYSTEMS
IN THE VILLAGE OF HARTLAND STUDY AREA: 1998



Source: U.S. Natural Resources Conservation Service, Wisconsin Department of Commerce, and SEWRPC.

MAP 4-3

SOIL SUITABILITY OF RESIDENTIAL DEVELOPMENT IF SERVED BY PUBLIC SANITARY SEWER IN THE VILLAGE OF HARTLAND STUDY AREA: 1998



Source: U.S. Natural Resources Conservation Service and SEWRPC.

TOPOGRAPHIC FEATURES

The topography or relative elevation of the land surface within the Village of Hartland study area has been determined by the configuration of bedrock geology and by the overlying glacial deposits. The topography of the study area shown in 10-ft. contour intervals, is depicted on Map 4-5. Surface elevations range from a low of about 800 feet above mean sea level in the southeast part of the study area by Pewaukee Lake, to a high of more than 1,100 feet above mean sea level in the far northeast and southwest part. In general, the topography of the study area is level to gently rolling, with the low-lying areas associated with lakes, stream valleys, or wetland areas.

Table 4-2

AGRICULTURAL SOIL CAPABILITY CLASSES

Class	Qualitative Description
I	Soils have few limitations that restrict their use.
II	Soils have some limitations that reduce the choice of plants or require moderate conservation practices.
III	Soils have moderate or severe limitations that reduce the choice of plants, require special conservation practices, or both.
IV	Soils have very severe limitations that restrict the choice of plants, require careful management, or both.
V	Soils are subject to little or no erosion but have other limitations, impractical to remove, that limit their use largely to pasture, range, woodland, or wildlife food and cover.
VI	Soils have severe limitations that make them generally unsuited to cultivation and limit their use largely to pasture, range, woodland, or wildlife food and cover.
VII	Soils have very severe limitations that make them unsuited to cultivation and that restrict their use largely to grazing, woodland, or wildlife.
VIII	Soils and landforms have limitations that preclude their use for commercial plant production and restrict their use to recreation, wildlife, water supply, or to aesthetic purposes.

Source: U.S. Natural Resources Conservation Service and SEWRPC.

Slopes

Slope is an important factor in determining the practicable land use on a given parcel of land. Steep slopes are generally poorly suited for urban development and for most agricultural purposes, and therefore, should be maintained in natural cover for erosion control. Less severe slopes may be suitable for certain agricultural uses, such as pasture, and for certain urban uses such as carefully designed low density residential areas. Lands which are gently sloping or nearly level are best suited to agricultural production and to medium- and high-density residential, industrial, or commercial uses. It should also be noted that slope is directly related to water runoff and erosion hazards and, therefore, the type and extent of both urban and rural land uses should be carefully adjusted to the slope of the land. In general, slopes of 12 percent or more should be considered unsuitable for urban development and most types of agricultural land uses and, therefore, should be maintained in essentially natural, open uses. Urban development, if allowed on such slopes, would require careful planning and above average site-specific design and management. As shown on Map 4-6, areas having a slope of 12 percent or greater encompass about 3.4 square miles, or about 14 percent of the study area and are found throughout the study area.

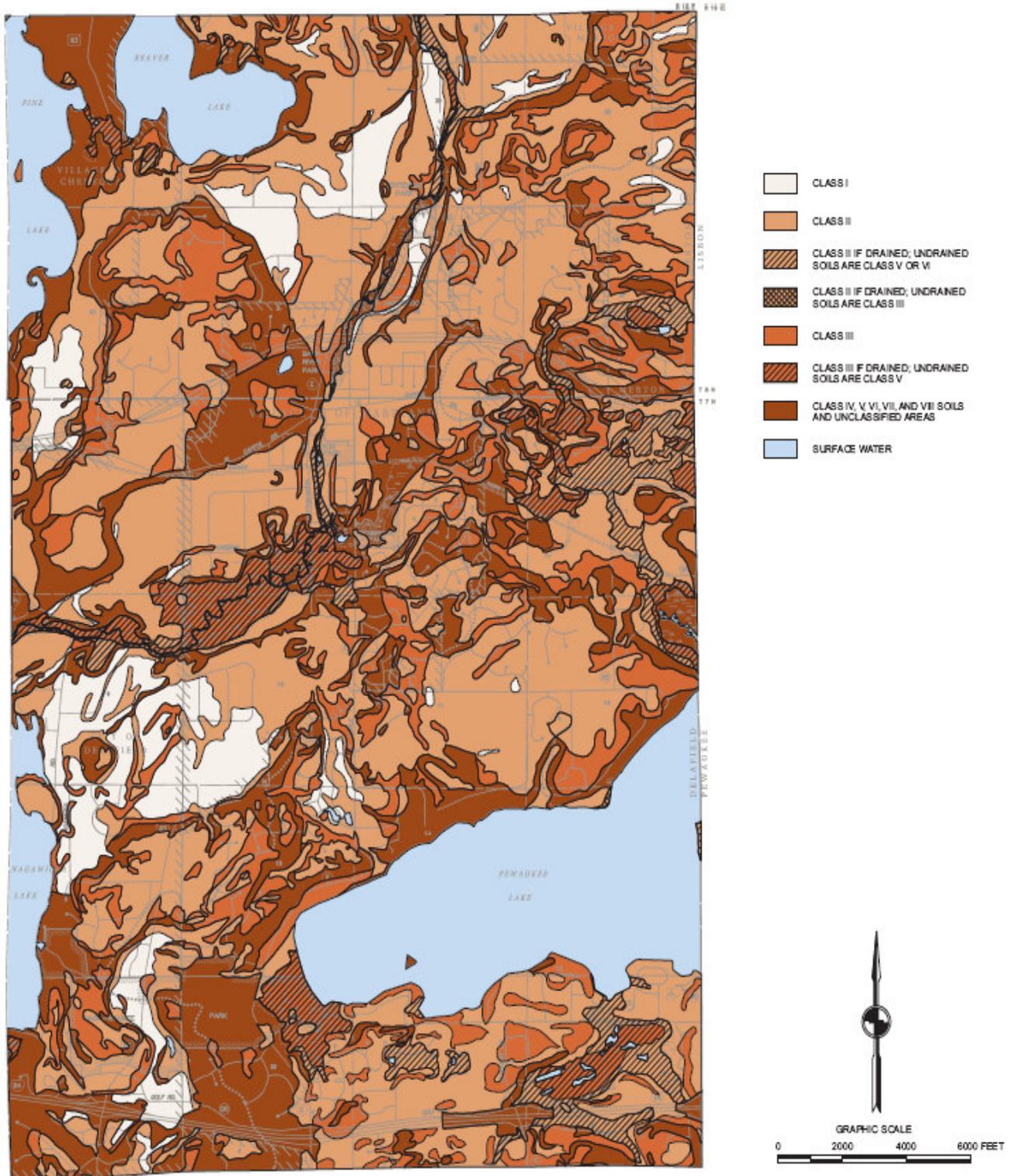
Scenic Overlooks

Scenic overlooks are areas that provide a panoramic or picturesque view. There are two important components of a scenic overlook: the picturesque view itself, which usually consists of a diversity of natural or cultural features, and the vantage point or overlook from which the scene and its features are observed. In identifying the scenic overlooks in the Hartland area three basic criteria were applied: 1) the view should provide a variety of features that exist harmoniously in a natural or rural landscape; 2) there should be a dominant or particularly interesting feature, such as a river or lake, which serves as a focal point of the picturesque view; and 3) the overlook should permit an unobstructed observation area from which a variety of natural features can be seen.

An inventory of scenic overlooks meeting the aforementioned criteria was conducted. Using the best available topographic maps, all areas with a relief greater than 30 feet and a slope of 12 percent or more were identified. Areas of steep slope with a ridge of at least 200 feet in length and a view of at least three features, including surface water, wetlands, woodlands, or agricultural lands within approximately one-half mile of the ridge, were identified as scenic overlooks. In the Village of Hartland study area, 38 scenic overlooks were identified. Most of these were long, continuous ridge lines along the Bark River in the Village of Hartland and near Beaver, Nagawicka, Pine, or Pewaukee Lakes. The topography and location of scenic overlooks are shown on Map 4-5.

Map 4-4

AGRICULTURAL SOIL CAPABILITY IN THE VILLAGE OF HARTLAND STUDY AREA

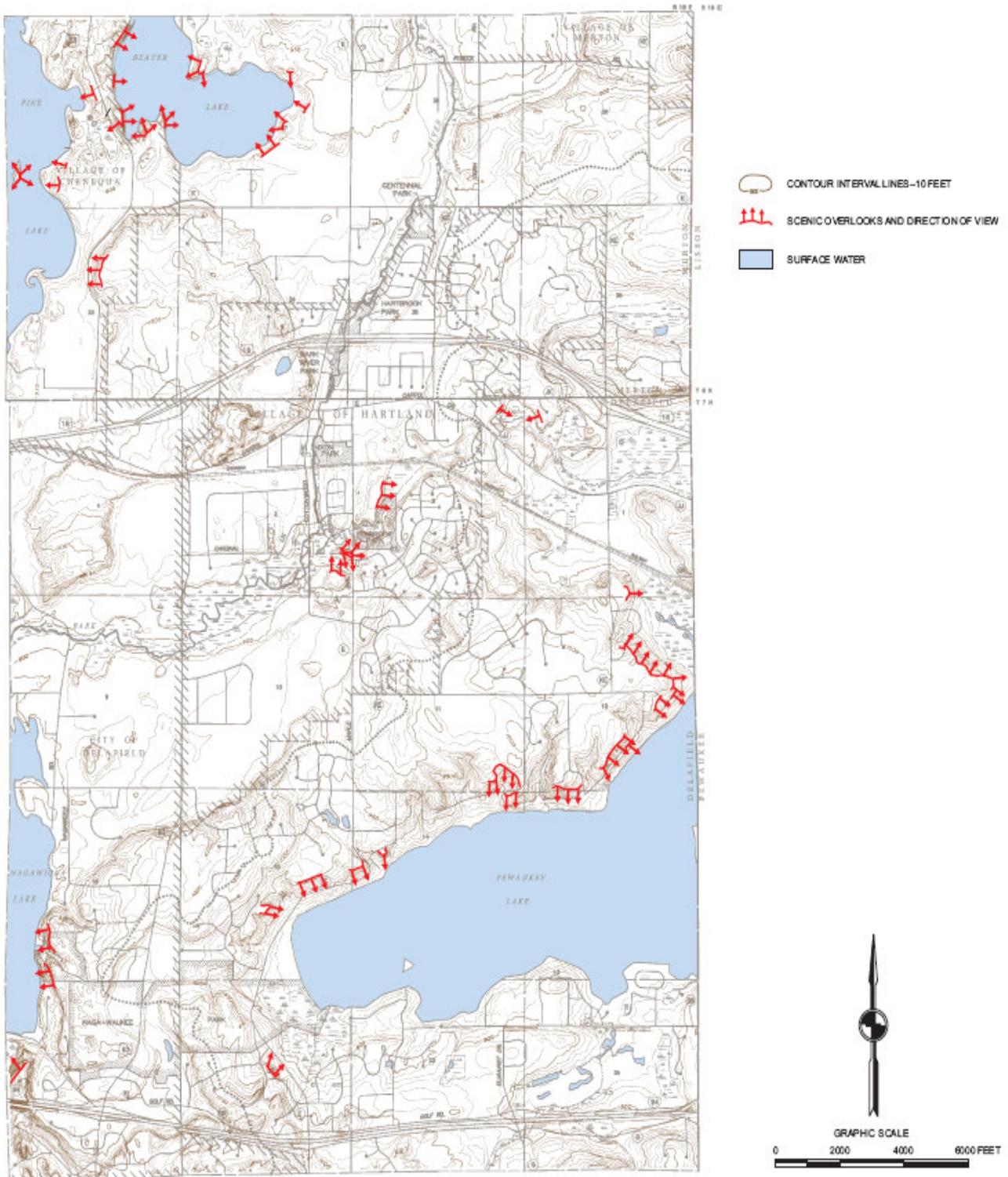


Source: U. S. Natural Resources Conservation Service and SEWRPC.

and A Master Plan for the Village of Hartland: 2020

MAP 4-5

TOPOGRAPHIC AND SCENIC OVERLOOKS IN THE VILLAGE OF HARTLAND STUDY AREA: 1998

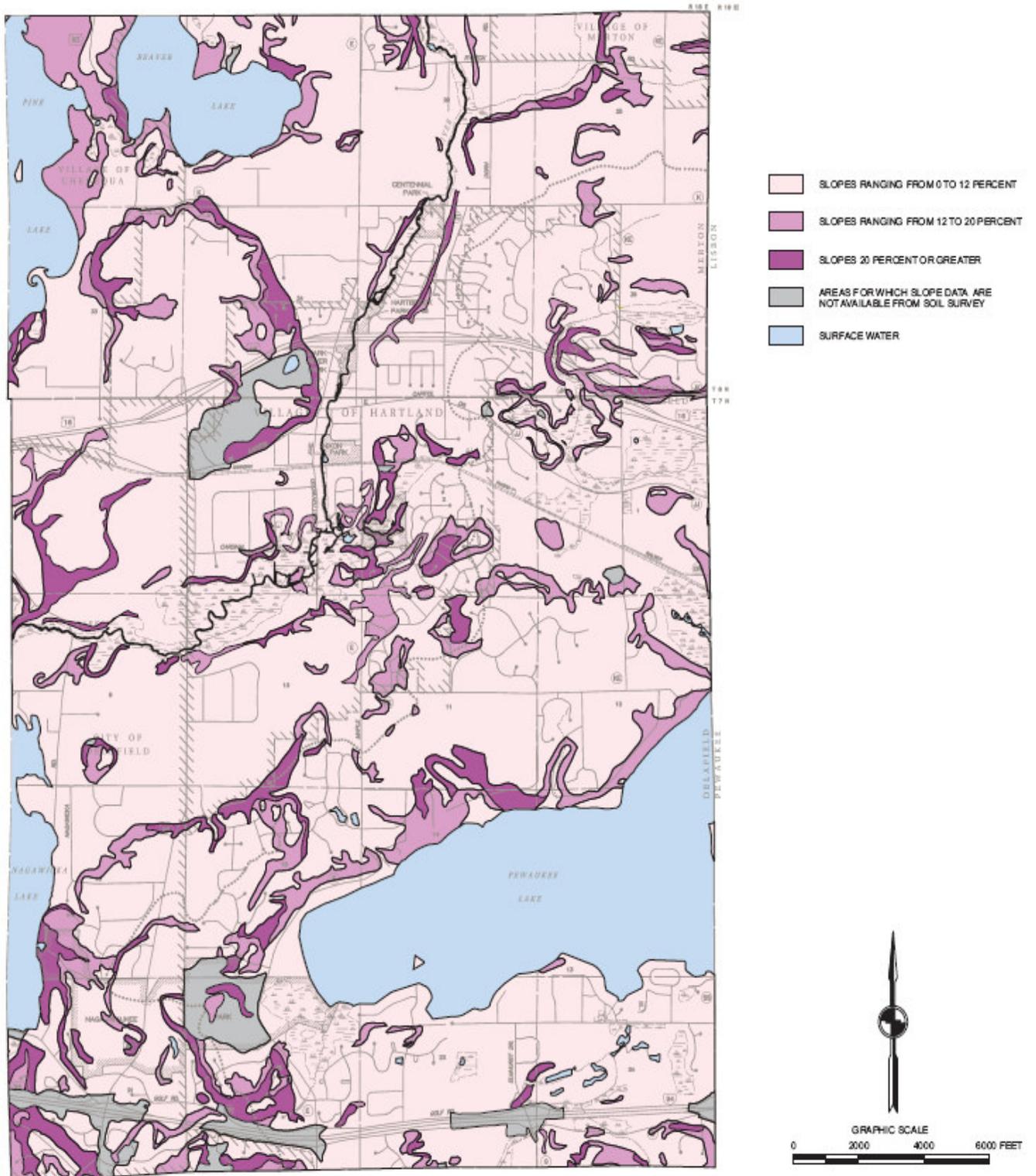


Source: SEWRPC.

and A Master Plan for the Village of Hartland: 2020

Map 4-6

SLOPE ANALYSIS FOR THE VILLAGE OF HARTLAND STUDY AREA: 1998



Source: U.S. Natural Resources Conservation Service and SEWRPC.

