

COMMUNITY CHARACTERISTICS
AND RESOURCES

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Location, population, economic conditions and environmental characteristics directly affect a community's past growth patterns. These resources also form the basis for future growth and development, as the interaction of these resources with the local political and socio-economic climate, along with a community's relationship to the global economy, will shape the community's future. The following section reviews past socio-economic trends and examines the environmental and community characteristics of Waushara County and the Village of Hancock and the Towns of Deerfield, Hancock, Oasis and Plainfield.

POPULATION

Population change is determined by two factors, natural increase and net migration. Natural increase is calculated by subtracting the number of deaths from the number of births for a given time period. Net migration is, in theory, the number of people leaving an area (out-migrants) subtracted from the number of people moving into an area (in-migrants). Since we do not track people's movement in this country, migration is usually calculated by subtracting the natural increase in population from the total population. The remainder is considered to be the number of net migrants. A negative number indicates that more people moved out of your community than moved into your community. A positive number indicates that more people moved into your community than moved out of your community.

Since 1960, natural increase has accounted for less than 3% of Waushara County's growth. As a result, population growth in Waushara County has been heavily influenced by net migration rates. Since 1950, net migration rates for Waushara County have ranged from a low of -8.62 percent in the 1950's to a high of 23.76 percent in the 1970's. Population growth patterns in Waushara County generally reflect those fluctuations, with the slowest rate of growth occurring in the 1950's, when the county's population declined by 423 residents and the highest rate of growth occurring during the 1970's, when the county's population increased by 3,721 residents (Table 1-1).

It is difficult to make meaningful numerical comparisons, when discussing populations of different sizes. A change of 100 people may not make a noticeable difference in a population of several thousand, but will make a big difference in the makeup of a population that is under a thousand in number. As a result, the remainder of the discussion regarding population change will refer to the percent change in population or subpopulation. For your convenience, the numerical change in total population for Waushara County and Group C communities is provided in Table 1-1. Actual population counts can be found in Appendix B.

Following the County's growth pattern, all Group C communities lost population during the 1950's, with the Town of Deerfield and the Village and Town of Hancock suffering the heaviest losses (Table 1.1). The Town of Hancock's population declined by 26% in the 1950's, while the Village of Hancock and the Town of Deerfield lost 18% of their population. The Towns of Oasis and Plainfield fared better, losing only six percent of their population during the 1950's. Waushara County's population as a whole declined by three percent (Figure 1-1).

Table 1-1. Numerical Change in Population, 1950 to 2000

	1950-1960	1960-1970	1970-1980	1980-1990	1990-2000
V. Hancock	-82	37	15	-37	81
T. Deerfield	-77	27	78	9	175
T. Hancock	-126	-8	80	41	64
T. Oasis	-25	-18	57	-14	16
T. Plainfield	-27	-2	127	-45	4
Waushara County ^a	-423	1,298	3,731	859	3,681

Source: U. S. Census, 1950, 1960, 1970, 1980, 1990, 2000.

The Towns of Hancock, Oasis and Plainfield continued to lose population during the 1960's, with population losses ranging from -0.5% to -5%. Population increased in the T. Deerfield by 8%, while the Village of Hancock and Waushara County experienced a 10% increase in population during this decade.

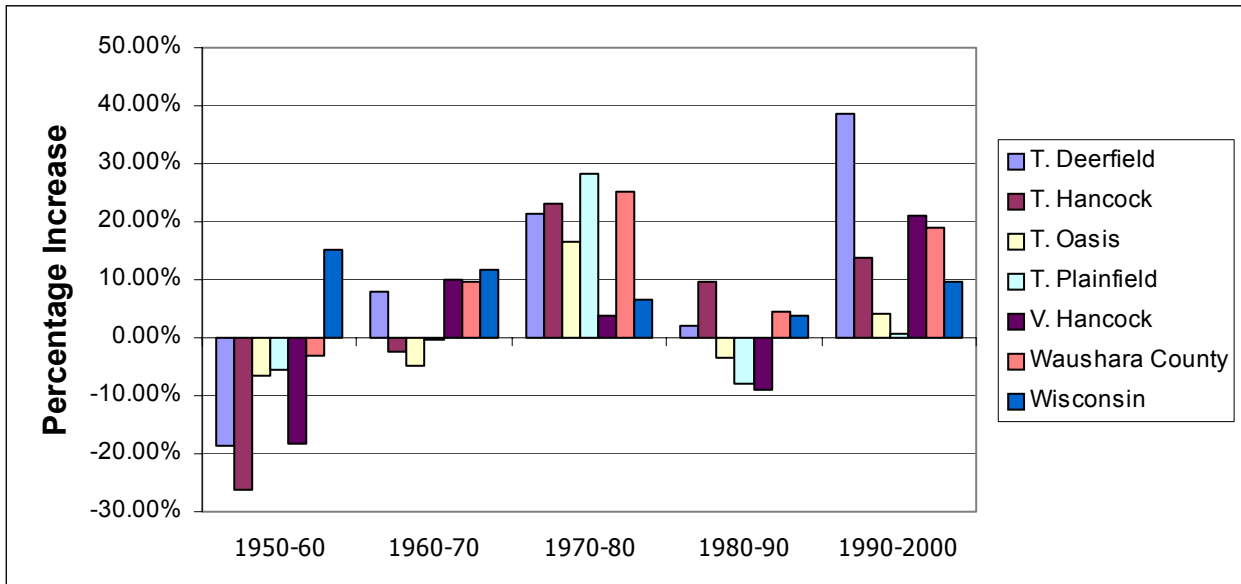
Waushara County and Group C communities experienced population growth during the 1970's, with growth rates ranging from 28% in the Town of Plainfield to just under 4% in the Village of Hancock. The county as a whole grew by 25%. The Towns of Hancock, Oasis, Plainfield and Waushara County experienced their highest rate of growth during this time period, with the Town of Hancock's population growing by 23%, Town of Oasis by 16%, Town of Plainfield by 28% and Waushara County by 25%. The Town of Deerfield also experienced significant population growth, 21%.

Growth rates varied in the 1980's. While the county as a whole grew by almost 5%, three of the five Group C communities, the Village of Hancock and the Towns of Oasis and Plainfield lost population during this time period. Population losses ranged from -9% in the Village of Hancock to -3% in the Town of Oasis. The Towns of Hancock and Deerfield gained population in the 1980's. The Town of Hancock's population grew by just under 10%, while the Town of Deerfield grew by two percent.

All five communities experienced population growth in the 1990's, with the Town of Deerfield experiencing the highest rate of growth. The Town of Deerfield and the Village of Hancock experienced their highest rate of growth during this time period, growing by 38% and 21%, respectively. Growth in the remaining communities ranged from 14% in the Town of Hancock to 1% in the Town of Plainfield. The County grew by 19%.

Population growth at the state level outpaced Waushara County and all five communities in the 1950's and 1960's, then slowed to a rate below that of Waushara County and all communities but the Village of Hancock in the 1970's. The state's population growth dropped to 4 percent in the 1980's, then increased to ten percent in the 1990's (Figure 1-1). The state experienced its highest rate of growth during the 1950's, growing at 15 percent. After 1960, the rate of population growth in the state declined steadily to 4 percent in the 1980's, then increased to 9.6 percent in the 1990's.

Figure 1-1. Comparative Population Growth, 1950 to 2000



Overall, Waushara County experienced the highest rate of growth. Between 1950 and 2000, Waushara County’s population grew by 66% (Appendix B. Table B-1). During this same period, Wisconsin’s population grew by 56% and the Town of Deerfield’s population grew by 51%. The other four communities grew at much slower rates. The Town of Plainfield’s population grew by 12% between 1950 and 2000, and the Town of Hancock’s population grew by 11%. The Town of Oasis and the Village of Hancock experienced the smallest rates of population growth during this time period, growing by 4% and 3%, respectively.

WI Department of Administration (DOA) estimates indicate that, at the beginning of the decade, population growth in Waushara County is outpacing growth in Group C communities and the State. Between 2000 and 2003, DOA estimates that Waushara County’s population grew by 7% (1,590 persons). During this time period, estimates place the Town of Deerfield’s population growth at 4% (24 persons). The Towns of Hancock (15 new residents) and Plainfield (16 new residents) grew by 3%, while the State’s estimated population growth is 2%. Population in the Village of Hancock and Town of Oasis stayed relatively constant, with the Village losing 1 resident, and the Town of Oasis losing 3 residents.

Population Projections

Population projections are typically based on historical growth patterns and the composition of the current population base. When evaluating population projections, one should be aware that it is extremely difficult to predict population change for small communities. Even minor changes in birth, death or migration rates can significantly impact community growth rates. Population growth is also difficult to predict in counties, such as Waushara, which are heavily dependent on migration. Migration rates may vary considerably based on various “push” and “pull” factors both within and outside of the county. Population projections in this plan were developed using historical population trends and anticipated impacts from the Redgranite Correctional Facility.

Based on past trends and anticipated demographic changes, The Town of Deerfield is the only community in the planning area expected to grow throughout the projection period. Population in the remaining four communities is expected to peak in 2005, then decline through the 2020 (Appendix B, Table B-2). Anticipated population growth rates range from a loss of 19 percent in the Town of Plainfield (approximately 100 residents), to a gain of 17 percent for the Town of Deerfield (just over 100 residents). The Towns of Deerfield and Hancock are the only two communities anticipated to experience a positive growth rate during the projection period. While Deerfield is expected to experience considerable growth, the Village and Town of Hancock's growth rates are expected to remain relatively stable. The Town of Hancock is estimated to grow by 2% (around 10 residents), while the Village of Hancock's population is estimated to decline by just under two percent (7 residents). The Town of Oasis is expected to lose 15% of its population (around 60 residents). Waushara County's population is expected to increase by ten percent between 2000 and 2020 (over 2,300 residents). However, current projection estimates indicate that all of the growth will occur in the first decade, with Waushara County's population peaking in 2010, then declining through 2020.

The Wisconsin Department of Administration (DOA) is currently reviewing and revising population projections for counties and communities in light of the 2000 Census information. A preliminary set of population projections through 2020 has been released for review. Those projections are currently subject to revision. Staff have reviewed those preliminary projections, and noted that the population projections released by the state for Group C communities and Waushara County are within 0% to 8% of East Central's projections for 2020, which indicates that the state also expects the same growth trends as East Central.

Population projections for the state as a whole have been modified by DOA and expanded through 2030. Wisconsin's population is expected to increase throughout the projection period. Although the state's population grew by 10% in the 1990's, it is anticipated that the state's population growth will slow to 6% in the 2000's and 2010's, then to 5% through 2030. The decrease in population growth reflects a decrease in natural increase rates due to an aging population and an anticipated reduction in net migration rates due to the slowdown in the economy, expected slow recovery and a decrease in international migration due to tighter controls placed after September 11, 2001.

Population by Age Cohort

The age structure of a population impacts the service, housing and transportation needs of a community. Communities with growing school age populations may need to expand school facilities. Communities with growing elderly populations may need to expand health care and transportation services.

Wisconsin's population is aging. The median age rose by three years between 1990 and 2000. Over the next thirty years, as the babyboomer generation ages, it is anticipated that the population age 65 and older will increase statewide by 89% by 2030. At the same time, a need will still exist to educate children and train the next workforce. As a result, communities may find it difficult to balance the needs of both the elderly and the young.

In 1990, the state's median age was 32.9 years. Median age for Group C communities ranged from a low of 31.1 years in the Town of Plainfield to a high of 41.2 years in the Town of Deerfield. Median age for the remainder of the Group C communities ranged from 35.2 in the Town of Oasis to 37.8 years in the Town of Hancock. Waushara County's median age was 38.6 years. The working age population, which includes individuals age 20 to 64, comprised over 50% of the population for all 7 jurisdictions. The Village of Hancock had the smallest share of its population in the working age cohort, 51%, while the state of Wisconsin had the largest share of its population in the working age cohort, 57% (Appendix B, Table B-3).

The next largest segment of the population varied by community. In the Village of Hancock and Town of Deerfield, persons age 65 and older comprised the next largest segment of the population. For the other 4 jurisdictions, the school age cohort (individuals age 5 to 19) comprised the second largest segment of the population. The Village of Hancock had the highest share of its population in the elderly cohort, 20%. The elderly comprised 19% of the Town of Deerfield's and Waushara County's population. In the remainder of the jurisdictions, the share of population age 65 and older varied from 18% in the Town of Hancock to 10% in the Town of Plainfield.

The Town of Oasis had the largest share of its population in the school age cohort, 25%, while the Town of Deerfield had the lowest share, 17%. In the remainder of jurisdictions, the school age segment of the population ranged from 24% in the Town of Plainfield to 19% in the Village of Hancock. School age children comprised 20% of Waushara County's population in 1990 and 22% of the state's population.

The smallest segment of the population by far for all jurisdictions was the pre-school age cohort. Individuals under the age of five comprised less than 10 percent of the population in all seven jurisdictions. Pre-school age children ranged from 6% of the population in Waushara County to just under 10% of the population in the Town of Plainfield. Seven and a half percent of the state's population was comprised of individuals less than 5 years old. Since companies consider the preschool age population to be an indicator of the potential pool of future workers, the small number of children in this age cohort may detract from the state's and this area's ability to attract new companies to the area.

Between 1990 and 2000, the median age increased in all seven jurisdictions. The Town of Plainfield experienced the largest increase in median age during this time period. Between 1990 and 2000, the median age in the Town of Plainfield increased from 31.1 years to 36.8 years. The Town of Deerfield experienced the smallest increase in median age. Median age in the Town of Deerfield increased by less than 3 years, rising from 41.2 years to 44.1 years. Even though the Town of Deerfield had the smallest increase in median age, it continued to have the highest median age of all seven jurisdictions. In 2000, the state had the lowest median age, 36 years. Median age in the remainder of the communities ranged from 42.8 years in the Town of Hancock to 39.4 years in the Town of Oasis.

The working age cohort continued to comprise the largest segment of the population in all jurisdictions in 2000 (Appendix B, Table B-4). In 2000, the working age population as a percentage of total population ranged from a high of 58% in the Town of Deerfield and the State of Wisconsin to a low of 51% in the Village of Hancock. Between 1990 and 2000, the working age cohort declined in the Town of Oasis from 55% of the population to 54% of the

population. It remained stable at 51% of the population in the Village of Hancock and increased as a share of the population in the other three jurisdictions. By 2000, the working age cohort comprised approximately 57% of the population in the Towns of Hancock and Plainfield and 55% in Waushara County.

The largest growth between 1990 and 2000 occurred in the school age population for all jurisdictions, except for the Towns of Oasis and Plainfield, which already had a relatively large portion of their population in the school age category, compared to the other jurisdictions. As a result of this increase, the second largest cohort for all jurisdictions in 2000 was the school age population. School age children comprised 27% of the population in the Town of Oasis, 26% in the Town of Plainfield, 24% in the Village of Hancock, 23% in the Town of Hancock and 20% in the Town of Deerfield. Twenty-one percent of Waushara County's population was school age and 22% of the state's population fell in that age cohort.

Although all communities but the Town of Hancock experienced an increase in the number of elderly residents, the share of population age 65 and older declined in all jurisdictions, except for the Towns of Oasis and Plainfield. As a result, by 2000, persons age 65 and older comprised less than 20% of the population in all jurisdictions, except for the Village of Hancock, where persons age 65 and older comprised 20% of the population. Elderly residents comprised 19% of the Town of Deerfield and Waushara County's population. Approximately 15% of the population in the Towns of Hancock and Oasis was age 65 or older. Thirteen percent of the state's population was age 65 or older. The Town of Plainfield has the smallest share of its population in the elderly cohort, just under thirteen percent.

The number of pre-school age children declined in all jurisdictions between 1990 and 2000. As a result, the smallest age cohort by far in 2000 was the pre-school age cohort. Pre-school age children comprised less than seven percent for all jurisdictions. The state had the highest share of population in the pre-school age cohort, just over six percent. Pre-school age children comprised approximately five percent of the population in the Village of Hancock and Waushara County, 4% in the Towns of Plainfield, Oasis and Hancock, and just under 3% in the Town of Deerfield. Numerically within Group C communities, the number of pre-school age children present in 2000 ranged from 16 in the Town of Oasis to 23 in the Town of Plainfield.

