SENECA COUNTY
COMPREHENSIVE PLAN UPDATE
2001

Seneca Regional Planning Commission
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1.

INTRODUCTION

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Planning can be defined as the deliberate, organized and continuous process of preparing the information necessary to advise elected officials on actions relevant to growth and change. The comprehensive plan, an important product of this process, details the development of goals, and graphically portrays the spatial relationships of a proposed county pattern. The comprehensive plan provides the strategic view of what the community will physically resemble in the future, and the general policy statements of how to get there. It provides the framework for more detailed development or functional plans, such as parks and open space, utilities, land use, transportation and neighborhood redevelopment. It is a guide for developers, landowners, concerned citizens, planning commissions, and elected officials as they make decisions about land.

Comprehensive planning has been done in Seneca County since the 1970's when the Seneca Regional Planning Commission completed the County's first comprehensive plan. As counties grow and experience change, it is often necessary to update the comprehensive plan. Since the last comprehensive plan was completed, the region has experienced growth in population and economic development. The County has also expressed a desire to adopt farmland preservation techniques to preserve the way of life in many of the rural parts of the County. Also, the majority of goals from the previous comprehensive plan has been exhausted or has become outdated. To ensure continued prosperity, the County has determined that a comprehensive plan update is needed. The County began the process of updating the comprehensive plan in June 1999. The plan was completed in November 2001.

Since the plan contains a community vision, citizen involvement in the planning process is critical to its overall success. Before a vision can be established, citizens must understand why planning is important and how the comprehensive plan can become a tool to guide Seneca County into the 21st century.

The comprehensive plan can be characterized as long-range, comprehensive and general. It is long-range in that it projects 20 to 30 years into the future. It is comprehensive in that it encompasses all geographical parts of the community and all the functional elements that

bear on physical development. It is general in that the plan designates only the general location, character and extent of the major physical elements of the community.

The plan is based on citizen input and careful studies of the planning areas, which merge into a broad consensus on land use and the location of future development. That is, the comprehensive plan sets forth a realistic vision for how the community should grow and develop. It is flexible, however, capable of responding to changing needs and technical innovation.

To be an effective guide into the future, the comprehensive plan must be a clear and definite statement of policy, it should be used by city officials and interested citizens, and it should be officially adopted by the legislative body of the community.

2.

COUNTY PROFILE

2

COMMUNITY PARTICIPATION

Community participation is an essential component of the comprehensive planning process. In Seneca County, public input was obtained through interviews, focus groups, and surveys with local officials, County residents, and realtors.

COUNTY OFFICIALS SURVEY

Early in the planning process, Seneca County officials were surveyed to provide critical input on the County's major issues, assets, and limitations. The significant issues identified during this process were further explored in countywide, topic-specific focus groups. This section outlines the key points from the survey. The detailed survey results are located in the Appendix.

According to County officials, one of Seneca County's greatest strengths is its educational opportunities. In addition to strong public and private schools, the County is home to two colleges: Heidelberg College and Tiffin University. Another strength is the nature of the County's citizenry. Seneca County residents were described as hardworking and dedicated individuals who have strong roots in their communities. Conversely, officials identified the County's weaknesses including an inadequate road system, lack of industrial employment opportunities, insufficient local shopping and retail, and inadequate land use planning.

In describing the development pressures in the County, officials indicated conflicts between farmland and residential and industrial growth. Growth and economic expansion was desired, but with minimal conversion of prime farmland. Officials wished to ensure adequate infrastructure before development occurred and to maintain the rural character of the County. Planning on a regional basis was cited as the best way to manage growth. They also recognized the need to cooperate and coordinate planning efforts with neighboring jurisdictions.

While County officials were in favor of growth, they stated a desire to avoid strip development along County and township roads. This type of development was acknowledged to cause traffic and safety issues. Instead, more compact development in existing urban areas or areas with appropriate infrastructure was preferred to minimize land consumption. The implementation of growth management techniques would also help preserve significant natural and historic features such as the Sandusky River corridor, County parks, and historic municipal downtowns.

Overall, County officials' goal for this planning process was to identify issues, discuss concerns, and reach consensus on matters where competing interests were involved. Officials also indicated the need for a long-range plan that would guide future growth into sound development patterns.

CITIZEN INPUT

ATTITUDE SURVEY

The attitude survey was developed to gain the community's perspective on many of the same issues addressed in the County officials survey. Results indicated that Seneca County's officials are mostly in agreement with the attitudes of County residents. As with the officials, citizens of the County found the region's two colleges to be significant strengths. They also stated that Seneca County's agricultural base and engineering department were positive attributes. In contrast, weaknesses included the lack of improved state highways, uncontrolled growth, lack of interjurisdictional cooperation, and law enforcement. Citizens and officials alike acknowledged that the encroachment of development on farmland is a critical County issue.

The County officials survey and the citizen attitude survey helped to identify major issues in Seneca County. From these results, five major areas of concern became the topics for countywide focus groups.

FOCUS GROUPS

In June 2000, residents of Seneca County facilitated and participated in focus groups aimed at exploring several plan-related topics more deeply. Participants addressed a series of questions on one of five topics: economic development, intergovernmental relationships, farmland preservations, urban growth / growth management, and community services. The following sections are brief summaries of the process results.

Economic Development

Seneca County was described as having average economic health. While there is a lack of large industries and major employers, there are a great number of smaller industries with high technology jobs. The economic climate of the County is one where most families must have

dual incomes to make ends meet. However, the County's economy was characterized as "up from the bottom" from where it was in the 1980's.

Two factors that have contributed to recent economic progress are the presence of two colleges in the County and the cooperation amongst all agencies and levels of government. Heidelberg College and Tiffin University have made positive impacts by providing educational and employment opportunities. Also, the relationship between County agencies and governmental bodies has had a positive economic impact. Continued cooperation is critical to further economic objectives and to increase communication with County residents and potential new industry leaders.

Conversely, the County's transportation network and school systems were cited as the main problems negatively affecting economic development. It was agreed that the quality of the schools and transportation system had an impact on industry decisions to locate in the area.

When asked to identify what types of commercial and industrial growth should be encouraged in the County, citizens favored smaller "locally owned" types of development. However, it was also recognized that the location of any industry should be encouraged. Furthermore, the use of an apprentice program to train employees could be beneficial by encouraging both technical training and 4-year degrees. The County should make use of existing areas by encouraging planned growth and redevelopment of brown fields, and industries should be located along the rail system to make better use of existing infrastructure. Furthermore, development should be concentrated close to cities and not spread into highly productive farmland.

According to the focus group participants, the parties responsible for economic development in the County include the Seneca Industrial & Economic Development Corporation (SIEDC), the commissioners, mayors, County engineers, and utility companies. There was a recognized need to be more aggressive in attracting business; however, there was an acknowledgement that highway constraints pose a significant economic development limitation. Another concern was the balance between planned growth and economic reality. The idea of planned growth is that all entities should be included in the process of determining where new industries locate. However, the economic reality of the situation is that local entities do not always have control over where a particular industry locates. In order to promote positive economic growth countywide, there should be a cooperative understanding between all agencies, citizens, and public officials so all parties can be involved in new industry proposals.

Finally, the group identified ways to enhance economic development in the County. These included social goals of strengthening the family unit and instilling a better work ethic in young people, as well as physical improvements in the road system and farmland preservation. Additionally, the group felt existing businesses should be supported to a greater extent and that tax incentives for new businesses are a necessary evil in order to compete with other municipalities.

Intergovernmental Relationships

A group consisting of public officials from the County, cities, and townships discussed the issue of intergovernmental relationships. Major issues of countywide concern include farmland preservation, water quality issues, and the impact of regulations on smaller villages and rural areas. One common water quality concern was ground source pollution due to failing septic systems.

Group members felt that past cooperation between different branches and levels of government was strained, but over the past three to five years, major improvements had been made. Areas of opportunity for continued intergovernmental cooperation include an intergovernmental working agreement, industrial growth, infrastructure, and the use of Issue 2 monies for roadwork and regional planning. Other areas of cooperation cited include working as partners with various privately owned utilities such as Ohio American Water Company, Rural Electric, and others.

The group also indicated that all political jurisdictions should work together on growth issues. Growth could be managed through brown field renovations and effective use of land use planning and zoning. Group members stated that "growth should be a win-win situation" and that government should not "reinvent the wheel" when handling growth issues. Finally, suggestions for enhancing intergovernmental relationships were the creation of a regional planning newsletter and greater use of the website.

Farmland Preservation

Focus group members defined prime farmland using both qualitative and quantitative standards. They indicated prime farmland is profitable and consists of loam soil with good drainage and level topography. These qualities must also exist in sufficient quantity, estimated by the group to be over 25 acres, to be considered prime. Agricultural uses in the County consist of traditional crops such as corn soybeans, wheat, alfalfa, hay, and oats as well as vegetable crops, horticultural uses, and livestock production.

The group indicated that there are some uses that are compatible with agricultural uses, namely residential. However, not all types of farming are compatible with residential uses, a leading example being hogs. The group was asked to consider whether non-agricultural uses should be prohibited in agricultural areas. Participants were hesitant to impose prohibitions, indicating that landowners should be able to determine the use of their property within the framework of local zoning regulations. When questioned as to possible minimum lot size requirements, several participants reiterated their concern over the rights of property owners. The only consensus was that a minimum lot size should be established that was necessary for a leach bed.

Recognizing agriculture as integral to the economy and character of the County, prime farmland should be preserved. Methods of preservation included the use of restrictive wills, trusts, government programs, and keeping farms in the family. Capital gains taxes and tax

abatements were cited as factors that negatively impacted rural areas. Additionally, urban redevelopment might help to stop encroachment and pressure on prime farmland.

Several problems related to the implementation of a farmland preservation plan were identified. Two of these were funding issues and the buyout of development rights by private corporations that may seek to prohibit farming. Other concerns were lack of respect for private property rights and lack of support for agriculture among the citizenry.

Urban Growth / Growth Management

Seneca County faces a number of growth-related issues. When asked to identify issues and problems related to growth in the County, the group cited farmland issues as a hot topic. Of prime concern was the construction of new housing in farm areas. Drainage issues, watersheds, and sewer tiles were also seen as important growth issues. The group felt zoning in the townships must be upheld in order to counter potential growth problems.

The group cited growth management as a means to plan ahead for growth and prevent the further environmental degradation of the land. One growth management strategy is to limit public services to areas of compact growth. However, the focus group felt that rural areas do need resources, and fire and security services should be provided to them. There was consensus that services should be provided except in cases where it was not financially feasible. Proper zoning requirements are also advantageous in managing growth.

It was recognized that growth comes with certain costs associated with the provision of infrastructure and services. The County sees increased traffic as one reason for the increased costs of growth. The group felt the responsibility of paying for growth should lie with the government or by establishing a tax base. Another solution could be that developers could pay for the services and then recoup the money when the project sells. The buyers would also maintain the financial support. Currently, new homeowners are carrying the weight of tax issues.

The group cited changing laws, new officials, and township opposition to growth as impediments to managing growth. Another barrier to implementing growth management strategies are citizens' "not in my backyard" attitudes. Other obstacles include difficulties in revitalizing or rebuilding old buildings and determining which parties have responsibility or control. However, given the citizenry's concern about loss of prime farmland and land conversion, growth management will be a valuable tool as the County faces development pressures in the future.

Community Services

Generally, service provision within the County was viewed positively. However, the group recognized a growing need to meet increasing demands with fewer resources. Concern was expressed that the public does not understand the limitations in services that the government can provide. Specifically, new rural residents expect services to be offered at the same level as they are in town, such as the availability of parks and recreation opportunities.

The need for public support was indicated by the group, which cited as an example the failure of a County levy that prevented the County park district from upgrading and improving the park system. School funding was also an important concern, as the schools are seen as focal points of the community. According to the group, all of the schools--public, parochial, college, and university--need to be promoted.

DEMOGRAPHICS

Population, growth rates, and the socioeconomic characteristics of a County's inhabitants are inseparably linked to its demographics. The analysis of these factors creates a greater understanding of the influences that affect the livelihood of the County. Furthermore, population data can assist the County in determining its economic, educational, transportation, employment, and recreational demands.

POPULATION

The 2000 US Census provided the most recent population figure for the Seneca County. According to the Census, the County's population was 58,683, a population decrease of almost two percent since 1990. In contrast, the State of Ohio experienced a growth rate of nearly five percent during the same time period. Table 2.1 illustrates the population census figures for 1950 through 2000 in Seneca County. This data will later be used in this analysis to calculate population projections.

Table 2.1

Year	Population	% Change
1950	52,978	--
1960	59,326	12.0 %
1970	60,696	2.3 %
1980	61,901	2.0 %
1990	59,733	-3.5 %
2000	58,683	-1.8 %

Source: ODOD, Department of Strategic Research

Table 2.2 indicates the populations for Seneca County's largest municipalities based on the 1990 Census and the 2000 Census. According to this data, the two largest cities—Tiffin and Fostoria—have been losing residents. The remaining villages in the County have had a wide distribution of population growth and loss since 1990.

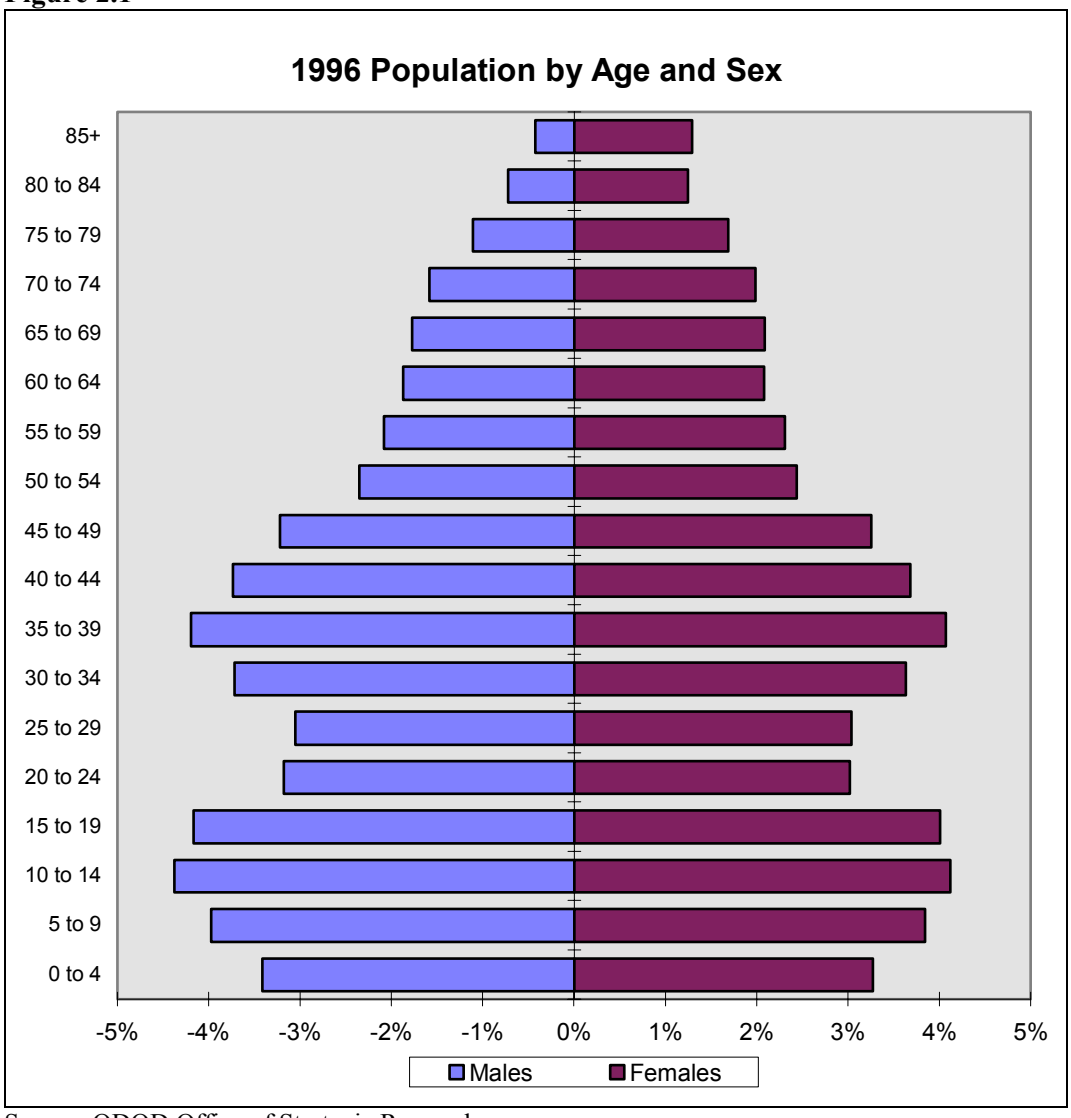
Table 2.2

Largest Municipalities in Seneca County			
	1990	2000	% Change
Tiffin city	18,604	18,135	-2.5 %
Fostoria city	10,836	10,035	-7.4 %
Bloomville village	949	1,045	10.1 %
Attica village	944	955	1.2 %
Bettsville village	752	784	4.3 %
Green Springs village	731	648	-11.4 %
Republic village	611	614	0.5 %
New Riegel village	298	226	-24.2 %

Source: US Census Bureau

Seneca County's 1996 population is shown distributed by age and gender in Figure 2.1. The population pyramid shows a fairly similar distribution in comparison with other counties in the nation. One trend to note is the swell of individuals in their mid 30's to early 50's, the baby boomers, and a corresponding swell of their children, ages 5 to 19. Due to the aging of the baby boomers, the elderly population should continue to grow in the next several decades.

Figure 2.1

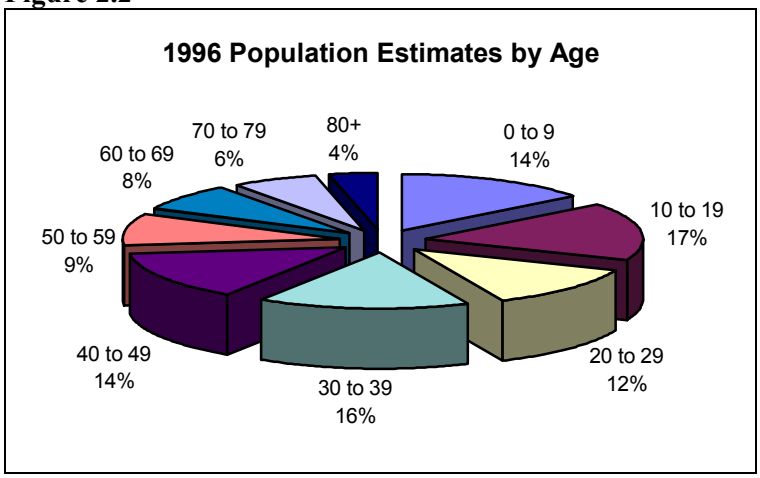


Source: ODOD Office of Strategic Research

The 1990 US Census determined that Seneca County had a total of 21,227 households with an average of 2.71 persons per household. The Census also recorded that the County was home to 15,776 families where a family is defined as two or more related individuals living together. Of these, 13,113 (83.1 percent) were married couples. Approximately half of the married couples had children living with them at the time. Additionally, females headed 12.7 percent of the County's families. The mean number of persons per family was 3.21.

The age breakdown for 1996 in Seneca County is illustrated in Figure 2.2. The chart shows that the largest age cohorts coincide with the younger age groups, as expected. There is a consistent decline in population following the 30 to 39 age cohort.

Figure 2.2



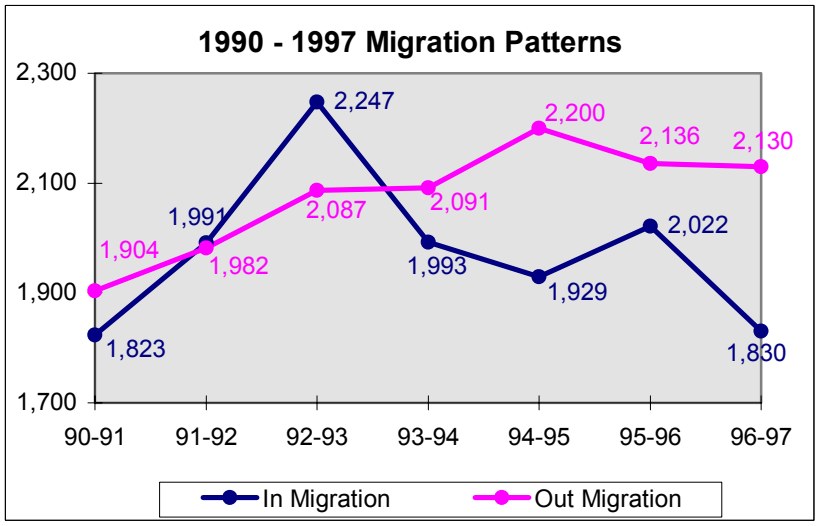
Source: ODOD Office of Strategic Research

ELEMENTS OF CHANGE

Population change can be caused by three factors: birth, death, and migration. The first two factors combined usually contribute to positive growth as the number of births, in most cases, outnumbers the number of deaths. However, a decline in family size during the second half of the 20th century and increasing longevity have both contributed to a declining birth rate. There is less predictability in the third factor, migration behavior, which is more variable and not easily foreseen.

Past migration patterns offer some clue as to future population trends in the County. Figure 2.3 depicts in and out-migration that occurred between 1990 and 1997 in Seneca County. Out-migration slowly increased and then leveled off over this time period. However, in-migration has been more inconsistent, rising in the early 1990's and declining later in the decade. In 1997, migration contributed to a net loss of 300 persons.

Figure 2.3



Source: ODOD Office of Strategic Research

POPULATION PROJECTIONS

Population projections are useful tools as they use past and present growth patterns to predict future populations. By having these projected estimates, the County will better be able to anticipate and plan for the needs of a growing or declining population.

Population projections can be calculated in several ways. First, aggregate methods can be used to determine growth of the population as a whole. Examples of aggregate methods include the linear growth model and the constant growth model. Second, the various components of demographic change—deaths, births, and migration—can be dealt with separately. These components are largely independent processes that change by differing amounts at varying times, affecting segments of the population in diverse ways. The method used for this analysis is called the cohort component method.

AGGREGATE METHODS

The complete process including methodology, data, and formulas used to compute aggregate population projections for this section is located in the Appendix.

LINEAR GROWTH MODEL

The linear growth model assumes population grows or declines following a straight line with constant slope indicating a constant incremental change. This method can be flawed, particularly in newly developing regions that often experience bursts of growth and increasing incremental change. This method is most appropriate for small, slow-growing regions.

CONSTANT GROWTH MODEL

The constant growth model inflates the population assuming that relative change remains the same. This method creates a geometric curve where population grows or declines at a constant rate. However, this method does not take into account that growth will inevitably be limited by saturation of land or resource constraints, both physical and fiscal.

Table 2.3 represents the outcomes of both the linear and constant growth population projections. Due to the slow rate of population change in Seneca County, both methods yield similar results. According to the projections, the County's population will fall to approximately 56,600 by 2020.

Table 2.3

Aggregate Population Projections				
Technique	**2005**	**2010**	**2015**	**2020**
Linear growth	58,158	57,633	57,108	56,583
Constant growth	58,168	57,658	57,153	56,652

COHORT COMPONENT METHOD

As previously stated, the cohort component method uses the three indicators of growth—birth, death, and migration—in determining growth rates. This is a more sophisticated method than aggregate methods because it is able to take into account shifts in the factors of growth over a large area. Cohort component models divide a population into five-year age groups. These models may also divide a population by sex and sometimes race. Because of the relative homogeneity of the population in Seneca County, the population was not broken up into race segments. These divisions are used to isolate population segments that experience significantly different demographic rates from the rest of the population.