WATER RESOURCES

Surface water resources such as lakes and streams and their associated floodplains, form a particularly important element of the natural resource base of the Village of Hartland study area. The contribution of these resources, including groundwater, is immeasurable to the economic development, recreational activity, and aesthetic quality of the Hartland area.

Watersheds, Subwatersheds, and Subbasins

The study area lies within two watersheds, the Rock River and Fox River watersheds, which are part of the larger Mississippi River drainage system. As shown on Map 4-7, these watersheds can be divided into subwatersheds, which include the Pine Lake, Bark River, Pewaukee Lake, and Scuppernong Creek subwatersheds. The Village of Hartland is located mostly within the Bark River subwatershed which is part of the larger Rock River watershed. For stormwater management planning purposes, all of the subwatersheds may be further subdivided into individual drainage areas, termed subbasins, also shown on Map 4-7.

Surface Water

Surface water resources, consisting of streams, rivers, lakes, and associated floodplains, form an important element of the natural resource base. Lakes and rivers constitute a focal point for water-related recreational activities, provide an attractive setting for properly planned residential development, and, when viewed in the context of the total landscape, greatly enhance the aesthetic quality of the environment. Lakes and rivers are, however, readily susceptible to degradation through improper land use development and management. Water quality can be degraded by excessive pollutant loads, including nutrient loads, from malfunctioning and improperly located onsite sewage-disposal systems; sanitary sewer overflows; urban runoff, including runoff from construction sites; and careless agricultural practices. The water quality of lakes and rivers may also be adversely affected by the excessive development of riverine areas and the inappropriate filling of peripheral wetlands, which removes valuable nutrient and sediment traps while adding to nutrient and sediment sources. The surface water resources in the Village of Hartland study area are shown on Map 4-8.

Lakes

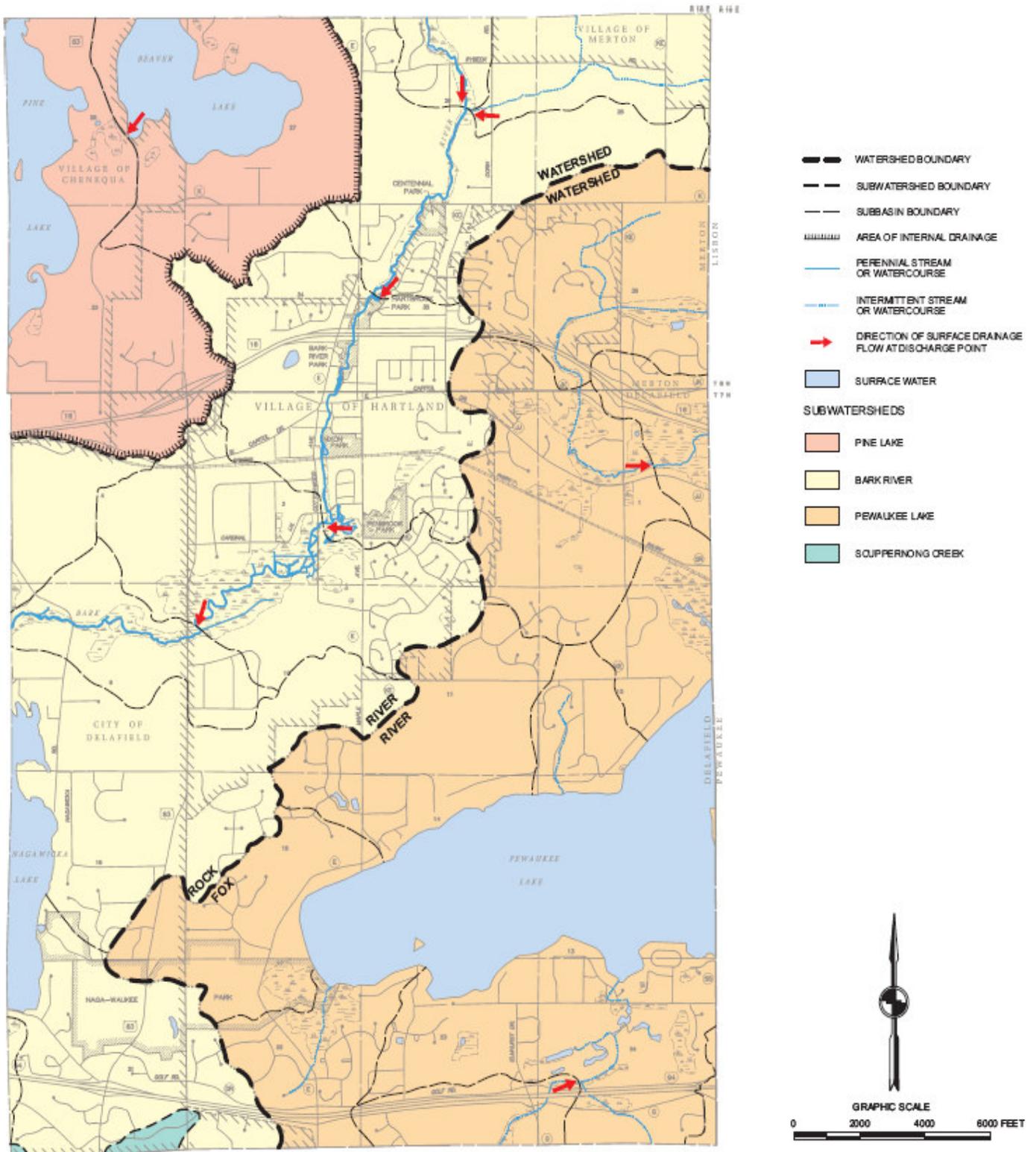
Lakes have been classified by the Regional Planning Commission as being either major or minor. Major lakes have 50 acres or more of surface water area, and minor lakes have less than 50 acres of surface water area. As indicated in Map 4-8, there are four major lakes in the study area, Beaver, Nagawicka, Pine, and Pewaukee Lakes. The total combined surface water area of these lakes, which includes surface water area outside the study area, is about seven square miles. The portion of the surface water area of the four lakes within the study area is approximately 3.3 square miles. The Village of Hartland is bounded on the south and northwest by these four lakes which provided Village residents readily accessible areas for water-oriented recreation and a pleasant aesthetic setting. Continued growth and development in the study area should be accomplished in a manner that preserves and enhances the natural beauty and environmental quality of these major lakes.

Rivers and Streams

Rivers and streams that are classified as perennial or intermittent also exist within the study area as indicated on Map 4-8. Perennial streams are defined as watercourses which maintain, at a minimum, a small continuous flow throughout the year except under unusual drought conditions. Intermittent streams are defined as watercourses which do not maintain a continuous flow throughout the year. A total of approximately 15.8 linear miles of perennial and intermittent watercourses exist within the study area, including the Bark River that flows through the Village of Hartland. Of this total, about 7.6 lineal miles, or about 48 percent, are perennial watercourses, and the remaining 8.2 lineal miles, or about 52 percent, are intermittent watercourses.

Map 4-7

WATERSHED FEATURES IN THE VILLAGE OF HARTLAND STUDY AREA: 1995

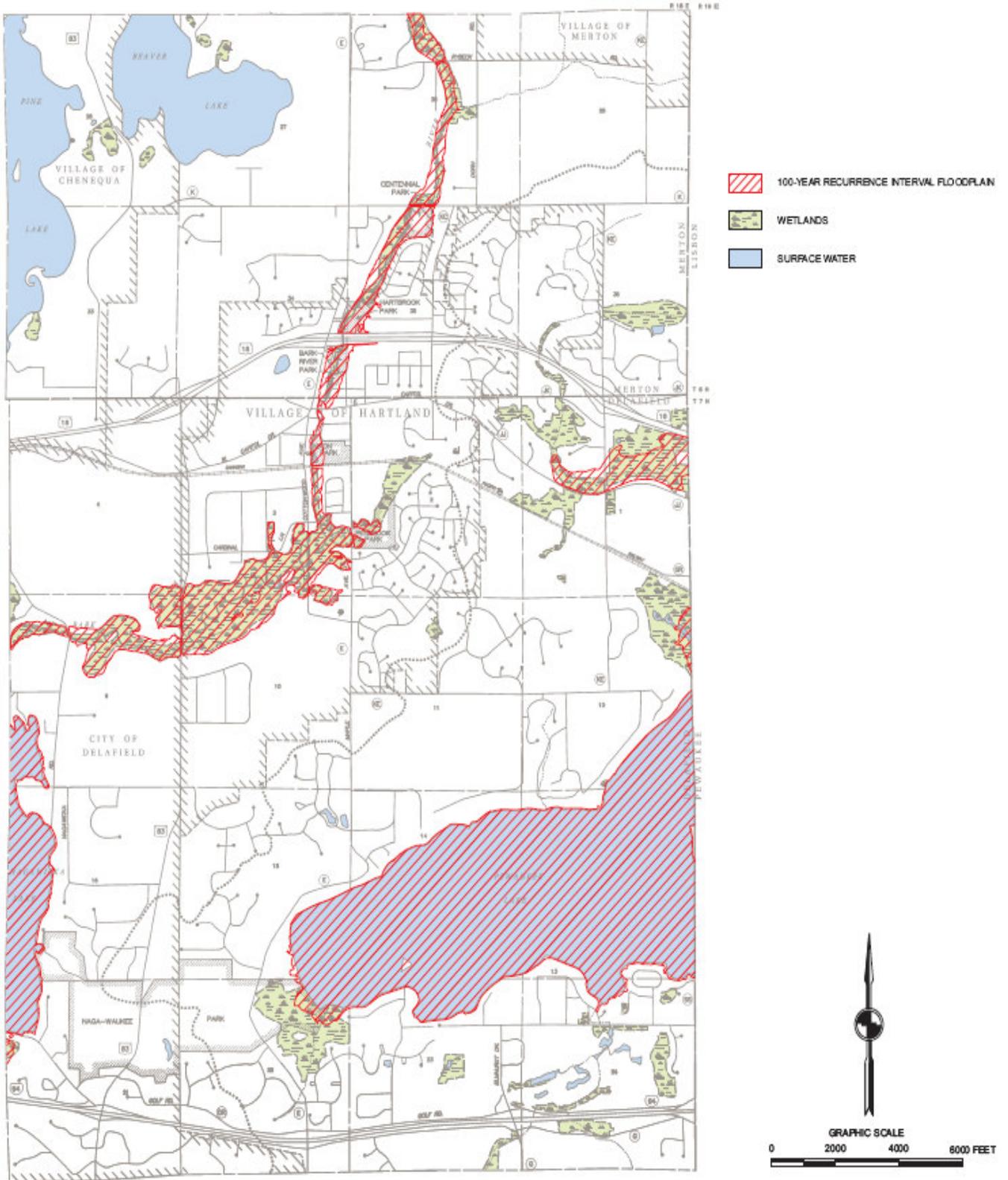


Source: SEWRPC.

and A Master Plan for the Village of Hartland: 2020

Map 4-8

WETLANDS, SURFACE WATER, AND KNOWN FLOODPLAINS
IN THE VILLAGE OF HARTLAND STUDY AREA: 1995



Source: Federal Emergency Management Agency and SEWRPC.
and A Master Plan for the Village of Hartland: 2020

Floodplains

The floodplain of a river or stream include the wide, gently sloping areas contiguous to, and usually lying on both sides of, the river or stream channel and the channel itself. For planning and regulatory purposes, floodplains are normally defined as the areas subject to inundation by the 100-year recurrence interval flood event. This is the flood event that has a 1 percent chance of occurring in any given year. Floodplain areas are generally not well suited to urban development, not only because of the flood hazard, but also because of the presence of high water tables and, generally, of soils poorly suited to urban uses. The floodplain areas, however, generally contain important elements of the natural resource base such as high-value woodlands, wetlands, and wildlife habitat and, therefore, constitute prime locations for needed park and open space areas. Every effort should be made to discourage indiscriminate and incompatible urban development on floodplains, while encouraging compatible park and open space uses. Map 4-8 shows the approximate location and extent of areas lying within the 100-year recurrence interval flood hazard area, or floodplain, in the study area for those areas in which floodplain studies have been conducted.³ About 3.3 square miles, or about 14 percent of the study area are known to be located within the 100-year recurrence interval floodplain.

Groundwater Resources

An adequate supply of high quality groundwater is essential if used for domestic consumption. Like surface water, groundwater is susceptible to depletion and deterioration. The available quantity of groundwater can be reduced by the loss of recharge areas, excessive or overly concentrated pumping, and changes in ground cover. In addition, groundwater quality is subject to degradation from onsite sewage-disposal systems, surface water pollution, improper agricultural practices, and inadvertent spills or leakage of pollutants at or below the land surface. An understanding of the relationship between groundwater resources and proper comprehensive planning is, therefore, important to prevent future development from adversely affecting the availability and quality of groundwater.

Groundwater within the Hartland area is available from two main water-bearing geologic units. The upper unit includes shallow limestone, referred to as the Niagara or dolomite aquifer, and overlying glacial deposits, referred to as the sand and gravel aquifer. These two interconnected aquifers are often called collectively the “shallow aquifer.” Separated from the shallow aquifer by a relatively impervious barrier, the Maquoketa shale formation, is a deeper sandstone aquifer commonly referred to as the “deep aquifer.” The aquifer systems in the Hartland area are complex since the area is on or near the western limits of the limestone or dolomite aquifer and the Maquoketa shale. Thus, a portion of the area may have the sand and gravel formation as the only component of the shallow aquifer. In addition, the Maquoketa shale layer may be absent and not underlie the more westerly portion of the Hartland area. The area where the shale is absent is the beginning of the recharge area for the deep sandstone aquifer since precipitation and surface water can migrate downward through the shallow aquifer into the deep sandstone formations.

Water table levels within the shallow aquifer vary seasonally and with topography. Properly constructed wells can obtain adequate yields of groundwater from the shallow aquifer in most portions of the study area. The deep sandstone aquifer can yield large quantities of groundwater suitable for municipal water supply purposes. Adequate yields of groundwater from the overlying sand and gravel aquifer are available in the Hartland area, and this aquifer is used exclusively as a water supply source. While the deep sandstone aquifer is not used by the Village of Hartland, it is used extensively by other Waukesha County communities.

³*No floodplain limits have been delineated within the Village of Chenequa and the Beaver Lake area of the Town of Merton, since no floodplain studies were conducted for these two areas even though there may be floodplain due to the presence of lakes.*

WETLANDS

Map 4-9

WOODLANDS IN THE VILLAGE OF HARTLAND STUDY AREA: 1995

Wetlands are defined as areas that are inundated or saturated by surface or groundwater at a frequency and duration that is sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally occur in depressions and near the bottom of slopes, particularly along lakeshores and stream banks, and on land areas that are poorly drained. Wetlands may, however, under certain conditions, occur on slopes and even hilltops.

