



*Village
of
Glenwillow*

July, 1999



*Master
Plan*

Prepared by the Cuyahoga County Planning Commission

Chapter 1

Community Goals

Goals are broad based ideals which a community aspires to obtain. They are statements of what the community would like to achieve and what it would like to be. In the planning process, goals are used to provide guidance in developing more detailed objectives and policies. The preparation of goals provides the basic framework for the development of the Glenwillow Master Plan. The goals presented are broad statements that indicate the general direction in which the Village should proceed in responding to more specific development issues. The goals have been grouped by subject category.

ENVIRONMENT

- ✓ Recognize, and to the degree possible, protect the natural environment as an asset of the community.
- ✓ Promote infrastructure projects which will improve the water quality within the Village.
- ✓ Ensure that proper procedures are followed, and maintenance is performed, so that the closed landfills' impacts on the environment are minimized and their appearances are not detrimental to the Village.
- ✓ Recognize that Tinkers Creek and Beaver Meadows Creek are unique resources, and to the degree possible, should be available for the enjoyment of the public.
- ✓ Support linking the open space and natural features of Glenwillow with areawide open space networks or efforts to improve the environment.

ECONOMIC DEVELOPMENT

- ✓ Develop a zoning code which is consistent with the goals, recommendations, and strategies set forth in the Master Plan, especially as it relates to the clear definition of land uses, appropriate types of development and design standards.
- ✓ Promote a balance of land use types, and a quality of development, which will ensure the fiscal health of the Village in the future.
- ✓ Capitalize on the large tracks of undeveloped land, but with the realization that the physical size of the Village is small and there is a finite amount of undeveloped land, so it must be developed wisely.
- ✓ Balance the desire for first class industrial development with the need for revenue.

- ✓ Capitalize on opportunities where the Village is positioned to attain benefits for the good of the entire community.
- ✓ Utilize development incentives to the degree necessary to make the Village a competitive location for companies to do business.
- ✓ Identify unique aspects of the Village, or areas within the Village, and market to those strengths.

HOUSING DEVELOPMENT

- ✓ Preserve the rural atmosphere of the Village.
- ✓ Provide an alternative within Cuyahoga County for home buyers looking for larger lots.
- ✓ Provide for the planning of attractive neighborhoods which recognize the natural environment.
- ✓ Provide protected neighborhoods and a common open space network where appropriate.
- ✓ Encourage links, pedestrian or vehicular, between housing developments which will promote a sense of neighborhood, instead of isolation.
- ✓ Encourage housing styles which acknowledge the street and promote interaction between neighbors through design considerations such as placement of windows and porches and locations of garages.
- ✓ Encourage development of housing along major streets in such a manner as to minimize the impact of the higher volumes of through traffic.
- ✓ Work with the owners of non-conforming properties to relocate to sites in the Village more in keeping with the nature of their operations.

VILLAGE CENTER

- ✓ Develop a focal point for community activities at Cochran and Pettibone Roads which capitalizes on the historic nature of the Village and scale of the company town.
- ✓ Encourage the reuse of existing “company homes” for uses which will not require changes that will detract from the historical nature of the structures and which will be economically feasible in such structures.

- ✓ Encourage reuse of the existing “company homes” for uses which will be complementary to the development of a community center.
- ✓ Promote the development of accessory uses which will increase the feasibility of reusing the existing historic homes.
- ✓ Encourage public right-of-way improvements within the Village center and at its approaches, including bridges and rail road crossings, which identify it as a special place in the community.
- ✓ Develop design standards for any new construction within the Village Center to ensure compatibility with existing architecture.
- ✓ Protect local control over decisions related to historic preservation.

PUBLIC FACILITIES AND INFRASTRUCTURE

- ✓ Support improvements which will promote the orderly flow of traffic and the reduction of traffic congestion.
- ✓ Encourage the extension of public transportation to better serve the community.
- ✓ Support pedestrian and bicycle traffic routes especially within the Village Center and within any open space network.
- ✓ Provide for the extension of infrastructure in a manner where new development pays for itself.
- ✓ Provide a high level of municipal services and facilities to the residents and workers of Glenwillow in the most fiscally responsible manner possible.
- ✓ Upgrade existing infrastructure, including roads and rail road crossings, to improve safety of traffic.

URBAN DESIGN

- ✓ Recognize the community’s unique history and utilize it to create a unique future.
- ✓ Preserve the small town atmosphere of the Village.
- ✓ Overcome the stigma associated with the past operations of the now closed landfills.

- ✓ Place special emphasis on the design quality of development at highly visible locations which have a great impact on the Village's identity, including gateways, focal points and the village center.
- ✓ Promote development which is sensitive to its context and will age with character.
- ✓ Upgrade the appearance of currently unattractive properties through a combination of code enforcement and working with property owners to develop a time line of achievable, methodical, and coordinated improvements.

Chapter 2

Demographic Analysis

SUMMARY

A review of the demographics of Glenwillow and nearby communities reveals trends in population, households, age, occupations, school enrollment, educational attainment and development which will affect the Village in the future. The following list of items highlights some of the more significant points from the more detailed analysis which follows.

- 1.) In 1996, the Census Bureau estimated Glenwillow's population at 477. **When the community is built-out a total population in the range of 1,350 to 1,450 can be expected to reside in the Village.** The number of households should increase from 207 in 1990 to approximately 500 at build-out.
- 2.) Much of Glenwillow's historic lack of population growth is due to the fact that sewer and water lines were not available and landfill operations lowered the Village's desirability as a place to live. **With the recent construction of water and sewer lines and the closing of the landfills, Glenwillow is in a position to realize an accelerated level of growth.**
- 3.) **Glenwillow is situated between more urbanized inner-ring suburbs to the north and west which have been losing population and fast growing outer suburbs to the south and east.** Development has leap-frogged Glenwillow but the Village's location between these two rings should be attractive to those individuals and companies looking for a location closer to Cleveland, which isn't overly built.
- 4.) Glenwillow has a lower population density than surrounding communities. The Village's **small physical size, its' minimum one acre lot size, and desire to keep the rural atmosphere will ensure that the community does not grow too large.**
- 5.) Glenwillow's current average household size (2.2 persons per household) is lower than surrounding communities because a high percentage of the current housing units are in mobile homes (47%). **With most new construction occurring as new single-family houses, this average household size should increase in the future.**
- 6.) A substantial percentage increase in the population due to new housing development will result in an **expected increase in the population in all age groups.**
- 7.) In 1990, the educational level of adults in Glenwillow was slightly lower than the populations in the growing suburbs such as Solon, Twinsburg, and Macedonia. Glenwillow's population was more like the urbanized suburbs of Bedford and Bedford Heights. New homes built in Glenwillow will be more expensive and will require households with higher incomes (and typically higher education levels) to afford them. **As a result the overall education level of the community should rise.**

- 8.) The fact that Glenwillow is in the Solon School district will also make Glenwillow more **attractive to families which can afford to move to an area that provides a high quality of education for their children.**
- 9.) The **proximity of Glenwillow to areas of high job concentration** in Solon (and in the future Glenwillow) make it a desirable housing location.
- 10.) Because of the above cited reasons and the relatively large minimum lot size (40,000 s.f.), **it is likely that new homes in Glenwillow will be priced close to those in Solon.** The median price has recently been in the \$200,000 to \$300,000 range.
- 11.) As new housing is built and occupied, the average income of Glenwillow should rise. **In most cases a household income of \$72,000 to \$79,000 is required to afford a \$250,000 house.** Glenwillow's median household income in 1990 was \$26,250 and median family income was \$34,100.
- 12.) As new residents move in, the occupational make-up of the community will also become more like the suburbs to the east and south, with a **rise in the number of managers and professionals living in the Village.**
- 13.) Based upon current zoning, most housing in Glenwillow will **continue to be owner-occupied.** The percent owner-occupied may go up, especially if the historic housing in the Village Center is converted to other uses. Most housing will continue to be single-family.
- 14.) Between 400 and 650 single-family homes have been constructed per year collectively in four communities adjacent to Glenwillow. Since only 300 to 400 new houses can be constructed within the Village, **substantial build-out of the community could occur within a short time frame.**

INTRODUCTION

Demographic analysis provides basic information that is necessary in order to develop a well thought out master plan. It assists in understanding the overall population of the community as well as specific groups within the community. Demographic information is used in a number of ways:

Quantify—Quantifying the various characteristics of the population and housing stock is essential to understanding the impacts of a population, or subgroup, on matters such as the level of services required, size of markets that can be supported, and the impact on transportation and infrastructure.

Trends—Analyzing numbers over time can identify trends which are now affecting or which may affect the community in the future.

Identifying issues and needs — Numbers or trends may identify conditions or issues which the community needs to address through policy or programs.

Projections — Demographic analysis provides the starting point for developing projections. Trends can be used as input in identifying the size and characteristics of a community's future population. Understanding the size and characteristics of the future population to be served can help a community plan policy and programs in a timely fashion.

Glenwillow is not an island and while the level of development and change over the last 25 years has not been great, there have been many changes in the communities surrounding Glenwillow. With the provision of sanitary sewers and water in the mid-1990's, it is likely that the pace of development within Glenwillow will accelerate. Because of the large potential for new housing development within the Village, many of the future residents will be moving into Glenwillow from outside communities. Therefore, it is essential to understand what is occurring in the communities surrounding Glenwillow so that those characteristics and trends may be taken into account to better understand what forces will be pressuring change on Glenwillow. Where possible, demographic and housing figures for communities adjacent to Glenwillow, and for Cuyahoga County, have been included for comparison purposes.

The latest data available for many of the demographic characteristics is from the 1990 Census of Population and Housing from the U.S. Census Bureau. Where possible, more recent sources of information have been included to supplement the Census Bureau figures. Data from the Ohio Departments of Education and Taxation, and the Cuyahoga County Auditor's files provide information on various aspects of the population and housing markets since 1990.

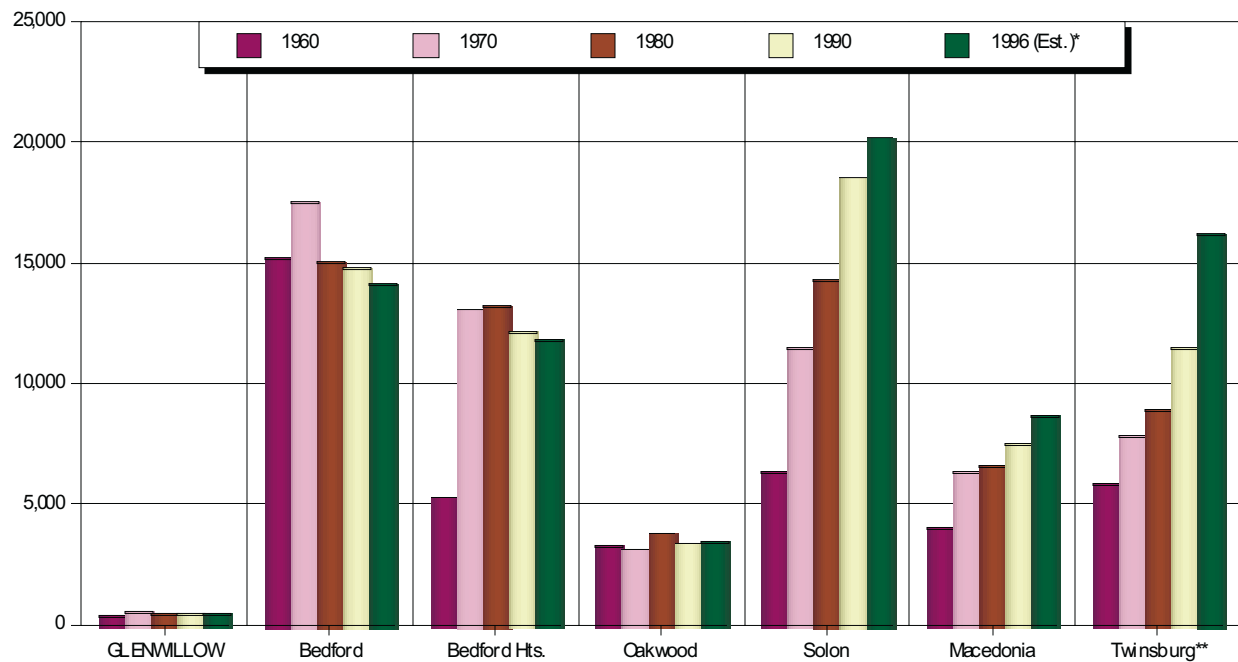
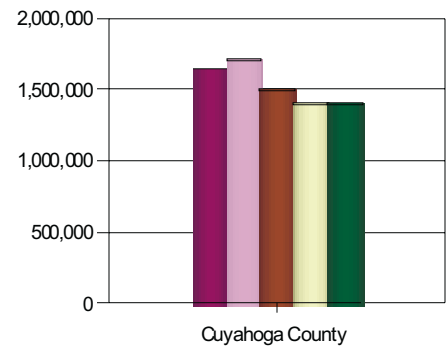
POPULATION GROWTH

Historic Population

The Village of Glenwillow was incorporated in 1914. In 1920, it had a population of 200 and it stayed in the 200's until sometime in the 1950's. During the 1950's and 1960's the Village had relatively large percent increases in population with the Village almost doubling in size from 257 in 1950 to 508 in 1970. Since 1970 the population of Glenwillow has showed a slight decrease, although the Village's 1996 population estimate is slightly higher than the 1990 census count. In 1990 Glenwillow had a population of 455 and it is estimated that the 1996 population was 477 (*see Exhibit 1*). Only Linndale Village and Chagrin Falls Twp., both much smaller in physical size compared to Glenwillow, had lower estimated populations in Cuyahoga County. The decline in average household size is responsible for Glenwillow's population loss between 1970 and 1990. Lack of water lines and sanitary sewer lines has also retarded development within the Village which has also had an effect on population growth.

Exhibit 1: Population Growth, 1960-1996

Community	Population					Percent Change			
	1960	1970	1980	1990	1996 (Est.)*	1960-70	1970-80	1980-90	1990-96
GLENWILLOW	359	526	492	455	477	46.5%	-6.5%	-7.5%	4.8%
Bedford	15,223	17,552	15,056	14,822	14,138	15.3%	-14.2%	-1.6%	-4.6%
Bedford Hts.	5,275	13,063	13,214	12,131	11,790	147.6%	1.2%	-8.2%	-2.8%
Oakwood	3,283	3,127	3,786	3,392	3,426	-4.8%	21.1%	-10.4%	1.0%
Solon	6,333	11,519	14,341	18,548	20,171	81.9%	24.5%	29.3%	8.8%
Macedonia	4,060	6,375	6,571	7,509	8,685	57.0%	3.1%	14.3%	15.7%
Twinsburg**	5,848	7,847	8,889	11,502	16,227	34.2%	13.3%	29.4%	41.1%
Cuyahoga County	1,647,895	1,721,300	1,498,400	1,412,140	1,401,552	4.5%	-12.9%	-5.8%	-0.7%



*Office of Strategic Planning, Ohio Department of Development, November 1997

**Includes Twinsburg Township

SOURCE: U.S. Bureau of the Census, 1960-1990

Surrounding Communities

Glenwillow is physically located between some of Cleveland's older and more built up suburban communities and the next ring of outer suburbs which have recently had a building boom. Bedford and Bedford Heights, northwest of Glenwillow, peaked in population in 1970 and 1980 and have recently begun to lose population. Meanwhile, the suburban communities of Solon, Macedonia and Twinsburg, which are to the south and east and further from the central city, have shown large increases in population. Solon's and Twinsburg's 1996 estimated populations are three times larger than their 1960 population and Macedonia's is twice as large. While the rate of Solon's growth seems to be leveling off, Twinsburg and Macedonia's rate of population growth seems to have accelerated in the 1990's.

The fact that development seems to have leapfrogged over Glenwillow again points to the historical lack of water and sewer. The level of population growth in some adjacent communities further from the central city points to the demand for new housing in the area. With the recent completion of new sanitary sewers and water lines through much of the community, Glenwillow can expect an increase in population in the future. That figure will be estimated in the population projections section.

VILLAGE AREA AND POPULATION DENSITY

Land Area

While the communities around it have either been built up or are in the process of being developed, the Village of Glenwillow has maintained a rural atmosphere. As *Exhibit 2* shows, Glenwillow is slightly smaller in land area than the more densely developed suburban communities to the north and west, and much smaller than the recently developing communities to the east and south. Twinsburg and Macedonia also have the ability to annex township land which borders it. Glenwillow and the surrounding communities in Cuyahoga County are bordered by other municipalities so the possibility of growth by annexation is almost non-existent. Glenwillow's relatively small physical size, 2.8 square miles, will limit the ultimate build-out for all uses in the Village.

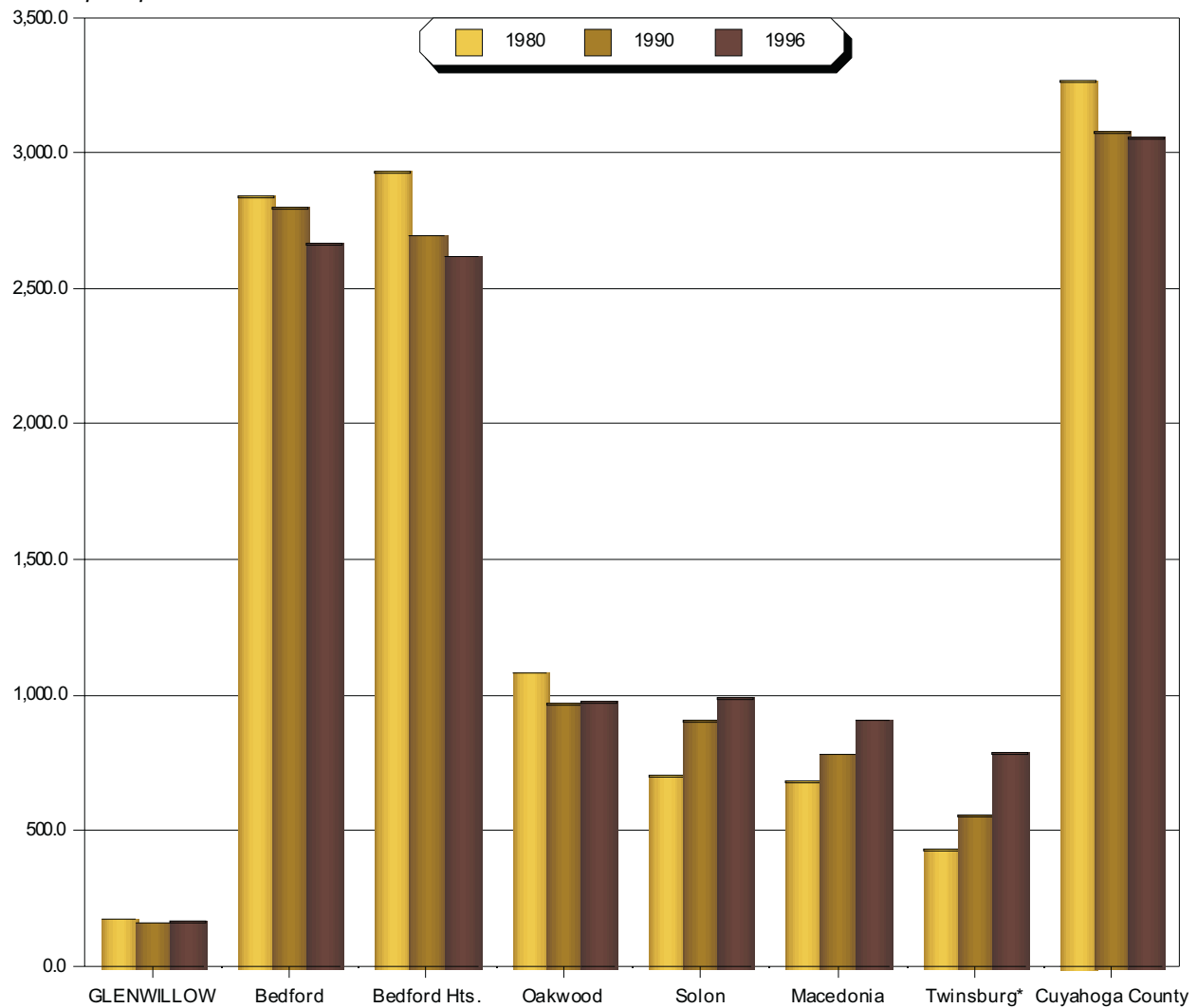
Population Density

Exhibit 2 also illustrates Glenwillow's rural nature through the figures on population density. Based on 1996 population estimates, Glenwillow had a population density of 164.5 persons per square mile or 0.26 persons per acre. These numbers are approximately 1/19th the density of the County. It is approximately 1/16th as dense as Bedford and Bedford Heights and 1/5th to 1/6th as dense as the communities to the east and south.

Exhibit 2: Population Density, 1980, 1990, 1996

Community	Persons Per Square Mile				Persons Per Acre			
	Square Miles	1980	1990	1996	Acres	1980	1990	1996
GLENWILLOW	2.8	169.7	156.9	164.5	1,856	0.27%	0.25%	0.26%
Bedford	5.3	2,840.8	2,796.6	2,667.6	3,392	4.44%	4.37%	4.17%
Bedford Hts.	4.5	2,936.4	2,695.8	2,620.0	2,880	4.59%	4.21%	4.09%
Oakwood	3.5	1,081.7	969.1	978.9	2,240	1.69%	1.51%	1.53%
Solon	20.4	703.0	909.2	988.8	13,056	1.10%	1.42%	1.55%
Macedonia	9.6	684.5	782.2	904.7	6,144	1.07%	1.22%	1.41%
Twinsburg*	20.6	431.5	558.3	787.7	13,184	0.67%	0.87%	1.23%
Cuyahoga County	458.3	3,269.5	3,081.3	3,058.2	293,312	5.11%	4.81%	4.78%

Persons per Square Mile



*Includes Twinsburg Township

SOURCE: U.S. Bureau of the Census and the Cuyahoga County Planning Commission

HOUSEHOLDS AND PERSONS PER HOUSEHOLD

Persons per Household

A general trend throughout the country has been the reduction in the number of persons per household. More single-person households, higher divorce rates and the reduction in the number of children in a family all contribute to this trend. This trend is also reflected in the figures in *Exhibit 3*. Cuyahoga County and the individual communities show a decrease in persons per household. The more dense, older suburbs tend to have smaller household sizes while households in the newer communities tend to be larger. Bedford and Bedford Heights have a higher percentage of their housing units in multi-family structures which are more appropriate for smaller sized households, while communities such as Solon and Macedonia have a higher percentage of their housing stock in single-family dwellings which tend to attract a higher percentage of families. Glenwillow's average household size is the smallest indicated in the table. The reason for this is that a high percentage of Glenwillow's current housing units are in a mobile home community located off Richmond Road. In 1990, Glenwillow's average household size was 2.2 people, but when broken down between single-family houses and mobile homes there is a significant difference. The average household size for a mobile home was 1.62 persons as compared to 2.72 persons for the single-family home. In addition, 30.1% of Glenwillow's households were single-person compared to the county average of 37.2%. The difference in household sizes among housing types will be taken into account for population projections.

Exhibit 3: Households, 1960-1990

Community	Households				Percent Change		
	1960	1970	1980	1990	1960-70	1970-80	1980-90
GLENWILLOW	118	182	202	207	54.2%	11.0%	2.5%
Bedford	4,319	5,444	5,782	6,551	26.0%	6.2%	13.3%
Bedford Hts.	1,580	4,250	5,482	5,354	169.0%	29.0%	-2.3%
Oakwood	920	925	1,306	1,288	0.5%	41.2%	-1.4%
Solon	1,707	3,278	4,607	6,341	92.0%	40.5%	37.6%
Macedonia	-	1,676	1,957	2,458	-	16.8%	25.6%
Twinsburg*	-	2,132	2,875	4,309	-	34.8%	49.9%
Cuyahoga County	496,926	554,239	563,779	563,243	11.5%	1.7%	-0.1%
Community	Persons Per Household						
	1960	1970	1980	1990			
GLENWILLOW	2.9	2.89	2.44	2.20			
Bedford	3.3	3.20	2.60	2.25			
Bedford Hts.	3.1	3.07	2.41	2.25			
Oakwood	3.1	3.36	2.81	2.51			
Macedonia	-	3.80	3.36	3.05			
Twinsburg*	-	3.68	3.09	2.68			
Cuyahoga County	3.6	3.51	3.11	2.92			

*Includes Twinsburg Township

SOURCE: U.S. Bureau of the Census

Households

Because of the declining household size, a community can lose population while not necessarily losing households or housing units. Glenwillow lost population between 1970 and 1990 but it did not lose households. As *Exhibit 2-3* indicates, Glenwillow gained households every decade between 1960 and 1990, although at a declining rate. Between 1980 and 1990, Bedford and Bedford Heights did lose a small percentage in households, but surprisingly Bedford, which lost 1.6% of its population during that time period showed a 13% gain in households. Between 1980 and 1990 Macedonia, Solon and Twinsburg showed gains in households of between 25% and 50%.

AGE COMPOSITION

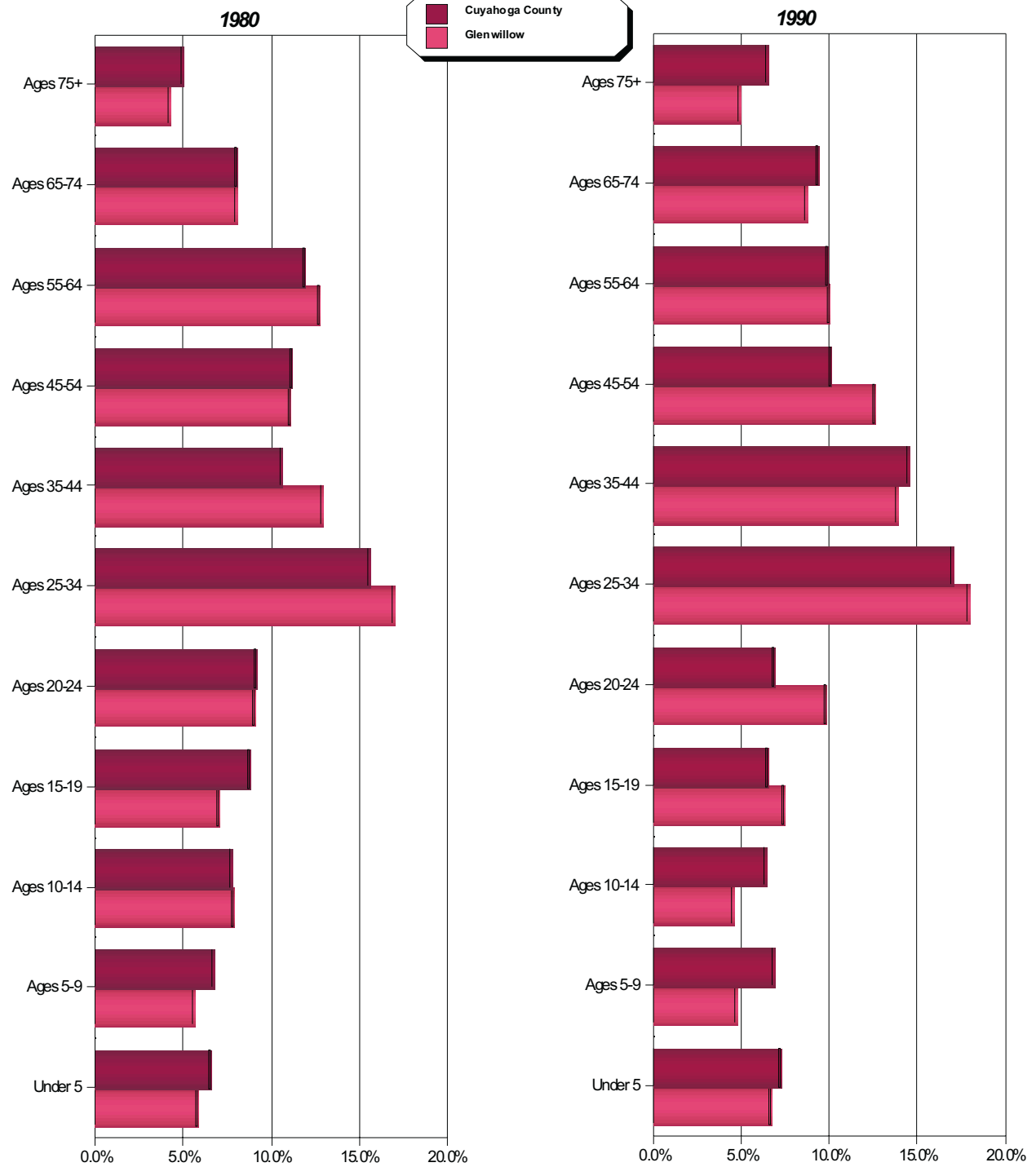
Exhibit 4 breaks down the population of Glenwillow and Cuyahoga County by age cohort and also shows the percentage of the population which are senior citizens and minors for surrounding communities.

Exhibit 4: Age Composition, 1990

Age	Glenwillow					Cuyahoga County				
	1980		1990		Change 1980-1990	1980		1990		Change 1980-1990
	#	%	#	%		#	%	#	%	
Under 5	28	5.7	30	6.6	2	96,100	6.4	100,293	7.1	4,193
5-9	27	5.5	21	4.6	-6	98,689	6.6	95,303	6.7	-3,386
10-14	38	7.7	20	4.4	-18	113,864	7.6	89,843	6.4	-24,021
15-19	34	6.9	33	7.3	-1	129,866	8.7	90,162	6.4	-39,704
20-24	44	8.9	44	9.7	0	134,547	9	94,697	6.7	-39,850
25-34	83	16.9	81	17.8	-2	231,673	15.5	238,040	16.9	6,367
35-44	63	12.8	63	13.8	0	157,516	10.5	203,606	14.4	46,090
45-54	54	11	57	12.5	3	166,666	11.1	140,952	10	-25,714
55-64	62	12.6	45	9.9	-17	177,517	11.8	138,196	9.8	-39,321
65-74	39	7.9	39	8.6	0	118,687	7.9	130,507	9.2	11,820
+75	20	4.1	22	4.8	2	73,275	4.9	90,558	6.4	17,283
Median Change	33.9		34.8		0.9	32		35		3
Community	19 and Under					65 and Over				
	1980		1990		Change 1980-1990	1980		1990		Change 1980-1990
	#	%	#	%		#	%	#	%	
GLENWILLOW	127	25.8	104	22.9	-23	59	12	61	13.4	2
Bedford	3,927	26.1	3,084	20.8	-843	1,818	12.1	2,606	17.6	788
Bedford Hts.	3,528	267.0	2,730	22.5	-798	1,116	8.4	1,429	11.8	313
Oakwood	1,203	31.8	820	24.2	-383	520	13.7	643	19	123
Solon	4,672	32.6	5,617	30.2	945	1,079	7.5	1,884	10.1	805
Cuyahoga County	438,519	29.3	375,601	26.6	-62,918	191,962	12.8	221,066	15.7	29,104

SOURCE: U.S. Bureau of the Census

Exhibit 4 (continued)



SOURCE: U.S. Bureau of the Census

Glenwillow

Between 1980 and 1990 a major trend which affected Glenwillow, Cuyahoga County and the communities surrounding Glenwillow was the decrease in the number, and percentage, of the population below the age of 19 and the increase in the number, and percentage, of the population over the age of 65. Because of Glenwillow's small size the change in the numbers are not that large. The number of people age 19 and less decreased by 23, from 127 in 1980 to 104 in 1990. The number of people age 65 and over increased by two. As a percent of the population, Glenwillow's figures for these two groups are slightly less than the average for Cuyahoga County.

Age 19 and Under

Bedford, Bedford Heights and Oakwood all had losses in the 19 and under age group and even Solon, which had an increase in the number of people 19 and under, had a decrease in this category as a percent of total population. One cohort within this category which did show an increase is the number of children in the 0 to 5 age group. In 1998, these children are in the 8 to 13 age group. Although age counts are not available beyond the 1990 census, enrollment data for school districts in the area have generally showed an increase in school age children. Even the Bedford City School District, where the overall population has shown a decrease, has experienced an increase in enrollment since 1993 (*see Exhibit 4*). These children are the offspring of the baby boomers, those people born between 1945 and 1964, many who have put off child bearing until later in life.

Age 65 and Over

All communities showed an increase in the over 65 population between 1980 and 1990. This cohort includes those people that were born before 1925. Because of improvements in medical science and heightened knowledge of the benefits of exercise and proper diet, the number of senior citizens is likely to continue to grow. A significant increase in the number of people over 65 will occur after the year 2010.

"Baby Boomers"

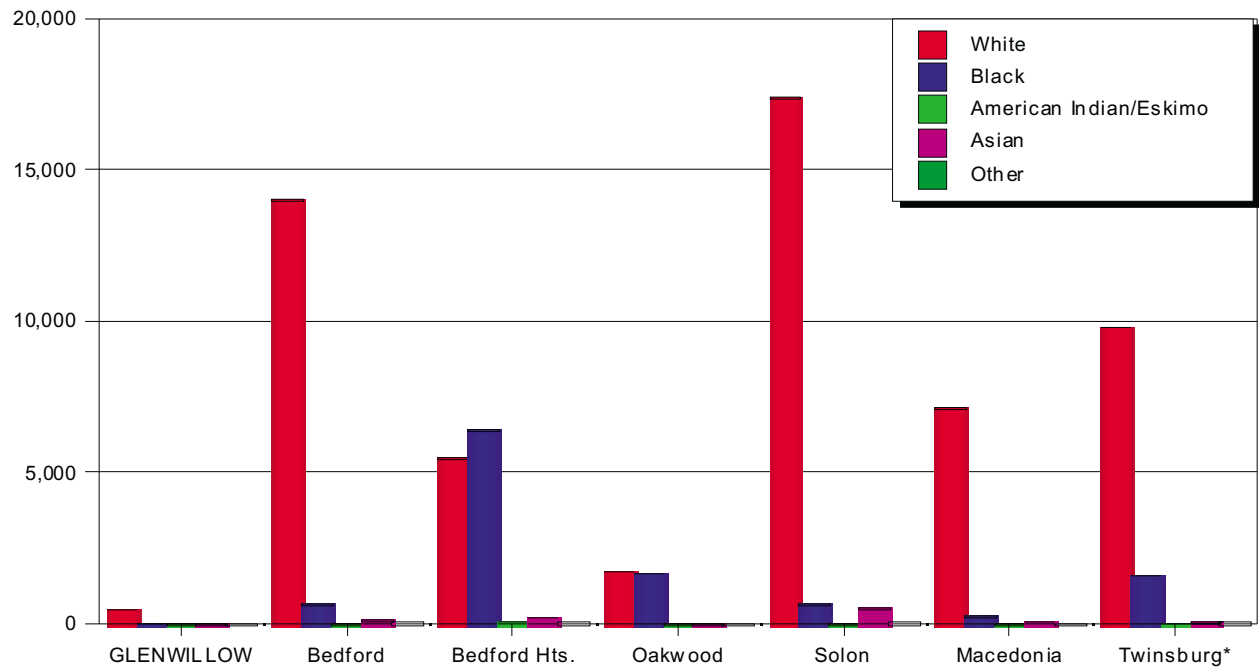
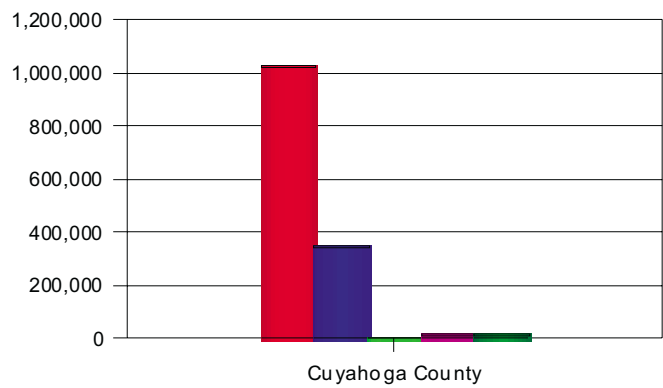
The baby boom of 1945 to 1964 is a significant demographic event that has impacted much of our society since the end of World War II. In 1980, this group was in the 16 to 35 age range and the 26 to 45 age range in 1990. In the year 2000, the first baby boomers will turn 55 and will turn 65 in the year 2010. As the baby boom generation grows older, their place in the life cycle and spending patterns will have a significant impact on many aspects of society, including housing styles, recreation, transportation and health care.

RACIAL COMPOSITION

Only 1.1% of the population was non-white in Glenwillow in 1990 (*see Exhibit 5*). By comparison, Cuyahoga County's non-white population was 27.4%, up from 19.6% in 1970. Most of the com-

Exhibit 5: Racial Composition, 1990

Community	Total	White	Black	American Indian/ Eskimo	Asian	Other	1990 % Non-White	1980 % Non-White	1970 % Non-White
GLENWILLOW	455	450	5	0	0	0	1.1%	0.0%	1.6%
Bedford	14,822	14,046	641	10	90	35	5.2%	0.7%	0.3%
Bedford Hts.	12,131	5,469	6,379	27	211	45	54.9%	28.7%	1.6%
Oakwood	3,392	1,712	1,650	7	12	11	49.5%	44.1%	29.5%
Solon	18,548	17,377	625	14	510	22	6.3%	2.8%	0.3%
Macedonia	7,509	7,151	266	13	71	8	4.8%	2.1%	1.2%
Twinsburg*	11,502	9,792	1,591	17	72	30	14.9%	10.2%	11.5%
Cuyahoga County	1,412,140	1,025,756	350,185	2,533	18,085	15,581	27.4%	24.6%	19.6%



*Includes Twinsburg Township

SOURCE: U.S. Bureau of the Census

munities surrounding Glenwillow have become more integrated. In 1990, Bedford Heights and Oakwood, which border Glenwillow on the west, had substantial minority populations in the 50% range. Oakwood has had a substantial minority population since before 1970 whereas Bedford Heights has had a notable racial change during the 1970's and 1980's. The other communities had a minority population of under 10% in 1990 except for Twinsburg and Twinsburg Township which had a 14.9% non-white population. A large portion of Solon's non-white population was made up of Asians. School enrollment figures since 1990 (which will be detailed more in a later section) show the Bedford City School District (which includes Bedford, Bedford Heights, Walton Hills, and Oakwood) and the Solon School District (including Solon and Glenwillow) with slight increases in the percent minority. The Twinsburg and Nardon School District (which includes Macedonia) have had a relatively stable minority percentage.

EDUCATION ATTAINMENT AND SCHOOL ENROLLMENT

Educational Attainment of Adults

In 1990, 79.6% of Glenwillow residents age 25 and older had a high school diploma. Those with bachelor and graduate degrees made up 11.6% of those 25 and older, while another 29.8% had an associates degree or some college (*see Exhibit 6*). The percent with at least a high school degree was higher than the average for Cuyahoga County, but the percent of residents with at least a four year degree is less than the 20.4% for Cuyahoga County. In 1990, the education level of Glenwillow's population was more like the urbanized suburbs to the north and west than the suburbs further from the central city. Solon had the highest education level with 38% of its population 25 and over in possession of at least a four year degree. Twinsburg and Macedonia also had higher levels of residents with bachelor degrees and, along with Solon, lower proportions of the population without a high school degree. As new housing developments are constructed in Glenwillow, its numbers could shift closer to those of Solon and Twinsburg as new residents that are able to afford and purchase new homes will be similar in character to residents that have recently bought new housing in those communities.

School District Attendance and Facts

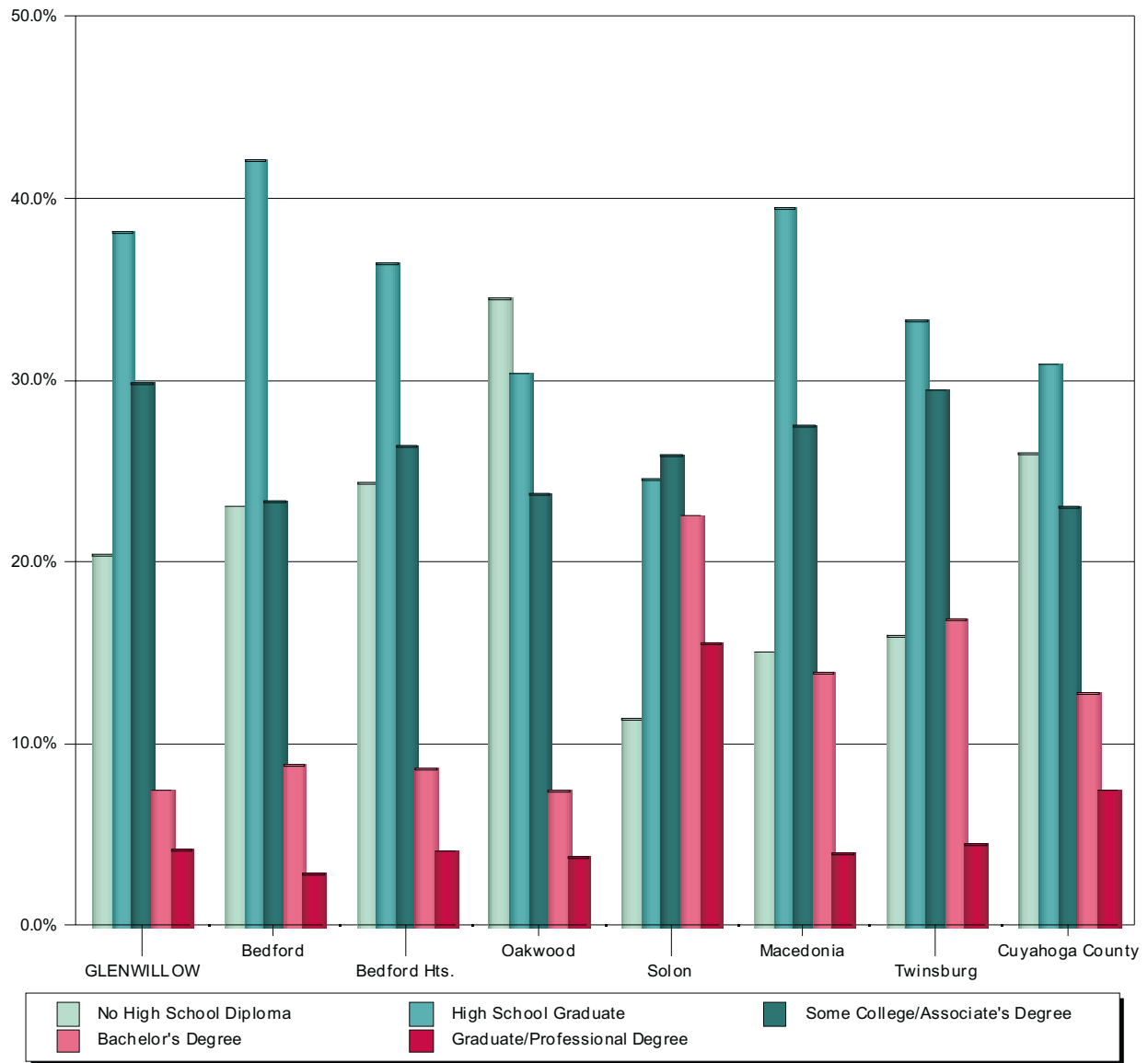
Glenwillow is in the Solon School District. To the west is the Bedford City School District which serves Bedford, Bedford Heights and Oakwood, and Walton Hills. In Summit County the Twinsburg School District and Nardon School District (in which Macedonia is located) are adjacent to Glenwillow. All the districts have shown a recent rise in enrollment (*see Exhibit 7*). From 1992 to 1996, the enrollment in the Solon School District has risen 23.5%.

Out of the 4,417 students in the Solon School District in 1996, 54 lived in Glenwillow. In 1997-98, 60 students are from Glenwillow. The breakdown of attendance is as follows:

- ✓ 19 - Solon High School
- ✓ 11 - Solon Middle School (7th & 8th)

Exhibit 6: Educational Attainment, 1990 (Persons Age 25 and Older)

Community	All	No High School Diploma	High School Graduate	Some College/ Associate's Degree	Bachelor's Degree	Graduate Professional Degree
GLENWILLOW	309	20.4%	38.2%	29.8%	7.4%	4.2%
Bedford	10,664	23.0%	42.1%	23.4%	8.8%	2.8%
Bedford Hts.	8,397	24.4%	36.4%	26.4%	8.6%	4.1%
Oakwood	2,393	34.5%	30.4%	23.8%	7.4%	3.8%
Solon	12,099	11.4%	24.6%	25.9%	22.5%	15.5%
Macedonia	4,774	15.0%	39.5%	27.5%	13.9%	4.0%
Twinsburg	6,397	15.9%	33.3%	29.4%	16.9%	4.5%
Cuyahoga County	943,924	26.0%	30.9%	23.0%	12.8%	7.4%



SOURCE: U.S. Bureau of the Census

Exhibit 7: School Enrollment and Proficiency Test Results; Solon, Bedford, Nardonía, Twinsburg

	Year				
	1992	1993	1994	1995	1996
Enrollment					
SD	3,577	3,785	3,786	4,144	4,417
BCSD	3,920	3,845	3,845	3,962	4,071
ND	3,005	3,013	3,013	3,163	3,264
TWD	2,314	2,477	2,477	2,703	2,827
Minority %					
SD	9.0%	9.5%	9.5%	10.6%	11.0%
BCSD	48.0%	48.0%	48.0%	53.0%	55.0%
ND	4.0%	4.0%	4.0%	4.8%	5.0%
TWD	21.0%	22.0%	22.0%	22.0%	22.0%
Expenditure Per Pupil					
SD	\$6,589	\$7,012	\$7,012	\$7,387	\$7,383
BCSD	\$6,447	\$7,093	\$7,093	\$7,447	\$7,454
ND	\$5,442	\$6,066	\$6,066	\$6,187	\$6,239
TWD	\$5,644	\$5,540	\$5,540	\$5,811	\$5,968
Revenue Per Pupil					
SD	\$7,554	\$7,289	\$7,289	\$7,542	\$7,297
BCSD	\$6,554	\$7,382	\$7,382	\$7,661	\$8,235
ND	\$5,413	\$5,772	\$5,772	\$6,446	\$6,628
TWD	\$5,614	\$5,640	\$5,640	\$6,018	\$6,518
Student:Teacher Ratio					
SD	16.9:1	16.9:1	18.5:1	17.6:1	18.2:1
BCSD	16.8:1	17.8:1	17.3:1	18.7:1	19.8:1
ND	17.3:1	18.2:1	18.7:1	19.1:1	19.3:1
TWD	17.2:1	18.5:1	18.7:1	18.7:1	19.2:1
SD = Solon School District			ND = Nardonía School District		
BCSD = Bedford City School District			TWD = Twinsburg School District		
Ohio 12th Grade Proficiency Test Results					
1997 Test Administration - 1996 Standard					
	SD	BCSD	ND	TWD	
Writing	95	69	78	76	
Reading	97	77	82	89	
Math	87	43	62	67	
Citizen	92	64	72	78	
Science	82	45	59	65	
All Taken	74	29	42	44	

SOURCE: Ohio Department of Education

- ✓ 4 - Orchard (5th & 6th)
- ✓ 6 - Roxbury (K thru 4th)
- ✓ 20 - Arthur Road (K thru 4th)

The student-teacher ratio in the Solon School District is the lowest among the four districts in the area. Expenditures per pupil in the Solon School District have risen since 1992 but were relatively flat between 1994 and 1996. In 1996, expenditures per pupil in the Solon School District were \$7,383, above Twinsburg and Nardonía, but slightly below Bedford. Revenue per pupil has fluctuated during the time period shown and was \$7,297 in 1996.

1997 Proficiency Test Results

Exhibit 2-7 also indicates the 12th Grade proficiency test results for the test administered in 1997. It is only a snapshot of one year's results, but the results are a good indicator of how well pupils have recently performed and the quality of the educational environment. The quality of education is an important consideration when families are considering the purchase of a home. As the table shows, in 1997 students in the Solon School District have performed extremely well as compared to students in the surrounding districts. This is a factor that is a strength for Glenwillow and should have a positive influence on the Glenwillow housing market.

