Chapter 3

AGRICULTURAL, NATURAL AND CULTURAL RESOURCES

This chapter of the plan presents an inventory and analysis of the agricultural, natural and cultural resource base of the Town of Genesee. Included is descriptive information pertaining to topography, soils, groundwater resources, surface-water resources, wetlands, woodlands, natural areas and critical species habitat sites, park and open space sites, environmental corridors, historic and cultural resources and agricultural lands.

NATURAL RESOURCE BASE

The natural resource base of the Town, defined herein as the surface waters, wetlands, woodlands, wildlife, and soils are vital elements to its economic development and to its ability to provide a pleasant and habitable environment for human life. Therefore, a careful evaluation and analysis of the capabilities of this resource base to support various kinds of land use development is important to a sound local planning effort. Land and water resources are limited and subject to misuse through improper land use development. Such misuse may lead to severe developmental and environmental problems, which may be difficult and costly to correct, and may lead to the general deterioration and even destruction of the resource base itself. Intelligent selection of the most desirable land use pattern must, therefore, be based in part upon a careful assessment of the natural resource base. A sound and meaningful planning effort must therefore acknowledge that natural resources are limited, and that urban development should be consistent with sound management of the natural resources so that serious and costly environmental problems can be avoided.

Soils

Soil properties exert a strong influence on the manner in which man uses 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 land use planning effort to examine not only how land and soils are presently used, but also how they can be best managed for future use. As shown on Map C, approximately 50 percent of the Town is covered by soils having severe or very severe limitations for urban residential development utilizing conventional onsite soil absorption sewage disposal systems on lots less than one acre in size. Characteristically, soils with severe and very severe limitations for septic tank use have slow permeability rates, a high or fluctuating water table, and a high shrink-swell ratio, and may be located on steep slopes and subject to periodic flooding or surface ponding. All these characteristics are detrimental to development for urban use and particularly to residential use utilizing septic tanks for sewage disposal. However, the Department of Commerce amended the sanitary code (Comm 83) as it relates to septic systems. In 2003, Comm 83 allowed A+4 systems, which require only four (4) inches of suitable soil below the "A" horizon. In most cases the "A" horizon is only 8 – 12 inches in depth. Therefore, areas that could not accommodate private on-site waste disposal systems in the past are now able to support the new A+4 systems. Given the minimum standards of the A+4 systems, it is extremely difficult to map those areas only able to accommodate the A+4 systems.

In 1963, to assess the significance of the diverse soils found in Southeastern Wisconsin, the Southeastern Wisconsin Regional Planning Commission negotiated a cooperative agreement with the U. S. Department of Agriculture, Soil Conservation Service (SCS), now known as the Natural Resources Conservation Service (NRCS), under which detailed operational soil surveys were completed for the entire Region. The results of the soil surveys have been published in SEWRPC Planning Report No. 8, Soils of Southeastern Wisconsin and subsequently updated in by the NRCS, 2003. These soil surveys have resulted in the mapping of the soils within the area, including the Town of Genesee, in great detail. At the same time, the surveys have provided definitive data on the physical, chemical, and biological properties of the soils and, more importantly, have provided interpretations of the soil properties for planning, engineering, agricultural, and resource conservation purposes.

Suitability for Agriculture

In order to lend uniformity to the identification of productive farmlands throughout the nation, the U. S. Department of Agriculture, Soil Conservation Service, established a soil classification system under which soils are categorized relative to their agricultural productivity. The two most highly productive soils are categorized as either national prime farmland or as farmland of statewide significance. National prime farmland is defined as land that is well suited for the production of food, feed, forage, fiber, and oilseed crops, with the soil quality, growing season, and moisture supply needed to produce economically sustained high yields of crops when properly treated and managed. Farmland of statewide importance includes land in addition to national prime farmland, which is of statewide importance for the production of food, feed, fiber, forage, and oilseed crops.

Analysis of the soils in general in the Town, indicates approximately half of the land in the Town is covered by soils that are classified as hydric, poorly drained or containing steep slopes (Map C). The eastern half of the Town has a high percentage of hydric soils, while the western portion of the Town contains a higher portion of those areas containing slopes in excess of 12 percent. Most the areas with slopes in excess of 12 percent are already developed and generally not good for agricultural production. Class 1 and Class II soils are generally considered prime for agricultural productivity. In an analysis of the vacant parcel in the Town of Genesee, it appears the areas containing Class I and II soils are scattered throughout the Town. Very few farmers remain the Town and those areas that are farmed are scattered throughout the Town.