Wetlands are generally poorly suited for most agricultural or urban purposes. Wetlands, however, have important recreational and ecological values. Wetlands contribute to flood control and water quality enhancement, since such areas naturally serve to store excess runoff temporarily, thereby tending to reduce peak flows and to trap sediments, undesirable nutrients, and other water pollutants. Wetlands may also serve as groundwater recharge and discharge areas. Additional important natural functions of wetlands include the provision of breeding, nesting, resting, and feeding grounds and predator escape cover for many forms of wildlife. In view of these important functions, continued efforts should be made to protect these areas by discouraging wetland draining, filling, and urbanization. The latter can be particularly costly in both monetary and environmental terms. Wetlands in the study area, as shown on Map 4-8, covered about 1.2 square miles, or about 5 percent, of the study area in 1995. The largest concentrations of wetlands in the study area occur adjacent to intermittent streams and the Bark River.

WOODLANDS

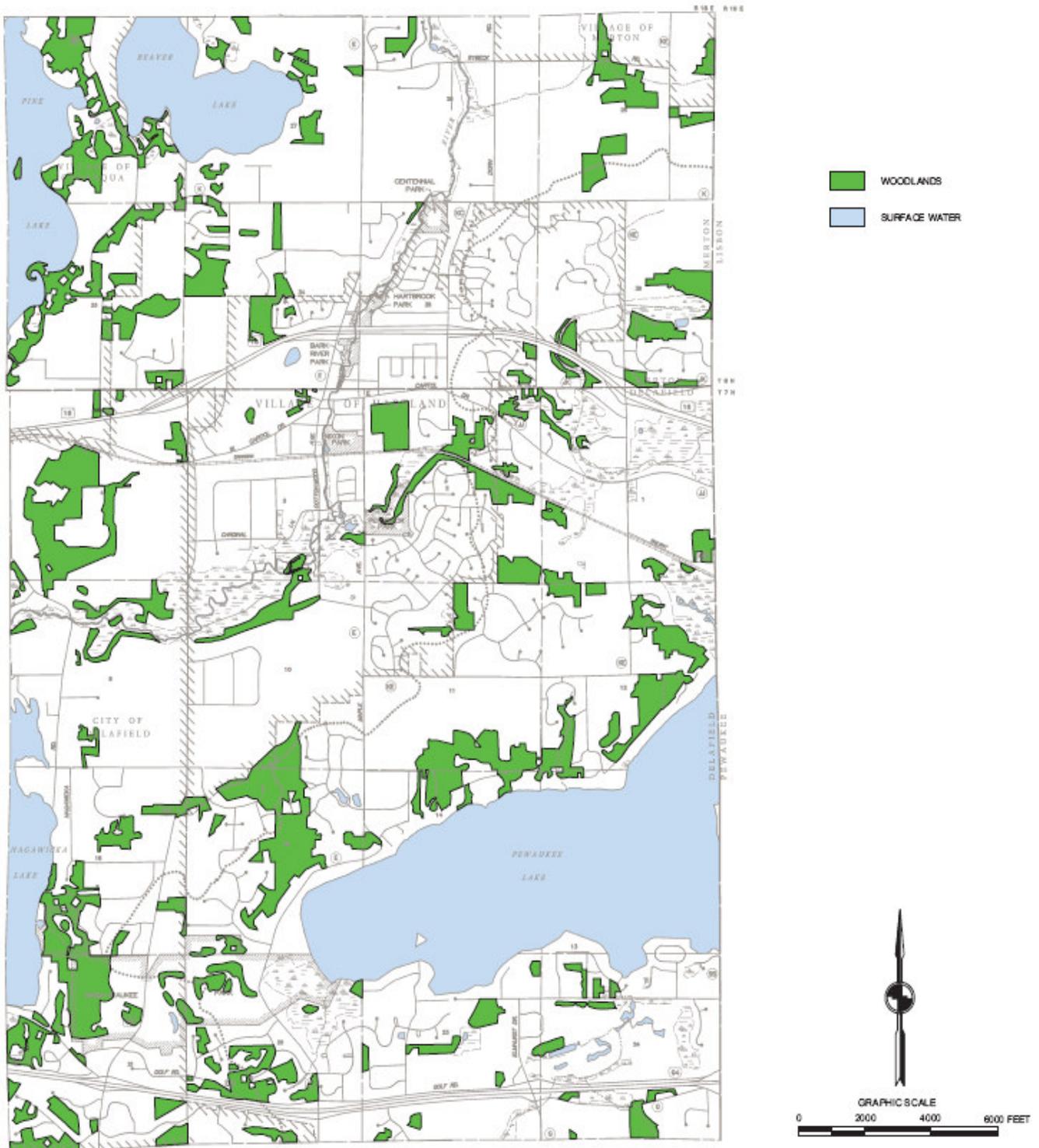
Under good management, woodlands can serve a variety of beneficial functions. In addition to contributing to clean air and water and regulating surface water runoff, the woodlands contribute to the maintenance of a diversity of plant and animal life. Unfortunately, woodlands which required a century or more to develop can be destroyed through mismanagement in a comparatively short time. The destruction of woodlands, particularly on hillsides, can contribute to increased stormwater runoff and soil erosion, the siltation of lakes and streams, and the destruction of wildlife habitat. Woodlands should be maintained for their scenic, wildlife habitat, open space, educational, recreational, and air and water quality protection values. In 1995, wooded areas covered about 2.6 square miles, or about 11 percent, of the study area. As shown on Map 4-9, woodlands occur in scattered locations throughout the study area.

WILDLIFE HABITATS

Wildlife in the Village of Hartland study area include species such as rabbit, squirrel, woodchuck, raccoon, fox, whitetail deer, pheasant, and water fowl. The remaining wildlife habitat areas provide valuable recreation opportunities and constitute an invaluable aesthetic asset to the study area. The spectrum of wildlife species has, along with the habitat, undergone tremendous alterations since settlement by Europeans and the subsequent clearing of forests and draining of wetlands for agricultural purposes and urban development.

In 1985, the Regional Planning Commission and the Wisconsin Department of Natural Resources cooperatively inventoried wildlife habitat in Southeastern Wisconsin. This data was re-inventoried in 1995 for the Village of Hartland study area with the results shown on Map 4-10. Three classes of wildlife habitat are identified: Class I areas contain a good diversity of wildlife, are large enough to provide all of the habitat requirements for each species, and are generally located near other wildlife habitat areas; Class II areas lack one of the three criteria necessary for a Class I designation; and Class III areas lack two of the three criteria for Class I designation.

Wildlife habitats in the study area generally occur in association with existing surface water, wetland, or woodland resources. In 1995, wildlife habitat areas covered about 4.8 square miles, or about 20 percent of the Village of Hartland study area. Of this total habitat area, about 1.0 square mile, or about 4 percent of the study area, were rated as Class I; about 2.2 square miles, or about 9 percent of the study area, were rated as Class II; and about 1.7 square miles, or about 7 percent of the study area, were rated as Class III.

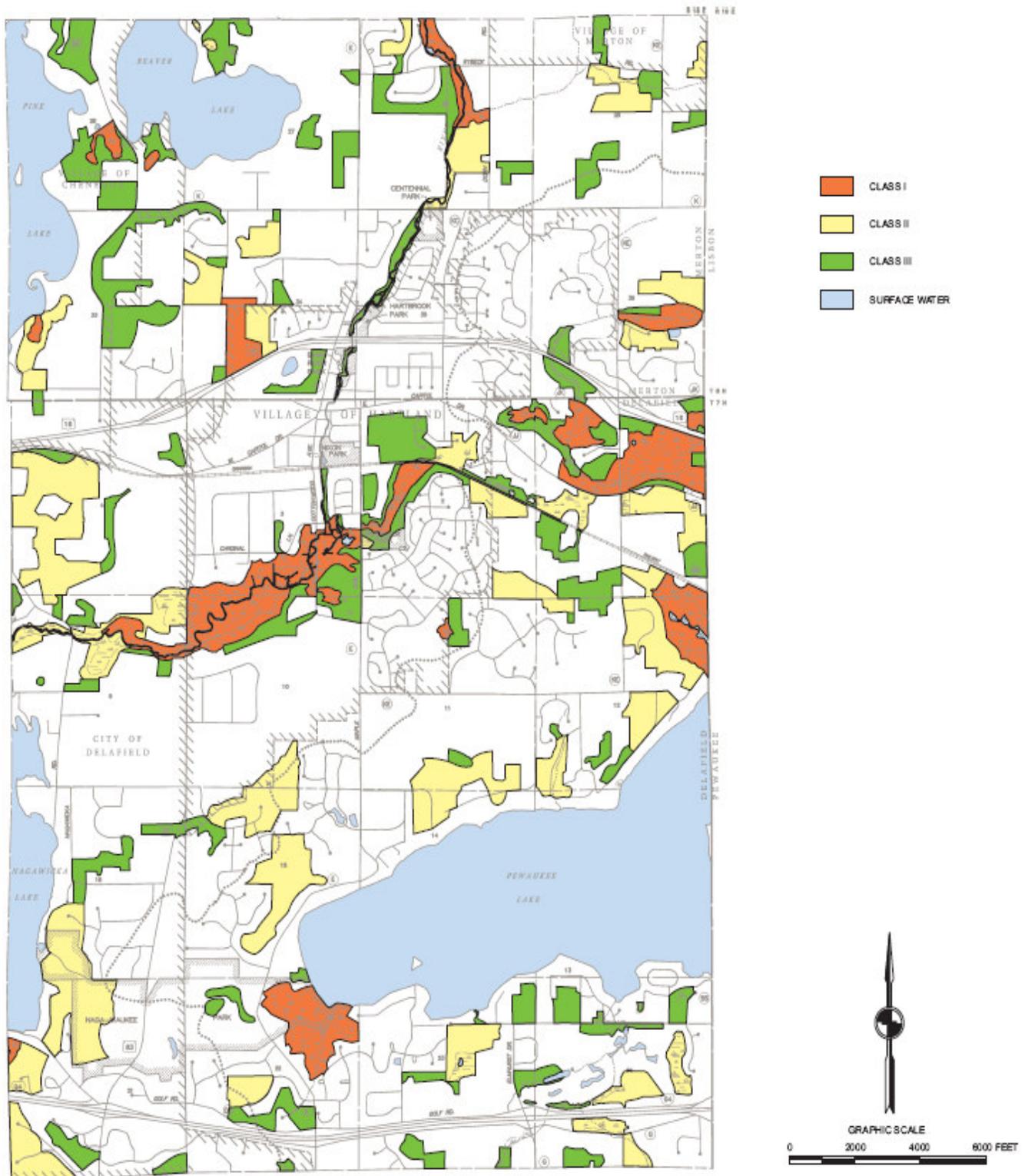


Source: SEWRPC.

and A Master Plan for the Village of Hartland: 2020

Map 4-10

**WILDLIFE HABITAT AREAS
IN THE VILLAGE OF HARTLAND STUDY AREA: 1995**



Source: Wisconsin Department of Natural Resources and SEWRPC.
and *A Master Plan for the Village of Hartland: 2020*

NATURAL AREAS, SIGNIFICANT GEOLOGICAL

SITES, AND CRITICAL AQUATIC HABITATS

A special inventory was completed in 1994 to identify the most important remaining natural areas and critical species habitats, along with significant geological sites and archaeological sites, in Southeastern Wisconsin and to recommend means for their protection and management.⁴ No known archaeological sites were identified in the Village of Hartland study area. Natural areas, significant geological sites, and critical aquatic habitats in the study area are discussed below.

Natural Areas

Natural areas are tracts of land or water so little modified by human activities that they contain intact native plant and animal communities believed to be representative of the pre-European settlement landscape. Natural areas are classified into one of three categories: natural areas of statewide or greater significance (NA-1), natural areas of countywide or regional significance (NA-2); or natural areas of local significance (NA-3). Classification of an area into one of the three categories is based upon consideration of the diversity of plant and animal species and community types present; the structure and integrity of the native plant or animal community; the extent of disturbance from human activities such as logging, grazing, water level changes, and pollution; the commonness of the plant and animal communities present; unique natural features within the area; the size of the area; and the educational value.

Five natural areas, encompassing a total of about 118 acres, or about 1 percent of the study area, were identified in the inventory completed in 1994. These sites are shown on Map 4-11 and listed in Table 4-3. One of the sites is located within Naga-Waukee County Park and a second is partially within public ownership.

Geological Sites

Significant geological sites are tracts of land that include such glacial features as eskers and kames, fossil beds, and rock outcrop and exposed bedrock sites of scientific and educational value. These sites, like natural areas and critical species habitats, are subject to inadvertent disturbance or destruction as urbanization within the Region continues, resulting in the loss of the opportunities which these sites afford educational and scientific pursuits. Geological sites identified as significant under the plan are classified as being of statewide or greater significance (GA-1), countywide or regional significance (GA-2), or local significance (GA-3).

Two geological sites were identified in the Village of Hartland study area. These sites encompassed an area of about seven acres, or less than 1 percent of the study area, and are identified on Map 4-11 and described in Table 4-3.

Aquatic Habitats

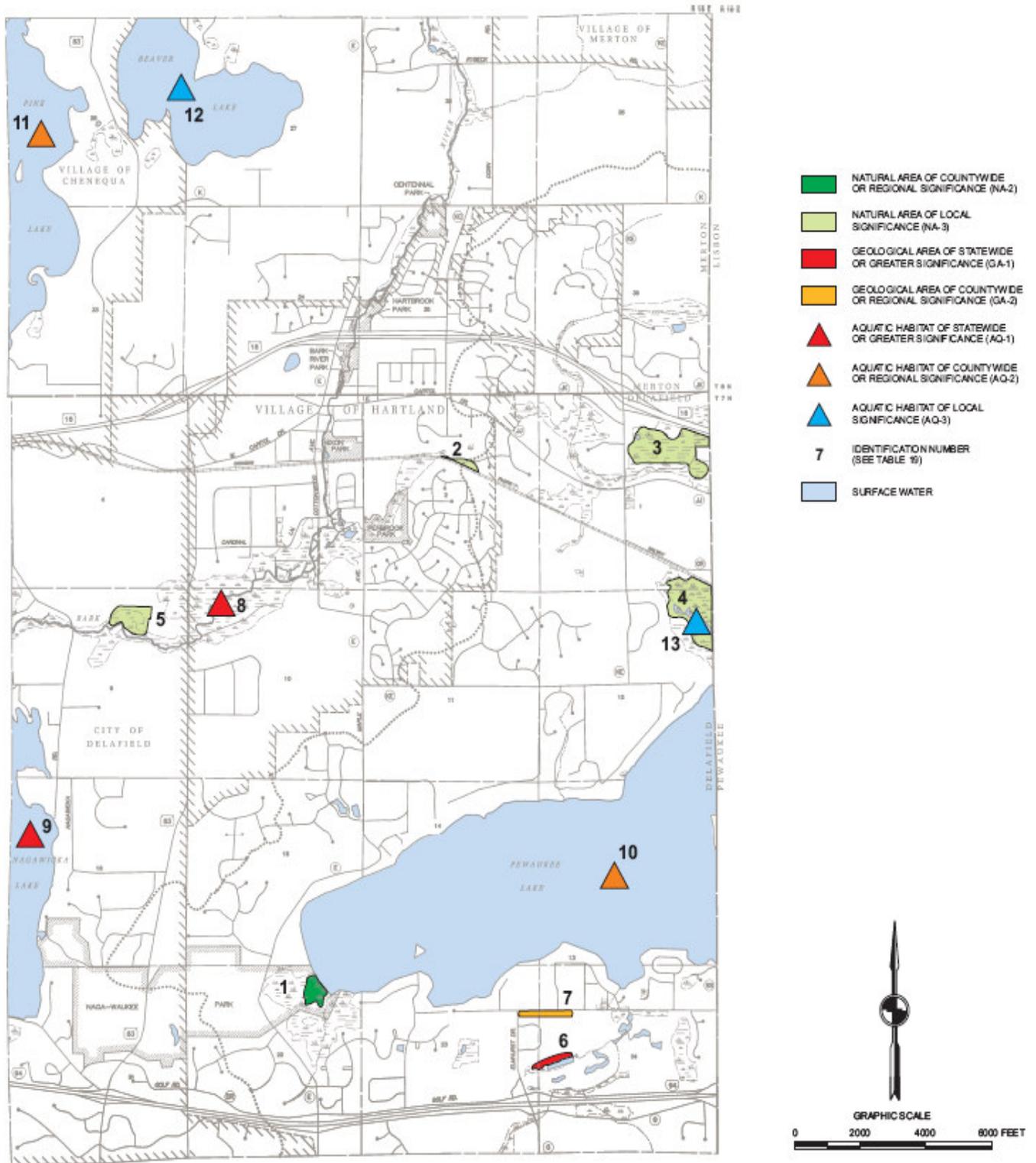
Critical habitats are those areas, outside of natural areas, where the main value lies in their ability to support rare, threatened, or endangered species. Such areas constitute "critical" habitat that is important to ensure survival of a particular species or group of species of special concern.