OCCUPATION AND JOURNEY TO WORK

Occupations

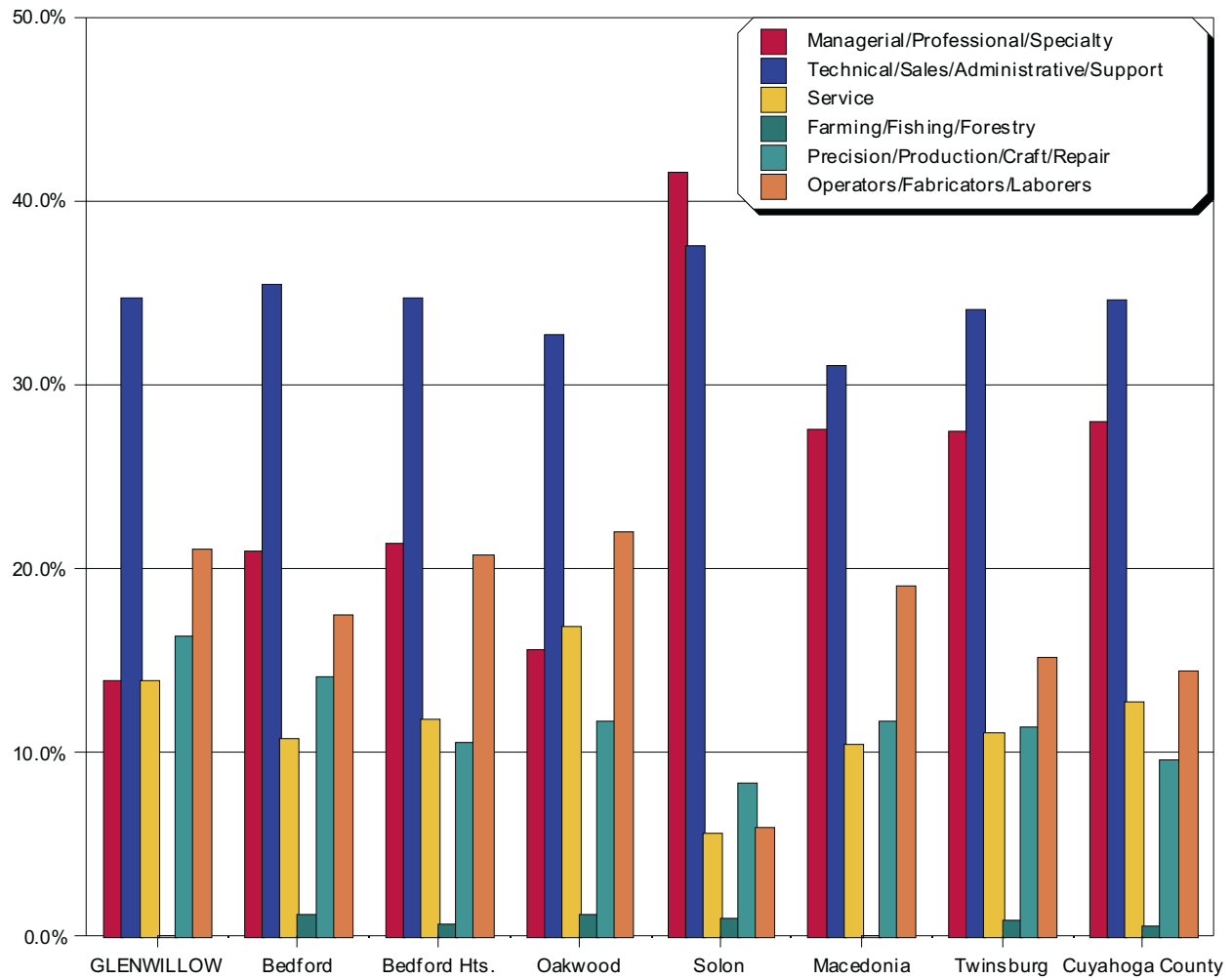
One's level of education often affects one's type of occupation. For example, because a high percentage of Solon's population has bachelor and graduate degrees, it follows that a very high percentage of the workforce would be in managerial and professional positions. The highest percentage of Glenwillow's workforce in 1990 was in Technical/Sales/Administrative/Support positions (*see Exhibit 8*). This is consistent with most other communities and Cuyahoga County. A high percent of the population (21.1%) were in fabricator, laborer and operator positions. Glenwillow's numbers for this category were high compared to Cuyahoga County's numbers for 1990 but were in line with a number of adjacent communities including Bedford Heights, Oakwood and Macedonia. Glenwillow also had a higher percent of its workforce in precision, production, craft and repair positions. Managerial and professional positions are where Glenwillow's numbers were lower than average. The 13.9% figure for Glenwillow in 1990 was less than half the County average. The percent of residents in managerial and professional occupations will, however, likely increase as new residents move in to newly constructed housing. With the closing of the landfills in the community, the stigma associated with them will lessen over time and more managers and professionals will be attracted to Glenwillow. The success of the future attempts to improve the look of existing development and ensure high quality new development will also affect who will be attracted to live in the Village.

Means of Transportation

In 1990, nearly everyone in Glenwillow drove to work (*see Exhibit 2-9*). Over 94 percent used private automobiles while three percent each either walked to work or worked at home. In 1990 nobody in Glenwillow reported using public transportation as a regular mode for getting to work. In Cuyahoga County approximately eight percent used public transportation. Glenwillow is at the end of the RTA's 97X line which serves Richmond Road. This line first runs south to Broadway and then turns northwest onto Broadway Avenue and heads through Oakwood, Bedford and Maple Heights on its way to Downtown Cleveland. The trip to Downtown Cleveland takes approximately one-hour and only serves Richmond Road twice in the morning and twice in the evening. There is also a 41A&C line which services the industrial areas along Cochran Road in Solon. It connects the industrial area with the center of Solon and other east side suburbs but service on Cochran Road stops before it gets to Glenwillow.

Exhibit 8: Occupations (Employed Persons Age 16 and Older), 1990

Community	Employed Persons Over 16	Managerial/ Professional/ Specialty	Technical/Sales/ Administrative Support	Service	Farming/ Fishing/ Forestry	Precision/ Production/ Craft/Repair	Operators/ Fabricators/ Laborers
GLENWILLOW	251	13.9%	34.7%	13.9%	0.0%	16.3%	21.1%
Bedford	7,743	21.0%	35.5%	10.8%	1.2%	14.1%	17.5%
Bedford Hts.	6,687	21.4%	34.7%	11.8%	0.7%	10.5%	20.8%
Oakwood	1,577	15.6%	32.7%	16.9%	1.2%	11.7%	22.0%
Solon	9,460	41.6%	37.6%	5.6%	1.0%	8.3%	5.9%
Macedonia	4,002	27.6%	31.1%	10.4%	0.0%	11.7%	19.1%
Twinsburg	5,338	27.5%	34.1%	11.1%	0.9%	11.4%	15.2%
Cuyahoga County	629,512	28.0%	34.6%	12.8%	0.6%	9.6%	14.4%



SOURCE: U.S. Bureau of the Census

Exhibit 9: Journey to Work, 1990

Means of Transportation	Glenwillow		Cuyahoga County
	Number	Percentage	Percentage
Private Vehicle	231	94.3%	86.2%
Drive Alone	218	89.0%	75.5%
Carpool	13	5.3%	10.7%
Public Transportation	0	0.0%	8.0%
Walking	7	2.9%	3.3%
Other Means	0	0.0%	0.7%
Work at Home	7	2.9%	1.8%
Workers 16 Years and Over	245	100.0%	100.0%
Place of Work			
Within MSA	214	87.3%	95.8%
Cleveland	22	9.0%	44.4%
Solon	68	27.8%	2.1%
Remainder of Cuyahoga County	119	48.6%	46.4%
Lake County	5	2.0%	2.2%
Geauga County	0	0.0%	0.4%
Medina County	0	0.0%	0.4%
Outside MSA	31	12.7%	4.2%
Summit County	25	10.2%	1.6%
Portage County	5	2.0%	0.2%
Elsewhere	1	0.4%	2.4%
Workers 16 Years and Over	245	100.0%	100.0%

SOURCE: U.S. Bureau of the Census

Place of Work

Solon is a major work destination for residents of Glenwillow. In 1990, almost 28% of Glenwillow's workforce worked in Solon. Summit County and Cleveland were the destinations for 10.2% and nine percent of the workforce respectively. Approximately half the workforce worked elsewhere in Cuyahoga County.

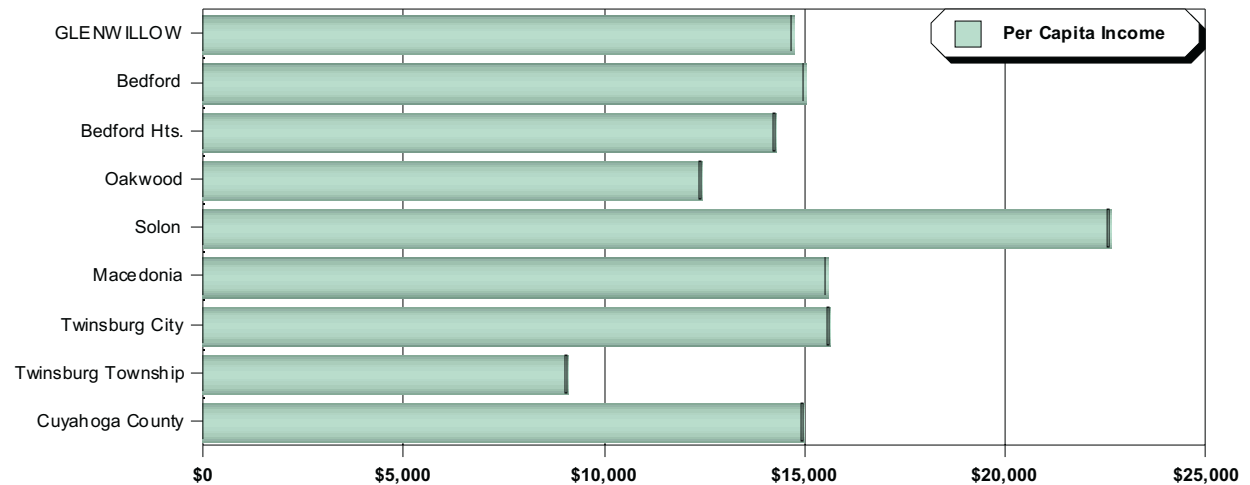
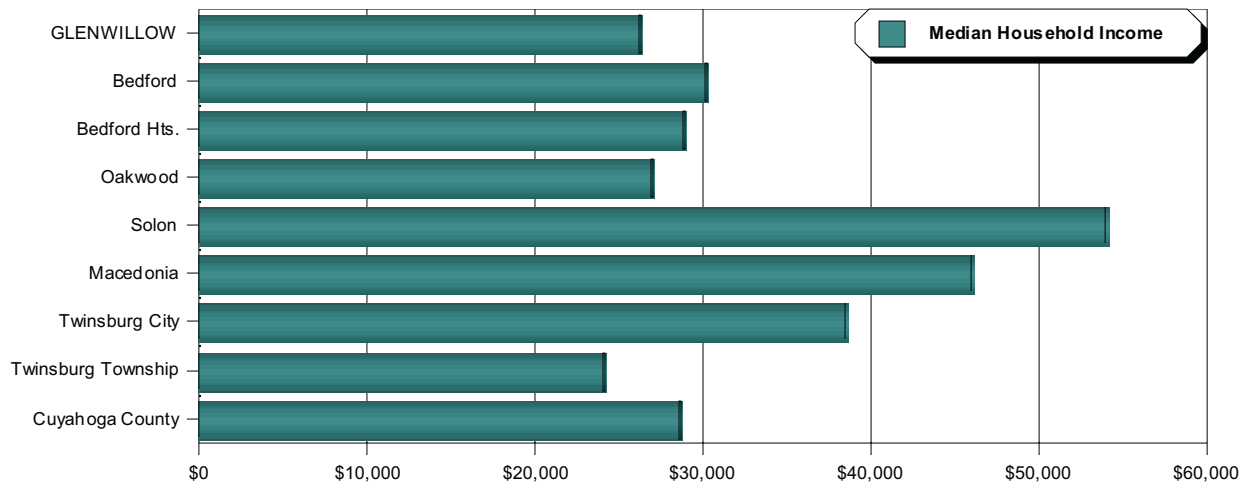
MEDIAN INCOME AND PER CAPITA INCOME

Glenwillow

In 1990, Glenwillow's median household income was \$26,250, about eight percent lower than the Cuyahoga County median of \$28,595 (*see Exhibit 10*). It was also lower than all of the surrounding communities except for Twinsburg Township. Median family income for Glenwillow was also lower than the Cuyahoga County median, but only by 4.5%. The median family income in Glenwillow in 1990 was \$34,107. Compared to Cuyahoga County, Glenwillow had a lower percentage of its households which were classified as families (a householder and one or more persons living in the same household related by birth, marriage or adoption). In 1990, 60.5% of Glenwillow's households were classified as families compared to 66.2% for Cuyahoga County. The high percent of mobile homes in the community can account for much of this difference. Per capita income figures for Glenwillow show it being much more in line with the County and surrounding communities. Glenwillow's \$14,658 per capita income figure was only 1.7% below the County figure of \$14,912.

Exhibit 10: Income, 1989

Community	Median Household Income	Median Family Income	Median Non-Family Income	Per Capita Income
GLENWILLOW	\$26,250	\$34,107	\$13,125	\$14,658
Bedford	\$30,082	\$34,563	\$19,408	\$14,935
Bedford Hts.	\$28,873	\$36,859	\$18,773	\$14,234
Oakwood	\$26,944	\$33,866	\$12,301	\$12,362
Solon	\$54,005	\$58,426	\$14,639	\$22,514
Macedonia	\$45,972	\$48,132	\$16,969	\$15,511
Twinsburg City	\$38,500	\$41,926	\$21,070	\$15,549
Twinsburg Township	\$24,063	\$26,534	\$13,750	\$9,039
Cuyahoga County	\$28,595	\$35,749	\$16,269	\$14,912



SOURCE: U.S. Bureau of the Census

Adjacent Communities

The highest incomes in the area were in Solon. Median household income was 89% higher than the County average and per capita income was 50% higher. Macedonia and Twinsburg City also had higher income figures. These communities have shown the highest population growth in recent years and also have the highest percent of their workforce in managerial and professional positions.

HOUSING UNITS, OCCUPANCY AND TENURE

As mentioned in earlier sections, because of the lack of water and sanitary sewers there has not been much residential development in Glenwillow in recent years. In 1990, Glenwillow had the smallest number of housing units out of the communities highlighted in *Exhibit 11*. Glenwillow's vacancy rate of 6.3% was in line with the County average and with the communities of Bedford and Bedford Heights. Solon, Macedonia and Twinsburg had lower vacancy rates. A very high percent of the units in Glenwillow were owner-occupied. Glenwillow's owner-occupancy rate of 84.1% was only exceeded by Macedonia's 94.5% and Solon's 85.8%. This would indicate most of the mobile homes are also owner-occupied.

HOUSING CHARACTERISTICS

Type of Structure

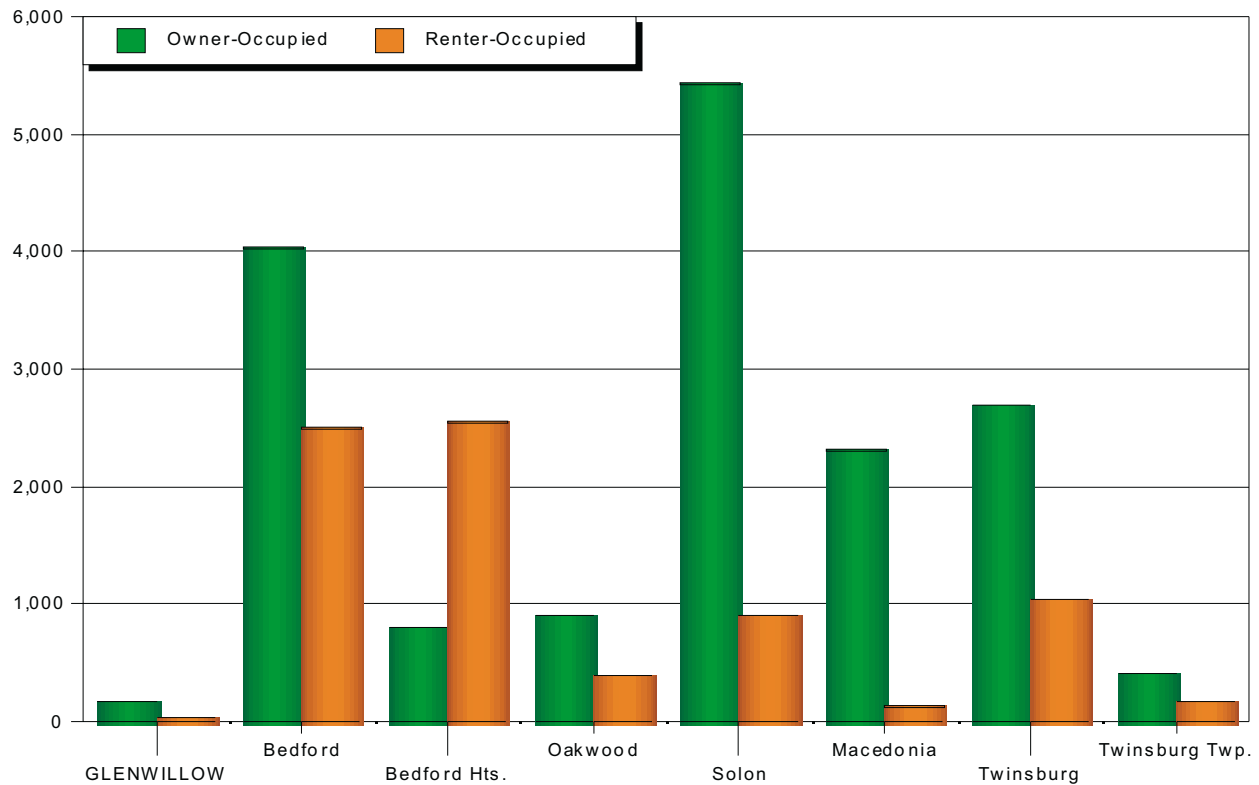
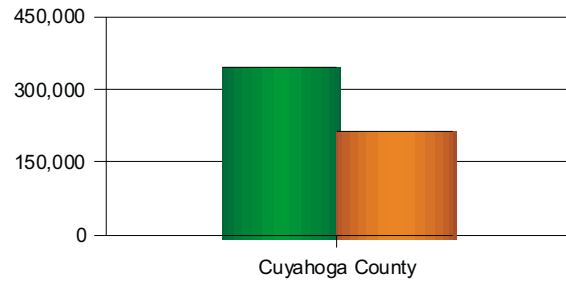
One factor which affects the ownership rate is the type of housing which comprises a municipality's housing stock. Almost all of Glenwillow's housing in 1990 was in single-family homes and mobile homes, at 52.3% and 47.1%, respectively (*see Exhibits 12*). There were five units in two to nine unit structures (two of the company homes on Pettibone Road owned by BFI were two-family structures). In Cuyahoga County 61.6 percent of the housing units were in one-family structures. In addition to Glenwillow, Bedford Heights was below that average. Bedford was very close to the County average. Macedonia had the highest percentage of units in single-family homes at 96.4%. Twinsburg and Bedford had the highest percentage of units in small multi-family structures. Twinsburg's zoning ordinance has a number of residential cluster districts which permit more dense development. The highest percentage of large apartment buildings in the area is in Bedford Heights. Almost 39% of that communities housing units are in buildings of over ten units. This is over twice the County average. Glenwillow has an extremely high percentage of its units in mobile homes. In Cuyahoga County only % of the units are in mobile homes but as stated earlier, mobile homes made up 47% of Glenwillow's housing in 1990. As new single-family housing is constructed in Glenwillow the percent of units in mobile homes will drop.

Year Structure Built

Seventy-five percent of Glenwillow's housing units were built between 1950 and 1980 (*see Exhibit 13*). Seven percent, or 16 units, have been constructed since 1980. Glenwillow's first substan-

Exhibit 11: Housing Counts, Occupancy Tenure, 1980

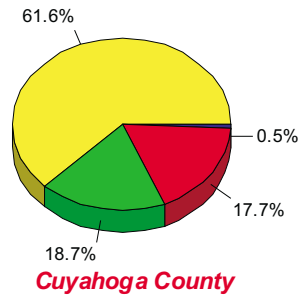
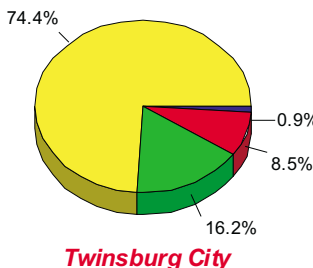
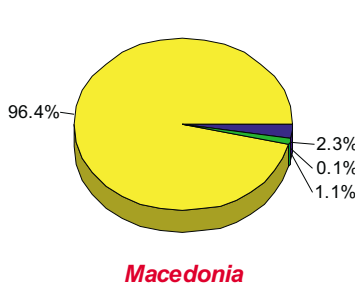
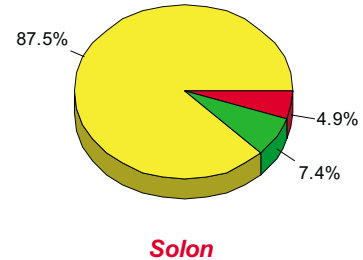
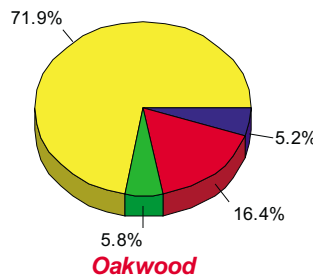
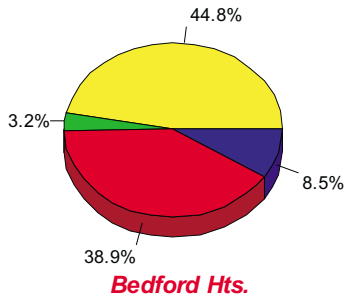
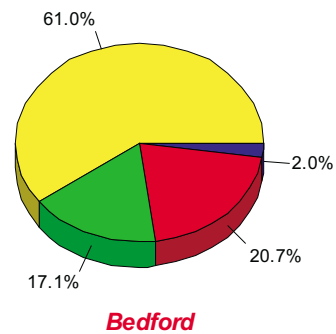
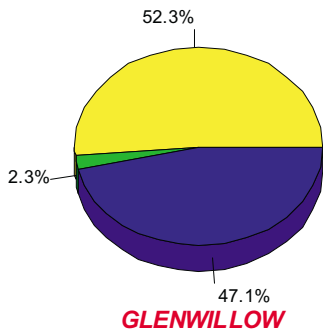
Community	Total	Occupied Housing Units		Owner-Occupied		Renter-Occupied		Vacant Units	
		Number	%	Number	%	Number	%	Number	%
GLENWILLOW	221	207	93.7%	174	78.7%	33	14.9%	14	6.3%
Bedford	7,074	6,551	92.6%	4,049	57.2%	2,502	35.4%	523	7.4%
Bedford Hts.	5,736	5,354	93.3%	2,998	52.3%	2,556	44.6%	382	6.7%
Oakwood	1,354	1,288	95.1%	903	66.7%	385	28.4%	66	4.9%
Solon	6,601	6,341	96.1%	5,440	82.4%	901	13.6%	260	3.9%
Macedonia	2,497	2,458	98.4%	2,324	93.1%	134	5.4%	39	1.6%
Twinsburg	3,855	3,722	96.5%	2,686	69.7%	1,036	26.9%	133	3.5%
Twinsburg Twp.	625	587	93.9%	415	66.4%	172	27.5%	38	6.1%



SOURCE: U.S. Bureau of the Census

Exhibit 12: Housing Units by Type of Structure, 1990

Community	Single-Family	%	2 to 9 Units	%	10 Units & Over	%	Mobile Homes	%
GLENWILLOW	115	52.3%	5	2.3%	0	0.0%	104	47.1%
Bedford	4,317	61.0%	1,208	17.1%	1,465	20.7%	2	2.0%
Bedford Hts.	2,572	44.8%	183	3.2%	2,233	38.9%	485	8.5%
Oakwood	973	71.9%	78	5.8%	222	16.4%	70	5.2%
Solon	5,773	87.5%	487	7.4%	322	4.9%	2	0.0%
Macedonia	2,408	96.4%	27	1.1%	5	0.2%	57	2.3%
Twinsburg City	2,870	74.4%	623	16.2%	326	8.5%	36	0.9%
Cuyahoga County	372,541	61.6%	113,256	18.7%	107,430	17.7%	2,986	0.5%

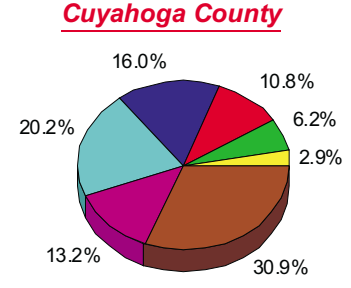
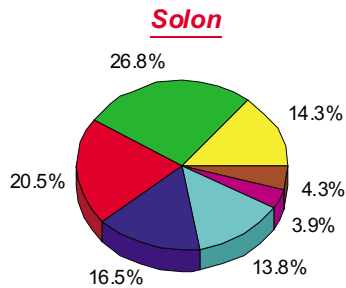
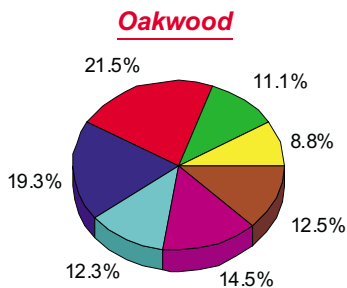
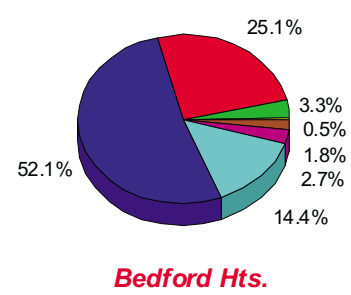
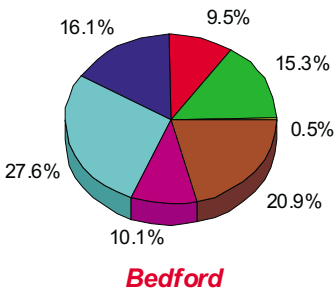
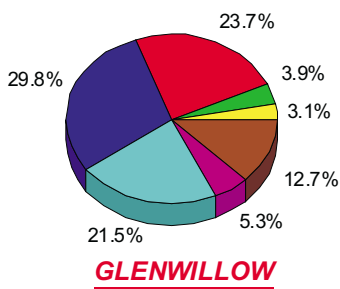


*Includes attached and detached units

SOURCE: U.S. Bureau of the Census

Exhibit 13: Year Residential Structures Built

Community	Total Housing Units	1990-1997	1980-1989	1970-1979	1960-1969	1950-1959	1940-1949	1939 or Earlier
GLENWILLOW	228	3.1%	3.9%	23.7%	29.8%	21.5%	5.3%	12.7%
Bedford	7,112	0.6%	15.3%	9.5%	16.1%	27.6%	10.1%	20.9%
Bedford Hts.	5,765	0.5%	3.3%	25.1%	52.1%	14.4%	2.7%	1.8%
Oakwood	1,422	4.8%	11.6%	21.5%	20.2%	12.8%	15.1%	13.0%
Solon	7,709	14.4%	26.7%	20.5%	16.4%	13.8%	3.9%	4.3%
Cuyahoga County	624,323	3.1%	6.2%	10.8%	15.9%	20.2%	13.2%	30.8%



Residential permits since 1990 added to 1990 unit counts. Does not factor demolitions since 1990.

SOURCE: 1990-1997: Construction Statistics Division, Bureau of the Census (reviewed by individual community's Building Departments); 1989 and earlier: Census of Population and Housing, STF#A, Bureau of the Census

tial housing development occurred at the turn of the century when the Austin Powder Company constructed housing for their workers. Because the explosive's manufacturer had to be in a rural location to minimize the damage done by accidents at the facility, the company had to construct housing so that the plant had an accessible workforce. Twenty-eight residential structures dating from the time of the original company town still line Pettibone and Cochran Roads. These structures account for almost all the housing developed prior to 1939. Cuyahoga County communities to the west and north (closer to Cleveland) have a generally older housing stock. Over half of Bedford's units were constructed before 1960 while over half of Bedford Heights units were constructed during the 1960's. Oakwood has had a fairly steady pace of construction over the years. The most concentrated period of development occurred in the 1970's when 22.7% of the units were constructed. Solon has the largest amount of new housing. Forty percent of its units were developed since 1980 and another 20% were developed during the 1970's.

HOUSING VALUE, CONTRACT RENT AND HOME SALES

Median Home Value

Between 1980 and 1990, the median home value in Glenwillow increased 47.2%, from \$64,400 to \$94,800 (*see Exhibit 14*). This was the second highest percentage increase for the communities in the area and was well above the County figure for the same time period of 35.5%. The average value at the time was also second only to Solon's \$141,500 for communities in this area. Much of Solon's increase in price was due to the amount of new housing constructed during the 1980's which tends to be more expensive than existing housing.

Median Contract Rent

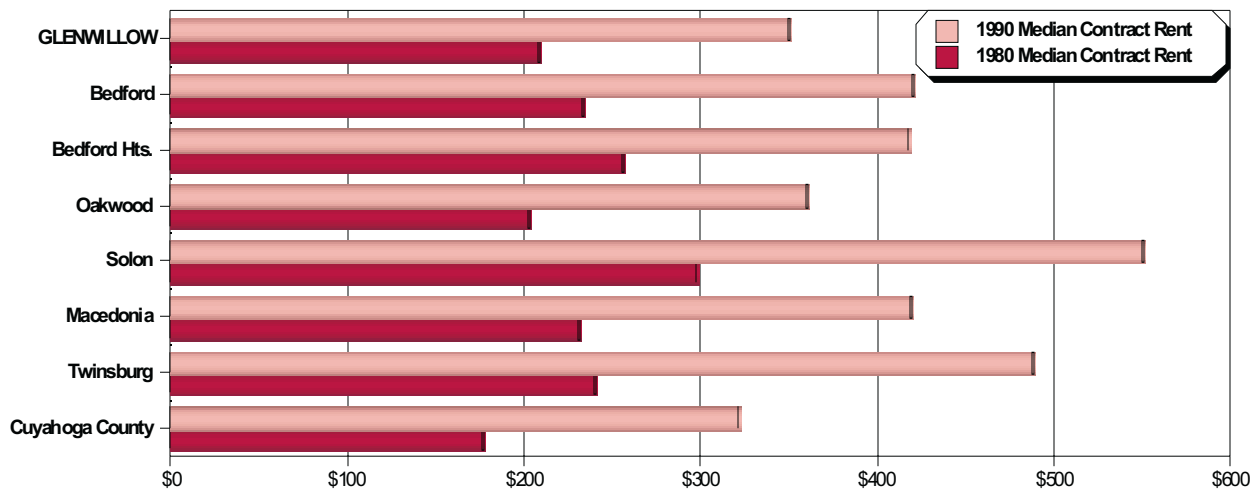
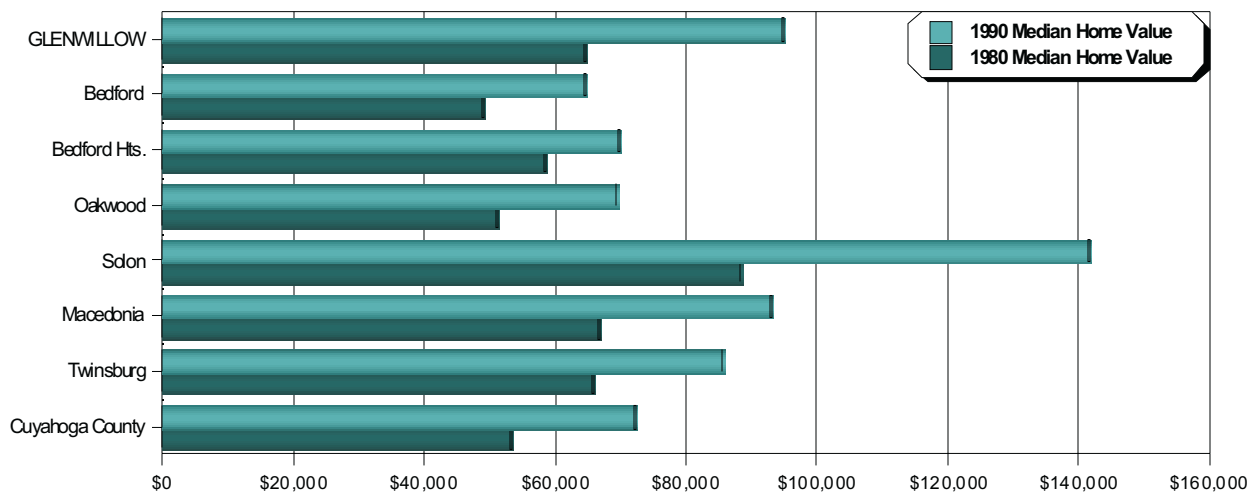
The 68.3% increase in median contract rent between 1980 and 1990 for Glenwillow was below the Cuyahoga County average of 82.4%. Although the 1990 contract rent was above the County average (which was lowered by the many rental units within the City of Cleveland), it was the lowest of the communities in the immediate vicinity. The fact that many of the rental units in Glenwillow are in the old worker houses which were owned by the Austin Powder Company, and these units were close to an operating landfill, may explain why the increases and levels of rent tended to be lower than those in surrounding communities.

Single-Family Home Sales (Existing)

The Urban Center of Cleveland State University keeps track of housing sales in Cuyahoga County through the Cuyahoga County Auditor's records. Data on housing sales from 1991 through August of 1997 are presented in *Exhibit 15*. The table breaks down the sales of existing housing and new construction. Because of the relatively small number of units, Glenwillow has had very few sales of houses per year. There have typically been one to three sales of houses each year, although there were eight sales in 1995. Since 1991 the sales prices have been in the \$100,000 to \$105,000 range. Because there are so few sales it difficult to establish a meaningful trend for the Village. The price

Exhibit 14: Median Housing Value* and Contract Rent, 1980-1990

Community	Housing Value			Contract Rent		
	1980	1990	%	1980	1990	%
GLENWILLOW	\$64,400	\$94,800	47.2%	\$208	\$350	68.3%
Bedford	\$48,900	\$64,400	31.7%	\$233	\$420	80.3%
Bedford Hts.	\$58,300	\$69,500	19.2%	\$255	\$418	63.9%
Oakwood	\$51,100	\$69,300	35.6%	\$202	\$360	78.2%
Solon	\$88,200	\$141,500	60.4%	\$298	\$550	84.6%
Macedonia	\$66,700	\$92,900	39.3%	\$231	\$419	81.4%
Twinsburg	\$65,600	\$85,500	30.3%	\$240	\$488	103.3%
Cuyahoga County	\$53,200	\$72,100	35.5%	\$176	\$321	82.4%



*Owner-occupied housing units

SOURCE: U.S. Bureau of the Census

Exhibit 15: Single-Family Home Sales, New Construction Sales and Median Price, 1991-1997

Single-Family Homes (Excludes New Construction)							
Community	Median Price and Number of Sales						
	1991	1992	1993	1994	1995	1996	1997
GLENWILLOW	\$103,500	\$102,000	\$106,000	\$97,900	\$105,000	-	\$57,500
	2	1	3	2	8	-	1
Bedford	\$67,000	\$69,900	\$68,300	\$72,000	\$76,000	\$79,900	\$83,000
	163	151	191	205	171	204	209
Bedford Hts.	\$70,700	\$73,700	\$76,500	\$86,900	\$85,950	\$93,000	\$88,500
	88	86	82	81	82	72	74
Oakwood	\$69,500	\$79,500	\$72,750	\$85,000	\$72,200	\$73,200	\$95,100
	25	18	22	23	22	40	25
Solon	\$151,250	\$159,750	\$165,000	\$176,950	\$179,500	\$193,000	\$199,000
	250	306	284	298	293	295	318
Cuyahoga County	\$77,500	\$82,500	\$83,900	\$85,000	\$87,500	\$91,500	\$95,000
	13,645	14,289	15,080	15,868	15,118	15,818	15,987
Cuyahoga County (excluding Cleveland)	\$87,500	\$92,000	\$95,500	\$99,000	\$105,000	\$110,000	\$114,900
	10,181	11,019	11,337	11,769	10,944	11,513	11,624
New Construction							
Community	Median Price and Number of Sales						
	1991	1992	1993	1994	1995	1996	1997
GLENWILLOW	-	-	\$180,500	-	-	-	-
	-	-	1	-	-	-	-
Bedford	\$86,700	\$125,950	\$69,000	\$69,900	\$110,900	\$108,000	\$78,450
	6	2	5	3	9	7	2
Bedford Hts.	\$102,000	\$82,200	\$97,000	\$58,000	\$70,000	\$86,750	\$56,200
	13	2	3	1	3	2	2
Oakwood	\$170,400	\$147,600	\$158,000	\$158,600	\$163,000	\$192,050	\$197,700
	3	10	11	22	20	9	8
Solon	\$207,750	\$180,000	\$211,000	\$228,250	\$256,250	\$226,900	\$303,000
	128	157	165	170	130	86	61
Cuyahoga County (excluding Cleveland)	\$185,000	\$181,700	\$200,000	\$189,700	\$191,800	\$182,400	\$185,800
	1,285	1,375	1,046	1,293	1,094	685	546

SOURCE: "Residential Sales Price Distribution, Cuyahoga County", Housing and Policy Research Program and Northern Ohio Data Information Service, The Urban Center, Cleveland State University, Cleveland, Ohio. 1991 to July 1995 - source data from the Cuyahoga County Auditor's Deed Transfer File.

of existing homes have shown a steady increase in Cuyahoga County. Prices have increased between four to six percent per year. Through August of 1997 the price of a typical suburban home in 1997 was \$114,500. The Cuyahoga County communities surrounding Glenwillow have also shown an increase in housing value although with varying degrees of consistency. Prices in 1997 range from an average of the low \$80,000's in Bedford and Bedford Heights to an average \$200,000 price in Solon.

New Construction Sales

The median price for a new house in suburban Cuyahoga County through August of 1997 was in the low \$180,000's. The yearly median price for a new housing unit in the County has been from the \$180,000's to \$200,000 since 1991. Records from the County Auditor only showed one new house sold during this same time period in Glenwillow. In Solon the prices for new housing has been consistently over \$200,000 and was approaching \$300,000 midway through 1997. Oakwood's new housing prices have been lower, with houses selling in the \$150,000 to \$180,000 range.

New Construction Rates

During the 1990's between 410 and 654 single-family homes were built each year collectively within the communities of Oakwood, Solon, Twinsburg and Macedonia. The years 1995 to 1997 have shown a slight decrease from the years 1992 to 1994. Twinsburg made up close to half of these totals each year. In Twinsburg, the number of single-family home constructed from 1995 to 1997 was in the low- to mid-200's. From 1992 to 1994, single-family construction was in the 300 to 350 unit range each year. Since 1995, home construction in Solon has averaged just over 100 units per year, which is also down from the early 1990's average of 150 homes constructed per year. Construction has fluctuated in Macedonia each of the last four years with either 50 or 150 homes being built per year. Since 1992 Oakwood has had between 10 and 30 homes constructed per year. The portion of this market which Glenwillow captures will depend upon a number of factors, including the price of new housing constructed in Glenwillow. Because it is in the Solon School District and has a minimum lot area of one acre, it is likely that new homes in Glenwillow will be priced in the range of new houses in Solon, whose median has recently been between \$200,000 and \$300,000.

PROJECTIONS

Lack of water and sewer and the operation of landfills has caused the Village to experience little new housing or population growth. The Village now has water and is developing its sewer system. The landfills have closed. Conditions which have affected past trends have changed and using past trends to project the future is not appropriate. This section estimates what the Village's population will be under full development.

There are currently 443 acres of vacant residentially zoned land within the Village (excluding the Town Center). The Village's current minimum lot size is one acre. Steep slopes, streets, and water retention facilities will occupy a portion of this land and will reduce the number of lots to less than the number of acres. For example, the Village has recently approved a residential subdivision off Richmond Road of 43 lots on 63 acres of land.

Taking this into account, and figuring the number of lots which could fit on current vacant parcels, the Cuyahoga County Planning Commission has estimated that approximately 285 lots could be developed on the residential vacant land west of Tinkers Creek. This number could be reduced if lot sizes in proposed developments are above the minimum one acre lot size required in the zoning code. In addition, the Village has approved the construction of a nursing home on Cochran Road.

The nursing home would house 105 residents which would count in Glenwillow’s population figure.

Glenwillow’s current household size is low because many of the current households are located in mobile homes which have a smaller household size. New housing will be single-family homes and a more appropriate measure to estimate population will be to use the average family size. Two estimates are used. One estimate uses the latest family size while the second uses a reduced figure to reflect the fact that average household sizes have been decreasing. *Exhibit 16* shows the resulting population figures based upon the assumptions listed above.

Exhibit 16: Population Projections

Single-Family Vacant Land	Net Acres	Units per Acre	Total Units	Persons per Family	Additional Population From New Construction	1996 Population Estimates	Nursing Home Population	Total Population
Current Family Size	443	1.0	285	2.93	835	477	105	1,417
Decreased Family Size	443	1.0	285	2.72	775	477	105	1,357

Income

Glenwillow’s relatively large minimum lot size, and the fact that it is located in the Solon School District, will likely cause new homes in the Village to be priced much like those in Solon. The median price in Solon has been in the \$200,000 to \$300,000 range. Based upon current property tax, home loan interest rates and mortgage insurance costs, a homebuyer which puts 10% to 20% down on a \$250,000 house would have monthly expenses of \$1,680 to \$1,850 (a 30 year, 7% loan was assumed). A guideline used by banks for loans is that monthly expenses should not exceed 28% of gross income. Using this figure, a homebuyer putting 10% to 20% down on a new \$250,000 home would need a monthly income of \$6,000 to \$6,600, or yearly income of \$72,000 to \$79,000.

Chapter 3

Land Use

There are approximately 1,814 acres within the Village of Glenwillow or 2.83 square miles. While it is one of the smaller municipalities in the County, there are eleven other communities which are smaller in land area (there are 59 municipalities in Cuyahoga County). *Exhibit 17* presents the distribution of existing land use in the Village as of January 1998. In addition, *Map 1* identifies the location of existing land use within the Village. Major recent changes in land use include the closing of the landfills which operated in the Village, the development of a new Village Hall, the development of a handful of new single-family homes and the construction of the BFI transfer station and Signature Brands headquarters. Very little other development has occurred in the Village since the 1980 Master Plan.



The 432,000 square foot Mr. Coffee/Sunbeam building, which opened in 1997, is the largest development to occur in recent history in the Village. Over 56% of the Village is currently zoned for industry.

Residential

Residential uses make up 7.9% of the land area in the Village. Most of this area is made up of single-family residences which are located along the main arterials of Pettibone, Richmond and Cochran Roads and in the Pergl Road subdivision off Richmond Road. There is also a mobile home park in the northern section of the Village off Richmond Road. The 7.5 acre mobile home park contains approximately 104 units or 13.9 units per acre. Two of the Austin Company homes on Pettibone Road are two-family structures and represent the remaining residential land.

Commercial

The only commercial structure in the Village is the vacant general store located on Pettibone Road near the Western and Lake Erie Railroad crossing.

Office

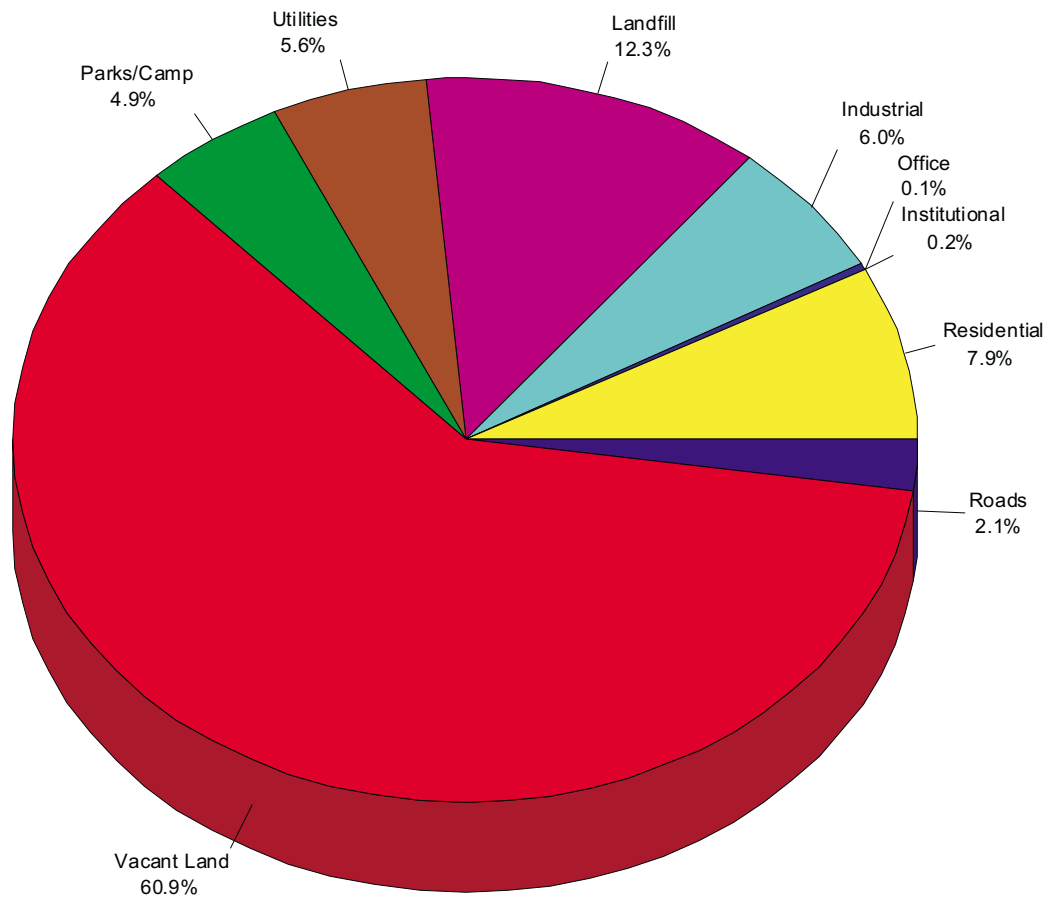
Land use which is exclusively office includes residential buildings converted to offices by BFI Industries which operates the trash transfer station on Pettibone Road. Industrial uses within the Village also devote portions of their buildings to office use.