Table 2.4

Cohort Component Population Projections	
Year	**Population**
1990	59,733
1995	59,853
2000	58,371
2005	57,214
2010	54,313
2015	52,416
2020	50,749

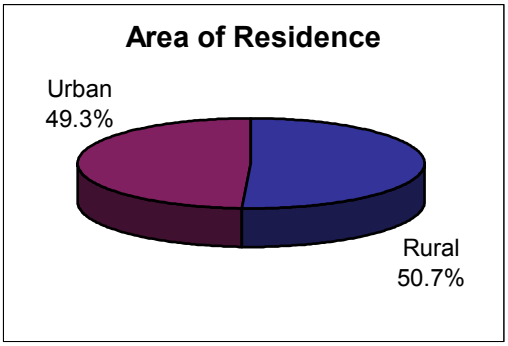
The cohort component projection was calculated based upon the 1990 Census. According to the projection, the population of Seneca County will decrease by 2020. Projection results are shown in Table 2.4. The County's actual 2000 population was 58,683, which shows that the projection was low by less than one percent.

The complete process including methodology, data, and formulas used to compute the cohort component population projection for this section is located in the Appendix.

POPULATION CHARACTERISTICS

So far, population change in Seneca County has been discussed in general terms and by citing specific changes based on age group and location. To have a greater understanding of the County's demographics, population should also be looked at in terms of a variety of social characteristics.

Figure 2.4



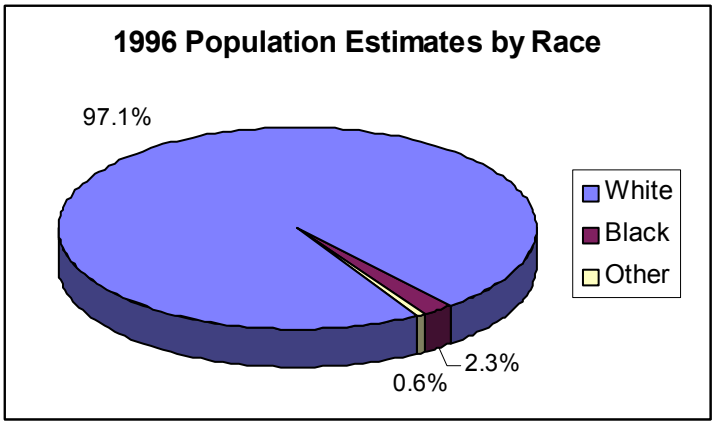
Source: 1990 US Census

Seneca County has a significant rural population. Figure 2.4 indicates that as of 1990, just over half of the County's residents lived outside of an urban area.

The racial composition of Seneca County is largely homogeneous, as seen in Figure 2.5. Whites comprise 97.1 percent of the population while blacks make up 2.3 percent and other racial groups constitute only 0.6 percent. For purposes of this analysis, persons of Hispanic decent could be of any race. The lack of diversity in the County's ethnicity is common in communities with strong agricultural sectors.

In 1998, enrollment in Seneca County public schools was 9,888. That year, the graduation rate was about 90 percent while the dropout rate was 3.25 percent. In contrast, Ohio had a 5.3 percent dropout rate and an 86.5 percent high school graduation rate.

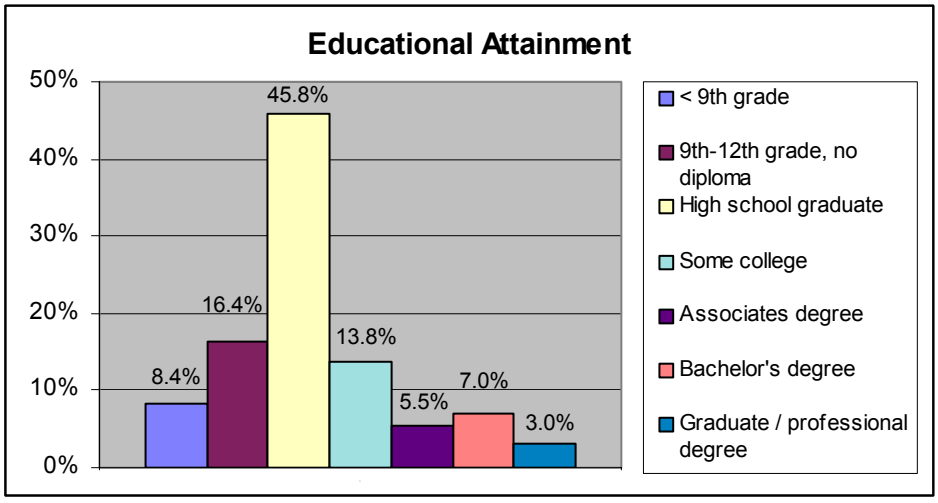
Figure 2.5



Source: ODOD Office of Strategic Research

Figure 2.6 indicates educational attainment as reported by the 1990 US Census. Approximately 75 percent of the residents in Seneca County ages 25 and older have graduated from high school. Additionally, almost 30 percent of the County's residents have had education beyond high school. In comparison with Ohio, Seneca County has virtually the same number of persons who have obtained their high school diploma. However, Seneca County has proportionally fewer persons with bachelors or graduate degrees than Ohio.

Figure 2.6



Source: 1990 US Census

During the 1990's, dropout rates fluctuated in Seneca County significantly. While steady between 2.2 and 2.7 percent through much of the decade, dropout rates increased in 1996 and 1997 to over five percent. However, in 1998, dropout rates declined by two percent near previous levels.

3.

GOALS & OBJECTIVES

3

Goals, objectives, and policies for Seneca County were developed as a result of input from focus groups, interviews with local officials, and citizen surveys. Three themes emerged as primary goals of the Plan: Quality of Life, Balanced Growth, and Efficient Services. A focus on these principles will permit Seneca County to accommodate growth while retaining the character and inherent attractiveness so important to the citizens of the County. The following major goal statements and objectives reflect these three themes.

More specific policies and implementation strategies for each goal are detailed in Chapter 9.

1. Maintain and enhance the standard of living for all citizens of Seneca County.

1.1 Increase the economic development potential of the County.

1.2 Provide a range of housing choices for all residents.

1.3 Ensure all residents have access to quality open space and recreation opportunities.

1.4 Preserve and protect historic sites and structures in the context of their natural settings.

1.5 Maintain the rural character of the County.

2. Encourage growth that focuses upon existing urban areas and respects the intrinsic values of the land.

2.1 Encourage growth that builds upon existing municipalities, and support new residential, commercial, and industrial growth only within identified urban growth boundaries where public infrastructure is available.

2.2 Utilize growth management principles.

2.3 Preserve prime farmland recognizing agriculture as a viable economic resource.

2.4 Protect sensitive environmental areas such as woodlands, steep slopes, endangered species habitats, and native flora and fauna from the impacts of development.

2.5 Encourage intergovernmental cooperation and collaboration among political jurisdictions and between governmental agencies.

3. Ensure timely and orderly development within the County by making strategic public investments in infrastructure and services.

3.1 Preserve the character of existing rural highways and promote a safe and efficient transportation system.

3.2 Minimize private and public costs of installing and maintaining public utility lines by limiting service provision to urban growth areas.

3.3 Encourage the joint use of all County facilities where feasible.

4.

LAND USE

4

INTRODUCTION

Measuring the magnitude of land use change and the potential for future change is an important activity of the planning process. In this chapter, existing land use conditions and the physical and economic factors that influenced change during the past 25 years were evaluated, and they served as the baseline for the development of this plan. During the past few decades, Seneca County has experienced many of the same general trends prevalent throughout rural Ohio: the upward and outward migration of local residents to the rural farming areas of the County. This emerging land use pattern has created a number of conflicts between the farming community and the new exurban residents moving into these areas. Additionally, the costs associated with providing services to these areas has continued to increase as more of these development patterns occur over time.

REGIONAL PERSPECTIVES

Two communities currently serve as population and economic centers for Seneca County. The cities of Tiffin and Fostoria along with the five incorporated villages collectively make up approximately half of the County's population and serve as the County's major commercial and industrial centers. Land uses in these communities make up the majority of high intensity development in the County with the exception of major mining operations and railroad switching stations located in the unincorporated areas.

During the 1990's Seneca County's new housing starts have been relatively stable ranging from 153 structures in 1993 to 201 structures in 1998.[1] Recent statistics for 1999 reflect 166 new housing starts with 248 new starts occurring in 2000.[2] Even though the 2000 Census reflects a decline in population of approximately 1.5 percent, new housing starts and lot split

[1] ODOD, Department of Strategic Research

[2] Seneca Regional Planning Commission

activities reflect an increasing trend in construction. These numbers are indicative of the overall trend in the state's rural areas of population redistribution along with greater land consumption.

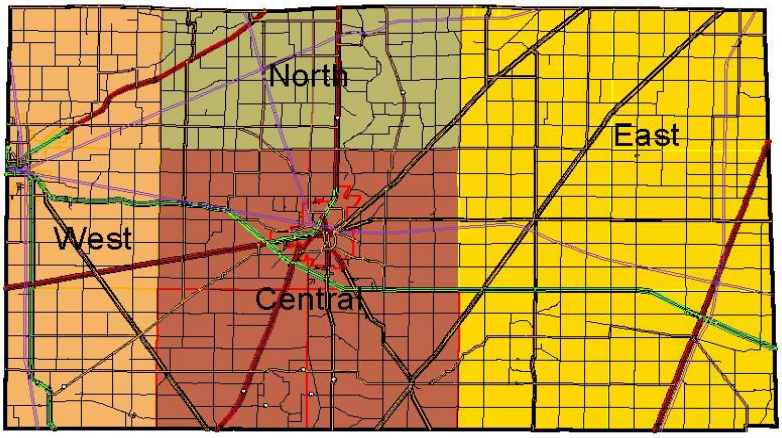
There exist a number of alternatives available to Seneca County to address this outward development pattern. Through the adoption of a series of regulatory and intergovernmental initiatives, this plan suggests that development should occur, whenever possible, within existing community service boundaries or existing hamlet settlements where adequate central water and sewer services exist or are programmed to be provided.

Additionally, it is suggested that leap-frog development such as lot splits on existing highway frontage and exempted 5 acre+ developments be discouraged whenever possible through the implementation of a county/township zoning initiative. It was this type of development pattern that concerned many of the citizens who participated in the focus group sessions, in addition to the need for the preservation of the County's very valuable and economically productive farmlands.

PLANNING AREAS

Four distinct planning areas were established during the planning process. By creating these geographically unique planning areas, statistical summaries have been calculated representing logical planning management sub-regions for the County. Each planning area represents a definable geographic, economic, cultural, and environmental region, providing the basis for their collective commonality. This sub-regional breakout also lends itself to a more targeted policy implementation process. The designated planning areas of the County are the central, north, west, and east.

Map 4.1



Central Planning Area: Clinton, Hopewell, Seneca and Eden Townships, and the City of Tiffin.
West Planning Area: Jackson, Loudon, and Big Spring Townships, the Village of New Riegel and the City of Fostoria.
North Planning Area: Liberty and Pleasant Townships and the Village of Bettsville.
East Planning Area: Adams, Scipio, Thompson, Reed, Bloom and Venice Townships, and the Villages of Republic, Green Springs, Bloomville, and Attica.

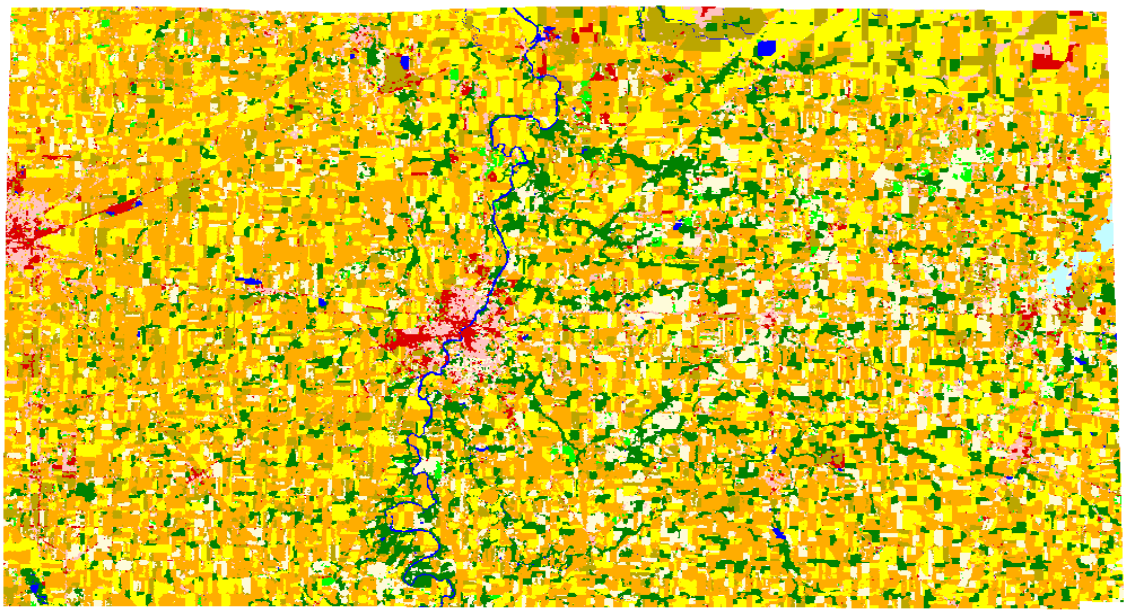
CURRENT LAND USE

LAND USE/LAND COVER 1999

The current Land Use/Land Cover map was derived from Landsat 7 Satellite imagery utilizing Erdas Imagine 8 imaging software. The NDVI (Normalized Differential Vegetation Index) classification process was used to derive the final land use coverage through an iterative scientific process for both the unsupervised and supervised land use/land cover classification system. This 1999 Land Use/Land Cover classification (see Map 4.2) provides the basis for the assessment of current agricultural and urban land uses, and provides the baseline for future land use evaluations. The land use summary for the county can be found below in Table 4.1.

It should be noted that the land use classification prepared for this plan is a unique agricultural land use/land cover inventory, unlike traditional land use inventories conducted by the State of Ohio.

Map 4.2



Using this analysis, it was determined that soybeans were the dominant crop in 1999 with just over 139,000 acres in production. This equates to 39 percent of the County's area. Soybeans were followed in production by corn, with over 78,700 or 22 percent of the County's area. High intensity urban land uses accounted for 6,500 acres or almost two percent of the County's area while low intensity urban land uses covered nearly 15,000 acres or four percent of the County.

One of the first applications of this land use classification was the isolation of the low and high intensity land uses from the County coverage. These patterns reflect an ongoing and evenly distributed pattern of unmanaged growth throughout Seneca County. Map 4.3 reflects both housing patterns from the County Auditor's Database, and the filtered low and high intensity urban land uses from the 1999 Land Use Classification. The general distribution of residential land uses in Seneca County as can be seen below, reflects a linear pattern of development along most of the existing road network.

Map 4.3: 1992 residential patterns & 1999 Seneca County low & high intensity land uses

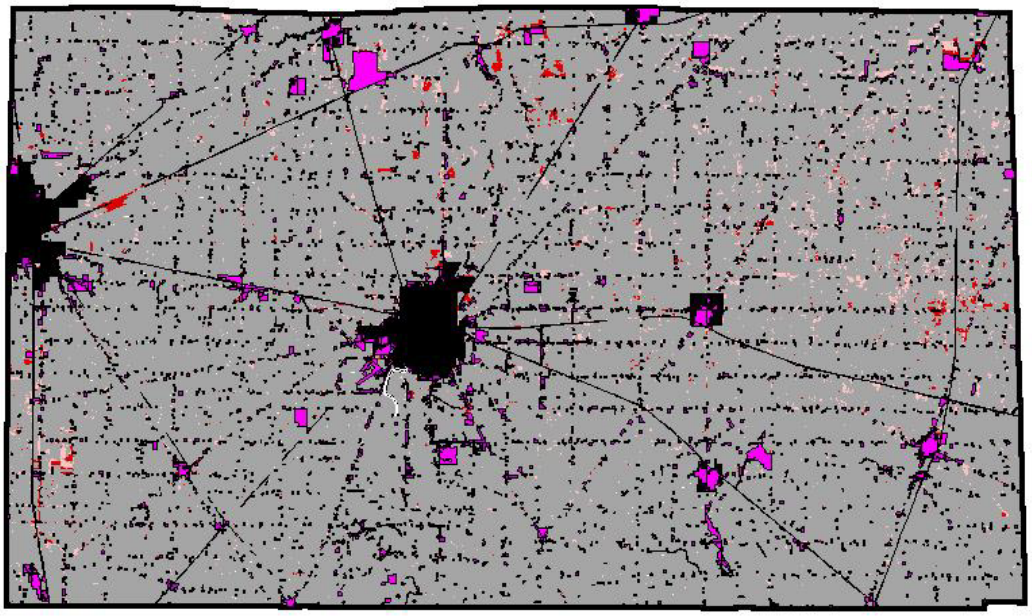


Table 4.1

Land Use/Land Cover Category	Area (Acres)	% Area
Ag-Corn	78,749.860	22.28 %
Ag-Other	37,564.706	10.63 %
Ag-Soybean	139,156.756	39.37 %
Ag-Wheat	30,716.694	8.69 %
Grass/Pasture	3,115.900	0.88 %
Open Water	2,559.984	0.72 %
Urban-High Intensity	6,541.711	1.85 %
Urban-Low Intensity	14,884.930	4.21 %
Wooded	40,163.479	11.36 %
Total	**353,454.020**	**100.00 %**

The cumulative impact of this type of development pattern is considerable, and generates increased maintenance costs for both the County and associated Township governments.

CENTRAL PLANNING AREA

The central planning area is comprised of Clinton, Eden, Hopewell, and Seneca Townships and the City of Tiffin and covers just over 92,500 acres or approximately 26 percent of the total land area of Seneca County.

The predominant crop in this planning area in 1999 was soybeans with nearly 36,000 acres under till, reflecting 38 percent of the central planning area. Corn crops comprised nearly 18,000 acres or 19 percent of the plan area.

High intensity urban land uses accounted for just over 2,000 acres or two percent of the central plan area while low intensity land uses occupied over 3,800 acres or four percent of the plan area. The bulk of these high and low intensity urban land uses were clustered around the city of Tiffin. Approximately 13,250 acres or 14 percent of the central planning area is covered with woods. For a summary of these land uses, see Map 4.4 and Table 4.2.

Map 4.4

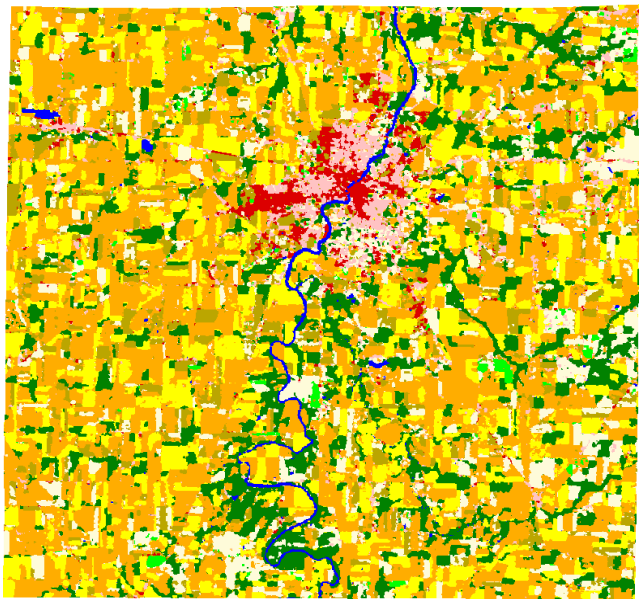
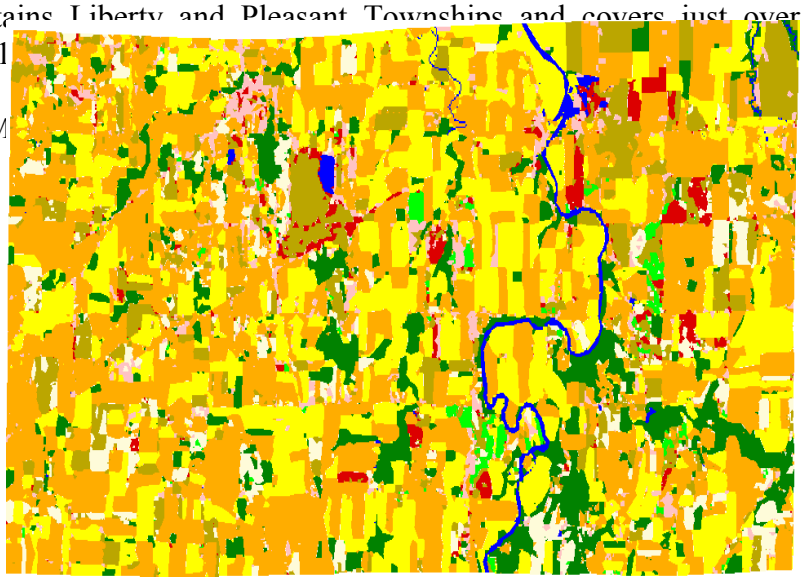


Table 4.2

Central Planning Area LU/LC	Acres	% Plan Area
Ag-Corn	17,954.705	19.39 %
Ag-Other	10,649.755	11.50 %
Ag-Soybean	35,980.020	38.86 %
Ag-Wheat	7,219.839	7.80 %
Grass/Pasture	792.056	0.86 %
Open Water	895.615	0.97 %
Urban-High Intensity	2,022.930	2.18 %
Urban-Low Intensity	3,827.525	4.13 %
Wooded	13,251.381	14.31 %
Total	**92,593.826**	**100.00 %**

NORTH PLANNING AREA

The north planning area contains Liberty and Pleasant Townships and covers just over 46,300 acres or approximately 1



The predominant crop in M this planning area in 1999 was soybeans with over 18,500 acres reflecting 40 percent of the north planning area. Corn crops comprised just over 12,000 acres or 26 percent of the planning area.

High intensity urban land uses accounted for 983 acres or two percent of the north planning area while low intensity land uses occupied over 1,800 acres or four percent of the plan area. Approximately 4,500 acres or ten percent of the planning area is covered with woods. For a complete summary of these land uses, see Map 4.5 and Table 4.3.

Table 4.3

North Planning Area LU/LC	Acres	% Area
Ag-Corn	12,015.133	25.91 %
Ag-Other	2,779.504	5.99 %
Ag-Soybean	18,661.488	40.24 %
Ag-Wheat	4,550.540	9.81 %
Grass/Pasture	477.633	1.03 %
Open Water	573.137	1.24 %
Urban-High Intensity	983.139	2.12 %
Urban-Low Intensity	1,819.068	3.92 %
Wooded	4,510.581	9.73 %
Total	**46,370.222**	**100.00 %**

WEST PLANNING AREA

The west planning area is made up of Big Spring, Jackson, and Loudon Townships and the portion of the City of Fostoria located within the Seneca County boundary. The west planning area occupies over 70,200 acres or approximately 20 percent of the total area of Seneca County.

The predominant crop in this planning area in 1999 was soybeans with over 33,200 acres or 47 percent of the west planning area. Corn crops comprised nearly 16,000 acres or 23 percent of the planning area.

High intensity urban land uses accounted for about 1,800 acres or three percent of the west planning area while low intensity land uses occupied nearly 3,200 acres or five percent of the planning area.

Approximately 3,600 acres or five percent of the west planning area is covered with woods. The majority of these high and low intensity urban land uses were clustered around the city of Fostoria. For a complete summary of land uses, refer to Map 4.6 and Table 4.4.