Suitability for Development

The primary soil features that present potential limitations for land development, including depth to water table and bedrock and steep slopes are shown on Map D. The soil features are presented for planning purposes only. Detailed on-site soil analysis is necessary to validate site conditions. Hydric soils generally have seasonal depth to water table of 1 foot or less and are capable of supporting wetland vegetation. Poorly drained soils have seasonal depth to water table of 3 feet and are concentrated on the eastern part of the county where many of the soils have a high clay content, often causing a perched water table condition. Shallow water table conditions risk groundwater contamination from on-site septic systems and could cause wetness problems for dwellings with basements. Shallow bedrock conditions pose higher construction costs for basements and also risk groundwater contamination from on-site septic systems because of the lack of a filtering soil layer. Steep slopes represent possible increased grading costs and higher risks for soil erosion during land development activities. Note that steep slopes are concentrated near the western half of the Town (Kettle Moraine area). A small area of shallow bedrock is concentrated near the southeast quarter of the Town.

Lot size is known to have a significant affect on soil limitations in the Town of Genesee. The soil properties concerned are such that septic tank systems require a larger filter field and therefore a larger lot. Prudence would also dictate that if onsite sewage disposal systems are to be used as a permanent means of sewage disposal, the lot sizes were large enough to permit construction of a replacement filter field in the event of system failure. Thus, the Town has pursued a policy of permitting residential development, on relatively larger lots.

As a part of the planning program for the Town of Genesee, detailed soils maps were examined. These maps depict the severe and very severe limitations of soils for residential development served by onsite soil absorption sanitary sewage disposal systems (septic tanks) on lots less than an acre in size and on lots one acre or more in size, as well as showing the particular limiting characteristics of the soil - i.e., slow permeability, high groundwater, shallow bedrock, flooding potential, and steep slopes.

Most areas of existing urban development in the Town were not included within any recommended centralized sanitary sewer service area in the adopted regional sanitary sewerage system plan, primarily because of the relatively small size and isolated nature of some of the residential areas and the location in, or adjacent to, one of the environmental corridors of the Region in which intensive urban development should not be encouraged. The only developed area recommended for inclusion in a proposed centralized sanitary sewer service area in the study area was the Village of Wales.

In the absence of a centralized public water supply system, urban development in the Town must rely on individual shallow wells for potable water supply. These types of wells are recharged from rainfall and runoff within local catchment areas and are subject to contamination from local sources. Urban development utilizing both septic tanks and shallow wells may, if poorly planned and located, result not only in surface water pollution, but in groundwater pollution and contamination of individual shallow wells, with the creation of attendant serious public health hazards.

Surface Waters

About 30 square miles of the Town are located in the Fox River Basin. The remainder of the Town lies within the Rock River basin. While no comprehensive watershed plan has been completed for either basin. A sub-watershed plan has been completed for the Pebble Creek watershed, which is a sub-watershed of the Upper Fox River watershed that is located within the Fox River Basin. In 2007, a Pebble Creek Watershed Protection Plan was completed by the Southeastern Wisconsin Regional Planning Commission (SEWRPC) – Community Assistance Planning Report No. 284. This plan is designed to assist municipalities in developing strategies that will benefit the natural assets of Pebble Creek and protect the sensitive habitats within the watershed. This protection plan may be used by the Town of Genesee as a practical guide for the management of the water quality within the Pebble Creek watershed and for the management of the land surfaces that drain directly and indirectly to this body of water.

The Town of Genesee lies on the eastern edge of the Kettle Moraine in the "hill and valley" district as defined in the Waukesha County park and parkway plan prepared by the Waukesha County Park and Planning Commission in February 1973. This area is characterized by broad, smooth, rolling hills of ground moraine in contrast to the choppy "kettle and kame" topography of the Kettle Moraine. The "hill and valley" district is drained almost entirely by the Fox River and its tributaries. The Town contains only a relatively small area of floodlands. These are located in the southeastern corner of the Town where Genesee Creek joins the main stem of the Fox River (Map E). These floodlands, which encompass an area of about 679 acres, or 3.4 percent of the total area of the Town, have been designated by the Regional Planning Commission as part of the primary environmental corridor that is located along the main stem of the Fox River and, consequently, preservation of these lands in essentially natural, open uses with ultimate public acquisition is recommended.