Institutional

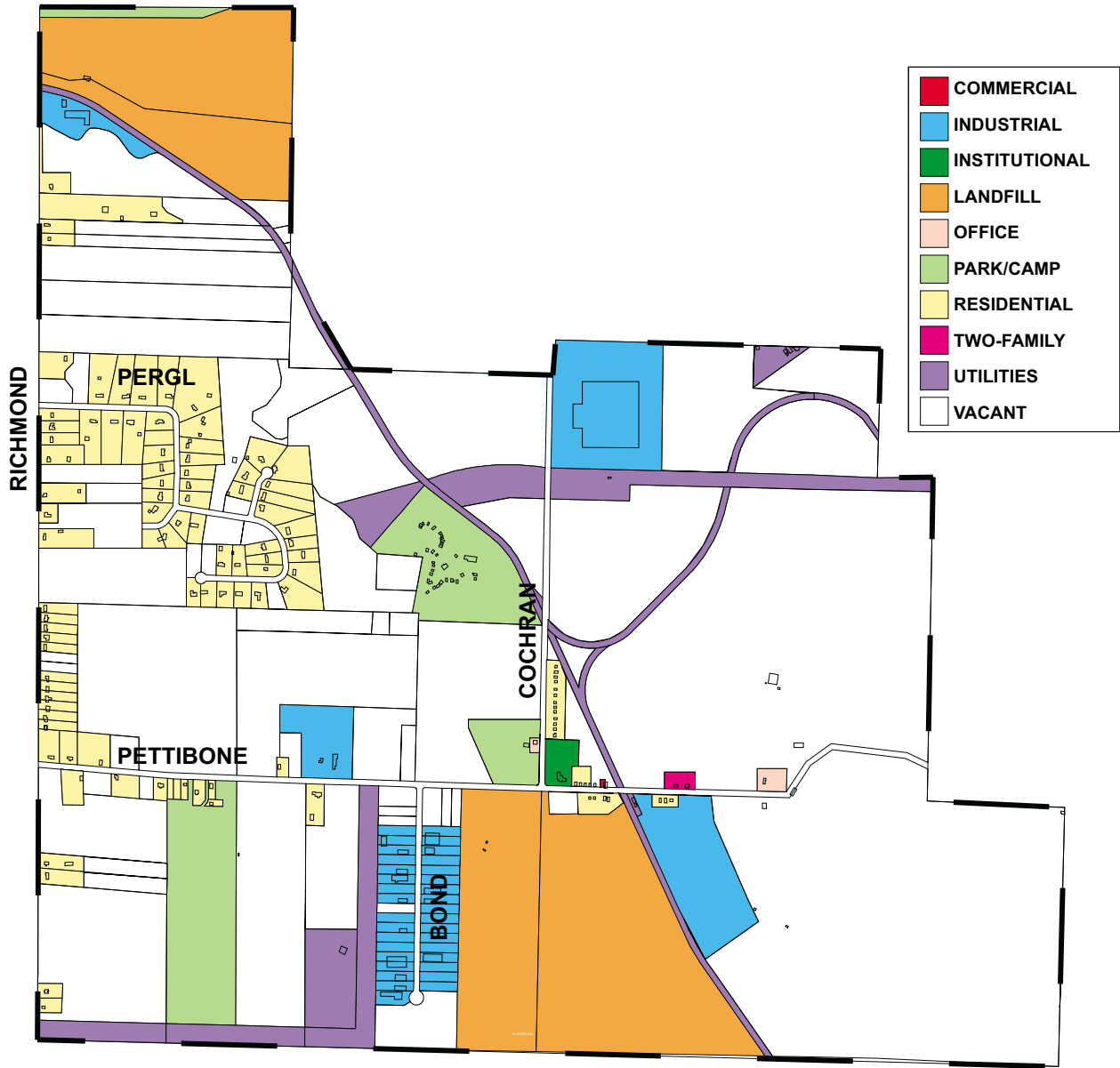
The Village hall, located at the northeast corner of Pettibone and Cochran Roads, accounts for the institutional uses within the Village.

Exhibit 17: Glenwillow Land Use, 1998

Use	Acres	Percent
Residential	142.4	7.9%
<i>Single-Family</i>	133.7	7.4%
<i>Trailer Park</i>	7.5	0.4%
<i>Two-Family</i>	1.3	0.1%
Commercial	0.1	0.0%
Office	2.0	0.1%
Institutional	3.5	0.2%
Industrial	108.3	6.0%
Landfill	223.0	12.3%
Utilities	101.9	5.6%
Parks/Camp	89.4	4.9%
Vacant Land	1,104.8	60.9%
Roads	38.8	2.1%
TOTAL	1,956.7	100.0%



Map 1: General Land Use, 1998





The mobile home park on Richmond Road accounts for 47% of the Village's housing units.



Most single-family homes are located off Pergl Road. Residential areas in the Village have a rural flavor.

Industrial

Industrial uses account for 108.3 acres, or 6% of land in the Village. Much of the Austin Powder and BFI land south of Pettibone Road, which was classified as industrial use is now considered vacant because of the change in the property's use. A portion of the land which is now used for a trash transfer station is still considered industrial. The largest number of industrial uses are located along Bond Street, which is located south off Pettibone Road just west of the Village Center. A non-conforming industrial use (a construction contractor) is located on the north side of Pettibone Road within the residentially zoned portion of the Village. Mr. Coffee/Sunbeam recently opened its headquarters on Cochran Road in the northern portion of the Village.

Landfill

The largest single use type within the Village is closed landfills. The two landfills occupy 223 acres or 12.3% of Glenwillow's land area. Their recent closing, along with the extension of water and sewer lines within the Village, make Glenwillow a much more attractive place for development. These landfills cannot be used for development in the near future and may not ever be usable.

Utilities and Transportation

Utilities and transportation include land owned by the electric utilities under the high level electric lines, land around a radio tower, a portion of the Solon Waste Treatment Plant, and railroad lines which traverse the community. These uses cover almost 102 acres or 5.6% of the Village. In addition, there are 27 acres of land over which power line easements run. Structures cannot be developed within these easements, although roads or drives crossing the easements may be constructed with approval of the utility company.

Parks/Camps

Parks and camps cover 89.4 acres. This includes Village recreation property and a camp owned by a fraternal organization which is located in the Tinkers Creek Valley just northwest of the Village Center. The Village Park occupies 38 acres and the recreation fields at the center of town cover another 15 acres.

Vacant Land

Vacant land makes up 1,120 acres or 61.7% of the Village. Outside of the Village Center approximately 443 of these acres are zoned residential. Another 56 acres within the Village Center are zoned residential. The remainder is zoned industrial. Steep slopes, floodplains and wetlands will reduce the amount of vacant land which is developable.

Surrounding Communities

Glenwillow shares borders with Solon to the north and east, Oakwood to the west, and Twinsburg to the south. In these adjacent communities, land to the west, south and east is predominantly residential. Much of the housing has been built within the last twenty years and new streets were being developed during 1998. North of Glenwillow, along Cochran Road in Solon, is a large area of newer industrial parks. The businesses located within this area generate large volumes of traffic during rush hours. Employees which live south of this area often cut-through Glenwillow. The northwest corner of the Village is touched by the Metroparks' Bedford-Chagrin Parkway which follows Tinkers Creek west of Richmond Road. East of Richmond Road the parkway turns north as it runs through western and northern Solon on its way to the South Chagrin Reservation.

TOPOGRAPHY

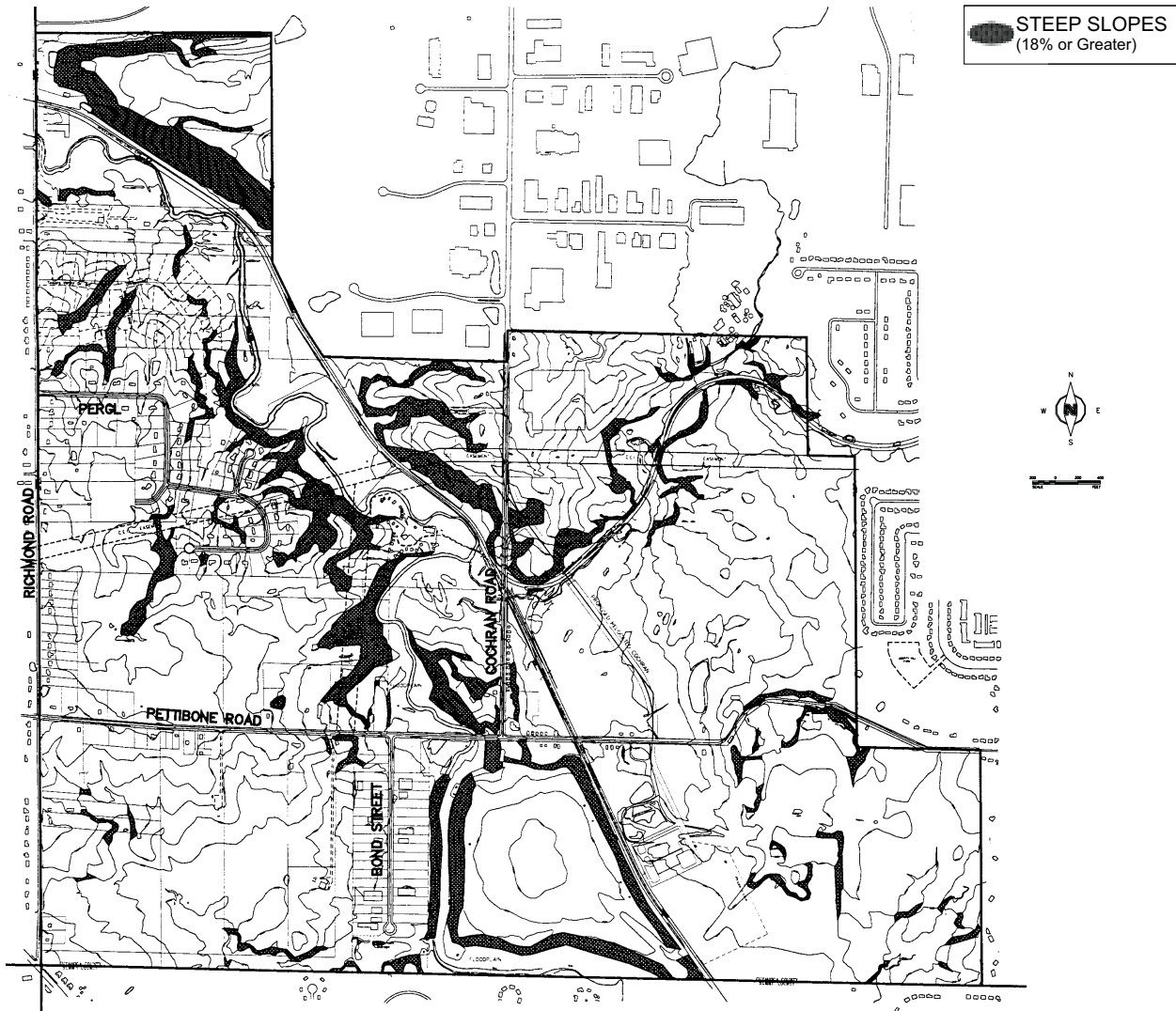


A major geographic feature is Tinkers Creek which flows through the center of the Village. Preservation of open space along the creek presents an opportunity to create an open space network by connecting to existing parkland outside of the Village borders.

Map 2 illustrates the topography of the Village. The map includes contour lines (points of equal elevation) between which are 10 foot changes in elevation. The closer the contour lines are to one another the steeper the slope. Highlighted are steep slopes of 18% percent and higher based upon the 10 foot intervals. An 18% slope means there is either an 18 foot rise or fall in elevation for every 100 feet of horizontal distance.

The major slopes occur in the Tinkers Creek and the Beaver Creek Valleys. The Tinkers Creek Valley runs northwest to southeast through the center of the Village and separates the residentially zoned land on the west side of the Village

Map 2: Topography



from a majority of the industrially zoned land which is located on the Village's east side. The Tinkers Creek Valley also links the Metroparks at the northwest corner of the Village to the Village Center. Other major slopes occur around the site of two landfills which operated and which were built up over the years. There are also smaller scattered sites of steep slopes in other parts of Glenwillow, most often associated with smaller streams.

WETLANDS

Introduction

Wetlands are areas covered by water or which have waterlogged soils for long periods of time during the growing season. The contribution of wetlands to the Earth's natural ecosystem is important. Wetlands provide habitats for wildlife, help in reducing floods, improve groundwater quality and provide recreational opportunities. Wetlands generally include swamps, marshes, bogs and similar areas, but some wetlands are not as easily recognizable because they do not look very wet or are dry during part of the year. Their importance to the natural environment has been recognized and government agencies have passed laws intended to protect wetlands from being destroyed during the development process.

Regulation

Section 404 of the Clean Water Act requires anyone interested in depositing dredged or fill material into the "waters of the United States, including wetlands", to receive authorization for such activities. Any projects that also increase or decrease runoff into these areas must receive authorization. While the Environmental Protection Agency establishes guidelines for the program, it is the Army Corp of Engineers that administers the program and which issues permits to allow projects which may affect wetland quality. The State of Ohio is also developing wetland water quality standards. The State standards will be administered through the Army Corp of Engineers process. The Corp of Engineers will forward a copy of the permit application to the State EPA for review and sign-off before the Corp of Engineers will issue a permit.

The Army Corp of Engineers Wetland Manual specifies methods for delineating wetlands and positive indicators for the presence of wetlands. Each of the following three indicators must be present for an area to be defined as a wetland:

- ✓ **Hydrophytic Vegetation** - a predominance of vegetation visible to the eye where saturation of the soil is a controlling influence on the plant species present.
- ✓ **Hydric Soil** - soils in which saturation or inundation of water produces anaerobic conditions which favor growth of hydrophytic vegetation. Peats and mucks are examples.
- ✓ **Wetland Hydrology** - the area under study is temporarily or periodically inundated with water, or has saturated soils during the growing season.

If during the permitting process (which may require a public hearing) wetlands are found to be impacted by the project, various options are available to minimize the project's impacts. The general steps to mitigation include:

- ✓ **Avoidance** - the project may be redesigned to avoid the wetlands as much as possible.
- ✓ **Minimization** - construction techniques, materials and project modifications can be made to minimize the impact to the environment.
- ✓ **Compensatory Mitigation** - replacement of wetlands for unavoidably impacted resources.

There is no set mitigation requirement for a particular type of project. It tends to be project-specific. Factors included when deciding upon mitigation measures include practicable alternatives, sensitivity of site design to natural features, social and economic criteria, and quality of the wetlands to be impacted. The Ohio Law (Ohio Administrative Code Rule, 3745-1-54) categorizes wetlands into three classifications depending upon the level of support as a wildlife habitat, and its hydrological or recreational functions. The Ohio Code sets standards for compensatory mitigation by establishing ratios for replacement wetlands by classification, location and type of mitigation. Mitigation can take a number of forms including:

- ✓ **Mitigation Bank** - contribute to a site preserved expressly for the purpose of providing compensatory mitigation in advance of authorizing impacts.
- ✓ **Creation** - establishment of a wetland where one did not exist.
- ✓ **Restoration** - re-establishment of a previously existing wetland.
- ✓ **Enhancement** - improving the quality or repairing the function of existing wetland.
- ✓ **Preservation** - in exceptional cases, protection of ecologically important wetlands in perpetuity through legal mechanisms.

Ratios for off-site mitigation are higher than ratios for on-site mitigation. Depending upon the category of impacted wetland, location of the compensatory off-site wetland may be within the watershed or within the Corp. of Engineer's District Boundary.

Location

Identifying the location of all wetlands based upon the Army Corp of Engineer's guidelines is beyond the scope of this plan. The presence of wetlands within undeveloped portions of the Village, however, will have an impact on the amount of potential development through the requirements of the regulations cited above, as well as through the desire of Village to preserve its natural resources.

Some wetlands have already been identified through impact studies conducted for the relocation of Cochran Road and for Phase II of the Village's Sanitary Sewers. In addition, other sources of information are available which can give an indication as to where wetlands and other water impacted locations are likely issues. **Map 3** identifies some of these areas within the Village. Areas identified are general locations and the original documents referred to should be consulted for more specific boundaries.

Wetlands

Wetlands investigations have been conducted by Flickinger Wetland Services Group for Phase II of the Village's Sanitary Sewers and for the Cochran Road relocation. **Map 3** shows the boundaries of the study areas, as well as the general location of wetlands identified in the studies. The map does not show the wetlands identified which are within floodplains in the Village. Both studies identified wetlands outside the direct impact of the projects in question. The sewer study identified wetlands which are in the northern portion of the Village Center near where Beaver Falls Creek flows into Tinker's Creek. The Cochran Road relocation study identified a number of wetlands in the vicinity of the proposed road and on land which is part of the industrial park to be developed by Duke Realty on land owned by BFI. Duke Realty is performing its own wetland's investigation for the proposed industrial park. Preliminary plans for the industrial park show 64 acres (out of a total of 232 acres) being preserved along Beaver Falls Creek for storm retention and nature preserve.

National Wetlands Inventory

The US Fish and Wildlife Service of Department of the Interior has produced a set of National Wetland Inventory (NWI) Maps. These maps were prepared by analysis of high altitude aerials in 1977. In the case of Glenwillow, they have not been field checked. **Map 3** identifies those areas noted on the NWI Maps which are not in the floodplain. In most cases those areas are adjacent to floodplains.

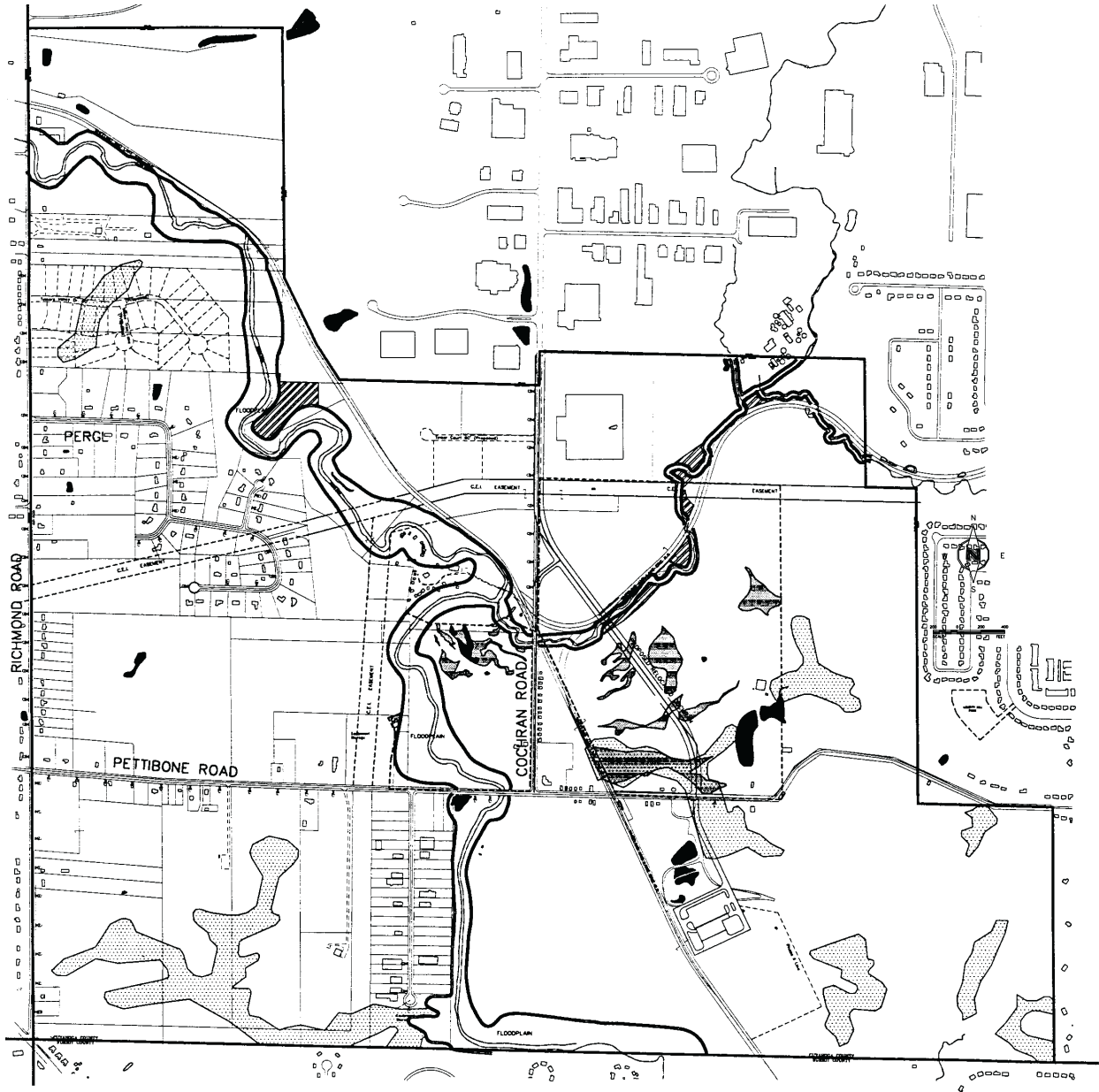
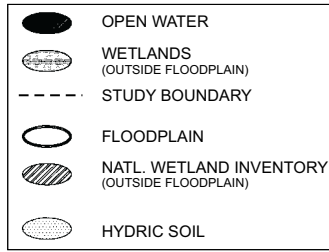
Floodplains

Map 3 also identifies the general boundaries of floodplains identified by the National Flood Insurance Program on its Flood Insurance Rate Map for the Village. This area is also subject to the Flood Plain District regulations in the Village's Zoning Code. Floodplains in the Village are located along Tinker's Creek and Beaver Meadow's Creek.

Hydric Soils

As mentioned above, hydric soils are one of the indicators of wetlands. In 1980, the U.S. Department of Agriculture's Soil Conservation Service, in cooperation with the Ohio Department of Natural Resources, produced a soil survey of Cuyahoga County. Soil maps in the survey identify areas of different soil types. The Soil and Water Conservation District (SWCD) has listed a number of soils in the County as hydric. **Map 3** indicates the general location of those soils identified as hydric by the SWCD. These soil types do not mean the areas identified are wetlands but are indicators of the possibility. More detailed surveys are needed to determine wetlands in these areas. In addition,

Map 3: Water Resources



because an area is not identified on this map, does not mean there are no wetlands. Other soil types do have hydric components, especially in depressions and drainageways. The previously cited wetlands studies found wetlands on soils not listed on the SWCD's list of hydric soils.

A concentration of "hydric" soils occurs in the southwestern portion of the Village on residentially zoned land, including the Village Park. Approximately 10.5 acres of the Village Park and 20.5 acres of other vacant residential land are covered by soil types "Holly silt loam" and "Sebring silty loam". Another concentration occurs in the southeastern corner of the Village on industrially zoned land south of Pettibone Road and east of the BFI transfer station. Approximately 29 acres are located on the soil types of "Holly silt loam", "Miner silty clay loam" and "Canadice silty clay loam". North of Pettibone Road "Canadice silty clay loam" occupies two areas. The Cochran Road relocation wetlands study identified a large portion of one of these areas as a wetland.

LANDFILLS

Until recently most people's perception of Glenwillow was tied to the fact that two landfills operated within the municipality. One landfill known as the Cuyahoga Regional Sanitary Landfill operated in the northern portion of the Village and is visible from Richmond Road. It was accessed off Cochran Road in Solon and operated as part of a larger landfill operation which included a landfill in Solon. The other, which was originally started by the Austin Powder Company and more recently was operated by Browning-Ferris Industries (BFI), is located just to the south of the Village Center and was accessed 1,000 feet east off Pettibone Road. Both landfills have recently closed. The Village was able to force the closing of the BFI landfill through the enforcement of a 1983 agreement with Austin Powder. As part of the negotiated agreement, BFI has provided the Village a number of improvements. BFI recently began operation of a trash transfer station adjacent to the landfill site. All truck traffic to this site is via Cochran Road.

The BFI and Cuyahoga Regional landfills are both located adjacent to Tinkers Creek. Environmental impacts of these facilities on water quality is a major concern. The BFI landfill last accepted solid waste at the end of 1996 and accepted the last of construction debris at the end of 1997. In order to minimize the amount of leachate (product of water interacting with the decomposing solid waste) produced over the years by the landfill, BFI is capping the landfill in order to minimize the amount of water which will penetrate into the solid waste. The capping is to finish in the summer of 1998 and a vegetative cover will be planted in 1999. BFI will monitor and mow the site for 30 years. Vegetation to be planted is constrained by the fact that roots should not pene-



The closed BFI landfill rises along the southern boundary of the center of the Village, forming a distinct boundary. Closing of landfill operations will make the Village a more desirable place for new development.

trate the cap so that water will not be able to penetrate into the solid waste. In addition, a leachate collection system has been installed around the perimeter of the landfill, and sedimentation ponds and gas extraction wells were also constructed. The cap may slow the decomposition of the solid waste.

Both the BFI Landfill and the Inland Reclamation Landfill were closed under the rules for construction in the Ohio Administrative Code Section (OAC)3745-27-06 to 08. The likelihood of the reuse of these sites in the near-term is not great, but not impossible. Any use, however, could not undermine the integrity of the cap. If any attempt is made to reuse the site, an agreement to disturb the landfill is needed from the Environmental Protection Agency. Application requests are regulated by OAC 3745-27-13 and the applicant must show how the proposed improvement will not harm public health.

EXISTING ZONING

Residential

The Village of Glenwillow currently is divided in two zoning land use districts, one residential and one industrial. The “Country Home” district is the community’s residential district. It is located in the western half of the Village and covers 793 acres, or 43.7% of the land within the Village. Its eastern boundary follows the rear of the Bond Street industrial area south of Pettibone Road, Cochran Road between Pettibone and the Wheeling and Lake Erie Railroad tracks, and the Wheeling and Lake Erie Railroad tracks north of its crossing of Cochran Road. The district boundary is delineated in *Map 4*.

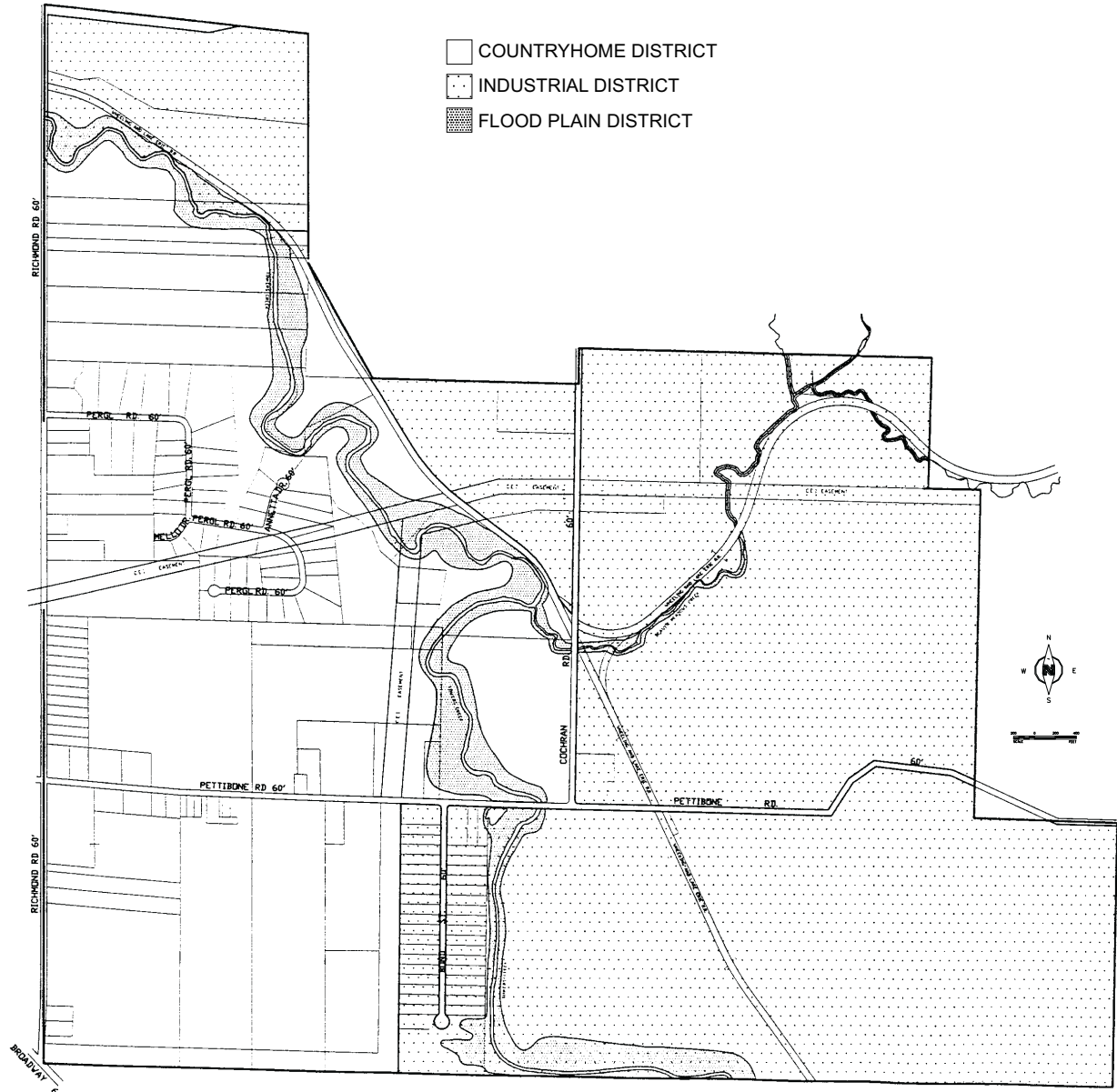
The standards set in the district generally include the following:

- ✓ Minimum lot area - 40,000 square feet
- ✓ Minimum lot width - 125 feet
- ✓ Minimum front yard - 70 feet
- ✓ Minimum side yard - 20 feet
- ✓ Maximum building height - 2 ½ stories or 35 feet.

Industrial

Industrial zoned land generally includes the eastern half of the Village and also land off Richmond Road, north of Tinker’s Creek, which was a landfill. Approximately 56.3%, or 1,021 acres, of the Village is zoned industry. The minimum lot area within the district is two acres and minimum lot width is 200’ at the building setback line. No building can be less than 5,000 s.f or taller than five stories or 75 feet.

Map 4: Existing Zoning



Floodplain

In addition, there is a Floodplain Overlay District in the Zoning Code which covers floodplains which have been identified by the Federal Emergency Management Agency in an engineering report titled “Flood Insurance Study for the Village of Glenwillow”. In order to reduce loss as a result of floods, general standards for development are provided and a special development permit is required by this section of the zoning code.

Surrounding Communities

Exhibit 18 indicates the generalized zoning for communities surrounding Glenwillow.

Exhibit 18: General Zoning Acreage, Glenwillow and Surrounding Communities

	Acres Zoned*						
	Residential - Minimum Lot Size**					Commercial	Industrial
	Multi-Family	Less than 15,000 s.f.	15,000 s.f. - 1 ½ acre	½ acre - 1 ½ acre	Over 1 ½ acre		
GLENWILLOW				793			1,021
Oakwood	11		1,253			201	438
Solon	105	28	838	7,801	1,115	359	2,136
Twinsburg	180		158	5,200	872	721	2,048
Macedonia			5,878			591	1,917

*All zoning categories not shown. Example: Institutional Zoning.

**Average based upon density / some communities allow clustering with minimum lot sizes

SOURCE: Cuyahoga County Planning Commission based upon individual communities zoning map

The majority of Solon’s industrially zoned land is located along Cochran Road, south of State Route 422. The industrial zoning extends south of State Route 422 to the Glenwillow border. Although there are many acres zoned for industry in Solon, recent development has absorbed most of the vacant land. The industrially zoned land in Glenwillow is along Cochran Road and is essentially an extension of the industrial area in Solon. Industrial areas in Twinsburg and Macedonia are located near Interstates 271 and 480. Easy access to the freeway system and the availability of land has drawn companies out of Cuyahoga County into these communities. In addition, there are over 1,850 acres of commercially zoned land in the four adjacent communities.

While most of the land north of Glenwillow is zoned industrial, most land adjacent to the Village on west, south and east is zoned residential. The industrial area along Broadway in Oakwood to the west approaches the border of Glenwillow in the Village’s southwest corner. As *Exhibit 18* shows, there are a variety of density levels allowed in the areas surrounding the Village. Some are more dense than Glenwillow’s standard and some are less dense. Solon has over 1,000 acres zoned for house with a minimum lot size of over 1 ½ acres (Solon’s U-1-E District has a minimum 5-acre lot size). This land is south of Pettibone Road in the City’s southeast corner.

SUMMARY

Very little development has occurred in the Village since the since 1980. In 1998, over 60%, or approximately 1,105 acres were vacant. Landfills (now closed) occupy the second largest amount of land, 223 acres or 12.3%, of the Village. Residential land includes houses located on major arterials, one subdivision off Richmond Road, a mobile home park and the historic Austin Company houses. The Village has no commercial uses. Village park land includes a 38-acre parcel located on the south side of Pettibone Road and recently constructed recreation fields at Pettibone and Cochran which occupy 15 acres.

Glenwillow is surrounded by residential uses on the east, south and west and is bordered by industry on the north. The Tinkers Creek valley divides the Village in half as it runs northwest to southeast through the center and separates residentially zoned land in the west from industrial zoned land in the east.

Wetlands mitigation is a factor which must be factored when assessing development options. The Army Corp of Engineers must issue a permit for disturbance of wetlands, and regulations controlling mitigation provide for a number of ways to mitigate those effects. Studies for portions of the Village have identified wetlands. The Emerald Valley Industrial Park is setting aside approximately 60 acres of open space for wetlands mitigation. Hydric soils, one indicator of wetlands, are present in other parts of the Village.

Both landfills which once operated within the Village are closed and being capped to minimize the amount of water which will penetrate the solid waste and produce leachate. The likelihood of reuse of these sites in the near-term is not great, but not impossible. Any future use, however, could not undermine the integrity of the cap and would need a permit from the Environmental Protection Agency.

The Village is currently divided into two zoning districts, one industrial and one residential. The residential zoning has a minimum lot area of 40,000 square feet and covers 793 acres, or 43.7% of the Village. A portion of the 1,000 acres zoned industrial includes the closed landfills. The flood plain overlay district within the Village's code requires a special permit for development in identified flood plains.

Chapter 4

Economic Development

Glenwillow is in the position to greatly benefit from its supply of vacant land and its location adjacent to a large established industrial area with freeway access. Glenwillow's industrially zoned land is an extension of the large industrial area in Solon which is adjacent to Glenwillow's northern border. State Route 422 is located 2.6 miles to the north via Cochran Road. Cochran Road north of Glenwillow is a wide (52 feet) four lane roadway developed for industrial traffic. It only takes 5 minutes to travel from the northern border of Glenwillow to the interchange at Cochran Road and State Route 422. State Route 422 is a freeway which links the southeast suburbs of Cleveland to the remainder of the metropolitan area.



The industrial area which has developed along Cochran Road in Solon is beginning to spread into Glenwillow. It is only a 5-minute drive from State Route 422 to Glenwillow, and the Tinkers Court subdivision is an example of future development which the Village can expect.

INDUSTRIAL DEVELOPMENT

Current Conditions

In January of 1998 there were 108.3 acres within Glenwillow that were developed for industry. The amount zoned industrial was 1,021 acres. On the 108 developed acres were 637,000 square feet of industrial building. These properties had an estimated value of \$9.6 million and a real estate tax of \$197,000. These figures include square footage figures for the Mr. Coffee/Sunbeam Headquarters, but do not yet reflect its value. The listing of businesses in the Village is in *Appendix A*.

Mr. Coffee/Sunbeam

The highest concentration of businesses is located along Bond Street but Mr. Coffee/Sunbeam Headquarters accounted for almost 2/3 of the industrial square footage in the Village. The 432,000 square foot facility opened in 1997 and employs 400-500 workers. It is located adjacent to the border of Solon, and is the first extension into Glenwillow of the larger industrial area located to the north in Solon.

Tinkers Court Subdivision

Across from Mr. Coffee/Sunbeam, on the west side of Cochran Road is another industrial project which is underway. The Tinkers Court Subdivision has approximately 37 acres of developable land. North Star Plastics is constructing a 50,000 square foot building on 5 acres in the subdivision. Approval for a 105-bed nursing home on 8 acres has also been given by the Village. This project will employ 120 people.

Bond Street

The largest numbers of businesses currently located within the Village are located on Bond Street. Bond Street is an industrial cul-de-sac on the south side of Pettibone Road just to the west of Tinkers Creek. It is the industrial area in the closest proximity to the residential portion of the Village and the Village Center, so its appearance is important to the image of the community. A high concentration of the businesses are construction-related and require a large amount of outdoor storage. The lots upon which the businesses are located are typically an acre in size (100' x 400'), which is relatively small, and in many cases businesses have developed across a number of adjacent lots. The dimensions for setbacks along Bond Street are smaller than required for new development elsewhere in the Village.

The appearance of the street has been a concern of the Village. The area has been designated as an Improvement Target Area which means that the conditions on the street have been surveyed and enough substandard conditions have been found to make the street eligible for the use of Community Development Block Grant Funds administered by the Cuyahoga County Department of Development. In 1996, staff from the Cuyahoga County Planning Commission prepared the Bond Street Improvement Plan which documented conditions along the street and made suggestions for improvements. The improvements fell into two categories, right-of-way and aesthetic appearance. They are summarized as follows:

Right-of-way

- ✓ Pavement width should be increased (20 feet to 24 feet)
- ✓ Long-term pavement improvements require street base repair/reconstruction
- ✓ Curbs should be installed
- ✓ Storm Sewers should be installed
- ✓ Sanitary Sewers should be installed (Completed in 1999)
- ✓ Driveway aprons should be repaired and reconfigured, as needed
- ✓ Sidewalks are not needed at this time.

Aesthetic Appearance

- ✓ Install signs and landscaping at the entrance from Pettibone to create a gateway
- ✓ Plant street trees as appropriate
- ✓ Improve mailboxes, as needed
- ✓ Consider underground placement of electric and telecommunications

The fact that many of the businesses are in related construction businesses is a strength that can be built upon. It can be used for setting a theme which could be reflected in the gateway and other improvements and can also be a way of marketing the street and creating a well defined image which will change people's perception of the street. A coordinated program of aesthetic upgrades which will allow business owners the opportunity to plan for



The lack of landscaping and screening of outdoor storage on many properties along Bond Street detracts from the appearance of the area and harms the image of the Village.

expenses and make individual improvements which will complement each other should be undertaken. Since many of the businesses are in the contracting business, much of the work may be done by companies on the street.

BFI Transfer Station

Although the landfill which BFI operated within the Village recently stopped accepting solid waste and construction material, BFI will continue to have a presence in Glenwillow through its operation of a waste transfer station. The station opened in April of 1997 and is located on a portion of the land BFI owns east and adjacent to the landfill site on the south side of Pettibone Road. At the facility, trucks which pick-up waste from sites around the county deposit the material and it is repacked into semis which haul the waste to landfills outside of the county. Most of the waste is generated from BFI trucks, but there are some non-BFI (including a couple of municipalities) sources which use the station. The facility is more expensive than some other transfer stations in the area, so it is not always the first choice for non-BFI sources.

The station operates from 5 a.m. to 6 p.m. and currently processes 1,000 tons per day. This translates into approximately 100 trucks and 40 semis entering and leaving the station per day. The authorized daily limit is 3,000 tons per day, although BFI projects the future useage to be in the vicinity of 2,000 to 2,500 tons per day. At the maximum limit, approximately 300 trucks and 120 semis would use the station each day. Trucks must use Cochran Road as the access route. The proposed Cochran Road relocation will bring Cochran Road into Pettibone Road directly across from the BFI entrance so that no other roads in the Village will be impacted by this truck traffic. Landscaping along Pettibone Road is to go in during 1998.

BFI has offices on the north side of Pettibone Road in an old farmhouse which was part of the Austin Company Farms. It also owns extensive land holdings through its acquisition of the Austin Company Farms. It has an agreement with Duke Realty to develop an industrial park on its land on the north side of Pettibone Road. BFI also owns 190 acres east of the transfer station which may be a phase two of the industrial park. It plans to keep land directly south of the transfer station as access for maintenance of the closed landfill and also to have in case it has a need for more land in the future.

Emerald Valley Business Park (Duke Realty)

BFI has an agreement with Duke Realty to develop approximately 250 acres of land BFI owns on the north side of Pettibone Road as an industrial park. The white wooden fence which borders the property along Pettibone Road, and the barns and silo which remain on the property, help define the rural atmosphere of the Village. To the degree possible these elements should be incorporated into the new development. The site includes all land bounded by Solon on the east, Pettibone Road on the south, Wheeling and Lake Erie rail lines and Cochran Road on the west and Centerior Energy high voltage lines on the north. This site is one of the largest vacant industrially zoned pieces of land remaining in Cuyahoga County. The Wheeling and Lake Erie spur line does bisect the property in the northwest corner and relocated Cochran Road will provide access into the interior of the site an create separate parcels in the southwest corner of the site. An additional industrial road may

be needed in order to provide access to parts of the sites depending upon the size of the lots developed. The site is designated as a Foreign Trade Zone and is intended to promote trade and create jobs. Companies located within the zone also save money on duties, and enjoy reduced paperwork and have increased flexibility on operations.

Although the entire site is 250 acres, in its preliminary plans Duke is reserving a portion of the site for storm detention and green space. This land is primarily in the vicinity of Beaver Falls Creek. Wetlands regulations and regulations for runoff are factors in the reduction of land to be developed. Wetlands investigation for the Cochran Road relocation project have identified wetlands on a portion of the site. Duke Realty submitted a wetlands mitigation plan to the Army Corp of Engineers. The preliminary plans show the developable area outside those reserved areas to be 165 acres. Steep slopes on other portions of the site may reduce the developable area by another 10 acres.

Duke Realty has estimated that the site will be developed with a minimum of 8 buildings and a maximum of 18 buildings with users which could occupy anywhere between 5 and 150 acres. Build-out could occur anywhere between 3 to 10 years. Build-out estimates and impacts for this site and other vacant industrially zoned properties are developed later in this chapter.



Much of the existing charm of the Village is the rural atmosphere created by the Austin Company Farms. Although much of this land is to be redeveloped for industrial use, elements of the existing farm should be preserved in order to maintain the aesthetics and history of the area.

INDUSTRIAL MARKET

Market Overview

The southeast region of the Cleveland area is a strong area for industrial development. In Grubb & Ellis Company's "1998 Real Estate Forecast" figures for industrial development for the Cleveland region are provided. In general, vacancy rates were lower and net absorption, total construction and rents were higher than for any other region within the Cleveland area. The southeast region generally includes Beachwood on the north, Twinsburg, Macedonia and Aurora on the south, Bedford on the west and Solon on the east. Vacancy rates in 1997 were 5.6% compared to the total market average of 12.2%. The 25.98 million square feet of industrial building in the region, was 27.3% of the total market figure of 94.96 million square feet. Approximately 1.47 million square feet were available in the southeast region and the net absorption in 1997 was 1.30 million square feet. (Net absorption in 1996 and 1995 were approximately 800,000 and 115,000 square feet respectively.) Another 490,000 square feet were under construction. The average rent per square foot for industrial space in the southeast region was \$4.75 compared to the market average of \$4.10. Research and development and flex space in the southeast region was going for \$9.65 a square foot versus the market average of \$7.95.

Grubb and Ellis specifically identified activity levels to pick up in Glenwillow with the completion of the Mr. Coffee/Sunbeam building and development of the proposed industrial park by Duke Realty. The ability of industrial parks to offer pre-developed infrastructure, possible tax abatement and quick delivery of buildings was identified as an important factor in lowering the overall cost of a new facility. The forecast identified growth in high tech and in research and development industries to create a demand for suitable high tech/flex space, which has historically been a small part of the Cleveland area’s industrial inventory. Locating in proximity to a sizable workforce and established public transit systems will also likely play a larger role in the selection of sites for industrial development.

Building Permit Activity

Exhibit 19 shows the number of permits which have been issued for industrial and office use in the Cuyahoga County communities surrounding Glenwillow between 1992 and 1997. The table indicates the number of permits for new buildings and for additions to buildings. During that period two permits were issued in Glenwillow for new manufacturing buildings. Bedford Heights’ and Oakwood’s proximity to I-271 is the reason for the number of warehouse permits for new buildings and additions. Solon had a slightly smaller number of permits issued for warehouses. Solon had the highest number of permits issued for manufacturing facilities. Bedford Heights and Solon had the highest number of permits issued for office uses.

Exhibit 19: Industrial Permit Activity, 1992-1997, Glenwillow and Nearby Communities

	Warehouse		Manufacturing		Office	
	New	Addition	New	Addition	New	Addition
GLENWILLOW	0	0	2	0	0	0
Bedford	0	0	0	2	0	0
Bedford Heights	8	10	2	1	5	2
Oakwood	11	0	1	0	3	0
Solon	7	6	7	9	4	3

Source: 1992-1994 Manufacturing & Construction Division, OH Dept. Of Commerce, and 1995-1997 Individual Municipal Building Departments.

Exhibit 20 presents the total number of permits issued for industrial and commercial buildings for new structures, additions and renovations. As the table indicates, the highest level of overall activity has occurred in the Summit County communities of Macedonia and Twinsburg. Solon showed the most activity of the adjacent Cuyahoga County communities. Glenwillow has showed more activity in the later part of the period covered. Of the 6 permits issued, 5 were in the last two years.

Exhibit 20: Total Commercial and Industrial Permits Issued, 1992-1997, Glenwillow and Nearby Communities

	Permits Issued						TOTAL
	1992	1993	1994	1995	1996	1997	
GLENWILLOW	0	1	0	0	3	2	6
Bedford	1	0	1	7	1	6	16
Bedford Heights	5	6	7	8	2	8	36
Oakwood	4	3	6	2	7	5	27
Solon	4	6	10	13	14	7	54
Macedonia	7	10	41	21	14	n/a	100
Twinsburg	8	5	12	11	12	17	65

Source: 1992-1994 Manufacturing & Construction Division, OH Dept. Of Commerce, and 1995-1997 Individual Municipal Building Departments.

TAXES

Introduction

Taxes are the main source of revenue for municipalities and pay the bill for most of the services, facilities and improvements which the locality provides. The quality and level of service are affected by tax revenue. In addition, the more money a municipality can generate locally the more local control it will have over decisions which require expenditure of funds. It can't raise taxes too high however, or it will put itself at a disadvantage in attracting new private investment in the community. Most individuals and companies have flexibility in where they can locate and while location, community image and assets, and availability of land are important factors in locational decisions, taxes also play a role in the equation.

In this section three types of taxes related to development will be addressed. **Income taxes** are a major source of income for a municipality and are generated by taxing the income of individuals which work in the community, and in some cases, live in the community. **Real estate taxes** are taxes on the value of land and the improvements (buildings) on that land. It is a major source of income for the schools, but also provides funds for the municipality, county, libraries and metroparks. **Personal property taxes** are taxes on property, excluding land and buildings, used in business. This includes machinery and equipment, furniture and fixtures, small tools, supplies, and inventories. An exemption is provided on the value of a portion of the property which lowers the tax burden on smaller businesses. The tax is distributed similarly to real estate taxes. For a municipality with a large amount of industry, personal property tax can generate a significant amount of revenue.

Income Taxes

Rates. Glenwillow is in line with the surrounding communities in terms of income tax rates. As *Exhibit 21* shows, Glenwillow's rate is 2% of income and it credits residents 100% of taxes they pay to their community of work up 2%. Income taxes are first paid to the community in which an

individual works. The exception is Bedford which credits an individual up to 1.50% of taxes paid in the community of work. Unless they also work in Bedford, an individual living in Bedford must pay the City an income tax of 0.75% in addition to what they pay to the community they are employed in.

Exhibit 21: Income Tax Rates -1996, Glenwillow and Nearby Communities

	Tax Rate	Tax Credit	Credit Limit
GLENWILLOW	2.0%	100.0%	2.00%
Bedford	2.25%	100.0%	1.50%
Bedford Hts.	2.0%	100.0%	2.00%
Oakwood	2.0%	100.0%	2.00%
Solon	2.0%	100.0%	2.00%
Macedonia	2.0%	100.0%	2.00%
Twinsburg City	2.0%	100.0%	2.00%

Source: Greater Cleveland Fact Book, Greater Cleveland Growth Association, 1997

Collections. As has been previously stated, Glenwillow is one of the smaller and least developed communities in the area. It should not be surprising that the tax collections in Glenwillow are much smaller than those of surrounding communities. In 1996, income tax collections were \$248,000 according to the Ohio State Department of Taxation (*see Exhibit 22*). These numbers do not reflect the relocation of Mr. Coffee/Sunbeam from Bedford Heights to Glenwillow in 1997. The 400-500 employees in that facility will increase the Village’s income tax collections significantly over the 1996 figure. Between 1990 and 1996 the Village’s income tax collections have fluctuated but have shown an overall increase of 17.4%. This increase is lower than that for all the surrounding communities other than Bedford Heights. Twinsburg, Macedonia and Oakwood have shown the largest percentage increases and Solon, with its large industrial base, collects the largest amount of income tax.