Map 4.6

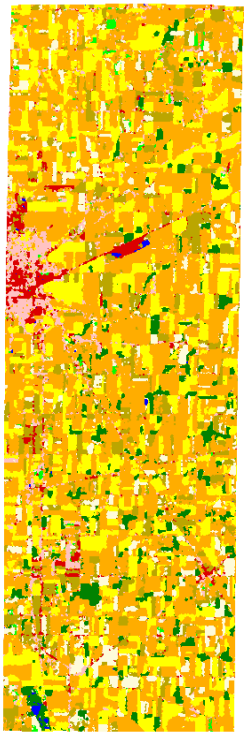


Table 4.4

West Planning Area LU/LC	Acres	% Area
Ag-Corn	15,829.610	22.54 %
Ag-Other	4,904.433	6.98 %
Ag-Soybean	33,277.444	47.39 %
Ag-Wheat	7,114.925	10.13 %
Grass/Pasture	380.055	0.54 %
Open Water	121.081	0.17 %
Urban-High Intensity	1,765.970	2.51 %
Urban-Low Intensity	3,193.249	4.55 %
Wooded	3,637.709	5.18 %
Total	**70,224.476**	**100.00%**

EAST PLANNING AREA

The east planning area consists of six townships including Reed, Adams, Bloom, Scipio, Thompson, and Venice Townships in addition to a portion of the Village of Green Springs. The east planning area occupies over 144,000 acres or approximately 40 percent of the total area of Seneca County.

Map 4.7

The predominant crop in this planning area in 1999 was soybeans, with nearly 51,238 acres or 35 percent of the east planning area. Corn crops made up 32,950 acres or 23 percent of the planning area. High intensity urban land uses accounted for just less than 1,800 acres or one percent of the east planning area while low intensity land uses occupied almost 6,050 acres or four percent of the planning area. Nearly 19,000 acres or 13 percent of the east planning area contains woodlands.

For a complete summary of land uses refer to Map 4.7 and Table 4.5. It should be noted that approximately 750 acres (0.52 percent of the planning area shown as light blue) along the eastern border of this planning area was obscured by clouds in this satellite image. In this area the land use and land cover categories were inaccurate and are indicated as cloud in this summary.

Table 4.5

East Planning Area LU/LC	Acres	% Area
Ag-Corn	32,950.508	22.84 %
Ag-Other	19,231.102	13.33 %
Ag-Soybean	51,237.934	35.52 %
Ag-Wheat	11,831.502	8.20 %
Grass/Pasture	1,466.184	1.02 %
Open Water	970.169	0.67 %
Urban-High Intensity	1,769.748	1.23 %
Urban-Low Intensity	6,045.277	4.19 %
Wooded	18,763.838	13.01 %
Cloud	749.445	0.52 %
Total	**144,266.262**	**100.00 %**

FUTURE LAND USE

BACKGROUND

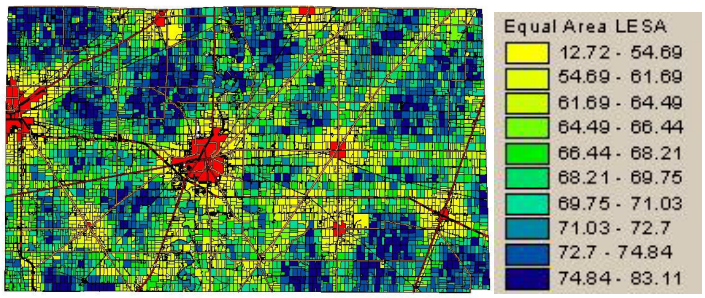
The Future Land Use Plan reflects the input from County citizens through the use of one-on-one interviews, focus groups, and surveys. The first component of the planning process involved the development of the Seneca County Farmland Preservation Plan. The cornerstone of this effort centered on the development of a Land Evaluation Site Assessment (LESA) model. A complete discussion on the model can be found on pages 4.23 to 4.30.

The Farmland Task Force met monthly over a period of a year, with the plan being adopted in June of 2000. Final outputs from the model were subsequently selected to serve as the foundation of the final land use plan. Parcels that scored in the top 30 and middle 40 percentiles of the LESA model were designated as farmland preservation categories one and two respectively. In addition, critical resources were defined as areas containing designated 100-year flood plains, and perennial streams with associated buffers of 120 feet.

OVERVIEW

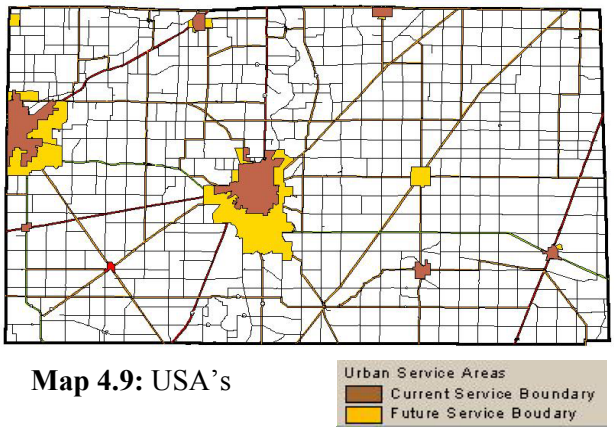
Throughout the planning process, Farmland Task Force and steering committee members stressed the desire to preserve farmland and protect the County's natural and scenic resources. This same recognition was also found in the results of surveys and focus group sessions conducted during the process. Based upon these factors, a number of assumptions have gone into the developmental logic of the future land use plan. They include the following:

1. The "Equal Area" parcel scoring designation of the LESA model was selected by the steering committee as the classification method to be utilized in determining areas suitable for agricultural preservation. In using this method, breakpoints were established for 10 classification categories each representing approximately 10 percent of the total unincorporated areas of the County. Ultimately, the top 70 percent of the LESA parcels (LESA scores >64.49) falling outside of the defined Urban Service Areas (USA's) were selected for agricultural preservation. The top scoring 30 percent (>71.03) of LESA parcels were prioritized for the highest level of agricultural preservation with the middle scoring 40 percent of LESA parcels carrying the second agricultural designation.



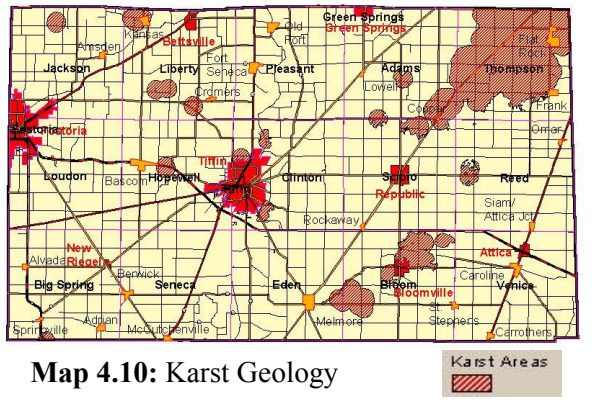
Map 4.8: LESA Outputs

2. A number of governmental entities within Seneca County have elected to enter into intergovernmental agreements for the purpose of defining urban service areas, utility extensions, annexation protocols and tax base revenue sharing formulas. Agreements have been executed between the County, the cities of Tiffin and Fostoria and a number of the adjacent townships. Additional discussions involving some of the villages and surrounding townships are ongoing. Based upon these intergovernmental agreements, development is programmed to occur within these existing and proposed urban service areas (USA's) of the County.



Map 4.9: USA's

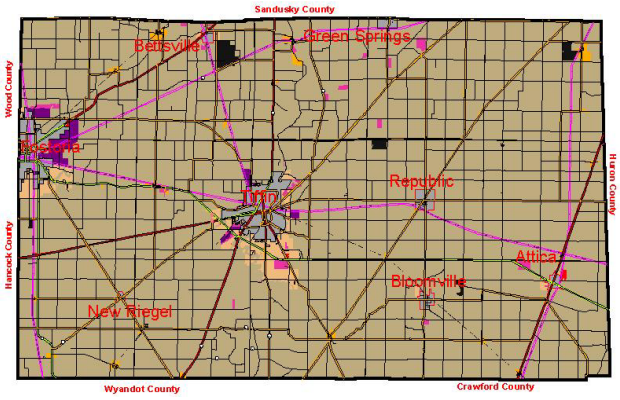
3. Seneca County contains a number of areas underlain with karst geology, the largest of which being located in Thompson Township. This shallow limestone formation presents serious and ongoing groundwater contamination concerns in other isolated areas throughout the County. Based upon growing concerns associated with this groundwater pollution threat, a new land use designation was created. The restricted residential land use represents an attempt to assign a minimum residential density standard for those lands without benefit of central utilities and outside the farmland preservation land use categories.



Map 4.10: Karst Geology

Note: The plan is founded upon the concept of farmland and critical resource preservation and proposes to classify 223,932 acres of agricultural lands and 21,440 acres of critical resources for preservation purposes. The plan also proposes to redirect development to Urban Service Areas (USA's) where adequate infrastructure currently exists, or has been programmed for construction within the 2020 timeframe. Please refer to the Goals and Objectives section identified on pages 3.1-3.2 of this document for further information.

4. Through a series of objectives and development strategies, the plan suggests the need for development to be constructed in tighter development patterns similar to the existing hamlets and villages throughout the County. To encourage development within existing hamlet settlements, the category of village cluster has been created. This land use is designed to accommodate a mixed-use residential component with neighborhood commercial services where the availability of central utility services either exist, or are programmed for construction within the time horizon of the plan.



Map 4.11: Proposed Development Areas

FUTURE LAND USE CATEGORIES

INTRODUCTION

In developing the general concept for the Seneca County Future Land Use Plan, an analysis of current land use conditions was conducted along with an inventory of both the physical and economic factors that influenced previous land use patterns.

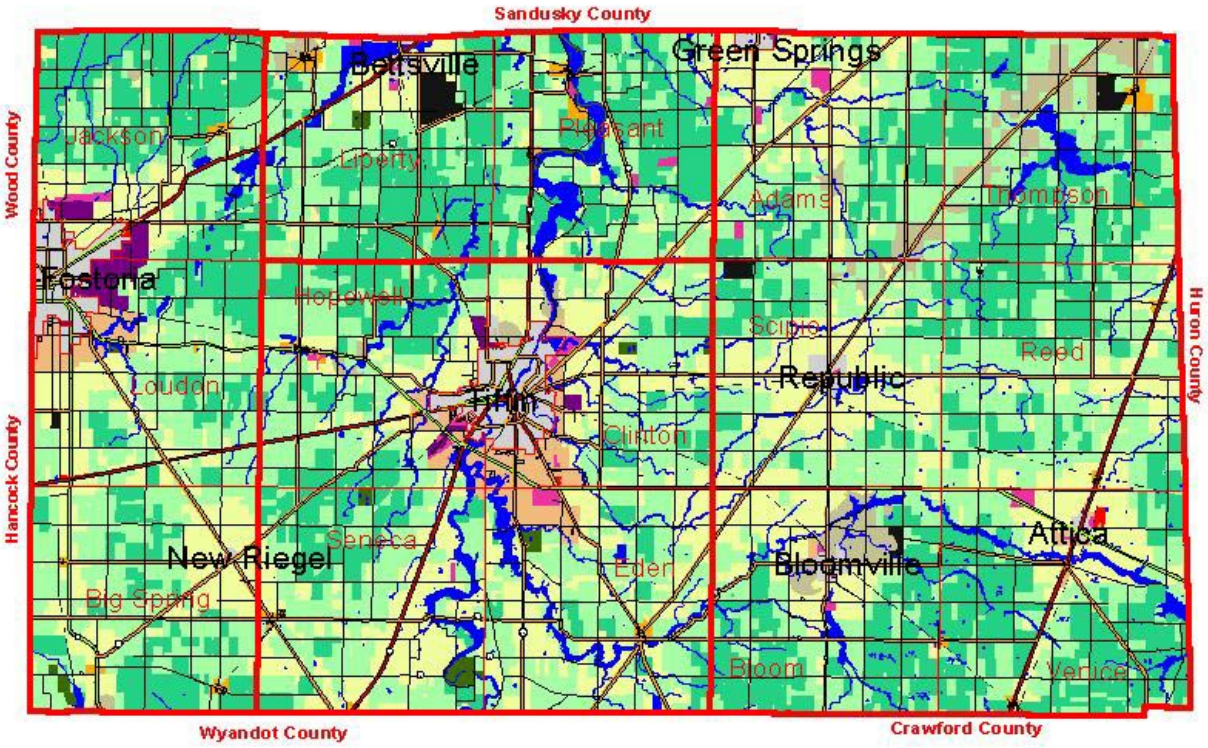
For an in depth analysis of demographics and general population characteristics for the County, please refer to Chapter 2 of this document. Initial findings from the 2000 Census reflect a general decline in the growth rates of the County, with an overall loss of approximately 8,000 people, or 13.5 percent of the County's population through the year 2020. This statistic is somewhat misleading from a land use perspective due to the continued increase in lot split activity and new housing starts throughout the unincorporated areas of the County.

In defining Seneca County's future land uses, there were two categories that required special consideration: farmland and critical resources. From the outset, these resources were overwhelmingly identified as needing protection, by the Farmland Task Force and the steering committee members, as well as by the general public as communicated in surveys and focus group discussions.

Another concern was that future development should be directed (when possible) to areas where central utilities currently existed or were programmed to be constructed within the 2020 timeframe. This desire to redirect new development to these existing and proposed urban service areas (USA's) was a major factor in the final development of the future land use plan. These factors along with other criteria selected during the development of the County Agricultural Plan were incorporated into the programming of the Land Evaluation Site Assessment (LESA) model. This model was designed to provide flexibility for not only

the analysis and rating of farmland and critical resources, but also to provide the vision for the future land use of the County. Map 4.12 represents the Future Land Use Plan. Areas of significant agricultural importance are denoted in the two shades of green, and represent areas that merit special protection strategies. Rural residential is the third largest land use category in the plan containing just over 74,000 acres and is programmed for low density residential uses.

Map 4.12



This new land use vision has been structured to accommodate new growth within existing and proposed urban service areas. By encouraging a development pattern that redirects development to areas that currently have or are programmed to have services, valuable agricultural resources can be preserved.

The current pattern of rural residential development threatens the very quality of life the residents of Seneca County cherish. Not only are these patterns contrary to the historic trends of the County, they threaten the considerable natural resources, particularly in the extreme northeast corner of the County (Thompson Township) where serious groundwater contamination issues are becoming apparent. The continued proliferation of rural residential development in highly productive agricultural areas also threatens to place additional burdens on the existing rural highway system. If this trend continues, it will in-turn, place a greater financial burden on local taxpayers in the years ahead.

Table 4.6

Future Land Use by Planning Area (Acres)						
Land Use	**Central**	**East**	**North**	**West**	**Total**	**Total %**
Ag Preservation 1	14,370	43,326	18,399	20,709	**96,804**	**27.4 %**
Ag Preservation 2	34,498	51,673	16,543	24,483	**127,196**	**36.0 %**
Restricted Residential	677	6,404	382	225	**7,688**	**2.2 %**
Rural Residential	24,538	30,272	4,268	14,990	**74,067**	**20.9 %**
Suburban Residential	4,189	324	197	1,603	**6,314**	**1.8 %**
Village Center	454	669	661	363	**2,147**	**0.6 %**
Commercial	79	98		85	**261**	**0.1 %**
Industrial	457	26		1,769	**2,253**	**0.6 %**
Public Facility	669	758	326	193	**1,946**	**0.6 %**
Open Space	758	164	356	252	**1,531**	**0.4 %**
Critical Resource	7,806	7,892	3,787	1,893	**21,378**	**6.0 %**
Other	243	1,423	1,179	420	**3,265**	**0.9 %**
Incorporated	3,939	1,426	193	3,189	**8,748**	**2.5 %**
Grand Total	**92,678**	**144,455**	**46,291**	**70,174**	**353,597**	**100.0 %**
Percent of Total	**26.2 %**	**40.9 %**	**13.1 %**	**19.8 %**	**100.0 %**	**100.0 %**

By embracing the redevelopment of existing unincorporated hamlets, the County hopes to proactively address the ultimate likelihood of septic system failures associated with these historic settlements. It is most desirable that new development occurs where the potential for central sewer availability exists. This new vision provides the opportunity for County and township officials to work together in the redevelopment of these new hamlet communities.

This type of development pattern has been proven to be more fiscally prudent throughout the country, while also providing the opportunity for the preservation of both prime agricultural lands and sensitive critical resources within the context of the overall settlement pattern. Overall, the concept of encouraging clustered communities rather than perpetuating the current land use pattern of rural sprawl along current rural highway systems provides the opportunity to preserve the unique rural character of concern to so many of Seneca County's residents.

Table 4.6 provides the summary by planning area of the proposed land uses recommended in the plan. What follows is a description of the individual land use categories and planning area statistical breakouts.

CATEGORY DESCRIPTIONS

The following land use categories have been established for the Seneca County Future Land Use Plan based upon the general assumptions discussed above. The land use designations were finalized based upon the determination of the Farmland Task Force to first rank the most desirable farmland to be preserved, to identify lands containing critical resources or lands containing environmental constraints for development, and finally to identify lands located within existing or proposed urban service areas (USA's) capable of sustaining new

growth. Final outputs from the LESA model were utilized for this task by defining an "equal area" threshold classification for the County. This classification was used to determine which lands were most appropriate for agricultural preservation. This statistical method classifies polygon features by defining equal area breakpoints,[3] and ultimately was used to determine the desired break points in the agriculture preservation categories.

AGRICULTURAL PRESERVATION 1 (AP-1) (1 DU / 50 ACRE)

The agricultural preservation 1 classification has been established as the highest designated agricultural land use category, and is recommended for the highest possible level of protection in the County. The designation of these lands as AP-1 was determined by identifying the top 30 percent scoring parcels as determined by the LESA model. Parcels with LESA scores of 71.03 and above were assigned to this land use category. This classification contains a total of 96,603 acres or 27.4 percent of the County's total area. Land uses appropriate for this category include farmsteads, single-family homes, and agricultural uses associated with traditional farming activities.

AGRICULTURAL PRESERVATION 2 (AP-2) (1 DU / 25 ACRE)

The agricultural preservation 2 classification identifies farmlands that have been designated as viable agricultural resources with LESA scores ranging from 64.49 to 71.03. This classification contains the middle 40 percent of the County's agricultural lands. AP-2 parcels located within the designated USA's were excluded in the future land use coverage. This land use contains a total of 127,129 acres and makes up 36 percent of the County's total area. Land uses appropriate for this category include farmsteads, single-family homes, and agricultural uses associated with traditional farming activities.

RESTRICTED RESIDENTIAL (RR) (1 DU/25 ACRES)

The restricted residential classification is a default land use that by definition contains areas designated by ODNR as karst terrain that are located outside of the two agricultural preservation categories previously identified. Areas in this category should be developed at extremely low densities based upon the high potential for groundwater contamination unless central wastewater utilities are available. In total, this land use category contains a total of 7,712 acres or 2.2 percent of the County's total area. Land uses appropriate for this category include farmsteads, single-family homes, and agricultural uses associated with traditional farming activities.

RURAL RESIDENTIAL (R) (1 DU/10ACRES)

The rural residential classification contains lands that are by definition outside of the designated USA's and not included in the AP or critical resource designations. This

[3] It should be noted that final model output scores represent 85% of the total LESA score. One factor, "Enrollment in CAUV and/or Agricultural Districts" which made up 15% of the model weighting was excluded from the mechanized model due to the lack of a reliable database. Upon completion of the Auditor's GIS mapping system, this factor can be added to the LESA model.

coverage makes up a total of 20.9 percent of the County's area containing a total of 74,009 acres. The recommended density for this land use has been established at one dwelling unit per ten acres. Land uses appropriate for this category include farmsteads, single-family homes, and agricultural uses associated with active farming activities.

SUBURBAN RESIDENTIAL (SR) (2-6 DU/ACRE)

The suburban residential land use designation has been established to accommodate transitional residential uses for lands currently located within the existing and proposed urban service areas of the County. Currently, this coverage makes up 1.8 percent of the County containing a total of 6,209 acres. The recommended gross density for this land use located within current USA's has been established at four dwelling units per acre. Bonus densities of up to an additional two dwelling units per acre should be made available where sewer capacities currently exist. These bonus densities may be awarded where additional open space dedication occurs, where voluntary design standards are utilized, or where density transfer credits have been negotiated. For lands located outside of the currently defined USA's but inside the proposed ultimate USA, a base density of two dwelling units per acre is recommended with additional bonus densities of up to two additional dwelling units per acre available where desired incentives have been met. Residential land uses appropriate for this classification include both single family and attached residential housing.

MIXED USE RESIDENTIAL VILLAGE (MURV) (4 DU/ACRE)

The mixed use residential village category is established for the purpose of accommodating a mixed use/higher density residential community within the confines of an existing hamlet settlement or a proposed planned development concept. This category is currently programmed for selected unincorporated hamlets throughout Seneca County where it was determined that this land use was practical. A total of 2,279 acres or 0.006 percent of the County area has been designated for this land use subject to the availability of central water and sewer services. Gross densities for this land use are recommended at up to four dwelling units per acre when central utilities are available. In addition, up to five percent of the MURV area may be designated for a restricted neighborhood commercial classification. If central utilities are not available, residential densities should not exceed one dwelling unit per acre.

COMMERCIAL (C)

The commercial land use category provides for the convenient shopping and service needs of the citizens in Seneca County. These facilities provide community retail, office and highway oriented commercial services situated along state highways and at major intersections. This use has been programmed for areas either currently inside USA's, or proposed for utility availability. A Floor Area Ratio of 0.3 is recommended for this land use. Currently a total of 256 acres or 0.1 percent of the County contain this classification. This designation is also appropriate for new growth areas within the USA's of local villages and hamlets throughout the County.

INDUSTRIAL (I)

The industrial designation has been established in areas either currently within the existing or proposed urban service areas designated within the County. This land use has been assigned to areas within close proximity to major transportation linkages such as airports, rail spurs, and state highways. Land uses programmed for this classification include heavy manufacturing, fabrication, assembly, and storage activities in addition to research laboratories and similar technological activities, and industrial/office distribution, or business wholesaling activities. A Floor Area Ratio of 0.2 is recommended for this land use. A total of 2,270 acres or 0.6 percent of the County is projected for this use.

PUBLIC FACILITIES (PF)

The public facilities designation has been established to define areas set aside for government activities such as public schools, fire and police stations, libraries, water and solid waste treatment, and other governmental offices. The plan reflects a total of 1,992 acres or 0.6 percent of the County area.

OPEN SPACE (OS)

The open space coverage refers to lands set aside to conserve and protect valuable natural features and processes. These lands serve the useful function of providing not only habitat for wildlife, but also by providing protection of scenic, historic, and cultural resources in addition to active and passive recreational opportunities as designated by the community. Over time, conservation easements may be secured through the implementation of a conservation subdivision program in addition to a number of other open space acquisition programs. The current allocation of this land use represents 0.04 percent of the County containing a total of 1,481 acres.

CRITICAL RESOURCE (CR)

The critical resource classification has been defined to include designated 100-year flood plains and 120-foot stream buffers. This classification represents 6.1 percent of the County containing a total of 21,440 acres. Development within the CR category is ***strongly*** discouraged.