Figure 1-2 shows the 2000 population distribution for the Group C communities and Waushara County. As evident on the graphs, the largest cohort for all jurisdictions include individuals born following WW II or the "baby boom" generation, followed by their children, the "echo boom". Together, these two age cohorts comprise over 50% of the population in Group C communities and Waushara County. The two smallest age cohorts are the 20 to 24 year old cohort and the 85 and older cohort. Persons age 85 and older comprise less than 3% of the population in Group C communities and Waushara County. The share of the population age 20 to 24 years varies from 5% of the population in the Town of Plainfield to less than 2% in the Town of Deerfield. Numerically, within Group C communities the number of individuals age 85 and older in 2000 varied from 4 persons in the Town of Oasis to 11 persons in the Village of Hancock. The number of individuals age 20 to 24 varied from 9 in the Town of Deerfield to 17 in the Town of Plainfield.

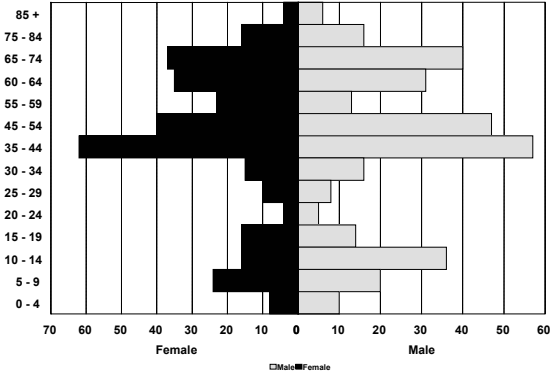
In all cases, it appears that as children are graduating from high school, they are leaving the area. The relatively large 35 to 74 age cohort suggests that the county and these communities

are currently attracting working age individuals and early retirees. Migration by age data indicates that individuals in Waushara County that reach age 75 are migrating out of the area, probably in search of more appropriate housing and easier access to healthcare and other services.

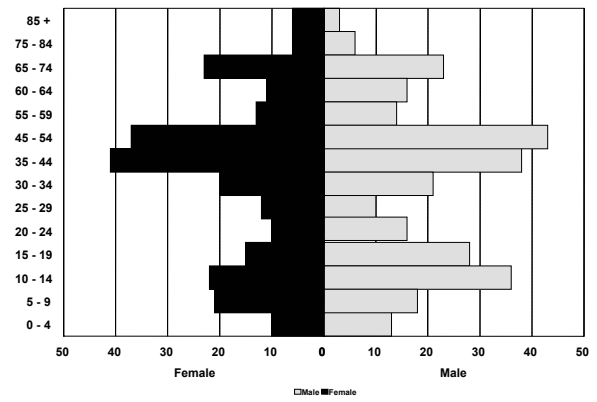
These different migration patterns impact communities. Baby boomers are now reaching retirement age. The sheer size of this generation will result in a large increase in the elderly population, which will impact housing markets and influence service sector demands nationwide. If current migration trends continue, Group C communities can expect to see continued in-migration in the 35 to 74 age cohort and continued out-migration in the 20 to 24 and 75 and older age cohorts. As the baby boom generation reaches their mid-70's, Group C communities and Waushara County can expect to see a decline in this population, as these individuals leave the area in search of more appropriate housing and greater access to health care and other services. Group C communities and Waushara County may very well continue to attract individuals age 35 to 74. However, the pool of these potential in-migrants will be smaller. As a result of the relative size and anticipated shifts in these two populations, Group C communities should expect to see their total population decline, which is indicated in the out years of the projection period.

Figure 1-2. Population by Age Cohort, 2000

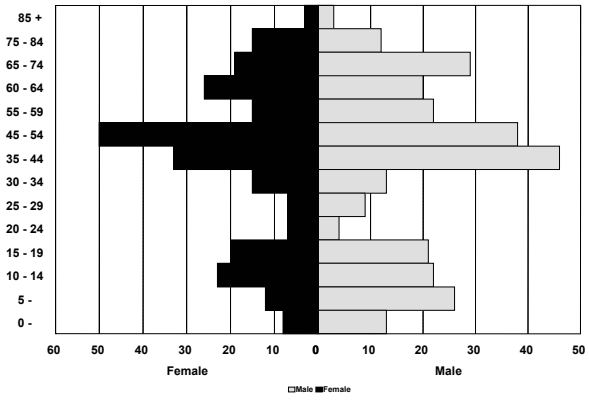
Town of Deerfield



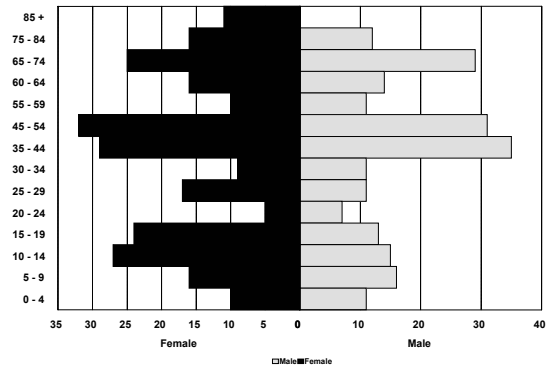
Town of Plainfield



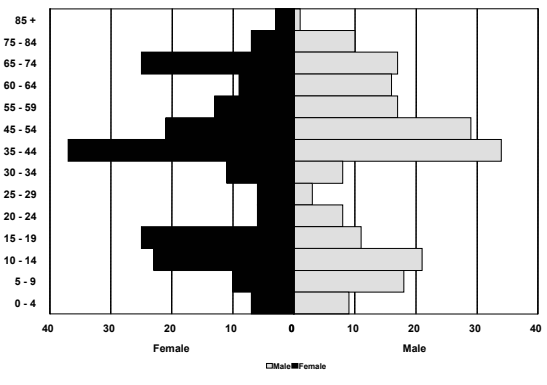
Town of Hancock



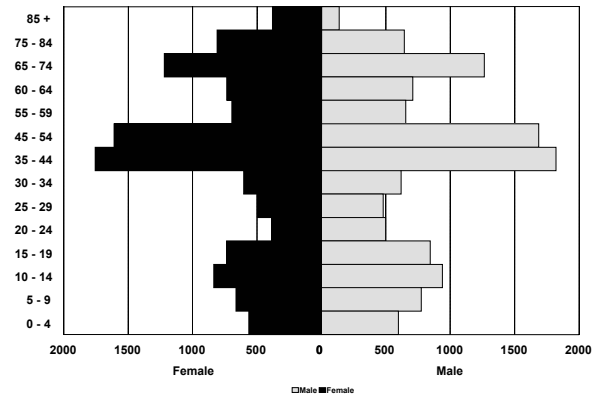
Village of Hancock



Town of Oasis



Waushara County



HOUSING CHARACTERISTICS

The availability, affordability and quality of housing are key ingredients of a healthy community. The age and type of dwelling units, occupancy characteristics and housing stock values reflect growth trends, economic conditions, household formation rates and housing preferences within communities.

Age of Occupied Dwelling Units

The age of occupied dwelling units reflect the historic demand for additional or replacement housing units, thereby providing historic information regarding household formation rates, migration trends and natural disaster impacts. In 1990, the largest share of housing stock for all jurisdictions was 40 years and older, indicating that the majority of growth for all jurisdictions occurred prior to 1950. The second largest category for age of dwelling units was for dwelling units built between 1970 and 1979, which is the period the peak of the baby boomers began entering the housing market. Other fluctuations in building rates varied by community.

In 1990, the Village of Hancock had the smallest share of newer housing stock. Just over 25 percent (25.64%) of the Village's occupied housing stock was built during the preceding 20 years. The Town of Hancock had the largest share of newer housing stock, 50%. The share of housing stock less than 21 years of age in the remaining Group C communities ranged from 39% in the Town of Plainfield to 48% in the Town of Deerfield. Forty-five percent of Waushara County's housing stock was less than 21 years of age, compared to 39% for Wisconsin Appendix B, Table B-5).

The Village of Hancock had the largest share of housing stock more than 40 years old, 55%, while the Town of Plainfield had the smallest share, 28%. The share of housing stock 40 years and older in the remaining communities varied from 45% in the Town of Oasis to 34% in the Town of Hancock. Approximately 36% of the housing stock in Waushara County and the state was built prior to 1950.

Between 1990 and 2000, variable growth in the housing market shifted the relative age of the occupied housing stock. During this time period, the Village of Hancock moved from having the smallest share of newer housing stock in 1990 to having the largest share of newer housing stock in 2000. In 2000, 43.2% of the Village's occupied housing stock was less than 21 years old. The share of housing stock less than 21 years of age in the remaining Group C communities ranged from 43.1% in the Town of Hancock to 28% in the Town of Plainfield. Thirty-four percent of Waushara County's housing stock was less than 21 years of age, compared to 27% for Wisconsin (Appendix B, Table B-6).

The share of occupied housing stock more than 40 years old decreased in the Village of Hancock and the Towns of Deerfield and Oasis and increased in Waushara County, the State and the remaining Group C communities. In 2000, the share of occupied housing stock 40 years and older ranged from 46% in the Village of Hancock to 34% in the Town of Plainfield. Thirty-nine percent of the County's occupied housing stock was more than 40 years old, compared to 44% of the State's occupied housing stock.

Structural Type

Residential units by structural type is one indication of the degree of choice in the housing market. Availability of units by type is indicative not only of market demand preferences, but also of zoning laws, developer preferences and access to public services. Current state planning goals encourage communities to provide a wide range of choice in housing types.

Single family residential units comprise the vast majority of housing stock in all 7 jurisdictions (Appendix B, Table B-7). In 1990, the Town of Oasis had the highest share of single family housing stock, 95%; the state had the lowest share, 68%. The share of single family housing stock varied in the remainder of Group C communities from 94% in the Town of Hancock to 76% in the Town of Plainfield. Almost 81% of Waushara County's housing stock was comprised of single family units in 1990. The majority of the remaining housing stock in the Group C communities and Waushara County consisted of mobile homes, trailers and other dwelling units.

Duplex and multi-family units comprised less than two percent of the housing stock in the Group C communities and less than 5% in Waushara County. At the state level, multi-family units comprised 26% of the housing stock, while mobile homes, trailers and other units only comprised six percent of the housing stock.

The limited number of duplex and multi-family units in Group C communities likely reflects the rural nature of Group C communities and Waushara County. Urban services, such as public sewer and water, are needed to support these types of development. Within Group C, the Village of Hancock is the only community with the level of services needed to support multi-family housing.

Between 1990 and 2000, the total number of dwelling units increased in all 7 jurisdictions. The Town of Deerfield experienced the largest increase in total dwelling units. Between 1990 and 2000, the number of dwelling units in the Town of Deerfield increased by 127 units or 37% percent. The increase in total dwelling units in the remaining Group C communities ranged from 43 units in the Town of Hancock to 2 units in the Town of Plainfield¹. Waushara County experienced a 12% increase in housing stock, while the state experienced a net gain of 13% in its housing stock.

The largest increases occurred in single family housing stock (Figure 1-3). The Town of Deerfield experienced a 46% increase in the number of single family homes between 1990 and 2000. The number of single family homes increased by 18% in the Town of Plainfield, 9% in the Town of Hancock, 6% in the Town of Oasis and 5% in the Village of Hancock. The number of single family homes increased by 14% in Waushara County and 15% in Wisconsin.

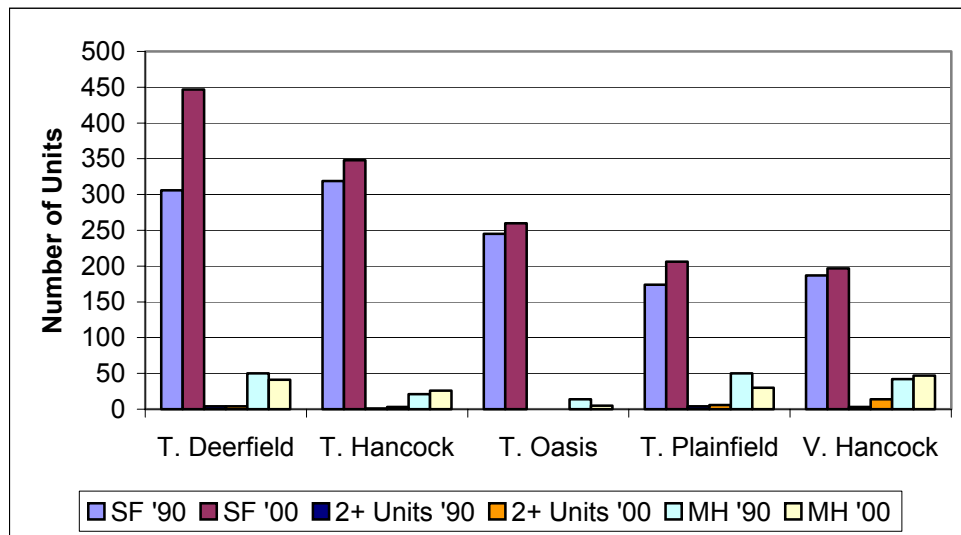
The number of duplex and multi-family units remained unchanged in the Towns of Deerfield and Oasis. All other jurisdictions experienced an increase in the number of duplex and multi-family units between 1990 and 2000. The number of duplex and multi-family units increased by 8% in Waushara County and 14% in Wisconsin. The number of duplex and multi-family units in the Village of Hancock rose from 3 units in 1990 to 14 units in 2000. The number of duplex and

¹ The actual increase in dwelling units in the Town of Oasis is unclear. Based on the 100% count 2000 Census data, the Town of Oasis lost 1 unit between 1990 and 2000. However, sample data from the 2000 Census and building permit data from the WI Dept. of Administration indicates that the Town of Oasis may have gained 6 to 8 units.

multi-family units increased from 1 to 3 in the Town of Hancock and from 4 to 6 in the Town of Plainfield.

The only two jurisdictions to see an increase in mobile homes, trailers and other units were the Village and Town of Hancock. Between 1990 and 2000, mobile homes, trailers and other units increased by 12% in the Village of Hancock and 24% in the Town of Hancock. The number of mobile homes, trailers and other units decreased by 40% in the Town of Plainfield and 18% in the Town of Deerfield. In the Town of Oasis, the number of mobile homes, trailers and other units decreased from 14 units in 1990 to 5 units in 2000, a 64% decline. Mobile homes, trailers and other units declined by 3% in Waushara County and 19% in Wisconsin.

Figure 1.3. Units in Structure, 1990 and 2000



By 2000, the balance of units in structure had shifted slightly, but single family units continued to dominate the housing stock. In 2000, the Town of Oasis had the highest percentage of single family homes, 98%. Single family homes comprised 92% of the housing stock in the Town of Hancock, 91% in the Town of Deerfield, 85% in the Town of Plainfield and 76% in the Village of Hancock. Almost 83% of housing units in Waushara County and 69% of housing units in the state were single family homes. The Village of Hancock had the largest share of mobile homes, trailers and other units in 2000, 18%, while the Town of Oasis had the smallest share of mobile homes, trailers and other units, 2%. Mobile homes, trailers and other units comprised 12% of the total units in the Town of Plainfield, 8% in the Town of Deerfield and 7% in the Town of Hancock. Mobile homes, trailers and other units comprised 13% of the county's housing stock and just over 4% of the state's housing stock. Duplex and multi-family units comprised less than 3% of the housing stock in all of the Group C communities, except the Village of Hancock, where duplex and multi-family units comprise 5% of the total housing stock. Four percent of Waushara County's housing stock was comprised of duplex and multi-family units, compared to 26% for the state (Appendix B, Table B-8).

Occupancy Status

Occupancy status reflects the utilization of available housing stock. The total number of housing units include renter-occupied, owner-occupied and various classes of vacant units, including those which are available for sale or rent and those which are seasonal, migrant, held for occasional use or other units not regularly occupied on a year-round basis.

In 1990, the state had a higher occupancy rate (89%) than either the Group C communities or Waushara County (Appendix B, Table B-9). Of the Group C communities, the Town of Plainfield had the highest occupancy rate, 84%. Occupancy rates in the remaining jurisdictions ranged from 71% in the Village of Hancock to 49% in the Town of Deerfield. Sixty-two percent of Waushara County's housing stock was occupied year round.