Exhibit 22: Income Tax Collection (1990 - 1996), Glenwillow and Nearby Communities

	City Income Tax Collection (000's)							% Change 1990-1996
	1990	1991	1992	1993	1994	1995	1996	
GLENWILLOW	\$212	\$176	\$287	\$190	\$212	\$375	\$248	17.4%
Bedford	\$3,625	\$4,257	\$4,629	\$4,974	\$5,397	\$6,046	\$6,245	72.3%
Bedford Hts.	\$6,455	\$6,592	\$6,762	\$7,298	\$7,857	\$8,363	\$7,545	16.9%
Oakwood	\$1,457	\$1,657	\$1,905	\$1,893	\$2,124	\$2,390	\$2,685	84.2%
Solon	\$16,663	\$17,367	\$17,611	\$18,831	\$19,432	\$21,496	\$22,335	34.0%
Macedonia	\$1,436	\$1,796	\$2,296	\$2,445	\$2,816	\$3,309	\$3,459	140.9%
Twinsburg City	\$5,626	\$5,841	\$6,581	\$6,215	\$8,688	\$10,479	\$12,867	128.7%

Source: Tax Data Series - Municipal Income Taxes Table LG-11, Ohio Dept. of Taxation 1991-1997

On a per capita basis (taxes collected divided by population), Glenwillow is in the lower half of the amount of income taxes collected (*see Exhibit 23*). Municipalities such as Solon, Twinsburg and Oakwood, which have a larger amount of industrial and commercial tax base compared to their populations have the highest collections. Even though it is not the lowest in taxes collected per capita, Glenwillow’s small size means collecting the sum of money to undertake larger projects is difficult. Income taxes are important to the financial health of a municipality. Development of currently vacant industrially zoned land will be very important for the financial health of the municipality in the future.

Exhibit 23: Income Tax Collection Per Capita (1996), Glenwillow and Nearby Communities

GLENWILLOW	\$520
Bedford	\$442
Bedford Hts.	\$640
Oakwood	\$784
Solon	\$1,107
Macedonia	\$398
Twinsburg City	\$793

Real Estate Taxes

Real estate taxes are a very important source of financing for schools in the state of Ohio. In addition, Cuyahoga County and the Libraries/Metroparks get funding through real estate taxes and a portion also goes to the municipality.

Mill Rates. Real estate tax rates are expressed in the term “mills”. A mill is 1/1000 the assessed value of the property (the assessed value is 35% of the market value). *Exhibit 24* compares the millage between Glenwillow and communities in Cuyahoga County surrounding Glenwillow. There are two tax rates shown, one for residential and agricultural land, and one for commercial and industrial land. The tax rates on commercial and industrial property are usually higher than the rate on residential land.

All communities in Cuyahoga County pay the same rate to county government, the county library and metroparks. The millage going towards municipal government is lower in Glenwillow (3.30) than in the surrounding municipalities. It is much lower than the more urbanized communities of Bedford and Bedford Heights which typically must provide more services to the population. These communities also do not collect as high amount in income taxes as do the communities of Oakwood and Solon which also have relatively low millage rates. The two school districts covered by these communities are Bedford and Solon. Glenwillow is in the Solon School District which generally has a higher tax rate than the Bedford City School District. As is noted on the table, the millage figures are further reduced by rollbacks of 12.5% for residential property and 10% for commercial property.

Rate as Percent of Market Value. *Exhibit 25* summarizes the overall tax rate for real estate in each community adjusting for market value and the rollbacks noted above (the two adjacent Summit County communities are included in this table). Glenwillow is in the middle of the list with re-

Exhibit 24: Real Estate Tax Millage* - Tax Year 1997 (Collected in 1998), Glenwillow and Nearby Communities

	Effective Millage*	
	Residential/Agricultural**	Commercial/Industrial**
All Communities		
Library/Metroparks	1.13	1.27
Cuyahoga County	11.09	13.21
GLENWILLOW		
Village	3.3	3.3
Schools (Solon)	35.24	42.27
Bedford		
City	12.8	12.8
Schools	30.15	38.61
Bedford Hts.		
City	12	12
Schools (Bedford)	30.15	38.61
Oakwood		
Village	3.8	3.8
Schools (Bedford)	30.15	38.61
Solon		
City	4.27	4.3
Schools	35.24	42.27

*rounded to two decimal places, applies to "assessed value" which is 35% of market value

**the effective millage shown are reduced further by rollbacks of 12.5% for resid./agric. property and 10% for commercial/industrial property

Source: Budget Commission, Cuyahoga County Auditors Office

Exhibit 25: Real Estate Tax Rates as Percent of Market Value - Tax Year 1997, Glenwillow and Nearby Communities

	Residential/Agricultural	Commercial/Industrial
GLENWILLOW	1.55%	1.89%
Bedford	1.69%	2.08%
Bedford Hts.	1.67%	2.05%
Oakwood	1.41%	1.79%
Solon	1.58%	1.92%
Macedonia	1.53%	1.69%
Twinsburg	1.40%	1.65%

Source: Cuyahoga County Auditor's Office/Summit County Tax Settlement & Budget Office

spect to the real estate tax rate. Oakwood, Macedonia and Twinsburg had lower overall rates. A \$100,000 house in Glenwillow would pay \$1,550 a year in real estate taxes (\$100,000 x 1.55%). A similar house in Oakwood would pay \$1,410 per year and in Solon would pay \$1,580 per year. A \$100,000 commercial or industrial property in Glenwillow would pay \$1,890 per year.

Distribution Rates. *Exhibit 26* presents how each real estate tax dollar collected from Glenwillow is distributed. Though the County and Library/Metroparks have the same millage rate in each municipality, their percent of the tax distribution will vary amongst communities because each has its own municipal and school tax rates which figure into the equation. This table shows that approximately 70% of the real estate dollars distributed go to the schools. Because of Glenwillow’s relatively low millage for the village, it receives only 5.5% of the real estate tax dollars collected from industry and 6.5% of each dollar collected from residential.

Exhibit 26: Real Estate Tax Distribution - Tax Year 1997 (Collected in 1998), Glenwillow

	Distribution as Percent of Tax Dollars Collected			
	Village	Schools	County	Library/Metroparks
Residential Property	6.5%	69.4%	19.0%	5.1%
Comm/Indust Property	5.5%	70.4%	19.5%	4.6%

Source: Cuyahoga County Auditor’s Office

Real Estate Assessments. *Exhibit 27* shows the distribution of property value by type of real estate property in Glenwillow. It is fairly evenly distributed among the property categories. The total assessed value had gone down between 1995 and 1997 but has increased in 1998. This is most likely due to the relocation of Mr. Coffee/Sunbeam to Glenwillow, since most of the increase is in the Other Real Estate Category. Public utilities property makes up a very large percent of the value of land in Glenwillow compared to the average for Cuyahoga County. The assessed value figure for this class of property has been steadily decreasing over the past four years. The assessed value of other real estate should steadily increase as new industrial development occurs in Glenwillow. Because of the Village’s distribution of zoning, it is unlikely that the Village will approach the average distribution within the County.

Exhibit 27: Real Estate Valuations and Estimated Market Value, Glenwillow

Collection Year	Residential/Agricultural		Other		Public Utilities		Total	
	Real Estate		Real Estate		Property		Assessed Value	Est. Market Value
	Assessed Value	Est. Market Value	Assessed Value	Est. Market Value	Assessed Value	Est. Market Value		
1995	\$3,305,900	\$9,445,429	\$3,952,620	\$11,293,200	\$5,428,400	\$15,509,714	\$12,686,920	\$36,248,343
1996	\$3,301,130	\$9,431,800	\$3,906,080	\$11,160,229	\$5,233,230	\$14,952,086	\$12,440,440	\$35,544,114
1997	\$3,301,130	\$9,431,800	\$3,859,600	\$11,027,429	\$5,188,000	\$14,822,857	\$12,348,730	\$35,282,086
1998	\$3,684,420	\$10,526,914	\$5,104,930	\$14,585,514	\$4,983,780	\$14,239,371	\$13,773,130	\$39,351,800
% in 1998	26.8%		37.1%		36.2%		100.0%	
County Avg.	66.3%		27.8%		6.0%		100.0%	

Source: Cuyahoga County Auditor’s Office

Real Estate Collections. As *Exhibit 28* indicates, real estate collections are not a large source of income for the Village. In 1997, it received only \$38,460 from real estate taxes out of a total collection of \$796,000. The collection in 1997 was lower than the previous two years (as mentioned assessed value had fallen). This trend was shared by Oakwood although the other adjacent communities in Cuyahoga County showed annual increases. Although it will not be as significant a source of funds as income taxes, new industrial development and the development of new housing should reverse this trend and provide additional tax dollars to Glenwillow in the future.

Exhibit 28: Real Estate Tax Collection and Distributions, 1995-1997, Glenwillow and Nearby Communities

	Distribution	Collection Year		
		1995	1996	1997
GLENWILLOW	Total	\$758,406	\$754,525	\$796,587
	Village	\$41,640	\$41,299	\$38,460
	Schools (Solon)	\$525,559	\$518,666	\$576,116
	County	\$174,568	\$177,917	\$166,528
	Library	\$16,640	\$16,644	\$15,483
Bedford	Total	\$10,597,908	\$11,716,398	\$12,126,287
	City	\$2,323,029	\$2,361,025	\$2,437,281
Bedford Hts.	Total	\$10,790,612	\$11,653,404	\$11,785,299
	City	\$2,184,801	\$2,166,493	\$2,175,108
Oakwood	Total	\$3,196,236	\$3,498,951	\$3,459,937
	Village	\$240,742	\$239,512	\$236,675
Solon	Total	\$31,444,869	\$32,842,931	\$38,262,290
	City	\$2,462,929	\$2,517,203	\$2,851,666
Cuyahoga County	Total	\$1,168,003,286	\$1,232,747,498	\$1,310,671,302
	Municipalities	\$193,189,242	\$195,454,410	\$198,140,620

*Collection year is one year later than tax year; e.i. taxes collected in 1997 are for tax year 1996. Figures are gross distributions; Cuyahoga County assesses fees for services which are taken out of these figures.

Source: Budget Commission, Cuyahoga County Auditor's Office

Personal Property Taxes

Rates. Personal property tax rates for the communities in Cuyahoga County surrounding Glenwillow are presented in *Exhibit 29*. The rates are for every \$100 in valuation. Valuation is affected by exemptions allowed and also by depreciation of personal property based on its property class and age. Glenwillow has the second lowest rate (8.25) of the surrounding communities within Cuyahoga County.

Assessed Valuations. The value of tangible personal property in Glenwillow has risen over the past three years from \$1.33 million in 1995 to \$1.8 million in 1997. As *Exhibit 30* shows, this total is still very small compared to surrounding communities. Oakwood, with the next smallest total, has ten times as much tangible personal property as Glenwillow. As the table also shows, the total tangible personal property within a community can rise or fall for a given year. Unlike real estate, whose value is set before taxes are collected, the value of personal property cannot be determined

until businesses file their tax returns. When more businesses locate in Glenwillow, the community's figure should rise substantially.

Exhibit 29: Personal Property Tax Rates - 1998, Glenwillow and Nearby Communities

	Per \$100 Valuation
GLENWILLOW	8.25
Bedford	8.84
Bedford Hts (Bedford Schools)	8.76
Bedford Hts (Orange Schools)	9.82
Oakwood	7.94
Solon	8.35

Source: Cuyahoga County Auditor's Office

Exhibit 30: Personal Property Assessed Valuations, 1995-1997, Glenwillow and Nearby Communities

	Assessed Valuation		
	1995	1996	1997
GLENWILLOW	\$1,335,139	\$1,668,150	\$1,807,656
Bedford	\$35,114,286	\$38,537,810	\$38,919,537
Bedford Hts.	\$82,694,291	\$84,511,322	\$77,547,766
Oakwood	\$14,983,524	\$16,713,607	\$19,871,887
Solon	\$197,807,661	\$189,671,684	\$201,276,279
Cuyahoga County	\$2,603,148,191	\$2,728,870,969	\$2,791,334,654

Source: Cuyahoga County Auditor's Office

Collections. Personal property tax collections have not contributed considerably to Glenwillow's revenues in the past three years. The collection in 1997 was only \$5,894 although that figure is double the 1995 sum of \$3,158 (*See Exhibit 31*). Personal property taxes did contribute substantial sums to a number of the surrounding communities. Solon and Bedford Hts. collected over \$850,000 each in 1997. Personal property taxes contributed substantially to their school districts. Overall \$248 million was collected in 1997 in Cuyahoga County in personal property taxes with municipalities receiving a \$27.5 million share. Glenwillow has the ability to benefit substantially from personal property taxes on new industrial development.

DEVELOPMENT PROGRAMS

There are a number of business incentives, programs, and technical assistance services available through the State of Ohio and the Cuyahoga County Department of Development. Glenwillow currently provides a number of incentives for businesses to located within the community.

Exhibit 31: Personal Property Tax Collections and Distributions, 1995-1997, Glenwillow and Nearby Communities

	Distribution	Collection Year			Share of Distribution-1997
		1995	1996	1997	
GLENWILLOW	Total	\$72,069	\$152,131	\$147,656	
	Village	\$3,158	\$6,683	\$5,894	4.0%
	Schools (Solon)	\$51,346	\$108,921	\$109,611	74.2%
	County	\$16,075	\$33,692	\$29,650	20.1%
	Library	\$1,490	\$2,835	\$2,501	1.7%
Bedford	Total	\$3,107,577	\$3,393,569	\$3,434,526	
	City	\$468,285	\$491,886	\$497,307	14.5%
Bedford Hts.	Total	\$7,204,231	\$7,809,920	\$7,183,102	
	City	\$996,484	\$1,035,892	\$951,455	13.2%
Oakwood	Total	\$1,049,287	\$1,083,082	\$1,484,236	
	Village	\$52,725	\$51,523	\$71,034	4.8%
Solon	Total	\$15,926,641	\$15,202,463	\$17,221,722	
	City	\$838,217	\$799,955	\$884,020	5.1%
Cuyahoga County	Total	\$218,894,662	\$230,107,520	\$247,952,588	
	Municipalities	\$25,504,317	\$26,875,620	\$27,531,084	11.1%

Source: Budget Commission, Cuyahoga County Auditor's Office

Foreign Trade Zone

Mr. Coffee/Sunbeam site is currently a Foreign Trade Zone and an application has been filed to designate the proposed Emerald Valley Industrial Park as an Foreign Trade Zone. Foreign trade zones are attractive to international companies because duties on goods which are imported or exported from the zone may be deferred, reduced or eliminated. In addition, Ohio inventory tax may be reduced or eliminated. Foreign Trade Zones also allow greater flexibility in how companies may operate and require less paperwork for companies dealing internationally.

State of Ohio - Enterprise Zone Certification

The entire village is a designated enterprise zone. Enterprise zones are areas in which businesses can receive tax incentives in the form of tax exemptions on eligible new investments. The designation allows local officials to negotiate individually with businesses to encourage new investment and serve as an economic development tool. To be eligible, a business must agree 1) to retain or create employment, and 2) establish, expand, renovate, or occupy a facility located in an Enterprise Zone.

The tax incentives involve only new investment in real or personal property; existing taxable property remains taxable at the current level.

Benefits:

- ✓ Exemption of up to 75% of the assessed value of real property improvements and/or personal property increases for up to 10 years. The exemption level can be exceeded under special circumstances with local board of education approval.

- ✓ State franchise tax incentives are available to companies that are in compliance with their local Enterprise Zone Agreement and have created new jobs, provided that 25% or more of the new persons hired are from specific disenfranchised groups.
- ✓ Brownfield site incentives are available to companies that make at least a 250% investment over the existing value of the facility. The community can exempt up to 50% of the value of the facility prior to remediation, exempt up to 100% of the increase in the assessed valuation of the real property of the facility during or after remediation, and exempt up to 75% of the assessed value of personal property, all for up to ten years.
- ✓ Additional state incentives available include health care subsidies and disadvantaged worker hiring credits.

At least fifteen communities in Cuyahoga County offer Enterprise Zone incentives. Other communities with Enterprise Zones located in proximity to Glenwillow include Solon, Oakwood, Bedford Heights and Bedford.

Improvement Target Areas

Bond Street has been designated as an Improvement Target Area (ITA) making it eligible for Community Development Block Grant (CDBG) funds through the Cuyahoga County Department of Development. In 1996, the Cuyahoga County Planning Commission, through a conditions survey, reconfirmed that the condition of properties on Bond Street met standards for determining an area to "blighted" for purposes of administering the CDBG program. Low/moderate income areas and conditions which are immediate threats to health or welfare are also eligible for CDBG funding. ITA projects are funded through a competitive grant program. These funds are used often for sewer and road work.

State of Ohio - Other Programs

The Ohio Department of Development offers a range of economic assistance programs, including job training, minority business assistance, and loan programs. Descriptions of all programs are available on their web site: <http://www.odod.ohio.gov>. Click on the word Fact Book.

FUTURE INDUSTRIAL DEVELOPMENT

Vacant Industrial Land

In order to forecast future industrial development, it is necessary to start with available land for industry. Glenwillow has over 1000 acres zoned for industrial development. In 1998, 108 acres were developed as industry. In 1996, the Village estimated that 250 workers were employed in the Village before Mr. Coffee/Sunbeam moved its headquarters into the Village. Landfills occupy another 223 acres of industrially zoned land. A small portion of the vacant industrial zoned land is currently

located within the Town Center which is envisioned as being developed for other more suitable uses. Natural features such as steep slopes and wetlands also affect how much of the vacant land can be developed in the future.

Map 5 identifies the sites within the Village available for future industrial development. The figures on the map are the gross square feet of land within the thick boundaries outlined. The gross square footage amounts are then reduced further to take into account land on steep slopes and those lands which may be subjected to wetlands which were identified in the land use chapter. The Emerald Valley Business Park (EVBVP) land area figures are reduced by the amount of open space and storm retention area shown on the developer's preliminary site plans which could be subject to some change. Other land areas are reduced by steep sloped areas and hydric soils identified in the Land Use Chapter. The resulting figures are labeled A2 on the map and correspond to the land area figures under "Development Site" in **Exhibit 32**. Based upon the assumptions and adjustments cited above, there is approximately 387 acres of developable industrial vacant land within the Village of Glenwillow.



The relocation of Cochran Road will open up the east side of the Village for industrial development. The gap in the tree line indicates the alignment of the new road.

Development Assumptions

In order to project how much industrial development could be constructed within the Village, a number of development standards were applied to the land area figures from above. Sources used included the Urban Land Institute's "Development Impact Assessment Handbook", the Institute of Transportation Engineer's "Trip Generation 5th Edition", R.S. Means Co. "Square Foot Costs 19th Edition", Department of Census "County Business Patterns" and Cuyahoga County Auditor's 1998 tax rates for the Village of Glenwillow.

Some of the basic assumptions used in **Exhibit 32** include the following:

- ✓ Building coverage - 25%
- ✓ Employees per 1,000 square feet building area - 2
- ✓ Average salary - \$35,000
- ✓ Square foot construction cost - \$60.00
- ✓ Average trips per employee - 3.34
- ✓ Percent truck trips - 8%
- ✓ Income tax rate - 2%
- ✓ Commercial property tax rate - 1.89% (based upon market value)

Build-Out Figures

Based upon the assumptions above, approximately 4.2 million square feet of industrial building space could be developed within the industrial portions of Glenwillow. Over 8,000 employees

Map 5: Industrial Vacant Land

 Vacant Industrial Sites

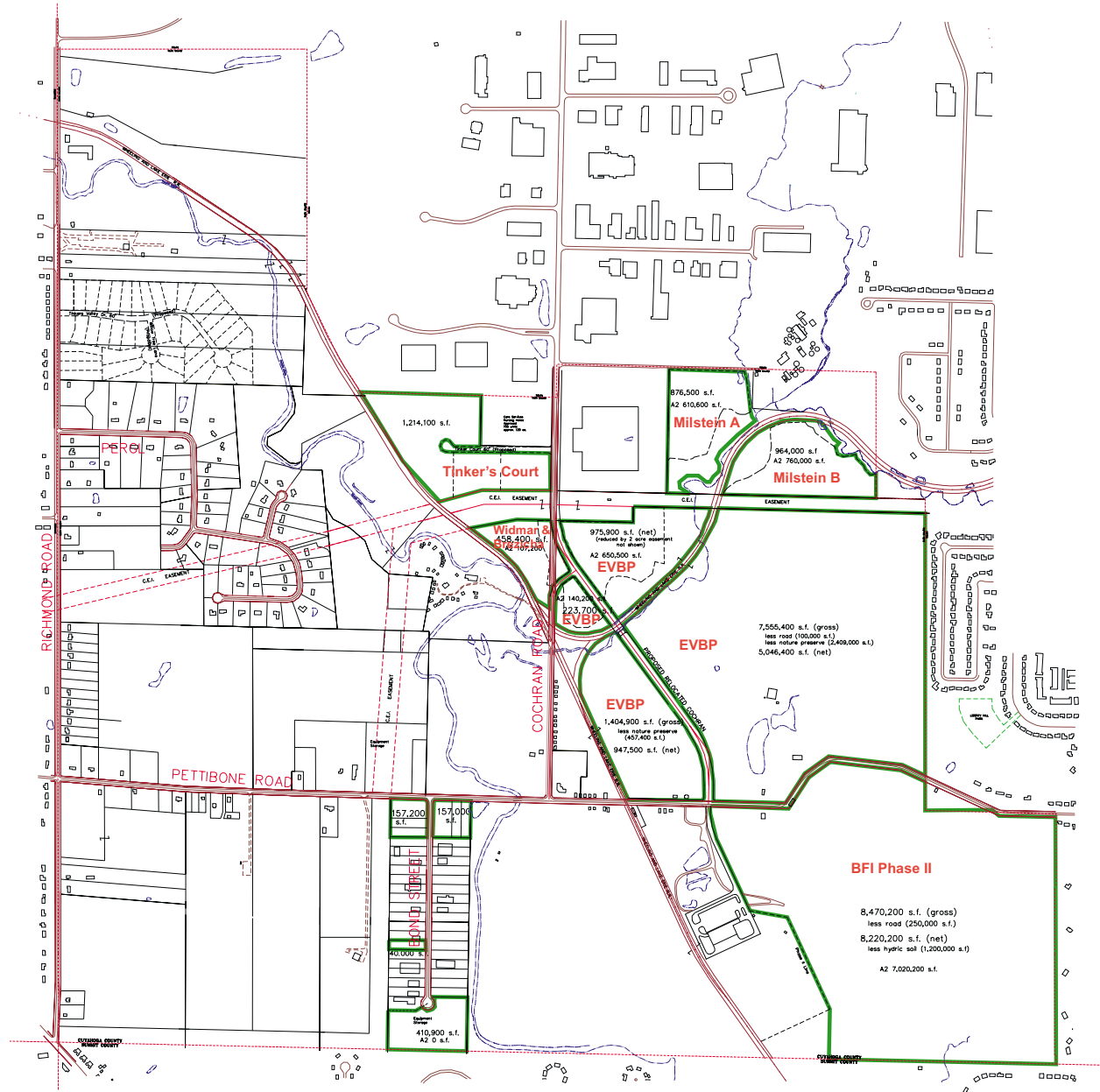


Exhibit 32: Industrial Development Impact Analysis, Build-Out of Currently Vacant Industrial Land

Nature Preserve Removed from Emerald Assumptions								
Land Area Reduced for Steep Slopes and Hydric Soil								
Development Site	Emerald Valley Business Park	BFI Land Phase II	Tinkers Court	Bond St. Vacant Land	Milstein A	Milstein B	Widmar & Brezicha Land	TOTAL
Land Area (s.f.)	6,784,600	7,020,200	1,214,100	354,200	610,600	760,000	107,200	16,850,900
Land Area (acres)	155.8	161.2	27.9	8.1	14.0	17.4	2.5	387
BUILD - OUT								
Building Square Feet	1,696,150	1,755,050	303,525	88,550	152,650	190,000	26,800	4,212,725
Market Value	\$101,769,000	\$105,303,000	\$18,211,500	\$5,313,000	\$9,159,000	\$11,400,000	\$1,608,000	\$252,763,500
Assessed Value	\$35,619,150	\$36,856,050	\$6,374,025	\$1,859,550	\$3,205,650	\$3,990,000	\$562,800	\$88,467,225
Employees	3,392	3,510	607	177	305	380	54	8,425
Payroll	\$118,730,500	\$122,853,500	\$21,246,750	\$6,198,500	\$10,685,500	\$13,300,000	\$1,876,000	\$294,890,750
IMPACTS								
Traffic								
Total Trips Generated	11,330	11,724	2,028	592	1,020	1,269	179	28,141
Trucks	906	938	162	47	82	102	14	2,251
Transit Trips	102	105	18	5	9	11	2	253
Environmental								
Water Consumption (gallons/day)	508,845	526,515	91,058	26,565	45,795	57,000	8,040	1,263,818
Sewage Production (gallons/day)	437,607	452,803	78,309	22,846	39,384	49,020	6,914	1,086,883
Solid Waste Production (tons/day)	4.7	4.8	0.8	0.2	0.4	0.5	0.1	11.6
Public Safety								
Police Personnel	1.70	1.76	0.30	0.09	0.15	0.19	0.03	4.21
Police Vehicles	0.51	0.53	0.09	0.03	0.05	0.06	0.01	1.26
Police Facilities (s.f.)	170	176	30	9	15	19	3	421
Fire Personnel	1.40	1.45	0.25	0.07	0.13	0.16	0.02	3.48
Fire Vehicles	0.17	0.18	0.03	0.01	0.02	0.02	0.00	0.42
Fire Facilities (s.f.)	212	219	38	11	19	24	3	527
EMS Personnel	0.12	0.12	0.02	0.01	0.01	0.01	0.00	0.29
EMS Calls per Year	31.0	32.0	5.5	1.6	2.8	3.5	0.5	76.9
EMS Vehicles	0.03	0.03	0.01	0.00	0.00	0.00	0.00	0.07
SERVICES SUPPORTED								
Employees Requiring Daycare	67.8	70.2	12.1	3.5	6.1	7.6	1.1	168.5
TAXES GENERATED								
Income Taxes	\$2,374,610	\$2,457,070	\$424,935	\$123,970	\$213,710	\$266,000	\$37,520	\$5,897,815
Total Real Estate Property Taxes	\$2,138,930	\$2,213,206	\$382,760	\$111,666	\$192,499	\$239,600	\$33,796	\$5,312,457
Village Share	\$117,641	\$121,726	\$21,052	\$6,142	\$10,587	\$13,178	\$1,859	\$292,185
Total Personal Property Taxes	\$1,351,747	\$1,398,687	\$241,894	\$70,570	\$121,654	\$151,421	\$21,358	\$3,357,331
Village Share	\$54,070	\$55,947	\$9,676	\$2,823	\$4,866	\$6,057	\$854	\$134,293
VILLAGE TAXES								
Total Taxes from Income, Real Estate & Personal Property	\$2,546,321	\$2,634,744	\$455,663	\$132,934	\$229,164	\$285,235	\$40,233	\$6,324,293
Increase per Capita	\$5,338.20	\$5,523.57	\$955.27	\$278.69	\$480.43	\$597.98	\$84.35	\$13,258.48
EXPENDITURES	\$90,534	\$93,677	\$16,201	\$4,726	\$8,148	\$10,141	\$1,430	\$224,858
Increase per Capita	\$189.80	\$196.39	\$33.96	\$9.91	\$17.08	\$21.26	\$3.00	\$471.40
NET FISCAL IMPACT	\$2,455,787	\$2,541,067	\$439,462	\$128,208	\$221,016	\$275,094	\$38,803	\$6,099,435

could work within the community. This industrial development will not occur all at once, however. The developer of the Emerald Valley Industrial Park estimated it could take 3 to 10 years to build out that development. Absorption figures from 1995 to 1997 showed an average absorption of industrial space of 740,000 square feet per year in the southeast region of Cleveland. This included the area from Beachwood to Aurora. Glenwillow should attract a greater share of new development in the future as surrounding communities such as Solon run out of vacant land, and after relocated Cochran Road opens land for industrial development within the community.

If recent growth rates were to continue into the future and Glenwillow were to capture 25% of the growth (approximately 185,000 square feet per year, or 17 acres), it would take over 20 years to build-out the land. The ability to capture large headquarters buildings or other large facilities could shorten this time frame as large amounts of land would be developed at one time. For example, the Mr. Coffee/Sunbeam building on Cochran Road is 435,000 square feet on 34.5 acres. Companies buying more land than what they require now in anticipation of future expansion needs could also shorten how quickly land is absorbed but would not increase the speed of building development.

Additional traffic will be generated as new development occurs over the years. At build-out, as many as 28,000 trips could be generated, although those would be spread out over a dispersed area. Relocated Cochran Road, which will be a four lane roadway developed for industrial traffic will accommodate much of the traffic. It is the most direct route to a freeway and already serves the adjacent industrial district to the north in Solon. Solon does not allow trucks on Pettibone Road and Oakwood does not allow trucks on Pettibone Road between Richmond Road and Broadway. Pettibone Road will see an increase in automobile traffic from future residential and industrial development. Additional traffic studies should be conducted to evaluate how such industrial traffic will be dispersed on the existing streets and whether any additional changes or improvements are needed on the Village's main streets.

In 1997, the Village collected \$439,000 in real estate, personal property and income taxes. In 1996 it collected \$300,065. Total general fund collections for those years were \$839,000 and \$1.5 million respectively. Under the above assumptions, at build-out, the Village could collect up to \$6.3 million in today's dollars in real estate, personal property and income taxes. \$5.9 million of that figure would come from income tax receipts. The Solon Schools could realize \$5 to \$6 million annually from new industrial development through real estate and personal property taxes if all vacant industrial land is developed.

The Village could also expect an increase in expenditures to service new development within the community. In order to estimate increased expenditures due to new development the "Employment Anticipation Method" established in the Practitioner's Guide to Fiscal Impact Analysis was used to calculate expected increases. At build-out, expenses would increase by \$550,000 in current dollars, well below the estimated tax collection figure. Using standards from the Urban Land Institute's "Development Impact Assessment Handbook" it is estimated that an additional 4 police officers and 3 fire personnel would be needed to service the new development. One additional police vehicle would also be required.

RETAIL MARKET

Current Conditions

There is currently no retail within the Village of Glenwillow. The closest major concentrations of retail are located in Oakwood, Solon and Macedonia. The closest mall in Cuyahoga County is Randall Park Mall in North Randall. In Oakwood, Hawthorne Square Shopping Center is 1.3 miles to the west at Broadway and I-271. It is anchored by highway-oriented big box retailers such as Builders Square and Office Max. There are also a number of fast food restaurants in the area and Pettiti's Garden Center has its main location nearby. Downtown Solon is centered at Aurora and S.O.M. Center Roads and is located 3.6 miles away to the north and east. A number of community level shopping centers make up this commercial district. A wide variety of shopping opportunities are available in this area including supermarkets, discount department stores, other shopping goods and a variety of restaurants. An area which has recently experienced a large amount of new retail construction is the Route 82 and I-271 interchange which is 4.6 miles to the south and east in Macedonia. Wal-Mart and Kohl's department stores anchor a new shopping center which also includes a supermarket and other convenience and shopping outlets. A number of restaurants have also located in this area. Convenience outlets along Broadway Avenue in Oakwood and Twinsburg are also located near residential portions of the Village.

Village Income

The latest estimates showed 210 households and 477 people lived within the Village. They had an average household income of \$32,750 or a combined total income of \$6.87 million. According to the 1994-95 Consumer Expenditure Survey released by the U.S. Bureau of Labor Statistics, at that average income level in the midwest approximately 36% goes to retail expenditures. In the case of the Village it would total \$2.5 million. It is estimated that at build-out another 315 to 360 housing units may be constructed. Based upon an assumed \$250,000 house price, the average income would be in the \$75,000 range. This would add between \$23.6 and \$26.7 million to the income within the community in today's dollars. At the \$75,000 level, approximately 25.7% is spent on retail expenditures. New residents, at build-out would spend approximately \$6 million in today's dollars.

According to the 1992 Census of Retail Trade (the latest available) retail sales within Cuyahoga County broke down by store type in the following proportions:

- ✓ Building Materials, Garden Supply - 5.5%
- ✓ General Merchandise - 15.9%
- ✓ Food Store - 25.7%
- ✓ Apparel and Accessory - 8.9%
- ✓ Furniture and Home Furnishing - 8.2%
- ✓ Eating and Drinking Places - 16.8%
- ✓ Drug and Propriety - 9.9%
- ✓ Miscellaneous Retail - 9.3%

Calculations

Exhibit 33 provides figures of how much retail could be supported by the current and future populations within the Village of Glenwillow based upon an additional 315 units being constructed. Village residents currently are expected to spend approximately \$640,000 per year at the food store and have the potential to spend \$2.2 million if all residential land were built upon.

In order to translate dollars spent into supportable square footage of differing retail types, average square foot sales figures from the Urban Land Institute’s Dollars and Cents of Shopping Centers was used.

Exhibit 33: Potential Sales by Store Type from Village Population

Store Type	Current Population	Additional Build-Out	Total Potential Sales
Building Material, Garden Supply	\$135,900	\$332,350	\$468,250
General Merchandise	\$394,570	\$964,900	\$1,359,470
Food Store	\$636,120	\$1,555,550	\$2,191,670
Apparel and Accessory	\$220,480	\$539,150	\$759,630
Furniture and Home Furnishing	\$202,870	\$496,080	\$698,950
Eating and Drinking Places	\$415,400	\$1,015,800	\$1,431,200
Drug and Propriety	\$245,000	\$599,200	\$844,200
Miscellaneous Retail	\$229,900	\$562,200	\$792,100
Total Potential Retail Sales	\$2,480,240	\$6,065,230	\$8,545,470

Store Type	Avg Sales per S.F.*	Potential Supportable Square Feet		
		Current Population	Additional Build-Out	Total
Building Material, Garden Supply	\$130	1,045	2,555	3,600
General Merchandise	\$145	2,720	6,655	9,375
Food Store	\$345	1,845	4,510	6,355
Apparel and Accessory	\$185	1,190	2,915	4,105
Furniture and Home Furnishing	\$140	1,450	3,545	4,995
Eating and Drinking Places	\$200	2,075	5,080	7,155
Drug and Propriety	\$245	1,000	2,445	3,445
Miscellaneous Retail	\$140	1,640	4,015	5,655
Total Potential		12,965	31,720	44,685

Store Type	Capture Rate	Supportable S.F. within Village			
		Current Population	Additional Build-Out	Total	Typical Store Size
Building Material, Garden Supply	20%	210	510	720	80,000
General Merchandise	20%	545	1,330	1,875	73,500
Food Store	50%	920	2,255	3,175	42,228
Apparel and Accessory	20%	240	585	825	2,700
Furniture and Home Furnishing	20%	290	710	1,000	20,000
Eating and Drinking Places	20%	415	1,015	1,430	2,500
Drug and Propriety	50%	500	1,225	1,725	10,000
Miscellaneous Retail	20%	330	800	1,130	1,800
Total		3,450	8,430	11,880	

*Dollars and Cents of Shopping Centers, Urban Land Institute 1997

The spending figures of residents are divided by the average sales per square foot figure for the category of retail store in order to estimate how many square feet of each store type can be supported by the community. The potential supportable square feet totals are how much the Village could support if everyone spent all their money in the Village. Any particular location will capture only a portion of the retail spending of those living nearby. People are likely to spend more dollars close to home for convenience goods such as groceries and drugstore items. Shopping goods are more likely to be bought in a variety of locations. Using an estimate that the Village could capture 50% of the convenience spending and 20% spent on other goods, a closer approximation of what Village residents can support can be obtained.

Findings

Currently the Village can support close to a total of 3,500 square feet of retail across all categories. With new development that total could increase to close to 12,000 square feet. Comparing the supportable square feet to the typical size store for each category shows that if a store were to rely solely on residents very little could be supported. Within the food store category, a convenience store of a few thousand square feet could probably be supported. A small eating establishment could also possibly be supported. Most stores which would locate in the Village would have to rely on others from outside the Village for a portion of their sales. A large increase in the daytime working population, however, could provide a market for the goods and services which would cater to the working population.

SUMMARY

There are currently 108 acres and 637,000 square feet of building within the Village that are developed for industry. Bond Street is currently home to the largest number of businesses. The appearance of Bond Street is a concern to the Village. A study was conducted in 1996 for the Village which suggested a number of steps to improve the right-of-way and aesthetic appearance. The factor that many businesses are in the construction industry should be built upon in marketing and creating a well defined image for the street.

The relocation of Cochran Road will open up much the Village's east side for industrial development, with most of that land owned by Browning Ferris Industries (BFI). BFI has an agreement with Duke Realty to develop an industrial park on the site of the Austin Company Farms. The white wooden fence which borders the property along Pettibone Road, and the barns and silo which remain on the property, help define the rural atmosphere of the Village. To the degree possible these elements should be incorporated into the new development. Vacant industrial sites within Glenwillow are some of the largest remaining in Cuyahoga County. The Village has approximately 522 acres of vacant land which is zoned industrial. Removing steep slopes, floodplains and potential wetlands from that figure reduces it to 387 acres.

Glenwillow's income tax rate is comparable to surrounding communities at 2%, while the property tax rates are slightly above Twinsburg, Macedonia and Oakwood but below Bedford, Bedford

Heights and Solon. Glenwillow has enterprise zone status. Bond Street is an Improvement Target Area and Free Trade Zone status is in place for the Mr. Coffee/Sunbeam building and under application for the Emerald Valley Industrial Park.

In 1997, Glenwillow collected \$439,000 in real estate, personal property and income taxes. Build-out of industrial property could result in another 4.2 million square feet of industrial space and 8,000 jobs. Based upon recent absorption rates it would take approximately 20 years to develop all the vacant industrial land in the community. In today's dollars, new industrial development at build-out could generate \$6.3 million annually in real estate, personal property and income taxes.

The Village's population will not support much retail development on its own. Most stores will rely on outside populations for much of their sales. The increased daytime working population in the Village and people attracted to the Town Center by regional draws such as a renovated train station are potential markets.

Chapter 5

Infrastructure and Community Facilities

INFRASTRUCTURE

Roads

Right-of-Way/Pavement Widths - *Map 6* shows the location, condition, right-of-way and pavement width of streets within the Village. All existing streets within the Village have 60 foot right-of-ways regardless of the type of road. Richmond Road which makes up the western boundary of the Village has the widest road pavement. It is 26 feet in width. Pettibone Road, the main east-west arterial through the Village, is 22 feet in width and Cochran Road, the main north-south arterial in the center of the community, is 21 feet in width. All are one lane in each direction. Existing residential side streets are 18 feet in width. Cochran Road terminates at a t-intersection with Pettibone Road in the center of the Village. Near the eastern boundary of the Village, Pettibone Road curves rather sharply to the north, and up a slope, before eventually turning back to the east and south where it joins a continuation of its original east-west alignment in the City of Solon.



Gateways are the first impression one receives as he enters a community. The use of higher quality of design and materials can also indicate a higher level of design standards.






Subdivision Regulations - The existing pavement width of roads within the Village do not meet the existing standards in the Village’s subdivision regulations. Section 1172.07 of the existing regulations set standards for local, collector and industrial roads. New development will be required to meet these standards. They are as follows:

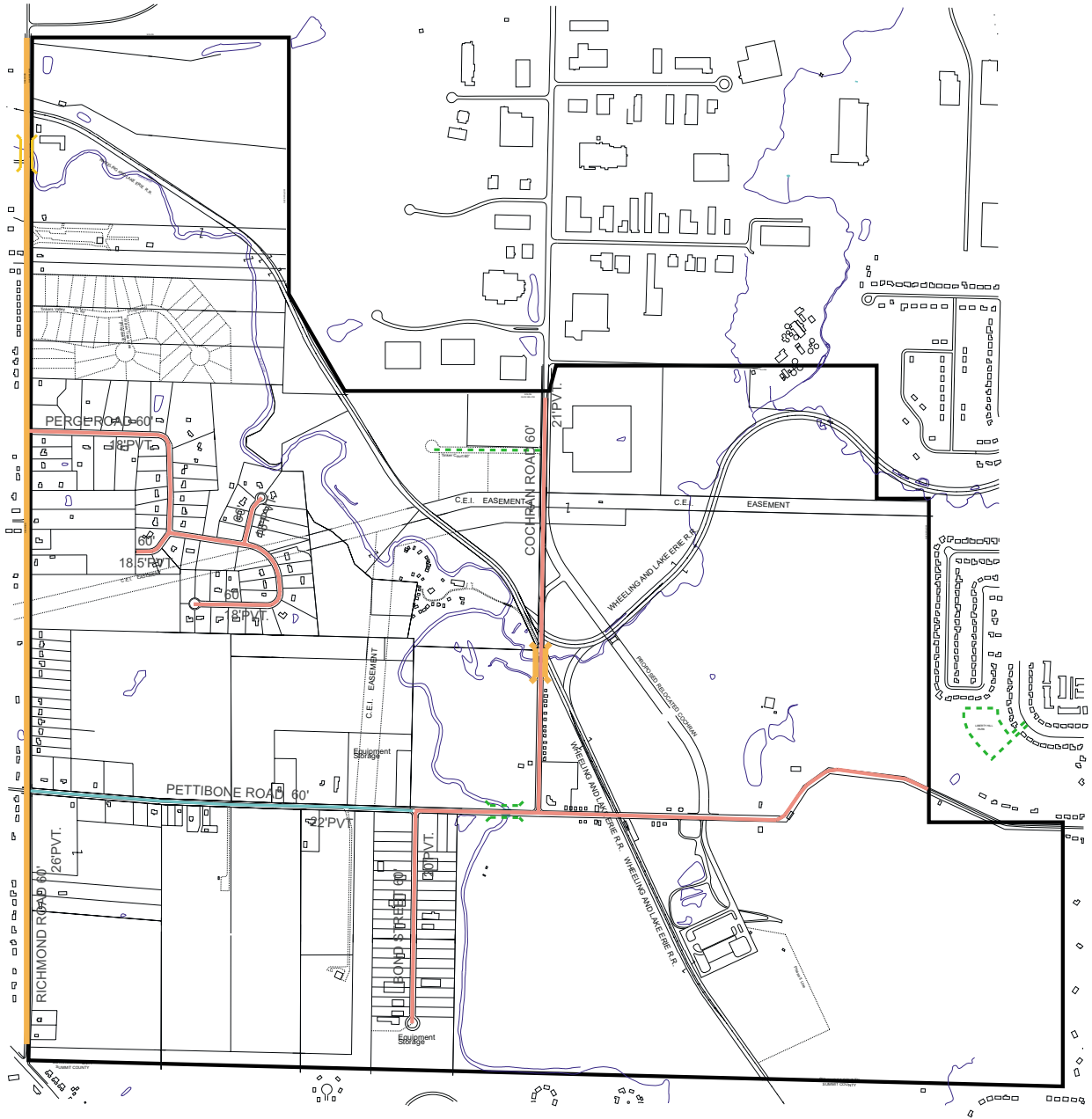
Street Classification	Minimum Right-of-Way	Pavement Width	Sidewalk Width
Local	60 feet	26 feet	5 feet
Collector	80 feet	36 to 40 feet	5 feet
Industrial	60 to 80 feet	36 to 40 feet	5 feet

Conditions - Pettibone Road west of Bond Street, Bond Street, and residential roads within the existing Pergl Road subdivision are in good condition (*see Map 6*). Cochran Road and Pettibone Road east of Bond Street are in fair condition. The road in worst condition is Richmond Road which is in poor condition. In addition to Bond Street, the Cochran Road Bridge over Beaver Meadows Creek and the Richmond Road Bridge over Tinkers Creek are in poor and critical conditions respectively and in need of repair. The Pettibone Road Bridge over Tinkers Creek was reconstructed in 1996 and is in excellent condition.

Rail Crossings - The major arterials of Pettibone and Cochran Roads are crossed at grade by tracks from the Wheeling and Lake Erie Railroad. The Pettibone Road crossing is located 800 feet east of the Cochran and Pettibone intersection. It has warning lights, but no gates. Rush hour traffic at the intersection of Pettibone and Cochran frequently backs up to the tracks creating a dangerous situation. Gates would help to warn of oncoming trains. There are two crossings within 150 feet of each other on Cochran Road just north of where the road crosses Beaver Meadow’s Creek. Because of

Map 6: Road Conditions

BRIDGE/ROAD CONDITION		WIDTHS
	EXCELLENT	60' RIGHT-OF-WAY
	GOOD	18'PVT PAVEMENT
	FAIR	
	POOR	
	CRITICAL	



Source: Elewski & Associates

the angles at which the tracks cross the road, it is difficult for motorists to get an adequate view of the track approaches. The crossings have crossbucks but no warning signals or gates. The proximity of the tracks to one another also causes situations where vehicles are stopped between the two sets of tracks watching for trains.

Traffic Volumes - 1993 and 1994 are the latest daily traffic counts available for Glenwillow. *Exhibit 34* shows the change in traffic volume for the last three counts. The last count for the Cochran-Pettibone intersection was in 1993. Traffic volumes on Pettibone increased approaching Cochran from both the east and the west. The average daily traffic count for Pettibone Road was slightly higher west of Cochran Road than east of Cochran Road. The count was in the vicinity of 7,500 vehicles per day. Cochran Road was used by approximately 1,000 cars less per day. In 1993 traffic volume on Richmond Road was higher south of Pettibone Road than north of it. Volumes on Richmond Road were only 2/3 to 3/4 of those on Pettibone Road. The 1994 intersection counts showed a substantial increase in traffic for both Pettibone and Richmond Roads over the 1993 counts. The counts for Pettibone Road at the intersection of SOM Center Road were higher in 1993 as compared to the previous count in 1991. The count of 5,800 for the leg of Pettibone Road west of SOM Center in 1993 was 1,500 cars less than the segment of Pettibone Road east of Cochran Road in Glenwillow. Compared to the 1988 counts, the volumes on Pettibone Road near SOM Center have shown a decrease of traffic.

Roadway Capacities - *Exhibit 35* lists information acquired from the Cuyahoga County Engineer regarding capacities for various sized roadways.

The latest counts (1993) showed Pettibone and Cochran Roads, which are two lanes, had average daily volumes within the capacity shown for their road types. New development could generate traffic which will necessitate an upgrade to existing roadways. Additional detailed studies need to be conducted to determine whether additional lanes need to be added to Pettibone Road west of the Wheeling and Lake Erie Railroad tracks. Based upon the County Engineers guidelines for lane widths for roads with truck traffic, Pettibone Road should at least be widened to 26 feet from 22 feet. In addition, any improvement of Pettibone Road should include a sidewalk on at least one side

of the street. This sidewalk should connect the residential portion of the Village to the center of town. If major work is planned in the future, the feasibility of burying power lines as part of the construction should be promoted.



Pettibone Road is the major east/west road through the community. Additional traffic studies need to be conducted to determine if extra lanes should be added or if intersection improvements will be sufficient to handle future traffic volumes. If major road reconstruction is required, the feasibility of burying power lines should be studied.

Plans. A major change to the Village's roadway network is planned with the relocation of Cochran Road. With the recent installation of other infrastructure, including water lines and a trunk line sanitary sewer, accelerated growth is forecast for Glenwillow. The relocated road would also open up one of the largest tracts of vacant industrial land remaining within Cuyahoga County. Construction is to begin in late 1998.