OTHER (OT)

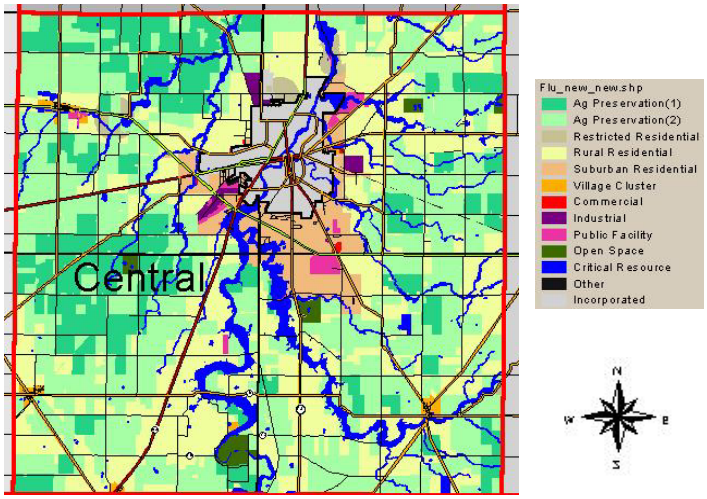
This category contains land uses defined as quarries, landfills, sand and gravel, borrow pits, and right-of-ways. A total of 3,264 acres or 0.9 percent of the County has been designated under this classification.

INCORPORATED (IN)

This land use represents the incorporated municipal boundaries within Seneca County. A total of 8,747 acres or 2.5 percent of the County's area falls under this designation.

CENTRAL PLANNING AREA

Map 4.13: Central Planning Area



The central planning area is comprised of Clinton, Eden, Hopewell, and Seneca Townships the City of Tiffin, and the four unincorporated hamlets of Bascom, Melmore, McCutchenville, and Berwick. This is the second largest planning area covering 92,668 acres, making up approximately 26 percent of the total land area of the County. Current population projections based upon 2000 Census numbers for the County reflect the continuing trend from the 1990's of a continuing gradual decline in population for the foreseeable future. This trend holds true for the central planning area as well, with the projected population decreasing from 18,135 to 15,683 by year 2020. Please refer to Table 4.7 for a statistical summary.

The City of Tiffin serves as the population, industrial, and governmental center of this planning area as well as the County, containing 18,135[4] people and making up approximately 31 percent of the total County population. In addition, Tiffin is the home to two universities, Heidelberg College and Tiffin University, with a combined enrollment of approximately 3,000 students.

Table 4.7

Central Planning Area Population Projections					
Jurisdiction	**2000**	**2005**	**2010**	**2015**	**2020**
Seneca County	*58,683*	*57,214*	*54,313*	*52,416*	*50,749*
Eden Township	2,020	1,969	1,870	1,804	1,747
Clinton Township	4,188	4,083	3,876	3,741	3,622
Hopewell Township	2,874	2,802	2,660	2,567	2,485
Seneca Township	1,585	1,545	1,467	1,416	1,371
City of Tiffin	18,135	17,681	16,785	16,198	15,683
Total	**28,802**	**28,081**	**26,657**	**25,726**	**24,908**

The future land use plan for the central planning area contains just under 49,000 acres of the agriculture preservation 1 and 2 categories making up 52.73 percent of the projected land uses. The rural residential category contains 24,530 acres or 26.47 percent of the study area,

[4] 2000 Census

with just over 4,000 acres (Tiffin USA) being designated suburban residential based upon the proposed USA's for year 2020. A number of developments currently exist within this proposed service area that utilize septic systems. As utility lines are extended into these areas, existing developments should be required to hook-up to the new system. The plan as currently structured also proposes to utilize existing rural settlements (hamlets) as new development areas as central sewer utilities are brought on line. Table 4.8 provides a statistical summary for the central planning area's proposed land uses.

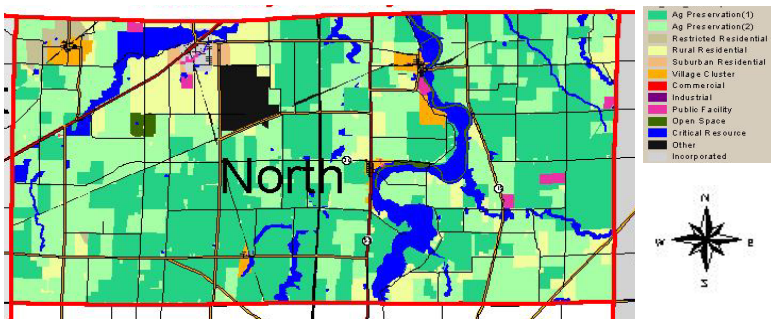
Table 4.8

Central Planning Area Future Land Use Statistics (Acres)					
Land Use	**Existing**	**Outside**	**Proposed**	**Total**	**Area %**
Ag Preservation 1		14,344	26	**14,370**	**15.5%**
Ag Preservation 2		34,439	59	**34,498**	**37.2%**
Restricted Residential	0.5	676	0.5	**677**	**0.7%**
Rural Residential	4	24,351	182	**24,538**	**26.5%**
Suburban Residential	12	74	4,103	**4,189**	**4.5%**
Village Center		454		**454**	**0.5%**
Commercial			79	**79**	**0.1%**
Industrial	2		456	**457**	**0.5%**
Public Facility	6	129	534	**669**	**0.7%**
Open Space		756	3	**758**	**0.8%**
Critical Resource	391	6,403	1,012	**7,806**	**8.4%**
Other		199	44	**243**	**0.3%**
Incorporated	3,927	9	3	**3,939**	**4.3%**
Grand Total	**4,342**	**81,834**	**6,502**	**92,678**	**100.00 %**

NORTH PLANNING AREA

The north planning area is made up of two Townships: Liberty and Pleasant, the Village of Bettsville, and four hamlets: Kansas, Ft. Seneca, Cromers, and Old Fort. This is the smallest of the four planning areas, containing just over 46,300 acres making up approximately 13 percent of the total land area of Seneca County.

Map 4.14: North Planning Area



Some of the most productive soils in the County are found in this area with over 75 percent of the land area being designated as agriculture preservation 1 or 2 for a total of 34,943 acres.

Just over nine percent of this region is designated rural residential containing a total of 4,268 acres with just over eight percent of the planning area designated as critical resource. The Village of Bettsville provides the current best opportunity for suburban residential land uses associated with their proposed USA. For a complete statistical summary of the future land uses, see Map 4.14 and Table 4.10.

Table 4.9

North Planning Area Population Projections					
Jurisdiction	**2000**	**2005**	**2010**	**2015**	**2020**
Seneca County	58,683	57,214	54,313	52,416	50,749
Liberty Township					
Village of Bettsville	784	764	726	700	678
Remainder	1,556	1,517	1,440	1,390	1,346
Pleasant Township	1,685	1,643	1,560	1,505	1,457
Total	**4,025**	**3,924**	**3,725**	**3,595**	**3,481**

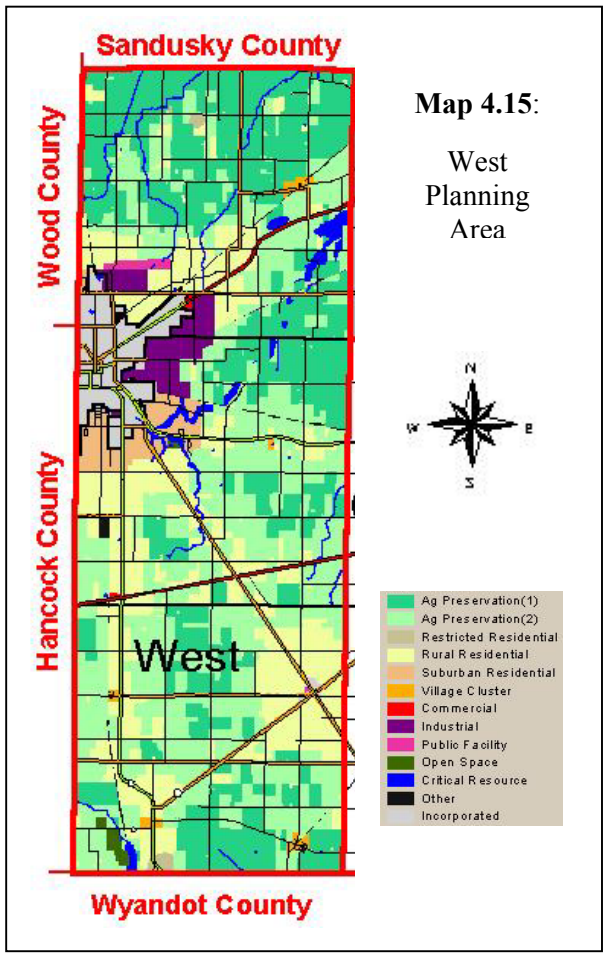
Population projections for this planning area reflect the same overall trend of the entire county, a 14 percent loss of population through the year 2020. This planning area contains approximately eight percent of the County population.

Table 4.10

North Planning Area Future Land Use Statistics (Acres)					
Land Use	**Existing**	**Outside**	**Proposed**	**Total**	**Area %**
Ag Preservation 1		18,399		**18,399**	**39.7 %**
Ag Preservation 2		16,543		**16,543**	**35.7 %**
Restricted Residential		382		**382**	**0.8 %**
Rural Residential		4,268	0	**4,268**	**9.2 %**
Suburban Residential	2		195	**197**	**0.4 %**
Village Center		661	0	**661**	**1.4 %**
Commercial				**--**	**--**
Industrial				**--**	**--**
Public Facility	23	301	2	**326**	**0.7 %**
Open Space		356		**356**	**0.8 %**
Critical Resource	71	3,694	23	**3,787**	**8.2 %**
Other	47	1,131	1	**1,179**	**2.5 %**
Incorporated	192		1	**193**	**0.4 %**
Grand Total	**335**	**45,733**	**222**	**46,291**	**100.0 %**

WEST PLANNING AREA

The west planning area contains three Townships: Jackson, Loudon and Big Spring, the Village of New Riegel, and the unincorported hamlets of Adrian, Springville, Alvada, and Amsden. A total of 70,174 acres are contained in this planning making up 19.8 percent of the County's total land area. The City of Fostoria serves as the major commercial center for the western third of the County containing 10,035 people or approximately two thirds of the planning area's population base. Please refer to Table 4.11 for a complete planning area breakdown of population projections.



Map 4.15: West Planning Area

Jackson Township, the northern most township in this planning area, contains some of the most productive agricultural soils in the County. Over 73 percent of the Township carries the designation of either ag preservation 1 or 2 for a total of 16,359 acres. What is noteworthy is the fact that over half of the lands designated as ag preservation 1 for the entire planning area are located in Jackson Township. Rural residential is the third largest land use category making up 21.3 percent of the total area for a total of 14,957 acres.

Table 4.11

West Planning Area Population Projections					
Jurisdiction	**2000**	**2005**	**2010**	**2015**	**2020**
Seneca County	58,683	57,214	54,313	52,416	50,749
Big Spring Township					
Village of New Riegel	226	220	209	202	195
Remainder	1,565	1,526	1,448	1,398	1,353
City of Fostoria	10,035	9,784	9,288	8,963	8,678
Jackson Township	1,640	1,599	1,518	1,465	1,418
Loudon Township	2,395	2,335	2,217	2,139	2,071
Total	**15,861**	**15,464**	**14,680**	**14,167**	**13,717**

Table 4.12

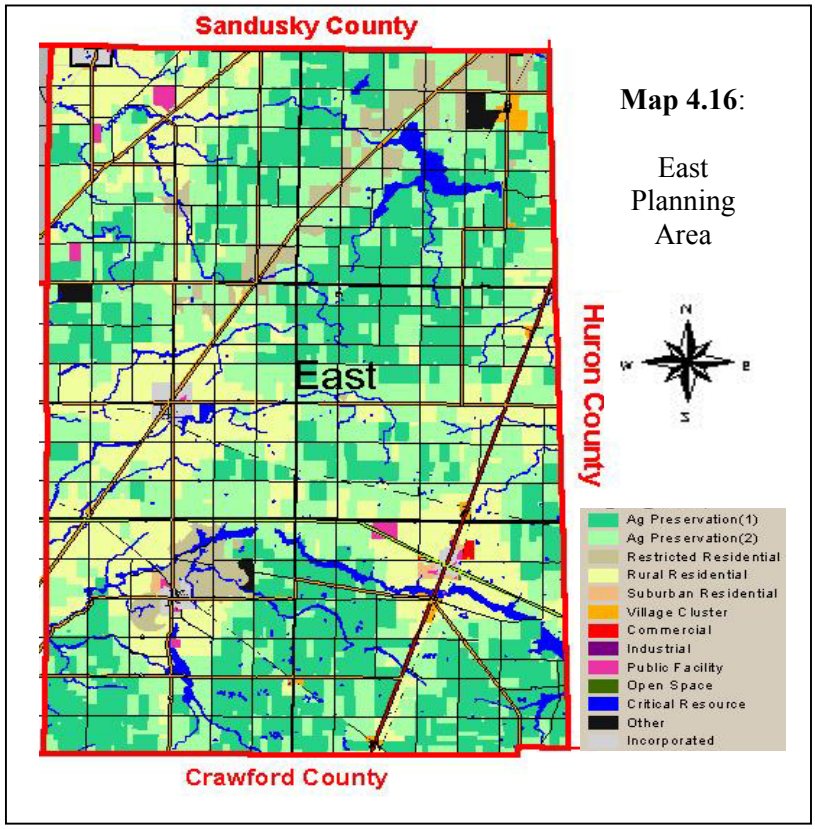
West Planning Area Future Land Use Statistics (Acres)					
Land Use	**Existing**	**Outside**	**Proposed**	**Total**	**Area %**
Ag Preservation 1		20,635	74	**20,709**	**29.5 %**
Ag Preservation 2		24,357	125	**24,483**	**34.9 %**
Restricted Residential		225		**225**	**0.3 %**
Rural Residential	111	14,440	439	**14,990**	**21.4 %**
Suburban Residential	23	4	1,575	**1,603**	**2.3 %**
Village Center		363		**363**	**0.5 %**
Commercial	32	3	49	**85**	**0.1 %**
Industrial	5	33	1,732	**1,769**	**2.5 %**
Public Facility		192	1	**193**	**0.3 %**
Open Space		204	48	**252**	**0.4 %**
Critical Resource	32	1,568	293	**1,893**	**2.7 %**
Other	6	386	27	**420**	**0.6 %**
Incorporated	3,092	98		**3,189**	**4.5 %**
Grand Total	**3,300**	**62,510**	**4,363**	**70,174**	**100.0 %**

There exists, a large concentration of land designated for industrial purposes directly east of Fostoria, and a second area contiguous to the airport containing a total of 1,804 acres and making up 2.6 percent of the overall planning area. For a complete statistical summary of the future land uses proposed, please refer to Table 4.12 above.

EAST PLANNING AREA

The east planning area consists of six Townships: Reed, Adams, Bloom, Scipio, Thompson, and Venice Townships; the villages of Bloomville, Attica, Republic, and a portion of Green Springs, and eight unincorporated hamlets.

The east planning area is the largest of the four planning areas containing over 144,000 acres or approximately 40 percent of the total land area of the County. This planning area contains about 16 percent of the County's population and



Map 4.16:

East Planning Area

faces the same downward trend in population over the next 20 years. Table 4.13 provides the population projections for the east planning area through 2020.

Table 4.13

East Planning Area Population Projections					
Jurisdiction	**2000**	**2005**	**2010**	**2015**	**2020**
Seneca County	58,683	57,214	54,313	52,416	50,749
Adams Township	1,337	1,304	1,237	1,194	1,156
Bloom Township					
Village of Bloomville	1,045	1,019	967	933	904
Remainder	892	870	826	797	771
Reed Township	949	925	878	848	821
Scipio Township					
Village of Republic	614	599	568	548	531
Remainder	1,217	1,187	1,126	1,087	1,052
Thompson Township	1,422	1,386	1,316	1,270	1,230
Venice Township					
Village of Attica	955	931	884	853	826
Remainder	916	893	848	818	792
Total	**9,347**	**9,113**	**8,651**	**8,349**	**8,083**

Excellent opportunities currently exist within this planning area for the implementation of incentive based, density transfer programs. These programs should be linked with County farmland preservation programs, once implemented.

Table 4.14

East Planning Area Future Land Use Statistics (Acres)					
Land Use	**Existing**	**Outside**	**Proposed**	**Total**	**Area %**
Ag Preservation 1		43,326		**43,326**	**30.0 %**
Ag Preservation 2		51,673		**51,673**	**35.8 %**
Restricted Residential	3	6,401		**6,404**	**4.4 %**
Rural Residential	1	30,269	2	**30,272**	**21.0 %**
Suburban Residential	4	287	33	**324**	**0.2 %**
Village Center	3	743	1	**748**	**0.5 %**
Commercial		669		**669**	**0.1 %**
Industrial	3	6	17	**26**	**0.02 %**
Public Facility	75	652	31	**758**	**0.5 %**
Open Space		164		**164**	**0.1 %**
Critical Resource	10	7,853	29	**7,892**	**5.5 %**
Other	85	1,273	65	**1,423**	**1.0 %**
Incorporated	826	67	533	**1,426**	**1.0 %**
Grand Total	**1,007**	**142,709**	**739**	**144,455**	**100.0 %**

Through the use of intergovernmental agreements, these villages and surrounding townships offer an excellent opportunity to collaborate on an incentive based program that could developed to preserve large aggregations of lands designated for agricultural preservation. All of these communities, with the exception of Republic, currently have the ability to expand their current treatment capabilities during the time horizon of this plan. The Village of Republic has contracted for the design of a new wastewater treatment facility that is programmed to be on line within the next year.

LAND EVALUATION & SITE ASSESSMENT MODEL

The Land Evaluation Site Assessment (LESA) model endeavors to systematically assess and identify prime agricultural lands by applying a consistent rating scheme to land parcels. In this study data was gathered and organized from various existing sources (primarily from State and Federal agencies) and input into a Geographic Information System (GIS). Using a GIS allows for accurate spatial analysis and modeling, and provides an intuitive presentation tool for communicating identified issues, planning goals, and implementation strategies to stakeholders involved in the planning process and to the general public. A LESA model when used in combination with a GIS can provide a consistent and defensible platform from which policy decisions can be based concerning issues of farmland preservation and land use. The information collected was in response to direct public participation and interaction with the Seneca County Farmland Task Force (SCFTF).

BACKGROUND

Several methods similar to the LESA model have been in use since the thirties. Many efforts of this type were compiled and profiled by the National Resources Planning Board in the 1940 publication titled "Land Classifications in the United States." Canadian Angus Hills developed a system similar to the LESA model for rating of agriculture, forestry and, outdoor recreation. Similarly Ian McHarg, the pioneering landscape architect, used an overlay method (a precursor to modern GIS) during the late sixties and early seventies to evaluate sites most environmentally suitable for development activities.

Several other rating systems were created in other areas such as to Tulare County, California in 1975 and Jackson County, Oregon 1976. In 1981 the Soil Conservation Service developed and tested systems to classify farmland based on the limitations to agriculture, soil qualities, and economic importance to state and local economies. This early version of LESA was very advanced since it provided a national model with consistent terminology while still incorporating a great deal of local flexibility. In 1984 a generic version of LESA was adopted by the USDA to be used by federal agencies evaluating projects that caused agricultural land conversion. Today over 200 LESA models are being used by various state and local governments in order to review their own circumstances and plan future policy objectives.

GOALS & OBJECTIVES

This study seeks to establish measurable criteria (LE & SA factors) to evaluate agricultural land on a parcel basis. The criteria were chosen and refined through various forms of public participation. This was accomplished through a series of public focus groups and meetings that were held to establish and prioritize key issues in the area of farmland preservation. Next, a Farmland Task Force was created to oversee, refine, and define the criteria that will be used to evaluate farmland in the County. This task force also monitored and provided valuable feedback throughout the study's development. As a result of this study, Seneca County has an agricultural land parcel evaluation tool (LESA) consisting of a computer spreadsheet model and a GIS data structure that can be applied to any parcel in the County.

It must be noted that this study and the resulting model are intended as an analytical tool, not a farmland protection program. County and/or local governments can help preserve land for agricultural through land use planning policies, agricultural districts or zoning, acquisition or transfer of development rights, or other techniques as well as by strengthening the local farming economy through tax incentives and agricultural development programs. The model's role is to provide a systematic and objective procedure to weight and rank sites for agricultural importance in order to aid officials making decisions concerning present and future land use.

MODEL COMPONENTS

The model consists of an Excel spreadsheet and a GIS data set. The Excel spreadsheet model contains two types of factors: Land Evaluation (LE) and Site Assessment (SA). The LE portion of the model is weighted so that it makes up a full one third of the total model score while the SA portion of the model comprises the remaining two thirds of the overall model weight. Since the physical characteristics of the soil are fixed, the weight of the LE portion is identified and then set, as opposed to the SA factors, which are variably weighted.

LE FACTORS

The LE factors are designed to evaluate parcels based on the physical characteristics of the soils present within a parcel. Some typical physical soil characteristics include soil type, corn or soybean yield rating, productivity index, and prime or hydric soils. In Seneca County the productivity index was chosen as the measure for the LE portion of the LESA model. This rating was chosen because it gauges the productivity of specific soil types across all crop types. All soil types present on a site are identified and evaluated on the productivity index rating as scored in the MUIR database. Using the GIS, the percentage of the total parcel area is determined for each soil type and a weighted productivity index score is determined for each soil type present on the site. Next, a parcel average weighted productivity index score is calculated. This process allows the LESA model to assign a productivity index score to an entire parcel and makes comparisons between parcels possible. Finally, the final LE score is determined. This score is based on a 100-point scale productivity index. Rating the soils in this way allows for a regional approach to

productivity rating rather than relying on state or national figures that may not accurately reflect existing conditions in Seneca County.

SA FACTORS

The SA factors are divided into three major categories: agricultural productivity and economic viability, potential future development pressure, and other relevant factors. Specific factors in each of the above categories were determined by the Seneca County Farm Task Force (SCFTF) members. Each of the SA factors was selected based upon its ability to measure key elements which would define prime farmland suitable for preservation. The SA factors chosen are as follows:

AGRICULTURAL PRODUCTIVITY & ECONOMIC VIABILITY FACTORS

a. Percentage Of Area Incompatible With Agricultural Use Within One Mile

This factor is measured from the perimeter of the test site. It indicates the potential for land use conversions of surrounding parcels. This factor also attempts to gauge the potential for conflicts between land uses. For example, if a large animal operation is located within close proximity to a developing housing area, it is likely that conflict will emerge and the potential for nuisance suits will increase as the area continues to develop. The points for this factor are distributed so that areas with high concentrations of land uses compatible with agriculture uses receive high scores while areas with lower concentrations receive lower scores. A parcel's score will reflect the percentage of the total area within a one-mile radius of the perimeter of the site, which has land uses that are compatible with agriculture. For example, a site with 85 percent of the surrounding area within a one-mile radius with land uses that are compatible with agriculture would receive a score of 85 points.

b. Size Of Farm

The underlying assumption for this factor holds that larger farms are more economically viable and therefore are less likely to be subject to development pressure and as a result are less likely to be converted to other land uses. Large farms receive high scores while smaller farms receive lower scores, with exception of farms smaller than 10 acres with production of $2,500 and higher per year. These farms receive 20 points. This qualifier makes allowances for specialty crop producers.

Table 4.15

Factor Description	Point Value
Over 100 Acres	100
80–99 Acres	70
65-79 Acres	50
40-64 Acres	30
11-39 Acres	20
Less than 10 acres (unless $2500 of gross income, then)	0 20

c. Participation in Agricultural District or CAUV Program

This factor indicates individual owner or operator's desires to protect farmland properties. It also gauges the likelihood that specific parcels will convert to non-agricultural land uses.

Table 4.16

Factor Description	Point Value
Ag District and CAUV	100
Ag District	80
CAUV	20
Neither Ag or CAUV	0

POTENTIAL DEVELOPMENT PRESSURES FACTORS

a. Distance From Central Water Lines

This factor assumes that proximity to central water lines indicates the potential for conversion of agricultural land. The economies of scale associated with infrastructure connections and extensions over short distances make this factor an important indicator of development pressure. Farm parcels in close proximity to areas serviced with central water will receive low points while sites farther away will receive high points.