Between 1990 and 2000, the occupancy rate increased for all seven jurisdictions. The state continued to have a higher occupancy rate (90%) than the remaining 6 jurisdictions. The Town of Plainfield continued to have the highest occupancy rate of all Group C communities. In 2000, 86% of all housing units in the Town of Plainfield were occupied, compared to 76% in the Village of Hancock, 68% for Waushara County, 59% in the Town of Oasis and 55% in the Town of Hancock. The Town of Deerfield continued to have the lowest occupancy rate, 54% (Appendix B, Table B-10).

In both time periods, the majority of occupied housing stock was owner occupied, rather than renter occupied in all seven jurisdictions. Between 1990 and 2000, the share of housing that was owner-occupied increased in all seven jurisdictions. The Town of Plainfield had the highest share of owner-occupied units. In 1990, 65% of the Town of Plainfield's housing stock was owner-occupied. By 2000, the ratio of owner-occupied housing units to total housing units had increased to 73% in the Town of Plainfield. This increase in owner-occupancy reflected a 14 unit decline in the number of rental occupied housing units and a decrease of 5 vacant housing units.

The Town of Deerfield had the lowest ratio of owner-occupied housing units to total housing units of all jurisdictions in 1990. Between 1990 and 2000, the Town of Deerfield's share of owner-occupied housing stock rose from 44% of all housing units to 50% of all housing units. This increase in owner-occupancy reflected a slight decrease in the number of rental occupied housing units (2 units) and a decrease in the share of vacant housing units. In the Town of Deerfield, the number of vacant units increased by 42 between 1990 and 2000, but the increase in the number of vacant units was smaller than the increase in the number of owner-occupied units (87 units). By 2000, the Town of Hancock had the lowest share of owner-occupied housing (48%) of all seven jurisdictions. The Town of Hancock's share of owner-occupied housing stock rose from 44% in 1990 to 48% in 2000, as the largest increase in number of units occurred in the owner-occupied category (33 units). Their increase in owner-occupancy resulted in a very slight decrease in the share of rental housing units and a decrease in the share of vacant units.

The ratio of owner-occupied units to total units remained virtually unchanged in the Village of Hancock, rising from just under 55% in 1990 to just over 55% in 2000. The Village of Hancock was the only jurisdiction to see an increase in the number and share of rental units between 1990 and 2000. The ratio of rental units to total units increased in the Village from 16% in 1990 to 20% in 2000 as the Village gained 15 new rental units. As with the other jurisdictions, the

ratio of vacant units to total units declined during this time period, as the increase in owner-occupied units was greater than the increase in vacant units.

In the Town of Oasis, owner-occupied units as a share of total units increased from 45% in 1990 to 52% in 2000. This increase in owner-occupancy not only reflected a decrease in the share of rental and vacant housing units, but also a decrease in the number of rental and vacant units. The ratio of owner-occupied units increased at the county level from 50% in 1990 to 57% in 2000 and at the state level from 59% in 1990 to 61% in 2000. Both jurisdictions saw a decrease in the share of rental housing units and vacant units to total units.

Vacancy Status

Vacant housing units are units that are livable, but not currently occupied. The vacancy status of units available for purchase or rent is considered to be a strong indicator of housing availability. Generally, when vacancy rates are below 1.5 percent for owner-occupied units and 5 percent for renter-occupied units, housing is considered to be in short supply. Communities with vacancy rates at or above 1.5% for owner-occupied and 5% for renter-occupied units are generally considered to have an adequate supply of available housing. However, when small communities are doing needs assessments or considering development proposals, they should also consider other information such as the actual number of vacant units, condition of the units, market demand, etc.

For example, in 2000, the Town of Hancock had a rental vacancy rate of 7.41%, which is higher than the standard used to indicate adequate supply. In reality, however, the Town of Hancock only had two vacant rental units. If the demand for rental units within the Town of Hancock is less than two units a year, the units are in good condition, affordable based on the current wage rates and have the adequate square footage and layouts to meet the needs of potential renters, then the Town has an adequate number of rental units. If, however, the units are not affordable, need updating or repair and/or the Town has a higher demand for rental units, etc. then the Town should consider increasing the supply of rental units, regardless of the vacancy rate.

This is a factor that all Group C communities should keep in mind. Based on 1990 and 2000 Census data, all five communities had an owner-occupied vacancy rate above standard for both years. However, the largest number of houses any community had for sale during either year was 7. The largest number of units for rent during either year was 6.

In 1990, vacancy rates for owner-occupied and rental units were well above the standard in the Village of Hancock and Waushara County, indicating that the available supply of housing was likely more than adequate within the Village and County (Appendix B, Table B-11). The Village of Hancock had a 3.15% vacancy rate for owner-occupied units and 16.22% vacancy rate for rental units. The high rental vacancy rate is, in part, due to the small number of rental units in the Village. In 1990, the Village of Hancock only had 6 units available for rent.

Waushara County's vacancy rates were 2.50% for owner-occupied units and 8.53% for rental units. Vacancy rates for owner-occupied units in the Town of Deerfield were also very high, 3.16%. The Town of Deerfield had a rental vacancy rate of 5.00%, indicating that an adequate

number of rental units were available in 1990. The Towns of Hancock and Oasis had adequate vacancy rates for owner-occupied units, 1.99% and 1.71%, respectively that year. However, the rental vacancy rates were below standard in both towns, indicating a very tight rental market. In 1990, the Town of Hancock's rental vacancy rate was 3.70%. The Town of Oasis had no vacant rentals. The housing market was tight for both owner-occupied and rental housing in the Town of Plainfield, indicating a need for additional housing. In 1990, the Town of Plainfield's vacancy rates were 0.68% for owner-occupied housing stock and 2.33% for rental housing stock. The state's homeowner (1.20%) and rental (4.70%) vacancy rates were just below standard.

Between 1990 and 2000, owner-occupied vacancy rates dropped for all jurisdictions, except for the Town of Plainfield and the state. Rental vacancy rates declined in the Village of Hancock, Town of Deerfield and Waushara County, and rose in the Towns of Hancock and Plainfield and the State. The Town of Oasis continued to have no units available for rent (Appendix B, Table B-12).

In 2000, owner-occupied and rental vacancy rates in the Village and Town of Hancock, Town of Plainfield and Waushara County indicated that these jurisdictions likely had an adequate number of units for rent and sale. In 2000, vacancy rates in the Village of Hancock were 2.84% for owner-occupied units and 5.77% for rental units. In the Town of Hancock, 1.63% of houses were for sale and 7.41% of rental properties were available to rent. At the county level, 1.89% of owner-occupied units were vacant and for sale and 6.76% of rental units were available for rent. The Town of Deerfield had a more than adequate owner-occupied vacancy rate (2.86%) in 2000, indicating that the town has an adequate number of owner-occupied units. However, no units were available for rent, indicating a serious shortage in rental properties within the Town of Deerfield. The owner-occupied vacancy rate in the Town of Oasis was 1.49%, indicating an adequate supply of houses for sale. However, the Town of Oasis continued to have no available rental units.

Almost 3% (2.96%) of houses in the Town of Plainfield were for sale in 2000, indicating an oversupply of owner-occupied housing stock. The rental vacancy rate was also high, 6.90%, indicating an adequate supply of rental housing stock. In real numbers, however, 2 rental units were listed for rent and 5 houses were listed for sale in the 2000 Census. While those units may have been more than sufficient to meet demand, the Town should carefully consider market factors also. With vacancy rates of 1.20% and 5.60%, respectively, the state had an adequate supply of both owner-occupied and rental units.

The overwhelming majority of vacant units in all jurisdictions were seasonal units or vacant units held for occasional or other use. Seasonal units were especially significant in the Towns of Deerfield, Hancock and Oasis. In 1990, vacant units comprised 51% of the total housing stock in the Town of Deerfield, 48% in the Town of Hancock and 47% in the Town of Oasis. Ninety-seven to 98% of vacant units in these three towns were held for seasonal or occasional use. Vacant units comprised 29% of the total housing stock in the Village of Hancock in 1990 and 16% of the housing stock in the Town of Plainfield. Eight-five percent of the village's vacant units and 95% of the Town of Plainfield's vacant units were held for seasonal and occasional use. Vacant units comprised 38% of Waushara County's housing stock and 11% of the state's housing stock. Seasonal and units for occasional use comprised 94% of the county's vacant units and 81% of the state's vacant units.

Between 1990 and 2000, the number of vacant units increased in the Towns of Deerfield and Hancock and in the State of Wisconsin. The share of vacant units to total units, however, declined in all 7 jurisdictions. The Towns of Deerfield, Hancock and Oasis continued to have the largest share of vacant units. In 2000, vacant units comprised 46% of the total housing stock in the Town of Deerfield, 45% in the Town Hancock and 41% in the Town of Oasis. Vacant housing units comprised 24% of the Village of Hancock's housing stock and 14% of the Town of Plainfield's housing stock. Seasonal and units held for occasional use continued to comprise 97 to 98% of the vacant housing stock in the Towns of Deerfield, Hancock and Oasis. Eighty-nine percent of the village's vacant housing stock and 78% of the Town of Plainfield's housing stock was seasonal or held for occasional use in 2000. Vacant units comprised 32% of Waushara County's housing stock and 10% of the state's housing stock in 2000. Seasonal units and units for occasional use comprised 94% of the county's vacant units and 76% of the state's vacant units. The decrease in the share of vacant units to total units indicate that some seasonal units were converted from seasonal to year-round occupied units during this time period. That was especially true in the Village of Hancock, Town of Oasis and Waushara County, where the increase in the total number of households was greater than the increase in the total number of housing units.

While the vacancy status of units available for rent or sale is considered a strong measure of housing availability, it provides no indication of housing choice, conditions or affordability. A community may have an adequate percentage of units available for rent or sale, but housing styles may be limited, the price of those units may be beyond the reach of the average citizen or the available housing stock may not meet the needs of the prospective household. Communities, which have a very small number of units, also need to consider the market demand for owner-occupied or rental units within their community.

Housing Stock Value

In 1990, median housing values of owner-occupied housing units in Group C Communities ranged from \$26,300 in the Village of Hancock to \$50,400 in the Town of Deerfield. The median housing value for owner-occupied units in Waushara County was \$45,300. The state had the highest median value for owner-occupied housing, \$62,100.

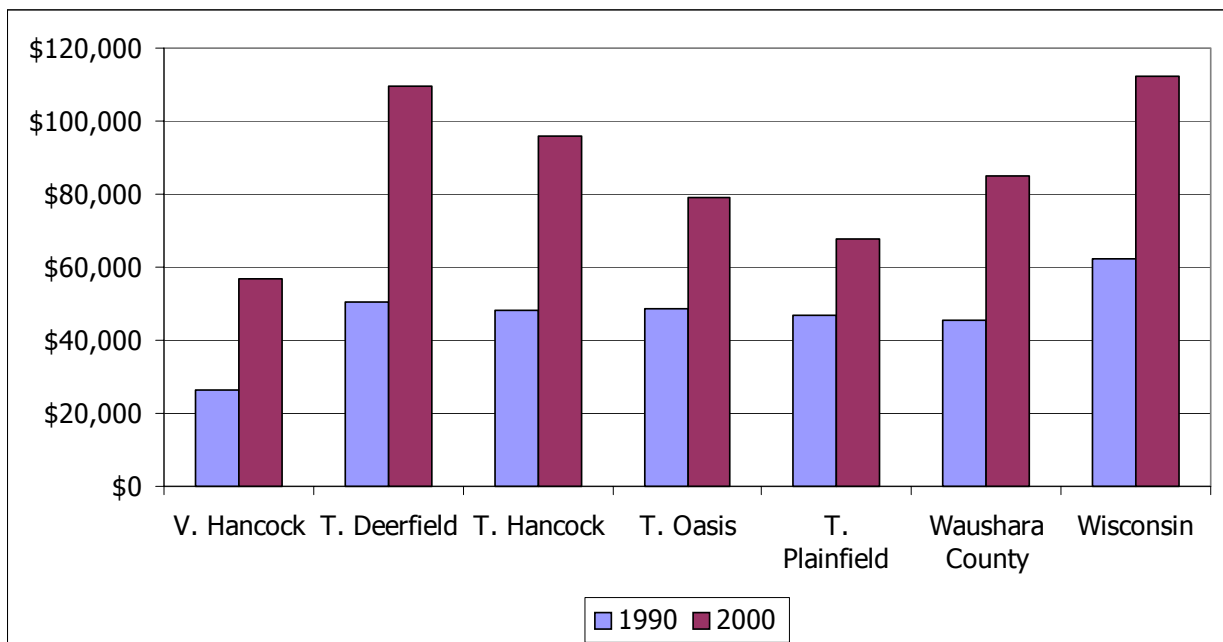
Between 1990 and 2000, median housing values rose substantially for all seven jurisdictions (Figure 1-4). Median housing values more than doubled in the Town of Deerfield and the Village of Hancock. The Town of Plainfield experienced the smallest increase in median housing values, 46%. By 2000, the median value of owner-occupied units in Group C communities ranged from \$56,900 in the Village of Hancock to \$109,600 in the Town of Deerfield. Median housing values for the remainder of Group C communities were as follows: Town of Hancock, \$96,100; Town of Oasis, \$79,200; and Town of Plainfield, \$67,900. The median housing value for owner-occupied units in Waushara County was \$85,100. The state had the highest median value for owner-occupied units, \$112,200.

The Village of Hancock not only had the lowest median housing value, but the village also had the tightest range of housing values and the largest percentage of owner-occupied housing stock valued below \$50,000 of all seven jurisdictions. Thirty-nine percent of the Village of Hancock's owner-occupied housing stock was valued at less than \$50,000. The remainder of owner-

occupied housing stock in the village was valued between \$50,000 and \$150,000. The state and Waushara County had the widest range of housing values, with owner-occupied housing values ranging from less than \$50,000 to over one million dollars in value (Appendix B, Table B-13).

The Towns of Deerfield and Oasis had the largest range of housing values of the Group C communities. In these two towns, housing values ranged from less than \$50,000 to \$500,000. The Town of Deerfield also had the smallest percentage of owner-occupied housing stock valued at less than \$50,000 of all seven jurisdictions. In the Town of Deerfield, only 6% of owner-occupied units were valued at less than \$50,000. The most common range of housing values in the Town of Deerfield was \$100,000 and \$149,999. Forty percent of homes in Deerfield fell in this category. The least common value range for housing in Deerfield was for those units valued between \$300,000 and \$499,999. Only 2% of Deerfield’s housing stock fell within this category. The Town of Oasis had a larger share of houses below \$100,000 and above \$300,000 than the Town of Deerfield. In 2000, almost 8% of homes in the Town of Oasis’s were valued at less than \$50,000, and almost 4% of homes in Oasis were valued between \$300,000 and \$499,999. The most common range of housing values in the Town of Oasis was between \$50,000 and \$99,999. Sixty-six percent of homes in the Town of Oasis fell within those value ranges.

Figure 1-4. Median Housing Values for Specified Owner-Occupied Units



In the Towns of Hancock and Plainfield, owner-occupied housing values ranged from less than \$50,000 to \$299,999. Barely 8% of the Town of Hancock’s housing stock was valued at less than \$50,000 in 2000. Almost 48% of the Town of Hancock’s housing stock was valued between \$50,000 and \$99,999. Only 3% of the Town Hancock’s owner-occupied housing stock was valued between \$200,000 and \$299,999. Next to the Village of Hancock, the Town of Plainfield had the second highest share of owner-occupied units valued at less than \$50,000, 24%. Forty-five percent of the Town of Plainfield’s housing stock was valued at between \$50,000 and

\$99,999, 16% at \$100,000 to \$149,999, and 14% at \$150,000 to \$199,999. Only two percent of the Town of Plainfield's owner-occupied housing stock was valued between \$200,000 to \$299,999.