Exhibit 34: Traffic Count Changes, Selected Intersections In and Around Glenwillow

Road	Count Date	ADT* This Leg	% Trucks	% Increase This Leg**
Cochran - N. of Pettibone	6/93	6560	2	10.8%
	8/90	5949	2	
	7/89	5922	3	
Pettibone - W. of Cochran	6/93	7819	3	19.5%
	8/90	6796	7	
	7/89	6542	10	
Pettibone - E. of Cochran	6/93	7410	3	14.3%
	8/90	6531	7	
	7/89	6483	10	
Pettibone - E. of Richmond	7/94	8711	5	24.6%
	6/93	7557	9	
	7/91	6990	2	
Pettibone - W. of Richmond	7/94	7267	1	34.3%
	6/93	6432	6	
	7/91	5412	1	
Richmond - N. of Pettibone	7/94	6707	2	88.6%
	6/93	4728	3	
	7/91	3556	1	
Richmond - S. of Pettibone	7/94	6460	6	53.6%
	6/93	5478	7	
	7/91	4207	3	
Pettibone - W. of SOM Center	6/93	5846	7	-13.1%
	7/91	5529	6	
	8/88	6730	5	
Pettibone - NE of SOM Center	6/93	5036	5	-15.4%
	7/91	4389	3	
	8/88	5950	3	
SOM Center - N. of Pettibone	6/93	15358	4	24.6%
	7/91	12193	4	
	8/88	12326	5	
SOM Center - S. of Pettibone	6/93	17266	4	32.9%
	7/91	13495	3	
	8/88	12991	5	

*Average daily traffic

**Percent increase between first and last counts shown

Source: Cuyahoga County Report of Intersection Vehicle Counts - 1997, Cuyahoga County Engineer

Exhibit 35: Roadway Capacities

Lane Set-Up	Capacity: Vehicles per Hour	Capacity: Vehicles per Day
2 Lanes	450, one-way	8,750, two-way
2 Lanes with continuous two-way left-turn land	540, one-way	10,500, two-way
2 Lanes with one left-turn lane at intersection	750, one-way	14,600, two-way
4 Lanes	900, one-way	17,500, two-way
4 Lanes with one continuous two-way left-turn lane	1,080, one-way	21,000, two-way
4 Lanes with one left-turn land at intersection	1,200, one-way	23,300, two-way

SOURCE: Cuyahoga County Engineer

The alignment of the proposed road is shown on *Map 6*. The road will diverge from the existing Cochran Road near the Solon/Glenwillow line and will veer to the east before reconnecting with Pettibone Road at a point 1,700 feet east of the Wheeling and Lake Erie Railroad crossing. The new alignment will be a 52 foot wide, 4-lane concrete roadway. The right-of-way is 100 feet. The project will include construction of a new bridge over Beaver Meadow’s Creek and a new railroad crossing. The length of the project is 0.9 miles. New sidewalks will also be part of the project.

In addition, Pettibone Road will be widened from the Wheeling and Lake Erie railroad tracks to the intersection. It will go from the existing 20 feet width to a three lane, 37.5 feet wide road to accommodate a turning lane onto Cochran Road. Old Cochran Road will be upgraded by grading, draining and paving. The pavement will be increased to 26 feet and the roadway will be re-aligned at the north to intersect with the new road at 90 degrees.

Gateways to the Village should be upgraded. Pettibone and Cochran Roads are the main arterials to Glenwillow and their appearance is the major image people have of the Village. The first impression is created at the community’s border. The Pettibone and Richmond Road intersection, Pettibone Road at the Solon border, and Cochran Road at the Solon border are locations where gateways should be designed to reflect the impression the Village wishes to exhibit.

PUBLIC TRANSIT

In 1990, no one in Glenwillow reported using public transportation as a regular mode for getting to work. In Cuyahoga County approximately eight percent of the population used public transportation. Glenwillow is at the end of the RTA’s 97X line which serves Richmond Road.

This line first runs south to Broadway and then turns northwest onto Broadway Avenue and heads through Oakwood, Bedford and Maple Heights on its way to Downtown Cleveland. The trip to Downtown Cleveland takes approximately one-hour and only serves Richmond Road twice in the morning and twice in the evening. There is also a 41A&C line which services the industrial areas along Cochran Road in Solon. It connects the industrial area with the center of Solon and other east

side suburbs, but service on Cochran Road stops before it gets to Glenwillow. The 41A&C line should be extended into Glenwillow along relocated Cochran Road to serve future industrial development. The route should also be extended to connect to the Village's center. The 97X should be studied for the feasibility of extending service along Pettibone Road to serve new residential development and also new industrial areas along Cochran Road.

WATER LINES

Map 6 illustrates the locations of water lines within the Village. Water lines were just recently extended into Glenwillow. The oldest line dates back to 1989. The new lines are in excellent condition. The existing lines serve current development and also form the framework which future developments can tap into. An issue which needs to be addressed in the future is the provision of water along the relocated Cochran Road. This road will be the backbone of much of the future industrial development within the City, and present plans for the road relocation do not include the provision of water lines. The provision of underground electric service along relocated Cochran Road should also be lobbied for at this time.

SANITARY SEWERS

Existing Conditions

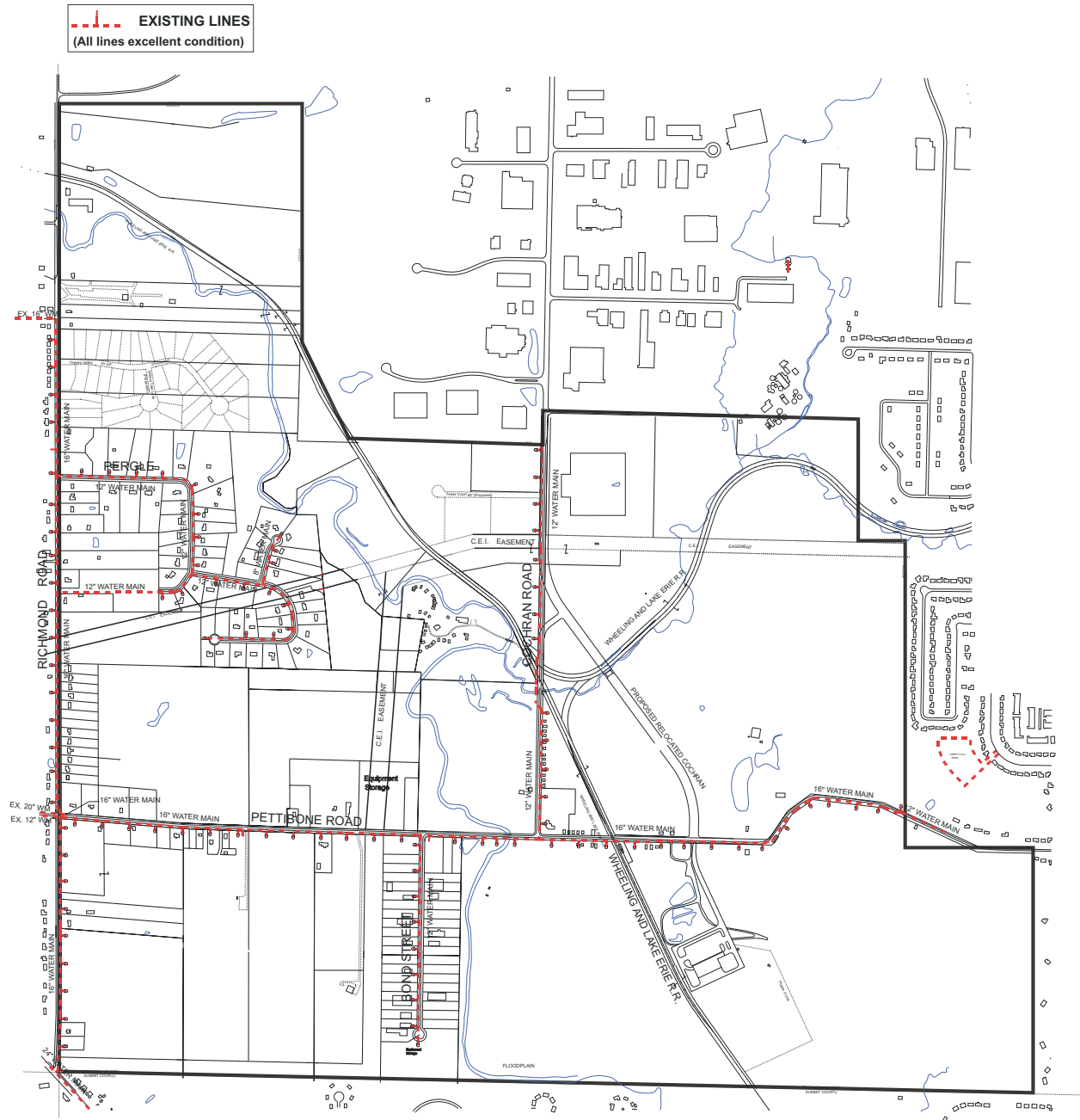
The first sanitary sewers were developed within the Village in 1996. Prior to this improvement, except for a small portion of Richmond Road, both commercial and residential uses were connected to septic systems. In 1996, a main trunk sewer was constructed along the Wheeling and Lake Erie railroad tracks to the point where the relocated Cochran Road is to be developed (*see Map 7*). This main trunk line ties to a sanitary sewage treatment plant on Solon Road owned and operated by the City of Bedford Heights. Sewers have also been developed along the proposed Cochran Road right-of-way to Pettibone Road. Other sewers which tie into the trunk line include those along Pettibone and existing Cochran Roads which service the center of the Village and BFI properties.

The construction of new sanitary sewers is not only important for spurring new development, but is also necessary to alleviate the existing conditions of septic systems throughout the Village. The Cuyahoga County Board of Health prepared a report titled "1996 Glenwillow Water Quality Monitoring Project". The report analyzed the septic systems within the community and found they did not meet current design levels and standards. Many old filter beds were found to be undersized and many had outlived their useful lives.



The poor performance of residential and industrial septic systems is effecting water quality in Tinkers Creek. New sewers are needed to alleviate this problem and allow new development.

Map 6: Water Lines



Source: Elewski & Associates

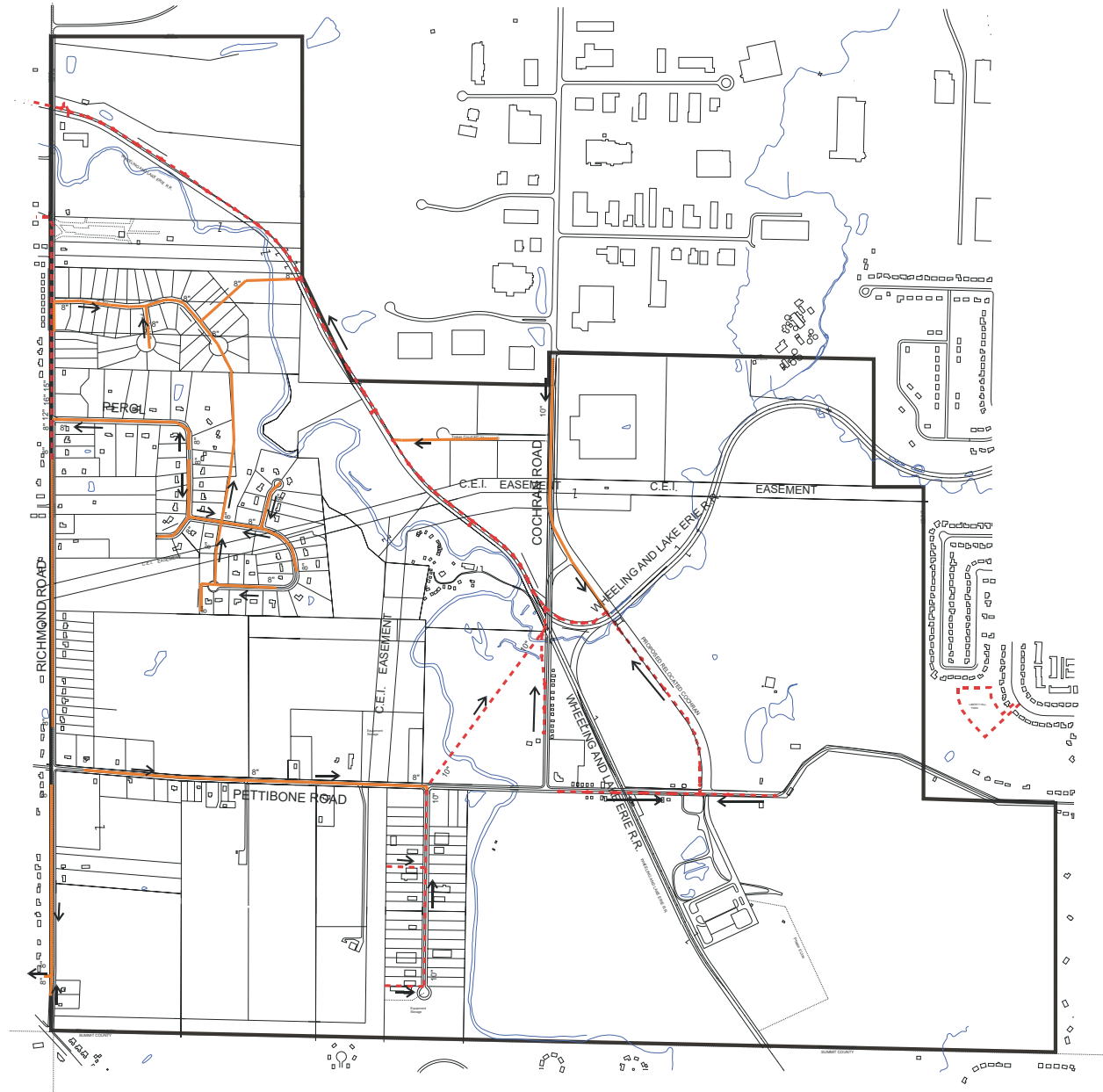
Map 7: Sanitary Sewers

--- EXISTING LINES
(All lines excellent condition)

— PLANNED LINES

← DIRECTION OF FLOW

8" SIZE OF LINES



Tests of water in Tinker's Creek throughout the community showed that levels of fecal coliform bacteria exceeded standards considered safe for primary and secondary contact.

Plans

In 1994, Elewski & Associates, Inc. developed a comprehensive sanitary sewer plan for Glenwillow. *Map 7* also shows proposed sanitary trunk line sewers for the community, as well as the sewers for those residential and industrial subdivisions which exist or have been approved. Future industrial and residential subdivisions will tie into the framework of sewer trunk lines under the major arterials illustrated on the map. Trunk lines on Cochran Road north of the Wheeling and Lake Erie Railroad; Pettibone Road, east of Cochran Road; and on Bond Street are planned for construction and will tie in to the recently constructed trunk line along the Wheeling and Lake Erie rail line. Properties along Richmond Road, south of Pettibone, will flow to an existing pump station on Richmond Road in Oakwood. Richmond Road, between Pettibone and Pergl, and a portion of Pergl will drain to an existing sanitary sewer in Richmond Road. The Village has recently constructed the Bond Street sewer and its connection to the existing trunk line near Cochran Road. A portion of this connection runs through vacant land north of the Village's new ballfields. New development on this site north of the ball fields will need to be designed to either factor in an easement for the sewer or will need to relocate the sewer as part of the development.

COMMUNITY FACILITIES

Village Hall and Service

Existing Conditions. The Village Hall is located on the northeast corner of Pettibone and Cochran Road on land which was given to the Village through its agreement with BFI. The building was constructed in 1994 and is 6,344 square feet in area. The police department occupies 860 square feet of the building. In addition to administrative offices, the building also contains council chambers and meeting rooms. The Mayor, Council Clerk and secretary are part-time employees.

The Building Department is located adjacent and to the east of the Village Hall in a rehabilitated Austin Company house. The building commissioner and secretary are part-time positions. The building contains 2,052 square feet and the second floor contains rooms which serve as the offices for the Finance Director, Law Director and Village Engineer. The Village Engineer, Law Director and Finance Director are employees of outside firms which contract the Village for their services.



Village Hall, constructed in 1994, is located at the center of the Village. The Village has converted the house to the east into additional Village offices. New development may not require an increase in personnel, but could require most part-time positions to become full-time.

The Village Service Garage is located north of the Village Hall on the same parcel of land. The structure was built in 1997. It is 2,688 square feet in area. The service department employs six part-time personnel.

All the above buildings were recently constructed, or rehabilitated, and are in very good condition.

Future Needs. Increased development within the community will most likely require the addition of full-time personnel. The Village population could ultimately reach 1,500 residents and 8,000 employees could work in the Village during the day. An estimate of the number of employees which will be required to administer Village government in the future can be gained by looking at other similar sized municipalities within Cuyahoga County. Brooklyn Heights, Valley View, and Cuyahoga Heights are communities whose population is similar in size to Glenwillow at build-out and which also have a similar mix of land use. *Exhibit 36* presents the number of full-time employees employed by these municipalities.

Exhibit 36: Number of Full-Time Employees* in Similar-Sized Communities

	Brooklyn Heights	Valley View	Cuyahoga Heights
Service Department	7	10	8
Police Department	15	18	18
Clerical**	3	3	4
Subtotal	25	31	30
Maintenance	-	2	-
Recreation	-	7	-
Fire Department	-	8	30
Dispatchers	-	-	4
TOTAL	25	48	64

*All other positions including Finance, Law, Recreation, Building, Engineering, and Mayor's posts are either part-time, elected, or contracted out positions.

**Includes accounts payable, payroll and mayor's secretary

The above numbers show that police and service departments require the most full-time personnel. Glenwillow currently has 16 part-time officers. That is the range of full-time officers employed in these similar-sized communities. Approximately 3 to 4 employees will be needed within the Village Hall full-time and 7 to 10 service department employees could expect to be needed. Most of the department head positions continue to be part-time or contracted out positions in the examples illustrated.

SAFETY

Current Conditions

Year	Solon Fire	Oakwood Fire	Oakwood EMS
1997	6	7	31
1996	7	4	28
1995	6	6	33

The Village of Glenwillow has its own Police Department but contracts out Fire and EMS Service to the City of Solon and the Village of Oakwood. The Police Department utilizes 860 square feet within Glenwillow Village Hall and has a 810 square foot garage which it uses for its 3 police vehicles. It has 16 part-time officers. Primary fire service is provide

by the City of Solon from its Harper Road station near U.S. 422. Secondary service is provided by the Village of Oakwood from its station at 24800 Broadway. EMS service is provided by Oakwood from the same facility. The following list indicates the number of calls made to Glenwillow for the past three years.

Guidelines and Estimates

In order to estimate the impact new development will have on safety forces, model factors found in the *Development Impact Assessment Handbook* published by the Urban Land Institute were used. **Exhibit 37** summarizes the effect new residential and industrial development will have on public safety needs. The existing development numbers represent the latest population estimate of 477 residents from 1996 and estimated employment within the Village, including 650 employees at the Signature Brands/Sunbeam facility. New residential numbers includes new single-family development west of Tinkers Creek, but does not include the new population living within the proposed nursing home on Cochran Road.

As **Exhibit 37** shows, the impact from new development could increase the safety requirement of the Village by four or five times present levels. New investment in safety facilities may not be warranted. The existing police facilities and vehicles should be enough to cover new development within the Village, although the employment of full-time personnel should be investigated. Because the needs for Fire and EMS service have been very low to begin with, an increase in needed services may still not justify the Village developing its own station.

RECREATION

Current Conditions

The Village of Glenwillow has one village park on Pettibone Road and is developing a second recreation area in the Village Center on the north-west corner of Pettibone and Cochran Roads. The existing Village Park is located on the south



Improvements to the existing 38-acre Village Park have been limited to a shelter and picnic table. The site provides a passive recreation alternative to the recreation fields developed off Cochran Road.

Exhibit 37: Safety Impacts

Impact	Multiplier*	Existing Development		Expected Existing Impact	New Development		New Development Impact	TOTAL IMPACT
		Residential	Industrial		Residential	Industrial		
					284 housing units	4,212,725 s.f.		
		477 residents	900 employees		832 residents	8,425 employees		
Police								
Personnel	1 officer / 500 population	0.7	0.5	1.2	1.3	4.2	5.5	6.7
Vehicles	.3 vehicles / 500 population	0.2	0.1	0.3	0.4	1.3	1.7	2.0
Square Feet	100 s.f. / 500 population	72	45	117	125	421	546	663
Fire Department								
Personnel	.825 fire fighters / 500 population	0.6	0.4	1.0	1.0	3.5	4.5	5.5
Vehicles	.1 vehicles / 500 population	0.1	0.0	0.1	0.1	0.4	0.5	0.6
Square Feet	125 s.f. / 500 population	89	56	146	156	527	683	829
EMS								
Personnel	.068 personnel / 500 population	0.0	0.0	0.1	0.1	0.3	0.4	0.5
Vehicles	.017 vehicles / 500 population	0.01	0.01	0.02	0.02	0.30	0.32	0.34
Calls	18.25 calls / 500 population / year	13	8	21	23	77	100	121

*Police, Fire and EMS needs are based on population totals, which factor in a nonresidential workforce
 A resident is represented as .75 of the population standard and an employee as .25 of the same standard

side of Pettibone Road at approximately 28000 Pettibone. The Village Park is 700 feet wide from east to west and almost a 1/2 mile deep. The park is almost hidden from Pettibone Road because it is behind four residential properties which reduce the width of the park at the street frontage to 200 feet. The Village Park is approximately 38 acres in size. Entrance to the park is via a gravel drive off Pettibone Road. The drive leads behind the residential structures to the only facility in the Park, a picnic shelter with a gravel parking lot. The park land was purchased in 1981 by the Village with the assistance of Cuyahoga County Community Development funds. According to the Cuyahoga County Department of Development the land has been a park for long enough to fulfill its obligation for the use of County money and may be used by the Village for whatever it chooses.

As part of its agreement with BFI, the Village is developing a recreation area totaling approximately 15 acres at the northwest corner of Pettibone and Cochran Roads. The site is bordered by Tinker's Creek on the south and west. There is additional vacant land to the north of the site. The land in this area has been leveled to make room for two soccer fields and two ball diamonds. The asphalt parking lot for 50 cars has access off Cochran Road. A pavilion is being developed on a hill overlooking the ball diamonds. It is approximately 30 to 40 feet higher in elevation. The pavilion provides a good view of much of the Village Center and beyond. Also on this site is the largest of

the old Austin Company homes. It has been used for offices by the Austin Company and BFI, and has the potential for becoming a community center.

Guidelines

The *National Recreation and Park Association* has developed a classification system for parks that can be used as a guideline when planning recreation. The following summarizes the descriptions of the various types of parks most applicable to Glenwillow.

- ✓ Mini-Park. Specialized facilities which serve a specific location, or group, such as tots or seniors.

- ✓ Neighborhood Park. Basic unit of a park system and serves as a focus of the neighborhood. Should be developed for both passive and active recreation and accommodate a range of users. Creating a sense of place by bringing together the unique character of the site and the neighborhood is vital to successful design.

- ✓ Community Park. Typically larger in size and broader in purpose than a neighborhood park. They allow for group activities not feasible or desirable at the neighborhood level. Should be developed for both active and passive recreation.

Numerical standards which have been developed to be used as guidelines are presented in *Exhibit 38*.

Exhibit 38: Park Guidelines

Classification	Service Area	Size Criteria	Acres/1000 Population
Mini-park	1/4 mile radius	½ to 1 acre	.25 to .5 acres
Neighborhood Park	1/4 to ½ mile radius	5 to 10 acres	1.0 to 2.0 acres
Community Park	1 to 2 mile radius	25+ acres	5.0 to 8.0 acres
General guidelines for specific activities include the following:			
Activity/Facility	Units per Population		
Basketball	1 per 5,000		
Handball	1 per 20,000		
Tennis	1 court per 2,000		
Volleyball	1 court per 5,000		
Baseball/Softball	1 per 5,000		
Soccer	1 per 10,000		
1/4-Mile Running Track	1 per 20,000		
18-Hole Golf Course	1 per 50,000		
Swimming Pool	1 per 20,000		

Source: National Recreation and Park Association

Future Needs

The future recreation needs of the community should not only be based upon recreation standards but also the desire of the citizens of Glenwillow and the ability of the Village to develop and maintain recreation facilities. At build-out Glenwillow is expected to only have in the vicinity of 1,500 residents. The facilities being developed at the Town Center would seem to be sufficient to serve not only residents, but also groups from outside the community. Some facilities which require a larger population to support, such as a pool or track, would be more feasible if shared with adjacent communities. An agreement for residents of the Village to use another community's facility would also be an alternative. Playground equipment and possibly a tennis court are facilities which the Village does not have that could be supported by residents of the Village.

Using the acreage figures per 1,000 population for mini-parks, neighborhood parks and community parks, at a build-out figure of 1,450 to 1,650 residents, the Village would need approximately 10.5 to 17.5 acres of parkland. Using the size criteria of each park type as a minimum for the desired amount of park land would result in a figure of approximately 36 acres. These figures are less than the total of 53 acres which the Village will have in recreation land when the recreation fields are complete.

The new recreation fields being developed are at the geographical center of the Village, and combined with the Village Hall and potential adjacent new development, have the opportunity to contribute to a vibrant town center. The fields are at the eastern edge of the residential portion of the Village and are physically separated by Tinkers Creek and its valley. The existing Village Park land is located near the center of the residentially zoned portion of the Village and has the opportunity to become a focal point of the residential portion of Glenwillow. Some of the largest parcels of vacant residentially zoned land are adjacent to the park or are across Pettibone Road. Park land at this location can provide an opportunity as a passive recreation alternative to the more active recreation at Pettibone and Cochran. The design of this space, and how it presents itself to surrounding developments, can have an impact on the overall character of much of the residential district.

The current Village Park is on the south side of Pettibone Road. In the future it would be desirable for a small park, oriented toward smaller children, to be located north of Pettibone Road. Most of the residential land is north of Pettibone Road and a playground on that side of the street would eliminate the need to cross a major street.

Open Space Network

An additional opportunity to contribute to the recreational and open space assets of the community, is the preservation of open space along Tinkers Creek and Beaver Meadow's Creek as part of a regional open space network. The Village is currently developing recreation fields adjacent to Tinkers Creek. Preliminary plans for the Emerald Valley Business Park show the preservation of land for open space and storm water retention along Beaver Meadow's Creek. The Metroparks' Hawthorne Valley Parkway, which runs along Tinkers Creek west of Richmond Road, touches the northwest corner of the Village. The Metroparks' long-range plan shows the concept of preserving green space along Tinkers Creek and extending an all-purpose trail into Glenwillow. Tinkers Creek flows between the existing Metroparks land and the Village Center along the rear of residential and

industrial properties. In most cases the land around the creek is physically separated from the rest of its lot by an elevation change and is not used, or will not be used, as part of future development. The developer of the Tinkers Valley subdivision, a new 43 home development off Richmond Road, has already expressed an interest in disposing of the left over land in the Tinkers Creek valley which cannot be developed. The opportunity exists to preserve open space along these creeks through the center of the Village and connect them to a regional open space system.

To the south of Glenwillow, the City of Twinsburg has acquired and preserved 1,000 acres of land on either side of Tinkers Creek which it calls the Center Valley Bike Area. The City has developed a bike path which currently runs from Dodge Middle School to Glenwood Drive. The City of Twinsburg has shown interest in developing the path north of Glenwood Drive which would bring it to the southern border of Glenwillow. The exact alignment of a bikeway extension has not been determined and could be designed to connect to a path from Glenwillow. The most direct connection between the parkland in Twinsburg and the center of Glenwillow is along Tinkers Creek adjacent to the closed BFI landfill. There is an existing access road to the landfill site from Pettibone Road on the east bank of Tinkers Creek. The access road runs between the base of the landfill and the creek down to the Twinsburg border. BFI has indicated a willingness to consider the future use of this road for a bikeway if it were fenced-off and secured from the landfill.

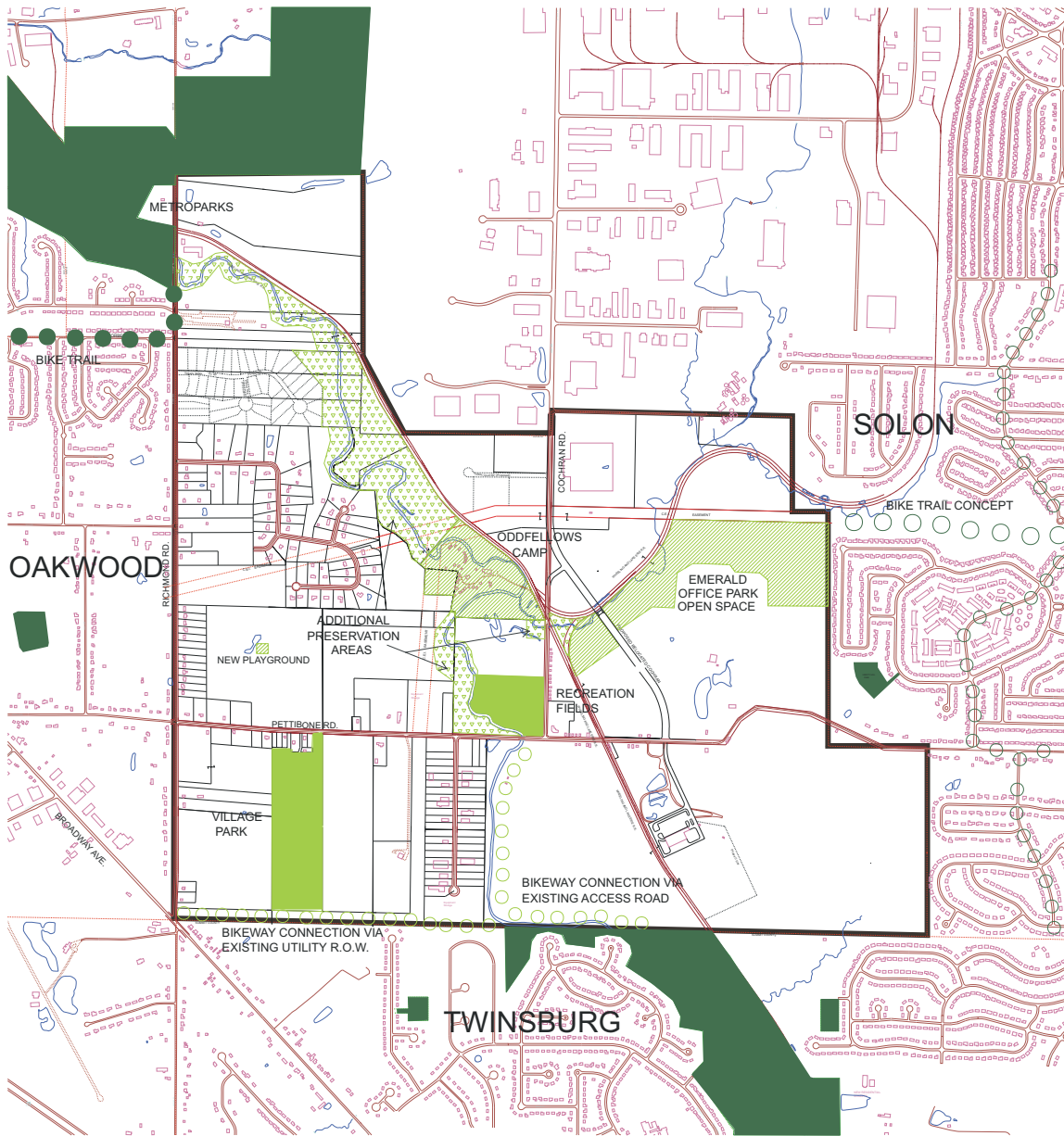
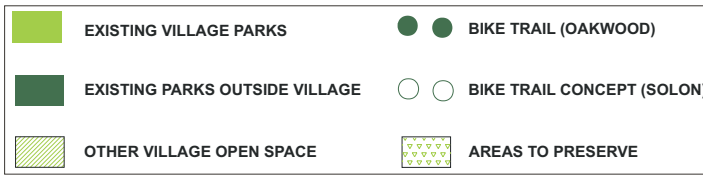
To the east, the City of Solon hired a consultant to produce a plan for bike trails within the City. Public acceptance and funding issues have held back any implementation of the plan. One potential route which could connect to a Village open space network is a bike path which follows the CEI easement in southern Solon. This easement is located adjacent to proposed open space along Beaver Meadow's Creek in the Emerald Valley Business Park plan. To the west the Village of Oakwood is developing a bike path which will parallel Forbes Road. This path will touch the Village of Glenwillow at Richmond Road in the northwest corner of the City.

Map 8 shows the locations of existing and potential opens space connections within and outside of the Village.

SUMMARY

Current roadways within the Village do not meet existing standards set out in the Village's subdivision code. Pettibone and Cochran Roads are 22 and 21 feet wide, respectively and existing residential streets are 18 feet wide. Road conditions are generally fair to good. Bridges on Richmond and Cochran Roads, however, are in critical and poor condition. Rail crossings within the Village are also in need of upgrading with respect to safety devices. Traffic volumes in the Village have increased in the early 1990's by 11% to 25%. The construction of relocated Cochran Road will shift major north-south traffic flow to the east of the Village Center and will reduce traffic on the existing leg of Cochran Road. New development which relocated Cochran Road will spur will increase traffic generated within the Village. A detailed traffic study should be undertaken to determine other road improvements that may be necessitated by additional development. Based on Cuyahoga County Engineer's standards, Pettibone Road should be widened to at least 26 feet.

Map 8: Open Space Plan



Existing bus routes serve Glenwillow at the periphery but do not enter the Village. The 41A&C which serves the industrial areas off Cochran Road in Solon should be extended into Glenwillow to serve future industrial development and the Village center. The 97X should also be studied for future extension into the Village along Pettibone in order to serve the Village's residential areas and provide access to industrial areas.

Aging septic tanks in both residential and industrial properties will require retrofitting existing developments with sanitary sewers. Major roads in the Village which don't already have sanitary sewers will also require the construction of sewers.

The Village Hall and the service garage were recently constructed in 1994. The Village is currently run by part-time personnel. Additional development within the Village may not increase substantially the number of employees, but likely will require making most non-director positions full-time. Additional development will not necessarily require the addition of new safety facilities. Existing police space should be adequate and the future demand for fire and emergency medical service may not be enough to justify the Village developing its own fire station.

The Village currently owns a 38-acre parcel off Pettibone Road which is the Village Park and recently developed another 15 acres of recreation fields at the northwest corner of Cochran and Pettibone Roads. Based upon future expected population and nation park standards, the Village would need approximately 36 acres of park area. Baseball and soccer fields at the center of the Village are more than adequate to serve Village residents. Larger facilities such as a pool should be shared with surrounding communities. A tennis court and additional playgrounds could be supported by residents.

The recreation fields at Cochran and Pettibone Roads can contribute activity which complements a vibrant town center. The existing Village Park could provide a passive recreation alternative closer to the Village's neighborhoods.

Preserving open space along Tinkers Creek and Beaver Meadow's Creek is an important undertaking in protecting the Village's natural resources. Combined with parks and park plans from the Metroparks and adjacent communities, the development of a regional open space system is possible.

Chapter 6

Focus Areas

Within the Village of Glenwillow there are specific areas of special interest because a number of potential development, or redevelopment, options are being considered. For these areas more detailed analyses have been performed in order to gauge the impacts and benefits of each development option. The areas studied are shown on *Map 9* and are listed as follows:

- ✓ Focus Area 1a: Reuse of Historic Austin Company Homes
- ✓ Focus Area 1b: Vacant Land behind Company Homes and Village Hall
- ✓ Focus Area 2: Vacant Land North of Village Recreation Fields
- ✓ Focus Area 3: Southeast Corner of the Village
- ✓ Focus Area 4: Village Park and Vacant Parcels to the East

Information from previous chapters in the document was used in evaluating development alternatives for each of the areas. The information in this chapter and the other chapters should be utilized when reviewing the potential development options considered in each of the above focus areas.

As part of the study of each focus area, alternative development impact analyses have been conducted for parcels of land that are either currently undeveloped, or face the possibility of being redeveloped, and which the ultimate reuse needs closer study. Factors considered in the formulation of alternative development impact analysis include the following:

- ✓ Compatibility with goals of the Master Plan
- ✓ Compatibility with surrounding land uses
- ✓ Projected impacts on the physical environment
- ✓ Projected fiscal impacts

For additional information on the methodology used in conducting these alternative development impact analysis, see Appendix B.

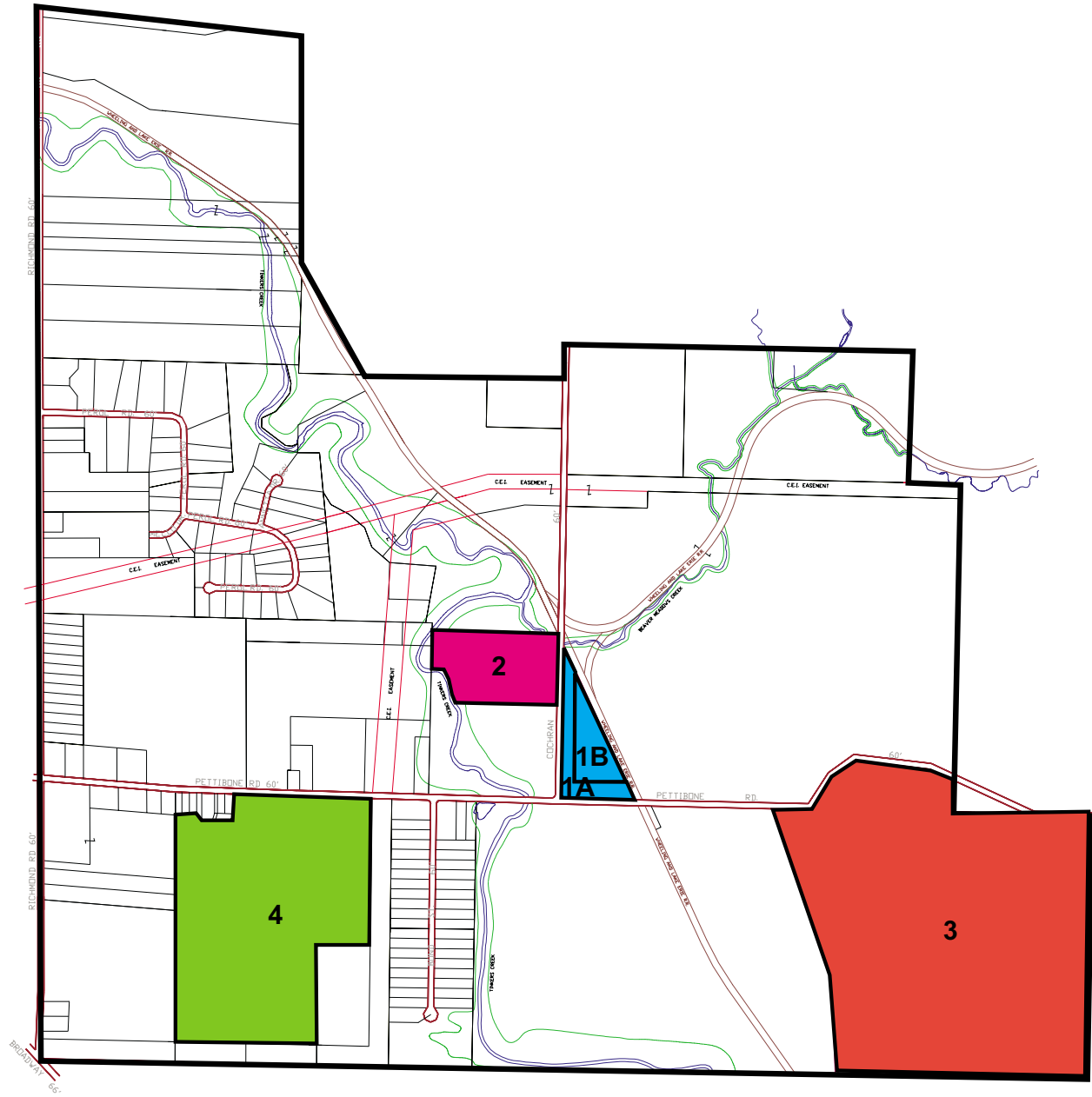
FOCUS AREAS 1a & 1b.

Focus Area 1 consists of the land and buildings on the northeast corner of Pettibone and Cochran Roads, excluding the Village Hall and service garage. It is a portion of parcel number 991-22-003 which is owned by Glen Willow Properties (Browning Ferris Industries).

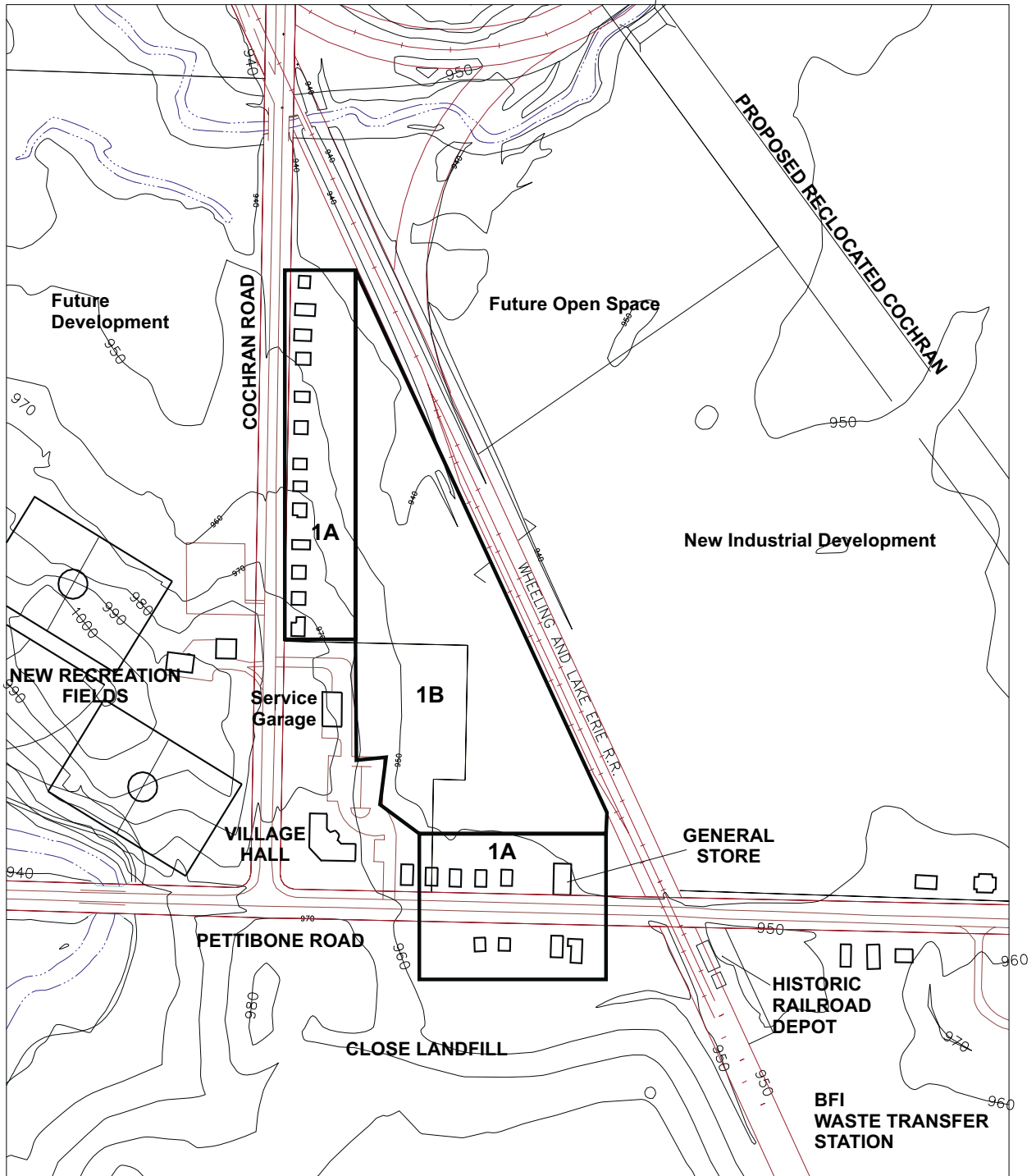
History

This property is the site of the historic Austin Powder Company town which was developed at the turn of the century to house workers at the nearby gunpowder factory. The company bought land in what is now Glenwillow in 1892 when it was rural farmland. A remote location was chosen because making gunpowder ran the risk of explosions. The remote location also dictated that housing

Map 9: Focus Areas



Map 10: Focus Area 1, Existing Conditions



be provided for workers of the plant. In addition to the houses, a general store and train depot still survive today from the early company town.

Objective

It is the desire of the Village to preserve and capitalize on this unique asset by developing a more formal Town Center which includes the addition of historic streetscape elements, the development of the historic train station and possibly the reuse of the historic homes for offices and/or small shops. Focus Area 1 does not include all the original company homes. Five homes east of the Wheeling and Lake Erie Railroad tracks fall outside the proposed Town Center boundaries. One home on the west side of Cochran is located on the site of new recreation fields developed by the Village and is being considered for a community center. Another has been converted by the Village into offices for the Building Department and other Village officials.

Zoning

Focus Area 1 is currently zoned industrial district. New residential is not permitted in industrial districts. The houses are not on their own distinct lots but are actually part of a larger lot which is owned by BFI and which includes land to the east of the Wheeling and Lake Erie Railroad. The portion of this lot east of the Wheeling and Lake Erie Railroad is to be developed as an industrial park. The west side of Cochran Road (outside Focus Area 1), between Pettibone Road and Tinkers Creek is zoned residential.

Surrounding Uses

The existing company homes are part of a larger well defined Town Center within the Village. In addition to the Village Hall and service garage which are located on the northeast corner of Pettibone and Cochran, and which lie between the two clusters of company homes, recreation fields have recently been developed on the northwest corner of Pettibone and Cochran. The recreation fields contain two ball diamonds and two soccer fields. In addition, a picnic pavilion, a 50 car parking lot, and one home which may be converted to a community center are located on the site. The parking lot is across the street from the southern four homes in the Cochran cluster. North of the recreation fields is additional land which has potential for new development (Focus Area 2). Residential and commercial uses are being studied for that land. Adjacent to the Pettibone cluster, near the point where the Wheeling and Lake Erie Railroad crosses Pettibone Road, are the Village's old general store and the historic "Fall's Junction" train depot. Plans are to make this a focal point and drawing card to the area by moving the train depot next to the general store, restoring it and running trains from it. The general store is currently used as a carpenters shop by BFI.

Future industrial development in the eastern half of the Village could bring as many as 8,000 employees into the area. West of the Town Center and Focus Area Ia most of the development will be residential. Approximately 1,500 people could live in the Village when it is built out. To the south of the homes on Pettibone is the closed BFI landfill. It rises 40 to 50 feet above the elevation of the

street and forms a distinct enclosure to the district. The mound will be planted with grass and mowed. Development of this site is unlikely for the distant future.

Traffic

The Pettibone and Cochran Road intersection is the geographic center of the Village as well as the social center. The latest traffic counts for the intersection are from 1993. Pettibone Road had average daily traffic (ADT) of 7,800 vehicles west of Cochran and 7,400 east of Cochran. Cochran Road's traffic level north of Pettibone was 6,560 vehicles. The percentage which were trucks was 2 and 3 percent. Since 1989 traffic had increased approximately 11% on Cochran. Traffic on Pettibone increased 14% east of Cochran and 19.5% west of Cochran during the same four years. With the relocation of the main portion of Cochran Road to the east in order to open up land for industrial development, Cochran Road in the center of the Village will no longer be one of the main thoroughfares through the Village. It will connect Pettibone to the relocated portion of Cochran Road. With the development of the industrial land to the north and east of the Town Center there will be more traffic in the general area. Most truck traffic should enter and exit Glenwillow to and from the north via relocated Cochran Road. Some truck traffic will travel through the Village Center in order to access the Bond Street industrial area, or to access Broadway Avenue via Richmond Road.

Focus Area 1 has been broken down into two smaller areas. *Focus Area 1a* includes the turn of the century housing on the site. *Focus Area 1b* analyzes the vacant land to the rear of those houses.