Table 4.17

Factor Description	Point Value
1 Mile or More	100
3/4 Mile to 1 Mile	70
1/2 Mile to 3/4 Mile	50
1/4 Mile to 1/2 Mile	20
Less than 1/4 Mile	0

b. Distance From Central Sanitary Sewer Lines

This factor similarly, as in the previous factor, assumes that proximity to central sanitary sewer lines indicates the potential for conversion of agricultural land. The economies of scale associated with infrastructure connections and extensions over short distances make this factor an important indicator of development pressure; this is particularly true when considering sanitary sewer line extensions. Farm parcels in close proximity to areas serviced with central sanitary sewers will receive low points while sites farther away will receive high points.

Table 4.18

Factor Description	Point Value
1 Mile or More	100
3/4 Mile to 1 Mile	80
1/2 Mile to 3/4 Mile	60
1/4 Mile to 1/2 Mile	40
201 feet to 1/4 Mile	20
Less than 200 feet	0

c. Distance From Transportation

This factor holds that proximity to transportation access points indicates the potential for conversion of agricultural land. In this case it is the access point that is important because the accessibility of the site to the transportation network will dictate the potential for land use conversion. Parcels close to transportation access points will receive low points while sites farther away will receive high points.

Table 4.19

Factor Description	Point Value
Frontage on Land Access or Special Use Road	100
Within 1/2 Mile of a County or Township Road	75
Within 1 Mile of State or Federal Route	50
Within 2 Miles of a 4 Lane Highway	30
Within 1 Mile of an Limited Access Interchange	0

OTHER RELEVANT FACTORS

a. Critical Resource Areas

This factor was originally based on the definition of critical resources chosen by the SCFTF members. The preliminary critical resources identified were 100-year flood plains and the prominent karst[5] terrain of the County. The logic for this factor assumes that agricultural land uses will have beneficial impacts on the critical resource areas when compared to other land uses (it is assumed that Best Agricultural Practices are being utilized). Farm sites with a high percentage of their total area in critical areas will receive high points while parcels with lower percentages will receive low points. A parcel's score will reflect the percentage of its total area that falls within a critical area. If the site does not contain any critical areas it will receive 0 points. For example a site with 55 percent of its area within a 100-year floodplain would receive a score of 55 points.

[5] Ultimately, it was determined by the steering committee that the karst areas should be deleted from the model and replaced by a 120' stream buffer for all perennial streams. Additionally, areas underlain with karst geology were assigned their own land use classification to address the environmental sensitivity associated with this terrain.

SA FACTOR WEIGHTING SCHEME

Once the SCFTF chose the SA factors weighting factors were assigned. This weighting factor indicates the relative importance of each of the SA factors compared to the others in the model. For example if the size of the farm factor is deemed to be of greater importance than the distance to roadways in determining prime agricultural land, then it would be weighted more heavily and assigned a larger weighting factor (i.e. 0.2 rather than 0.05).

This process of assigning the SA factor weights is known as the *Delphi process*. In this process each member of the SCFTF prioritized the SA factors by assigning a numerical weight to each of the factors. This weighting scheme allows the task force to identify how important each factor is for determining prime agricultural land and affords each individual taskforce member the opportunity to think about how to score each factor both independently and in relation to the other factors. The final Delphi weighting scheme was arrived at by calculating the average of each factor weight as reported by the individual SCFTF members and is presented in table 4.20 below.

Table 4.20

SA Factors	Delphi Weights
SA-1 Factors: Agricultural Productivity	
a. Percentage of Area in Agricultural Use Within 1.0 Mile	0.24
b. Size of Farm	0.14
c. Participation of Farm in Agricultural District, CAUV	0.15
SA-2 Factors: Development Pressures	
a. Distance from Central Water Lines	0.10
b. Distance from Central Sanitary Sewer Lines	0.21
c. Distance from Major Highway	0.10
SA-3 Factors: Other Public	
a. Critical Resource Area	0.06

MECHANIZED GEOGRAPHIC INFORMATION SYSTEM BASED LESA MODEL

Once the study was completed and the Task Force members accepted the calibration of the model, the consultant began the construction of a GIS enabled set of mechanized or automated LESA model procedures. These procedures can construct a LESA model on many parcels, such as all the selected parcels within a township or within the entire County. The model scores selected parcels with the criteria determined by the SCFTF.

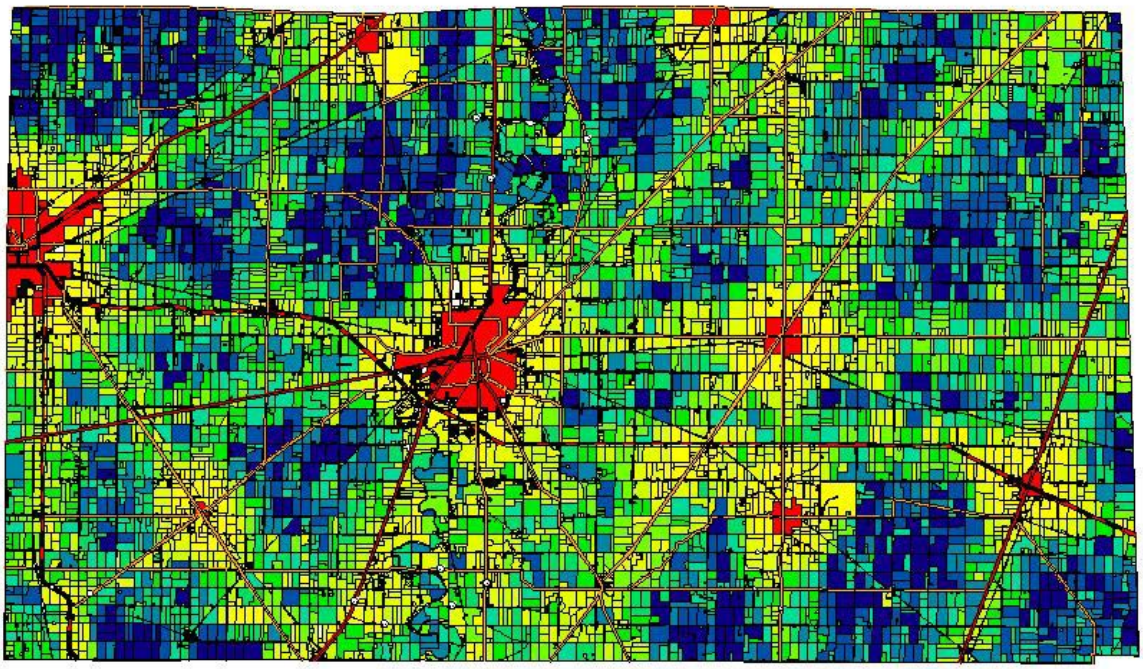
For the development of this model, the basic unit for evaluation was determined to be a single parcel. A number of spatial operations including overlay, intersection, proximity, and adjacency were utilized in the development of the model. As a result these automatic LESA model construction procedures are extremely computationally intensive. There are three steps involved in building a countywide LESA model using these automatic procedures. The first is to calibrate the LESA factor scores for each parcel. The second step requires the

preparation of scoring and weighting tables that include all of the factors established by the SCFTF. Finally the automatic procedure calibrates the final LESA score for each parcel. The final outputs were then utilized by Task Force and steering committee members to define threshold cutoffs for the ultimate definition of prime farmland as based upon the LESA model factor scoring, and weighting.

Once the final GIS outputs were available, different scenarios were examined and ultimate groupings of parcels were selected for preservation as significant agricultural areas. This model was developed with the built-in capability of changing either the scoring or weighting schemas or both for each successive scenario run. This provides the opportunity for annual fine-tuning and reevaluation of factor scoring and weighting.

INTERPRETING LESA SCORES FOR DECISION MAKING

Map 4.17: Final output from LESA model 2000



Once a set of LESA scores has been established, it is important to set score thresholds to aid in policy decision-making. Since there are seven factors in Seneca County's LESA model, the setting of thresholds becomes very important because the final score will reflect a mix of factors and the meaning of this score may be unclear. For example, one site may have a very low soil rating and high SA factor scores while another site may have a high soil rating and a few low scoring but heavily weighted SA factors, yet both may have the same final LESA score. It may be advisable to set thresholds for each factor or for the most important factors in addition to considering the final LESA score.

The equal area GIS classification process was utilized in the determination of scoring thresholds. This method classifies land parcels by finding breakpoints in the LESA scores so that the total area of the land parcels in each class is the approximately the same. An example of this can be seen on the previous page. Note on the map legend that each class is represented by one color. The lowest class has the largest range in terms of LESA scores, between 12.72 and 54.69, while a mid range class has scores between 66.44 and 68.21. Ultimately, decision makers' interests lie with knowing how much land will be affected by preservation efforts. This classification method allows for the demonstration of patterns in easy-to-understand groupings. For example, in the above map there are 10 classes of parcels each equaling 10 percent of the County area and the associated LESA scores from low to high. Adjustments can be made to any group of classes in order to clearly define the areas and their associated ranges of LESA scores that will be contained in these classes. These classes provide more information than strict Agricultural Security Areas (ASAs) because they do not illustrate transitions or important differences between areas.

The LESA model provides the capability to evaluate multiple scenarios in the final determination of ASAs in the County if desired. For example in Map 4.17 the two darkest blue areas representing highest LESA scores (between 72.7 and 83.11) and 20 percent of the total land area of Seneca County could be used as an ASA. Similarly any percentage of the total land area and the corresponding LESA score range can be used to define an ASA.

LAND PRESERVATION & GROWTH MANAGEMENT TECHNIQUES

AGRICULTURAL ZONING

Zoning is a widely applied form of local land use regulation that exists to promote the public health and safety and prevent nuisances. Agricultural zoning is a zoning application that protects the viability of agriculture through limiting density of development and restricting nonfarm uses of the land. Agricultural zoning is an important preservation tool for the following reasons.

- Agricultural zoning reduces the conflicts that may occur between farmers and non-farmers due to situations such as chemical irritants spilling onto non-farm properties or the litter and vandalism of agricultural land.
- Zoning encourages orderly growth, which, in turn, enhances aesthetics and minimizes the cost of public services.
- Agricultural zoning protects the agricultural land base and productive soils and is most effective when applied to large areas of contiguous farmland.
- Agricultural zoning corresponds with conservation movements such as retaining open space, protecting environmentally sensitive wetlands, and protecting water resources and air quality.

Agricultural zoning is the land use tool most commonly used for the preservation of farmland. In addition to limiting density and nonfarm uses, it protects agricultural land by

requiring houses to be built on small lots and restricting subdivision of land into parcels that are too small to farm.

This zoning technique is attractive to local governments because it can quickly protect large areas of farmland, and it is flexible to the changing needs of the community. Those persons purchasing land in an agricultural zone understand up front the restrictions of the area. Furthermore, it is less expensive to implement than other preservation tools such as purchasing development rights.

- **SLIDING SCALE**

Sliding scale zoning is a type of area-based allocation. Using this tool, the density of development permitted varies with the size of the tract. Sliding scale requires that the density decreases per acre as the size of the parcel increases. Therefore, smaller parcels will have a higher proportion of developed land than larger tracts. This permits small tracts of land with limited farming potential to be used for residential purposes while restricting the number of dwellings on larger, more profitable tracts.

- **QUARTER/QUARTER ZONING**

Quarter/quarter zoning limits the use of land to agriculture or activities related directly to agriculture. Development is limited to a single residential lot consisting of one acre per every 40 acres of farmland. This technique is called "quarter / quarter" zoning as it is based upon one-fourth of an original tract of 640 acres, which equals 160 acres, and further dividing it by one-fourth, yielding 40 acres. Therefore, landowners may build, for example, two homes on two acres on an 80-acre parcel. Upon dividing the two house lots, the balance of the land is held for agricultural purposes.

There are several benefits to quarter / quarter zoning. Development is controlled, and farmland can be buffered from surrounding, incompatible uses. Also, land prices are kept affordable, and taxes are often less, as costs of public services are lower. However, quarter / quarter zoning is best suited to rural areas that are not under intense development pressure. In addition, this technique may have significant enforcement costs, variances and rezonings may be granted, and legal takings challenges may be costly at a local level.

- **EXCLUSIVE AG ZONING**

This form of zoning prohibits non-farm residents and most non-agricultural activities. Exceptions may be made for parcels of land that are not suitable for farming. This technique is rarely used as it risks being declared a taking by the government without just compensation.

⌑ LARGE LOT ZONING

Large lot zoning is a common type of agricultural zoning wherein a farm cannot be broken down into parcels below a certain minimum size for farming. The goals of large lot zoning are to preserve farmland in blocks large enough to be profitable and to make lot size large as to be too expensive for residential use. This will prevent farmland from being segmented by many residential sites. However, nonfarm dwellings may be permitted on small lots where farming is not productive. Nonfarm uses may also be limited next to existing developed areas.

Large lot zoning is flexible and can be changed over time with shifts in population or growth. Large lot zoning also varies significantly by state. Some states permit minimum lot sizes of over 100 acres. However, in Ohio, minimum lot sizes are generally not greater than five acres.

⌑ BUFFER ZONING

Buffer zoning both separates incompatible uses and reduces the impacts of development on neighboring agricultural land. There are several types of agricultural buffer zoning. The first type allows nonfarm dwellings on lots subdivided from a farm. The second type regulates the amount of development allowed adjacent to a farm. Both methods decrease the likelihood of conflict between residential and agricultural uses and reduce a nonfarm resident's ability to win a nuisance lawsuit against a farmer with a normally functioning operation. Ordinances may also prevent the location of residences, schools, play areas, wells, commercial food outlets, and picnic sites within a buffer area.

AGRICULTURAL DISTRICTS

Agricultural districts are voluntarily created districts where farming is the preferred land use. They have been formed in order to assuage the push to convert farmland to other uses. In an agricultural district, the landowner receives certain benefits including protection against nuisance suits, relief from utility assessments, and limits on annexation and eminent domain.

In Ohio, agricultural districts are created for renewable five-year periods in which the landowner agrees to leave the land undeveloped. Farmers are able to place all parcels or a portion of their parcels into agricultural districts. To qualify for an agricultural district, the land must be in agricultural production or be enrolled in a federal conservation program. The land must also meet criteria for lot size and a minimum generated income.

CURRENT AGRICULTURAL USE VALUE

Current Agricultural Use Value (CAUV) is a differential real estate tax assessment program that affords owners of farmland the opportunity to have their parcels taxed according to their value in agriculture, rather than full market value. To qualify for use value assessment, a landowner must devote the parcel "exclusively to agricultural use." By definition, this means

"tracts, lots, or parcels of land totaling not less than 10 acres that...were devoted exclusively to commercial animal or poultry husbandry, aquaculture, apiculture, the production for a commercial use of field crops, tobacco, fruits, vegetables, nursery stock, ornamental trees, sod, or flowers, or the growth of timber for a noncommercial purpose, if the land on which the timber is grown is contiguous to land that is already eligible for CAUV." An owner of farmland may also qualify for CAUV if, "such land has been lying idle or fallow for up to one year and no action has occurred to such land that is either inconsistent with its return to agricultural production or converts the land devoted exclusively to agricultural use..." [ORC 5713.30(A)(4)].

CAUV corrects inherent "unfairness" to farmland owners in the Ohio real estate tax system. Ohio farmers generally own the largest amount of land in any rural taxing district, and since local public services are funded largely through local real estate taxes, farmland owners, particularly those in non-metropolitan counties, provide the bulk of the funding for local public services. These farmers use relatively few local services. Cost of community services studies show that farmland generates a net surplus because of its modest demand for local public services. Farmland essentially subsidizes residences, which demand more in public services than they generate in tax revenue, even after CAUV tax savings are factored into the study. CAUV attempts to even out a real estate tax "playing field" that is tilted against farmland owners.

CONSERVATION EASEMENTS

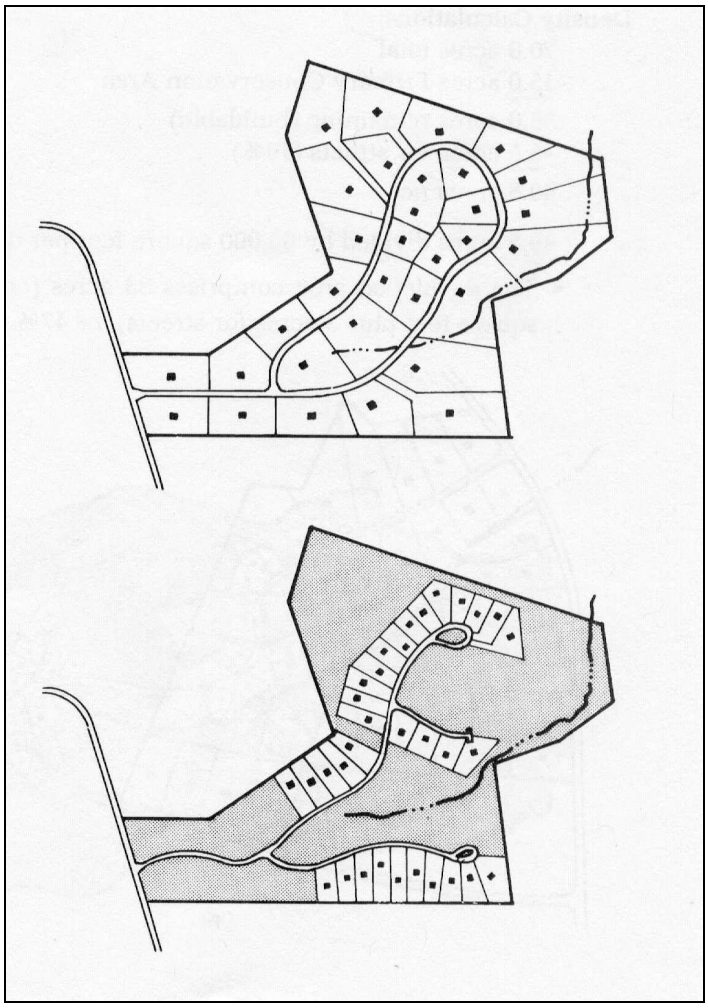
A conservation easement is a legally recorded, voluntary land protection tool that is privately initiated by a property owner. Conservation easements are designed to exclude certain land uses on the property such as commercial and residential development. The goal of an easement is to protect the resources of the land, which may be natural or man-made. Most conservation easements are permanent; however, term easements may impose restrictions for a limited number of years. Land protected by conservation easements remains private property, though an outside party that monitors and enforces the terms of the agreement holds the easement. Landowners who donate permanent conservation easements are often entitled to tax benefits such as savings on federal income and estate taxes or state and local property tax breaks.

An agricultural easement is one type of conservation easement that prevents the development of land used for farming to ensure continued viability for agricultural use. These easements are designed to meet the needs of the landowner, therefore, may include provisions to build farm structures such as barns or family quarters. As with other conservation easements, agricultural easements may include an entire property or only certain areas.

CONSERVATION SUBDIVISION

The conservation subdivision is an emerging tool that can be used to balance growth and conservation pressures in smaller communities and rural areas. Simply stated, a conservation subdivision is a development in which at least fifty percent of the total land has been set-aside as permanent, protected open space. This is accomplished while maintaining the same

overall density that would be allowed under conventional zoning. For example, a fifty-acre parcel zoned for one unit per acre would permit a total of 50 one-acre house lots. In a conservation subdivision, these same 50 lots could be creatively arranged on 25 acres, leaving the balance of the property as open space. The developer can get the same economic return, while developing in a less land-consumptive manner. The open space is protected through a permanent conservation easement, which can be held by a municipality, homeowner's association, or land trust. The open space can be used for active or passive parkland, farmland, or simply left as an open field to preserve scenic views in and out of the site. Many conservation subdivisions incorporate a combination of these. Conservation subdivisions can accommodate a variety of land uses, including single and multiple-family residential, commercial, industrial and mixed-use developments.



Source: Randall G. Arendt, *Conservation Design for Subdivisions*.

Conventional subdivision and zoning regulations were designed to provide for the orderly transition of raw land into lots and streets. Generally, these regulations allow all but the "unbuildable" portions of the property, e.g. 100-year floodplains, wetlands, steep slopes, and storm water management areas to be developed. In contrast, conservation subdivisions take into account the unique natural, cultural and historic features of a site and call for their permanent preservation. Such "natural features" might include wetlands, floodplains, significant wildlife habitats, woodlands, farmland, historic or archaeological sites, scenic views and aquifers/recharge areas. Conservation subdivisions can be part of an overall plan to develop a greenway system traversing the community.

HAMLETS

The primary focus of the hamlet concept is to permit existing or new development to occur within agricultural areas while preserving the environmental integration of the area. Also by encouraging hamlets instead of traditional lot split developments, access management and safety concerns can be addressed.

Existing hamlets are designated in the plan within rural areas, often at crossroads. Hamlets are not synonymous with subdivisions. Although hamlets are primarily residential in character, they may have a small, compact core offering limited convenience goods and community activities, such as a multi-purpose community building, a house of worship, a tavern or luncheonette, a commons or similar land uses. The density of a hamlet should conform to the carrying capacities of natural and built systems.

While some existing hamlets may not have public water or sewer system, small-scale systems may be required by the Health Department and/or Ohio Environmental Protection Agency (OEPA) if they are planned to accommodate new development. New development in existing hamlets, however, should absorb the development that otherwise would occur adjacent to the hamlet. The amount or level of new development should conform to the capacities of natural resource and infrastructure systems that would exist in the absence of the water and sewer systems.

TRANSFER OF DEVELOPMENT RIGHTS

Transfer of development rights (TDR) allows landowners to transfer the right to develop one parcel of land to a different parcel of land. Generally established through local zoning ordinances, TDR programs can protect farmland by shifting development from agricultural areas to areas planned for growth called "receiving areas." Developers can increase the density of development in a designated receiving area by purchasing development rights from landowners in a protected "sending area." Once the development rights are transferred from agricultural property, the land can be restricted with a permanent agricultural conservation easement. As a result, development occurs in appropriately zoned areas at a higher density than ordinarily permitted by base zoning. Ideally, TDR causes growth to occur in an efficient, less sprawled manner.

TDR not only protects farmland, but also changes the way growth occurs. To be successful, this process should involve the input of all stakeholders including public officials and citizens as well as landowners and developers. The TDR technique is attractive to communities for several reasons.

- Unlike the purchase of development rights tool, the private sector buys the development rights, saving government expenses.
- TDR provides open space and compensates landowners for land use restrictions.
- Prices for farmland are kept affordable for agricultural use.
- Development is encouraged and concentrated in areas with adequate services and infrastructure following growth management principles.

While less expensive than purchasing development rights, TDR is one of the most difficult preservation tools to establish and utilize effectively. Public resistance to TDR can arise as residents in sending zones may object to the down zoning of their property while residents in receiving zones may object to potential nuisances created by increased densities. Therefore, it is crucial to have citizen participation in the TDR process. To eliminate some possible

conflicts, TDR is best suited to communities where farmland is separated from development areas so that distinct sending and receiving zones can be created.

PURCHASE OF DEVELOPMENT RIGHTS

The purchase of development rights (PDR) is a method state and local governments can use to preserve agricultural land. This voluntary process involves landowners' sale of their properties' development rights to the government. However, the landowner / farmer retains the remainder of the "bundle of rights" included in property ownership such as the right to sell the property and liability for property taxes. Furthermore, the land remains private property but may be subject to governmental inspection.