Six critical aquatic habitats that support threatened or rare fish, herptile (amphibians and reptiles), or mussel species were identified in the study area. The six habitats include two habitats of statewide or greater significance (AQ-1), two habitats of countywide or regional significance (AQ-2), and two habitats of local significance (AQ-3). As shown on Map 4-11 and indicated in Table 4-3, there are six stream miles and 2,113 lake acres of such habitats in the study area.

Map 4-11

⁴*SEWRPC Planning Report No. 42, A Regional Natural Areas and Critical Species Habitat Protection and Management Plan for Southeastern Wisconsin, September 1997.*

NATURAL AREAS, CRITICAL AQUATIC HABITATS, AND SIGNIFICANT GEOLOGICAL SITES IN THE VILLAGE OF HARTLAND STUDY AREA: 1998



Source: Wisconsin Department of Natural Resources and SEWRPC.

and A Master Plan for the Village of Hartland: 2020

Table 4-3

**NATURAL AREAS, SIGNIFICANT GEOLOGICAL SITES, AND
CRITICAL AQUATIC HABITATS IN THE VILLAGE OF HARTLAND STUDY AREA: 1994**

Number on Map 4-11	Area Name	Classification Code ^a	Location	Ownership	Size	Description and Comments
1	Pewaukee Lake Access Fen	NA-2 (RSH)	T7N, R18E Section 22 Town of Delafield	Waukesha County	10 acres	Good-quality calcareous fen on west side of Pewaukee Lake. Contains regionally uncommon plant species, including a good population of the State-designated threatened beaked spike-rush (<i>Eleocharis rostellata</i>). Site has improved with program of periodic burning
2	Hartland Railroad Prairie	NA-3	T7N, R18E Section 2 Village of Hartland	Private	4 acres	Remnant mesic prairie, mostly on hill on north side of railway right-of-way. Characteristic species include big bluestem, rough blazing star, and prairie dock. Threatened by residential development
3	Capitol Drive Sedge Meadow and Wet Prairie	NA-3	T7N, R18E Section 1 Town of Delafield T7N, R19E Section 6 City of Pewaukee	Pewaukee Lake Sanitary District, City of Pewaukee, and private	47 (91) acres ^b	Moderate-quality sedge meadow, wet-mesic prairie, and shallow marsh. Disturbed by highway construction
4	Pewaukee Lake Wetland	NA-3	T7N, R18E Sections 1, 12 Town of Delafield T7N, R19E Section 7 City of Pewaukee	Private	40 (68) acres ^b	Moderate-quality wetland complex at northwest corner of Pewaukee Lake, consisting of shallow marsh, sedge meadow, and shrub-carr
5	Bark River School Sedge Meadow	NA-3	T7N, R18E Section 9 City of Delafield	Private	17 acres	Small sedge meadow of moderate quality on north side of Bark River
6	Jones Quarry	GA-1	T7N, R18E Sections 23, 24 Town of Delafield	Private	4 acres	Undisturbed 19th-century quarry remains only source of rich Ordovician fossil biota in South-eastern Wisconsin. To east is an excellent exposure of the Niagara Escarpment
7	Delafield Interurban Cut	GA-2	T7N, R18E Sections 23, 24 Town of Delafield	Private	3 acres	Fossil-rich exposure of lower Mayville. Dolomite along abandoned interurban railway line
8	Bark River upstream from Nagawicka Lake	AQ-1 (RSH)	T7N, R18E City of Delafield Village of Hartland T8N, R18E Town of Merton Village of Merton T8N, R19E Town of Lisbon T9N, R19E Town of Richfield	--	5.7 (19.3) stream miles ^b	Good overall fish population and diversity; important reservoir for critical fish and herptile species
9	Nagawicka Lake	AQ-1 (RSH)	T7N, R18E City of Delafield Village of Nashotah	--	192 (957) acres ^b	A deep drainage lake ^c in the Bark River valley; an important reservoir for critical fish species; adjacent to Natural Area, Nagawicka Lake Bog and Oak Woods
10	Pewaukee Lake	AQ-2 (RSH)	T7N, R18E Town of Delafield T7N, R19E City of Pewaukee Village of Pewaukee	--	1,321 (2,493) acres ^b	An impounded spring lake ^c with critical fish and herptile species present; migratory waterfowl use the lake
11	Pine Lake	AQ-2 (RSH)	T7N, R18E 8N, R18E Village of Chenequa	--	287 (703) acres ^b	A spring lake ^c with critical fish species present
12	Beaver Lake	AQ-3 (RSH)	T8N, R18E Village of Chenequa Town of Merton	--	313 (316) acres ^b	A spring-seepage lake ^c with critical fish species present
13	Pewaukee Lake tributary	AQ-3	T7N, R18E Town of Delafield T7N, R19E City of Pewaukee	--	0.3 (2.3) stream miles ^b	Class II trout stream

^aNA-2 identifies Natural Area sites of countywide or regional significance.

NA-3 identifies Natural Area sites of local significance.

GA-1 identifies Geological Area sites of statewide or greater significance.

GA-2 identifies Geological Area sites of countywide or regional significance.

AQ-1 identifies critical aquatic habitat sites of statewide or greater significance.

AQ-2 identifies critical aquatic habitat sites of countywide or regional significance.

AQ-3 identifies critical aquatic habitat sites of local significance.

RSH, or Rare Species Habitat, identifies those sites which support rare, threatened, endangered, or “special concern” species officially designated by the Wisconsin Department of Natural Resources.

^bSite area, lake, or stream is located partially within the Village of Hartland study area. The number without parentheses refers to the acreage or stream miles within the study area, and the number in parentheses is the total site area or stream miles, including those beyond the study area.

^c“Drainage lakes” are lakes that have both an inlet and an outlet and whose main water source is stream drainage.

“Seepage lakes” are lakes which have no inlet or outlet and whose main source of water is direct precipitation and runoff supplemented by groundwater.

“Spring lakes” are lakes which have no inlet but do have an outlet and whose main source of water is groundwater flowing directly into the basin and from the immediate drainage area.

Source: Wisconsin Department of Natural Resources and SEWRPC.

RESOURCE-RELATED ELEMENTS

Elements closely linked to the natural resources, such as scenic overlooks mentioned earlier, are considered in the planning process. Park and open space sites, as well as related trails, are enhanced by the presence of natural resources and, due to the commitment of land to such uses, contribute to the preservation of the resources.

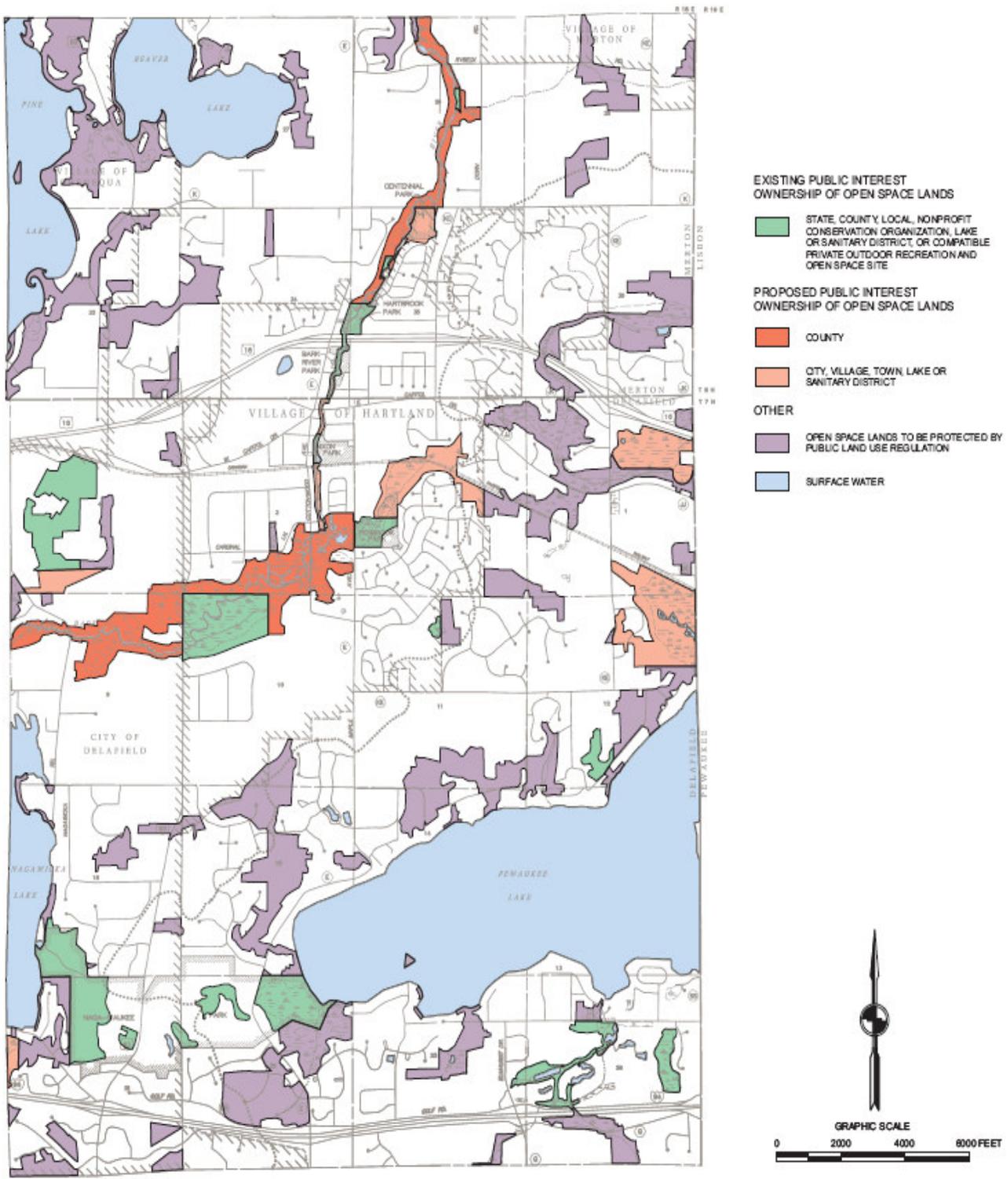
County and Regional Park and Open Space Plans

The adopted regional park, outdoor recreation, and related open space plan, as described in SEWRPC Planning Report No. 27, *A Regional Park and Open Space Plan for Southeastern Wisconsin—2000*, November 1977, identifies existing and probable future park and open space needs within the Region and recommends a system of large regional resource-oriented parks, recreational corridors, and smaller urban parks, together with their attendant recreational facility requirements, to meet these needs. The portion of the regional park plan that applies to Waukesha County, including the Village of Hartland study area, was revised in 1989 and is documented in SEWRPC Community Assistance Planning Report No. 137, *A Park and Open Space Plan for Waukesha County* December 1989. In 1996, the County plan was updated and included as an element of the adopted Waukesha County Development Plan. Waukesha County recently updated the County Park and Open Space Plan again, which was also adopted as a plan element of the Comprehensive Development Plan for Waukesha County on February, 24, 2009. The plan consists of both an open space preservation element and an area wide outdoor recreation element, intended to, respectively, protect areas containing important natural resources and to provide resource-oriented recreational sites and facilities. The Open Space Preservation Element of the plan is presented in Map 4-12, and the Regional Bicycle-way system plan is presented in Chapter 8 - Transportation in Map 8-18 and 8-19.

The Waukesha County park and open space plan identifies the most significant remaining natural areas, critical species habitats, geological sites, and archaeological sites in the Region, and recommends means for their protection and management.

Map 4-12

OPEN SPACE PRESERVATION ELEMENT OF THE ADOPTED WAUKESHA COUNTY PARK AND OPEN SPACE PLAN AS RELATED TO THE VILLAGE OF HARTLAND STUDY AREA: 1998



Source: Waukesha County and SEWRPC.

and A Master Plan for the Village of Hartland: 2020

The plan identifies potential sites to be placed in public or private protective ownership, and other sites to be protected, insofar as it is possible, through zoning and other regulatory means without protective ownership. It

also recommends that a detailed management plan be prepared and implemented for each site placed under protective ownership. Map 4-11 in this Chapter shows the five natural areas, two significant geological sites, and six critical aquatic habitats in the Village of Hartland study area as identified in the regional natural areas plan. In addition to the recommendations of the County park and open space plan, the regional natural area plan recommends that the two significant geological sites in the study area be preserved. Specifically, the plan recommends that the site identified as the Delafield Interurban Cut be preserved, to the extent practicable, through zoning or other regulatory means without protective ownership. The other site, Jones Quarry, is located within an existing golf course, and is recommended to be preserved by the Wisconsin Department of Natural Resources by acquiring a conservation easement for the site.

In light of the County Plan the Village created their own “Comprehensive Outdoor Recreation Plan” in 1988. with subsequent updates in 1994, 2001, and 2007. The Plan is updated every 5 years, and should be adopted by reference, and used in conjunction with this Comprehensive Plan document for any recreation planning needs.

The updated plan identifies park and open space preservation and development objectives and supporting standards, presents information on existing and future needs for park and recreation facilities, identifies deficiencies and safety concerns related to existing facilities, and establishes an action program to improve and enhance the existing park and recreation facilities. The document reestablished eligibility for the Village to receive State and Federal assistance funds for the acquisition and development of park and recreation sites over a five-year period

Park, Recreation, and Open Space Sites An inventory of park and open space sites and outdoor recreational facilities in the Village of Hartland study area was conducted in 1998. As listed in Table 4-4, there were 36 such sites encompassing a total of approximately 2.6 square miles, or about 11 percent of the study area. Of this total, 21 sites encompassing about 1.1 square miles were publicly owned, and 15 sites encompassing about 1.5 square miles were privately owned. The Village of Hartland owned 10 of these sites totaling approximately 84 acres. In addition to the Bark River Greenway, Village-owned sites include large parks, such as Hartbrook, Nixon, Centennial, and Penbrook Parks, and smaller parks, such as Bark River, Joliet, Sunnyslope, Castle, and Nottingham Parks. The Village parks provide a variety of recreational facilities for local residents, from playgrounds to baseball diamonds, as noted in Table 4-4. The recreational sites listed in Table 4-4 are shown on Map 8-5, in Chapter 8 – Transportation, because the map also contains information on scenic drives and trails.