FOCUS AREA 1a: REUSE OF HISTORIC AUSTIN COMPANY HOMES

Description

The majority of existing structures within the Village's Town Center (the area bounded by the Wheeling & Lake Erie Railroad, Tinkers Creek and the BFI landfill) are homes built by the Austin Powder Company around the turn of the century. The houses are vernacular and Colonial Revival in style with some Queen Anne elements. They are all painted white. The homes on Cochran Road are set back 25 feet from the road pavement while those on Pettibone are set back 20 feet from the road pavement. The road frontage averages 60 feet per home. Driveways lead from the street to the land behind the homes. Some of them have garages, but many have gravel parking areas for the occupants. The homes, and the land they are on, were bought by BFI when it purchased the Austin Companies lands in Glenwillow. They are rented out today, with some still occupied by former Austin Company workers.

The first and second floor area of these 20 homes total 26,689 square feet. The individual homes range in size from 1,050 to 1,700 square feet. The homes which make up the Focus Area 1a are grouped in two clusters. Eight homes are clustered along the north and south sides of Pettibone Road near the general store building and the train depot. There are four homes on either side of the street. From the railroad track to the far end of the cluster of homes is 500 feet. On Cochran Road there are twelve more homes which are all located on the east side of the street. The distance from

the first to last home is 700 feet. This cluster is approximately 700 feet north and west from the Pettibone cluster. Between the two cluster of homes, on the northeast corner of Pettibone and Cochran, is the new Village Hall built in 1994. The Village's service garage is also located on the site.

Alternative Development Impact Analysis

Exhibit 39 presents analysis of the four alternative development scenarios evaluated for the reuse of the existing company homes. These include:

- ✓ Conversion of all to offices
- ✓ Pettibone Road homes to small shops and Cochran Road homes to offices
- ✓ Conversion of all to small shops
- ✓ Continued use as residential

Estimated value of the property for reuse as offices and small shops is based upon the Cuyahoga County Auditor's valuation of the Grand Pacific Junction development in Olmsted Falls in which historic buildings have been upgraded into an integrated commercial district. Estimated values of the houses as residential dwellings are based upon existing valuation for the site by the Cuyahoga County Auditor.

Fiscal Impact

The analysis indicates that conversion of the homes to offices would generate the most tax dollars for the Village. Office development generally employs more people with a higher average salary than retail development. The office/small shop alternative and small shop alternative would also have a net positive fiscal impact for the Village. Residential use would have a cost associated with it for the Village. The residential alternative does not generate as much tax revenue for the schools as do the commercial alternatives.

Physical Impact

Converting the homes to commercial uses would generate more traffic. Existing homes can be expected to generate an average of 191 trips per day. Office uses would increase that figure to 305 trips per day and commercial uses to 1,085 trips per day. Commercial uses would also require the development of additional parking. Offices would require 93 parking spaces. If the houses were all retail, a total of 133 spaces would be needed. A combination of the uses would require a figure in between those two numbers. Sewer and water consumption would be greater with office use.

Compatibility with Surrounding Uses

The conversion of the houses into small shops showed the highest compatibility with surrounding uses and plans. The development of the historic train depot and general store into a train and village

Exhibit 39: Glenwillow Impact Analysis, Focus Area 1A: Reuse of Historic Austin Company Homes

	Alternative 1	Alternative 2			Alternative 3	Alternative 4
	Offices	Cochran Offices	Pettibone Small Shops	Total	Small Shops	Residential
Property Data						
Building Coverage/HH Units	26,689	15,890	10,799	26,689	26,689	20
Market Value	\$1,267,728	\$754,775	\$342,868	\$1,097,643	\$847,376	\$452,200
35% Assessed Value	\$443,705	\$264,171	\$120,004	\$384,175	\$296,582	\$158,270
Property Tax						
Total	\$26,644	\$15,863	\$7,206	\$23,070	\$17,810	\$9,504
Village	\$1,465	\$872	\$396	\$1,269	\$980	\$523
School District	\$18,758	\$11,168	\$5,073	\$16,241	\$12,538	\$6,691
County	\$5,196	\$3,093	\$1,405	\$4,499	\$3,473	\$1,853
Library/Metroparks	\$1,226	\$730	\$331	\$1,061	\$819	\$437
Income Tax						
Total Employees/Residents	96	57	20	77	49	54
Est. Avg. Employee Income/HH Income	\$28,000	\$28,000	\$13,000	-	\$13,000	\$30,000
Total Village Income Tax for Site	\$53,656	\$31,945	\$5,110	\$37,055	\$12,629	\$0
Fiscal Impact Summary						
All Tax Revenue	\$80,300	\$47,809	\$12,316	\$60,125	\$30,439	\$9,504
All Village Revenue	\$55,121	\$32,818	\$5,506	\$38,324	\$13,609	\$523
Total Village Expenditures	\$5,493	\$3,270	\$1,127	\$4,397	\$2,785	\$52,768
NET FISCAL IMPACT FOR VILLAGE	\$49,628	\$29,547	\$4,380	\$33,927	\$10,824	-\$52,245
Vehicle Trips						
Avg. Vehicle Trips per Square Feet/Unit	11.42	11.42	40.67	-	40.67	1-2
Total Additional Traffic for Site	305	181	439	621	1,085	191
Parking Spaces Required	93	56	54	110	133	20-40
Environmental Impacts						
Sewage Flow (gallons/day)	7,663	4,562	1,792	6,354	4,428	3,536
Water Consumption (gallons/day)	8,911	5,305	2,083	7,389	5,149	5,440
Solid Waste Production (tons/day)	0.10	0.06	0.02	0.08	0.05	0.10
Compatibility of Proposed Development with Adjoining Land Uses						
North (Railroad & Open Space)	0 (Neutral)			+ 1/2 (Positive)	+1 (Positive)	0 (Neutral)
South (Closed Landfill)	0 (Neutral)			0 (Neutral)	0 (Neutral)	0 (Neutral)
East (Railroad and Industrial)	+1 (Positive)			+1 (Positive)	+1 (Positive)	-1 (Negative)
West (Recreation and Additional Develop.)	0 (Neutral)			0 (Neutral)	+1/2 (Positive)	+1 (Positive)
Total	+1 (Plus 1)			+1 ½ (Plus 1 1/2)	+2 ½ (Positive)	0 (Neutral)

*Village credits 100% on a 2% income tax and, therefore, generates minimal revenues for the Village

museum, and the conversion of houses to small shops would be mutually beneficial for each development. In addition, if the Tinkers Creek valley could be connected to a regional open space system, the development of shops could benefit from recreational users of the park, including bike riders. People attracted to the recreation fields and community pavilion on the west side of Cochran Road would also be potential patrons of shops in the area. A combination of shops and offices would also positively impact surrounding uses. Offices would open up another market to occupy space not filled by shops. Office use would lower the traffic generation and parking numbers compared to retail, and would increase the positive fiscal impact for the Village.

FOCUS AREA 1b: VACANT LAND BEHIND COMPANY HOMES AND VILLAGE HALL

Description

Focus Area 1b is vacant land located to the rear of the company homes analyzed in Focus Area 1a. It is part of the same parcel that includes Focus Area 1a. This triangular shaped piece of property is also bounded by the Wheeling and Lake Erie Railroad on the northeast side. The property is five to twenty feet below the elevation of the houses and is not highly visible from the street. The area of the site is 6.5 acres. Like the houses which front on Pettibone and Cochran Roads, it is zoned industrial.

Alternative Development Impact Analysis

Figures for development options assessed for Focus Area 1b are included in *Exhibit 40*. The options studied include:

- ✓ Construction of offices
- ✓ Construction of offices & restaurant space
- ✓ Construction of offices, restaurant space & small shops
- ✓ Development of residential at ½ acre density

The commercial alternatives are based upon the schematic included in the Town Center chapter of the plan. In the schematic, *Map 17*, approximately 31,000 square feet of building footprint and 260 parking spaces for new buildings are shown. Two story buildings should be developed in order to keep the heights consistent with the houses which front on Pettibone and Cochran Roads and create a sense of continuity within the district. An additional 17,000 square feet of space has been assumed as second floor space. In the options which include restaurant space, an estimate of 6,000 square feet is used. This is equivalent to 2 or 3 restaurants. Because the density of patrons eating in a restaurant is greater than patrons expected to be shopping in retail stores, the number of vehicle trips and parking spaces required are greatly increased by including restaurant use.

Fiscal Impact

As with Focus Area 1a, the greatest financial gain for the Village would be to develop the area for offices. Residential use would contribute the least financially to the Village. Property taxes generated would be approximately the same for all the commercial alternatives. The income taxes generated by offices uses would be higher than the other alternatives. Property taxes generated by the residential alternative would be approximately 60% of the commercial figures. Since the Village credits 100% of residents income taxes up to 2%, minimal income tax would be generated by the residential alternative.

Exhibit 40: Glenwillow Impact Analysis, Focus Area 1B: Vacant Land Behind Company Homes and Village Hall

	Alternative 1		Alternative 2		Alternative 3			Alternative 4	
	Offices	Offices	Restaurants	Total	Offices	Restaurants	Small Shops	Total	Residential
Property Data									
Acreage	6.5			6.5				6.5	6.5
Square Footage	281,750			281,750				281,750	281,750
Building Coverage/HH Units	48,000	42,000	6,000	48,000	21,000	6,000	21,000	48,000	12
Market Value	\$3,843,600	\$3,363,150	\$699,086	\$4,062,236	\$1,681,575	\$690,450	\$1,618,575	\$3,990,600	\$2,400,000
35% Assessed Value	\$1,345,260	\$1,177,103	\$244,680	\$1,421,783	\$588,551	\$241,657	\$566,501	\$1,396,710	\$840,000
Property Tax									
Total	\$77,545	\$67,852	\$14,104	\$81,956	\$33,926	\$13,930	\$32,655	\$80,510	\$42,647
Village	\$4,265	\$3,732	\$776	\$4,508	\$1,866	\$766	\$1,796	\$4,428	\$2,346
School District	\$54,591	\$47,767	\$9,929	\$57,697	\$23,884	\$9,807	\$22,989	\$56,679	\$29,597
County	\$15,121	\$13,231	\$2,750	\$15,981	\$6,616	\$2,716	\$6,368	\$15,700	\$8,103
Library/Metroparks	\$3,567	\$3,121	\$649	\$3,770	\$1,561	\$641	\$1,502	\$3,703	\$2,175
Income Tax									
Total Employees/Residents	172	151	60	211	75	60	38	173	33
Est. Avg. Employee Income/HH Income	\$28,000	\$28,000	\$8,400	-	\$28,000	\$8,400	\$13,000		\$57,000
Total Village Income Tax for Site	\$96,499	\$84,437	\$9,999	\$94,436	\$42,218	\$9,999	\$9,937	\$62,155	*
Fiscal Impact Summary									
All Tax Revenue	\$174,044	\$152,288	\$24,103	\$176,392	\$76,144	\$23,929	\$42,592	\$142,665	\$42,647
All Village Revenue	\$100,764	\$88,169	\$10,775	\$98,944	\$44,084	\$10,766	\$11,733	\$66,583	\$2,346
Total Village Expenditures	\$9,879	\$8,644	\$3,412	\$12,056	\$4,322	\$3,412	\$2,191	\$9,925	\$31,661
NET FISCAL IMPACT FOR VILLAGE	\$90,885	\$79,524	\$7,363	\$86,887	\$39,762	\$7,353	\$9,542	\$56,658	-\$29,315
Vehicle Trips									
Avg. Vehicle Trips per Square Feet/Unit	11.42	11.42	150		11.42	150	40.67		9.55
Total Additional Traffic for Site	548	480	900	1,380	240	900	854	1,994	115
Parking Spaces Required	168	147	120	267	74	120	105	299	12-24
Environmental Impacts									
Sewage Flow (gallons/day)	13,782	12,059	5,426	17,485	6,030	5,426	3,484	14,940	2,122
Water Consumption (gallons/day)	16,026	14,023	6,309	20,332	7,011	6,309	4,051	17,372	3,264
Solid Waste Production (tons/day)	0.2	0.2	0.1	0.2	0.1	0.1	0.0	0.2	0.1
Compatibility of Proposed Development with Adjoining Land Uses									
Northeast (Railroad and Industry)	0 (Neutral)			+1 (Positive)				+1 (Positive)	-1 (Negative)
South (Houses Converted to Shops or Office)	+1 (Positive)			+1 (Positive)				+1 (Positive)	0 (Neutral)
West (Houses Converted to Shops or Office)	+1 (Positive)			+1 (Positive)				+1 (Positive)	0 (Neutral)
Total	+2 (Plus 2)			+3 (Plus 3)				+3 (Plus 3)	-1 (Minus 1)

*Village credits 100% on a 2% income tax and, therefore, generates minimal revenue for the Village

Physical Impact

Office use requires the least amount of parking compared to the other commercial alternatives. It would require approximately 90 spaces less than shown on the schematic, *Map 17*. For this alternative additional building space could be developed, or a portion of the parking shown on the drawing could be replaced by open space. Alternative 2, which includes restaurant space requires about the amount of parking shown on *Map 17*. Alternative 3, which assumes as much space is occupied by small shops as office use, requires approximately 40 more spaces than shown on the schematic, *Map 17*. To address this situation, additional parking could be located nearby to make up for the deficiency in parking spaces, or the square footage of building area could be scaled back to the point where the building to parking ratio works on the site. Reducing the area devoted to restaurant use to 4,000 square feet would reduce the required number of spaces by 40. The residential alternative would generate the least amount of traffic. Office space development would be expected to generate approximately 550 trips per day. The introduction of restaurants and small shops would increase number of vehicle trips to around 2,000 per day.

Compatibility with Surrounding Uses

Alternatives 2 and 3, which include restaurants and retail uses have a higher compatibility and synergy with surrounding uses. While strictly office development would be compatible with industry, the inclusion of restaurants adds an amenity which is needed by employees in the proposed industrial park and would be a positive factor for the industry to the east. If houses are developed on the vacant land, the conversion of the historic homes to offices or small shops would not necessarily be detrimental to the new units. The new units would, however, be next to the railroad tracks and the rear of industrial properties would face them from across the railroad tracks. As mentioned in the description of the focus area, the site is to the rear of, and at a slightly lower elevation than, the houses on Cochran and Pettibone Roads. The lack of visibility could be detrimental to those uses relying on pass-by traffic. If the district were to become a destination, or if there were amenities or anchors located to the rear of the houses which would draw people off the main roads, then retail uses would be more viable on this site. Attractive and appropriate signs on the main roads would also increase the awareness of development on Focus Area 1b. Retailers which want to be part of the district, but for which converted space would not work, may also be attracted to new space which better meets their operational needs.

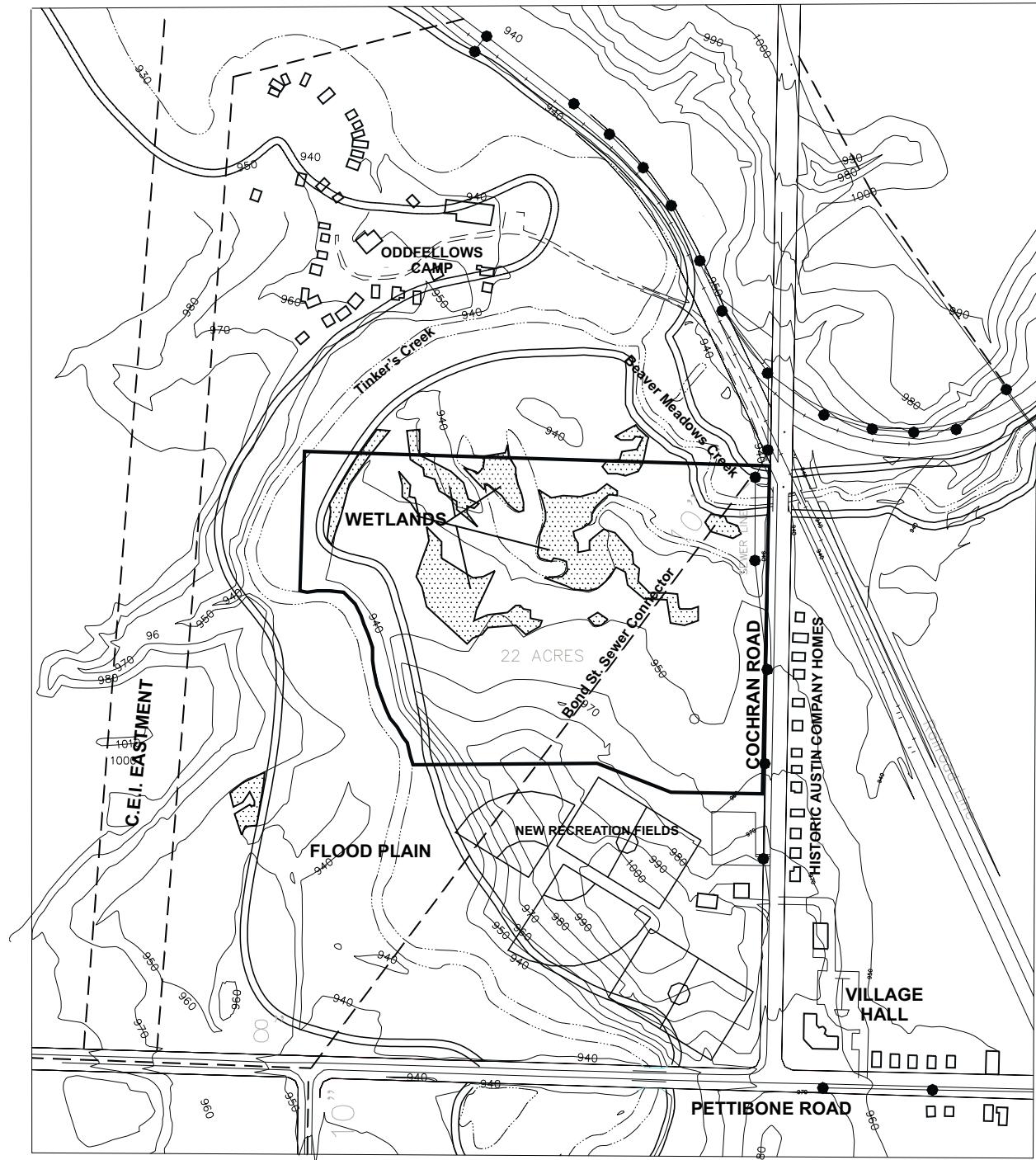
FOCUS AREA 2: VACANT LAND NORTH OF RECREATION FIELDS**Description**

Focus Area 2 is located on the west side of Cochran Road, north of the soccer fields and ball diamonds recently constructed in the Village's Town Center. The site is part of a larger parcel (991-22-002) which is owned by Browning Ferris Industries (BFI). The larger parcel includes most of the property on the west side of Cochran Road, south of Beaver Meadows Creek and includes land on both sides of Tinkers Creek. Focus Area 2 is 22.2 acres in size. Approximately 4.6 acres of wetlands have been identified on the site. A portion of the site along Beaver Meadows Creek and Tinkers Creek is in the 100-year flood plain and is covered by the Village's Flood Plain overlay district. The site slopes from Cochran Road and the recreation fields to the north and west toward the creeks. The slopes are not steep. The underlying zoning for the site is Country Home District which limits development to single-family homes on 40,000 square foot minimum lots and municipal uses.

Infrastructure

Cochran Road is one of the main thoroughfares through the center of the Village. In 1993, approximately 6,500 vehicles per day used Cochran Road. Many commuters currently use Cochran as access from the industrial areas of Solon to suburbs to the south and east. When the new Cochran Road is relocated to the east of the Wheeling and Lake Erie Railroad tracks, commuter traffic will be reduced on this segment of roadway. Preliminary drawings for the Bond Street sanitary sewer show the sewer passing through the center of the site in a southwest to northeast direction.

Map 11: Focus Area 2, Existing Conditions



Surrounding Uses

Across Cochran Road on the east side of the street are twelve turn-of-the-century company houses whose density is approximately 1/4 acre per house. The street frontage for each house is 50 to 60 feet in length. The site is bounded on the west by Tinkers Creek. To the north is the Oddfellows Fresh Air farm, which is a collection of cottages and facilities which serves as a gathering place for the fraternal organization. A number of events are held at this location each year. The portion of the Oddfellows site on which buildings are located are separated from Focus Area 2 by Tinkers Creek. Adjacent, and south of the site, are the new recreation fields constructed by the Village.

Alternative Development Impact Analysis

Several alternatives were studied for this vacant tract of land:

- ✓ Alternative 1: Residential development at 1 acre density
- ✓ Alternative 2: Residential development at ½ acre density
- ✓ Alternative 3: Retail/office development on Cochran and 1 acre residential density
- ✓ Alternative 4: Retail/office development on Cochran and ½ acre residential density
- ✓ Alternative 5: Residential development at 3 ½ units per acre density
- ✓ Alternative 6: Retail/office development on Cochran and 3 ½ units per acre residential density

The one acre residential density relates to the existing density standard in the zoning code. The half acre density considers an alternative where housing is developed at a density similar to the existing historic homes, 1/4 acre, but half the site is reserved as open space which reduces the density to ½ acre per dwelling. The alternatives which consider a density of 3 ½ dwelling units per acre are based on a cluster housing arrangement. The example used to determine the density is Macintosh Farms in Broadview Heights. In addition to the alternatives which look strictly at residential development, each density option was considered assuming the frontage of Cochran Road was developed with commercial uses. This assumes that the commercial development are small in scale and the commercial frontage was approximately 175 feet in depth.

Exhibit 41 outlines the physical and fiscal impacts of each of the six options. Several assumptions were made regarding this focus area. For example, the average value of a new single-family home was estimated at \$200,000 and cluster houses at \$180,000. Appendix I details the full list of assumptions regarding this site.

Fiscal Analysis

Each of these alternatives requires a significant investment by the Village with little fiscal return, as expenditures exceed revenues in every case. In general, residential development is not profitable

Exhibit 41: Impact Analysis, Focus Area 2: Vacant Land North of Ballfields

	Alt. #1 Residential	Alt. #2 Residential	Alt. #3 Residential & Retail/Office		
	low density (1 acre density)	high density (1/2 acre density)	low density (1 acre density)	Retail/Office	Total
Property Data					
Acreage	22.2	22.2	20.2	2.0	22.2
Square Footage	967,032	967,032	879,912	87,120	967,032
Housing units/Building coverage	22	44	18	21,780	-
Market Value	\$4,400,000	\$8,800,000	\$3,600,000	\$1,608,060	\$5,208,060
35% Assessed Value	\$1,540,000	\$3,080,000	\$1,260,000	\$562,821	\$1,822,821
Property Tax					
Total	\$78,186	\$156,372	\$63,970	\$33,797	\$97,768
Village	\$5,082	\$10,164	\$4,158	\$2,197	\$6,355
School District	\$54,261	\$108,522	\$44,395	\$23,455	\$67,851
County	\$14,855	\$29,711	\$12,154	\$6,422	\$18,576
Library/Metroparks	\$3,987	\$7,975	\$3,262	\$1,724	\$4,986
Income Tax					
Total residents/Employees	60	120	49	40	89
Est. avg. HH income/ employee income	\$72,000	\$72,000	\$72,000	\$20,500	-
Total Village Income Tax for Site	*	*	*	\$16,400	\$16,400
Fiscal Impact Summary					
All Tax Revenue	\$78,186	\$156,372	\$63,970	\$50,197	\$114,168
All Village Revenue	\$5,082	\$10,164	\$4,158	\$18,597	\$22,755
Total Village Expenditures	\$58,200	\$116,400	\$47,530	\$1,083	\$48,613
NET FISCAL IMPACT FOR VILLAGE	-\$53,118	-\$106,236	-\$43,372	\$17,514	-\$25,858
Vehicle Trips					
Avg. Vehicle Trips per Dwelling	9.55 per dwelling	9.55 per dwelling	9.55 per dwelling	40.67 per 1,000 sq. ft.	-
Total Additional Vehicle Trips	210	420	172	886	1,058
Parking spaces Required	44	88	36	109	145
Environmental Impacts					
Sewage Flow (gallons/day)	3,900	7,800	3,185	6,840	10,025
Water Consumption (gallons/day)	6,000	12,000	4,900	7,960	12,860
Solid Waste Production (tons/day)	0.11	0.21	0.09	0.04	0.13
Compatibility Of Proposed Development with Adjoining Land Uses					
North (Floodplain & Camp)	0 (Neutral)	0 (Neutral)			0 (Neutral)
South (Recreation)	0 (Neutral)	0 (Neutral)			0 (Neutral)
East (Residential or Office/Shops)	+½ (Positive)	+1 (Positive)			+½ (Positive)
West (Floodplain & Vacant)	0 (Neutral)	0 (Neutral)			0 (Neutral)
Total	+½ (Plus ½)	+1 (Plus 1)			+½ (Plus ½)

Exhibit 41 (continued)

	Alt. 4 Residential & Retail/Office			Alt. 5 Residential	Alt. 6 Residential		
	high density (1/2 acre density)	Retail/Office	Total	MacIntosh Farms density	MacIntosh Farms density	Retail/office	Total
Property Data							
Acreage	20.2	2.0	22.2	22.2	20.2	2.0	22.2
Square Footage	879,912	87,120	967,032	967,032	879,912	87,120	967,032
Housing units/Building coverage	35	21,780	-	78	71	21,780	-
Market Value	\$7,000,000	\$1,608,060	\$8,608,060	\$14,040,000	\$12,780,000	\$1,608,060	\$14,388,060
35% Assessed Value	\$2,450,000	\$562,821	\$3,012,821	\$4,914,000	\$4,473,000	\$562,821	\$5,035,821
Property Tax							
Total	\$124,387	\$33,797	\$158,184	\$249,484	\$227,094	\$33,797	\$260,892
Village	\$8,085	\$1,859	\$9,944	\$16,216	\$14,761	\$1,859	\$16,620
School District	\$86,324	\$23,793	\$110,118	\$173,142	\$157,603	\$23,793	\$181,397
County	\$23,633	\$6,590	\$30,224	\$47,402	\$43,148	\$6,590	\$49,738
Library/Metroparks	\$6,344	\$1,555	\$7,898	\$12,724	\$11,582	\$1,555	\$13,136
Income Tax							
Total residents/Employees	95	40	135	212	193	40	233
Est. avg. HH income/ employee income	\$72,000	\$20,500	-	\$52,000	\$52,000	\$20,500	-
Total Village Income Tax for Site	*	\$16,400	\$16,400	*	*	\$16,400	\$16,400
Fiscal Impact Summary							
All Tax Revenue	\$124,387	\$50,197	\$174,584	\$249,484	\$227,094	\$50,197	\$277,292
All Village Revenue	\$8,085	\$18,259	\$26,344	\$16,216	\$14,761	\$18,259	\$33,020
Total Village Expenditures	\$92,150	\$1,083	\$93,233	\$205,640	\$187,210	\$1,083	\$188,293
NET FISCAL IMPACT FOR VILLAGE	-\$84,065	\$17,176	-\$66,889	-\$189,424	-\$172,449	\$17,176	-\$155,273
Vehicle Trips							
Avg. Vehicle Trips per Dwelling	9.55 per dwelling	40.67 per 1,000 sq. ft.	-	9.55 per dwelling	9.55 per dwelling	40.67 per 1,000 sq. ft.	-
Total Additional Vehicle Trips	334	886	1,220	745	678	886	1,564
Environmental Impacts							
Sewage Flow (gallons/day)	6,175	6,840	13,015	13,780	12,545	6,840	19,385
Water Consumption (gallons/day)	9,500	7,960	17,460	21,200	19,300	7,960	27,260
Solid Waste Production (tons/day)	0.17	0.04	0.21	0.37	0.34	0.04	0.38
Compatibility Of Proposed Development with Adjoining Land Uses							
North (Floodplain & Camp)			0 (Neutral)	0 (Neutral)			0 (Neutral)
South (Recreation)			0 (Neutral)	0 (Neutral)			0 (Neutral)
East (Residential or Office/Shops)			+1 (Positive)	+½ (Positive)			+½ (Positive)
West (Floodplain & Vacant)			0 (Neutral)	0 (Neutral)			0 (Neutral)
Total			+1 (Plus 1)	+½ (Plus ½)			+½ (Plus ½)

*Village credits 100% on a 2% income tax and, therefore, generates minimal revenue to the Village

on the municipal level. The school district on the other hand, does benefit from residential development because it receives the largest percentage of property taxes. Whereas industrial land use is the most fiscally beneficial, retail and office land uses can be profitable on the municipal level because they generate property and income taxes.

Alternative 3 fiscally impacts the Village the least over the other alternatives. This alternative has the lowest number of housing units, which in turn translates into low total municipal expenditures because the number of housing units is directly related to municipal expenditures. The retail component in this alternative also helps to absorb the fiscal costs of the residential development. Alternatives 5 and 6 fiscally impact the Village the most. In general, the higher the density of residential development, the more expensive municipal expenditures become.

Physical Analysis

The high density residential and retail/office development generate the greatest physical impacts. Vehicle trips are the highest for Alternatives 4 and 6 and are largely attributed to the retail and office uses. Between 1,200 to 1,500 additional vehicle trips are anticipated for Alternatives 4 and 6 respectively. Truck traffic is also a consideration in these alternatives since the retail establishments and offices require dock space and deliveries. The residential alternatives of Alternatives 1 and 2 are estimated to only generate between 200 and 400 additional vehicle trips per day.

The high density residential and retail/office development also generates the greatest environmental impacts, in terms of sewage, water consumption, and solid waste production. Again, the higher number of households, the greater the demand and use of resources and environmental impact. The retail and office component also increases solid waste, sewage, and water consumption. Alternative 1 on the other hand, generates the least environmental impacts since it has a low number of housing units and no retail or office development.

Compatibility with Surrounding Uses

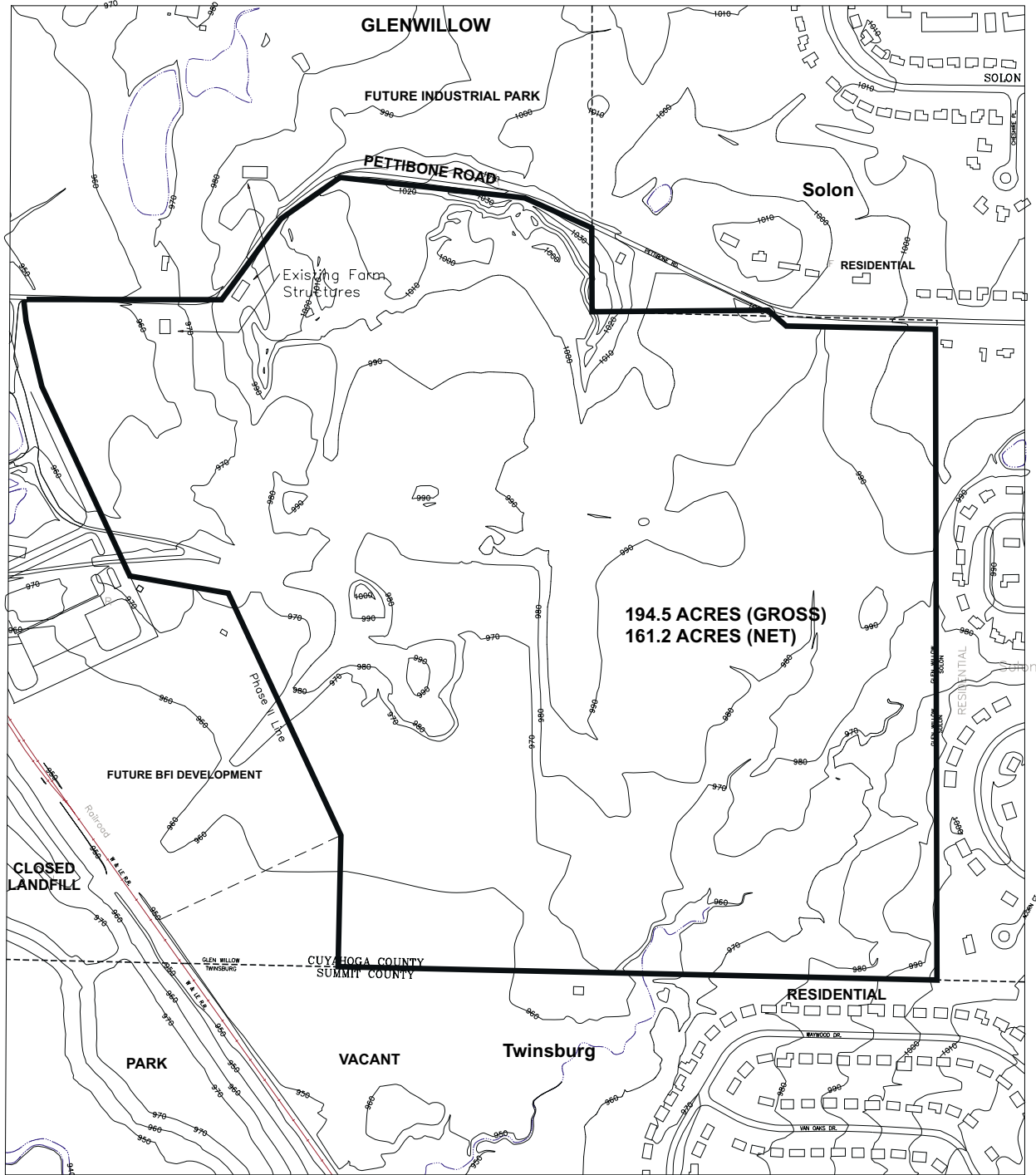
The six proposed development alternatives would all be compatible with the existing land uses that surround the site. In general, each alternative has a neutral effect to the north (flood plain and IOOF camp), to the south (recreation fields), and to the west (vacant land and flood plain). Compatibility to the east is dependent upon the density of the alternative. The ½ acre density of Alternatives 2 and 4 would be the most compatible with existing or anticipated land uses on the east side of Cochran Road. Whereas the analysis finds each of these alternatives to be compatible with the surrounding land uses, it is the design and details of the development that will be most important. Design elements and form will help to create a unified and coordinated district.

FOCUS AREA 3: SOUTHEAST CORNER OF THE VILLAGE

Description

Focus Area 3 is located in the southeast corner of the Village. The area being considered for development is east of the Wheeling and Lake Erie railroad tracks, south of Pettibone Road. This focus area is part of a larger parcel of land (991-22-005) which is owned by Browning Ferris Industries (BFI). Focus Area 3 is currently vacant, except for a few structures close to the road which are representative of Glenwillow's recent agricultural history. The area is zoned industrial. Focus Area 3 covers 194.5 acres. On the Soil and Conversation Service's soil survey for Cuyahoga County, hydric soils are identified for approximately 27.5 acres of the site. While not the final determinant for wetlands, it is an indicator of wetlands. Actual wetlands cannot be determined until wetlands studies are conducted for the site. Such studies performed for other projects have identified wetlands and have required mitigation measures for new development. In calculating the developable area for the site, the hydric soils acreage has been subtracted under the assumption that such requirements will pertain to this site. Additional acreage, representing areas reserved for roadways, has also been removed from the area of the site, resulting in a net figure of 161.2 developable acres.

Map 12: Focus Area 3, Existing Conditions



Surrounding Uses

Other land uses also are located on this parcel and include industrial and residential uses. Both uses are just east of the Wheeling and Lake Erie Railroad. Adjacent and west of the site is a waste transfer station owned by BFI. It operates from 5 a.m. to 6 p.m. processes 1,000 tons of waste per day. One hundred trucks and 40 semis enter and leave the station per day. At maximum capacity 300 trucks and 120 semis would use the station each day. On the north side of Pettibone Road in Glenwillow is additional land owned by BFI which will be developed as an industrial park. In the City of Solon, to the north and east are residential subdivisions which border the site. Residential uses in Twinsburg are also adjacent to the southeast portion of the site. Also in Twinsburg, vacant land which is residentially zoned borders the southwest corner of the site. Relocated Cochran Road will terminate at the western edge of the site on Pettibone Road. The road will be developed to handle industrial traffic and will connect the area to U.S. 422, a limited access freeway. Pettibone Road is a major east-west arterial. Solon does not allow truck traffic on its portion of Pettibone Road.

Alternative Development Impact Analysis

Two development scenarios were examined for this focus area. *Exhibit 42* presents the results from the two alternatives studied. Industrial development is the preferred land use for most of the site, but the amount of land devoted to industry is under consideration. Alternative 1 considered full development of the site as industry while Alternative 2 considered industry on approximately 118 acres with a residential buffer of 42.5 acres. This residential buffer would be located to the east of this parcel where Glenwillow meets the City of Solon. Solon currently has neighborhoods and residential housing at its border with the Village.

Fiscal Analysis

Alternative 1 generates the greatest net fiscal impact at an estimated \$2.5 million dollars annually. Alternative 2 generates less taxes than Alternative 1, but still produces gains for the Village. New industry would generate both property and income taxes, and benefit the Village as well as the school district.

Physical Analysis

The second alternative would generate the least physical impacts on the site. Vehicle trips are almost 3,000 trips per day less than Alternative 1. A total of 9,400 additional vehicle trips are estimated per day for Alternative 2, four hundred of which would be generated by residential use. Alternative 1 can be expected to generate close to 977 trips per day for truck traffic, compared to 720 truck trips for Alternative 2.

Alternative 2 generates the least environmental impacts. Industry creates a heavier burden upon the infrastructure, consuming more water and producing more sewage and solid waste. The residential buffer of this alternative helps to lower the impacts of a large scale industrial development.

Exhibit 42: Impact Analysis, Focus Area 3: Southeast Corner of the Village

	Alternative #1	Alternative #2		
	Industrial	Industrial	Residential Buffer	Total
Property Data				
Acreage	161.2	118.7	42.5	161.2
Square Footage	7,021,872	5,170,572	1,851,300	7,021,872
Building coverage/HH units	1,755,050	1,292,643	42	-
Market Value	\$116,264,600	\$85,630,180	\$10,500,000	\$96,130,180
35% Assessed Value	\$40,692,610	\$29,970,563	\$3,675,000	\$33,645,563
Property Tax				
Total	\$2,443,591	\$1,799,732	\$186,580	\$1,986,312
Village	\$134,398	\$98,985	\$12,128	\$111,113
School District	\$1,720,288	\$1,267,012	\$129,486	\$1,396,498
County	\$476,500	\$350,948	\$35,450	\$386,398
Library/Metroparks	\$112,405	\$82,788	\$9,516	\$92,303
Income Tax				
Total employees/residents	3,510	2,585	114	2,700
Est. avg. employee income/HH income	\$35,000	\$35,000	\$72,000	-
Total Village Income Tax for Site	\$2,457,070	\$1,809,700	*-	\$1,809,700
Fiscal Impact Summary				
All Tax Revenue	\$4,900,661	\$3,609,433	\$186,580	\$3,796,012
All Village Revenue	\$2,591,468	\$1,908,685	\$12,128	\$1,920,813
Total Village Expenditures	\$59,140	\$43,555	\$110,580	\$154,135
NET FISCAL IMPACT FOR VILLAGE	\$2,532,328	\$1,865,130	-\$98,452	\$1,766,678
Vehicle Trips				
Avg. Vehicle Trips per 1,000 sq. ft./resident	6.96	6.96	9.55	-
Total additional traffic for site	12,215	8,997	401	9,398
Trucks	977	720	-	720
Transit Trips	105	78	-	84
Environmental Impacts				
Sewage Flow (gallons/day)	452,803	333,465	7,410	340,875
Water Consumption (gallons/day)	526,515	387,750	11,400	399,150
Solid Waste Production (tons/day)	4.84	3.57	0.20	3.77
Compatibility Of Proposed Development with Adjoining Land Uses				
North (Industrial & Residential)	0 (Neutral)			+ (Positive)
South (Residential)	- (Negative)			0 (Neutral)
East (Residential)	- (Negative)			+ (Positive)
West (Industrial)	+ (Positive)			+ (Positive)
Total	-1 (Minus 1)			+1 (Plus 1)

*Village credits 100% on a 2% income tax and, therefore, generates minimal revenue to the Village

Compatibility with Surrounding Land Uses

Alternative 2, the combination of industrial with residential, provides the most compatible land use option with existing surrounding development. This option is complementary with the residential uses to the north in Solon, the industrial and closed land fill to the west, and the residential housing directly east of the focus area. Any housing developed on this site, however, would be isolated from other residential areas in the Village and would also require buffering from new industrial development. The type of industrial uses anticipated are not heavy manufacturing uses. Adequate buffer areas along the rear and side property lines should provide the desired protection for existing residential uses.

FOCUS AREA 4: COMMUNITY PARK, SOUTH OF PETTIBONE**Description**

This focus area consists of three parcels found south of Pettibone Road and west of Bond Street. Together they make up 96.4 total acres. This land is currently zoned residential, as is most of the land to the west and north of it. Approximately 38 acres are owned by the Village of Glenwillow as the Community Park. This park is largely wooded without formal recreation activities outside of a pavillion, picnic tables, and open field. A small creek runs through the southern portion of the Community Park. Hydric soils have also been identified around the creek and towards the center of parcel adjacent to the Community Park. The land slopes steadily down to the south, where rainfall and runoff finally meet the creek.

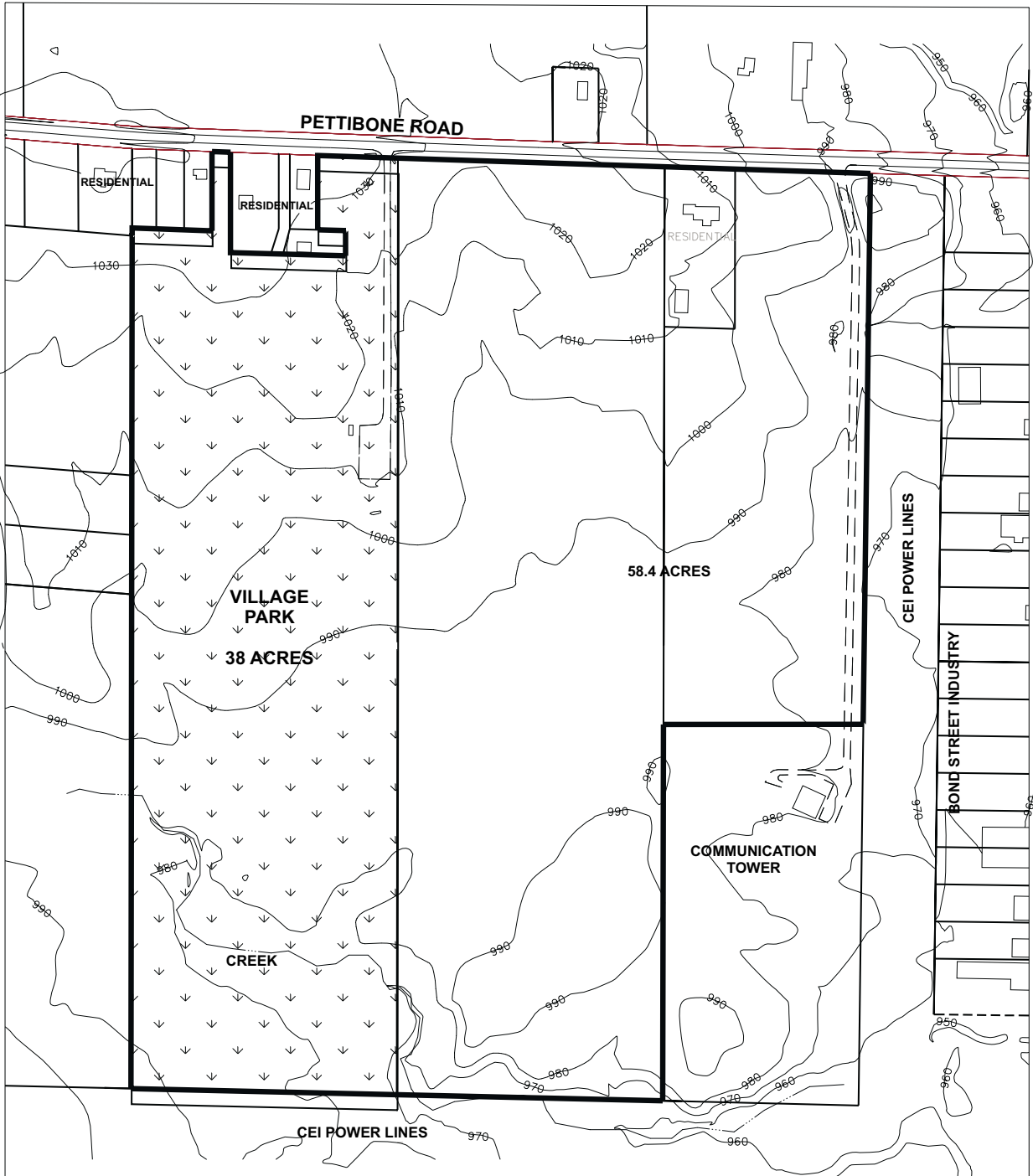
The remaining 58.4 acres are split between two parcels, both owned by SK Company. These parcels are currently vacant and bounded by a Cleveland Electric Illuminating (CEI) Company easement to the east and south. To the west of the Park is additional residential land, including some large parcels which may be subdivided in the future for new residential streets. The Village Park land currently runs from the Pettibone Road south to the CEI easement which forms the Village's southern boundary and separates the vacant residential areas on either side.

Alternative Development Impact Analysis

With the development of recreation fields on the northwest corner of Pettibone and Cochran Roads, and because of the consideration of linking residential subdivisions together as a neighborhood, the issue of selling-off a portion of the Community Park's land is being considered. Several alternatives were considered for this focus area. Three residential scenarios with different layout designs were studied. They are as follows:

- ✓ Residential with 38 acres Community Park
- ✓ Residential with 22 acres Community Park
- ✓ Residential with 16 acres Community Park

Map 13: Focus Area 4, Existing Conditions



The number of housing units estimated to be located on the site range from a low of 52 units if none of the park is sold-off, to 68 units if over half the current park land is developed as housing (See *Exhibit 43*).

Exhibit 43: Impact Analysis, Focus Area 4: Community Parks, South of Pettibone

	Alternative 1	Alternative 2	Alternative 3
	Residential	Residential	Residential
	38 acres Park	22 acres Park	16 acres Park
Property Data			
Acreage	96.4	96.4	96.4
Square Footage	4,199,184	4,199,184	4,199,184
Housing units	52	59	68
Market Value	\$13,000,000	\$14,750,000	\$17,000,000
35% Assessed Value	\$4,550,000	\$5,162,500	\$5,950,000
Property Tax			
Total	\$231,004	\$262,100	\$302,082
Village	\$15,015	\$17,037	\$19,635
School District	\$160,316	\$181,897	\$209,645
County	\$43,891	\$49,799	\$57,395
Library/Metroparks	\$11,781	\$13,367	\$15,406
Income Tax			
Total residents/Employees	141	160	185
Est. avg. HH income/ employee income	\$72,000	\$72,000	\$72,000
Total Village Income Tax for Site	*	*	*
Fiscal Impact Summary			
All Tax Revenue	\$231,004	\$262,100	\$302,082
All Village Revenue	\$15,015	\$17,037	\$19,635
Total Village Expenditures	\$137,197	\$155,666	\$179,411
NET FISCAL IMPACT FOR VILLAGE	-\$122,182	-\$138,629	-\$159,776
Vehicle Trips			
Avg. Vehicle Trips	9.55 per dwelling	9.55 per dwelling	9.55 per dwelling
Total Additional Vehicle Trips	497	563	649
Parking Spaces Required	104	118	136
Environmental Impacts			
Sewage Flow (gallons/day)	9,165	10,400	12,025
Water Consumption (gallons/day)	14,100	16,000	18,500
Solid Waste Production (tons/day)	0.25	0.28	0.32
Compatibility Of Proposed Development with Adjoining Land Uses			
North (Vacant/Residential/Industrial)	+ (Positive)	+ (Positive)	+ (Positive)
South (Residential)	0 (Neutral)	0 (Neutral)	0 (Neutral)
East (Residential and Utility)	0 (Neutral)	0 (Neutral)	0 (Neutral)
West (Residential)	+ (Positive)	+ (Positive)	+ (Positive)
Total	+ 2 (Plus 2)	+ 2 (Plus 2)	+ 2 (Plus 2)

*Village credits 100% on a 2% income tax and, therefore, generates minimal revenue to the Village

Fiscal Analysis

New house prices were estimated at \$250,000 each. The scenarios which have a higher number of units also result in a larger property value. The resulting value of land for the scenarios is between \$13 and \$17 million, and potential property tax collections are between \$230,000 and \$300,000 per year. Most of these taxes go to the Solon City Schools. The Village of Glenwillow's portion of the property tax would be between \$15,000 and \$20,000 per year. Because the City credits residents 100% of income tax paid to their municipality of employment (if they pay 2% or greater), very little income tax would be expected to be generated by new housing. Based upon existing expenses, it is estimated that services for each resident come to \$973 per year (see Appendix I). New residents expected under the three scenarios range from 141 to 185, and expenditures range from \$138,000 to \$180,000 per year. The net fiscal impact for the Village would be a cost of \$122,000 to \$160,000 per year.