In recent years, concern has been mounting over the potential effects of changing land use patterns on flood flows and flood hazards in rapidly urbanizing portions of the Town. Methods for abating flood damages on flood-prone areas are being structured into regulatory ordinances. Foremost in importance among available methods are floodland zoning regulations based on definitive flood hazard data provided by federal, regional, and county studies. Soil survey data, as well as hydrological and hydraulic studies, are utilized in the delineation of floodlands along major stream channels. Waukesha County has the responsibility under state law for enacting a shoreland and floodland zoning ordinance for the Town of Genesee. Waukesha County adopted a Shoreland and Floodland Zoning Ordinance in 1970. This ordinance serves to further the maintenance of safe and healthful conditions; prevent and control water pollution; protect spawning grounds, fish, and aquatic life; control building sites, placement of structures, and land uses; protect against flood hazards; and preserve shore cover and natural beauty.

GROUND WATER RESOURCES

Groundwater is a vital natural resource of Waukesha County, which not only sustains lake levels and wetlands and provides the perennial base flow of the streams, but also is a major source of water supplies. In general, Waukesha County has an adequate supply of groundwater to support its growing population, agriculture, commerce, and a viable, diverse industry. However, overproduction and water shortages may occur in areas of concentrated development and intensive water demand, especially in the sandstone aquifer and in selected areas served by the shallow aquifers. The amount, recharge, movement, and discharge of the groundwater is controlled by several factors, including precipitation, topography, drainage, land use and soil limitations.

In 2002, the Southeastern Wisconsin Regional Planning Commission (SEWRPC) published Technical Report 37 entitled, Groundwater Resources of Southeastern Wisconsin. The Report provided baseline information regarding groundwater availability and use in southeastern Wisconsin.

Groundwater Aquifers

Groundwater occurs within three major aquifers that underlie the County. From the land's surface downward, they are: 1) the sand and gravel deposits in the glacial drift; 2) the shallow dolomite strata in the underlying bedrock; and 3) the deeper sandstone, dolomite, siltstone, and shale strata. Because of their proximity to the land's surface and hydraulic interconnection, the first two aquifers are commonly referred to collectively as the "shallow aquifer," while the latter is referred to as the deep aquifer. Within most of the County, the shallow and deep aquifers are separated by the Maquoketa shale, which forms a relatively impermeable barrier between the two aquifers. This shale layer is located in the eastern portion of the Town.

Groundwater Use

In 2003, the Wisconsin Legislature passed the Groundwater Protection Act (Act 310) which sets new standards and conditions for approval of high capacity wells by the Department of Natural Resources (DNR) and other requirements for the management of the use of groundwater. Under Act 310, groundwater management areas were established in Southeastern and Northeastern Wisconsin, most notably Waukesha and Brown Counties, respectively. Those areas were designated as such because declining groundwater levels have become a chronic concern.

Groundwater Availability

Recharge to groundwater is derived almost entirely from precipitation. Much of the groundwater in shallow aquifers originates from precipitation that has fallen and infiltrated within a radius of about 20 or more miles from where it is found. The deeper sandstone aquifers are recharged by downward leakage of water through the Maquoketa Formation from the overlying aquifers or by infiltration of precipitation in western Waukesha County

where the sandstone aquifer is not overlain by the Maquoketa Formation and is unconfined. On the average, precipitation annually brings about 32 inches of water to the surface area of the County. It is estimated that approximately 80 percent of that total is lost by evapotranspiration. Of the remaining water, part runs off in streams and part becomes groundwater. It is likely that the average annual groundwater recharge to shallow aquifers is 10 to 15 percent of annual precipitation.

Groundwater quality conditions can, through improper construction or management, be impacted by such sources of pollution on the surface as infiltration of storm water runoff, landfills, agricultural fertilizer, pesticides, manure storage and application sites, chemical spills, leaking surface or underground storage tanks, and onsite sewage disposal systems. The potential for groundwater pollution in the shallow aquifer is dependent on the depth to groundwater, the depth and type of soils through which precipitation must percolate, the location of groundwater recharge areas, and the subsurface geology. The Town of Genesee exhibits moderate to high potential for contamination of groundwater in the shallow glacial drift and Niagara aquifers (Map F).