Table 4-4

**EXISTING PARK, RECREATION, AND OPEN SPACE SITES
IN THE VILLAGE OF HARTLAND STUDY AREA: 1998**

Number	Site Name	Acreage	Outdoor Facilities/Comments
Publicly-Owned			
1	• Hartbrook Park	12	Playground, softball diamond, playfield
2	• Bark River Park	6	Playground, softball diamond, playfield
3	Hartland North Elementary School	15	Sandlot, playfield
4	• Louis Joliet Park	2	Playground, softball diamond
5	• Sunnyslope Park	1	Passive Use
6	Swallow Elementary School	7	Playfield, basketball courts
7	Arrowhead Union High School	72	Baseball diamonds, playfields, tennis courts, soccer field, football field
8	• Nixon Park	16	Softball diamond, tennis courts
9	• Centennial Park	14	Fine arts center, playground, baseball diamonds, soccer field,
10	• Penbrook Park	25	Playfield, baseball diamond, tennis courts
11	• Castle Park	4	Playground, passive use, trails
12	• Nottingham Park	2	Passive use
13	Hartland South Elementary School	4	Sandlot, playfield, basketball courts
14	North Shore Middle School	35	Playfields, baseball diamond
15	Lakeside Elementary School	2	Playground, playfield
16	Naga-Waukee Park	416	Playground, playfields, 18-hole golf course, boat launch,
17	Sports Commons	18	Sandlots, playground, playfield, sand volleyball, picnic areas
18	Del-Town Park	5	Playground, picnic areas
19	• Bark River Greenway	2	Trail, passive use
20	Beaver Lake Public Access	1	Boat access site
21	Open Space Site	13	Open Space
21 Sites	Subtotal	672	--
Privately-Owned			
22	Chenequa Country Club	144	18-hole golf course, tennis courts
23	Subdivision Park	1	Tennis court, passive use
24	Subdivision Park	5	Tennis court, passive use
25	Subdivision Park	5	Passive use
26	St. Charles Catholic School	11	Softball diamond, playfield
27	University Lake High School	153	Playfields, tennis courts
28	Ice Age Park & Trail Foundation	90	Trails, passive use, open space
29	Wee Know School	2	Playground, playfield
30	Golden Anchors Launch	1	Boat launch
32	Nagawicka Yacht Club	1	Boat launch
33	Western Lakes Golf Club	282	18-hole golf course (open to public)
34	St. Anthony-On-The-Lake School	3	Playfield
35	Prairie Hill Waldorf School	3	Playground, playfield
36	Bristlecone Pines Golf Club	200	18-hole golf course (open to public)
15 sites	Subtotal	969	--
36 sites	Total	1,641	--

* Owned by the Village of Hartland

Note: Site 31 has been removed from the chart and is no longer considered as recreational areas

Source: SEWRPC.

ENVIRONMENTAL CORRIDORS AND ISOLATED NATURAL RESOURCE AREAS

As defined, environmental corridors are elongated areas in the landscape that encompass concentrations of recreational, aesthetic, ecological, and cultural resources. Such areas generally include one or more of the natural resource base elements previously discussed. These areas are identified and mapped so that they can be maintained in their natural state. However, the County recognizes that under the comprehensive plan, the existing (year 2000) configuration of environmental corridors and isolated natural resource areas could be modified

slightly. These modifications may include minor deletions or encroachments into the PEC where development of such lands is consistent with the recommendations of SEWRPC relative to adopted sewer service area plans. Therefore, the Village of Hartland has authority to allow development of some areas that have been included in previous established sanitary sewer district areas.

The location of environmental corridors and other isolated natural resource areas within the study area, as delineated by the Regional Planning Commission, are shown on Map 4-13. The essentially linear corridors represent a composite of the best remaining elements of the natural resource base in the study area, and have immeasurable environmental and recreational value. Preservation of the primary environmental corridors, and careful consideration of preserving secondary environmental corridors and isolated natural resource areas, in an essentially open, natural state - including compatible park and open space uses and rural-density residential uses - will serve to maintain a high level of environmental quality in the area, protect the natural beauty of the area, and provide valuable recreation opportunities. Preservation techniques may avoid the creation of serious and costly environmental and developmental problems such as flood damage, poor drainage, wet basements, failing pavements and other structures, excessive infiltration of clear waters into sanitary sewers, and water pollution. Compatible uses within environment corridors and isolated natural resource areas are indicated in Table 4-5.

Primary Environmental Corridors

Primary environmental corridors are by definition at least 400 acres in size, two miles long, and 200 feet wide. These corridors include lakes, streams, wetlands, woodlands, steep slopes, natural areas, and wildlife habitats. In 1995 about 6.6 square miles, of which half is related surface water area, or about 27 percent of the study area, were encompassed within the primary environmental corridors shown on Map 4-13. These corridors are mostly associated with four major lakes and are located along perennial and intermittent streams, including the Bark River. The protection of primary environmental corridors from intrusion by incompatible urban uses, and thereby from degradation and destruction, should be one of the principal objectives of a local comprehensive plan.

Secondary Environmental Corridors

While secondary corridors may have many of the same qualities as primary corridors, they are smaller in size. Such corridors are by definition at least 100 acres in size and one mile long, except when they serve to connect primary environmental corridors, and often contain remnant resources from former primary environmental corridors which have been developed for intensive agricultural or urban land uses. As shown on Map 4-13, about 0.4 square mile, or about 2 percent of the study area, was encompassed within secondary environmental corridors in 1995. Secondary environmental corridors in the Village of Hartland study area are mostly located along streams and include wetlands associated within these streams. Secondary environmental corridors facilitate surface water drainage, maintain "pockets" of natural resource features, and provide for the movement of wildlife, as well as for the movement and dispersal of seeds for a variety of plant species. Such corridors should be preserved in essentially open natural uses as urban development proceeds within the study area, particularly when the opportunity is presented to incorporate them into urban stormwater detention areas, associated drainageways, and parks and open space sites.

Isolated Natural Resource Areas

In addition to the environmental corridors, other small concentrations of natural resource base elements exist within the study area. These elements are isolated from the corridors by urban development or agricultural uses and, although separated from the environmental corridor network, may have important residual natural values. Isolated natural features may provide the only available wildlife habitat in an area, provide good locations for local parks and nature study areas, and lend aesthetic character and natural diversity to an area. Important isolated natural resource areas within the Village of Hartland study area include a geographically well distributed variety of isolated wetlands, woodlands, and wildlife habitat. In 1995, these areas encompassed about 0.5 square mile, or about 2 percent of the study area. These areas should be protected and preserved in a natural state whenever possible. Isolated natural resource areas at least 200 feet wide and five acres or greater in size are shown on Map 4-13, and guidelines are provided in Table 4-5.

GENERAL DEVELOPMENT GUIDELINES RELATED TO TABLE 4-5 (Below)

- Transportation and Utility Facilities in Environmental Corridors: All transportation and utility facilities proposed to be located within important natural resources will be evaluated on a case-by-case basis to consider alternative locations for such facilities. If it is determined that such facilities should be located within natural resources, development activities will be sensitive to, and minimize disturbance of, these resources,

and, to the extent possible following construction, such resources will be restored to preconstruction conditions.

Table 3-1 presents development guidelines for major transportation and utility facilities. These guidelines may be extended to other similar facilities not specifically listed in the table.

- Recreational Facilities in Environmental Corridors: In general, no more than 20 % of the total environmental corridor area, including areas of upland wildlife habitat and woodlands, should be developed for recreational facilities. However, that in certain cases these percentages may be exceeded in efforts to accommodate needed public recreational and game and fish management facilities within appropriate natural settings.

Table 3-1 presents development guidelines for major recreational facilities. These guidelines may be extended to other similar facilities not specifically listed in the table.

- Residential Development in Environmental Corridors: All residential development proposed to be located within important natural resources will be evaluated on a case-by-case basis to consider alternative locations for such development. Limited residential development may be accommodated in upland environmental corridors, provided that buildings are kept off steep slopes. The maximum number of housing units, accommodated at a proposed development site within the environmental corridor, may be determined by dividing the total corridor acreage within the site, less the acreage covered by surface water, floodplains and wetlands, by five. The permitted housing units may be in single-family structures. When rural residential development is accommodated, conservation subdivision designs are strongly encouraged to locate development outside the corridor while maintaining an overall development density of no more than one dwelling per five acres.

Single-family development on existing lots of record will be permitted as provided for under county or local zoning at the time of adoption of the land use plan.

- Other Development: In lieu of recreational or rural density residential development, up to 10 percent of the upland corridor area in a parcel may be disturbed in order to accommodate urban residential, commercial, or other urban development under the following conditions: 1) the area to be disturbed is compact rather than scattered in nature; 2) the disturbance is located on the edge of a corridor or on marginal resources within a corridor; 3) the development does not threaten the integrity of the remaining corridor; 4) the development does not result in significant adverse water quality impacts; and 5) development of the remaining corridor lands is prohibited by a conservation easement or deed restriction. Each such proposal must be reviewed on a site-by-site basis.

Under this arrangement, while the developed area would no longer be part of the environmental corridor, the entirety of the remaining corridor would be permanently preserved from disturbance. From a resource protection point of view, preserving a minimum of 90 percent of the environmental corridor in this manner may be preferable to accommodating scattered homesites and attendant access roads at an overall density of one dwelling per five acres throughout the upland corridor areas.

- Pre-Existing Lots: Single-family development on existing lots of record should be permitted as provided for under county or local zoning at the time of adoption of the land use plan or on lands with the Primary Environmental Corridor amended through adopted sewer service plans.

All permitted development presumes that sound land and water management practices are utilized.

Table 4-5

GUIDELINES FOR DEVELOPMENT COMPATIBLE WITH ENVIRONMENTAL CORRIDORS

Component	Permitted Development
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Natural Resource and Related Features within Environmental Corridors ^a	Transportation and Utility Facilities (see General Development Guidelines below)				Recreational Facilities (see General Development Guidelines below)								Residential Development (see General Development Guidelines below)
	Streets and Highways	Utility Lines and Related Facilities	Engineered Stormwater Management Facilities	Engineered Flood Control Facilities ^b	Trails ^c	Picnic Areas	Family Camping ^d	Golf	Play-fields	Hard-Surface Courts	Parking	Bldgs	
Lakes, Rivers, and Streams .....	..^e	.. ^{f,g}	--	.. ^h	.. ⁱ	--	--	--	--	--	--	--	--
Shoreland	X	X	X	X	X	X	--	X	--	--	X	X ^j	--
Floodplain .....	..^k	X		X	X	X	--	X	X	--	X	X ^l	--
Wetland ^m .....	..^k	X	--	--	X ⁿ	--	--	.. ^o	--	--	--	--	--
Wet Soils	X	X	X	X	X	--	--	X	--	--	X	--	--
Woodland	X	X	X ^p	--	X	X	X	X ^p	X ^p	X ^p	X ^p	X ^p	X
Wildlife Habitat	X	X	X	--	X	X	X	X	X	X	X	X	X
Steep Slope	X	X	--	--	.. ^q	--	--	X	--	--	--	--	--
Prairie	--	.. ^g	--	--	.. ^q	--	--	--	--	--	--	--	--
Park	X	X	X	X	X	X	X	X	X	X	X	X	--
Historic Site	--	.. ^g	--	--	.. ^q	--	--	--	--	--	X	--	--
Scenic Viewpoint ..	X	X	--	--	X	X	X	X	--	--	X	X	X
Natural Area or Critical Species Habitat Site	--	--	--	--	.. ^q	--	--	--	--	--	--	--	--

NOTE: An "X" indicates that facility development is permitted within the specified natural resource feature. In those portions of the environmental corridors having more than one of the listed natural resource features, the natural resource feature with the most restrictive development limitation should take precedence. Note: Unlike the Waukesha County Comprehensive Development Plan the Village of Hartland Table 4-6 does not contain swimming beaches, boat access, or ski hills.

Footnotes to Table 4-5:

^aThe natural resource and related features are defined as follows:

Lakes, Rivers, and Streams: Includes all lakes greater than five acres in area and all perennial and intermittent streams as shown on U. S. Geological Survey quadrangle maps.

Shoreland: Includes a band 50 feet in depth along both sides of intermittent streams; a band 75 feet in depth along both sides of perennial streams; a band 75 feet in depth around lakes; and a band 200 feet in depth along the Lake Michigan shoreline.

Floodplain: Includes areas, excluding stream channels and lake beds, subject to inundation by the 100-year recurrence interval flood event.

Wetlands: Includes areas that are inundated or saturated by surface water or groundwater at a frequency, and with a duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Wet Soils: Includes areas covered by wet, poorly drained, and organic soils.

Woodlands: Includes areas one acre or more in size having 17 or more deciduous trees per acre with at least a 50 percent canopy cover as well as coniferous tree plantations and reforestation projects; excludes lowland woodlands, such as tamarack swamps, which are classified as wetlands.

Wildlife Habitat: Includes areas devoted to natural open uses of a size and with a vegetative cover capable of supporting a balanced diversity of wildlife.

Steep Slope: Includes areas with land slopes of 12 percent or greater.

Prairies: Includes open, generally treeless areas which are dominated by native grasses; also includes savannas.

Park: Includes public and nonpublic park and open space sites.

Historic Site: Includes sites listed on the National Register of Historic Places. Most historic sites located within environmental corridors are archeological features such as American Indian settlements and effigy mounds and cultural features such as small, old cemeteries. On a limited basis, small historic buildings may also be encompassed within delineated corridors.

Scenic Viewpoint: Includes vantage points from which a diversity of natural features such as surface waters, wetlands, woodlands, and agricultural lands can be observed.

Natural Area and Critical Species Habitat Sites: Includes natural areas and critical species habitat sites as identified in the regional natural areas and critical species habitat protection and management plan.

^bIncludes such improvements as stream channel modifications and such facilities as dams.

^cIncludes trails for such activities as hiking, bicycling, cross-country skiing, nature study, and horseback riding, and excludes all motorized trail activities. It should be recognized that trails for motorized activities such as snowmobiling that are located outside the environmental corridors may of necessity have to cross environmental corridor lands. Proposals for such crossings should be evaluated on a case-by-case basis, and if it is determined that they are necessary, such trail crossings should be designed to ensure minimum disturbance of the natural resources.

^dIncludes areas intended to accommodate camping in tents, trailers, or recreational vehicles, which remain at the site for short periods of time, typically ranging from an overnight stay to a two-week stay.

^eCertain transportation facilities such as bridges may be constructed over such resources.

^fUtility facilities such as sanitary sewers may be located in or under such resources.

^gElectric power transmission lines and similar lines may be suspended over such resources.

^hCertain flood control facilities such as dams and channel modifications may need to be provided in such resources to reduce or eliminate flood damage to existing development.

ⁱBridges for trail facilities may be constructed over such resources.

^jConsistent with Chapter NR 115 of the Wisconsin Administrative Code.

^kStreets and highways may cross such resources. Where this occurs, there should be no net loss of flood storage capacity or wetlands. Guidelines for mitigation of impacts on wetlands by Wisconsin Department of Transportation facility projects are set forth in Chapter Trans 400 of the Wisconsin Administrative Code.

^lConsistent with Chapter NR 116 of the Wisconsin Administrative Code.

^mAny development affecting wetlands must adhere to the water quality standards for wetlands established under Chapter NR 103 of the Wisconsin Administrative Code.

ⁿOnly an appropriately designed boardwalk/trail should be permitted.

^oWetlands may be incorporated as part of a golf course, provided there is no disturbance of the wetlands.

^pOnly if no alternative is available.