Physical Analysis

The smaller the number of units, the less the physical impacts expected on site. If only the parcels to the east of the park were developed, there would be an expected increase of 500 vehicle trips per day. Alternative 3 which would result in 16 more units would also result in an additional 150 trips per day. Sewage flow would increase by 9,000 to 12,000 gallons per day and water consumption would increase by 14,000 to 18,000 gallons per day.

Alternative 1, which maintains the Village Park as is, results in a residential development which is isolated from the remainder of the community. Alternative 2, which maintains the park land closer to Pettibone Road and assumes development of the south half of the site for new housing, attempts to connect potential housing east of the park to potential subdivisions to the west of the park. It also seeks to maintain the park in a more centralized location in relation to residential development in the Village. In this scenario, however, the land which would be developed for housing is at a relatively low elevation and has a creek flowing through it. Although an actual wetlands investigation would need to be performed, the hydric soils which county maps identify on the site are an indication that wetlands could be present. Alternative 3 attempts to provide for connections between subdivisions to the east and west of the park. In this case the park land on the south side of the site, which includes the creek and potential wetlands, is maintained as park and the northern half of the park is developed with housing.

Compatibility with Surrounding Land Uses

The area is currently zoned for residential and none of the scenarios deviate from the existing use or density requirements in the zoning code. Residential is compatible with the existing residential to the north and west. The CEI lines to the east buffer this site from the industries on Bond Street.

Golf Course Option

The Village had been approached by a developer who was considering developing a unique golf course on the site. The course would have 9 holes but each hole would have two separate tee posi-

tions which would provide greater variety to the course and would require less land area than a 18 hole course. The developer did not return calls to provide additional information on the potential course. In the absence of that information, other information was collected on local golf courses which could give an indication of the possible impacts of this type of development.

Most regular 18 hole courses are 50% larger than the 96.4 acres located on this site. They can be expected to average 145 acres, generate 800 to 1,000 vehicle trips per day and employ 37 workers. The number of trips generated would be 300 to 400 greater than the residential options considered. A survey of golf courses in the Cleveland area show an annual property tax of \$25,000 to \$75,000. The Village's share of this figure would be \$1,375 to \$4,125. Income taxes generated would depend upon the income of the employees. If the average income were \$10,000, then the Village would gain \$7,400 in income per year. Although the income generated by the site would not be great, the costs associated would be minimal. Using the "employee anticipation method" of generating estimated expenditures results in a cost to the Village of \$1,000 per year. The net fiscal impact would therefore be positive.

Exhibit 44: Focus Area 4: Village Park and Vacant Land to East, Golf Courses - Property Tax Generated

Name	Land Value	Building Value	Total Value	½ Year Tax	½ Year Tax * 2	PPN
Hawthorn Valley Country Club	\$1,017,600	\$2,881,114	\$3,898,714	\$37,483.82	\$74,967.64	79311001
Astorhurst	\$1,039,200	\$695,200	\$1,734,400	\$14,583.41	\$29,166.82	95117012
Grantwood	\$5,535,314	\$695,886	\$6,231,200	\$0.00	\$0.00	95538001
Mid-Pines	\$969,800	\$329,914	\$1,299,714	\$12,495.98	\$24,991.96	95632001
Springvale	\$1,061,656	\$1,188,000	\$2,249,656	\$19,534.58	\$39,069.16	23619011

Institute of Traffic Engineers	
Trip Generation - 1991	
Golf Course (430)	
Average Acres	145
Median Counts	800-1000 vehicles per day
Average Number Employees	37
Potential Taxes and Cost	
Village share of above property tax figures	\$1,375 to \$4,125
Village Income Tax Receipt*	\$7,400
Village Costs for 37 employees**	\$1,000

*If 37 employees each earn \$10,000
 **Employee Anticipation Method

Chapter 7

Glenwillow Town Center

EXISTING CONDITIONS AND PLANS



The historic Falls Junction train depot is in need of repair. Plans to move and rehabilitate the structure into a museum and to run train excursions can serve as the foundation for improving the center of town.

Introduction

The Village of Glenwillow is in the unique position of developing their downtown. This chapter's focus is to document the existing conditions of land use, ownership, and infrastructure within the Town Center in Glenwillow. Concept plans and recommendations have then been compiled based on considerations from the Village and a special field visit made in April of 1998.

The area of focus originates at the intersection of Pettibone and Cochran Roads and is bounded by Tinkers Creek to the west and extends to the Wheeling & Lake Erie Railroad tracks on the east. To the south, it includes several single-family homes but is bounded by the closed BFI landfill. To the north, the Beaver Meadow Creek forms the boundary. **Maps 14 and 15** detail the area and its present conditions.

There are several areas of major focus in this district. The train depot is an area of particular interest since it is pending a more permanent site location. At the same time, the depot is in need of substantial structural improvements. Two large tracts of vacant land within this focus require special consideration of future land use: the vacant land on the west side of Cochran Road and the vacant land northeast of the Village Hall. There has also been some desire to link Glenwillow with the Cleveland Metroparks via an all-purpose trail.

There are three main gateways into the Town Center. As one travels south on Cochran Road from the city of Solon, a gateway is located at the railroad crossing and bridge over Beaver Meadows Creek. On Pettibone Road, another gateway exists at the bridge over Tinkers Creek east of Bond Street. A third gateway exists at the railroad crossing on Pettibone Road.

There are three main gateways into the Town Center. As one travels south on Cochran Road from the city of Solon, a gateway is located at the railroad crossing and bridge over Beaver Meadows Creek. On Pettibone Road, another gateway exists at the bridge over Tinkers Creek east of Bond Street. A third gateway exists at the railroad crossing on Pettibone Road.

Land Use

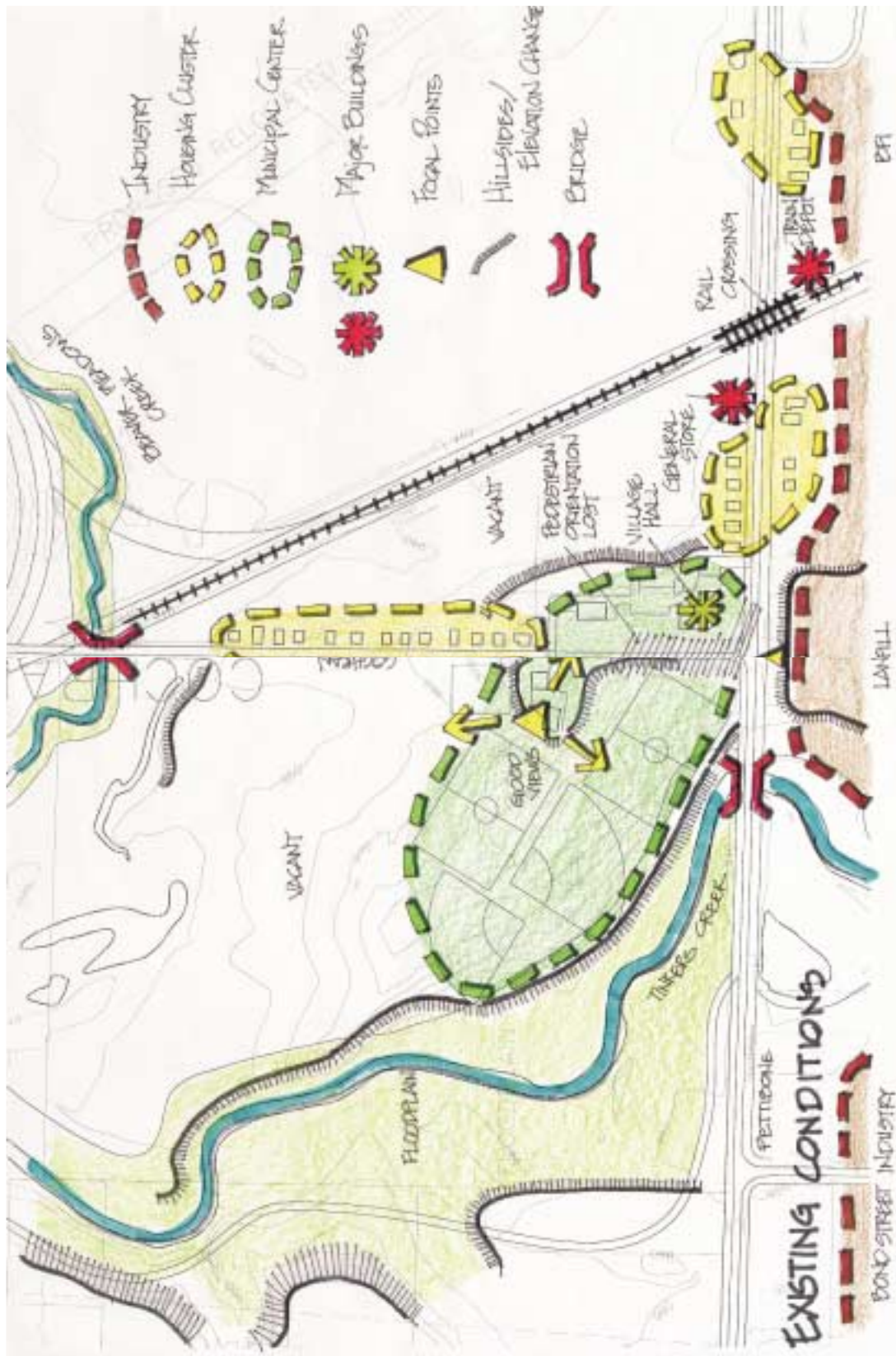
There are several land uses within this Town Center. These uses range from single-family housing and institutional, to recreational and vacant. The extent of these uses are discussed in further detail below.

Company Homes. Many Austin Powder company homes still exist and can be found within this triangular area. There are three main clusters of housing: one just east of the railroad tracks on Pettibone Road (outside the Town Center bound-



These homes on Cochran Road are part of the company town which the Austin Powder Company built its workers in the late 1800's.

Map 14: Existing Conditions, Glenwillow Town Center



Map 15: Existing Plans, Glenwillow Town Center



aries), another just west of the railroad tracks on Pettibone Road nearby the Village Hall, and a third cluster along Cochran Road. The houses are set back 25 feet from the road pavement. In total, there are 23 company homes within the Town Center boundaries, one of which has been converted to office space by the Village for their Building Department and other functions. Five more company homes are located on Pettibone Road, east of the Wheeling and Lake Erie railroad tracks. All company homes are presently renter-occupied and are owned by Browning-Ferris Industries (BFI).

Train Depot. The Falls Junction train depot, which has the potential to be a major attraction, is located at the southeastern portion of this focus area. It presently sits on the south side of Pettibone Road just east of the railroad tracks. The depot was built in the 1870's and includes both a passenger and freight station on its site. In recent years brick walkways, indoor lighting, and exterior painting have been made to the structure. Although many improvements have been made over the years, the depot *does not have a permanent heat source* and has *significant water damage* to the foundation of its passenger station which requires prompt attention.

General Store. An old storefront remains on the north side of Pettibone Road. It is currently being used as storage space and a carpenter's shop by BFI. Although it no longer functions as a commercial structure, this general store was built in coordination with the passenger station and railroad in Glenwillow. When Glenwillow had its own Post Master at the turn of the century, the post office operated out of this store. The structure has a false facade which is characteristic of western pioneer towns. It does contain electrical lighting, but no heat source. It was the center of community life during the early years of the Village.

Village Hall. Glenwillow's Village Hall is located on the northeastern corner of Pettibone Road. It is set back from Pettibone and Cochran Roads approximately 75 feet. The Village Hall houses most of its municipal offices with the exception of the Building Department. This facility was built in 1994 and replaced the old Village Hall operating out of the century home on the west side of Cochran Road. The new site includes a service garage and a parking lot for roughly 30 cars. The main door to the Village Hall is oriented towards the parking lot behind the building.

The intersection of Pettibone and Cochran Roads loses the intimate pedestrian scale felt along the street near the clusters of company homes. The BFI landfill property comes up to the street on the south side of the intersection. Two soccer fields have recently been added on the west side of the intersection, but there is a grade separation which divorces that site from being connected to the intersection. The Village Hall's main entrance is away from the street and there are no sidewalks on the street. There is currently also substantial heavy industrial traffic during the day. When Cochran Road is relocated to the east though, much of that traffic should diminish.

Recreation. On the northwestern corner of Pettibone and Cochran Roads are newly constructed recreation fields. The land has been leveled to accommodate these new organized sports venues. The site includes two soccer fields, two baseball diamonds and a parking lot for 50 cars. A pavilion sits on the hill overlooking these fields and provides a strategic view of both the Village and Tinkers Creek. A century home is also located on the site near the pavilion and is currently being used by BFI for additional office space. This home was also the previous site of the old Village Hall.

Many interior changes have been made to this century home over the years. The structure is currently configured to accommodate office space, especially on the second floor. The first floor and downstairs though, could be transformed in a Community Center for the Village of Glenwillow.

Vacant Land. There are two currently vacant areas within this triangular focus area. The first is found on Cochran Road just north of the new recreation area. This land is bounded by the flow of Tinkers Creek on the west and on the north by the tributary Beaver Meadows Creek. In total, there are approximately 28 acres of vacant land, but roughly 22 acres are outside of the flood plain.

There is also vacant land to the northeast of the Village Hall. Located just east of Cochran Road, the vacant land is roughly 200 feet from the road. A total of 6.5 acres of land is currently vacant at this location. The railroad tracks form the eastern boundary of this focus area. These tracks run diagonally across the property, forming an eastern boundary and limiting development to the west of the tracks.

Flood plain/Wetlands. Tinkers Creek forms the western boundary of the Town Center. Its flood plain extends out from its banks until the topography rises to roughly 950 feet. Tinkers Creek is part of the Cleveland Metroparks system west of the Glenwillow Village boundary at Richmond Road. A tributary named Beaver Meadows Creek later flows into Tinkers Creek in the northern portion of Glenwillow's Town Center area.

There are minimal wetlands within the Village Center as outlined in two recent studies conducted for Glenwillow. The study for the relocation of Cochran Road identified wetlands around the proposed road and on the bordering land to be later developed as the Emerald Valley Business Park. The second study looked at wetlands during Phase II of the Village's Sanitary Sewer System project. It studied the area north and west of Cochran Road and identified wetlands in the northern portion of the Village Center near Beaver Meadows Creek.

Landfill. There is a landfill located on the south side of Pettibone Road. The landfill can be seen from the road and is especially visible from higher altitudes. This site is owned and operated by Browning-Ferris Industries (BFI). The landfill is currently closed but BFI is still operating a transfer station at this site. Although the landfill is in the process of being capped and covered to discourage the penetration of water into the solid waste, it appears as a barren hillside with little vegetation on it.

Additional vegetation, specifically plants with short root systems such as grass, is scheduled to be planted beginning in 1999.

Other. The Cleveland Metroparks has expressed an interest in an all-purpose trail through Glenwillow. In their Park District Plan, Metroparks 2000, they identified a potential route from Hawthorne Parkway, through Glenwillow and into Solon. Since talks have not developed in recent years, the exact location of the trail has not been determined. The Metroparks is also interested in pursuing a concept called "Tinkers Creek Greenway" which would link ecological resources. This greenway would protect Tinker's Creek fragile ecosystems and riparian resources. The Metroparks is not actively pursuing land right now, but encourage the Village to initiate talks to secure the land.

Ownership

There are only a handful of land owners in the Town Center. It is important to note that while BFI holds a considerable amount of land in this focus area, the Village controls its land use through a contractual arrangement with the company. No land use changes or decisions can be made without the approval of the Village.

Browning-Ferris Industries. BFI is the largest land owner of developed land in this focus area. Most of BFI's land is south of Pettibone Road where the landfill and transfer station is located. They also own approximately 22 acres of vacant land on the west side of Cochran Road, north of the new recreation fields. Approximately 3 acres of vacant land fall within the Village's flood plain and are not suited for development. BFI owns the company homes located on Pettibone and Cochran Roads which were included in the sale of the land from the Austin Powder Company. These homes are all renter-occupied and contain households, with the exception of the Building Department at 29645 Pettibone Road.

Duke Realty has an agreement with BFI to develop BFI's land. They are presently working on the development of a Business Park east of the railroad tracks. The proposed project has been named the Emerald Valley Business Park and plans to include designated green space. This nature preserve would provide a nice link to the proposed Metroparks trail. The open space, which preliminary drawings show being located along Beaver Meadows Creek, would provide an area for stormwater retention and would address wetlands mitigation measures.

Village of Glenwillow. The Village of Glenwillow is a land owner within this triangular area. The Village owns the parcel of land where the Village Hall, parking lot, and service garage are located. The Village also owns a tract of land, roughly one acre, at the northeast edge of the Town Center by the vacant general store.

Midwest Railway Historical Society. The Midwest Railway Historical Society owns the train depot. They oversee any maintenance and improvements made at the depot. One idea is to relocate the train depot to the north side of Pettibone Road next to the old general store. Here the train depot would be converted into a working museum in conjunction with the general store. The move was first proposed by BFI in 1993 but has since been delayed due to funding and the proposed change of ownership between BFI and Duke Realty.

Independent Order of Odd Fellows. This fraternal organization owns land in the northwestern edge of this focus area. Their camp, located just north of Tinkers Creek, is known as the Fresh Air Camp of Odd Fellows and includes several cottages, a social hall, and green space. The Odd Fellows currently own roughly 6 acres within the Town Center's boundaries, but two of which fall within the flood plain. This park and camp is limited to its membership and is not open to the public for use.

Topography

The topography of this area ranges from 940 ft to 1,000 feet in elevation. It is lowest at the bank of Tinkers Creek and rises in elevation as it extends from its flood plain. These changes in elevation

provide scenic views of the Village and form natural boundaries in certain areas. The pavilion overlooking the recreation fields provides a good view of the Village in all directions. To the rear of the Village Hall and its parking lot, the land slopes down to a lower elevation to the east. Just south of the Cochran Road bridge the land rises as one travels south toward the pavilion area. Lastly, the landfill is a man-made change in elevation which forms a boundary and is a mark on the landscape, but does not provide any public access views of the Village.

Roads and Infrastructure

The two main roads through town include Pettibone and Cochran Roads. Cochran Road runs north/south and Pettibone Road runs east/west. Both currently have one-lane in each direction. As mentioned earlier there are no sidewalks in the Village and so does not accommodate pedestrian traffic.

There are two bridges within this focus area. These bridges help serve as gateways into the Village. One bridge is located on Cochran Road for traffic over the Beaver Meadows Creek. A second bridge is located on Pettibone Road which crosses over Tinkers Creek.

Plans are underway for the relocation of Cochran Road. As one travels south down Cochran Road from Solon, one will have the option of turning right onto the existing Cochran Road or following the new route further east where it also connects to Pettibone Road. The new Cochran Road will especially favor industrial traffic and will ease the present traffic levels on the existing Cochran Road.

CONCEPT PLAN

Introduction

The development of Glenwillow's Town Center can take any number of forms depending upon the opportunities which arise for future development. Any plan for the Town Center needs to be flexible enough to accommodate future opportunities, yet needs to follow a framework of basic concepts which provide an understanding of how the area should, or could, function. The following concepts for development in the Town Center are built upon the existing conditions and natural features of the area, and the known plans at this time.

Gateways

The gateway to an area is the first impression a person has when they enter. Just as the entry of a house is articulated with additional architectural detail on the outside, and many times has a formal foyer which adds to the sense of arrival, a gateway to a district should also give the sense of arrival to a distinct place. A gateway is the first opportunity to establish the character of a place.

The Glenwillow Town Center has three distinct points of entry- two bridges and a railroad crossing. These elements could be incorporated into the development of the gateways. The bridge on



The Cochran Road bridge over Beaver Meadow's Creek has been identified in poor condition. Replacement or major repair of the bridge would be an ideal time for building a covered bridge which could act as a gateway to the center of town.

Pettibone Road has recently been reconstructed but there may be ways to add on to the basic structure with elements which give it character. The Cochran Road bridge has been rated in poor condition. If it were to be reconstructed, the new design should go further than the basic highway bridge design. Construction of a covered bridge, or the addition of wood railings or stone side-walls, would give these structures character and create an impression in people's minds. The rail crossing should incorporate the historic name "Fall's Junction" in its signage. At this location, not only would one be at a gateway to the district, but also a destination within the district.

Additional signs at each gateway which indicate one is entering a historic district should also be part of the gateway design. These entry signs should be consistent with one another and also be part of a larger sign plan for throughout district. Landscaping elements should also be part of the gateway design. The type, extent and location of the landscaping at each point of entry should be designed specifically for the conditions at that site.

Activity Centers

Based upon current plans there seems to be the opportunity to develop three activity centers within the district. The activity centers are uses which are destinations in and of themselves which can generate the activity from which other development can benefit. These activity centers would be located at separate points around the district and would be connected by formal pedestrian paths, development of other uses and through visual connections.

One activity center would revolve around the proposed relocated train depot at Pettibone Road and the Western and Lake Erie Railroad crossing. The "Falls Junction" Railroad depot would be a educational/recreational destination which spotlights trains and life at the turn of the century. It could also focus in on the history of Glenwillow itself. The display could be expanded to included information on company towns in general or the making, and use, of gunpowder. Another educational component which may not be at the depot, but adjacent to it as part of the same activity center, and which would have a relationship to the history of Glenwillow, could be an educational exhibit relating to the environment. BFI currently has educational components at a couple of its facilities including its facility in Lorain. A combination of



The Falls Junction railroad crossing, with the rehabilitation of the train depot and general store, can be developed as one of the activity generators for the area.

these uses would attract a variety of users to the area including railroad enthusiasts, Greater Clevelander's looking to relax in the evening or on weekend, and school classes.

A second activity center would be associated with the development of an all purpose trail along Tinkers Creek and Beaver Meadow's Creek. A parking lot at Cochran Road could be developed as a trailhead. This would create a destination at the northern end of the Town Center. Those looking for active recreation could gravitate to this point as a place to enter the trail and it would generate more traffic past the company homes on Cochran Road. This area could be linked to the rest of the Town Center by the development of a bike trail or a sidewalk along Cochran Road. Peninsula is an example of an area where a recreational trail and small shops have been developed in a complementary manner. Weekend bikers and joggers, and employees at lunch could be attracted to such a location.

The final activity center is the ball diamonds, soccer fields and community center which the Village is developing on the west side of Cochran Road, north of Pettibone. This area will be a focal point for the residents of the Village. Not only will the participants of the games be attracted to the area, but so will the spectators. The picnic shelter at the park is at a high elevation and provides views over a large distance. Depending upon how attractive the Village Center is developed, the view may be an attraction for individuals. The use of the fields may not be limited to residents of Glenwillow. To the extent it is rented out to other groups, this will also be an area that brings others into the Village.

Uses

The above activity centers are uses which will draw people to the center of Glenwillow. In addition, each of those focal points has the potential to create interest in the development of other uses which will complement and benefit from those activity centers. For this reason, the activity centers would most likely be the first things to develop. There are additional uses appropriate to locate within the Town Center which are destinations in themselves, but which are more limited in the amount of activity generated. Residential uses and professional office use are examples.

Professional Offices. Professional offices could be retrofitted into existing company homes or developed in locations which don't have as much main street presence. They would not need to be as close to the activity centers since they don't need the pass-by traffic which more retail oriented shops require. In order to create the environment and image many professionals would desire when considering moving to this location, streetscape improvements which create a quality image would need to be in place. Such offices could include:

- ✓ Doctor/dentist
- ✓ Law
- ✓ Architect
- ✓ Insurance
- ✓ Accounting
- ✓ Real Estate

Residential. New residential use could be developed on land west of Cochran and north of the community ball fields. The area is located furthest away from the existing development in the Town Center and is furthest away from the natural travel patterns which are desired for linking commercial portions of the area together. Development of this area for residential would also limit the amount of commercial to be developed and would help ensure that the commercial district does not become too large and lose the quaint small town feel which is desired. A residential presence in the district would also add life to the



Conversion of houses along Pettibone Road to small shops would complement the renovation of the historic train depot.

area in times when other events were not occurring, and would contribute a small market for some of the commercial and office uses in the district. Small scale commercial or office development directly on the west side of Cochran Road could be a development option as long as the nature and scale of development contributed to the small town atmosphere desired.

Other uses which could be attracted to locate into the Town Center would be uses that rely on the activity generated by other established destinations. Retail which complements the attractions, uses which benefit from outdoor recreation activities, business services and uses catering to employees in the proposed industrial park are possibilities.

Small Shops. The train depot, ballfield and even the Metroparks trailhead could all generate traffic which could benefit small shops. With the relocation of Cochran Road, however, Pettibone Road will be the only main thoroughfare through the district. This fact, combined with the pedestrian scale of the area, and the character and potential draw of an activity center based upon the train depot and general store, make Pettibone Road the best location in which to initially try to attract a concentration of small shops and restaurants. As the area becomes established, houses and sites further away along the main roads could be converted to shops and offices. Once the proposed industrial park on the west side of Glenwillow is established, convenience retail and services could also find a market in the employees which work there. The closest concentrations currently are at the center of Solon and on Broadway in Oakwood. Types of retail which may be appropriate in the Town Center include:

- ✓ Restaurants, coffee shop, ice cream/candy and nuts, pastry and bakery
- ✓ Barber/beauty, drycleaner, daycare, bank
- ✓ Outdoors shop, sports shop, hobby shop, photo shop, books, florist
- ✓ Antiques, art gallery, gift/novelty/souvenir, sewing/needlework, special clothing, home items
- ✓ Bed and breakfast

Business Services. Uses which are small in scale and geared toward providing services to businesses may also find the center of Glenwillow an attractive location. The industrial areas in Solon and Glenwillow would provide a market for the services these uses provide. These types of uses would be active during the business day, and less busy on weekends and during evenings when other uses are more active. Parking could be shared between uses that have different peak times and this would require less overall parking and would provide an opportunity to create an environment which is not dominated by parking lots. Examples of such companies include:

- ✓ Reproduction services
- ✓ Commercial art and graphics
- ✓ Computer services
- ✓ Advertising companies
- ✓ Business consultants
- ✓ Building maintenance companies

Building Location and Orientation

To the degree possible, major street frontages, activity centers, and areas exposed to major views should be developed with the front facade of buildings facing them. Service areas, or other private spaces, should back on to other service areas or to less exposed locations. The facades of buildings contribute to the definition of the sense of space and place. The openings typical in the front facade of a building, like the windows and doors, contribute to a sense of connection with the activities inside, and make an area more inviting. Much like the walls within a house define the character of the rooms, the faces of the buildings which line a street, or surround an open space, have an effect on the character of that space. The services in a house, the electric wire, cable and water lines, are hidden within the walls. They could function out in the open, but that would detract from the enjoyment of the house. The same concept applies to services for “outside rooms” such as streets or parks.

Within Glenwillow’s Town Center care should be taken with the views from the major streets of Cochran and Pettibone, and views from the recreation fields and the picnic shelter. The picnic shelter is being developed as a focal point of the community and is located at a high point in elevation. From this location much of the Town Center and beyond can be seen. It is important in the construction of buildings within the Town Center that this view be taken into account since this will be an accessible point for everyone and the view will be a defining image of Glenwillow. Areas within the Town Center where new construction is possible include the vacant land north of the ball fields and the vacant area behind the company houses on the east side of Cochran. New houses developed on the vacant land north of the ball fields should be oriented toward the park. This will not only give the park more of a finished look, but by orienting the rear of the houses away from the active recreation, the privacy of those homeowners will be protected.

New buildings should also be oriented toward the street on the west side of Cochran Road north of the new ballfields. By orienting them toward Cochran, they will become part of the district and help to give it a completed look. If the sides of buildings front on Cochran Road, there will not be as strong of a connection between both sides of the street. New buildings developed behind the company houses should be developed with the rear of those buildings facing the rail line and the front

facing the toward the company houses. This orientation will also be toward the views from major streets and the picnic shelter. The buildings would block the view of much of the rear of the industrial properties which will be developed on the east side of the train tracks and will also back the service area of these buildings with the service area for the industrial uses.

Respecting the existing setbacks and scale of buildings within the town center will also contribute to a consistency between the existing buildings and new development. New buildings or parking areas developed at existing setback lines will be more in harmony on Cochran and Pettibone. New streets and development will also blend in better if setbacks, the scale of facades and the building spacing relate to the existing company houses. Height, roof pitch and direction, window shape and facade materials are details of existing buildings which can be picked-up on in the design of new structures.



The highest point in the center of town is occupied by the largest of the company homes and a park shelter. The site is a visual focal point and also provides excellent views of much of the village center.

Visual Focal Points

Focal points are areas of heightened awareness. Not only is the location of the picnic shelter an area from which most of the Town Center can be seen, but because it is as much as 50 feet higher in elevation than other parts of the district, it can be seen from many other areas in the district and the eye is drawn to it. An interesting structure or monument at this point would not only act as a symbol of the area, but would work to attract people to this location.

Another focal point is the intersection of Pettibone and Cochran Roads. Cochran terminates into Pettibone at a T-intersection. On the

south side of the intersection is an embankment, beyond which is the closed BFI landfill. Even though it is a main intersection in the community, the topography, and the scale and orientation of uses, don't lend this area towards being a main activity center. It is a main visual focal point, however, because those driving south on Cochran Road see this embankment at the end of their line of sight, and as they are waiting to turn into Pettibone Road they have more time to look around and survey the landscape. They are more aware of their surroundings at this point. Landscaping and directional signs which are well designed would be noticed by most people and would do a great deal to improve the look of this intersection and the district.



The t-intersection at Cochran and Pettibone Roads is cluttered with signs and is unkempt. Consolidating signs and landscaping the embankment would improve the aesthetics of the area.

Linkages

The connections between elements within the district are important for the area to function successfully. Automobiles, bikes and pedestrians all require links that work for them. Links between areas are enhanced through a number of ways. The most obvious way is through the development of walkways or paths. But a walkway or path alone is not always enough to make people want to use it. Visual objects in the distance or development of uses along the pathway, will keep their interest and will make the link stronger.

Within the Village Center there are two clusters of houses which may be redeveloped for other uses and which are physically separated by about 700 feet along the street frontage, and 550 feet if a short-cut through the Village Hall parking lot is used. Currently there is little connection between these two clusters of buildings. New development to the rear of these buildings could be used to provide a stronger relationship between these two clusters of company houses. Both the uses and physical presence of buildings will contribute to a better connection and a sense that this is one place.

The east side and west side of Cochran Road are also areas to be linked together in a more formal fashion. Natural crossing paths could be highlighted with signs, paving treatments or landscaping elements. People will take the shortest distance between two points. Points near the driveway and parking lot for the picnic shelter and recreation fields are currently natural crossing points.

Another link would be from a Metroparks trailhead to the Town Center. This may only require an extension of a bike path or a sidewalk from the point where the houses end to a parking lot.

Pedestrian Paths

In order for the Town Center to have the feel of a quaint, small town it will have to be pedestrian friendly. People will want to take the shortest distance between two points, will avoid walking up steep slopes if possible, and want interesting and comfortable paths of travel. The existing streets within the Town Center have no sidewalks. A streetscape which includes sidewalks, and other elements which look like they provide a natural context for the turn of the century homes, needs to be developed on the street. The sidewalks should be buffered from street traffic by a tree lawn area and should be closer to the houses to further encourage those walking past to patronize the businesses inside. Some landscaping area is needed between the walk and building in order to soften the appearance and keep a residential look to the district.

Following the existing street pattern, the elevation rises as one approaches Cochran Road along Pettibone Road. It also rises further up Cochran Road as one heads north away from the Cochran-Pettibone intersection. When finally approaching the houses located on Cochran Road, the ele-



Developing a streetscape for Pettibone and Cochran Roads would make the area more pedestrian-friendly.

vation begins to drop again. A more direct route between the Pettibone cluster and Cochran cluster of houses, is to walk behind the houses. There is also a much smaller elevation change. The distance and elevation factors are two reasons why a natural connection between the two clusters of houses would be from the rear. Any new development should be constructed to look like an extension of the existing company town. New buildings should be connected with the same streetscape pattern which is developed for Cochran and Pettibone Roads. Designing new parking to look like a street with head-in parking off of it would also contribute to making new development look like an extension of the existing town.

The Village Hall parking lot could provide additional parking for periods when larger events are occurring at either the Train Depot site, or at the Village Park on the west side of Cochran Road. It is centrally located. It is also likely to be used as a cut-through for those walking from Pettibone Road to Cochran Road since there is no destination located at the intersection, and cutting through the parking lot will shorten the distance. For these reasons, pedestrian connections from the Village Hall parking lot to Cochran Road and to the lower elevations to the rear of the Village Hall should be considered in future plans.

Finally, a sidewalk, linking the Town Center to the residential section of the Village west of Tinkers Creek should be developed. This would provide a protected way for Villagers to walk or ride their bikes to the civic area (*see Map 16*).

SCHEMATIC PLAN

The schematic drawing (*Map 17*) exhibits one form which the concepts described in the previous section can take.

The relocated train station and general store could serve as an anchor for the part of the district east of Cochran Road. A plaza developed as a central gathering place where events could be held and where vendors could set up retail carts could tie the two together. Outdoor eating areas could also be established. Parking would be away from the main plaza so as not to impede upon the quality of the space and to limit congestion. It would be within easy walking distance and could be developed in a number of smaller lots, including the south side of Pettibone Road or east of the railroad tracks. A drop off for buses and cars could be developed for larger groups or for those that cannot walk long distances. A focal point in the middle of a turnaround would add character to that space.

The homes along Pettibone would be within easy walking distance of the depot and could be converted into small retail shops or a bed and breakfast. A historic streetscape design which began at the tracks would tie the area together and provide a pleasant environment for pedestrians.

This same streetscape design should be continued on Cochran Road and for new development along the Wheeling and Lake Erie Railroad. Parking areas would be broken-up into smaller single-bay sections divided by landscaped islands and a larger landscaped area which could serve as a second-

Map 16: Concept Plan, Glenwillow Town Center



ary gathering place nearer to the center of this triangle. A gazebo or other structure could serve as a focal point of this space.

Buildings developed along the tracks will not have the visibility from the main roads that many retailers want. The spaces may initially be more oriented toward offices and business services. As the Town Center became more of a destination, it is possible that it could become successful enough that retailers may find these spaces attractive. The quality of the design of the buildings and site will be important in how attractive this area becomes. Setbacks in the front facades of buildings could be made to make the scale of the buildings seem more consistent with the company houses. The southernmost building developed should face the plaza and help define that space. It would also serve as a transition to the new buildings developed behind it. Service to the rear of the buildings would be located adjacent to the railroad tracks and be out of site from most visitors to the Town Center. This area could also serve as parking for employees and visitors and be the location for parking buses. In the schematic approximately 31,000 square feet of development is shown on the first floor footprints. Most buildings should also have at least partial second floors. Reuse of the general store building would add another 2,200 square feet of development.

Paths and stairways would connect the Village Hall and its parking lot to new construction and to the new ball fields on the west side of Cochran Road. Bike paths could be developed that connect into the system of sidewalks through the center of development. Parking for new development should be constructed with details which give them the appearance of streets. Small lots behind the houses on Cochran Road could function as gravel lots. This would add a rural small town feel to this section of the district and would lessen water runoff. A water feature such as a pond would add visual interest, increase the natural feel of the area and could be an attraction which would get people to walk towards the northern end of the district.

On the west side of Cochran Road a concept for single-family homes on quarter acre lots is shown. Although the lots are a quarter acre in size, the overall density is $\frac{1}{2}$ acre per lot. The lot widths (minimum 60 feet) relate to the spacing of the existing company homes on Cochran Road. The schematic shows 44 homes on 22 acres of land. Homes front on Cochran Road in order to add to the complete sense of place on Cochran Road. Orienting these homes to Cochran better acknowledges the uses on the east side of the street which helps tie both sides of the street together into one district. The street providing access to the residential cul-de-sacs from Cochran Road forms the northern border of the recreation fields. Orienting the front of homes toward the recreation fields along this street also positively contributes to the appearance of the recreation area and to the view from the community pavilion. Areas along the periphery of the site which are closer to Tinkers and Beaver Meadows Creek are protected open space that can become part of the larger open space plan of the Village. A bike path can provide access to this area for the public, connect to pedestrian and bike connections in other parts of the Town Center and become part of a larger open space network.

Map 17: Proposed Glenwillow Town Center



SUMMARY

Most of the structures in the center of the Village are part of the Austin Powder Company town developed late in the 1800's. These buildings include 23 single-family houses, a general store and a train depot. During the 1990's a new Village Hall and recreation fields were built at the intersection of Pettibone and Cochran Roads. The Town Center is a well defined area. It is bounded by the Wheeling and Lake Erie Railroad on the east, a closed landfill on the south, Tinkers Creek on the west and Beaver Meadows Creek on the north. In addition to the above mentioned uses, there is also vacant land to the rear of the company homes and to the north of the recreation fields which has potential for future development. The two major landowners in the area are Browning Ferris Industries, which bought Austin Powder's holdings in the Village, and the Village of Glenwillow.

Concepts which should be implemented in order to create a sense of place and vibrant Town Center include:

- ✓ **Gateways.** They are the first point of entry to a place and should be designed so as to establish a character for the area. The Town Center has three distinct gateways. They are:
 - à Cochran Road bridge over Beaver Meadows Creek
 - à Pettibone Road bridge over Tinkers Creek
 - à Railroad crossing over Pettibone Road

- ✓ **Activity Centers.** They are destinations and can generate activity from which other development can benefit. Potential activity centers include:
 - à "Falls Junction" railroad depot and general store on Pettibone Road
 - à Park trailhead on Cochran Road near Beaver Meadows Creek
 - à Recreation fields/community center/Village Hall

- ✓ **Mixture of Uses.** This includes uses which complement and benefit from the activity centers, which also create variety and generate activity, although in a more limited fashion. Appropriate uses within the Town Center include:
 - à Professional Offices
 - à Small Shops
 - à Business Services
 - à Residential Uses

- ✓ **Building Location and Orientation.** Major street frontages, activity centers and areas exposed to major views should be developed with the front facade of buildings facing them. Service areas should back on to less exposed locations. Respecting the scale and setbacks of existing structures will contribute to a consistency between the new and historic. Uses which need more pass-by traffic should be located closer to main streets.

- ✓ **Visual Focal Points.** Focal points are areas of heightened awareness. Views of them contribute greatly to the perception of the area. Among the focal points in the Town Center are:
 - à Pavilion on the west side of Cochran Road

- a Embankment on the south side of the Pettibone and Cochran intersection

✓ **Linkages.** Good connections, both visual and physical, between the various elements within the Town Center will tie them together and create a sense of a district and also make it more likely that people will patronize and visit more than one place when they enter the district. Linking the two clusters of company homes and the east and west sides of Cochran Road will create a stronger sense of place.

✓ **Pedestrian Paths.** In order to have a feel of a quaint, small town the district will have to be pedestrian friendly. Actions which should be taken include:

- a Developing a streetscape along Pettibone and Cochran Roads and continue those elements into areas of new construction and parking so they seem like extensions of the existing street system.
- a Creating connections along natural pedestrian paths which are characterized by shorter distances and smaller changes in elevation.

Chapter 8

Final Development Plan

INTRODUCTION

The final development plan for the Village of Glenwillow incorporates the findings from the previous chapters in the plan. This chapter consists of two sections. The first is the final recommendations for the focus areas discussed in Chapter 6 (*for an overview of the locations of the focus areas in the Village, see Map 9*). The second is the proposed land use map for the Village of Glenwillow. These pieces, combined with the specific recommendations for the Town Center in Chapter 7, make up the final development plan for the City. The next chapter, the Strategic Management Plan, addresses implementation of the Plan and examines other development issues raised in the goals and objectives.

FOCUS AREA 1a (HISTORIC AUSTIN COMPANY HOMES)

- ∩ *The preferred alternative is the reuse of the homes for a combination of small shops and offices.* This combination would complement other proposed projects within the center of the Village. While the exact proportion of space devoted to office versus small shops will be determined by the market and individual decisions of those locating business here, the development of small shops should first be encouraged to focus at the Pettibone Road cluster of houses. This cluster of houses is on the main road and within easy walking distance to a proposed major activity generator (the train depot).



The Pettibone cluster of homes would be the most appropriate for conversion into small shops. They are on the main traffic patterns and within easy walking distance of the proposed renovated historic train depot.

While office use on the second floor of some buildings may be appropriate, interspersing office use between retail conversions would dilute the shopping experience of visitors. Office use should be located at the periphery of the retail node. The homes on Cochran Road would be appropriate for office use. Over time, as the area has established itself as a destination, a number of these houses on Cochran Road may be converted again to small shops if demand for additional retail space grows.

- ∩ *A first step which should be taken to develop the center of the Village as a destination is the rehabilitation of the historic "Falls Junction" railroad depot.* Trains have a tremendous drawing effect across all age groups. The depot should be moved from its present location on the southeast corner of Pettibone Road and the Wheeling and Lake Erie Railroad crossing to the northwest corner next to the general store building. This move will create a much better physical link between this potential activity generator and the remainder of the district. Plans to permanently store old rail cars on the site should also be encouraged because they will contribute to the image desired for the district.

- ÿ ***Food has a tremendous drawing power and a restaurant would complement uses proposed for the train depot.*** The general store building is very open inside and could be renovated into a restaurant whose decor also addresses the history of the Village. A public space which is visible from the street can be developed between the general store and train depot and serve as an area for community events. Parking should be located away from the street so as not to disrupt the appearance of the historic district from the main road. Access should be located between the general store and the first house to the west. Parking should initially be developed behind the general store and train depot for convenience, but as subsequent phases of development occur (see Focus Area 1b) the parking should be relocated and new buildings constructed near this main activity generator.



- ÿ ***Glenwillow's history is that of a rural community and that image can set Glenwillow apart from other communities in the area.*** Streetscape improvements along the road should be kept to a minimum so not to erode the rural feeling. Sidewalks should be developed near the houses in order to give pedestrians a defined and protected place to walk between shops. A number of houses on the north side of Pettibone could use improvements to their landscaping, including the addition of a

number of trees. While lighting is needed to brighten the area and make it safer for pedestrians, a formal street lighting is not necessarily in keeping with the rural environment. Lighting which is developed as a part of the building, or the lot, could provide the necessary illumination and be more in keeping with the rural feeling. Quality shop signs on the street will do much for improving the appearance of the district and adding a personality to the area. The focus of right-of-way improvements on the street should be at specific focal points and entryways to the district. Much of development energies should be focused to the rear of the buildings where parking and additional entries to the shops would be located.

- ÿ ***The use of color, signs, or the addition of other amenities should be considered to distinguish the structures from one another.*** The homes were built and have been under collective ownership since they were constructed in the late 1800's. They are all painted white, and while there are differences in their architecture, the buildings do not distinguish themselves from one another. The architecture is also very basic. This sameness contributes to the connection as a district, but if the buildings are to be used as shops, developing individuality and character for the houses would make them more attractive.
- ÿ ***Homes located on the east side of the Wheeling and Lake Erie Railroad which may be threatened by future industrial development should be moved to the west to fill in the gaps in the district.*** One location to move the houses would be to the south side of Pettibone Road. If the houses could be relocated to Cochran Road between the road and the service building, they could serve to screen the service building and bring the two cluster of houses closer together. Another option would be to move them closer to the rail line, but to leave them on the east side of the tracks, where their appearance can frame the "Falls Junction" crossing. The site of the houses on the east side of the track would buffer the view of the back of the new industrial uses located off relocated Cochran Road.

- ÿ *The use of other government monies would open up any proposed changes in the district to historic review by the state preservation agency.* This is an important point to be considered before applying to any outside sources for funding of improvements.
- ÿ *This site is included in the schematic in Chapter 7, “Glenwillow Town Center”.*

FOCUS AREA 1b (VACANT LAND BEHIND COMPANY HOMES AND VILLAGE HALL)

- ÿ *The preferred alternative is the development of the site for a combination of office use and small shops.* New space may provide opportunities to attract shops or restaurants which could not use renovated space within the existing company homes. Shops should be encouraged to locate closer to Pettibone Road, while office use would be more appropriate to locate near Cochran Road.
- ÿ *The buildings should be situated so as to foster connections between the Pettibone Road cluster and the Cochran Road cluster of homes.* New buildings should be designed to complement the company homes by picking up on elements of the existing structures such as building height, roof pitch and direction, appearance of materials, attachments and building spacing.
- ÿ *Site improvements are important elements for creating an attractive environment.* The theme developed along Pettibone Road should be continued in the new development in order to strengthen the image of the area. Attention to detail is important in all facets in order to create an interesting place. Some compromise with authenticity may be required in order to improve how the area functions. Gravel parking may be more authentic in a rural area, but a paved parking area will be much more easy to snow plow in the winter when patrons are shopping.
- ÿ *Guidelines for new construction of buildings and site improvements should be developed* in order to more fully clarify the Village’s vision of the area, and to provide future developers guidance.
- ÿ *This site is included in the schematic in Chapter 7, “Glenwillow Town Center”.*



Development of the land behind the Village Hall and company homes can serve as a link between the two clusters of homes and can tie the district together. Offices and small shops would be the most appropriate use.



Development on this site should present a front facade to both Cochran Road and the new recreation fields in order to blend into the existing district. Single-family homes are the preferred use.