Compared to the deep aquifer, the shallow aquifers are more susceptible to pollution from the surface because they are nearer to the source in terms of both distance and time, thus minimizing the potential for dilution, filtration, and other natural processes that tend to reduce the potential detrimental effects of pollutants. Isolated cases of contamination have been identified in portions of Waukesha County. Such problems can often be traced to runoff pollution sources, septic system discharges, and chemical spills or leakage.

In the far western portion of the County, there is no confining impermeable layer of rock between the glacial drift and the sandstone aquifer. This is cause for concern in planning for the future development of that area. Urban development adversely affects both the quantity and quality of recharge water, especially where the aquifer is overlaid by outwash, end moraine, or other highly permeable glacial material. An increase in the area of impervious surfaces such as pavement affects the recharge of the sandstone aquifer by diverting larger amounts of precipitation into surface drainage courses as runoff, rather than allowing it to percolate into the ground.

Water Supply Planning

In January 2005, the Southeastern Wisconsin Regional Planning Commission announced that it has initiated the conduct of a regional water supply study for the Southeastern Wisconsin Region. That study will lead to the preparation and adoption of a regional water supply system plan. The preparation of the regional water supply plan represents the third, and final, element of the SEWRPC regional water supply management program. The first two elements, comprising the development of basic groundwater inventories and the development of a groundwater simulation model for the Southeastern Wisconsin Region, were completed previously.

The regional water supply plan is intended to include the following major components:

- Development of water supply service areas and of forecast demands for water use.
- Development of recommendations for water conservation efforts to reduce water demand.
- Evaluation of alternative sources of supply, culminating in identification of recommended sources of supply for each service area and in recommendations for development of the basic infrastructure required to deliver that supply.
- Identification of groundwater recharge areas to be protected from incompatible development.
- Specification of any new institutional structures found necessary to carry out the plan recommendations.
- Identification of any constraints to development levels in sub areas of the Region that may emanate from water supply sustainability concerns.

The regional water supply plan will be based upon a design year of 2035. It is expected that the regional water supply plan will be completed by the end of 2007, with plan adoption and documentation following early in 2008.

Topography

The elevations above mean sea level in the Town of Genesee as shown on Map G range from the lowest elevations of 770-780 feet above mean sea level in the southeast corner of the Town (near Point Drive) to the highest elevations of 1060 to 1070 feet above mean sea level in the Kettle Moraine Estates area (Section 19).

Suitability for Nonmetallic Mining

The Town of Genesee has an abundant supply of sand, gravel, and stone. The geology around and in the Kettle Moraine is the most likely source areas for sand and gravel. In this area, the melting waters of the glacier were most active in sorting and depositing high-quality sand and gravel as kames, eskers, and outwash terraces. Ground moraine, common in other parts of the County, typically has not been sorted, as has the glacial outwash, and is generally not as well suited for commercial sand and gravel. The most high quality material for nonmetallic mining is concentrated in the western half of the Town along Grush Road, just north of the Village of North Prairie and in the Northwest corner of the Town (also known as the “Wolf Pit” (Map H).

Extractive land use in the Town totaled about 860 acres, or about 4.2 percent of the total area of the Town. This area consists primarily of lands devoted to the extraction of sand, gravel, and stone but also includes lands formerly used for such purposes and which lay idle. Areas devoted to extractive uses are scattered throughout Waukesha County.

Significant Geological Sites

A survey of scientifically and historically important bedrock geological sites in Southeastern Wisconsin was conducted by Dr. Joanne Klussendorf of the University of Illinois-Champaign-Urbana and Dr. Donald G. Mikulic of the Illinois State Geological Survey. Based on published literature, library archives of manuscripts, letters and unpublished reports, field notes and maps of earlier geologists and new field examinations, a list of significant geological sites known to have existed over the last 150 years, was compiled. The report identifies four (4) significant geological sites in the Town of Genesee. Of the sites, 3 are classified as sites of statewide or greater significance and one (1) as county wide or regional significance. Table III-1 presents the significant geological areas in the Town of Genesee.