PDR is funded at the state level by bonds, general appropriations, and real estate transfer tax revenue, and is often supported by local and federal funds. At the county level, PRD can be funded through general obligation bonds, local real estate transfer taxes, sales taxes, and other dedicated taxes. While PDR is a more expensive method of farmland preservation for government entities than agricultural zoning, it also has numerous benefits.

- PDR has been successful in holding down land prices thereby making it more affordable to farmers.
- This tool provides for permanent and legally binding farmland preservation while keeping it in private ownership.
- PDR provides stabilization of the farm economy, land base, and land use patterns.
- This preservation technique limits sprawl and reduces the costs associated with development, such as for services and infrastructure.
- Communities benefit through the protection of environmentally sensitive areas, open space, and rural character while avoiding takings issues that zoning changes may create.
- The local economy benefits when landowners recycle the capital gains from the sale of their development rights.

LEASE OF DEVELOPMENT RIGHTS

Lease of development rights (LDR) is a similar preservation tool to PDR. This technique offers a more flexible option to PDR wherein the restrictions outlined in the lease may be modified or terminated over time as the public interest changes. Unlike PDR, LDR requires regular monitoring to protect the intent of the document, but it requires a lower annual financial commitment on the part of the governmental body to achieve farmland preservation.

GROWTH MANAGEMENT

Growth management is utilized to control the timing, location, and character of land development. Its goal is to prevent or limit sprawl into undeveloped areas such as agricultural land. When implemented, growth management can significantly reduce costs associated with sprawl such as service and infrastructure expenses. There are several tools

used in growth management including agricultural zoning, urban growth and service boundaries, and holding capacity and concurrency policies.

- **URBAN SERVICE BOUNDARY**

An urban service boundary is a line inside which urban services such as sewer, water, roads, and police and fire protection will be provided to accommodate urban growth. Outside of this boundary, services will not be provided as to preserve low density development, scenic views, farmland, and / or open space.

- **HOLDING CAPACITY**

Holding capacity is a similar term to carrying capacity in environmental planning, which refers to the long term sustainability of the rural environment. Consideration of the rural community's development holding capacity assumes that, although efficiencies of uses may vary, resources are finite and can only bear so much use. For example, there are limits placed on development by the availability of infrastructure and services.

- **CONCURRENCY**

Concurrency is government policy stating that new development will only be approved when adequate public services including water and sewer are in place.

ACCESS MANAGEMENT

Access management is the process that provides or manages access to land development, while simultaneously preserving the flow of traffic on the surrounding road system in terms of safety, capacity, and speed. Access management is a technique in which a governing body works toward an efficient balance between access and mobility.

TRAFFIC SHEDS

Road network failure is a serious concern in many rural communities where the existing infrastructure cannot support additional development. The traffic shed concept was developed to deal with these issues in transportation network analysis. The traffic shed model follows the premise that rural residents use township roads to get to major thoroughfares upon which they commute to jobs, shopping, entertainment, etc. The traffic shed is based on the watershed model in that as water travels downstream from creeks to rivers, so does traffic move from rural roads to major arterials. The traffic shed model can be used both to analyze the present transportation network and as a regulatory system. However, the model is only suitable where traffic is unidirectional.

In traffic shed analysis, road capacity must first be determined. Next, the traffic shed area for each rural road can be outlined using watershed principles. With the knowledge of the traffic shed area and road capacity, it is possible to calculate how much development the area can support, which is expressed in terms of density. In order to increase the supportable

development in an area, roads require improvements to raise capacity and / or the traffic-shed area must be reduced.

Traffic sheds analyze the relationship between planning, zoning, and road capacity. Where road networks are a consideration, traffic sheds can be useful tools in growth management.

PRIME AGRICULTURAL LAND IMPACT FEES (MITIGATION ORDINANCE)

Mitigation ordinances require developers to permanently protect one acre of farmland for every acre of agricultural land they convert to other uses. Generally, developers place an agricultural conservation easement on farmland in another part of the city, although paying an agricultural impact fee may also satisfy mitigation.

AGRICULTURAL SECURITY AREAS

Agricultural security areas set aside a predetermined amount of land, under the ownership of one or more persons that has been designated for exclusive agricultural use for a specified period of time. For example, a cluster of farms comprising 500 contiguous acres or within close proximity over a ten year period. During this time no non-agricultural related development activity can take place without the approval of local governing bodies. Agricultural uses that would qualify for these protected areas would include areas in active crop production, livestock and dairy products operations, and operations of direct marketing of these products.

CIRCUIT BREAKER TAX RELIEF

Circuit breaker tax relief is a tax abatement program that permits eligible landowners to take some or all of the property tax they pay on farmland and farm buildings as a credit to offset their state income tax. Generally, farmers are eligible for a credit when property taxes exceed a set percentage of their income.

DEFERRED TAXATION

Deferred taxation is a form of differential assessment that provides farm property tax breaks. Deferred taxation permits eligible land to be assessed at its value for agriculture rather than for its most profitable use. Deferred taxation is similar to preferential assessment, but landowners must pay some or all of the taxes that were excused if they later convert land to ineligible / nonfarm uses. That is, the landowner must pay rollback taxes, which are penalties that recover the difference between taxes paid under differential assessment and taxes that would have been due if the land was taxed at its highest and best use.

FARM LINK

Farm Link is a program that matches retiring farmers who want to keep their land in agriculture with beginning farmers who want to buy a farm. Farm Link programs are

designed to facilitate farm transfer, usually between farmers who are not related to each other.

PRIVATE LAND TRUSTS

Private land trusts are local, state, or regional nonprofit conservation organizations formed to protect natural resources such as productive farm and forestland, natural areas, historic structures, and recreational areas. Land trusts can be organized to serve a region or to protect a single property. Furthermore, they may work singularly or in cooperation with government agencies or other nonprofit organizations in conducting land transactions and land management. Trusts may purchase and accept donations of conservation easements. Also, private land trusts serve the public through education about the need to conserve land, and some provide land use and estate planning services to local governments and individual citizens.

There are many advantages to a private land trust. Private organizations are better able to manage land and other assets than individuals and can be more flexible and act more quickly than government agencies. Also, as a nonprofit, land trusts can take advantage of a variety of tax benefits and exemptions. Finally, land trusts are community-based organizations that are familiar with the area and that often have built relationships with local landowners. This is extremely helpful to the organization in obtaining resources and in negotiating transactions.

SENSITIVE LAND OVERLAYS / REGULATIONS

Where land areas feature special resources, hazards, or other sensitive characteristics, zoning overlay districts superimpose additional layers of regulations upon underlying zoning districts. Overlay districts commonly impose special development restrictions in floodplain areas or areas with environmental hazards, fragile resources, wildlife habitat, scenic areas, and historic buildings. In many Ohio communities, overlays are the typical approach to preserving historic areas. While the underlying zoning remains unchanged, building demolition, alterations, and renovation may be conditioned upon approvals from a local preservation commission.

5.

HOUSING

5

INTRODUCTION

The previous chapter provided an analysis of existing land use patterns in Seneca County as well as a future plan for growth and development. The plan designated areas for future residential development and made recommendations for the type and density of such development. It was also acknowledged in the plan that while demographic data shows a declining trend in the County's population, there has still been an increase in lot split activity and new housing starts in recent years. This new housing activity has been largely limited to the unincorporated areas of the County. This chapter discusses the implications of this trend on the County's municipalities and rural areas. Additionally, this housing analysis provides data on Seneca County's current housing market, future household projections, and areas of housing need. Data was gathered from a variety of sources including the United States Census, the Seneca County Community Housing Improvement Strategy (CHIS), local realtors, and various local officials.

GENERAL

In 1990, Seneca County contained a total of 22,473 housing units, of which 21,277 were occupied. As indicated in Table 5.1, over 76 percent of the units were single-family detached units. In comparison to Ohio, Seneca County's housing

Table 5.1

Comparison of General Housing Stock Characteristics		
	Seneca County	**Ohio**
Median Year Built	1949	1959
Vacancy Rate (all units)	5.3 %	6.5 %
Single Family Detached	76.3 %	66.1 %
Condominium	0.2 %	2.6 %
Manufactured Homes	6.9 %	4.7 %

Source: Seneca County CHIS

stock was older with a higher rate of single-family homes. Furthermore, approximately 70 percent of the County's total units were owner occupied, while 25 percent were renter occupied.

The table also shows that Seneca County had a much lower percentage of condominiums and a higher rate of manufactured homes than the State. This trend is fairly common in rural areas and may indicate a preference for mobile home living or a lack of affordability for other types of housing units.

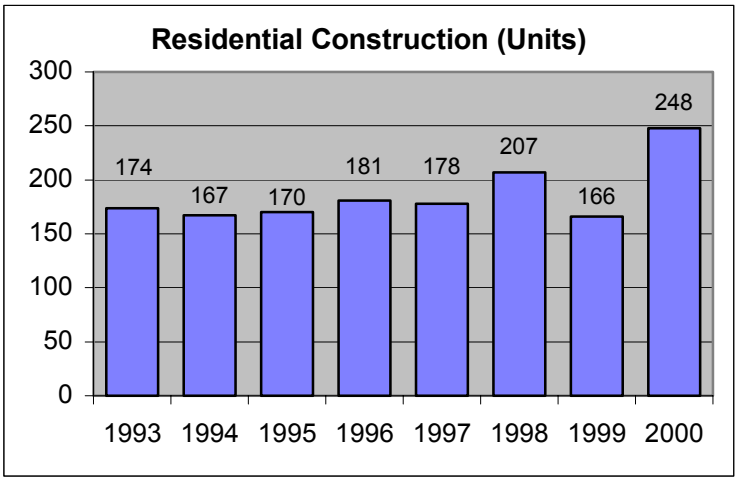
The 1990 vacancy rate in the County was 5.3 percent, lower than Ohio's 6.5 percent. Vacancy rates are informative as they provide a measure of housing supply and demand. Vacancy rates must be high enough to provide choice for potential homeowners and renters. A total vacancy rate of four percent is generally considered adequate to give residents sufficient housing options.

In 1990, the median housing value of an owner occupied residence within Seneca County was $47,700, while the median cash rent for a rental unit was $225. More recent estimates from the Seneca County Housing Authority indicate that rent ranges from $250 to $400 for one bedroom, $350 to $450 for two bedrooms, and $350 to $550 for three bedrooms.

NEW HOUSING STARTS

Figure 5.1 indicates residential construction in Seneca County between 1993 and 2000. During the mid-1990's, construction of housing remained relatively steady with a minimum of 167 units in 1994 to a maximum of 207 new units in 1998. New residential units constructed between 1993 and 1998 were together valued at over $13 million, which is approximately $65,500 per unit.

Figure 5.1



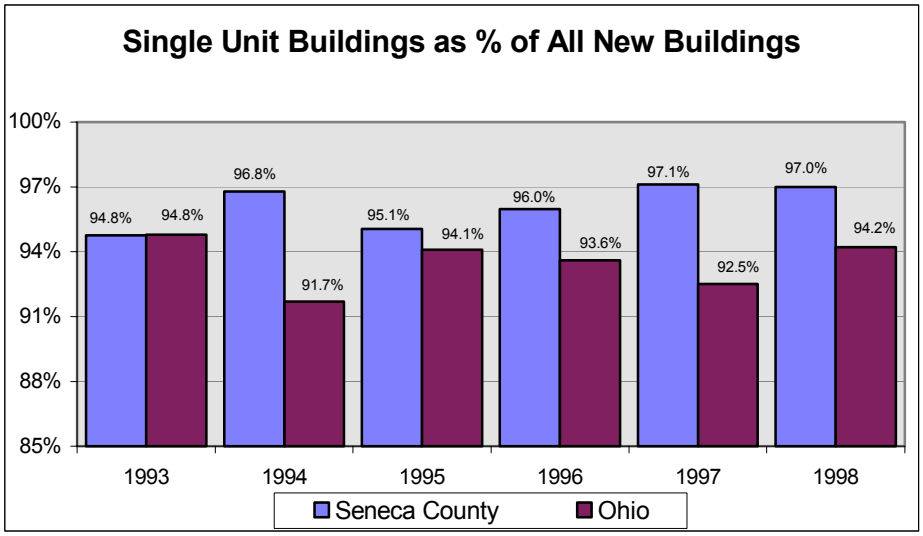
Source: ODOD, Department of Strategic Research

More recently, there were 166 new housing starts in 1999 and 248 new starts in 2000. Interestingly, while the 2000 Census reflects a decline in population of approximately 1.5 percent over a ten-year period, new housing starts and lot split activities reflect an increasing trend in construction. These numbers are indicative of the overall trend in the state's rural areas of population redistribution along with greater land consumption.

Figure 5.2 compares the percentage of single-family units out of all buildings constructed in Seneca County and in Ohio between 1993 and 1998. The percentage of single unit buildings

has fluctuated slightly between 94.8 and 97.1 percent during the 1990's. In comparison to Ohio, Seneca County generally had a higher percentage of single-family housing new construction.

Figure 5.2



Source: ODOD, Department of Strategic Research

HOUSEHOLD SIZE

As indicated in Table 5.2, Seneca County's household size shrunk from 2.71 in 1990 to 2.56 in 2000. This overall decline in average household size helps to explain how the number of households in the County could increase in this time period while the population decreased. The decline in household size could be attributed to both families having fewer children and an increase in senior and empty-nester households as grown children move out of the County.

There is also a significant difference in household size between urban and rural areas of the County. Table 5.2 shows average household size in each of the planning areas as well as the Cities of Tiffin and Fostoria. Tiffin and the central planning area have the lowest household sizes at 2.31 and 2.44, respectively. In contrast, the more rural areas of the County such as the east and north planning areas have the highest average household sizes at 2.74 and 2.75, respectively. This may be indicative of the greater shift of population and new construction to unincorporated areas of the County. According to realtors, new homes in rural areas tend to be around 1,500 square feet with a minimum of three bedrooms and two bathrooms, suggesting that they primarily attract new and growing families.

Table 5.2

Persons Per Household		
	1990	**2000**
North	2.92	2.75
East	2.91	2.74
Central	2.60	2.44
Tiffin	2.45	2.31
West	2.77	2.62
Fostoria	2.64	2.55
Seneca County	2.71	2.56

Source: US Census Bureau

CURRENT HOUSING MARKET

As part of this planning process, thirteen representatives of local realty companies were interviewed about the housing market in the County. There was a general consensus that Seneca County has a strong seller's market. One realtor indicated that while there were twice as many houses on the market since the previous year, that amount was insufficient to meet current demand. This was especially true of homes in the $100,000 to $150,000 range.

There were mixed viewpoints on the market for new housing. The majority of the realtors indicated that there was demand for new homes, and that this demand spanned across a wide range of price levels. A few of those interviewed indicated that there was minimal or no demand for new housing, citing lack of affordability or movement into existing housing as reasons.

Realtors said that most new housing units being constructed in Seneca County were on single lots in unincorporated areas of the countryside. Respondents indicated that the availability of utilities was opening up outer areas for development. Many of these new homes cost $100,000 and over. Realtors also described new housing in the southern areas of Tiffin and in Fostoria. In both cities, much of the new construction was in suburban areas or outside corporate limits.

Realtors cited housing prices in Seneca County ranging from $30,000 to $350,000. However, a significant number of interviewees indicated housing costs between $80,000 and $90,000. Prices for newly constructed homes were considerably higher. Estimations ranged from $80,000 to above $275,000. Cost estimates for the average new house fell between $120,000 and $170,000.

Realtors agreed that new houses include at least three bedrooms and two bathrooms. Square footage varies widely from 1,200 square feet to 3,000 square feet. However, most structures fell in the 1,200 to 1,600 square foot range. The realtors indicated that Tiffin and Clinton Township were the two fastest growing areas in the County in new housing construction. Fostoria and areas in the southern part of the County were also cited as locations that were rapidly growing.

QUALITY OF HOUSING

The quality of available housing can be estimated by a number of variables. These may include but are not limited to the following factors.

- Units without a full bathroom or complete kitchen facilities do not provide for essential functions of daily living.
- Units that contain over 1.01 persons per room can be defined as overcrowded.
- As housing units age, structural and mechanical integrity tend to decline.

According to the 1990 Census, 197 housing units lacked complete kitchen facilities while 176 units lacked complete bathroom facilities. However, units in these categories each represent less than one percent of the County's 1990 housing stock.

According to the 1990 Census, the majority of housing stock in Seneca County was single-family homes constructed prior to 1950. Table 5.3 indicates the number of 1990 units in the County by year built. Only 6.9 percent of the housing units existing in 1990 had been built after 1980. Due to the large number of aging structures, it is likely that increasing amounts of repair and maintenance will be required to preserve housing quality.

Table 5.3

Year Housing Structures Built		
Year	**Number**	**Percent of 1990 Total**
< 1939	9,551	42.5 %
1940 to 1949	1,834	8.2 %
1950 to 1959	3,041	13.5 %
1960 to 1969	2,653	11.8 %
1970 to 1979	3,852	17.1 %
1980 to 1990	1,542	6.9 %
Total	*22,473*	*100 %*

Source: 1990 US Census

Additionally, while the population of the County has been declining, new housing starts have remained stable. The majority of this construction has occurred in unincorporated areas of Seneca County, which indicates a trend of outward movement from the County's municipalities. As a result, city and village officials will likely be faced with increasing vacancies and/or housing maintenance problems associated with population shifts and aging structures.

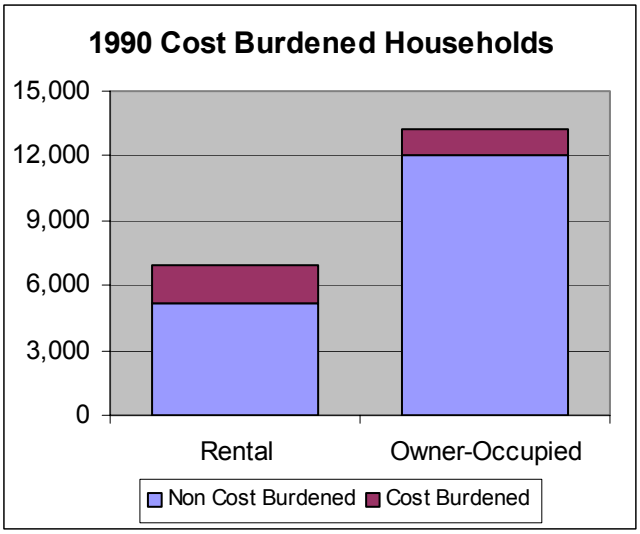
In fact, several areas within the County underwent a physical survey to determine whether or not certain housing units met housing quality standards. The City of Fostoria, the Villages of Bloomville and Republic, as well as a number of unincorporated areas were part of this survey. Within all of the studied neighborhoods of these urban areas, the percentage of housing units found to be substandard ranged between 52 percent and 76 percent. To improve this situation, certain programs were implemented including demolition, code enforcement, and rehabilitation.

HOUSING NEED

The WSOS Community Action Commission, Inc. developed the 1999 Community Housing Improvement Strategy (CHIS) for Seneca County in order to identify the housing needs for low and moderate-income households. The CHIS determined the housing needs of the County based on three factors. These factors include cost burdened housing, inadequate housing, and overcrowding.

The 1999 CHIS identifies any household paying more than 30 percent of the gross monthly income towards housing costs as cost burdened. The CHIS also defines these costs as utilities and rent payments for renters and house payments, interest, insurance, and taxes for owners.

Figure 5.3



Source: 1999 Seneca County CHIS

According to the CHIS, a total of 1,207 (10 percent) of owner occupied households were paying 30 percent of incomes or more for housing, a situation referred to as cost burdened. A total of 1,752 (34 percent) rental households were paying more than 30 percent of incomes for monthly housing costs. Figure 5.3 shows the number of households that are considered cost burdened in Seneca County. Overall, 2,959 households are paying more for housing than they can reasonably afford. The higher percentage of cost burdened rental households may indicate that renters have a harder time finding affordable housing units than owner occupied households.

The determination of inadequate housing is based on a number of factors. The 1999 CHIS identified a unit valued at less than 50 percent of the median value and built before 1950 as an inadequate unit. The analysis also took into account units considered overcrowded and lacking plumbing facilities. These standards were applied to both owner occupied and rental units. Table 5.4 shows the number of inadequate units found in Seneca County, excluding the City of Tiffin. As shown, 8.8 percent of all housing units within the County are considered inadequate. The City of Fostoria identified 264 units as inadequate, accounting for 39 percent of the total inadequate units in Seneca County. The demolition and rehabilitation of these units in the future will help decrease the number of inadequate units.

Table 5.4

1990 Inadequate Housing in Seneca County (excluding Tiffin)			
	Number of Units	**Inadequate Units**	**Rate**
Owner Occupied	11,146	590	5.30 %
Renter Occupied	3,122	108	3.50 %
Total Occupied	**14,268**	**698**	**8.80 %**

Source: 1999 Seneca County CHIS

The third factor the CHIS uses to determine the need of Seneca County is overcrowding. An overcrowded unit contains more than 1.01 persons per room and 343 overcrowded units can be found in Seneca County. Overcrowding was found in 109 rental units, 2.7 percent of all

rentals. Overcrowded owner occupied units comprised 1.25 percent of all owner occupied units.

The overall need for affordable housing in Seneca County was calculated based on the number units found within each of the three factors. The findings identified the need for both rental and owner occupied units for the whole County. Table 5.5 indicates a greater need for quality, affordable rental housing compared to owner occupied units.

Table 5.5

Seneca County Housing Need			
	Owner	**Rental**	**Total**
Cost Burdened	826	1,018	1,844
Inadequate	590	108	698
Overcrowded	156	109	265
Total Need	**1,572**	**1,235**	**2,807**
Total Occupied	11,146	3,122	14,268
Rate of Need	**14.1%**	**39.6%**	**19.7%**

Source: 1999 Seneca County CHIS

The CHIS also examined the special needs populations within Seneca County including elderly, mentally and physically handicapped, and the homeless. Each of these groups possesses an increasing need for the provision of proper and affordable housing.

To address these housing needs, the 1999 CHIS developed an action plan that outlined steps for improvement in five areas: current homeownership, new homeownership, rental needs issues, special needs issues, and regulatory issues. Under each of these areas, specific steps were laid out such as housing rehabilitation, utility assistance to current homeowners, down payment assistance, and home buying counseling for new homeowners.

Under the area of rental issues, the need for a larger number of affordable rental units and rehabilitation of existing units were discussed. Special needs issues also included the need to provide affordable housing facilities for the elderly, homeless, and mentally and physically handicapped populations. Changes in the Health Department Code and the addition of more enforcement staff were actions identified to deal with regulatory issues.

LOW INCOME HOUSING

Table 5.6 shows the percentage of low and moderate-income (LMI) households as defined by HUD[1] in Seneca County and its major cities as reported by the Seneca County CHIS. In 1992, Fostoria had the highest percentage of LMI households with 47.62 percent, increasing by 7.44 percent from 1984. A larger concentration of LMI households is located in the urban areas of the County.

Table 5.6

Percentage of LMI Households			
	1984	**1992**	**% Change**
Fostoria	40.18 %	47.62 %	7.44 %
Tiffin	44.22 %	45.30 %	1.08 %
Seneca County	38.85 %	39.50 %	0.65 %

Source: 1999 Seneca County CHIS

While the percentage of LMI households increased

[1] Less than 80 % of area median income

between 1984 and 1992, it decreased between 1995 and 1999. The CHIS attributed the recent decrease in LMI households to the growth in the manufacturing sector and in the number of blue-collar jobs.

A number of housing programs and facilities are utilized within the County to provide for the needs of its low-moderate income citizens including Section 8 programs and projects, homeless transitional housing, elderly facilities and tax credit programs. According to the CHIS, the Seneca Metropolitan Housing Authority (SMHA) dispersed 139 Section 8 certificates and vouchers in 1999. More recently, 99 households were also on the waiting list to receive these subsidizes. Subsidized housing includes a 68-unit Section 8 facility in Clinton Township and 187 units of subsidized housing in the City of Fostoria.