Housing Costs

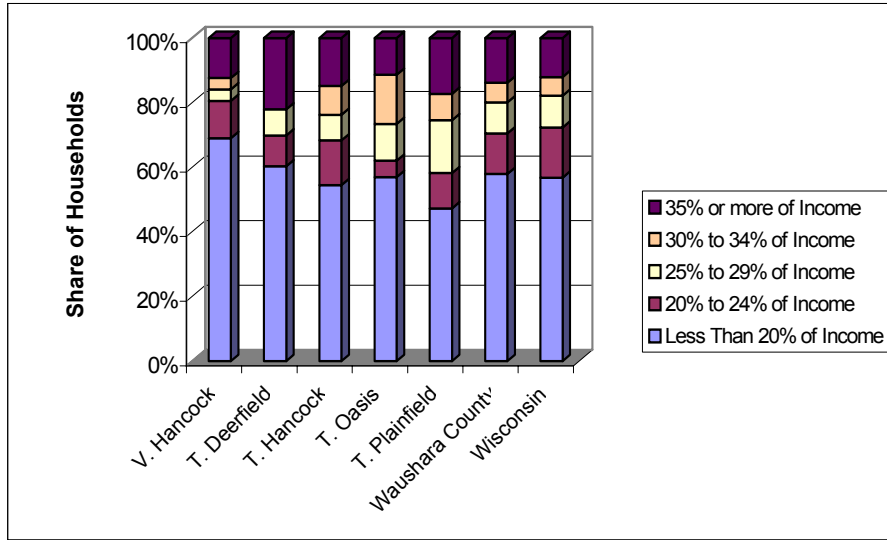
The relationship between housing costs and household income is an indicator of housing affordability, which is gauged by the proportion of household income expended for rent or home ownership costs. Rental costs include contract rent, plus the estimated average monthly cost of utilities, fuel and insurance. Owner costs include payments for mortgages, real estate taxes, fire hazard and flood insurance on the property, utilities and fuels. In 1989, the standard for determining whether rent or home ownership costs comprised a disproportionate share of income was set at 30 percent of gross household income. Households spending more than 30 percent of their income for housing may be at risk of losing their housing should they be confronted with unexpected bills, unemployment of one or more workers per household or assume a high debt load.

Based on the thirty percent ratio, housing costs within Group C communities were affordable for most residents in 2000 (Figure 1-5). However, Group C residents were more likely to pay a disproportionate share of their income for housing, compared to the county or the state. The Village of Hancock was the only Group C community where homeowners were more likely to find affordable housing. In 2000, 16% of homeowners in the village paid a disproportionate share of their income for housing, compared to 18% of state residents and 20% of county residents (Appendix B, Table B-14).

The Town of Oasis had the greatest problem with owner-occupied housing affordability. Almost 27% of homeowners in the Town of Oasis paid more than 30% of their income for housing. Twenty-six percent of homeowners in the Town of Plainfield paid a disproportionate share of their income for housing, compared to 24% of homeowners in the Town of Hancock and 21% of homeowners in the Town of Deerfield.

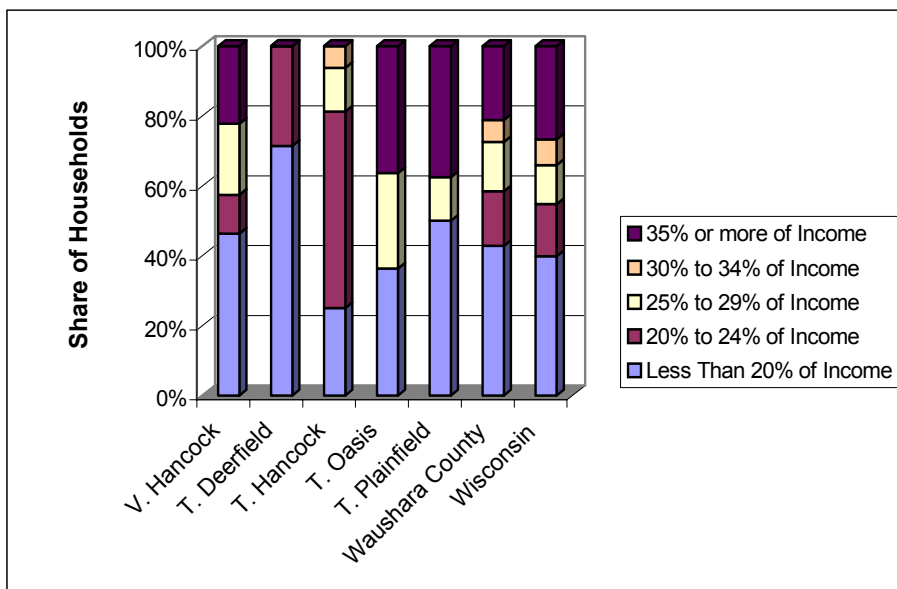
At the state and county level, renters were far more likely to pay a disproportionate share of their income for housing than homeowners (Appendix B, Table B-15). In 2000, 23% of renters in Waushara County paid a disproportionate share of their income for housing, compared to 20% of homeowners. At the state level, 32% of renters paid a disproportionate share of their income for housing compared to 18% of homeowners (Figure 1-6).

Figure 1-5. Homeowner Affordability



Census results in Group C communities were mixed. In three of the communities, the Towns of Deerfield, Hancock and Oasis, renters were more likely to find affordable housing than homeowners. None of the renters in Deerfield reported paying a disproportionate share of their income for housing and only 5% of renters in the Town of Hancock reported paying a disproportionate share of their income for housing. Rent was not affordable for 21% of renters in the Town of Oasis.

Figure 1-6. Rental Affordability



Renters were more likely than homeowners to pay a disproportionate share of their income for housing in the Village of Hancock and the Town of Plainfield. Twenty-two percent of renters in the village paid a disproportionate share of their income for housing, compared to 16% of homeowners. Renters in the Town of Plainfield had the greatest difficulty finding affordable rental housing of all the Group C communities. Twenty-six percent of renters in the Town of Plainfield reported paying a disproportionate share of their income for housing.

Housing Conditions

Census data generally used for determining housing conditions includes units lacking complete plumbing facilities and overcrowding. Complete plumbing facilities include hot and cold piped water, flush toilet and a bathtub or shower. Housing units are classified as lacking complete plumbing facilities when any of the three facilities are not present. Overcrowding is defined as more than one person per room in a dwelling unit.

In 2000, the Town of Oasis was the only one of the seven jurisdictions to list no overcrowded units. According to the 2000 Census, 2% of units in Waushara County and the State of Wisconsin were overcrowded. Overcrowding in the remainder of Group C communities ranged from 6% in the Village of Hancock to 1% in the Town of Hancock. The Town of Plainfield was the only Group C community to report units that were overcrowded and lacked complete plumbing facilities. One and a half percent of housing units in the Town of Plainfield were overcrowded and lacked complete plumbing facilities. Less than one percent of units in Waushara County and the State were overcrowded and lacked complete plumbing facilities (Appendix B, Table B-16). Since the Village of Hancock and Town of Plainfield had an adequate supply of rental units in 2000 and a relatively high percentage of renters paying a disproportionate share of their income for housing, it is likely that the overcrowding resulted from a mismatch between household incomes and the price of rental units.

Household Size

Household size is one determinant of future demand for housing. Declining household size generally indicates a need for more housing units, even if no general growth in population occurs. Declining household size can result from a number of factors, adult children leaving their parent's home, divorce, a death in the family, fewer births per household or a split in nonfamily households. Increasing household sizes may result from more births per household or two or more households merging through marriage or a need or desire for companionship, to increase housing affordability, accessibility or provide care for elderly parents or children.

Between 1990 and 2000, average household size declined in the Group C towns, Waushara County and the State of Wisconsin. Average household size increased in the Village of Hancock.

In 1990, average household sizes varied from 2.86 persons per household in the Town of Oasis to 2.33 persons per household in the Village of Hancock (Appendix B, Table B-17). Between 1990 and 2000, the Town of Oasis experienced the largest decrease in household size. Household size decreased in the Town of Oasis from 2.86 in 1990 to 2.66 in 2000. In spite of that decline, in 2000 the Town of Oasis continued to have the largest average household size of

all seven jurisdictions. The Town of Deerfield has the smallest average household size in 2000, 2.39 persons per household.

In 1990, two person households comprised the largest share of households in all jurisdictions, except the Village of Hancock, where one person households outnumbered two person households. The smallest household size category for both years was the 6 or more persons per household category. Six or more person households comprised 6% of all households in the Town of Plainfield, and less than 5% of all households in the remaining jurisdictions in 1990. Between 1990 and 2000, the number of 6 or more persons per household increased in the Village and Town of Hancock, the Town of Oasis, Waushara County and Wisconsin, and declined in the Towns of Deerfield and Plainfield. In 2000, six or more person households comprised almost 8% of all households in the Town of Hancock, 5% of households in the Town of Plainfield, and less than 5% of all households in the remaining jurisdictions.

All jurisdictions experienced an increase in the number of two person households between 1990 and 2000. As a result, two person households comprised the largest share of households in all jurisdictions in 2000 (Appendix B, Table B-18). In Group C communities, two person households comprised over 37% of all households. The share of two person households ranged from almost 38% of all households in the Village of Hancock to 52% of all households in the Town of Deerfield. Two person households comprised 42% of Waushara County households and 35% of Wisconsin households.

The Town of Plainfield was the only jurisdiction to experience a decline in the number of one person households between 1990 and 2000. The number of one person households increased in the remaining jurisdictions. In 2000, one person households were the second largest household size category. One person households as a share of all households ranged from 19% in the Town of Plainfield to 30% in the Village of Hancock. Many of these households were comprised of individuals age 65 and older. Sixty-two percent of one person households in the Village of Hancock were occupied by individuals age 65 or older, compared to 56% in the Town of Oasis, 50% in the Town of Deerfield and 37% in the Town of Hancock. The Town of Plainfield had the lowest share of one person households age 65 and older, 34% (Appendix B, Table B-19). The relatively large share of one person households age 65 and older may indicate a need for additional elderly services. It is also possible that many of these housing units may come on the market during the planning period, as individuals relocate for better access to services or more appropriate housing, pass on or double up for increased social interaction and housing affordability.

Household Projections

Between 2000 to 2020, the Town of Deerfield is the only Group C community whose population is expected to grow throughout the projection period. In the remaining four communities, population is expected to peak in 2005, then decline through 2020. In all five Group C communities, the household growth rate is expected to be more positive than the population growth rate during this time period.

Between 2000 and 2020, the number of households is expected to increase in the Town of Deerfield and the Town and Village of Hancock. The number of households in the Towns of

Oasis and Plainfield is expected to peak in 2005, then decline through 2020. However, the decrease in households in these two communities is expected to be considerably less than the decrease in population. The more positive growth patterns in household formation rates is due to the expected decrease in the number of persons per household. As the population in Group C communities age, it is anticipated that the number of persons per household will continue to decline, thereby generating a demand for housing that exceeds the anticipated population growth rate.

Between 2000 and 2020, the number of households in the Towns of Deerfield and Hancock is expected to increase by 29% and 12%, respectively. The number of households in the Village of Hancock is expected to peak in 2010, then decline through 2020 for an overall increase in households of 5.5%. The number of households in the Towns of Oasis and Plainfield are expected to decrease by 7% and 12%, respectively between 2000 and 2020 (Appendix B, Table B-20).

At the county level, Waushara's population is expected to grow by 10%, while the number of households is expected to increase by 17%. Household projections for the state of Wisconsin anticipate that the number of households in the state would increase by 20% between 2000 and 2020.

ECONOMIC CHARACTERISTICS

A review of socioeconomic conditions provides community decision makers with insights into the current economic health of the area. Factors such as educational attainment and employment by sector provide an indication of the educational level and skills of the labor force. Employment rates and income provide measures of economic well being or stress. Examining these characteristics identifies the economic strengths and weaknesses within a community; and helps provide direction for future economic growth and development.

Educational Attainment

In 2000, residents of Waushara County, Wisconsin and all Group C communities had higher levels of formal education in 2000 than they were in 1990. In 1990, high school graduation rates in Group C communities ranged from 55% in the Village of Hancock to 75% in the Town of Oasis (Appendix B, Table B-21). At least 16% of persons age 25 and older had some form of post secondary education. The state had the largest share of population with some education beyond high school, 42%. The Village of Hancock had the least, 16%.

Between 1990 and 2000, high school graduation rates increased in all jurisdictions, except the Town of Oasis. In the Town of Oasis, high school graduation rates among individuals age 25 and older decreased by less than one percent. In 2000, high school graduation rates in Group C communities ranged from 70% in the Village of Hancock to 85% in the Town of Hancock (Appendix B, Table B-22). All jurisdictions experienced an increase in the share of individuals age 25 and older with post secondary education. The state continued to have the largest share of population with some education beyond high school, 51%, while the Village of Hancock continued to have the smallest share, 28%. The percent of individuals age 25 and older with post secondary education in the remaining Group C communities ranged from 31% in the Town

of Hancock to 41% in the Town of Deerfield. In 2000, 36 percent of Waushara County residents age 25 and older had post secondary education.

Labor force

As a result of more women entering the labor force and changes in the population structure, the labor force has grown faster than the general population. Data from the U.S. Bureau of Census indicate that the labor force for the state, Waushara County and all Group C communities, except the Town of Deerfield, grew faster than the population between 1990 and 2000. The Town of Deerfield, which experienced the largest increase in population age 65 and older, saw its population grow by 39% between 1990 and 2000, while its labor force grew by 36%. The Village of Hancock experienced the largest growth in labor force during this time period, 64%, while the Town of Oasis experienced the smallest growth in its labor force, 12%.

In 1990, employment rates for individuals age 16 and older by community ranged from 85% in the Village of Hancock to 97% in the Town of Deerfield (Appendix B, Table B-23). Ninety-three percent of Waushara County's labor force was employed, compared to 95% for the state. Women were more likely to be employed than men in the Village of Hancock, the Town of Deerfield, Waushara County and the state. In the remaining communities, men had a higher employment rate than women. The Town of Deerfield had the highest employment rate for women, 98%, while the Town of Hancock had the lowest, 81%. Employment rates for men ranged from a high of 97% in the Town of Oasis to a low of 84% in the Village of Hancock.

By 2000, employment rates had risen in all jurisdictions, except the Town of Deerfield. Between 1990 and 2000, the employment rate in the Town of Deerfield declined from just under 97% in 1990 to just over 95% in 2000. Employment rates by community ranged from 92% in the Town of Plainfield to 97% in the Town of Oasis (Appendix B, Table B-24). Women were more likely to be employed by men in the Towns of Deerfield, Hancock and Oasis and Waushara County and the state of Wisconsin. In the remaining communities, men had a higher employment rate than women. The Town of Oasis had the highest employment rate for women, 98%, while the Town of Plainfield had the lowest, 92%. Employment rates for men ranged from 93% in the Town of Hancock to 96% in the Town of Oasis.

Income

In 1989, median household income and median family income were higher at the state level than for Waushara County and any of the Group C communities (Appendix B, Table B-25). In 1989, Wisconsin's median household income was \$29,442, compared to \$21,888 for Waushara County.

Median household incomes for Group C communities ranged from \$12,917 in the Village of Hancock to \$25,375 in the Town of Oasis. Median family income in Group C communities ranged from \$21,591 in the Village of Hancock to \$28,750 in the Town of Plainfield, compared to \$26,042 for Waushara County and \$35,082 for Wisconsin.

In contrast, the Town of Oasis had the highest per capita income of all seven jurisdictions, \$13,537. Per capita income for the remaining Group C communities ranged from \$7,351 in the Village of Hancock to \$11,194 in the Town of Deerfield. The state's per capita income was \$13,276, compared to the county's \$10,408.

Between 1989 and 1999, all seven jurisdictions experienced an increase in all three types of income. The amount of increase varied by jurisdiction and income type. The Town of Hancock had the largest increase in median family income. The Village of Hancock experienced the largest increase in median household and per capita income. The Village also had the third highest increase in median family income. In spite of that fact, the Village continued to have the lowest median household, median family and per capita incomes. The state had the lowest increase in median household income of all jurisdictions. The Town of Plainfield experienced the slowest growth in median family income and the Town of Oasis experienced the lowest growth in per capita income.