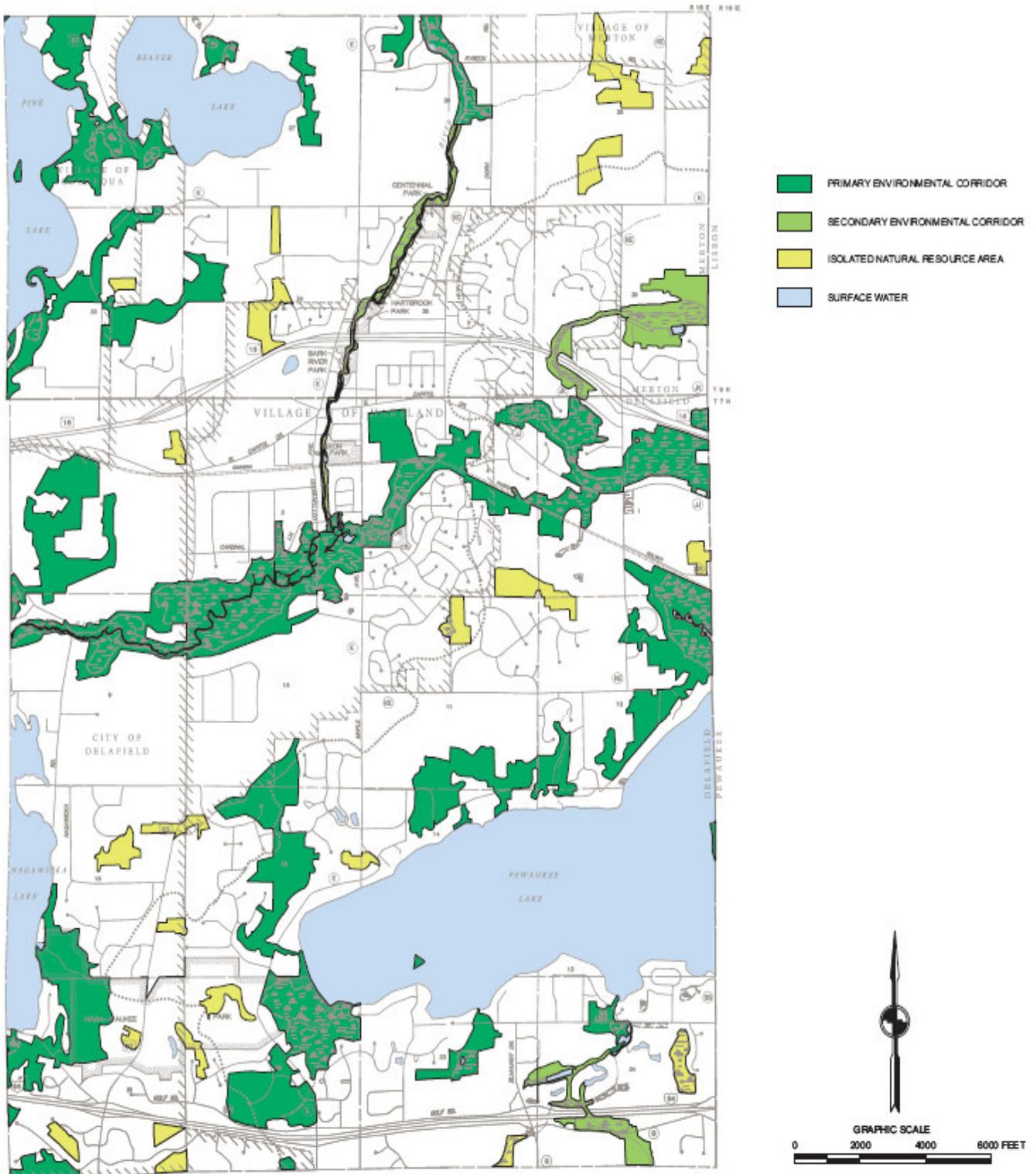
^qOnly appropriately designed and located hiking and cross-country ski trails should be permitted.

^rOnly an appropriately designed, vegetated, and maintained ski hill should be permitted.

Source: SEWRPC

Map 4-13

ENVIRONMENTAL CORRIDORS AND ISOLATED NATURAL RESOURCE AREAS IN THE VILLAGE OF HARTLAND STUDY AREA: 1995



Source: SEWRPC.

and A Master Plan for the Village of Hartland: 2020

HISTORIC RESOURCES

The preservation of historic places is intended to help ensure that the historic heritage of a community is protected and enhanced over time. Historic preservation planning recognizes that historic places are valuable resources whose damage or loss would be detrimental to the community. The key elements of an effective historic preservation planning effort include: 1) a thorough survey of historic resources, 2) community support for historic preservation, and 3) integration of historic preservation planning into the comprehensive community planning process. The principal means of implementing historic preservation plans include a local landmark or historic preservation commission created by municipal ordinance; a zoning ordinance with specific districts and district regulations for protecting historic sites and structures; and a demolition control ordinance. These principal means may be supplemented by the use of easements and taxation policies.

The importance of historic preservation planning is based on the assumption that the historic resources of a community are valuable and should be carefully considered in planning for community development and redevelopment. Historic preservation can help to maintain the unique identity of a community, especially within a community's "downtown" area, in a time when many factors tend to create a national homogeneity in the environment. Other benefits of historic preservation include: promoting tourism, increased real estate values and municipal tax revenues, arresting decay in declining areas, creating community pride, and conserving cultural resources. Despite these potential benefits, other forces such as economics, public attitudes, and existing laws can sometimes work against historic preservation. Through proper planning, however, the impediments to historic preservation can be reduced.

To be most effective, historic preservation planning for communities such as the Village of Hartland should be integrated into the overall community planning process. As an integral part of the total planning process, historic preservation can be considered in addition to all the other needs and goals of the community, thereby affording such preservation equal consideration with other planning issues. In this way, historic preservation can become an issue of continuing concern and can be built into the ongoing development and redevelopment decision-making process of the community.

Existing Historic Preservation Inventory

Realizing the importance of historic preservation, a detailed inventory of the significant architectural and historical sites and buildings in the Village of Hartland was completed in 1985. The findings of the inventory are documented in *Hartland: A Thematic History and an Intensive Survey of Historic Resources*, August 1985. Specifically, the survey provides a listing of the architectural and historic sites in the Village, including historical information for many selected sites in the inventory, with maps showing the location of a recommended historic district encompassing many of the most significant historic sites. The report may be further used to increase public and private sector awareness of the Village's historic and architectural heritage.

The inventory is intended to provide a basis for nominating significant sites and buildings for inclusion on the National Register of Historic Places, a mark of special status. If registered, such status would help protect the places from encroachment by State and Federal facilities development projects and may qualify for State and Federal tax incentives and Federal matching grants, when available, for research, restoration, acquisition, or stabilization. Any city or village containing property listed on the National or State Registers of Historic Places must enact a historic preservation ordinance to protect and preserve such resources. The survey document inventories and describes the historic places and buildings in a given area and identifies some of them as potentially eligible for listing in the National Register of Historic Places. The reconnaissance survey cards and the intensive survey forms used to conduct the inventory contain pertinent information about the sites and buildings within a recommended historic district, such as location, ownership, building site, construction and geographic data, historic significance, and major historic and bibliographic references. These data can be drawn upon when establishing historic preservation-related zoning districts, when making decisions regarding property identified as having historic value, or when making improvements in the historic district.

Approximately 175 properties and sites within the Village were surveyed. Seventeen buildings and a historic district consisting of 33 dwellings were identified as eligible for nomination to the National Register of Historic Places, as indicated on Table 4-6 and Map 4-14. To date, the East Capitol Drive Historic District and 13 of the 17 buildings were officially nominated and accepted into the National Register of Historic Places and the Wisconsin

State Register of Historic Places. In addition, a historic place referred to as the Beaumont Hop House (1863-65), located in the Town of Merton within the study area, is also included in the National and State Registers. In 1995 the Village of Hartland adopted a Historic Preservation Ordinance, administered by the Village of Hartland Architectural Board, to safeguard the significant historic resources in the Village of Hartland. The large number of identified historic places in the Village of Hartland and the high concentration of such historic places in and near the Village Center indicate that the area is rich in historic resources that should be protected for the present as well as future generations.

Table 4-6
SIGNIFICANT HISTORIC PLACES AND HISTORIC DISTRICT BUILDINGS
IN THE VILLAGE OF HARTLAND: 1998

Number on Map 4-14	Name	Location	Date	Architectural Style
1	White Elm Nursery	621 W. Capitol Drive	1929	Tudor Revival
2	Village of Hartland Well No.1	614 W. Capitol Drive	1933	Utilitarian
•3	Dansk Evangelical Lutheran Kirke	400 W. Capitol Drive	1910	Gothic Revival
•4	Zion Evangelical Lutheran Church	403 W. Capitol Drive	1910	Gothic Revival
•5	Trapp Filling Station	252-256 W. Capitol Drive	1922	Tudor Revival
•6	Bank of Hartland	112 E. Capitol Drive	1894, 1930	Georgian Revival
•7	Sign of the Willows	122 E. Capitol Drive	1923	Tudor Revival
•8	First Congregational Church	214 E. Capitol Drive	1923	Gothic Revival
•9	Stephen Warren House	235 E. Capitol Drive	1855	Greek Revival
•10	Burr Oak Tavern	315-317 E. Capitol Drive	1853-55	Greek Revival
•11	Harold Hornburg House	213 Warren Street	1928	Tudor Revival
12	Village of Hartland –Municipal Gas Plant	134 Cottonwood Avenue	1906	Commercial Vernacular
•13	Sarah Belle Van Buren House	128 Hill Street	1891-94	Vernacular
14	Harold Van Buren House	136 Hill Street	1934	Craftsman Bungalow
•15	Jackson House	235 North Avenue	1935-36	Tudor Revival
•16	Ralph C. Bailie House	530 North Avenue	1932	Spanish Colonial Revival
•17	Hartland Railroad Depot	301 Pawling Avenue	1879	Italianate
•East Capitol Drive Historic District (developed between 1850-1935)				
18	*Martin and Susan Lesica House	337 E. Capitol Drive	1890s	Queen Anne
19	Dr. Henry G.B. Nixon House	338 E. Capitol Drive	1893-95	Queen Anne
20	*Michael Murphy House	345 E. Capitol Drive	1946	Vernacular
21	Otto H. Willis House	400 E. Capitol Drive	1916	Bungalow
22	Hamilton E. Salsich	407 E. Capitol Drive	1897	Queen Anne
23	Salisch Carriage House	409 E. Capitol Drive	1897	Queen Anne
24	Gertrude Parker House	416 E. Capitol Drive	1921	Bungalow
25	Charles Wittenberg House	424 E. Capitol Drive	1926	Spanish Colonial Revival
26	Goodwin House	425 E. Capitol Drive	1859-66	Vernacular
27	Mark W. Rowell House	432 E. Capitol Drive	1923	Vernacular
28	Joseph Feix House	435 E. Capitol Drive	1933	Tudor Revival
29	*Gary Pilgrim House	504/506 E. Capitol Drive	1911	Vernacular
30	Dr. Edwin G. Benjamin House	511 E. Capitol Drive	1854	Vernacular
31	*Reinhold Dunne House	512 E. Capitol Drive	Early 1900s	Vernacular
32	George Pynn House	515 E. Capitol Drive	1907	Dutch Colonial Revival
33	*Mark Bulen House	518 E. Capitol Drive	Early 1900s	Vernacular
34	*Roger Wrede House	521 E. Capitol Drive	1955	Vernacular
35	*Rodney Holter House	524 E. Capitol Drive	1910s	Bungalow
36	*Robert Weikert House	527 E. Capitol Drive	1890s	Queen Anne
37	*John Pfeil House	530 E. Capitol Drive	Early 1900s	Vernacular
38	*Charles Pouchet House	533 E. Capitol Drive	1910s	Bungalow
39	*Vincent Leslie House	543 E. Capitol Drive	1880-90	Italianate
40	*Barbara Zwieg House	544 E. Capitol Drive	1890s	Queen Anne
41	August Schraudenbach House	551 E. Capitol Drive	1907	Queen Anne
42	*Ray Creasy House	552 E. Capitol Drive	1880-90	Italianate
43	*Jesse Janke House	558 E. Capitol Drive	1890s	Queen Anne
44	*John Dolan House	563 E. Capitol Drive	1850	Vernacular
45	Oliver Frisbee House	600 E. Capitol Drive	1883-90	Italianate
46	*John Siepmann House	606 E. Capitol Drive	Early 1900s	Vernacular
47	*Erik Laatsch House	607 E. Capitol Drive	Early 1900s	Vernacular
48	*Todd Fox House	614 E. Capitol Drive	1890-1910	Italianate
49	Joseph Counsell House	628 E. Capitol Drive	1887-91	Italianate
50	*David Wolken House	702 E. Capitol Drive	1891-97	Queen Anne

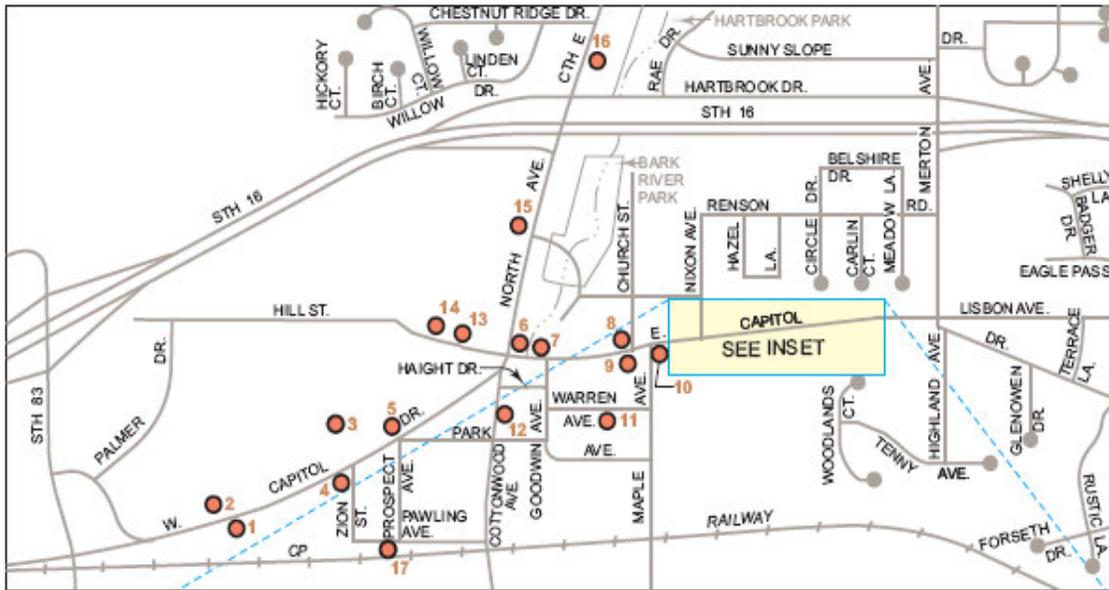
*Listed in both the National and Wisconsin State Registers of Historic Places.