HOUSING AND FUTURE LAND USE

Table 5.7 shows future residential land uses by planning area, including the percentage of total land area that each use represents in the County. The mixture of residential uses indicated in the table was tailored to the existing conditions and needs in each planning area. For example, the central and west planning areas have a greater proportion of suburban residential than the other planning areas reflecting the anticipated growth outside of the County's major cities. Also, more acres are devoted to the village center land use in the east and north planning areas where hamlets serve as area centers. All of the proposed future uses reflect the current character of the area and a continuation of low-density housing.

Table 5.7

Future Residential Land Use									
Category	**Central**		**East**		**North**		**West**		**Total**
	Acres	**%**	**Acres**	**%**	**Acres**	**%**	**Acres**	**%**	
Ag Preservation (1)	14,370	4.1	43,326	12.3	18,399	5.2	20,709	5.9	96,804
Ag Preservation (2)	34,498	9.8	51,673	14.6	16,543	4.7	24,483	6.9	127,196
Restricted Residential	677	0.2	6,404	1.8	382	0.1	225	0.1	7,688
Rural Residential	24,538	6.9	30,272	8.6	4,268	1.2	14,990	4.2	74,067
Suburban Residential	4,189	1.2	324	0.1	197	0.1	1,603	0.5	6,314
Village Center	454	0.1	669	0.2	661	0.2	363	0.1	2,147

Table 5.8 represents Seneca County's total residential holding capacity based upon the future land use plan. The acreage is based upon full build out of the future land use scenario. The total number of dwelling units possible at the designated densities described in Chapter 4 is approximately 61,200. This number of units is more than sufficient to meet the projected 20-year need in the County.

In 1990, there were 21,277 occupied housing units in the County. This number climbed to 22,292 in 2000. If the number of households in the County were to continue to increase at this rate, there would be 23,355 total households in 2010 and 24,469 total households in 2020.

Table 5.8

Total Residential Holding Capacity			
	Acres (ac)	**Density**	**Dwelling Units (du)**
Ag Preservation 1	96,804	0.02du/ac	1,936
Ag Preservation 2	127,196	0.04 du/ac	5,088
Restricted Residential	7,688	0.04 du/ac	308
Rural Residential	74,067	0.1 du/ac	7,407
Suburban Residential	6,314	2-6 du/ac	37,884
Village Center	2,147	4 du/ac	8,588
Grand Total	**314,216**		**61,211**

HOUSING STRATEGIES & POLICIES

- Provide a safe, decent, and sanitary housing stock.
  - Partner with local jurisdictions to create a unified and comprehensive code enforcement system to insure that existing homes remain in sound repair.

- Ensure a broad range of housing types so that all County residents have the opportunity to purchase or rent standard housing supported by adequate public services.
  - Expand existing regulations to permit and encourage a greater diversity of housing types, sizes, and densities to meet the needs of all economic levels and living styles.
  - Provide appropriate housing opportunities for empty-nesters or seniors transitioning to smaller households close to transportation nodes and services.
  - Promote programs that assist seniors to "age in place."
  - Encourage/facilitate home additions that accommodate home sharing with extended family.

- Provide incentives for increasing the use of mixed-use development to promote more efficient, compact nodes of growth within urban service boundaries.
  - Offer incentives such as density transfers and streamlined development review processes to encourage this development pattern.
  - Promote residential development characterized by higher densities with dedicated open space.
  - Encourage mixed densities within residential developments.

- Amend/create zoning and building codes that accommodate and encourage "work at home" employment that has no adverse impacts on neighbors.

6.

ECONOMIC DEVELOPMENT

6

Economic development is a process by which a local or regional jurisdiction helps to create a sustainable, high standard of living for its inhabitants. The creation of a high standard of living or "quality of life" involves the facilitation of wealth creation, the increasing of community financial resources, the retention and expansion of local businesses, the recruitment of new business establishments, physical infrastructure development, effective education systems, housing, provision of parks and recreation facilities, the development of an appropriate workforce, etc.

Economic development is an interactive process between members of a community, in this case Seneca County, and those outside entities that influence decisions that impact the community. While the roles of each player, public and private, may be different, they are all important to successful economic development outcomes.

Economic development is an integrated process. As the County successfully maximizes the use of its assets to attract new development, it should also concentrate on the retention of existing businesses, as well. The County's role in economic development is critical to the future overall economic health of the various political entities of the County. There are a number of elements critical to the practice of effective economic development including:

- **Management** – organizational structure
- **Public policy** – development of clear and non-bureaucratic regulatory policies and processes and business assistance programs
- **Information** – development of necessary community profiles including statistics, site and building databases, and marking materials
- **Communication** – community involvement in plan implementation and assessment as well as making the business community aware of adopted public policy
- **Product** – development of new sites and buildings to house new and expanding businesses consistent with the best use of public resources

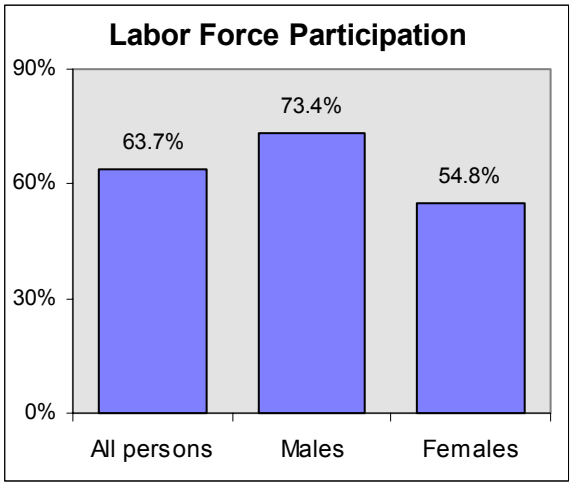
Later in this document, specific policies are defined that detail how these elements should be pursued in Seneca County. To provide a foundation for these policies, the following section contains background information on economic trends in the County.

ECONOMIC TRENDS

EMPLOYMENT

There are many measurements that can be used to determine the economic health of an area. One of the most common is employment, which includes statistics in labor force participation, unemployment, earnings, and primary sectors of employment.

Figure 6.1



Source: 1990 US Census

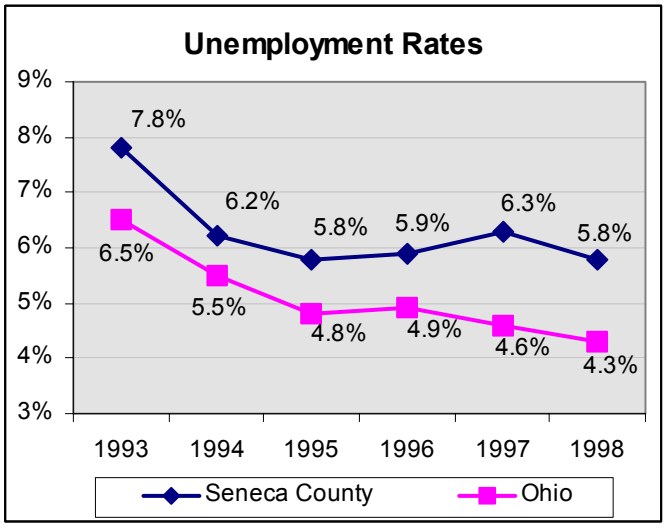
Figure 6.1 indicates the percent of all persons, percent of males, and percent of females over the age of 16 in Seneca County's 1990 labor force. Almost 64 percent of the County's residents were employed. Seventy-three percent of all males were employed while 55 percent of all females were employed. Since 1990, it is likely that labor force participation has increased. Falling unemployment rates during the past decade made it possible for more persons desiring a job to find work.

In comparison with the County, Ohio's labor force participation in 1990 was virtually the same. Total labor force participation by persons 16 or older was 63.5 percent. Males had a 73.2 percent participation rate, and females had a 54.7 percent participation rate.

Between 1997 and 1998, Seneca County's civilian labor force remained the same while the State's labor force declined by 0.5 percent.

Figure 6.2 is a comparison of the unemployment rates for Seneca County and Ohio from 1993 to 1998. Since 1993, unemployment has decreased both in the County and in Ohio in response to the booming economy. In 1998, unemployment was at 5.8 percent in the County, 4.3 percent in the State, and 4.5 percent in the nation.

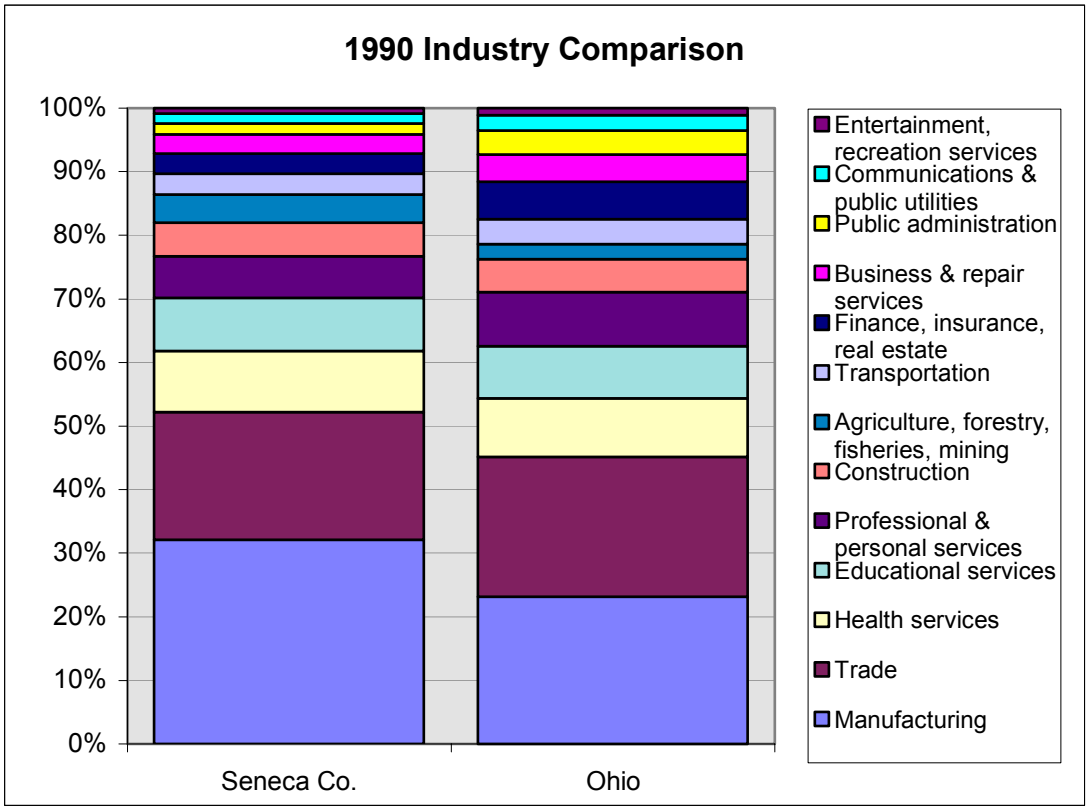
Figure 6.2



Source: ODOD, Department of Strategic Research

Figure 6.3 shows a comparison of employment by industry between Seneca County and Ohio in 1990. Note that manufacturing and trade were the County's top employing industries. In comparison with the state, Seneca County had a significantly higher percentage of workers in manufacturing and agriculture / forestry / fisheries / mining.

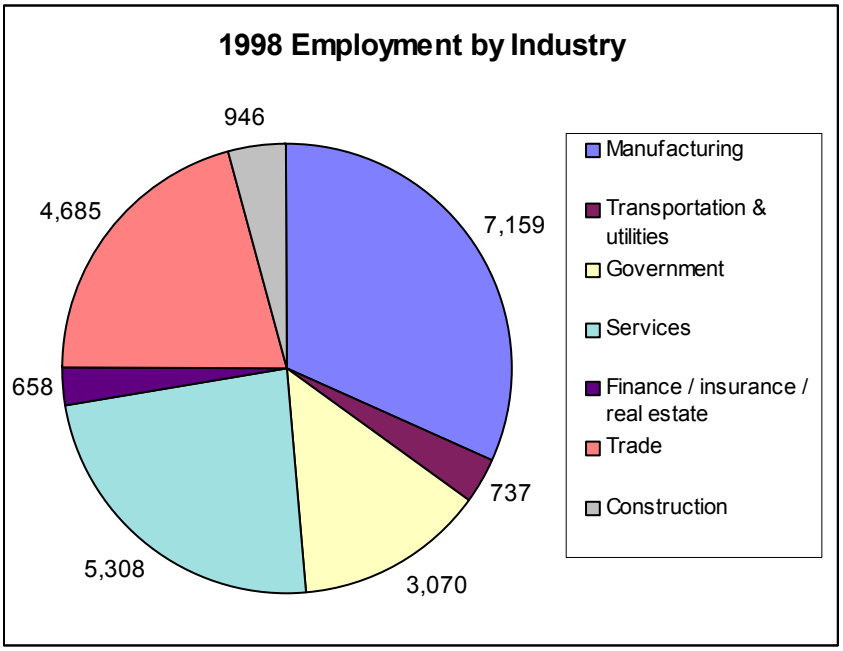
Figure 6.3



Source: 1990 US Census

Since 1990, industry employment has not significantly changed in Seneca County. Employment by industry (place of work) as obtained from the Ohio Department of Development is depicted in Figure 6.4. According to the data, the greatest numbers of employees remain in manufacturing, trade, and services. The largest employer is in the manufacturing industry at 32 percent. The service sector is the next largest in terms of employment at 24 percent. Also, trade and government employ about 24 percent and 14 percent of employees, respectively. Represented in smaller proportions are finance / insurance / real estate, transportation & utilities, and construction. Between 1997 and 1998, the transportation & utilities industry was the fastest growing sector with an increase of 39.4 percent.

Figure 6.4



Source: ODOD, Department of Strategic Research

In 1998, average weekly earnings for all industrial sectors in the County were $475. Earnings were greatest in manufacturing at approximately $669 while earnings were lowest in wholesale and retail trade at $310 per week. Other industrial sectors with earnings above $500 per week were construction and transportation & utilities. The sector with the greatest increase in average weekly earnings between 1993 and 1998 was trade with a 17 percent increase. The sector with the smallest increase was transportation and utilities with only a six percent increase.

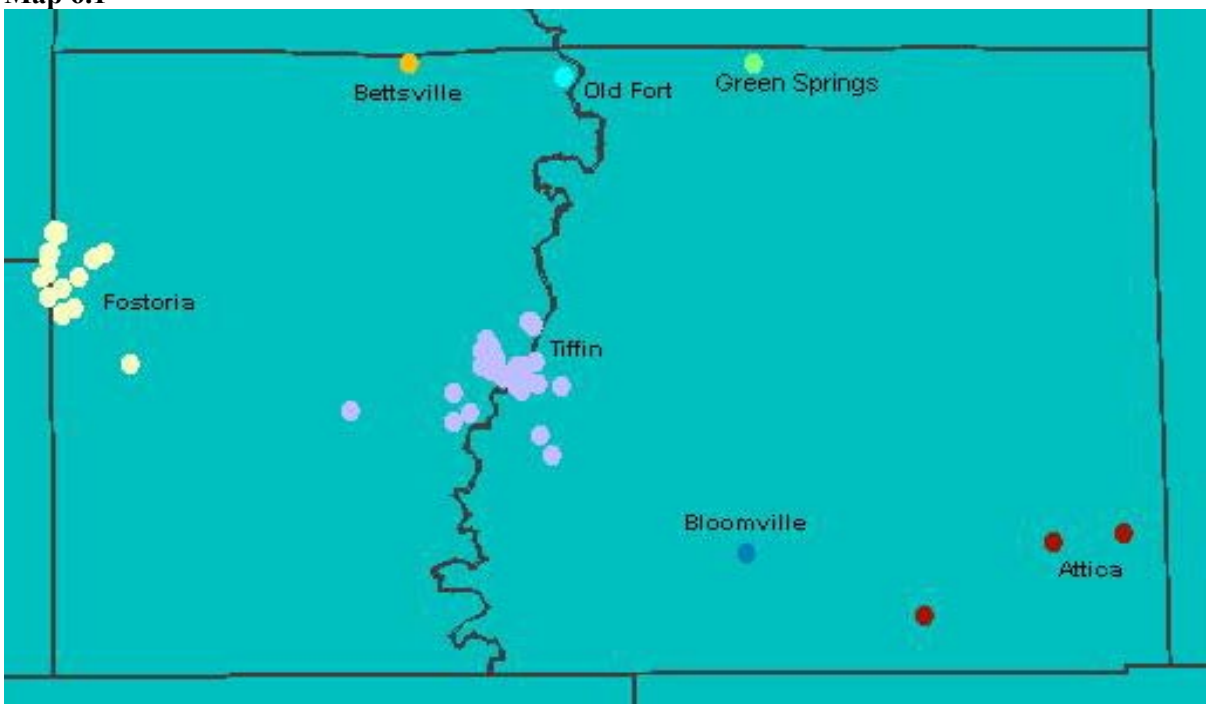
Table 6.1

Major Employers	
AlliedSignal Inc. / Fram / Autolite	Manufacturing
American Standard, Inc.	Manufacturing
Charleswood Corp / Ameriwood Industries	Manufacturing
Cummins Engine Co. / Atlas Inc.	Manufacturing
Fostoria City Board of Education	Government
Heidelberg College	Service
Mercy Hospital of Tiffin	Service
National Machinery Company	Manufacturing
State of Ohio	Government
Tiffin City Board of Education	Government
Tiffin University	Government
Webster Industries	Manufacturing

Source: ODOD, Department of Strategic Research

Table 6.1 indicates Seneca County's major employers. Based upon information previously presented, it is not surprising that the County's major employers are largely in manufacturing, service, and government.

Map 6.1

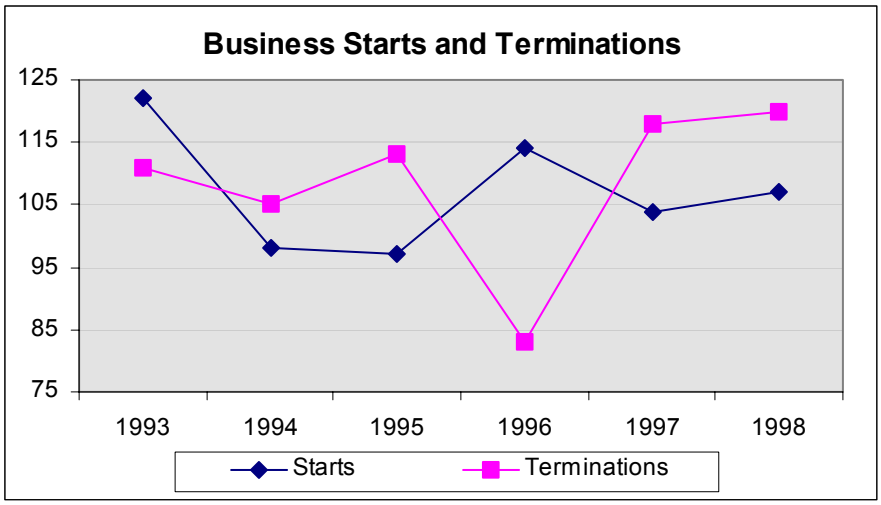


Source: Seneca Industrial and Economic Development Corporation

Map 6.1 displays the locations of these major employers and other industrial firms throughout Seneca County. The largest concentration of these employers can be found within the two cities. The City of Tiffin employs almost 3,500 persons among its 40 industrial sites, while the City of Fostoria's 18 sites employ 2,956 people.

Since 1993, Seneca County has experienced both annual net gains and losses in terms of business starts and terminations. Figure 6.5 illustrates this pattern from 1993 to 1998. In comparison, Ohio has more consistently gained businesses with a net loss only in 1997.

Figure 6.5



Source: ODOD, Department of Strategic Resources

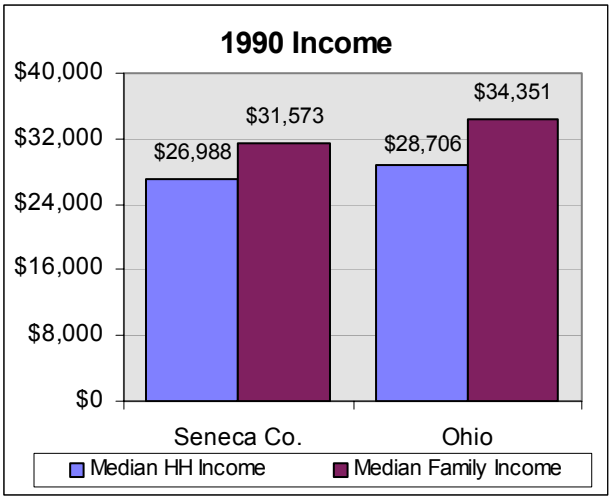
Table 6.2 indicates the total number of active businesses in Seneca County from 1993 to 1998. During the 1990's, the number of active businesses has remained fairly constant. The most significant change was the loss of 22 businesses between 1997 and 1998.

Table 6.2

Total Active Businesses			
Year	**Number**	**Year**	**Number**
1993	1,345	1996	1,358
1994	1,348	1997	1,353
1995	1,343	1998	1,331

Source: ODOD, Dept of Strategic Resources

Figure 6.6



Source: 1990 US Census

Seneca County residents have lower median household and family incomes than Ohio residents. Figure 6.6 compares income levels between the state and County at the time of the Census in 1990.

BASIC AND NON-BASIC EMPLOYMENT

The strength of a particular economic sector is often described in terms of its number of employees as compared to the national labor force. Measuring basic and non-basic employment is one way to compare employment in the region to employment in the nation. To calculate basic and non-basic employment in Seneca County, US and County employment information for 1993, 1995, and 1997 was gathered from the County Business Patterns data set at both the one and two-digit standard industrial classification[1] (SIC) levels.

Non-basic employment is the number of employees working in a particular industry who satisfy only local need. It is determined by applying the national rate of employment in a particular sector to a local employed population. Non-basic employment will always be a positive number. However, it is possible that a region may have fewer employees in the sector than meets all of the region's non-basic needs.

[1] One-digit SIC classifications describe broad employment categories, such as services, while the two-digit level specifies sub-categories, such as educational services.

Basic employment is the number of employees working in a particular industry who are in excess of those required to satisfy local need. It is calculated by subtracting non-basic employment in a particular sector from the total employment in that sector. Basic employment is considered "exporting" in that it meets more than local need. It is also possible to have no basic employment in a particular sector. Employment data by industrial sector at the one-digit SIC level is given in Table 6.3.

The complete listing of employment calculations at the two-digit SIC level is located in the Appendix.

Table 6.3

Industry	1993		1995		1997	
	NB	Basic	NB	Basic	NB	Basic
Agricultural Services	96	0	84	0	96	0
Mining	124	51	90	0	90	0
Construction	819	0	918	0	1,110	79
Manufacturing	3,705	3,127	3,813	2,953	3,500	4,359
Transportation, Comm., & Utilities	459	0	496	0	478	0
Wholesale Trade	910	0	969	0	912	0
Retail Trade	3,474	0	3,775	0	3,817	0
Finance, Insurance, Real Estate	523	0	558	0	531	0
Services	6,018	0	6,839	0	5,977	0

Calculations indicate that in 1997, the industries with basic employees included manufacturing and construction. The remaining industries had only non-basic employees.