In 1999, the state continued to have the highest median family and per capita incomes. However, the Town of Hancock had the highest median household income, \$43,889. Median household income in the remaining jurisdictions ranged from \$35,341 in the Village of Hancock to \$43,791 for the state of Wisconsin. Median family income ranged from \$36,250 in the Village of Hancock to \$52,911 at the state level, and per capita income ranged from \$14,889 in the Village of Hancock to \$21,271 in Wisconsin.

Poverty Status

The poverty level is determined by the U.S. Census Bureau, and based on current cost of living estimates, as adjusted for household size. In 2000, the poverty threshold for a family of four with two children was a household income of \$17,463. In 1999, the Town of Plainfield had the highest percentage of residents living below poverty, 12%. The share of residents in poverty in the remaining Group C communities ranged from 10% in the Village of Hancock to 4% in the Town of Hancock (Appendix B, Table B-26). Nine percent of county residents lived below the poverty level in 1999, as did 8% of state residents. Poverty rates for families ranged from 4% in the Town of Oasis to 11% in the Town of Plainfield. Five percent of families in Waushara County lived below the poverty level, as did six percent of state residents.

In all jurisdictions but the Towns of Hancock and Oasis, children were more likely to live in poverty than other residents. No children were reported living in poverty in the Towns of Hancock and Oasis in 1999. In the remaining six jurisdictions, the share of persons less than 18 years old and living in poverty in 1999 ranged from 13% in the Town of Deerfield to 49% in the Town of Plainfield (Appendix B, Table B-27).

Poverty rates for persons age 65 and older were higher than the general population in the Village and Town of Hancock, the Town of Oasis and Waushara County and lower than the general population in the Towns of Deerfield and Plainfield and the state of Wisconsin. Poverty rates for persons age 65 and older ranged from 4% in the Town of Plainfield to 14% in the Village of Hancock.

Employment by Industrial Sector

Employment by industrial sector has an impact on earned income. Typically, individuals who work in manufacturing, mining and high order service industries, such as finance, insurance and real estate (FIRE), health care and other professional services earn more than individuals who

work in low order service sector industries such as retail, clerical and personal services. The United States, as a whole, has been experiencing a shift in employment away from manufacturing and towards service sector employment. Employment in agriculture, forestry, fishing and mining is also declining. As the shift from agriculture, forestry, fishing, mining and manufacturing employment to service sector employment occurs, communities which have a larger percentage of their workforce employed in high order service sectors have higher wage levels than communities which have a larger percentage of their workforce employed in low order service sectors.

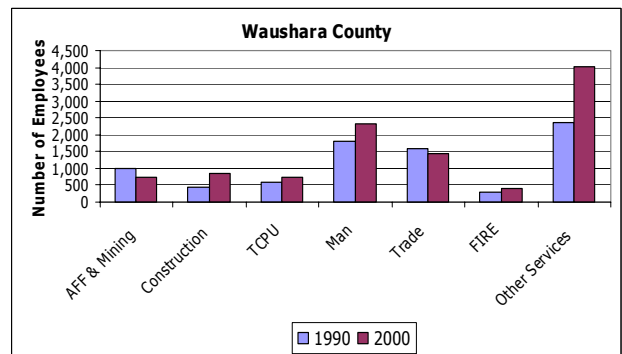
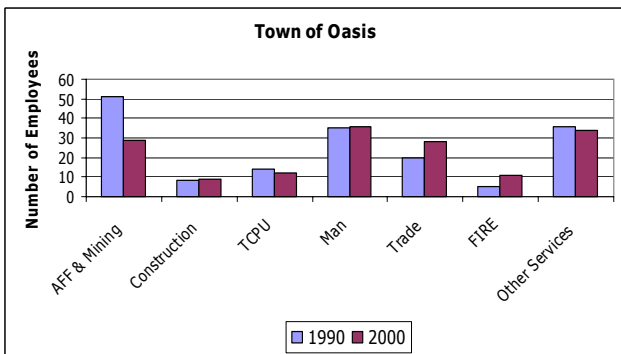
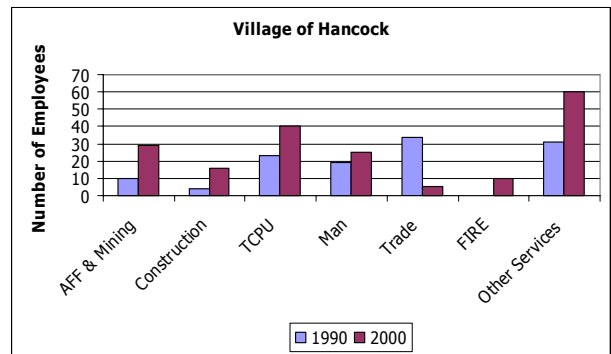
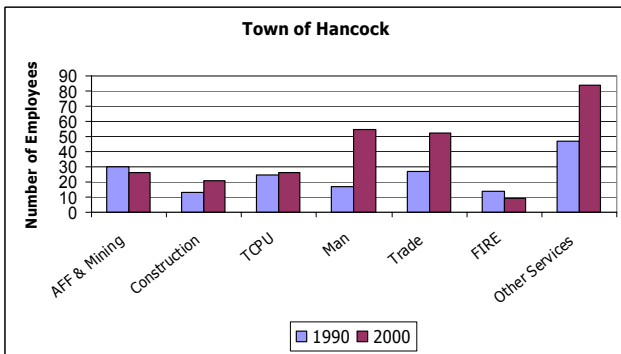
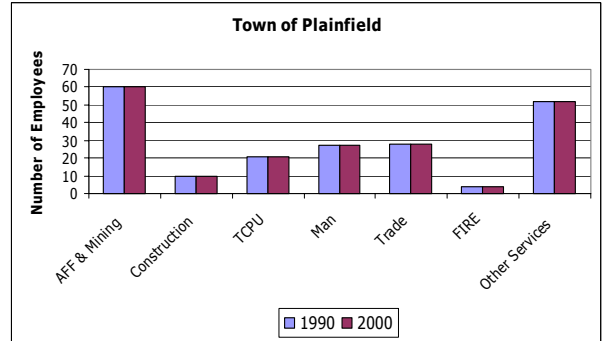
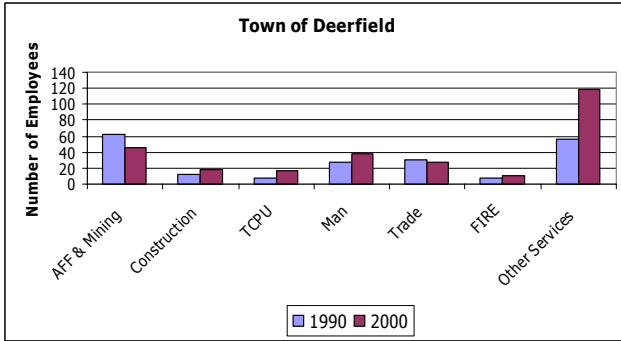
In 1990, the majority of the labor force in all seven jurisdictions worked in the service sector. In Group C communities, service sector employment ranged from 36% of the labor force in the Town of Oasis to 54% of the labor force in the Village of Hancock (Appendix B, Table B-28). Service sector employment accounted for 52% of the county's employment and 60% of the state's employment. The second largest employment sector varied by jurisdiction. Agriculture, forestry, fishing (AFF) and mining was the second largest employment sector for Group C towns. The second largest employment sector for village residents was transportation, communications and public utilities (TCPU). At the county and state level, manufacturing was the second largest employment sector.

Between 1990 and 2000, all jurisdictions experienced an increase in manufacturing and overall service sector employment. Within the service sector, some variation occurred in the change in service sector employment (Figure 1-7). Although the gain in service sector employment was substantial, the Towns of Deerfield and Plainfield, Waushara County and the state experienced losses in wholesale and retail trade, and the Town of Hancock lost employment in FIRE.

Employment change in other sectors also varied by jurisdiction. All jurisdictions, but the Village of Hancock, experienced a decrease in employment in the agriculture, forestry, fishing and mining sector. Employment in this sector more than doubled in the village. The Town of Oasis experienced the largest decrease in AFF and mining employment, 43%, followed by the state, which lost 33% of employment in this sector. Employment losses in AFF and mining in the remaining jurisdictions ranged from 13% in the Town of Hancock to 27% in the Town of Deerfield. All jurisdictions, except the Town of Plainfield, experienced an increase in employment in the construction sector. Construction employment remained stable in the Town of Plainfield. All jurisdictions, except the Town of Oasis, experienced an increase in employment in the transportation, communications and public utilities (TCPU) sector. The Town of Oasis experienced a 14% decline in this sector.

By 2000, service sector employment ranged from 46% of the labor force in the Town of Plainfield to 62% of total employment at the state level. The second largest employment sector again varied by jurisdiction. TCPU was the second largest employment sector in the Village of Hancock, comprising 18% of all employment. AFF and mining remained the second largest sector in the Town of Deerfield, comprising 17% of the Town of Deerfield's employment in the labor force. Manufacturing comprised the second largest employment sector for the remaining jurisdictions. Within these jurisdictions, manufacturing employment ranged from 18% of the labor force in the Town of Oasis to 22% of labor force employment in the Town of Plainfield, Waushara County and Wisconsin.

Figure 1-7. Employment by Sector



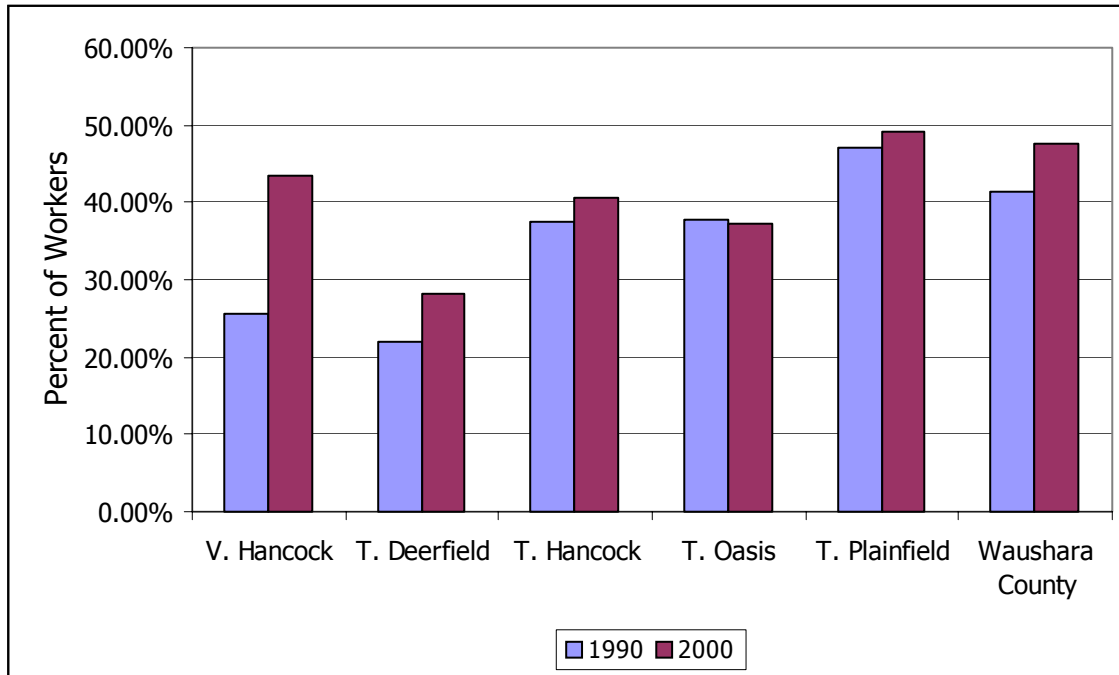
Location of Workplace

Location of workplace data provides information on the direction and distance residents have to travel to find employment. According to U. S. Bureau of Census data, the majority of Group C residents worked in Waushara County in 1990. Eighty-four percent of the Village of Hancock residents worked in Waushara County, compared to 78% of the Town of Deerfield residents, and 53% of Town of Plainfield residents. Sixty-two percent of Town of Hancock and Oasis residents worked in Waushara County (Appendix B, Table B-30). Countywide, 59% of residents worked in Waushara County. Portage County was the second most popular destination worksite for Group C residents. Twenty-seven percent of the Town of Plainfield and 25% of the Town of Oasis residents worked in Portage County. The share of workers commuting to Portage County drops off for the remaining communities. Fourteen percent of the Town of Hancock workers commuted to Portage County, compared to 10% of Town of Deerfield and 7% of Village of Hancock workers. In contrast, the second most popular destination worksite for county residents was the Appleton-Neenah-Oshkosh MSA. Ten percent of Waushara County workers commuted to the Appleton-Neenah-Oshkosh MSA, while only 4% of County residents commuted to Portage County to work.

Limited 2000 Location of Workplace data is available from the Census Bureau for counties or MCDs. County workplace flow data indicates that the percentage of workers living and working in Waushara County declined from 59% in 1990 to 53% in 2000, which would seem to indicate that residents are traveling farther from home to find employment. That information is supported by the travel time to work data, which indicates that on average, travel time is increasing. The second most popular destination worksite for Waushara County residents in 2000 was Winnebago County. Eleven percent of Waushara County workers reported that they worked in Winnebago County. Nine percent worked in Green Lake County and 6% worked in Waupaca County. As noted in Appendix B, Table B-31, the remainder of the Waushara County's workforce commuted to a wide variety of locations within the state, and just under 1% of Waushara County residents worked out of state or offshore in 2000.

Preliminary place of work data provides information on the share of the labor force that works within the county and minor civil division of residence. Information regarding the work location of minor civil division residents who work outside of their community and county is not yet available. Based on available data, it appears that a higher percentage of workers in Group C communities are commuting outside of Waushara County for employment (Figure 1-8). Between 1990 and 2000, the Village of Hancock experienced the largest increase in residents working outside of Waushara County, as the share of workers working within Waushara County decreased from 84% in 1990 to 57% in 2000. The Town of Plainfield experienced the smallest decrease in the share of workers working within Waushara County, as the share of workers working within Waushara County decreased from 53% in 1990 to 51% in 2000. The Town of Oasis was unique in that the share of workers living in Oasis and working in Waushara County increased from 62% in 1990 to 63% in 2000.

Figure 1-8. Percent of Workforce Which Worked Outside of Waushara County, 1990 and 2000



Source: U. S. Census, 1990 and 2000.

Travel Time to Work

On average, residents of all seven jurisdictions spent less than 30 minutes traveling to and from work in 1990 and 2000. In 1990, average commute time for Group C residents ranged from 17.5 minutes for Village of Hancock residents to 22.5 minutes for Town of Hancock residents. County residents traveled an average of 21.8 minutes to work, while state residents traveled an average of 18.3 minutes to work (Appendix B, Table B-33).

Between 1990 and 2000, average commute times rose for all jurisdictions, with the Village of Hancock experiencing the largest increase in average commute time. Between 1990 and 2000, the average commute time for Village residents increased by 9.5 minutes, rising from 17.5 minutes to 27.0 minutes in 2000. The Town of Plainfield and the state experienced the smallest increase in commute times, 2.5 minutes. In 2000, average commute times for Group C residents ranged from 23.6 minutes for Town of Plainfield residents to 28.5 minutes for Town of Hancock residents. County residents traveled an average of 27.1 minutes to work, while state residents traveled an average of 20.8 minutes to work.

The increase in average commute times resulted from a decrease in the share of commuter trips under 10 minutes in length and an increase in the share of commuter trips lasting 30 minutes or longer. Village residents experienced the greatest change in commute times. The share of Village of Hancock commuters traveling less than 10 minutes to work decreased from 35% of workers in 1990 to 17% of workers in 2000, while the share of Village residents commuting 30 minutes or more to work increased from 20% in 1990 to 34% in 2000. The Town of Oasis experienced the smallest change in commute times. The share of Town of Oasis

commuters traveling less than 10 minutes to work decreased from 23% in 1990 to 22% in 2000, while the share of Town of Oasis residents commuting 30 minutes or more to work decreased from 28% in 1990 to 27% in 2000. The Town of Oasis was the only community to experience a decrease in the share of workers traveling more than 30 minutes to work. As noted in the previous section, the Town of Oasis was the only Group C community to see the share of workers working in Waushara County increase between 1990 and 2000.