*Present owner(s)

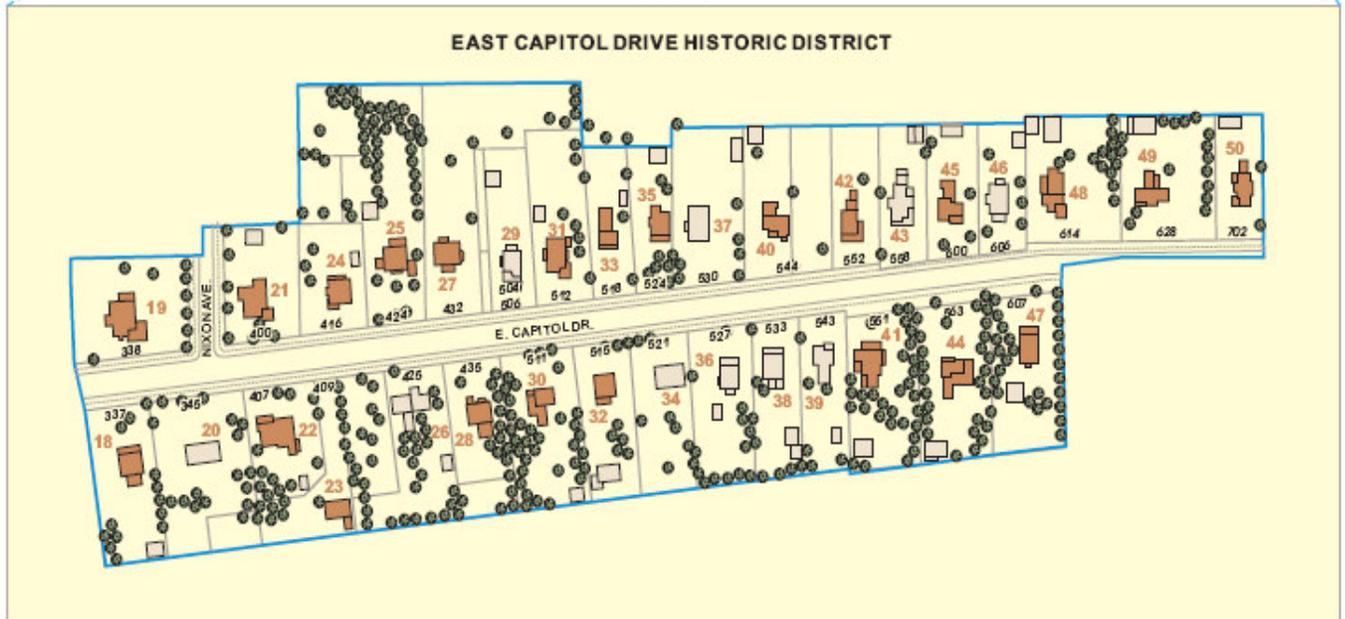
Source: SEWRPC and A Master Plan for the Village of Hartland:2020

Map 4-14

SIGNIFICANT HISTORIC PLACES AND HISTORIC DISTRICT IN THE VILLAGE OF HARTLAND : 1998



INSET



- HISTORIC BUILDING
- 21 REFERENCE NUMBER (SEE TABLE 23)
- EAST CAPITOL DRIVE HISTORIC DISTRICT BOUNDARY
- CONTRIBUTING STRUCTURE
- NONCONTRIBUTING STRUCTURE



Source: Village of Hartland and SEWRPC.

SUMMARY

If the Comprehensive Plan is to constitute a sound and realistic guide for making decisions concerning the physical development of the Village and environs, then pertinent Agricultural, Natural, and Cultural resources must be given careful consideration when judging the merits of land use development proposals. This chapter has presented a description of the aspects of the Agricultural, Natural, and Cultural resources within the developed environment of the Village of Hartland. The most important findings are as follows:

- Soil limitations for various urban and nonurban uses are an important consideration in any sound comprehensive planning effort. Map 4-1 and 4-2 depict the general suitability or unsuitability for development using onsite sewage-disposal systems, based on State Administrative Code requirements in effect prior to July 2000. Onsite investigations are essential to determine whether a specific tract of land is suitable for development to be served by an onsite sewage-disposal system.
- Approximately 15 square miles, or about 62 percent of the study area, are covered by Class I, II, and III soils which are well suited for agricultural use. In general, Class I and II soils are considered National Prime Farmland, and Class III soils are considered Farmlands of Statewide Importance.
- The study area is located within the Rock River and Fox River watersheds, which are part of the larger Mississippi River drainage system. The Village of Hartland is located mostly within the Bark River subwatershed which is part of the larger Rock River watershed. The major surface water resources in the study area include the Bark River and Beaver, Nagawicka, Pine, and Pewaukee Lakes. About 3.3 square miles, or 14 percent of the study area, is known to lie within the 100-year recurrence interval floodplain.
- The study area includes significant natural resources. In 1995, the study area included wetland areas encompassing about one square mile, or 5 percent of the study area; woodlands encompassing about three square miles, or 11 percent; and wildlife habitat areas encompassed about five square miles, or 20 percent. The study area includes five sites identified as natural areas under criteria established by the Wisconsin Natural Areas Preservation Council, two sites identified as significant geological sites, and six sites identified as critical aquatic habitats.
- Other natural resource related elements that exist in the study area include 38 scenic overlooks, four miles of the 75-mile Kettle Moraine Scenic Drive, five miles of the planned 1,000-mile Ice Age National Scenic Trail, four miles of the 17-mile Lake Country Trail, and 36 park and open space sites. The Village of Hartland owns 10 public outdoor recreation sites which provide residents with a variety of recreational facilities from play apparatuses to baseball diamonds.
- The best remaining natural resource features in the Village of Hartland study area, as in other parts of the Southeastern Wisconsin region, occur in linear concentrations in the land-scape and are referred to as environmental corridors. Primary environmental corridors in the study area are primarily associated with the Bark River and four major lakes. These corridors encompassed about 6.6 square miles in 1995, representing about 27 percent of the study area. Secondary environmental corridors encompassed about 0.4 square mile in 1995, representing about 2 percent of the study area. Other small concentrations of the natural resource base, known as isolated natural resource areas, encompassed about 0.5 square mile in 1995, also representing about 2 percent of the study area.
- The large number of historic buildings, especially in and near the Village Center, indicates that the Village is rich in historic resources. The Village contains 17 significant historic buildings and a historic district consisting of 33 dwellings. Thirteen of the 17 buildings and the district, East Capitol Drive Historic District, are listed on both the National and Wisconsin State Registers of Historic Places.

AGRICULTURAL, NATURAL, AND CULTURAL RESOURCE OBJECTIVES

The following list provides an overview of Planning Objectives for this Chapter.

NATURAL RESOURCES PROTECTION - OBJECTIVE NO. 1

Encourage the protection and wise use of the natural resources and agricultural lands in the study area. The preservation of sufficient high-quality open space lands for protection of the underlying and sustaining natural resource base will enhance the social and economic well-being and environmental quality of the Hartland area.

Principle

The proper allocation of land uses can assist in maintaining an ecological balance between human activities and the natural environment. Such ecological balance and natural beauty are important determinants of a community's ability to provide a pleasant and habitable environment for all forms of life. Preservation of the most significant aspects of the natural resource base, that is, primary environmental corridors and significant agricultural lands, further contributes to the maintenance of the ecological balance, natural beauty, and economic well-being of the Village and environs.

Soils Principle

The proper relation of urban and rural land use development to soils can serve to avoid costly environmental and developmental problems, aid in the establishment of better settlement patterns, and promote the wise use of an irreplaceable resource.

Standards

1. Sewered urban developments should not be located in areas covered by soils having severe development limitations, such as high or fluctuating water tables, slow permeability rates, erodibility on slopes, low bearing capacity, high shrink-swell potential, and frost-heave. When development is proposed on soils exhibiting severe limitations, careful attention should be given in the design to properly overcome these limitations.
2. Unsewered rural developments surrounding the Village should not be located in areas covered by unsuitable soils for such developments. When development is proposed on soils exhibiting unsuitable conditions, careful attention must be given in the design to overcome these limitations properly. Such development should utilize open space and conservation design concepts whenever possible.
3. Undeveloped areas surrounding the Village that are covered by the most productive soils for agricultural use, those designated by the U.S. Natural Resources Conservation Service as comprising agricultural soil capability Classes I and II, and which are not required to meet the land use needs of the forecast design year resident population and economic activity levels for the Hartland area should be preserved for agricultural use.
4. The location of nonfarm residential development in prime agricultural areas surrounding the Village should be discouraged. If permitted, development should be limited to densities of five acres or greater per dwelling unit, provided the locations can accommodate an acceptable private well system and are covered by soils suitable for the use of onsite sewage-disposal systems. Such development should utilize open space and conservation design concepts.

Lakes and Streams Principle

Lakes and streams and their associated floodlands and shorelands contribute to the community's environmental health in a number of ways. They add to the atmospheric water supply through evaporation; provide a suitable environment for desirable and sometimes unique plant and animal life; provide the population with opportunities for certain scientific, cultural, and educational pursuits; constitute prime recreational areas; provide a desirable aesthetic setting for certain types of land use development; serve to store and convey flood waters; and provide a source of water.

Standards

1. Floodlands should not be allocated to any urban development which would cause or be subject to flood damage.
2. The floodwater storage capacity of natural floodlands should not be reduced by urban or rural development.
3. The flow capacity of perennial stream channels and associated floodlands should not be reduced below existing conditions.
4. Adequate stormwater drainage facilities should be provided for all development.
5. Storm water management planning should seek to meet the potential biological use objectives of the streams in the County.
6. Potentially contaminating land uses should not be located in areas where the potential for groundwater contamination is the highest.

Note: The Wisconsin Department of Natural Resources (DNR) is required, under Wisconsin Statutes and the State Water Resources Act of 1965, to establish a set of water use objectives and supporting water quality standards applicable to all surface waters of the state. The type of aquatic community a particular surface water resource is capable of supporting is represented by the biological use objectives. The potential biological use of streams indicates the biological use or trout stream class a stream could achieve if it was well managed and pollution sources were controlled.

Groundwater Principle

Information regarding existing ground water quantity conditions is essential to any comprehensive land use and natural resource planning program. The existing condition of ground water quantity provides important baseline data. Potential ground water quantity conditions provide important data upon which planners and resource managers can make comprehensive development planning decisions.

Standards

1. Land use development patterns and practices should be designed to preserve important groundwater recharge areas and should support maintaining the natural surface and groundwater hydrology to the extent practicable.
2. Storm water management planning should seek to encourage ground water recharge to maintain the natural groundwater hydrology.

Note: The Wisconsin Department of Natural Resources (DNR) has established Administrative Code NR 140 to establish groundwater quality standards for substances detected in or having a reasonable probability of entering the groundwater resources of the state; to specify scientifically valid procedures for determining if a numerical standard has been attained or exceeded; to specify procedures for establishing points of standards application, and for evaluating groundwater monitoring data; to establish ranges of responses the department may require if a groundwater standard is attained or exceeded; and to provide for exemptions for facilities, practices and activities regulated by the department.

Wetlands Principle

Wetlands perform a variety of important functions that make them invaluable resources. These functions include: supporting a wide variety of desirable and sometimes unique plant and animal life; assisting in the stabilization of lake levels and stream flows; trapping and storing plant nutrients in runoff, thus reducing the rate of enrichment of surface waters and obnoxious weed and algae growth; contributing to the atmospheric oxygen supply; contributing to the atmospheric water supply; reducing stormwater runoff by providing area for floodwater impoundment and storage; trapping soil particles suspended in runoff and thus reducing stream sedimentation; and providing the population with opportunities for certain scientific, educational, and recreational pursuits.

Standard

Wetland areas adjacent to streams or lakes and wetlands within areas having special wildlife and other natural values should not be drained or filled and should not be allocated to any urban development except limited recreational use. To the extent practicable, areas immediately adjacent to and surrounding wetlands should be kept as a buffer with permanently vegetated open space uses within at least 15 feet of said wetlands.

Woodlands Principle

Woodlands assist in maintaining unique natural relationships between plants and animals; reduce stormwater runoff; contribute to the atmospheric oxygen supply; contribute to the atmospheric water supply through transpiration; aid in reducing soil erosion and stream sedimentation; provide the resource base for the forest product industries; provide the population with opportunities for certain scientific, educational, and recreational pursuits; and provide a desirable aesthetic setting for certain types of land use development.

Standard

Woodlands having an area of five acres or more should not be allocated to urban development except for limited recreational uses. When urban development does occur in such areas, the impact upon the woodland areas should be minimized by practicing sound conservation design principles.

Wildlife Principle

Wildlife, when provided with a suitable habitat, will supply the population with opportunities for certain scientific, educational, and recreational pursuits; comprises an integral component of the life systems which are vital to beneficial natural processes, including the control of harmful insects and other noxious pests and the promotion of plant pollination; provides food sources; offers an economic resource for the recreation industries; and serves as an indication of environmental health.

Standards

1. The most suitable habitat for wildlife, that is, the area wherein fish and game can best be fed, sheltered, and reproduce, is a natural habitat. Since the natural habitat for fish and game can best be achieved by preserving or maintaining in a wholesome state other resources such as soil, air, water, wetlands, and woodlands, the standards for each of these other resources, if met, would ensure the preservation of a suitable wildlife habitat and population.
2. Wildlife populations should be maintained in balance with the holding capacity of the land.

Natural Areas and Critical Species Habitats Principle

Natural areas and critical species habitats are important in a number of ways including economically, insofar as they support advances in agriculture and medicine; functionally insofar as they enhance surface-water and groundwater quality, minimize erosion, and enhance air quality; educationally; recreationally; aesthetically; scientifically; and biologically insofar as they maintain biological and genetic diversity. In a less tangible but equally important way, natural areas and critical species habitats contribute to mental well-being and to the overall quality of human life.

Standard

The remaining natural areas and critical species habitat areas should be preserved.

Environmental Corridor and Isolated Natural Resource Area Principle

The primary and secondary environmental corridors and isolated natural resource areas are a composite of the best individual elements of the natural resource base, including lakes, rivers, and streams and their associated floodlands, wetlands, woodlands, wildlife habitat areas; rugged terrain consisting of slopes 12 percent or greater; wet, poorly drained or organic soils; and significant geological formations. By protecting these elements of the natural resource base, flood damage can be reduced, soil erosion abated, water supplies protected, air cleansed, wildlife population enhanced, and continued opportunities provided for scientific, educational, and recreational pursuits.

Standards

1. All remaining undeveloped lands within designated primary environmental corridors⁵ should be pre-served in essentially natural, open use.
2. All remaining undeveloped lands within the designated secondary environmental corridors⁶ and isolated natural resource areas⁷ should be considered for preservation as urban development proceeds and be incorporated, as appropriate, for use as drainageways, floodwater detention areas, and parks, or in essentially natural, open uses to the extent practicable, as determined in county and local plans. Compatible uses within the preservation of environmental corridors and isolated natural resource areas are indicated in Table 4-5.

Other Environmentally Sensitive Areas Principle

Care in locating urban and rural development in relation to other environmentally sensitive areas can help to maintain the overall environmental quality of the County and to avoid developmental problems.

Standards

1. Small wetlands, woodlands, and prairies not identified as part of an environmental corridor or isolated natural resource area should be preserved to the extent practicable, as determined in county and local plans.
2. All natural areas and critical species habitat sites identified for preservation in the Regional Natural Areas and Critical Species Habitat Protection and Management Plan should be preserved.
3. One hundred-year recurrence interval floodlands should not be allocated to any development, which would cause or be subject to flood damage; and no unauthorized structure should be allowed to encroach upon and obstruct the flow of water in perennial stream channels and floodways.
4. Urban and rural development should be directed away from areas, with steep slopes (12% or greater) or with seasonally high groundwater one foot or less from the surface.
5. Land use patterns should be designed to discourage development of below grade structures on soils with seasonally high groundwater less than 3 feet from the surface. The intent is to allow development on these marginal soils, providing below grade structures (including basements) maintain a minimum of one foot separation from the seasonally high groundwater level.

RECREATION - OBJECTIVE NO. 2

To provide an integrated system of public outdoor recreation sites and related open space areas that will provide the residents of the Hartland area with adequate opportunities to participate in a wide range of outdoor recreation activities.

Principle

The provision of outdoor recreation sites and related open space areas contributes to the attainment and maintenance of physical and mental health by providing opportunities to participate in a wide range of activities. An integrated park and related open space system properly related to the natural resource base, such as the existing surface water network, can generate the dual benefits of satisfying recreational demands in an appropriate setting and protecting and preserving valuable natural resource amenities. Finally, an integrated system of outdoor recreation sites and related open space areas can contribute to the orderly growth of the Hartland area by lending form and structure to urban development patterns.