Table III-1

SIGNIFICANT GEOLOGICAL AREAS IN THE TOWN OF GENESEE: 2005

Site Name	Classification Code[a]	Location	Description and Comments
Scuppernong Creek Spillway	GA-1	T6N, R18E Sections 5, 6 Town of Genesee	One of the finest examples of a glacial spillway remaining in the United States. Studied on a national and international basis. Associated with several other interlobate glacial features including kames, a kame delta, and kettles
Johnston Quarry and Kilns	GA-1	T6N, R18E Section 24 Town of Genesee	Two quarries excavated in Silurian Waukesha Dolomite in side of 20-foot-high bedrock hill. Contains fossil cephalopods. Listed on National Register of Historic Places
Kettle Moraine	GA-1	Western portion of the Town of Genesee	Interlobate moraine consisting of a complex system of irregular, knobby ridges, trending northeast-southwest across the western portion of the Region
Delafield Drumlin Fields	GA-2	T6N, R18E Sections 1, 2 Town of Genesee T7N, R18E	A very well developed example of a drumlin field

GA-1 identifies Geological Area sites of statewide or greater significance
GA-2 identifies Geological Area sites of countywide or regional significance

Source: Wisconsin Department of Natural Resources, Wisconsin Geological and Natural History Survey, and SEWRPC.

Environmental Corridors

Environmental Corridors are linear areas in landscape that contain concentrations of high-quality, high-value elements of the natural resource base (Map I). These resource elements include lakes; streams and rivers; wetlands; woodlands; prairies; wet, poorly drained and organic soils; wildlife habitat areas; and high relief topography. These environmental corridors are generally located along rivers and streams and surround the major water bodies within the Town of Genesee. The Environmental Corridors contain most of the best remaining woodlands, wetlands, wildlife habitats, flood lands, and steep-sloped areas. Environmental Corridors serve to maintain a high level of environmental quality in the Town

and will avoid the creation of problems such as flood damage, wet basements, and failing septic systems and damage to the environmental qualities of that natural resource base. Environmental Corridors are broken down into three (3) categories; Primary Environmental Corridors, Secondary Environmental Corridors and Isolated Natural Resource Areas.

Primary Environmental Corridors are at least 400 acres in size, two (2) miles in length, and 200 feet in width. Secondary Environmental Corridors are at least 100 acres in size and one mile in length. Secondary Environmental Corridors usually connect larger areas of Primary Environmental Corridors. Smaller concentrations of natural resources areas that are separated from Primary and Secondary Environmental Corridors, which are at least five (5) acres in size, are identified as Isolated Natural Resource Areas. Environmental corridors can further be classified into two categories, lowland corridors (conservancy) or upland corridors. A comparison of the two types of corridors suggest that lowland corridors (wetlands and floodplain) make up about 2,033 acres (43.5% of the primary environmental corridor area) and upland corridors, usually wooded areas, contains 2,639 acres (56.5% of the environmental corridor area). The Environmental Corridors should, to the maximum extent practicable, be preserved in essentially open spaces for resource preservation and limited recreational purposes.

Southeastern Wisconsin as a whole does not have an overabundance of natural assets relative to other areas of the State and, therefore, there is an almost critical need to maintain the integrity of the remaining primary environmental corridors. A total of approximately 5,651 acres of environmental corridor, or 28.6 percent of the total area of the Town, are recommended to be preserved and protected in an essentially open natural state.

There are three (3) areas of primary environmental corridors in the Town. The first is located in the southeast corner of the Town adjacent to Genesee Creek and the Spring Lake outlet at their confluence with the Fox River. This area is also adjacent to the Vernon Marsh, the majority of which is located in the Town of Mukwonago adjacent to the Town of Genesee to the south. The second primary environmental corridor is located in the northeast corner of the Town along Brandy Brook. The third corridor lies in the northwest corner of the Town just north of, and an extension of, the Kettle Moraine State Forest area (Map I).

While this plan recommends the protection of environmental corridors and isolated natural resource areas, it recognizes that certain development may be accommodated in such areas without jeopardizing their overall integrity. The plan recognizes that certain transportation and utility uses may of necessity have to be located within such areas and that limited residential and recreational uses may be accommodated in such areas. Guidelines pertaining to such development within environmental corridors are presented in Table III-2, contained in the planning standards section at the end of this chapter. Under these guidelines, residential development in environmental corridors would be limited to upland environmental corridors at an overall density of no more than one dwelling unit per five acres. Conservation subdivision designs are strongly encouraged where such rural density residential development is accommodated.