ENVIRONMENTAL RESOURCES

The natural resources in an area determine the potential physical uses of the land. Certain environmental characteristics indicate the suitability of the land to support various types of development. Topography, drainage patterns, floodplains, soil characteristics, and groundwater properties are among the features that determine if an area is physically suitable for a specific type of development.

The towns of Hancock, Deerfield, Plainfield and Oasis and the Village of Hancock have significant areas of natural resources that help to define their communities. A variety of glacial features dating from the middle and late stages of the last Ice Age can be found within this area. The flat plain along the western portion of the area, the two moraines that bisect the region longitudinally, the outwash plain between the moraines, and the kettles and hills to the east of the second moraine help define this area. Many lakes are found within the pitted outwash plains and among the hills and kettles of the region, providing recreational activities and lakeshore home sites for people in the area. In addition, other environmental areas occur throughout the area, particularly near Carter and Roche a Cri Creeks and the Greenwood Wildlife Area. These areas include wetlands, floodplains, and perennial and intermittent streams. Fishing, hunting, swimming and other recreation activities are important past-times for many people within the immediate area.

Topography and Drainage

Land relief within the area encompassed by the five communities is approximately 310 feet. It ranges in elevation from less than 950 feet above sea level near the Mill Pond in the southeastern part of the Town of Deerfield to an elevation of approximately 1260 feet in section 10, also in the Town of Deerfield. The area's topography was strongly influenced by the latter stages of the Wisconsin Glaciation, which defined the end of the last Ice Age about 10,000 to 15,000 years ago. The flat alluvial outwash plain west of Plainfield and Hancock was once the lakebed of Glacial Lake Wisconsin and was created by deposition of sediments carried outward from the melting glacier. East of this alluvial plain, commonly referred to as the Central Sands, are two moraines. These ridges, which are comprised of unsorted material deposited by the melting ice, stand in stark contrast to the flat Central Sands to the west. The Outer (or westernmost) moraine runs in a north-south direction just east of the Village of Plainfield and through the Village of Hancock. The Second moraine, which represents a later advance of the glacial ice sheet, angles southwesterly from the Heffron area to a point north of Coloma, where it overlaps the Outer moraine. The merged moraines then continue southerly into Marquette County. Between the Outer and Second moraine is a pitted outwash plain composed of sand and gravel. This feature occupies much of the Town of Oasis. The pits located in this area are broad, shallow depressions, less than 10 feet deep near the Village of Hancock and reaching

depths of 100 feet or more near the Village of Plainfield. To the east of the moraines is a belt of hills and kettles. Runoff in these areas is mainly from precipitation and snowmelt and drains into the pits and kettles rather than draining into the Fox or Wisconsin Rivers.

The topographic divide follows the crest of the Second moraine from the northwest corner of the Town of Rose, south within the Town of Rose, then diagonally from the northeast corner of the Town of Deerfield to the southwest corner of the Town of Coloma. The topographic divide separates the surface water drainage between the Upper Wisconsin River Basin to the west and the Upper Fox River Basin to the east and gives rise to a number of headwater streams.

The 2,090 square mile Upper Fox River Basin (watershed) flows into the Lake Michigan drainage system while the Upper Wisconsin River Southern Sub-Basin flows into the Mississippi River. Several component watersheds of the Upper Fox River Basin and Upper Wisconsin River Southern Sub-Basin are found in the area.

The streams in the Upper Fox River Basin flow in a southeasterly direction toward the Fox River. Within the study area, they include the West Branch of the White River and Schudlach Creek, which flows into the Mekan River. The Mekan and White Rivers are major tributaries of the Fox, flowing into the river in Marquette and Green Lake County, respectively. Watersheds located in the Upper Wisconsin River Southern Sub-Basin contain streams that flow predominately westerly and southwesterly toward the Wisconsin River. These streams include Big and Little Roche a Cri Creeks, Carter Creek, Fourteenmile Creek, Tenmile Creek, and Sevenmile Creek.

The *State of the Upper Fox River Basin Plan*, dated October 2001, indicates that the tributaries within the Mekan River watershed support high quality cold water fisheries and that land use is primarily agricultural. The White River watershed contains a number of high quality streams and "Exceptional Resource Waters". The *Upper Wisconsin River Southern Sub-Basin Water Quality Management Plan, Public Review Draft* dated July 1991, indicates that the Little Roche a Cri Creek Watershed received a low ranking for surface water and a high ranking for groundwater. The Big Roche a Cri Creek Watershed received a high ranking for surface water and medium ranking for groundwater. The Fourteenmile Creek Watershed received a medium ranking for surface water and a high ranking for groundwater. The Sevenmile and Tenmile Creeks Watershed received a medium ranking for surface water and a high ranking for groundwater. A watershed receives a groundwater ranking based on three criteria. These criteria are based on (1) groundwater susceptibility map, (2) potential for groundwater quality improvements through the use of Non-Point Source (NPS) controls and (3) data documenting the groundwater problems created by NPS pollutants such as nitrates or pesticides.

Major waterways within the area are Carter Creek in the Town of Hancock, Big Roche a Cri Creek in the Town of Plainfield, and Schudlach Creek in the Town of Deerfield. Carter Creek is a hardwater spring-fed creek and is rated as a class I trout water. Big Roche a Cri Creek is a hardwater trout stream. Schudlach Creek is a hardwater spring fed trout stream.

The majority of lakes within Waushara County are natural and of glacial origin. Sandy soils readily allow the percolation of precipitation and thawing snow and ice into the ground rather than overland flow directly to surface waters. This leads to the continual recharge of the shallow aquifer underlying the county and surrounding region. Below is a listing of the lakes by municipality found within the area.

Town of Deerfield. The following lakes are located in the Town of Deerfield: *Fish Lake*, a moderate sized landlocked seepage lake located southeast of Pine Lake; *Crooked Lake*, a small lake located east of Fish Lake; *Bohn Lake*, a small landlocked seepage lake located in section 16; *Lake Virginia*, a small seepage lake supplemented by springs located in section 32 and 33; *Hartford (Lyman's) Lake*, a small landlocked seepage lake located in section 15; *Marl Lake*, a essentially landlocked seepage lake having an intermittent inlet that enters in the northwest corner located in section 23, a lake district (Marl Lake Protection and Rehabilitation District) was formed in 1988 to address the problem of declining water quality in the lake; *Ueeck Lake* between Hartford and Marl Lakes is a small seepage lake; *unnamed lake* located in section 35, a small seepage lake; *Round Lake*, a small lake located between Pine Lake and Crooked Lake; and the *(White River) Mill Pond (Upper)*, a moderate size impoundment on the West Branch of the White River. This headwater pond has no inlet, seepage is aided by spring activity, and a 30-foot dam is located at the outlet.

Town of Hancock. The following lakes are located in the Town of Hancock: *Pine Lake*, see above; *Fish Lake* a moderate size seepage lake located southeast of Pine Lake; *Goose Lake*, a small shallow swampy lake located one mile northeast of the Village of Hancock; and *Bullhead and Reeder Lakes*, small lakes located about a mile northeast of the Village of Hancock.

Village of Hancock. *Pine Lake* is a large, fertile and shallow lake, partially located in the village on the eastside.

Town of Oasis. The following lakes are in the Town of Oasis: *Plainfield Lake*, a small seepage lake located about one mile east of the Village of Plainfield; *Long Lake* a moderate landlocked lake whose source of water is from seepage and springs, located east of the Village of Plainfield, *Horsehead (Easting) Lake*, a small landlocked seepage lake located in section 16; *Yonkee Lake*, a small seepage lake located in section 5; *Lake Huron*, landlocked lake whose source of water is from seepage and springs, located in section 22; *Herrick Lake*, a small lake located in sections 31 and 32; *Weymouth Lake*, a small seepage lake located three mile southeast of the Village of Plainfield; *Mud Lake*, a small landlocked seepage lake located northeast of Huron Lake; *Shumway (Smith) Lake*, a small seepage lake located four miles southeast of the Village of Plainfield; *Second Lake*, a small lake located between Plainfield Lake and Long lake; *Sherman Lake*, a small lake located south of Second Lake; *Pumpkin Seed Lake*, a small lake located between Long Lake and Horsehead Lake; *Fiddle Lake*, a small lake located between Horsehead and Weymouth Lake; *Kawalski Lake*, a small landlocked seepage lake located east of Walters Lake; *Walters Lake*, a small lake located east of Kawalski Lake and north of Piper Lake; *Piper Lake*, a small lake located south of Walters Lake; and *Slafler Lake*, a small lake located in section 34 about two miles south of Lake Huron.

Town of Plainfield. *Sand Lake* is a moderate size shallow lake located about two miles south of the Village of Plainfield.

According to the Waushara County Zoning Ordinance, all unincorporated areas within 1,000 feet of the ordinary high water mark of navigable lakes, ponds or flowages or within 300 feet of the ordinary high water mark of a navigable river or stream fall under the Shoreland Jurisdictional Area. Restrictions, meant to protect these areas, address such things as lot sizes, setbacks, buildings, permitted uses, vegetative shore cover, grading and filling.

Floodplains

Areas susceptible to flooding are considered unsuitable for development due to potential health risks and property damage. Flood Insurance Rate Maps for the unincorporated portions of Waushara County identify areas lying within the Towns of Deerfield, Oasis, Hancock and Plainfield. The Village of Hancock is within an incorporated area of Waushara County and no flood insurance rate map has been developed for this area. All identified areas are within a Zone A, which means that no base flood elevations have been determined.

Town of Deerfield. The following areas have been identified: Schmudlach Creek, Lake Virginia, White River Millpond, Marl Lake, Ueeck Lake, Hartford Lake, Bohn Lake, Crooked Lake and Pine Lake

Town of Hancock. The following areas have been identified: a tributary of Carter Creek and part of Pine Lake.

Town of Oasis. The following areas have been identified: Sand Lake, Herrick Lake, Mud Lake, Shumway Lake, Fiddle Lake, Long Lake, Second Lake and Plainfield Lake.

Town of Plainfield. The following areas have been identified: Roche a Cri Creek and Sand Lake.

Table 1-2. below shows the acres and percentages of floodplains for each of the municipalities. Excluding the Village of Hancock, the Town of Oasis has the least number of acres while the Town of Plainfield has 488 acres, or more than double that of Oasis. Floodplains represent a small percentage of land within the towns and the area as a whole.

Table 1-2. Floodplains

	Acres	Percent
T. Deerfield	369	2%
T. Hancock	350	2%
V. Hancock*	0	0%
T. Oasis	222	1%
T. Plainfield	488	2%
Total	1,429	2%

Note: *No FEMA data available for the Village of Hancock.

Waushara County has adopted a floodplain ordinance requiring certain land use controls in designated flood hazard areas, thus making residents eligible to participate in the Federal Flood Insurance Administrative Flood Insurance Program. This program requires all structures that are to be constructed or purchased in designated flood hazard areas utilizing loans from federally insured banks to be insured by a flood insurance policy. See Exhibit 1-1.

Wetlands

Wetlands act as a natural filtering system for nutrients such as phosphorus and nitrates and serve as a natural buffer protecting shorelines and stream banks. Wetlands are also essential in providing wildlife habitat, flood control, and groundwater recharge. Consequently, local, state, and federal regulations place limitations on the development and use of wetlands and shorelands. The Shoreland/Wetland Ordinance adopted by Waushara County regulates shoreland use and development within 300 feet of navigable rivers or streams and within 1,000 feet of the ordinary high water mark of navigable lakes, ponds or flowages. The Army Corps of Engineers has authority over the placement of fill materials in virtually all wetlands five acres or larger. The U.S. Department of Agriculture incorporates wetland preservation criteria into its crop price support programs. Prior to placing fill or altering wetland resources, the appropriate agencies must be contacted to receive authorization. The wetlands shown in Exhibit 1-2 replicate the Wisconsin Department of Natural Resources (WDNR) Wisconsin Wetlands Inventory Map. These wetlands were identified on aerial photographs based on vegetation, visible hydrology, and geography based on the U.S. Fish and Wildlife Service "Classification of Wetland and Deepwater Habitats of the United States". The following wetlands are found in this area:

Town of Deerfield. Wetlands are mainly found along Schmudlach Creek, Lake Virginia, and the band of lakes stretching from Crooked Lake to the White River Mill Pond. These wetlands predominately fall into the following classes and subclasses (subclasses are shown in parenthesis): scrub/shrub (broad-leaved persistent), forested (broad-leaved deciduous), aquatic bed (floating), emergent/wet meadow (persistent), and open water.

Town of Hancock. Wetlands are mainly along Carter Creek, a tributary to Carter Creek, Roche a Cri Creek, and to the north of the Village of Hancock in the area near Goose, Bullhead and Reeder Lakes. These wetlands predominately fall into the following classes and subclasses (subclasses are shown in parenthesis): scrub/shrub (broad-leaved persistent), forested (broad-leaved deciduous) and emergent/wet meadow (persistent) in the western part of the town near the streams to scrub/shrub (broad-leaved persistent), emergent/wet meadow (narrow-leaved persistent), aquatic bed (floating), and open water in the northeastern part of the town near the lakes.

Village of Hancock. There is one sizable wetland located between Fish and Pine Lakes within the village. The class and subclass of this wetland is emergent/wet meadow, persistent. Smaller wetlands of less than 5 acres in size are indicated to the north of Pine Lake.

Town of Oasis. Wetlands are mainly located near the many lakes within the town. These wetlands predominately fall into the following classes and subclasses (subclasses are shown in parenthesis): aquatic bed (floating), emergent/wet meadow (nonpersistent), and open water.

Town of Plainfield. Wetlands are mainly found to the west of I-39 near Roche a Cri Creek and its tributaries, the South Branch of Tenmile Creek, and the tributaries of Fourtenmile Creek. Wetlands are also located near Sand Lake in the southeastern corner of the town. These wetlands predominately fall into the following classes and subclasses (subclasses are shown in parenthesis): forested (broad-leaved deciduous), scrub/shrub (broad-leaved deciduous), emergent/wet meadow (persistent) and flats/unvegetated wet soil in the western part of the

town near the streams to emergent/wet meadow (persistent, nonpersistent, narrow-leaved persistent), and open water near Sand Lake.

Table 1-3. below shows the number of acres and the percentage of wetlands within the five municipalities. Not including small tracts of wetlands with less than five acres, approximately three percent of the land is classified as wetlands. The Town of Plainfield, with 1,522 acres or seven percent, has the highest percentage of wetlands compared to the Village of Hancock, with only 4 acres or one percent. The amount and variety of wetland features may have moderate limitations on the future growth and development of the area.

Table 1-3. Wetlands

	Acres	Percent
T. Deerfield	146	1%
T. Hancock	609	3%
V. Hancock	4	1%
T. Oasis	24	0%
T. Plainfield	1,522	7%
Total	2,304	3%

Woodlands

Originally much of Waushara County ranged from a mixture of oak forest species to more open oak forest and oak openings with an understory of prairie grasses and other prairie plants. Today, upland woods dominated by tree species in the oak-hickory association, often interspersed with pines, are found in much of the county. Woodlands cover over 34 percent of the area and are sometimes found in wetland areas. Forests occurring in lowland areas are attributed to fresh layers of mineral sediments deposited by seasonal rises in waterways. Besides wetland areas, forests are also present along the moraines and in the kettle and hill portion of the region. See Exhibit 2-1. Forests or woodlands found within the area can be classified into one of three categories. These categories are general woodlands (naturally occurring forests or woods and hedgerows), planted woodlots (tree plantations or trees planted in rows, orchards and timber tracts, not including nurseries) and silvaculture (Christmas tree production). According to Table 1-4, woodlands comprise over forty percent of the total land area in the Town of Deerfield and the Village of Hancock while in Oasis woodlands only make up a quarter of the town. These woodlands should be considered as prime wildlife habitat areas and efforts to protect them from encroaching development should be considered.