FOCUS AREA 2 (VACANT LAND NORTH OF RECREATION FIELDS)

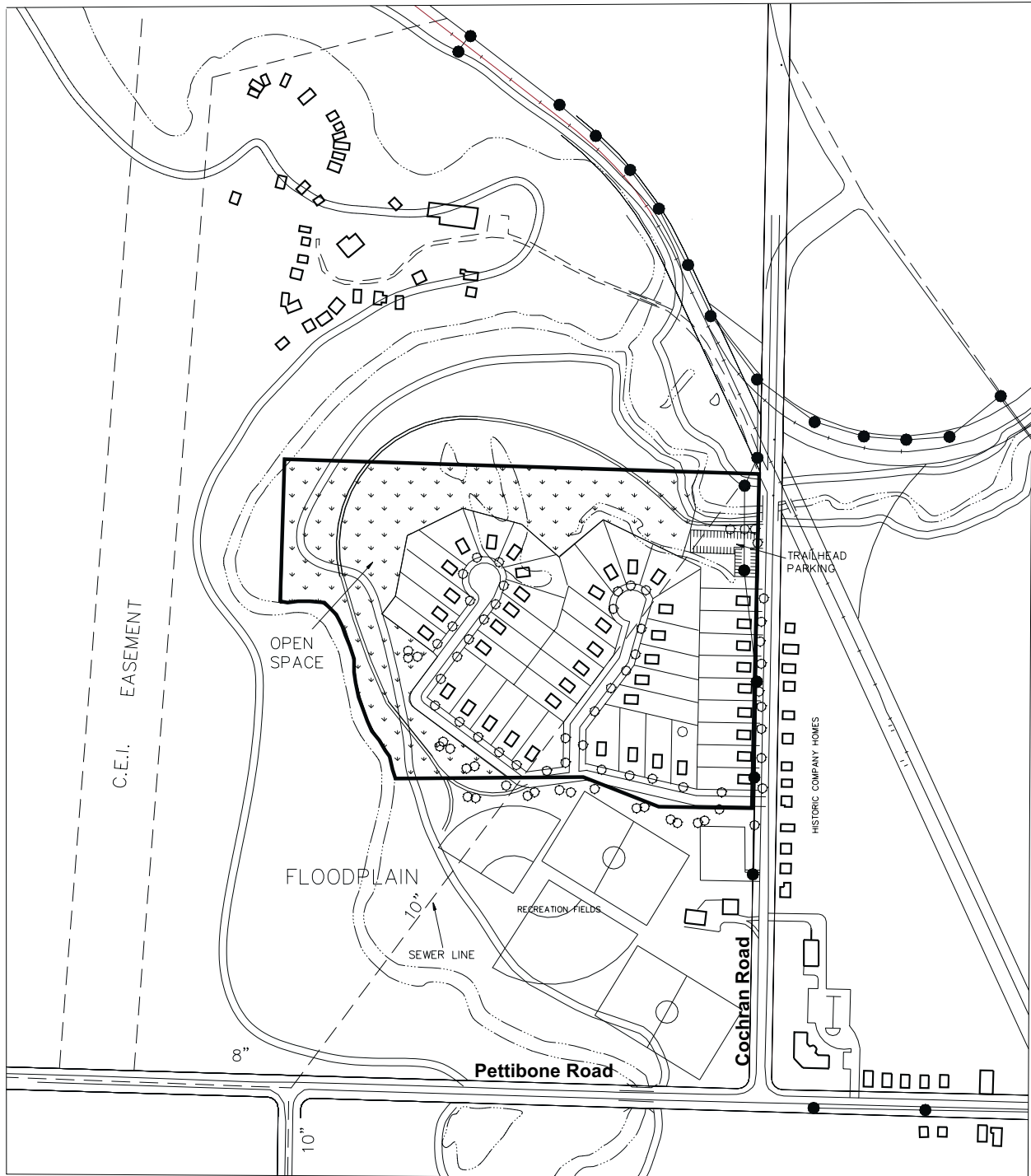
∅ **The preferred development scenario is the construction of single-family houses at a ½ acre density.** Although the overall density proposed is ½ acre, the minimum lot size could be acre, with the remainder of the land preserved as open space. This is the only site within the Village where a density greater than the current minimum lot size of one acre is appropriate. This density and type of development is the most consistent with the original company homes which were built on yards

with 60 foot frontages and approximately acre of land.

- ∅ ***Wetlands have been identified on the site through studies conducted for the Bond Street sewer project.*** An open space requirement would offer an on-site alternative for mitigation efforts.
- ∅ ***The Bond Street sewer runs diagonally through the site from southwest to northeast and complicates the layout of the site.*** Although a grid pattern would be the most appropriate configuration for streets, accommodations for the sewer line would need to be made. The most important urban design consideration for fitting a residential development into the larger district is how it addresses Cochran Road and the public open space to the south. New houses should front on the west side of Cochran Road to complement the structures on the east side of the street. Likewise, the front facade of homes should face the recreation fields to the south in order to provide that open space with a more finished look.
- ∅ ***In order for the new development to appear to complement the existing company homes, lot widths and building details of the existing structures should be used as a starting point for the design and layout.*** Building height, windows, materials, roof pitch and orientation are all details which will determine if the new development looks appropriate or out of place in the Town Center. The existing company homes are located on lots (60 feet wide) which may be considered relatively narrow by today's standards, but encouraging housing designs which allow a similar spacing of houses will strengthen the aesthetics of the district. Guidelines should be developed which form a framework for new development.
- ∅ ***A portion of the site should also be reserved for a trailhead for an open space network which follows Tinkers Creek.*** It would provide a place to park for those that wish to use a park trail. These people may also then decide to stay and patronize shops or restaurants in the center of the Village.

Following is a schematic of how the site could lay out.

Map 18: Focus Area 2, Single-Family Development, 1/4 Acre Lots, 1/2 Acre Density



FOCUS AREA 3 (SOUTHEAST CORNER OF THE VILLAGE)

✧ *The preferred alternative is to develop the entire site for industrial use.* Whether the residential uses are in Glenwillow or Solon, the issue of buffering between residential and industrial is the same. A residential street developed along the eastern edge would be isolated from the remainder of the Village's houses and would require access through Solon. The industrial development scenario would be fiscally beneficial to the Village.

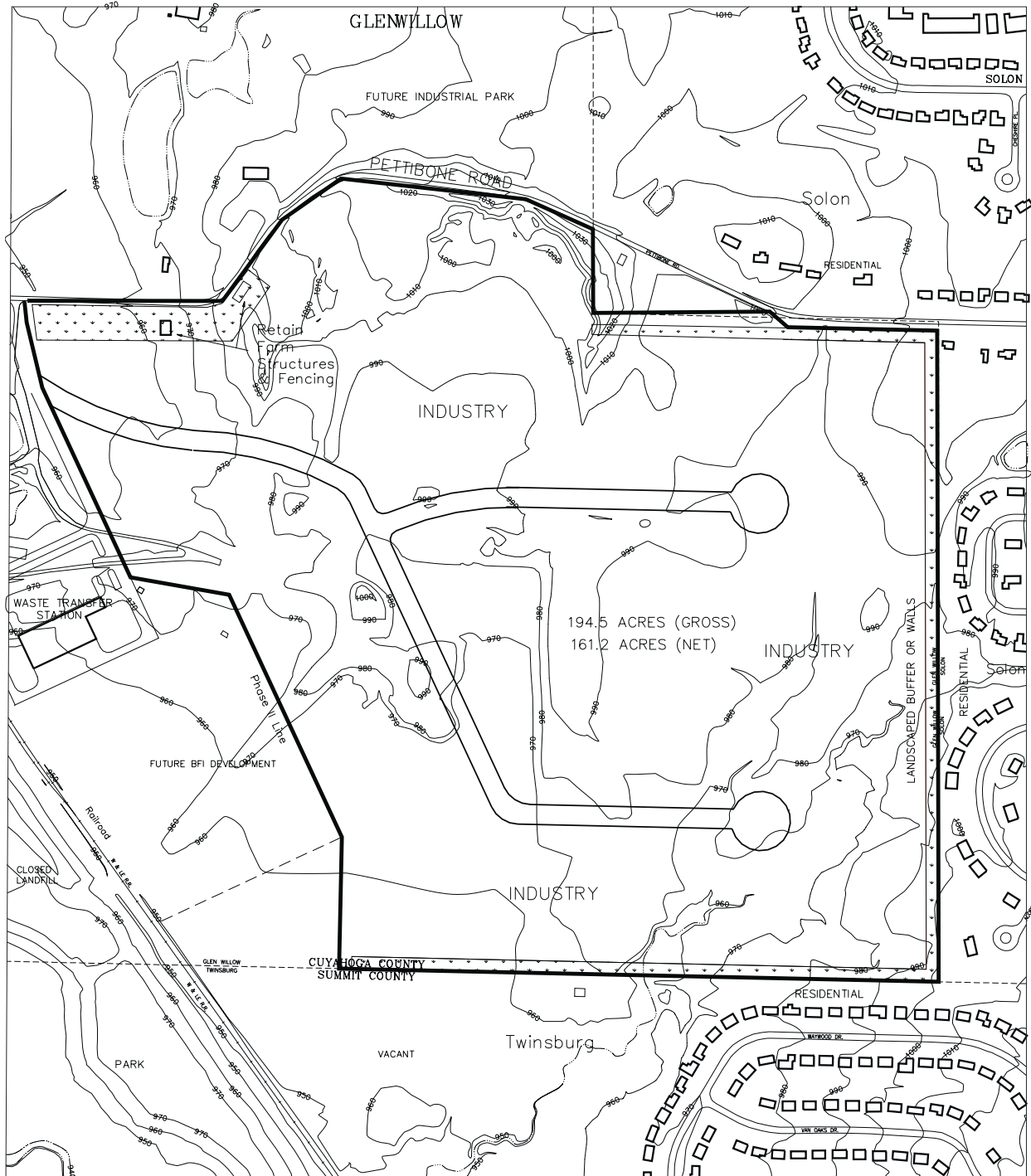


Although industrial development is proposed for the southeast corner of the Village, the preservation of three to four acres, which includes historic farm structures, should be supported to maintain a sense of the Village's history.

- ✧ *The Village's current requirement for industrial rear and side yards which abut residential districts is 130 feet from the residential property line* (Planning & Zoning Code - Section 1139.03). Parking is not allowed within 50 feet. A wall or solid screen planting of shrubs is required so as to effectively screen industrial operation, automobile parking or outdoor storage of materials or equipment. Any outdoor storage in a rear yard needs Planning Commission approval.
- ✧ *Access to the site should be from a point near where relocated Cochran Road intersects with Pettibone Road.*
- ✧ *Barn structures and wooden fencing on the site should be preserved as a monument to the Village's history.* These features are located along the Pettibone Road frontage and are hold-overs from the Austin Company farm. The image they create would also be beneficial for the industrial park and the businesses which choose to locate on the site. Preserving these structures would reduce the developable area of the site by only 3 to 4 acres.
- ✧ *Another option which would be considered appropriate for the site would be the development of the area for a combination of industry and golf course.* If any wetlands are found on the site, mitigation measures could be designed into the golf course plans. The average size of a course is 145 acres. This would leave 50 acres which could be developed for industrial use. As with the strictly industrial option, access and historic preservation considerations are the same.

The following map illustrates the aforementioned considerations.

Map 19: Focus Area 3, Industrial Development



FOCUS AREA 4 (COMMUNITY PARK, SOUTH OF PETTIBONE ROAD)

- ÿ *The preferred development option is to keep the community park as is, as a passive recreation asset for the community.*

If an extraordinary opportunity or price were to present itself to the community for the use or acquisition of the land, the Village could consider such an option in the future. Preserving the park is in keeping with the desire to preserve the rural atmosphere of the Village, and as much open space as possible.



The existing Village Park is a valuable commodity. Preserving the park is in keeping with the desire to maintain open space in the Village.

- ÿ *An opportunity exists to link the Village park to a regional open space system being proposed along Tinkers Creek via the*

CEI high power easement which runs along the southern border of the Village. A bike trail could be developed through the park to the power line easement. A trail along the easement could connect Richmond Road and the Village Park to park land in Twinsburg and to the bike trail proposed for along Tinkers Creek.

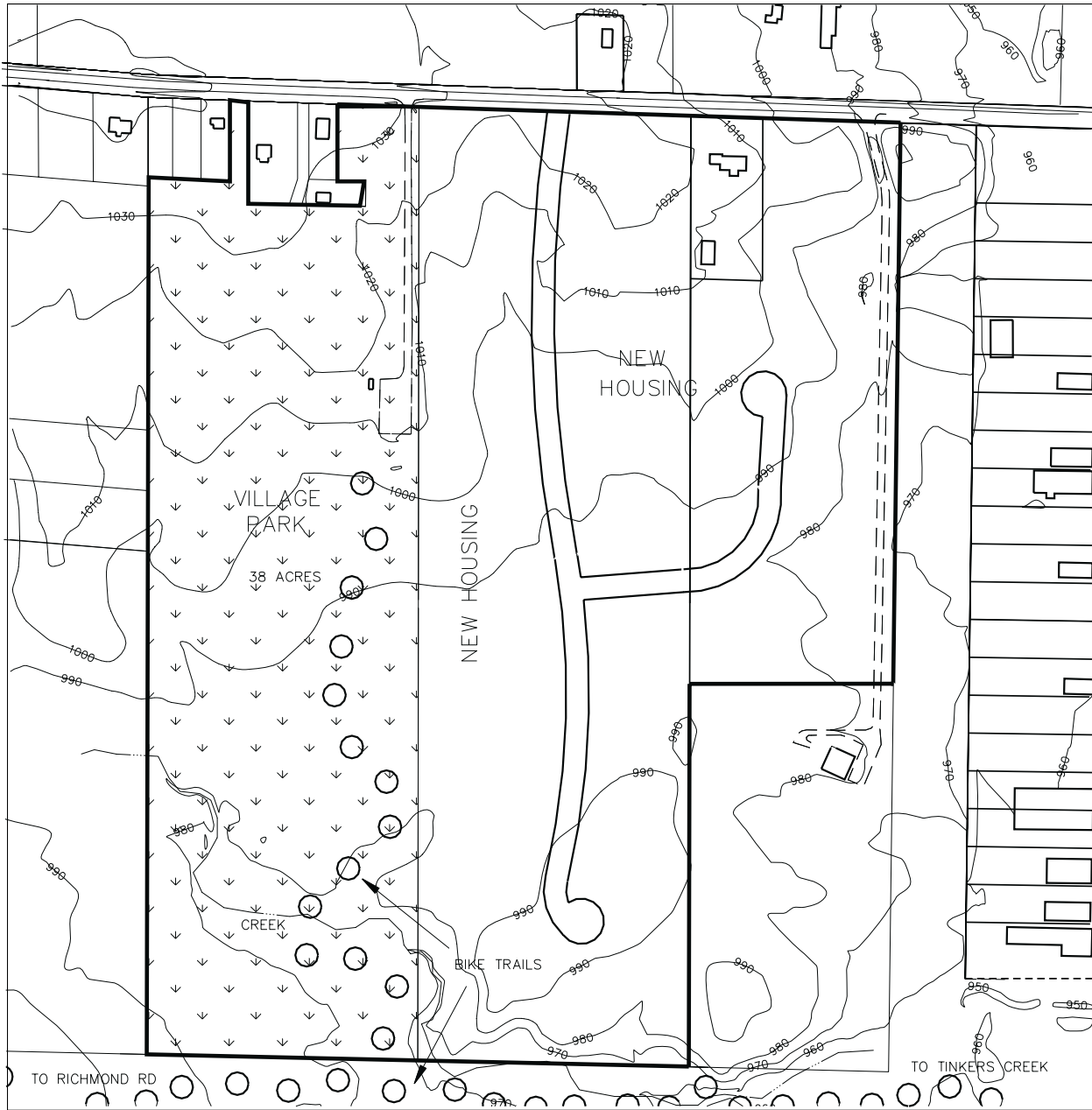
Another acceptable development scenario would include the park land (and adjacent properties) as part of a larger development which preserves open space in the Village. Such alternatives could include a golf course or a golf course community.

The following map illustrates the aforementioned considerations.

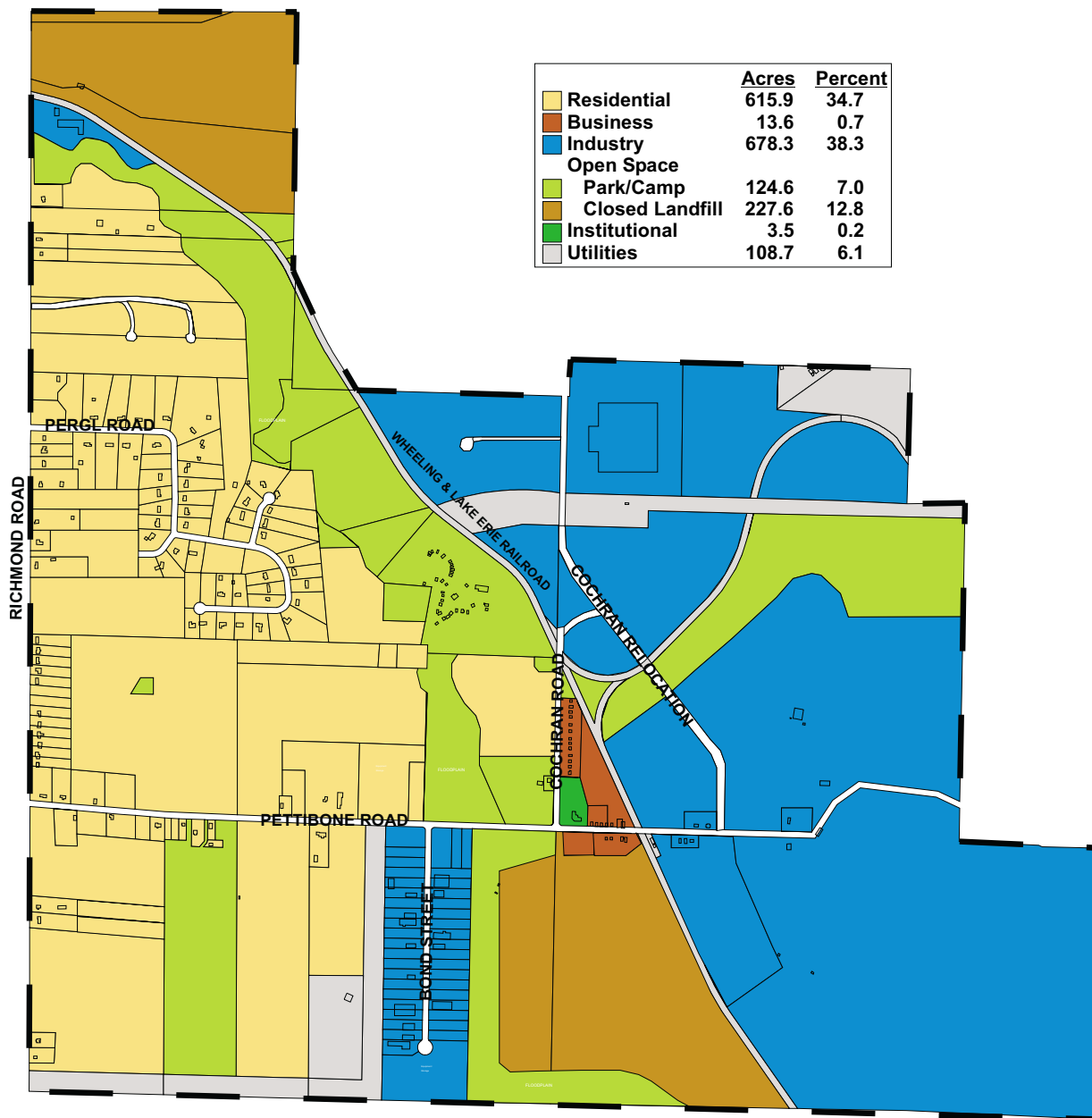
PROPOSED LAND USE MAP

Based upon the final configuration of land use, the Village can expect to see an ultimate population of approximately 1,500 residents and a housing unit count of 525. Although not large in number, it would be a 200% increase over the 1996 estimated population of 477. Over 8,000 employees could work within the Village when all industrial land is developed.

Map 20: Focus Area 4, Existing Park and Single-Family Housing



Map 21: Final Development Plan



Residential

There is no proposal to change the Village’s existing maximum density of one dwelling unit per acre in the Village’s Country Home District. A separate district which allows a mixture of uses should be developed for the center of the Village (the area bounded by Tinkers Creek, Beaver Meadows Creek, the Wheeling and Lake Erie Railroad and the closed landfill). Within that district new residential development should be limited to the west side of Cochran Road. Minimum lot sizes of acre and an overall density of 2 units per acre are recommended. This would encourage development at the same density as the existing historic homes, and also preserve open space.

Business

There is little demand generated from the Village's residential population for retail uses. However, employees of industrial uses, and visitors to other venues in the Village, could provide a market which would support small shops and eating establishments. The only portion of the Village for which any type of commercial is proposed is within the center of the Village. Physical improvements to the district should emphasize the Village's history and rural nature, and any new development should be in scale with existing buildings. One possibility for promoting a smaller scale would to impose a maximum business size. In addition to small shops, professional offices and business services would also be appropriate uses. To the degree possible small shops should be clustered around each other.

Industry

All land east of the Wheeling and Lake Erie Railroad tracks and undeveloped portions of Bond Street are proposed for industry. The Village can expect to see a good deal of industrial development in the future as relocated Cochran Road opens up new land for development and existing vacant land in Solon is used up. Large scale industrial developments should submit design guidelines for the approval by the Village to ensure quality with respect to design and materials. Site amenities, such as white wooden fencing, which contribute to a rural image should be included the design scheme. To the degree possible, historic structures which are located on sites proposed for industry should be preserved, or moved to other sites within the Village, to protect the Village's history. The fact that many of the businesses on Bond Street are in related construction businesses is a strength which should be built upon in undertaking improvements and creating a positive identity for the street.

Open Space

Tinkers Creek runs through the center of the Village and the preservation of open space along it has the potential to serve as a greenway which connects into a regional system of parks. The Emerald Valley Business Park has proposed a 65-acre nature preserve along Beaver Meadows Creek and the Wheeling and Lake Erie Railroad track as part of its wetlands mitigation proposal. This open space should be connected to a greenway along Tinkers Creek. The 38-acre Village Park on Pettibone Road should be preserved as a passive recreation area. The park could be connected to the Tinkers Creek area through a bike trail which follows power lines along the southern border of the Village. A small playground should be provided for at a location north of Pettibone Road in the residential section of the Village. Reuse of landfill land in the near term is not likely. Because of the capping of the landfill, vegetation which can be grown is limited to those plants whose roots do not compromise the integrity of the cap. A private use which should be permitted in either residential or industrial districts, and which would preserve large amount of open space in the Village, is a golf course.

Institutional Uses

Additional development will not necessarily require the addition of new safety facilities. The service garage is new, but its location in the center of the Village does not complement efforts to de-

velop an historic district. As the historic district develops in the future, the relocation of the service garage to a location on an industrial site should be considered. The current zoning code allows churches in industrial districts, but not in residential districts. Reversing this requirement should be considered in the zoning code.

Public Improvements

Targeted public improvements should be located near the center of the Village as part of the effort to create a historic district. Gateways into the Village at points along Pettibone and Cochran Road are also important locations for well designed right-of-way improvements. Water and sewer plans should continue to be implemented as part of the comprehensive plan. Relocated Cochran Road will open up much of the Village for industrial development. A detailed traffic study should be undertaken to determine other road improvements that may be necessitated by additional development. In addition to traffic flow considerations, any proposed widening of roads should consider the impact on adjacent development, especially within the center of the Village. Extension of existing bus lines, especially along Cochran Road to the center of the Village, should occur.

Chapter 9

Implementation Strategies

The final chapter of the *Glenwillow Master Plan* consists of a strategic management plan for implementing the goals and development recommendations detailed in the Master Plan. In order for the community to realize the goals of the Master Plan, it will require a cooperative and concentrated effort by local officials, the business community, and residents.

FORMAL ADOPTION OF THE MASTER PLAN

The formal adoption of the Master Plan by the Village is a basic step to the successful implementation of the policies and recommendations contained within the document. The formal adoption of the plan enables the Village Council and Planning Commission to make decisions on issues based upon clearly stated long-range policies which have formal support. The Master Plan serves as a practical working guide. Short-term decisions can be made within this framework which defines the desirable direction for future physical development of the Village. Effectiveness of the plan depends upon the extent to which it is read, understood and accepted by all those involved with the development process within Village. Village officials should look to the Master Plan when making decisions such as amendments to the zoning code, review of development proposals and capital improvement projects.

PERIODIC REVIEW OF THE MASTER PLAN

Although the Master Plan should be the basis for decision-making on development-related activities, it is a guide and should not be viewed as an absolute with respect to decision-making. The Master Plan should be one part of the continuous planning process. The Plan attempts to forecast future changes in the Village, but unforeseen economic, technological and social conditions are valid reasons for future amendments to the Master Plan. Proposed amendments to the Master Plan should be considered whenever aspects of the Plan become impractical due to the uncovering of previously unavailable information or unanticipated changes in the community. The opening of relocated Cochran Road, and the recent provision of utilities to the Village, will accelerate the degree of change experienced compared to the recent past. The Village may wish to review the Master Plan in its entirety every 5 to 7 years to determine if changes are warranted.

ZONING CODE AND MAP CHANGES

Recommendations in the Master Plan should form the basis for a number of changes in the Village's existing zoning code and zoning map. The Village's development code and map form the legal basis for controlling development. Therefore, changes to those documents which will assist in implementing recommendations in the plan should be undertaken.

ACHIEVING GOALS OF THE MASTER PLAN

Through the development of the goals and recommendations in the master planning process, a number of major initiatives have been identified which, if implemented, would achieve many of those goals. The following are a list of the major development initiatives which should be undertaken by the Village.

Development of Open Space Network

Preserving open space and protecting the natural environment are important goals for the community. Tinkers Creek and Beaver Meadows Creek are natural resources which are assets of the Village. The opportunity exists to preserve open space along these waterways, open them up for public access and make them part of a larger open space system. Because the Village does not have the personnel or expertise to undertake such a venture by itself, it should partner with an outside entity which has that expertise. Specifically, the Village should:

- ✓ Formally invite the Cleveland Metroparks to partner with the Village in the planning, implementation and operation of such a network. Specific tasks include:
- ✓ Further study and refinement of the boundaries, design and capital improvements for such an open space network;
- ✓ Begin discussions with property owners affected by such a plan within the Village in order to gain input and support for the greenway and its connections - Browning Ferris Industries, Duke Realty, First Energy and various property owners between Richmond and Cochran Roads should be contacted;
- ✓ Additional research into the legal and financial options for implementing such a plan should be undertaken. Groups such as the Metroparks, Trust for Public Land, and the Tinkers Creek Conservancy should be brought into the discussion in order to tap into their resources and expertise;
- ✓ Communication with surrounding communities throughout the process so that planning for connections can be coordinated - Twinsburg, Solon and Oakwood should be informed of the progress at specific steps in the process.

Developing the Center of the Village into a Mixed Use District which will Build Upon the Historic Nature of the Area

A major goal of the Village is to develop and upgrade the area around Cochran and Pettibone Roads so that it functions as the center of the community and presents a unique image which benefits the Village. It is envisioned that the area be developed as mixture of small shops and offices, with some new housing. Regional draws such as a rehabilitated train depot and the adjacent open space network would serve as anchors of the district. In order to accomplish this goal a number of public im-

provements will need to be made and assurances that new development complements the existing historical setting must be in place.

- ✓ Create a separate zoning district for the center of the Village (the area bounded by Tinkers Creek, Beaver Meadows Creek, the Wheeling and Lake Erie Railroad, and the closed BFI Landfill) which will allow for the rehabilitation of the existing homes for small shops and offices, the development of new office and commercial space at a scale and character consistent with the existing company homes, and the construction of new housing at a density and character similar to the existing company homes. New development within this area should be subject to a design review process.;
- ✓ Develop design guidelines which will further define the future character of this area and which will be used as a guide for decisions on future rehabilitation and new construction in the district. The guidelines should build on the uniqueness of Glenwillow. Separate guidelines should be developed for:
 - à Renovations
 - à New commercial (non-residential) construction
 - à New residential construction
 - à Site and right-of-way improvements
- ✓ Specific building items which should be addressed in the guidelines include:
 - à Building Height
 - à Roof shape, pitch and direction
 - à Building style
 - à Size and rhythm of windows
 - à Building materials and texture
 - à Color
 - à Building attachments
- ✓ Site criteria which should be addressed include:
- ✓ Building setback and spacing
- ✓ Site organization
- ✓ Screening
- ✓ Site Structures (lighting, signs, fencing, etc.)
- ✓ Preservation of existing features or views
- ✓ Paving materials
 - à Plantings
 - à Connections between parts of the district and to an open space system
- ✓ Contact architectural programs at local universities, such as Kent State, about using the Village Town Center as a design exercise in order to solicit additional design ideas;

- ✓ Rehabilitate the train depot, and open it up to the public, as a first step in creating the center of the Village as a destination. The Village should support the movement of the historic “Falls Junction” railroad depot to the north side of Pettibone Road adjacent to the general store building. It should work with the Midwest Historical Railway Society to determine short-term and long-term needs for parking, rail car storage and site improvements. Programming the building as an attraction is important. Trains, company town history and environmental education are all themes which are relevant to Glenwillow;
- ✓ Work with Browning Ferris Industries to keep commercial development under common land ownership, and/or management, to ensure coordinated development, design, leasing, marketing and maintenance. As efforts to develop design standards and implement initial public improvements are moving forward, continue to search for a developer which shares the vision for the community;
- ✓ Work with Browning Ferris Industries and Duke Realty to move historical houses threatened by industrial development into the district or closer to the railroad crossing;
- ✓ Create a marketing image for the district. “Falls Junction” and “Austin Powder Company” are two examples of historical names which can be used to develop a unique image;
- ✓ Undertake a wetlands study for the district in order to assess the location and extent of wetlands. Investigate how wetlands can be mitigated on site as a design feature of the district, or if they can be combined with other mitigation efforts for other sites in the Village;
- ✓ Contact the County Engineer about how gateway design improvements can be piggybacked onto repairs for bridges or railroad crossings; and
- ✓ Develop a capital improvements plan for prioritizing and phasing public improvements for the district.

Exhibits 45 to 47 illustrate examples of improvements which could be made in the district.

Upgrade the Appearance of Bond Street

Bond Street is an older industrial district developed before many of the existing zoning standards were in place. It is the only industrial area in the Village on the west side of Tinkers Creek and is the closest to residential areas of the community. Sewers have recently been installed to replace septic tanks. The aesthetics of the street are still in need of improvement.

- ✓ Continue to implement the improvements documented in the “Bond Street Improvement Plan” prepared in 1996 by the Cuyahoga County Planning Commission;

Exhibit 45: Town Center Area, Railroad Crossing/Gateway



EXISTING

1. *LACK OF DEFINITION OF ROADWAY.*
2. *NO CURBING ON STREET.*
3. *NO PEDESTRIAN/BICYCLE CIRCULATION.*
4. *LACK OF ENTRANCE/SIGNAGE TO IDENTIFY DISTRICT.*
5. *LACK OF LANDSCAPING TO DEFINE AND ACCENT CORRIDOR AND DISTRICT.*



PROPOSED

1. *ADDITIONAL LANDSCAPING TO ACCENT ENTRANCE AND FOCAL POINTS OF DISTRICT SUCH AS THE DEPOT.*
2. *ADD SIGNAGE FOR DIRECTION AND IDENTITY OF DISTRICT.*
3. *ADD SIDEWALKS/PATHS TO INCREASE PEDESTRIAN AND BICYCLE CIRCULATION AND USE.*
4. *ADD CURBING ALONG ROAD TO DEFINE VEHICULAR AND PEDESTRIAN USE AREAS.*

Exhibit 46: Town Center Area, General Store



EXISTING

1. *POTENTIAL SITE FOR FOCAL POINT OF INTEREST FOR DISTRICT.*
2. *LACK OF SIGNAGE.*
3. *LACK OF SIDEWALKS AND SEPARATION FROM ROADWAY.*
4. *LACK OF LANDSCAPING MINIMIZES DEFINITION OF SPACE.*



PROPOSED

1. *RENOVATE BUILDING FOR USE AS A RESTAURANT OR STORE.*
2. *USE SIGNAGE TO IDENTIFY THE DISTRICT AS UNIQUE.*
3. *ESTABLISH SIDEWALKS TO ENCOURAGE PEDESTRIAN USE IN A SAFE MANNER.*
4. *USE LANDSCAPING TO DEFINE SPACE AND ADD SEASONAL INTEREST.*

Exhibit 47: Town Center Area, Cochran Road Improvements



EXISTING

1. *POTENTIAL TO IMPROVE BUILDING APPEARANCE.*
2. *LACK OF SIGNAGE.*
3. *LACK OF SIDEWALKS AND SEPARATION FROM ROADWAY.*
4. *LACK OF LANDSCAPING DOES NOT COMPLEMENT BUILDING.*



PROPOSED

1. *IMPROVE APPEARANCE OF DISTRICT THROUGH RENOVATION OF BUILDINGS.*
2. *USE SIGNAGE TO IDENTIFY THE DISTRICT AS UNIQUE.*
3. *ESTABLISH SIDEWALKS TO ENCOURAGE PEDESTRIAN USE IN A SAFE MANNER.*
4. *USE LANDSCAPING TO UNIFY DISTRICT AND ADD INTEREST TO BUILDINGS.*

- ✓ Work with the business owners to develop a coordinated program of aesthetic upgrades which will allow them the opportunity to plan for expenses;
- ✓ Many of the companies are in the construction business. Identify portions of the programmed improvements which can be undertaken by companies located on the street as an opportunity to reduce costs and support local business;
- ✓ Capitalize on the fact that many businesses are construction related in order to create an image for the street. The construction theme can be used in marketing and the development of a gateway at Pettibone Road.

Ensure the Appearance of New Industry is of a High Quality.

The Village has one of the largest areas of contiguous vacant industrially-zoned land remaining in Cuyahoga County. The relocation of Cochran Road and the recent provision of water and sewer lines will accelerate the development of new industrial uses in the Village. The appearance of the industrial areas will impact the image of the entire Village and many of the views from the town center which the Village is creating. In order to ensure that industrial development is complementary the Village should:

- ✓ Work with Browning Ferris Industries and their developers to preserve as much of the historical structures and site amenities as possible from the Austin Company Farms. This could involve the Village designating structures as local historical landmarks;
- ✓ Require industrial subdivisions to develop design guidelines or restrictive covenants to be accepted by the Village and which will be used when approving individual industrial buildings or require all industrial buildings to come before Planning Commission for approval;
- ✓ Develop standards for landscaping within parking lots to minimize the amount of large open paved areas and to soften the appearance of industrial sites;
- ✓ Require that sidewalks be developed along major streets, as well as along industrial subdivision roads, so that workers which take public transit, ride bicycles, or wish to walk to other locations within the Village, can travel safely.

Preserve the Rural Character of the Village's Residential Areas

The Village wishes future residential development to be constructed on larger lots so as to maintain the relatively low density which characterizes existing neighborhoods. Preserving open space so all residents have easy access is also desired.

- ✓ Maintain the existing 40,000 square foot minimum lot area;

- ✓ Encourage developers to develop subdivision entryways which are designed with a rural flavor;
- ✓ Require conservation easements to protect natural features;
- ✓ Continue to strictly enforce existing subdivision regulations which are intended to result in neighborhoods which recognize the natural topography;
- ✓ Set aside a reserve fund for acquisition of open space.

Upgrade Pettibone Road

Pettibone Road is the Village's main east-west arterial and the main image many people will have of the community. It is important that the roadway promote the best possible image of the community as well as function efficiently as a connection through the community.

- ✓ Conduct an in-depth traffic study to determine if build-out of the Village will create traffic of sufficient volume to necessitate additional lanes or if intersection turning lanes will be adequate to handle the traffic. The addition of lanes through the center of the Village could have an adverse impact on the character of the area at Old Cochran and Pettibone;
- ✓ Investigate the burying of electric lines as part of the construction if major roadway improvements are undertaken on Pettibone Road;
- ✓ Develop a sidewalk on at least one side of the street in order to connect subdivisions to one another and to the center of the Village;
- ✓ Upgrade gateways at the Oakwood and Solon borders;
- ✓ Encourage development of houses which face Pettibone Road as long as a setback of sufficient depth to protect from the effects of traffic is in place. The development of the front facades toward Pettibone Road will give the road, and hence the Village, more personality. The backs or sides of houses provide a less favorable and less inviting impression as one travels down the road.

Continue Investment in Public Resources to the Degree Necessary to Serve the Village Residents

The Village's population is estimated to peak at roughly 1,500 residents. The Village's working population could grow to 8,000 employees. New development will create the need for additional services but even at build-out the Village will be a relatively small community. Some services can be provided by the community, but others will be contracted out.

- ✓ Initiate discussions with RTA to extend transit service to new industrial areas and the center of the Village;

- ✓ Initiate discussions with surrounding communities for the sharing of recreational facilities which the residents of the Village alone could not support. Such facilities could include a pool and recreation center;
- ✓ Continue discussions with surrounding communities for upgraded fire fighting protection in order to serve future industrial development;
- ✓ Develop small playgrounds at existing recreation sites in the Village and plan for an additional playground area on the north side of Pettibone Road within the residential area;
- ✓ Consider the hiring of full-time employees as new development increases the level of public services required;
- ✓ Implement water and sanitary sewer plans.

Appendices

**APPENDIX A
COMMERCIAL/INDUSTRIAL INVENTORY, AS OF MARCH 1998**

PPN	Name of Company	Address	Type	S.I.C. Code	S.I.C. Description	Employee Range	Bldg. Sq. Ft	County Est. Market Property Value	1/2 Year Real Estate Taxes	Year Total Real Estate Taxes
991-14-010	TABCO	7600 Bond St	N/A	N/A	N/A	N/A	10,840	\$284,000.00	\$2,932.78	\$5,865.56
991-14-016	Carron Asphalt Paving Inc.	7615 Bond St	Constr.	1611	Paving Contractors	20-49	10,605	\$278,029.00	\$2,830.15	\$5,660.30
991-14-012	DDD Enterprises	7620 Bond St	Constr.	1711	AC Contractors	20-49	same as below			same as below
991-14-012	H.D. Development Co.	7620 Bond St	Real Estate	6552	Real Estate	3-4	3,805	\$41,800.00	\$610.04	\$1,220.08
991-14-015	Davey Tree & Lawn Care	7625 Bond St	Constr.	1799	Landscape Contractors	10-19	6,000	\$157,029.00	\$1,715.10	\$3,430.20
991-14-021	Earth Images Landscaping	7555 Bond St	Constr.	1799	Landscape Contractors	N/A	same as below			same as below
991-14-021	Tony Calabrese Construction	7555 Bond St	Constr.	1500	General Contractors	N/A	17,735	\$362,000.00	\$3,844.61	\$7,689.22
991-14-005	J.L. Robbins	7570 Bond St	Constr.	1761	Roofing Contractors	10-19	4,400	\$201,029.00	\$2,628.48	\$5,256.96
991-14-020	Cleveland Air Comfort	7575 Bond St	Constr.	1711	AC Contractors	20-49	6,500	\$171,029.00	\$1,849.37	\$3,698.74
991-14-009	Valores Truck Painting & Body	7590 Bond St	Service	7532	Auto Body/Repair	10-19	12,920	\$208,000.00	\$2,203.93	\$4,407.86
991-15-008	Aero-Mark Inc.	7650 Bond St	Constr.	1611	Pavement Marking	5-9	3,092	\$25,514.00	\$408.49	\$816.98
991-15-004	Graffiti Galore	7680 Bond St	Retail	5943	Stationers-Retail	N/A	same as below			same as below
991-15-004	Industrial Metal Finishing	7680 Bond St	Manuf.	3471	Plating & Polishing	N/A	same as below			same as below
991-15-004	All Type Welding & Fabrication	7690 Bond St	Manuf.	3599	Sheet Metal Fabricators	20-49	same as below			same as below
991-15-004	Custom Decks Plus Inc.	7690 Bond St	Constr.	1799	Special Trade Contractor	N/A	same as below			same as below
991-15-004	Gutters by Rhea	7690 Bond St	Constr.	1799	Special Trade Contractor	N/A	22,500	\$550,000.00	\$5,647.56	\$11,295.12
991-14-014	ACME Construction Co.	7695 Bond St	Constr.	1629	Railroad Contractors	100-249	15,260	\$440,029.00	\$5,694.17	\$11,388.34
991-15-003	Glenwillow Heating & AC	7700 Bond St	C	1711	Heating Contractor	N/A	same as below			same as below
991-15-003	Left Foot Forward	7700 Bond St	N/A	N/A	N/A	N/A	7,586	\$192,000.00	\$2,050.48	\$4,100.96
991-15-002	Corvette Connection	7710 Bond St	Service	7532	Auto Restoration	N/A	same as below			same as below
991-15-002	Feldkircher Budnick & Assoc.	7710 Bond St	Wholesale	5072	Hardware Wholesalers	3-4	5,880	\$195,029.00	\$2,034.16	\$4,068.32
991-15-018	Silver Arrow Systems Inc	7730 Bond St	Transpor.	4212	Local Trucking	20-49	same as below			same as below
991-15-018	Silver Oak Land Development	7730 Bond St	Constr.	1500	General Bldg Contractors	N/A	12,255	\$281,029.00	\$2,904.28	\$5,808.56
991-20-001	Health-O-Meter/Signature Brands	7005 Cochran Rd	Manuf.	3634	Coffee Makers & Related	650	432,800	\$876,514.28	\$8,289.75	\$16,579.50
991-22-002	BFI Offices	7380 Cochran Rd	Public Util.	4953	Landfills	N/A	1,630	\$165,000.00	\$1,582.38	\$3,164.76
991-14-027	Hoover Heating & AC*	28450 Pettibone Rd	Constr.	1711	AC Contractors	N/A	N/A	not applicable	not applicable	not applicable
991-15-019	? (Chas. Sackermann)	28475 Pettibone Rd	Communic.	4800	Communication tower	N/A	4,057	\$510,029.00	\$4,891.27	\$9,782.54
991-09-003	LC DeFranco & Son	28555 Pettibone Rd	Constr.	1623	Sewer Contractors	N/A	same as below			same as below
991-09-003	DLK Construction	28555 Pettibone Rd	Constr.	1600	Heavy Construction	N/A	7,982	\$311,029.00	\$2,982.82	\$5,965.64
991-09-005	DLK Construction	28555 Pettibone Rd	Constr.	1600	Heavy Construction	N/A	N/A	\$71,400.00	\$684.74	\$1,369.48
991-22-005	BFI Transfer Station	30300 Pettibone Rd	Public Util.	4953	Landfills	N/A	44,560	\$762,914.00	\$7,316.49	\$14,632.98
991-22-003	BFI Offices	30555 Pettibone Rd	Public Util.	4953	Landfills	N/A	1,370	\$1,035,029.00	\$9,926.11	\$19,852.22
991-01-002	Mid American Waste Systems	6705 Richmond Rd	Public Util.	4953	Landfills	N/A	3,350	\$142,200.00	\$1,363.72	\$2,727.44
991-01-005	Mid American Waste Systems	6705 Richmond Rd	Public Util.	4953	Landfills	N/A	same as above	\$1,925,000.00	\$18,461.10	\$36,922.20
							637,467	\$9,625,661	\$98,546	\$197,092

*Denotes single-family residence

SOURCES: Inside Prospects, Marking Information Directory, June 1997; Harris Ohio Industrial Directory, 1998; Haines Directory, Address-A-Key, Cleveland & Eastern Suburbs, 1997-1998.

APPENDIX B ALTERNATIVE ANALYSIS IMPACT METHODOLOGY, STANDARDS & ASSUMPTIONS

The four components of an alternative development analysis include compatibility with the goals of the Master Plan, compatibility with surrounding land uses, the physical impacts and the fiscal impacts. The fiscal impacts are especially significant to community officials because the estimated costs and revenues can have a tremendous effect on local governments. Two different methodologies were used to calculate municipal expenditures. The specifics of each of these methodologies can be found in *The Fiscal Impact Handbook*, 1978. The **Per Capita Multiplier** was used to project costs in *residential* scenarios. The second methodology, the **Employee Anticipation Method** was used to project costs in *nonresidential* scenarios. Both methodologies require a detailed analysis of the community's most current annual financial report. They both include some basic assumptions about existing and projected population size, established or planned service infrastructure, and the current allocation of program dollars.

The standards and assumptions listed below were used in the various alternative analyses for the Village of Glenwillow. Many pieces of information were inputted into the calculations for each impact analysis. Many of these numbers were based upon accepted planning standards and general rule-of-thumb guidelines such as parking standards and number of employees. Other assumptions were based upon current market values and conditions such as construction costs and income data. The Cuyahoga County Auditor's Office and the Bureau of the Census also provided information used in the analysis.

The following is a list of standards and assumptions used in the alternative analyses:

Population

Average Persons per Family 2.72

Source: 1990 Population & Housing Characteristics, U.S. Bureau of the Census

Employees

Specialty Retail Employees (per square foot) 1.82

Industrial Employees (per square foot) 2.00

Office Employees (per square foot) 3.29

Restaurant Employees (per square foot) 9.92

Source: Trip Generation, Institute of Transportation Engineers, 6th Edition.

Property Data

Avg. Value of Company Home (existing) \$22,610

Avg. Value of Clustered Housing Home (New) \$180,000

Avg. Value of Single-family Home (Center of town) \$200,000

Avg. Value of Single-family Home (New) \$250,000

Source: 1998 Means Building & Construction data; County Auditor's data

Property Data *Continued*

	Construction cost (per sq. ft.)	Avg. Value of land (per acre)
Specialty Retail	\$67	\$74,400
Office	\$70	\$74,400
Industrial	\$60	\$68,000
Restaurant	\$105	\$74,000

Source: 1998 Means Building & Construction data; County Auditor's data

Property Taxes

1997 Effective Tax Rate (Residential/Agricultural) 50.77

1997 Effective Tax Rate (Commercial/Industrial) 60.05

Source: Cuyahoga County Auditor's Office, 1998

Distribution of 1997 Property Tax Dollars

	Residential/Agricultural	Commercial/Industrial
Village	6.5%	5.5%
School	69.4%	70.4%
County	19.0%	19.5%
Library/Metroparks	5.1%	4.6%

Source: Cuyahoga County Auditor's Office, 1998

Income Tax

Income Tax rate 2.00%

Tax Credit 100%

Credit Limit 2.00%

Source: Cuyahoga County Auditor's Office, 1998

Income Data (1998)

Estimated Avg. Household Income (New Single-family) \$72,000*

Estimated Avg. Household Income (New cluster housing) \$52,000*

* Income needed to purchase new home with 20% down

- Estimated Avg. Employee Income (Office) \$28,000
- Estimated Avg. Employee Income (Office/Retail) \$20,500
- Estimated Avg. Employee Income (Small Shops) \$13,000
- Estimated Avg. Employee Income (Restaurant) \$8,400
- Estimated Avg. Employee Income (Industrial) \$35,000

Source: 1990 Bureau of the Census, adjusted by 3% inflation factor; County Business Patterns, 1995

Expenditure Data

Glenwillow 1997 Financial Report

	Annual Expenses	Per Capita Expenditures
General Government	\$872,100.00	\$1,828.30
Public Safety	\$174,139.00	\$365.07
Public Works (Utility & Street Construction & Maintenance)	\$167,330.00	\$350.80
Health & Welfare	\$73,218.00	\$153.50
Recreation/Leisure	\$0.00	\$0.00
Statutory/Unclassified (Building, Housing, Community Dev.)	\$29,565.00	\$61.98
Debt Service	\$0.00	\$0.00

Source: Glenwillow Comprehensive Annual Financial report, 1997

Residential Development

Per Capita Municipal expenditures \$970.00

Source: Per Capita Multiplier Method, Fiscal Impact Handbook

Nonresidential Development

Employee Anticipation Method: Commercial Multiplier

General Government	0.0000076
Public Safety	0.0000702
Public Works (Basic Utility Services & Street Maint.)	0.0000134
Health & Welfare	0.0000186
Recreation & Culture	0.0001845
Statutory & Unclassified Expenses (Building, Housing)	0.0001561
Debt Service	0.0001079

Source: Employee Anticipation Method, Fiscal Impact Handbook

Traffic Data

Average trips per dwelling unit 9.55
 Average trips per 1,000 sq. ft. (Industrial) 6.96
 Average trips per 1,000 sq. ft. (Office) 11.42
 Average trips per 1,000 sq. ft. (Specialty Retail) 40.67
 Average trips per 1,000 sq. ft. (Restaurant) 130.34

Average Truck traffic (Industrial Development) 8%

Source: Trip Generation, Institute of Transportation Engineers, 6th Edition

Parking Data

Parking spaces (per dwelling unit) 2
 Parking spaces (per 1,000 square feet Office) 3.5
 Parking spaces (per 1,000 square feet Specialty Retail) 5.0
 Parking spaces (per 1,000 square feet Restaurant) 20.0

Source: Glenwillow Zoning Code; Development Impact Assessment Handbook, Urban Land Institute

Environmental Data

	Water Consumption	Sewage Production	Solid Waste Generation
Residential (per capita)	75 gallons/day/multi-family unit	65 gallons/day	0.00175 tons/day
Office (per 1,000 sq. ft.)	93 gallons/day	79.98 gallons/day	0.001 tons/day
Retail (per 1,000 sq. ft.)	106 gallons/day	91.16 gallons/day	0.001 tons/day
Industrial (per employee)	150 gallons/day	129 gallons/day	0.00138 tons/day

Source: Model Factors, Development Impact Assessment Handbook, Urban Land Institute