Under the comprehensive plan, the existing (year 2000) configuration of environmental corridors and isolated natural resource areas would be modified slightly. These modifications include minor deletions attendant to prior local commitments documented in adopted sewer service area plans, along with certain additions. The additions include currently farmed floodplains adjacent to existing environmental corridors within planned urban service areas that may be expected to revert to more natural conditions over time and become part of the corridor.

Natural Areas and Critical Species Habitat Sites

Natural areas were classified based upon the natural area classification system developed by the Wisconsin Department of Natural Resources. Three classification categories are used: NA-1, natural areas of Statewide or greater significance, which contain nearly complete and relatively undisturbed plant and animal communities, which are believed to resemble closely those of presettlement times; NA-2, natural areas of countywide or regional significance, which contain native biotic communities judged to be of lower than NA-1 significance, either because of evidence of a limited amount of human disturbance or because of limited size; and NA-3, natural areas of local significance, which have been substantially altered by human activities, but which provide refuge for native plant and animal species that no longer exist in the surrounding area because of land uses and associated activities.

As of 1994, there are three (3) natural areas identified in the Town of Genesee (Map J). Of the three (3) sites identified: two (2) are classified as an NA-II sites and one (1) is classified as an NA-III site. It is recommended that these areas be preserved and protected to the greatest extent possible through acquisition by public agencies and non-profit conservation organizations or where developed through protective zoning ordinances or conservation easements.

Wetlands

Wetlands perform an important set of natural functions, which make them particularly valuable resources lending to overall environmental health and diversity. Some wetlands provide seasonal groundwater recharge or discharge. Those wetlands that provide groundwater discharge often provide base flow to surface waters. Wetlands contribute to the maintenance of good water quality, except during unusual periods of high runoff following prolonged drought, by serving as traps, which retain nutrients and sediments, thereby preventing them from reaching streams and lakes. They act to retain water during dry periods and hold it during flooding events, thus keeping the water table high and relatively stable. They provide essential breeding, nesting, resting, and feeding grounds and predator escape cover for many forms of fish and wildlife. These attributes have the net effect of improving general environmental health; providing recreational, research, and educational opportunities; maintaining opportunities for hunting and fishing; and adding to the aesthetics of an area.

Wetlands pose severe limitations for urban development. In general, these limitations are related to the high water table, and the high compressibility and instability, low bearing capacity, and high shrink-swell potential of wetland soils. These limitations may result in flooding, wet basements, unstable foundations, failing pavements, and failing sewer and water lines. Moreover, there are significant and costly onsite preparation and maintenance costs associated with the development of wetland soils, particularly in connection with roads, foundations, and public utilities. Wetlands existing in 2000 are shown on Map K, covering 3,298 acres (16.1 percent) scattered throughout the Town.

Woodlands

Woodlands in the Town of Genesee, as well as, the Village of North Prairie and Village of Wales, are a significant feature of the natural resource base. The major stands of woodlands are located primarily on morainal hills and slopes, adjacent to streams, and in wetland areas.

Classified according to their primary values, woodlands are included in three specific groups: aesthetic, commercial, and other wooded areas. Aesthetic woodlands are defined as wooded areas 20 acres or more in size that have their highest potential value in a combination of multiple uses that include recreation, scenic and property value enhancement, watershed protection, and wildlife production. Commercial woodlands are wooded areas of 20 acres or more that have their highest potential value directed to the production of forest products and may also have aesthetic value. The third category of woodlands includes all wooded areas having an area of less than 20 acres. These parcels, because of their size, would probably not be economically feasible for commercial use and are generally pastured woodlots, which do not possess value as an aesthetic site. According to SEWRPC's Land Use Inventories between 1963 and 1995, upland woodland areas have actually decrease by only one (1) acre from 1,772 acres in 1963 to 1,771 acres in 1995. In 2000, woodlands actually account for 1,752 acres or 8.6 percent of the total area of the Town.