Table 1-4. Woodlands

	General Woodlands		Planted Woodlots		Silvaculture		Total Woodlands		Total Acres
	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	
T. Deerfield	7,030	31%	3,103	14%	692	3%	10,825	48%	22,421
T. Hancock	4,741	22%	2,147	10%	90	0%	6,978	32%	21,585
V. Hancock	233	35%	60	9%	0	0%	293	44%	663
T. Oasis	3,079	14%	1,940	9%	1,020	5%	6,039	27%	22,590
T. Plainfield	5,537	26%	932	4%	29	0%	6,497	30%	21,639
Total	20,620	23%	8,182	9%	1,830	2%	30,631	34%	88,898

The Managed Forest Law (MFL), enacted in 1985, combined the Forest Crop Law (FCL) and a companion law, the Woodland Tax Law (WTL). The purpose of the MFL is to encourage the growth of future commercial crops through sound forestry practices while recognizing individual property owners' objectives and society's need for compatible recreational activities, forest aesthetics, wildlife habitat, erosion control, and protection of endangered resources. As of January 1, 2000, approximately 577 acres of land within the area was enrolled in this program. The Town of Deerfield had 238 acres enrolled while property owners within the Village of Hancock and the Town of Plainfield did not participate.

The Forest Crop Law (FCL) was enacted by the Wisconsin Legislature in 1927 as a voluntary forest practices program to encourage sound forestry on private lands. It allowed landowners to pay taxes on timber only after harvesting, or when the contract was terminated, and has long promoted and encouraged long-term investments as well as the proper management of woodlands. Enrollment in FCL was closed on January 1, 1987 after passage of the Managed Forest Law (MFL) and renewal is not allowed. As of January 1, 2000, 1,076 acres of land within the area was enrolled in the FCL program, including approximately two percent of the Town of Oasis. It should be noted that 160 acres of land within the Town of Oasis expired on December 31, 2000.

Table 1-5. Managed Forest Law/Forest Crop Law

	Managed Forest Law		Forest Crop Land		Total		Total Acres
	Acres	Percent	Acres	Percent	Acres	Percent	
T. Deerfield	238	1%	240	1%	478	2%	22,421
T. Hancock	179	1%	281	1%	460	2%	21,581
V. Hancock	0	0%	0	0%	0	0%	663
T. Oasis	160	1%	480	2%	640	3%	22,602
T. Plainfield	0	0%	75	0%	75	0%	21,640
Total	577	1%	1,076	1%	1,653	2%	88,906

Soils

Soils support the physical base for development and agriculture within the town. Knowledge of their limitations and potential difficulties is important in evaluating crop production capabilities and other land use alternatives such as residential development, utility installation, and other various projects. The criteria considered by the Natural Resource Conservation Service (NRCS)

in establishing the severe rating of soils include wetness, shrink-swell potential, bearing strength, susceptibility to flooding, land spreading, slope steepness, and frost action. Severe soil limitations do not necessarily indicate areas that cannot be developed, but indicate more extensive construction measures must be taken to prevent environmental and property damage. The maps reflect information contained within the Soil Survey of Waushara County, issued by the USDA in September 1989.

Five soil associations, which are a grouping of individual soil types based on geographic proximity and other characteristics, are present within the area.

Plainfield-Okee-Richford soils cut diagonally across the towns of Hancock, Deerfield, Oasis and Plainfield and the Village of Hancock, corresponding to the end moraines, kettle and hills and the area that surrounds the string of lakes from Plainfield Lake to Mud Lake in the Town of Oasis.

Plainfield-Richford-Boyer soils are found in the pitted outwash plains of the towns of Oasis and Deerfield and between the waterways along the western part of the towns of Plainfield and Hancock and the end moraine. These soils are also found scattered in the hills and kettles area of the Town of Deerfield.

Kingsville-Meechan soils are found along the waterways in the western part of the towns of Plainfield and Hancock.

Houghton-Adrian-Willette soils are found in the southeast corner of the Town of Deerfield.

Plainfield-Pearl-Leola soils are found surrounding the Kingsville-Meechan soils in the western half of the towns of Plainfield and Hancock.

Plainfield-Okee-Richford soils are sloping to steep and are found on the sides of ridges, knolls, and hills on moraines and terraces. Slopes range from 6 to 30 percent. The soils within this association range from Plainfield soils that are excessively drained and rapidly permeable to Okee and Richford soils which are somewhat excessively drained and moderately permeable to moderately rapidly permeable. While some areas of the Richford soils are used for cropland, most acreage in this association is used as woodland and is especially well suited for pine trees.

Plainfield-Richford-Boyer soils are nearly level and gently sloping and are found on flats, ridgetops and knolls on outwash plains and terraces. Slopes range from 0 to 6 percent. The soils within this association vary from well drained and moderately permeable for Boyer soils to excessively drained and rapidly permeable for Plainfield soils. Most of the acreage in this association is used as cropland, much of it as irrigated.

Kingsville-Meechan soils are nearly level and gently sloping and are found in drainageways and depressions on outwash plains and in glacial lake basins. Slopes range from 0 to 3 percent. The soils within this association are somewhat poorly to poorly drained and rapidly permeable. Most of the acreage in this association is used for cropland and many areas are drained and used as irrigated cropland. Some areas are used as pasture or woodland.

Houghton-Adrian-Willette soils are nearly level, very poorly drained mucky soils found in depressions on outwash plains, in glacial lake basins and on moraines. Slopes range from 0 to 1 percent. The soils within this association range from moderately slowly permeable to moderately rapidly permeable. Most of the acreage in this association is used for native vegetation and the main plants are water-tolerant trees, marsh grasses, cattails, sedges, reeds, red osier dogwood and alder. A few areas are drained and are used for corn or specialty crops.

Plainfield-Pearl-Leola soils are nearly level and gently sloping, sandy soils found on flats and in slight depressions and drainageways on outwash plains. Slopes range from 0 to 3 percent. The soils within this association range from moderately well drained for Plainfield and Pearl soils to somewhat poorly drained for Leola soils. Permeability ranges from rapid for Plainfield soils to moderately rapid in the subsoil and rapid in the substratum for Pearl and Leola soils. Most of the acreage in this association is used for cropland, especially irrigated cropland, pasture or woodland and is well suited for trees.

Detailed Soils Information

Exhibit 1-3 identifies areas within the area that are generally suitable for development based on soils. The soil map identifies suitability for on-site waste disposal options based on an evaluation of soil characteristics. The evaluation is represented by a numerical rating indicating whether the soil type is a candidate location for a conventional system, a mound system, or unsuitable for all currently approved on-site systems. It must be noted that this map is not intended to serve as a substitute for on-site soils investigation, but rather as an indicator of reasonable expectations for soils underlying a site.

Evaluation of the soil data indicates that approximately 94 percent (83,686 acres) of the soils in the area are rated suitable for conventional, at-grade, in-ground pressure or mound systems (see Table 1-6 below). Generally, soils within the towns of Plainfield and Hancock, near the small tributaries along the western portion of the area, are the least suitable for on-site waste disposal. Other areas can also be found near Goose Lake, Sand Lake and a few other scattered locations within the area. Within the Town of Plainfield, only 34 percent of the soils are suitable for conventional systems compared with about 98 percent for the towns of Deerfield and Oasis. Less than four percent (3,398 acres) of the total area is suitable for holding tanks. The Town of Plainfield has the highest percentage (10%) of land within the five municipalities that falls in this category. The remaining two percent (1,823 acres) of the area's soils are rated unsuitable for on-site systems due primarily to wet soil conditions. Water, included in the above percentage, accounts for less than one percent of the surface area within the area. Currently public sanitary sewer collection and treatment is available in the Village of Hancock; therefore, within the village, soil suitability for on-site waste disposal is not an issue. The towns, however, do not have a public sewer collection and treatment system; therefore, these soil capabilities should be of concern within the towns.

Recently the State of Wisconsin revised Comm 83 that deals with Private Onsite Wastewater Treatment Systems. These revised rules, which recognize new technologies, went into effect on July 1, 2000. The rules were revised to give owners more on-site wastewater treatment system options, while at the same time protecting our natural resources and groundwater.

Within Waushara County, holding tanks are banned for new construction and are not allowed for replacement systems unless no other system will work. These revisions to Comm 83 should not adversely affect the existing provisions in place within the county that protect wetlands and groundwater and other natural resources.

Table 1-6. Soil Limitations for On-Site Waste Disposal

Community	Conventional		At-Grade ¹		Holding Tank ²		Unsuitable ³		Suitable ⁴		Total Acres
	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	
T. Deerfield	21,967	98.0%	48	0.2%	89	0.4%	317	1.4%	22,015	98.2%	22,421
T. Hancock	14,292	66.2%	5,847	27.1%	988	4.6%	454	2.1%	20,139	93.3%	21,581
V. Hancock	563	84.9%	80	12.1%	16	2.4%	5	0.7%	643	97.0%	663
T. Oasis	22,239	98.4%	30	0.1%	69	0.3%	264	1.2%	22,269	98.5%	22,602
T. Plainfield	7,378	34.1%	11,243	52.0%	2,237	10.3%	783	3.6%	18,620	86.0%	21,640
Total	66,438	74.7%	17,247	19.4%	3,398	3.8%	1,823	2.1%	83,686	94.1%	88,906

Notes: ¹Includes In-Ground Pressure and Mound Systems.

²Includes New Technology Systems producing 10⁴ or less coliform fecal units (cfu) per 100 ml.

³Includes not rated and water.

⁴Includes Conventional and At-Grade

Exhibit 1-4 identifies soil potential for building site development. The NRCS has evaluated soil characteristics and rated soil potential for building site development taking into consideration wetness, shrink-swell potential, bearing strength, susceptibility to flooding, slope steepness, and frost action. The ratings range from low to very high potential. About 76 percent (67,727 acres) of the soils within the area are evaluated to have a very high or high suitability for building site development. Approximately 18 percent (15,805 acres) are evaluated to have medium suitability and about 5 percent (4,516 acres) are rated low or very low for building site development. Water accounts for about one percent of the area. Lower suitable soils for building site development are found in the towns of Plainfield and Hancock along the tributaries flowing into the Wisconsin River in the Kingsville-Meehan soils. Additional areas are found along the moraine near Sand and Goose Lakes and scattered in the wetter areas of the towns and village. Typically, areas near flowages and in wetland areas have the lowest ratings.

Table 1-7. Soil Potential for Building Site Development

Community	Very High, High		Medium		Low		Very Low, No Rating		Water		Total Acres
	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	
T. Deerfield	18,742	83.6%	3,264	14.6%	89	0.4%	66	0.3%	259	1.2%	22,421
T. Hancock	16,168	74.9%	3,917	18.1%	988	4.6%	241	1.1%	267	1.2%	21,581
V. Hancock	561	84.6%	82	12.3%	16	2.4%	4	0.6%	0	0.1%	663
T. Oasis	21,205	93.8%	1,043	4.6%	69	0.3%	52	0.2%	233	1.0%	22,602
T. Plainfield	11,050	51.1%	7,500	34.7%	2,237	10.3%	755	3.5%	98	0.5%	21,640
Total	67,727	76.2%	15,805	17.8%	3,398	3.8%	1,118	1.3%	859	1.0%	88,906

Waushara County's farmlands, forestlands, floodplains and wetlands are unique natural resources providing food, fiber, wood, and water necessary for the continued welfare of the people. Each year, some of these lands are converted to other uses. Continued conversion of these lands may impair the ability to produce food, fiber, and wood as needed to meet the

domestic needs of the county, region and state. In order of their importance, the five important farmland classes are: prime farmlands, unique farmlands, statewide important farmlands, locally important farmlands, and other lands. See Exhibit 1-5.

Prime farmland, as defined by the U.S. Department of Agriculture, “is the land that is best suited to food, feed, forage, fiber, and oilseed crops” when managed according to acceptable farming methods. These lands may be cultivated, pasture, woodland or other land; it can not be urban, built-up or water areas. Prime farmland produces the highest yields with minimal inputs of energy and economic resources, and farming it results in the least damage to the environment. Criteria used to determine prime farmland include: adequate and dependable supply of moisture from precipitation or irrigation, few or no rocks, permeable to water and air, not excessively erodible or saturated with water for long periods, is not frequently flooded during the growing season, and has slopes that range from 0 to 6 percent. Soils that have a seasonal high water table may qualify for prime farmland if this limitation is overcome by drainage measures.

Unique farmlands are lands other than prime that are used to produce specific high-value food or fiber crops. It has a moisture supply, either from stored, precipitation or irrigation systems, and combines favorable factors of soil quality, growing season, temperature, humidity, air drainage, elevation, aspect or other conditions. Examples of these specialty crops that require a high management and investment level include apple orchards, lettuce, carrots, celery and cauliflower.

Statewide important farmlands are land in addition to prime and unique that are important to the State of Wisconsin for crop production.

Locally important farmlands are in addition to prime, unique and statewide farmlands and are important to Waushara County for crop production.

Other lands are lands that have little value for producing crops.

Table 1-8. Important Farmland Classes

Farmland Class	T. Deerfield		T. Hancock		V. Hancock		T. Oasis		T. Plainfield		Total Area	
	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent
Prime Farmland	1,571	7.0%	100	0.5%	0	0.0%	7,818	34.6%	675	3.1%	10,163	11.4%
Unique Farmland	9,916	44.2%	4,343	20.1%	177	26.7%	6,257	27.7%	1,965	9.1%	22,657	25.5%
Statewide Important	3,344	14.9%	4,953	23.0%	56	8.4%	4,443	19.7%	8,117	37.5%	20,913	23.5%
Local Important	2,691	12.0%	10,142	47.0%	255	38.4%	2,685	11.9%	10,533	48.7%	26,307	29.6%
Other Lands	4,639	20.7%	1,775	8.2%	175	26.4%	1,165	5.2%	253	1.2%	8,007	9.0%
Water	259	1.2%	267	1.2%	0	0.1%	233	1.0%	98	0.5%	859	1.0%
Total	22,421	100.0%	21,581	100.0%	663	100.0%	22,602	100.0%	21,640	100.0%	88,906	100.0%

According to the above criteria, approximately 12 percent (10,163 acres) of the land within the area is considered prime farmland. The majority of this classification is located within the Town of Oasis (comprising 35% of the town) along its eastern border and extending south of STH 73 and east of CTH BB. Unique farmland makes up about 26 percent (22,657 acres) of the area. This classification, while making up approximately 44 percent of the Town of Deerfield, also comprises a quarter of the land area within the Village of Hancock and the Town of Oasis. Within the Town of Deerfield, unique farmland is scattered throughout the town, especially in the kettle and hills area. Statewide important farmland, comprises about 24 percent (20,913 acres) of the area. This classification makes up about 38 percent of the Town of Plainfield. While widely scattered throughout the town, it is found within the outwash plains portion, mainly west of a diagonal line extending for the southwest corner of section 26 to the northeast corner of section 6 in the Town of Oasis. It is also widely scattered within the other towns, predominately in the pitted and outwash plains areas. Locally important farmlands, the largest classification, encompasses 30 percent (26,307 acres) of the area. This classification makes up just less than 50 percent of the land area in the towns of Hancock and Plainfield. It is found in the western portion of the towns in the wetter soils surrounding the tributaries or the Wisconsin River and along the outer moraine. The remaining 10 percent (8,866 acres) of the area is included in other lands, and water.

Exhibit 1-6 identifies soil limitations for septage spreading. The Waushara County Land Conservation Office has evaluated soil characteristics based on groundwater depths, permeability, soil texture, slope, wetness, and soil depth. The ratings range from none or slight to severe. Slight soils are relatively free of limitations that affect the intended use or the limitations are easy to overcome. Soils with moderate limitations have limitations that can normally be overcome with correct planning, careful design and good management. Soils rated with severe limitations are severe enough to make them doubtful for the proposed use. Additional criteria used for spreading are: no spreading should be allowed within 300 feet of direct conduit to the waters of the state without the incorporation of the septage within 72 hours or less of application. Spreading rates will need to be based on current soil tests, type of vegetation grown on the site, and a septic nutrient test.

A distinct difference exists in the ability of the various soil associations to accommodate septage spreading. The Kingsville-Meehan and the Plainfield-Pearl-Leola soils in the western part of the area in the towns of Plainfield and Hancock near the tributaries to the Wisconsin River have severe to moderate limitations. The Plainfield-Okee-Richford soils along the moraines, near the string of lakes in the Town of Oasis, in the southeast corner of the Town of Deerfield, and in the kettle and hills portion of the area have severe to moderate limitations. None to slight limitations are found in the Plainfield-Richford-Boyer soils.