⁵Primary environmental corridors are, by definition, at least two miles in length, 400 acres in area, and 200 feet in width.

⁶Secondary environmental corridors are at least one mile in length and 100 acres in area. Such corridors that link or serve to connect primary environmental corridor segments, particularly when the secondary corridors are related to surface drainage, have no minimum area or length criteria.

⁷Isolated natural resource areas are at least five acres in area and 200 feet wide. Such areas consist primarily of isolated wetland and woodland areas which have been separated physically from the environmental corridor network by intensive urban or agricultural land uses.

Public Outdoor Recreation Sites and Facilities Principle

Public, general-use, outdoor recreation sites promote the maintenance of proper physical and mental health both by providing opportunities to participate in such athletic recreational activities as baseball, swimming, tennis, and ice-skating, activities that facilitate the maintenance of proper physical health because of the exercise involved, as well as opportunities to participate in such less athletic activities as pleasure walking, picnicking, or just rest and reflection. These activities tend to reduce everyday tensions and anxieties and thereby help maintain proper physical and mental well-being. Well designed and properly located public general-use outdoor recreation sites also provide a sense of community, bringing people together for social and cultural as well as recreational activities, and thus contribute to the desirability and stability of residential neighborhoods and of the communities in which such facilities are provided.

Standard

Local governments should provide recreation sites sufficient in size and number to meet the recreation demands of the resident population. Such sites should contain the natural resource or human-made amenities appropriate to the recreational activities to be accommodated therein and be spatially distributed in a manner which provides ready access by the resident population. To achieve this standard, the site requirements indicated in Table 4-7, as well as the service radius and travel distance standards established in Table 4-8, should be met.

Recreation-Related Open Space Principle

Effective satisfaction of recreation demands within the Region cannot be accomplished solely by providing general-use outdoor recreation sites. Certain recreational pursuits, such as hiking, biking, in-line skating, cross-country skiing, canoeing, and kayaking are best provided through a system of recreation corridors located on or adjacent to linear resource-oriented open space areas. Resource-oriented outdoor recreational activities rely on natural resource amenities for their very existence or are significantly enhanced by the presence of natural features. A well-designed system of recreation corridors offered as an integral part of linear open space lands also can serve to connect existing and proposed public parks, thus forming a truly integrated park and recreation-related open space system. Such open space lands, in addition, satisfy the human need for natural surroundings, serve to protect the natural resource base, and ensure that many scenic areas and areas of natural, cultural, or historic interest assume their proper place as form determinants for both existing and future land use patterns.

Standards

The public sector should provide sufficient open space lands to accommodate a system of resource-oriented recreation corridors to meet the resident demand for trail-oriented recreational activities. To fulfill these requirements, the following standards should be met:

1. Resource-oriented recreation corridors should maximize use of environmental corridors, while protecting environmentally sensitive resources, for trail-oriented recreation activities; outdoor recreation facilities provided at existing public park sites; and existing recreational trail facilities. Major recreation corridors are identified in the Waukesha County Park and Open Space Plan.
2. The maximum vehicular travel distance to major recreation corridors should be five miles in urban areas and 10 miles in rural areas. Local recreation corridors should be conveniently accessible to residents in neighborhood units. These corridors should also function as a greenway system that interconnects local parks, and that ultimately connects to a major recreation corridor.
3. A minimum of 0.16 linear mile of recreation-related open space consisting of linear major recreation corridors should be provided for each 1,000 persons in the Region, including those in the Village of Hartland study area. No minimum size requirements are necessary for creating linear recreation corridors; however, a width of at least 200 feet wide is recommended to the extent practicable. There is no minimum length requirement for the provision of local recreation corridors since such corridors should be provided whenever possible.

Table 4-7

**STANDARDS FOR PUBLICLY-OWNED OUTDOOR RECREATION SITES
FOR THE VILLAGE OF HARTLAND STUDY AREA**

Site Type	Size (gross acres)	Parks			Schools ^a		
		Minimum Per Capita Requirement (acres per 1,000 persons) ^b	Typical Facilities	Service Radius (miles) ^c	Minimum Per Capita Requirements (acres per 1,000 persons) ^b	Typical Facilities	Service Radius (miles)
Community	25-99	2.2	Swimming pool or beach, nature study area, picnic areas, soccer and other playfields, baseball diamonds, softball diamonds, tennis courts, passive activity area ^d	2.0 ^e	0.9	Soccer and other playfields, baseball diamonds, softball diamonds, tennis courts	0.5-1.0
Neighborhood ^f	5-25	1.7	Picnic areas, softball diamonds, tennis courts, playground, soccer and other playfields, basketball goals, ice skating rink, passive activity area ^d	0.5-1.0 ^g	1.6	Soccer and other playfields, playground, softball diamonds, tennis courts, basketball goals	0.5-1.0

^aIn urban areas, the facilities commonly found at school recreation sites often provide a substitute for facilities usually found in parks. Indeed, recreation lands at the neighborhood level are most appropriately provided through a joint community-school district venture with the recreational facilities and space being located on one site, available to serve the recreation demands of both the student and the resident neighborhood population.

^bThe per capita acreage standards for neighborhood and community recreation sites are intended to be applied in a combined fashion. In this respect, a total of at least 6.4 acres of land should be provided at neighborhood or community recreation sites for each thousand urban area residents. Of the 6.4 acres, 3.9 acres should be provided at neighborhood or community parks, and 2.5 acres should be provided at school recreation sites or, if not distributed to school sites, then added to neighborhood or community parks.

^cIn the application of these service radius standards, the need for a neighborhood park can be met by a community, multi-community, or major park. The need for a community park can be met by a multi-community or major park.

^dA passive activity area is defined as an area that provides an opportunity for less athletic recreational pursuits such as pleasure walking, relaxation, and informal picnicking. Such areas are generally in all parks and consist of a landscaped area with mowed lawns, shade trees, benches, and picnic tables.

^eThis standard applies to urban areas with a resident population of at least 7,500 persons. If a municipal population is less than 7,500 persons, then at least one community park should still be provided to serve residents of the municipality.

^fThe acreage standards are for accommodating only outdoor recreational facilities typically located in a neighborhood, exclusive of the natural areas and the area required for school building site and associated parking and loading facilities. Natural areas should be incorporated into the design of a park site; however, acreages of areas with steep slopes, poor soils, floodlands, drainageways, wetlands, and woodlands should be considered as additions to the park-school acreage standards.

^gA service radius of 0.5 mile should be used in high-density residential areas, 0.75 mile in medium-density residential areas, and 1.0 mile in low-density residential areas. A 0.75 mile radius is generally appropriate in the Village of Hartland study area.

Source: SEWRPC.

Table 4-8

**SITE AREA, SERVICE RADIUS, AND TRAVEL DISTANCE STANDARDS
FOR COMMUNITY FACILITIES IN THE VILLAGE OF HARTLAND STUDY AREA**

Facility Type ^a	Service Capacity	Required Site Area (gross acres)	Service Radius: Medium-Density Neighborhood (miles)	Walking Distances ^c (miles)		Biking Distances ^c (miles)	
				Optimum	Maximum	Optimum	Maximum
Shopping Facilities							
Retail and Service Centers Neighborhood ^d	4,000 to 10,000 persons	5-15	1.25	0.25	0.50	0.75	1.25
Community ^e	10,001 to 75,000 persons	15-60	1.75	0.50	0.75	1.00	1.75
Highway-Oriented Commercial Developments	15,000 vehicles or more per day ^f	--g	--	--	--	--	--
Employment Facilities							
Community Office Developments	1,000 or more employees	Minimum 20	--	1.00	1.50	3.00	5.00
Community Industrial Developments	300 or more employees	Minimum 20	--	1.00	1.50	3.00	5.00
Public Transit Facilities							
Local Transit Stops	--	--	0.25	0.25	0.50	0.75	1.00
Rapid-Transit Facilities ^h	--	--	3.00	0.50	1.00	1.00	3.00
Public Education Facilities							
Elementary School (Grades K-5)	350 to 500 students	13.5-15 ^{i, j}	0.75 ^m	0.25	0.50	0.75	1.00
Middle School (Grades 6-8)	750 to 900 students	27.5-29 ^{i, k}	1.00 ^m	0.50	0.75	1.00	1.50
Senior High School (Grades 9-12)	1,000 to 1,500 students	40-45 ^{i, l}	1.50 ^m	0.75	1.00	1.50	2.00
Community Libraries	--	--	1.50	0.75	1.00	1.50	2.00
Public Outdoor Recreational Facilities							
Sub-Neighborhood	-- ⁿ	-- ⁿ	-- ⁿ	0.25	0.50	0.50	0.75
Neighborhood	4,000 to 8,000 persons	5-24 ^o	0.75	0.25	0.50	0.50	0.75
Community	Minimum 7,500 persons	25-99	2.00	0.50	1.00	1.50	2.00
Multi-Community	--	100-249	4.00	--	--	3.00	5.00
Major.....	--	250 or more	10.00	--	--	3.00	5.00

Source: SEWRPC

^aService radius standards for fire stations are presented under Objective No. 4 in chapter 3.

^bA medium-density neighborhood is defined as having between 2.2 to 6.1 dwelling units per net acre, with an average of approximately 6,500 persons per square mile.

^cOne-way distances from the farthest dwelling unit to the facility.

^dA neighborhood shopping center is defined as concentrations of stores including a grocery store or supermarket as the anchor and other retail stores and services such as a pharmacy, variety store, beauty parlor, laundromat, or bank that meet the day-to-day needs of neighborhood residents. Neighborhood shopping centers should not deal in such shopper goods as clothing, furniture, and appliances.

^eA community shopping center usually contains at least one supermarket and either a junior department store, discount store, or similar major tenant in addition to other retail stores and services found in neighborhood shopping centers. The need for a neighborhood shopping center can be met by a community shopping center.

^fIndicates minimum average weekday traffic volume required on an abutting freeway, highway, or arterial street.

^gA minimum site area of five acres at an interchange location should be provided for commercial developments serving freeway traffic.

^hIncludes park-and-ride lots and car-pool parking lots.

ⁱIncludes both land for the school building and for associated facilities such as parking, loading, and recreation facilities.

^jElementary school site area is based upon the standard of 10 acres, plus one acre for each 100 students.

^kMiddle school site area is based upon the standard of 20 acres, plus one acre for each 100 students.

^lHigh school site area is based upon the standard of 30 acres, plus one acre for each 100 students.

^mArrowhead Union School District provides busing services for kindergarten students located one or more miles from their school and for students from grades one through 12 located two or more miles from their school; however, exceptions may be made due to the presence of hazardous conditions.

ⁿTo be determined on an individual sub-neighborhood basis for those sub-neighborhoods that are not an integral part of a specific neighborhood area due to distance or physical barriers such as separation by a major highway or waterway. Such parks should contain about three to five acres of area to accommodate at least a playground and a combined playfield/softball diamond facility.

^oNeighborhood park sites not associated with a school site should contain between 10 to 15 acres in area per park site, depending on the types of outdoor recreation facilities needed to serve the neighborhood residents.

HISTORIC PRESERVATION - OBJECTIVE NO. 3

To preserve the historic heritage of the Village of Hartland.

Principle

The preservation of structures, sites, and districts possessing historical or architectural significance will promote the educational, cultural, and general welfare of residents of the Village of Hartland and provide for a more interesting, attractive and vital community. Accordingly, it is in the public interest to promote the protection, enhancement, perpetuation, and use of sites and improvements of special historic interest or value.

Standards

1. Historic sites, buildings, and structures identified in an intensive historic survey should be protected through the application and enforcement of the Village historic preservation ordinance and the Village of Hartland Architectural Board.
2. The standards promulgated by the U.S. Department of the Interior may be used for any historic preservation projects in the Village of Hartland. These standards govern all forms of historic preservation treatments, including acquisition, protection, stabilization, preservation, rehabilitation, restoration, and reconstruction. The following general standards may be applied to treatments undertaken on designated historic properties in the Village of Hartland:
 - a. Every reasonable effort should be made to use a structure or site for its originally intended purpose, or to provide a compatible use that requires minimal alteration of the site or structure and its environment.
 - b. The distinguishing original qualities or character of a building, structure, or site and its environment should not be destroyed. The removal or alteration of any historic materials or distinctive architectural features should be avoided whenever possible.
 - c. All buildings, structures, and sites should be recognized as products of their own time. This should be considered before alterations are undertaken which have no historical basis and which seek to create an antique appearance.
 - d. Changes which may have taken place in the course of time are evidence of the history and development of a building, structure, or site and its environment. If these changes have acquired significance in their own right, their significance should be recognized and respected.
 - e. Distinctive stylistic features or examples of skilled craftsmanship which characterize a building, structure, or site should be treated with sensitivity.
 - f. Deteriorated architectural features should be repaired rather than replaced, wherever possible. In the event replacement is necessary, the new material should match that being replaced in composition, design, color, texture, and other visual qualities. Repair or replacement of missing architectural features should be based on accurate duplications of features, substantiated by historical, physical, or pictorial evidence, rather than on conjectural designs or the availability of different architectural elements from other buildings or structures.
 - g. The surface cleaning of structures should be undertaken with the gentlest means possible. Sandblasting and other cleaning methods that will damage historic building materials should not be undertaken.
 - h. Every reasonable effort should be made to protect and preserve archaeological resources affected by, or adjacent to, any acquisition, protection, stabilization, preservation, rehabilitation, restoration, or reconstruction project.
 - i. Contemporary design for alterations and additions should not be discouraged when such changes do not destroy significant historical features and are compatible with the scale, mass, and architectural features of the historic property and its environment.
 - j. New additions should be designed so that if removed, the integrity of the structure is not impaired.

AGRICULTURAL, NATURAL, AND CULTURAL - IMPLEMENTATION RECOMMENDATIONS

1. Redefine the planning objectives and standards used to prepare this element to address groundwater supply and recharge issues, following completion of the Regional Water Supply Plan or the availability of sufficient regional data.
2. Amend land use categories to direct development away from areas with seasonally high groundwater one-foot or less from the surface and steep slopes (12% or greater) and to discourage development of below grade structures on soils with groundwater limitations less than 3 feet from the surface. Amend applicable zoning and land division codes to establish a minimum of one-foot separation between structures (including basements) and the seasonally high groundwater level.
3. Amend applicable zoning, land division, and storm water management ordinances to establish more stringent site design requirements that are necessary to address thermal and other runoff impacts, and detail ~~to~~ cold-water communities, outstanding water resources, and exceptional water resources.
4. Provide a list of historical sites that are eligible for historic designation, but have not been listed, and provide a list of potentially eligible sites that need additional evaluation for inclusion as eligible sites.
5. Protect those historic resources that have been identified, through establishment and adherence to historic preservation standards.
6. Protect tillable agricultural lands contained in the Agricultural land use categories and discourage residential development on agriculturally productive and environmentally sensitive areas, but provide for some marketability of such lands in order to allow economical use of lands suited to limited and controlled residential development. By permitting somewhat more intensive use of such lands, it is recommended that land use tools such as opportunities provided in the form of Planned Unit Developments and conservation design developments.
7. Protect and encourage the preservation of primary and secondary environmental corridors and isolated natural areas, and discourage residential development in environmentally sensitive areas, but provide for some marketability of such lands in order to allow economical use of lands suited to limited and controlled residential development.
8. To prevent land use conflicts with nonmetallic mining operations in the County, the Hartland Plan Commission should evaluate the following series of recommendations:
 - a. Create a new non-metallic mining Overlay District that would require notifications to appear on recorded documents associated with land divisions within the District denoting the parcel's proximity to an active or planned mining operation.
 - b. Establish a minimum setback from nonmetallic mining operations and adjoining properties within the zoning code. Landscape berms and vegetative screening should be provided in the setback area.