Wildlife Habitat

Wildlife, when provided with a suitable habitat, supplies the population with opportunities for certain scientific, education and recreational pursuits; comprises an integral component of the life systems which are vital and beneficial natural processes, and including the control of harmful insects and other noxious pests; the promotion of plant population; provides food sources, offers an economic resource for recreational industries; and serves as an indicator of environmental health. Waterfowl are numerous in the area along with deer and other wildlife species, which are present throughout the Town.

Outdoor Recreational Uses

In addition to the basic elements of the underlying and sustaining natural resource base, existing and potential sites having scenic, historic, and recreational value should be considered in any comprehensive land use planning effort. Although these elements are not strictly a part of the natural resource base, they are so closely linked to the underlying resource base that it was considered desirable to include them. Map L presents the location

and extent of these additional elements within the Town in graphic form. As of 1976, there were 15 existing parks or recreation and related open space areas in the Town, of which 11 were in public ownership and 4 in private ownership. Included in these existing park sites were public and private school sites which were considered to have recreational value.

Approximately 316 acres, or approximately 2 percent of the total area of the Town, are presently in park or open space use. A majority of these sites have been developed for public use. All the sites except two are considered to be active use recreational areas; that is, areas which have been improved or developed with facilities for active recreational use. The sites which are not considered as being for active use include the Retzer Nature Area and the Carroll College conservancy area, which are preserved in an essentially natural open state.

The potential park sites shown on Map L are those identified in the Waukesha County Development Plan Park and open space element potential. This inventory identified a total of 180 potential park sites, totaling some 37,364 acres, in Waukesha County. Of these, 16 sites, encompassing approximately 4,783 acres, are located within the Town of Genesee. Two of these sites are considered to have regional significance and are also considered to be two of the 10 best sites in the County. Of the remaining 14 sites, four were rated as low-value, seven as medium-value, and three as high-value for the type of park development recommended. The potential and existing major park and open space sites identified on Map L should be protected from inadvertent destruction as the result of urban land use or highway facility development.

An inventory of notable historical or cultural sites and structures within the Region indicates that the Town of Genesee has 13 such sites and structures, of which only one is presently officially marked as such. These types of sites may be broadly classified as natural, structural, or cultural in character. All the sites within the Town are cultural or structural sites; there are no natural feature sites. The one marked site in the Town is the Saylesville settlement site located on CTH X south of STH 59. It was officially marked by the Waukesha County Historical Society in 1966. The locations of the other sites are not shown in order to prevent their destruction and encourage their preservation as irreplaceable parts of the Town's cultural heritage (Appendix A).

Climate

Its midcontinental location gives the Town of Genesee a continental climate that spans four seasons, one season succeeding the other through varying time periods of unsteady transition. Summers, generally the months of June, July, and August, are relatively warm, with occasional periods of hot, humid weather and sporadic periods of cool weather. The cold winter, accentuated by prevailing frigid northwesterly winds, generally spans the months of December, January, and February, but may in some years include parts of November and March. Autumn and spring in the Town are transitional times of the year between the dominant seasons and usually periods of widely varying weather conditions. Temperatures are extremely varied, and long periods of precipitation are common in autumn and spring. Some of the more pronounced weather events include tornadoes and major snowmelt occurrences.

Air temperatures within Waukesha County are subject to extreme seasonal variation. Data on temperature observations in Waukesha County, recorded at the City of Waukesha, indicate variations in temperature from a low in January with a mean daily temperature of 18.7 degrees to a high in July with a mean daily temperature of 71.8 degrees. The growing season, which is defined as the number of days between the last freeze in the spring and the first freeze in the fall, averages about 155 days in Waukesha County. The last freeze in the spring normally occurs during the first two weeks in May and the first freeze in the fall normally occurs in mid-October.

Precipitation in Waukesha County, in the form of rain, sleet, hail, and snow, ranges from gentle showers to destructive thunderstorms. The more pronounced weather events can cause major property and crop damage, inundation of poorly drained areas, and lake and stream flooding. Daily precipitation data for observations recorded at the City of Waukesha record that the total average annual precipitation observed is slightly more than 32 inches, expressed as water equivalent. Monthly averages range from a low of 1.2 inches in February to a high of 3.70 inches in June. Snowfall and sleet averages approximately 41 inches annually, with January receiving the most snow and sleet, at about 11 inches.