Approximately 44 percent (93,139 acres) of land within the area have none to slight limitations for septage spreading, while 38 percent (33,598 acres) have moderate limitations. Severe limitations exist on 17 percent (15,145 acres) of the land. The remaining one percent of the area is either water or not rated. Approximately 50 percent of the soils in the towns of Deerfield, Oasis and Hancock have none to slight limitations while about 50 percent of the Village of Hancock has moderate limitations. Over 40 percent of the Town of Plainfield has moderate limitations while a third has severe limitations. See Table 1-9.

Table 1-9. Soil Limitations for Seepage Spreading

Community	None to Slight		Moderate		Severe		No Rating, Water		Total Acres
	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	
T. Deerfield	11,152	49.7%	7,613	34.0%	3,388	15.1%	267	1.2%	22,420
T. Hancock	9,837	45.6%	7,837	36.3%	3,580	16.6%	326	1.5%	21,581
V. Hancock	286	43.1%	331	49.9%	46	6.9%	0	0.1%	663
T. Oasis	12,299	54.4%	8,906	39.4%	1,142	5.1%	254	1.1%	22,602
T. Plainfield	5,565	25.7%	8,911	41.2%	6,988	32.3%	175	0.8%	21,640
Total	39,139	44.0%	33,598	37.8%	15,145	17.0%	1,024	1.2%	88,906

Exhibit 1-7 indicates those portions of the area that have slopes greater than 12 percent. Approximately 6 percent (5,265 acres) of the area has slopes that fall into this category. See Table 1-10. The areas of steeper slopes generally correspond with the undulating glacial features such as the end moraines, the hills and kettles, pothole lakes, and chain lake areas. The Town of Deerfield contains the largest percentage of slopes over 12 percent (14%), while the Town of Plainfield has the lowest percentage of steep slopes (< 1 %).

Table 1-10. Steep Slopes

Community	0 - 12 Percent		> 12 Percent		No Rating, Water		Total Acres
	Acres	Percent	Acres	Percent	Acres	Percent	
T. Deerfield	18,936	84.5%	3,217	14.3%	268	1.2%	22,421
T. Hancock	20,348	94.3%	905	4.2%	327	1.5%	21,581
V. Hancock	637	96.0%	26	3.9%	0	0.1%	663
T. Oasis	21,314	94.3%	1,033	4.6%	254	1.1%	22,602
T. Plainfield	21,381	98.8%	84	0.4%	175	0.8%	21,640
Total	82,616	92.9%	5,265	5.9%	1,025	1.2%	88,906

Groundwater

In the western part of Waushara County, abundant groundwater for irrigation is available in the outwash deposits of sand, gravel and silt. These deposits form the most permeable aquifer in the county and generally yield more water to wells than any other aquifer in the county. The source of nearly all the groundwater in the county is precipitation in the form of rain and snow. Recharge is generally greatest in the spring, when water from melting snow and heavy rains saturates the ground and percolates downward to the water table. If discharge (the drawing out and use of groundwater) is greater than recharge, then the elevation where the groundwater is found will fall, causing a depression to occur. Lower water levels causes the pumping lifts to increase and will diminish the yields of some of the wells. In Waushara County, there are no areas where the constant pumping of a water supply well has resulted in the continued lowering of the water table over a long period of time. Groundwater within the county occurs under both water table and artesian conditions. Water in the unconsolidated beds of sand and gravel is generally unconfined and is said to occur under water table conditions. Confined or artesian conditions exist locally where the water in the sand and gravel deposits is confined by layers of silt or clay.

A groundwater divide, located west and parallel to the topographic divide, cuts through the area. This divide runs from a point north of STH 21 and the western border of the county through Pine and Sand Lakes to the northeast corner of the Village of Plainfield then northeasterly to Yonkee Lake and the northern border of the Town of Oasis. East of this divide, groundwater moves southeasterly toward the Wolf and Fox Rivers. West of this divide, groundwater moves westwardly toward the Wisconsin River. The groundwater table within the area varies in elevation from a high of 1101 feet above sea level near Yonkee Lake in the Town of Oasis to a low of about 910 in the southeast corner of the Town of Deerfield. While the majority of the wells within the town are low capacity, a number of high capacity irrigation wells did exist in 1957 when the Geological Survey Water Supply Paper for Waushara County was completed. At that time, a number of high capacity irrigation wells existed to the west of USH 51, a couple north of Fish Lake, and four north of STH 73. In addition, the Village of Hancock had one high capacity municipal well and the Village of Plainfield had one high capacity irrigation pit. Seven springs can be found in the area, one near the Mill Pond in the Town of Deerfield and six near the Roche a Cri Creek in the Town of Plainfield.

According to well water information obtained from the Central Wisconsin Groundwater Center in Stevens Point, some private wells located in this area contain nitrate levels that are higher than EPA's Safe Drinking Water Act standards of 10 mg/l. These standards apply to municipal water sources only, but are suggested thresholds for private systems. Nitrates are used in fertilizers and are found in sewage and wastes from human and/or farm animals. Excessive levels of nitrate in drinking water have caused serious illness and sometimes death in infants under six months of age. Pregnant women are also advised not to drink water in which nitrate levels exceed 10 mg/l. Due to the sandy soils that exist in the county, there is the potential for groundwater contamination in the shallower aquifers of the county. However, in the deeper aquifers, this potential is greatly diminished. Below is a Table 1-11 that lists the results of water sample tests that were taken during the 1990's and later.

Table 1-11. Nitrate-Nitrite

Community	None Detected	0.1 - 2.0 ppm	2 - 10 ppm	10 - 20 ppm	> 20 ppm
T. Deerfield	10	4	8	9	1
T. Hancock	7	7	7	8	12
T. Oasis	4	5	1	3	1
T. Plainfield	2	4	5	2	9

According to the *Wisconsin Administrative Code, Chapter ATCP 30, Atrazine, Pesticides; Use Restrictions*, an atrazine prohibition area has been established within the towns of Hancock and Plainfield. Atrazine or an atrazine product refers to the pesticide chemical 2-chloro-4-ethylamino-6-isoprpy-lamino-1,3,5 triazine. In prohibition areas no person can apply, mix or load any atrazine product, except under special conditions. The prohibition area includes all of sections 4, 5, 8, and 9 in the Town of Hancock and the southern half of sections 10 and 11, the northern half of sections 22 and 23, and all of sections 14 and 15 in the Town of Plainfield. These areas have been determined by the Department of Agriculture based on well samples taken in these areas. These areas are monitored and, if atrazine is not applied in these areas, the levels will diminish and these areas may be removed from the list.

All homes within the towns of Deerfield, Hancock, Oasis and Plainfield are on private septic systems and wells according to Waushara County. The Village of Hancock has one active high capacity municipal well that pumped an average of 0.044 mgd in 1996. In approximately 75 percent (66,294 acres) of the overall area, the depth to groundwater is 6.1 feet or greater. Approximately 98 percent of the Town of Deerfield and the Town of Oasis fall within this category. This percentage is slightly less for the Village of Hancock (85%), while in the Town of Hancock, only two-thirds of the land, and in the Town of Plainfield, only one-third, is in this category. About 13 percent (11,709 acres) of the area has groundwater depths of 3.1 feet to 6.0 feet. These areas are mainly in the Town of Plainfield (7,252 acres, 18%), the Town of Hancock (4,333 acres, 20%), and the Village of Hancock (80 acres, 12%). In approximately 6 percent of the area, the depth to groundwater falls between 1 and 3 feet; again, these areas are mainly in the Town of Hancock (1,505 acres, 7%) and the Town of Plainfield (3,991 acres, 18%). Finally, about 5 percent of the area have depths to groundwater of one foot or less, again primarily in the Town of Hancock (1,170 acres, 5%), the Town of Plainfield (2,914 acres, 13.3%), and in the Village of Hancock (20 acres, 3%). The remaining one percent (1,024 acres) of the area is either water or has no rating. Groundwater is closer to the surface along the flowages in the area, primarily in the western part of the region. See Exhibit 1-8 and Table 1-12.

Table 1-12. Depth to Groundwater

Community	1 Foot or Less		1 - 3 Feet		3 - 6 Feet		> 6 Feet		No Rating, Water		Total Acres
	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	
T. Deerfield	147	0.7%	25	0.1%	23	0.1%	21,959	97.9%	268	1.2%	22,421
T. Hancock	1,170	5.4%	1,505	7.0%	4,333	20.1%	14,246	66.0%	326	1.5%	21,581
V. Hancock	20	3.0%	0	0.0%	80	12.1%	563	84.9%	0	0.1%	663
T. Oasis	100	0.4%	9	0.0%	20	0.1%	22,218	98.3%	254	1.1%	22,602
T. Plainfield	2,914	13.5%	3,991	18.4%	7,252	33.5%	7,308	33.8%	175	0.8%	21,640
Total	4,350	4.9%	5,530	6.2%	11,709	13.2%	66,294	74.6%	1,024	1.2%	88,906

Wildlife Habitat

The essential habitat elements available to be selected species of wildlife generally depend on the properties of several kinds of soil and the prevailing land uses. Diverse land uses in Waushara County results in numerous habitat types that enables the county to support abundant and varied fish and wildlife communities. The wooded areas provide wildlife habitat for game species such as white-tailed deer, ruffed grouse, cottontail rabbits, raccoons and gray squirrels. Mink, otter, muskrats and beaver inhabit the areas along streams. In fields where shore grass is predominant, ground nesting birds, mice and other small mammals that are used as food by hawks, owls, fox and other predator species can be seen.

Rare, Threatened and Endangered Species and Natural Communities

The Wisconsin Department of Natural Resources maintains a database of rare, threatened and endangered species and natural communities in Waushara County. In order to protect these species and communities, the exact location of these species and communities are not available to the public. Waushara County however does have a copy of this database. Whenever a request comes into the county for development, this database is consulted prior to granting approval.

Historic Sites

State and National Register of Historic Places. The Wisconsin Historical Society's Division of Historic Preservation (DHP) is the clearinghouse for information relating to the state's cultural resources: its historic buildings and archaeological sites. A primary responsibility of the DHP is to administer the State and National Register of Historic Places programs. The National Register is the official national list of historic properties in the United States that are deemed worthy of preservation. The National Park Service in the U.S. Department of the Interior maintains the program. The State Register is Wisconsin's official listing of state properties determined to be significant to Wisconsin's heritage, and is maintained by the DHP. Both listings include sites, buildings, structures, objects, and districts that are significant in national, state or local history, architecture, archaeology, engineering and culture. (For ease of discussion, "National Register" is used generally to refer to both programs. In Wisconsin, if a property is listed on one, then it is typically listed on the other. The National Register is not a static inventory. Properties are constantly being added and, less frequently, removed.)

Only one property within the subject area is currently listed on the National Register. This is the Whistler Mound Group, located within Whistler Indian Mounds Park in the Village of Hancock. The Whistler Mound Group archaeological site (ca.500-1500 AD) was entered onto the National Register of Historic Places in 1993. It was listed because of its potential to yield information important to the understanding of prehistory. Specifically, the site helps to answer questions regarding the origins, affiliations, functions, and spatial significance of mounds constructed by indigenous peoples during the Late Woodland stage. During this period people began to settle in large villages and use bows and arrows to hunt. Material remains also suggest that potters and gardeners first made their appearance in Wisconsin during the Woodland stage.

While the Whistler Indian Mounds are included on the National Register, other evidence of ancient Native American presence in the area exists according to "The Wisconsin Archeologist". In the Town of Deerfield, two mounds can be found near the White River Millpond and along the north bank of the West Branch of the White River. Also found near the millpond are the remains of an earthen enclosure that measures approximately 60 feet by 30 feet, traces of an old campsite and the grave of Big John, a local Indian chief of some distinction. Evidence of a cluster of small pits that may have been used to store food are found east of the enclosure.

Indian mounds like those of the Whistler Group have been the subject of scientific inquiry for over a century. Excavation data have suggested that mound building was often associated with mortuary activity, but as not all mounds have contained burials, hypotheses on additional functions of mounds continue to be debated. It has been suggested that effigy mounds in the shapes of animals might have represented clan or family symbols. Another hypothesis holds that a mound was a signpost of sorts; that it was a visual marker designating a gathering place for a geographically dispersed group.

Architecture & History Inventory. In order to determine those sites that are eligible for inclusion on the National Register, the DHP frequently funds historical, architectural, and archaeological surveys of municipalities and counties within the state. Very little work of this type has been done in Waushara County, and even less has been undertaken in the Village of Hancock and towns of Deerfield, Hancock, Oasis, and Plainfield. (NOTE: Like the National

Register, AHI is not a static inventory; properties are constantly being added and, less frequently, removed.) A search of the DHP's on-line Architecture & History Inventory (AHI) and on-line National Register inventory reveals the following about these communities:

- Thirty properties in the Village of Hancock are included in AHI. Inclusion in this inventory conveys no special status, rights, or benefits to owners of these properties. It simply means that some type of information on these properties exists in the DHP's collections; in this particular case, as a result of a Department of Transportation project.
- Only one property within the Town of Oasis is included in AHI: the Sir Henry Wellcome Birthplace house on County Highway J (T-R-S 2009E-03). This property has not been determined eligible for the National Register. Wellcome was a Wisconsin-born, naturalized Briton who in 1932 was knighted by King George of England in recognition of his contributions to the medical sciences. A historical marker along the road marks this location.

WDNR and Public Lands

Wisconsin Department of Natural Resources (WDNR) owns property in all four towns within the area that is available for the public to use. These properties are found within state fishery areas, state wildlife areas, state natural areas (SNA), and other miscellaneous areas. State fishery areas are purchased by the state to protect important waterways in Wisconsin from improper land use due to agricultural abuse or urban runoff. They are used to help preserve and manage headwaters and springs that often form the biological base for stream fisheries. In addition, they protect and improve spawning grounds for lake fisheries and prevent private blocking of important waterways, game lands and lakes. State wildlife areas are purchased by the state to preserve an important American heritage of wild lands and wild things for people, such as hunters, trappers, hikers and wildlife watchers, who are interested in the out-of-doors. Additionally, state wildlife areas protect and manage important habitat for wildlife and help prevent draining, filling and destruction of wetlands. These areas are also purchased to prevent private blocking of important waterways, game land and lakes. State natural areas are designated sites devoted to scientific research, the teaching of conservation biology, and especially to the preservation of their natural value and genetic diversity for future generations.

The Greenwood Wildlife Area is located in section 24 and 25 in the Town of Hancock and in section 19 in the Town of Deerfield. This state owned wildlife area contains about 1,438 acres. The Big Roche a Cri Fishery Area is located in the Town of Plainfield along Roche a Cri Creek. This fishery contains about 656 acres. There is also some remnant state land along Carter Creek in the Town of Hancock. The Plainfield Tunnel Channel Lakes State Natural Area is located in the Town of Oasis near Plainfield, Second and Sherman Lakes. This natural area contains about 86 acres.

Abandoned Landfills

According to the Wisconsin Department of Natural Resources Registry of Waste Disposal Sites in Wisconsin, June 1999 Update, the following sites are listed:

Town of Deerfield – NW ¼ of the SE ¼ of Section 32.

Town of Hancock – SE ¼ of the NW ¼ of Section 10

Village of Hancock – Section 11, CTH V

- SW ¼ of the NE ¼ Section 11, JCT CTH GG and CTH CC

Town of Plainfield – Section unknown

- NE ¼ of the NW ¼ Section 10

These landfills are indicated on Exhibit 2-1. This Registry is a list of WDNR's known solid and hazardous waste disposal sites in Wisconsin. The list includes active, inactive, and abandoned sites where solid or hazardous wastes were known, or likely to have been disposed. Inclusion of a site on the Registry does not mean that environmental contamination has occurred, is occurring, or will occur in the future. New development should avoid these areas, and future reuse of these areas should be considered in the proposed land use plan.

EXHIBIT 1-1
TOWN OF DEERFIELD FLOODPLAINS