Prevailing winds in the Town are northwesterly in the late fall and winter, northeasterly in the spring, and southwesterly in the summer and early fall. Wind velocities are less than five miles per hour (mph) for about 15 percent of the year, between five and 15 mph for about 60 percent of the year, and more than 15 mph for about 25 percent of the year.

Air Quality

The Clean Air Act requires the U.S. Environmental Protection Agency (EPA) to set national ambient air quality standards (NAAQS) for six criteria pollutants (carbon monoxide, lead, nitrogen dioxide, particulate matter, ozone, and sulfur oxides) which are considered harmful to public health and the environment. Areas not meeting the NAAQS for one or all of the criteria pollutants are designated as nonattainment areas by the EPA. In areas where observed pollutant levels exceed the established NAAQS and which are designated as “nonattainment” areas by the EPA, growth and development patterns may be constrained. For example, major sources of pollutants seeking to locate or expand in a designated nonattainment area, or close enough to impact upon it, must apply emission control technologies. In addition, new or expanding industries may be required to obtain a greater than one-for-one reduction in emissions from other sources in the nonattainment area so as to provide a net improvement in ambient air quality. Nonattainment area designation may therefore create an economic disincentive for industry with significant emission levels to locating or expanding within or near the boundaries of such an area. In order to eliminate this disincentive and relieve the potential constraint on development, it is necessary to demonstrate compliance with the NAAQS and petition EPA for redesignation of the nonattainment areas.

The Southeastern Wisconsin Region currently meets all but the ozone NAAQS, and the EPA has designated a single six-county ozone nonattainment area within the Region which is made up of Kenosha, Milwaukee, Ozaukee, Racine, Washington, and Waukesha Counties.

Ozone is formed when precursor pollutants, such as volatile organic compounds and nitrogen oxides, react in the presence of sunlight. The ozone air quality problem within the Region is a complex problem because ozone is meteorologically dependant. In addition, the ozone problem in the Region is believed to be attributable in large part to precursor emissions which are generated in the large urban areas located to the south and southeast and carried by prevailing winds into the Region. The ozone problem thus remains largely beyond the control of the Region and State and can be effectively addressed only through a multi-state abatement effort. Over the past decade, the combination of local controls and offsets implemented within and external to the Region, along with national vehicle emissions control requirements have resulted in a significant improvement in ambient air quality within the Region as well as nationally, and projections of future emissions indicate a continued decline in precursor emissions and a continued improvement in air quality.

Cultural Resources

Historic sites in the Town of Genesee have important recreational, educational, and cultural value. A variety of inventories and surveys of sites that possess architectural, cultural, and archaeological value have been conducted by the Wisconsin Historical Society and by various units and agencies of government in Waukesha County. Certain sites of known historic significance in Waukesha County are listed on the National Register of Historic Places. In 2005, there were 25 sites listed on the National Register for the Town of Genesee. Historic sites in the Town of Genesee listed on the National Register of Historic Places in 2005 are presented in Appendix A.

It is important to note that the potential exists for the identification of additional sites of historical significance which either are eligible for listing on the National Register or which are potentially eligible for listing but would require additional evaluation. In 2005, there was 1 eligible historic site in the Town of Genesee that was listed on the National Register of Eligible Historic Sites in the Town of Genesee. In addition, there are 2 sites in the Town of Genesee that are potentially eligible but would require additional evaluation. Historic sites in the Town of Genesee that are potentially eligible but would require additional evaluation are presented in Appendix B.

Cultural Based Facilities

Adding to the quality of life in the Town of Genesee is the presence of cultural based facilities such as museums and community theaters. The Town of Genesee has the “Ten Chimneys Foundation” located at S42 W31610 Depot Road. It is the former estate of Alfred Lunt and Lynn Fontanne. It is open for public tours and specialized programs for theatre, arts, and art education professionals.

Fire Departments

The Town of Genesee is serviced by two (2) Fire Departments. The Wales/Genesee Fire Department is voluntary and services the northern half of the Town of Genesee including all of Sections 21 and 22. The Wales/Genesee Fire Department has a full-time Fire Chief. The Village of North Prairie Fire Department is also voluntary and services the south half of the Town of Genesee, except Sections 21 and 22 (Map M).