In manufacturing, the most significant levels of basic employment existed in the following sectors: stone, clay, and glass products; electronic and other electric equipment; industrial machinery and equipment; and furniture and fixtures. In construction, basic employment was found in general contracting and heavy construction. Several subsections of other major industries also showed higher than average levels of basic employment including non-metallic minerals subsection of the mining division and the educational services subsection of the services division.

SHIFT SHARE ANALYSIS

Shift share analysis is another methodology by which employment in a region can be compared to employment in the nation. Furthermore, this technique can be used to forecast employment into the future. The primary components of shift share analysis are the national share, the industry mix, and the regional shift. The national share calculates the number of employees in a sector in the County if growth rates were to occur at national levels within a given time period. Industry mix and regional shift represent two measurements of the number of regional employees in surplus or deficit of the national ratio. They both represent a sector advantage or disadvantage. Singularly, these variables represent certain attributes of

the County's employment. Together, the components can be used to project employment figures for the future.

The forecast shown in Table 6.4 takes into account current regional trends and the national growth rate. According to the shift share projection, industrial sectors with growing employment include all sectors with the exception of mining and manufacturing. This projected loss is likely a response to the negative national growth rate in these sectors. For more detailed information, the Appendix contains complete data and formulas used in the shift share process for Seneca County.

Table 6.4

2001 Employment Forecast			
	National Growth Rate	2001 Forecast	Gain/Loss Since 1997
Agricultural Services	0.24	137	41
Mining	-0.04	60	-30
Construction	0.22	1,506	317
Manufacturing	-0.04	6,600	-1,259
Transportation, Comm., & Utilities	0.11	541	63
Wholesale Trade	0.09	991	79
Retail Trade	0.11	4,304	487
Finance, Insurance, Real Estate	0.07	552	21
Services	0.16	7,452	1,475

ECONOMIC DEVELOPMENT TOOLS

Economic development is the stimulation of economic activity resulting in investments, job creation, and increases in the tax base. Public sector participation in economic development gained momentum decades ago as the nation's cities faced the impacts of sprawled growth such as private disinvestment and deterioration of the urban core. To revitalize urban areas and to make up for the disparities of the free enterprise system, the public sector has assumed an increasing role in encouraging economic growth. A broad range of new and recycled tools is available to public sector entities wishing to promote economic development in their communities.

Economic development tools may fall into one of five categories, yet they are often used in combination. The categories are financial incentives, tax incentives, non-financial incentives, organizational tools, and services.

- **Financial incentives** include grants, financed infrastructure, loans, subsidies, and loan guarantees. Financial incentives, by nature, are capital intensive, and may not be appropriate for small local governments.

- **Tax incentives** may take the form of targeted tax credits, tax abatements, and tax-increment financing.

- **Non-financial incentives** involve actions of public policy requiring approval by a legislative body. They may involve money, yet the funds do not go directly to the private sector. Examples of non-financial incentives include zoning; legal powers such as eminent domain; amenities such as parks, recreation facilities, and plazas; and industrial revenue bonds.

- **Organizational tools** provide legal or functional advantages and opportunities for public / private cooperation. Such organizational tools include non-profit corporations, development corporations, and joint ventures.

- **Services** offer local governments low cost methods of economic development. Services, often provided by public sector employees, may include data and information, one-stop permitting, market analysis, technical assistance, brokering, and loan / grant packaging.

As previously discussed, the plan sets forth a number of objectives targeted at implementing the major economic development goal of fostering a strong and diverse economy. The following strategies and policies outline the considerations and action steps that will be required to accomplish this goal.

LOCAL ORGANIZATIONS

The Seneca Industrial & Economic Development Corporation (SIEDC) and the Fostoria Economic Development Corporation (FEDC) were formed to provide opportunities for both community and business development within various jurisdictions across the County. SIEDC uses several tools to assist in the attraction and establishment of economic development opportunities. The organization provides information on financial incentive programs and help businesses work with the local and County government. They also market the County to prospective businesses within the United States and abroad. A number of resources and connections are at the disposal of both organizations to meet the organization's goal of establishing a better economic base for all of Seneca County.

ECONOMIC DEVELOPMENT AND FUTURE LAND USE

Economic development must be considered within a land use framework in order to have maximum benefit on the regional and local economies while having minimum negative impacts on the environment, service capacity, and character of the area. Therefore, it is this Plan's recommendation that economic development activities should be focused in identified urban service areas where infrastructure and services can be provided most efficiently. Furthermore, the use of economic development agreements through intergovernmental coordination should be promoted, as growth is beneficial to the entire County wherever jobs are retained or created.

Based upon the future land use plan as described in Chapter 4, Table 6.5 indicates the amount of land in the County and by planning area that is designated for economic development.

Table 6.5

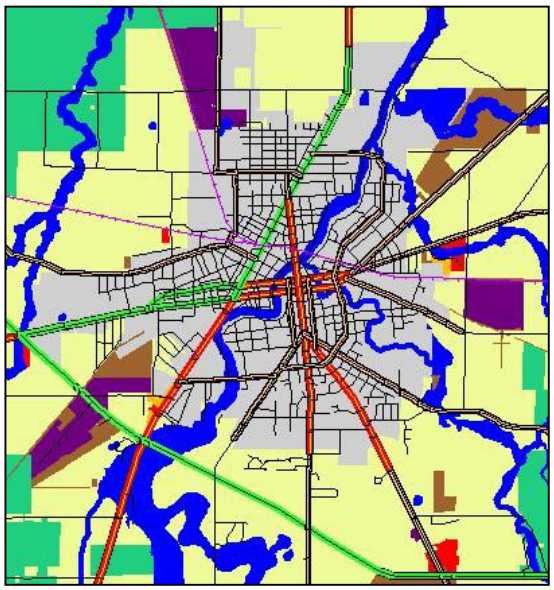
Future Economic Land Uses By Planning Area (Acres)					
	Planning Area				Total
Future Land Use	**Central**	**East**	**North**	**West**	
Village Center	454.22	668.55	661.42	362.70	**2,146.89**
Commercial	78.73	97.96		84.62	**261.31**
Industrial	457.43	25.78		1,769.43	**2,252.63**
Total	**990.38**	**792.29**	**661.42**	**2,216.74**	**4,660.83**
Percentage of Total County	**0.28%**	**0.22%**	**0.19%**	**0.63%**	**1.32%**

Unlike the commercial and industrial land use classifications, the village center land use accommodates residential development. The category was established to allow a mixed use/higher density residential community within existing hamlet settlements or planned developments. Therefore, while businesses are permitted in the village center category, the majority of the acreage will remain in residential use.

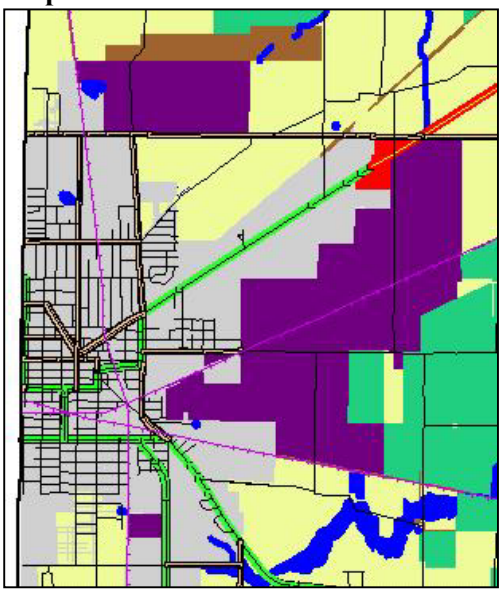
FUTURE COMMERCIAL AND INDUSTRIAL AREAS

The most significant future industrial and commercial activity in the County will be focused in the west and central planning areas around the cities of Fostoria and Tiffin. Development has been planned for these areas in order to encourage the location of sufficient commercial, office, and industrial space to meet the needs of the population while taking advantage of existing infrastructure and service capacity.

Map 6.2



Map 6.3



Maps 6.2 and 6.3 show the locations of existing and future commercial and industrial areas around Tiffin and Fostoria, respectively. Commercial development is shown in red while industrial development is shown in purple. These maps show that, wherever possible, future economic activities are located adjacent to existing development areas.

ECONOMIC DEVELOPMENT STRATEGIES & POLICIES

- Support business growth aimed at retaining and expanding existing businesses and encouraging new business recruitment.
  - Locate industrial and commercial development in clusters rather than in isolated scattered locations.
  - Promote the identity of individual communities and reinforce the existing design patterns within the community when locating new facilities.

- Maintain viable central business districts and historic preservation efforts within existing downtown areas.
  - Create downtown centers within the County's hamlets that provide limited commercial services to the local community.
  - Encourage municipalities to establish ongoing downtown revitalization programs.

- Broaden and diversify the economic base of the County by seeking an appropriate mix of industrial, commercial, and office uses.
  - Strengthen the role of the Seneca Industrial and Economic Development Corporation to coordinate regional marketing strategies.
  - Explore partnerships and economic incentives to encourage microenterprise and cottage industries.

- Include tourism as an economic development strategy.
  - Conduct an inventory of all County tourism destinations and historic sites.
  - Promote agritourism opportunities countywide.

7.

OPEN SPACE & RECREATION

7

INTRODUCTION

Cities, townships, and counties across the nation provide valuable open space and recreational opportunities for their citizens. Seneca County provides an example of the value of open space and natural resources to its residents. Throughout the County's past, the natural environment has played an important role in defining Seneca's identity. Seneca County prides itself on its rural character and agricultural resources. Additionally, numerous open space and recreational areas can be found within the County. Such natural resources include state nature preserves and fairgrounds, as well as municipal and neighborhood parks.

In the planning process, citizens were able to express their views on a number of issues, including open space. Citizens were concerned with preserving significant natural and historic features such as the Sandusky River corridor, County parks, and historic municipal downtowns. Citizens also want to maintain the rural character of the County by preserving farmland and other natural features. To protect the County's rural character, citizens suggested implementing growth management techniques such as encouraging compact development in existing urban areas.

OPEN SPACE & RECREATION

Using a variety of open space and recreational areas helps to provide diverse natural opportunities for citizens and visitors to Seneca County. The County contains a diversity of both active and passive resources. These resources can be broken down into various classifications that are defined on the basis of function and location within the community. The following paragraphs describe these classifications and provide relevant County examples. All types of open space and natural resources should be considered in order to provide a comprehensive open space and recreational plan for Seneca County.

TRADITIONAL PARKLANDS

Four general types of parkland can be found within most municipal or township boundaries. *Mini-parks* are small park areas that provide a place for adults to gather as well as a place for local children to play. Mini-parks can be valuable in high-density areas where private yards are lacking.

Neighborhood parks are parks to which neighborhood residents may walk or bike. These parks often provide activity and recreation programs for children and may also be located near elementary schools. They may include a recreation building, playing fields, courts, and play apparatus.

Community parks are larger and serve a greater population than neighborhood parks. They have more facilities and are designed for family use including activities for all ages. Community parks may also include athletic fields, meeting space, and a swimming pool. This type of park may attract large numbers of people and may coincide with a junior high or high school. Within Seneca County, examples of community parks are Hedges-Boyer Park in the City of Tiffin, and the future development of North End Park also found in Tiffin.

Metropolitan parks serve a regional or countywide area and provide a retreat from the noise and congestion associated with urban areas. These parks may offer boating, swimming, fishing, and may contain marinas, boat ramps, beaches, picnic areas, campgrounds, and hiking trails. Existing metropolitan parks in Seneca County include Meadow Brook Campground, Clinton Lake Campground (35 acres), Seneca County Fairgrounds, and Attica Fairgrounds.

ALTERNATIVE PARKLANDS

Three types of parkland can be defined as alternative parklands. *Wayside parks* serve as resting or stopping places for travelers en route to their primary destination. These parks offer scenic beauty as well as picnic areas or rest areas for the traveler. *Ornamental areas* are spaces designed to visually enhance streets and highways. Such areas may include median strips, triangles, and malls. *New developments* include a variety of other open spaces such as urban pocket parks and adventure playgrounds for children.

SPECIAL ACTIVITY AREAS

Special activity areas are designed for a particular purpose such as golf courses, pools, or recreation centers. Seneca County contains five golf courses including Loudon Meadows Golf Course, Nature Trails Golf Course, Seneca Hills Golf Course, Mohawk Golf Course, and Clinton Heights Golf Course.

GREENWAYS

Greenways are corridors of open space that follow roads, rivers, canals, shorelines, and bike paths. They may connect other areas of open space and allow for more pleasant methods of

travel from one place to another. Within Seneca County, one greenway example is the Scenic River Project.

SCENIC RIVER PROJECT

Scenic rivers in the state are designated by the Ohio Department of Natural Resources in order to protect the natural characteristics of Ohio's waterways in coming years. Regulations for state designated scenic rivers include requirements for stream length, adjacent forest cover, biological characteristics, water quality, present use, and natural conditions. A scenic river designation is considered a "cooperative venture among state and local governments, citizens' group, and local communities."

Seneca County is home to the middle portion of a designated scenic river. The Sandusky River follows US Route 53 from the City of Fremont in Sandusky County south through the City of Tiffin to the City of Upper Sandusky in Wyandot County. These 65 miles of water were designated in 1970, making the Sandusky River the second scenic river designation in the State of Ohio.

NATURE PRESERVES

Nature preserves are areas where the public can enjoy nature in its untouched form. These areas support wildlife; therefore, activities should be limited to those that do not disturb the natural habitat. Suggested activities include nature study, bird watching, campsites, and bridle paths. Nature preserves are legally protected natural areas representing the finest examples of Ohio's original landscape, based on its ecological or geological significance. The primary intent of a nature preserve is to conduct research, education, and low impact activities for the public.

Seneca County contains over 600 acres in three nature preserves, all located in the southern area of the County. The Garlo Heritage Nature Preserve is located in Bloom Township in the east planning area, and the Howard Collier State Nature Preserve located in Seneca Township and the Springville Marsh State Nature Preserve located in Big Spring Township are found in the west planning area.

Each of the preserves has unique attractions. Howard Collier Nature Preserve provides a 1.5-mile trail and picnic area for visitors, and its main features are spring wildflowers and large trees.

The Seneca County Park District recently acquired the over 250 acres of Garlo Heritage. The preserve has an old farmhouse in addition to a lake with a trail running along the southern edge. The County Park District would like to establish a nature trail system, along with the creation of a Bald Eagle Tower. The Park District would like to create an educational center or administrative office at the preserve.

Springville Marsh is the largest inland wetland in the northwestern part of the state according to the Ohio Department of Natural Resources (ODNR). The preserve also contains a number of rare and endangered plant species that can be viewed along the trail system that provides access throughout the preserve. A wildlife blind and observation tower can also be found in Springville Marsh.

ASSESSMENT

STANDARDS

The following are general standards addressing the amount of parkland that should be acquired to achieve a high quality park system that meets the needs of the County.

- 10 acres of metropolitan park land per 1,000 residents;
- 7 acres of community park land per 1,000 residents;
- 6 acres of passive open space per 1,000 residents;
- 3 acres of neighborhood park land per 1,000 residents; and
- 2 acres of special activity areas per 1,000 residents.

These standards help to determine whether the existing and future land uses provide the proper amount of open space and recreation opportunities for the number of residents within Seneca County. By reviewing the total number of open space acres and the resources found within each of the four planning areas, a determination of current and future need can be made.

Each of the four planning areas contains a variety of open space and recreational opportunities. Overall, Seneca County has 22,923 acres of open space and critical resource areas. Figure 7.1 displays the breakdown of open space and critical resource acres by planning area. The figure also shows the percentage of open space and critical resources in the County by planning area.

Figure 7.1

Open Space & Critical Resource Future Land Use				
Planning Area	**Open Space**	**Critical Resource**	**Total of OS & CR**	**OS & CR as Percent of Total County Acres**
Central	758	7,806	8,564	2.42 %
East	164	7,892	8,056	2.28 %
North	356	3,787	4,144	1.17 %
West	252	1,893	2,145	0.61 %
Seneca County	**1,531**	**21,378**	**22,909**	**6.48 %**

Each planning area contains various types of natural resources, open space, and recreational land. In order to determine the adequacy of the open space within the County, both open space acres and critical resource acres can be considered. In open space acres alone, the County contains approximately 25 acres per 1,000 in population. This figure is slightly below the general standard. However, when critical resources are included, there are 390 total acres per 1,000 in population.

In addition to lands specifically designated for open space or recreational use, the number of farms and the amount of undeveloped land in Seneca County contribute to the area's natural setting. While there appears to be no shortage of open spaces in the County, continued efforts should be made to ensure an appropriate mix of open spaces, including active recreational spaces.

LAND ACQUISITION & FUTURE SUPPORT

FUNDING

The location of parklands is essential in determining if the resources meet the need of residents. The acquisition of land prior to development could help municipalities and township areas provide sufficient open space and recreational areas. There are two basic processes for land acquisition and financing: the fee simple method and the less than fee simple method. The fee simple process is the actual payment and acquisition of open space and recreation areas. This process includes Capital Improvement Budgeting (CIP), General Fund Appropriations, Bond Issues, Bank Loans, Pay-as-you-go, Fees and Charges, Special Taxation, Concession Arrangements, and Gift and Trusts.

- **General Fund Appropriations** means the use of money drawn for one general fund, instead of relying on individual government funds to finance parks and recreation.

- **Bond Issues** enable communities to purchase land now and share the cost equally over a number of subsequent years.

- **Pay-as-you-go** use previously collected funds to construct or purchase land.

- **Fees and Charges** require the gathering of fees by charging for the exclusive use of or construction of facilities or areas and charging fees to recover the administration, operation, and maintenance costs.

- **Special Taxation** uses property taxes to finance the acquisition of open space and recreational area.

- **Concession Arrangements** charges for smaller services provided by park and recreational area, such as equipment and facility rental.

- **Gifts and Trusts** acquire land through a private gift, endowment, or trust fund.

The less than simple fee process does not involve the direct purchase or acquisition of land but placing limits on land use without taking ownership. Several methods of this process include Flood Plain / Wetland Regulation, Easements, Transfer of Development Rights, Conservation Zoning (PUD's), and Agricultural Preservation.

Any or all of this method found in these two processes could be explored and used to finance the acquisition of open space and recreation areas.

ORGANIZATIONS

Cooperation between municipal, township, and County entities could help in the provision of current and future resources. One example of this is the establishment of a County Park District in 1996 as a result of recommendations to create a park system for countywide use. The appointment of three commissioners to the Park District focus on a mission "to preserve, protect, and promote diversity of our natural resources; educate and develop an appreciation of the unique natural, rural and cultural aspects of Seneca County." The lack of available funds forces the Park District to function as a volunteer organization under the identity of Friends of Seneca County Park District.

The most recent addition to the Park District is the part-time park coordinator, whose role is to manage the current and future operations of the County's Park District. His tasks will include writing grants and long-term and short-term planning operations of natural areas. One natural area Seneca County Park District has obtained and currently manages is Garlo Heritage Nature Preserve. Volunteers work with this preserve and with other area parks to coordinate educational activities throughout the County for its citizens.

In the future, the County Park District would like to create bikeways and walkways that connect existing corridors within the County. The Park District is in the process of trying to acquire lands to accomplish these connectivity nodes. They are also negotiating for land in Eden Township for another natural park area of 55 acres. The Park District is interested in acquiring funds to support the County Parks system in the future.

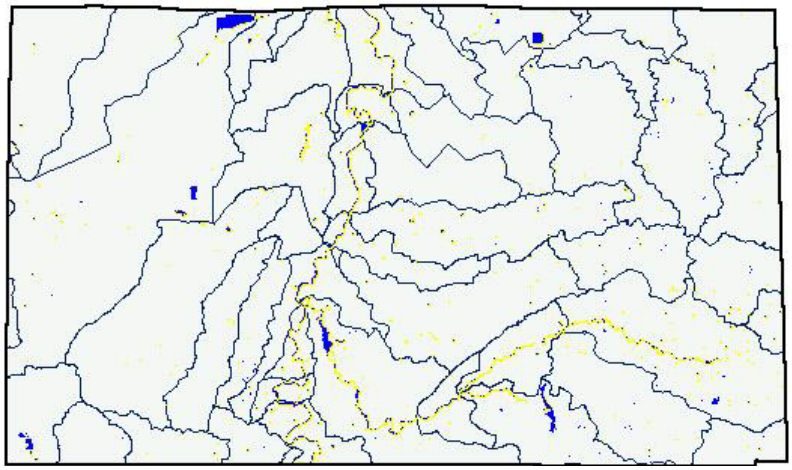
NATURAL RESOURCES

Critical resources have been given their own land use classification in the Future Land Use Plan. The category includes 100-year flood plains and streams with associated 120-foot stream buffers. While not included in the critical resource category, there are other sensitive natural resources that should be considered before development occurs. Some of these natural features include wetlands, flood prone soils, wooded lands, and steep slopes.

WATERSHEDS

Map 7.1 outlines the major watersheds in Seneca County. Watersheds are not inherently limits to development, but they define where water runoff flows. As development occurs, increasing levels of runoff are inevitable. Therefore, watershed boundaries can be used to determine where runoff and pollutants from present and future development will flow. The map shows in yellow the significant waterways in the County: the Sandusky River and Honey Creek. These waterways and their tributaries are the major collection points for the County's watersheds.

Map 7.1



The Sandusky River is environmentally sensitive to development that occurs in its watersheds. Three watershed action groups work towards the protection of the Sandusky River: the Scenic River Action Group, the Sandusky Scenic River Advisory Council, and the Sandusky River Watershed Coalition.

WETLANDS

Wetlands are another critical resource that is often protected from development as they provide a habitat for many species of plants and animals. Only small areas of wetlands are scattered throughout the County, and should, therefore, not place severe constraints on development. The wetland areas may include flood prone or hydric soils, which are soils containing shallow groundwater over a large portion of the year that have a muck-like consistency due to high organic content. Hydric soils, like wetlands, are also prohibitive to development. Wetlands exist in many forms in the County including marshes, wooded areas, meadows, and farmland.

OPEN SPACE & RECREATION STRATEGIES & POLICIES

- Develop a balance of neighborhood, community, and County district parks.

- Give priority to the park/school concept in order to more efficiently meet local park and recreation needs.

- Continue to cooperate with local jurisdictions and associations in the provision of park and recreation services to avoid duplication of efforts and encourage maximum use of available resources.

- Preserve points of historic and scenic interest when developing parks and open space areas.

- Create incentives that will force landowner/developer participation in the establishment of greenways and trails.

- Encourage appropriate conversions of railway abandonments to the greenways and trails system linking housing, services, and recreation.

- Consider strategic purchases of critical open space areas to preserve these areas and to provide important trail and habitat linkages.

8.

INFRASTRUCTURE

8

TRANSPORTATION

The Seneca County Comprehensive Plan is primarily a resource-based plan aimed at preserving the agricultural and low-density residential character of the land in the County. The major goals of the Plan are threefold: maintain and improve quality of life, promote balanced growth, and provide services efficiently. The Plan's transportation element is relevant to all three goals, as a transportation system can shape development by enhancing or interfering with accessibility between destinations and by directing growth and investment to particular locations. As a result, transportation is a crucial component to achieving the County's desired development pattern.

This transportation plan and its policy recommendations are the product of an analysis of Seneca County's existing transportation system as well as relevant state, county, township and municipal plans and projects. The transportation plan has a three-part purpose. First, the plan is aimed at resolving current transportation issues and problems. Second, this document will integrate existing state, County, and local transportation plans with the recommendations contained herein so that all plans are focused on a common goal. Finally, the transportation element will advance the objectives of the comprehensive plan by coordinating with all other plan elements, particularly land use.

The following sections of the transportation element include discussion of the plan's foundation, an existing conditions analysis, a review of current transportation plans and projects in the County, and a transportation improvement plan with recommendations to enhance the overall system.

PLAN FOUNDATION

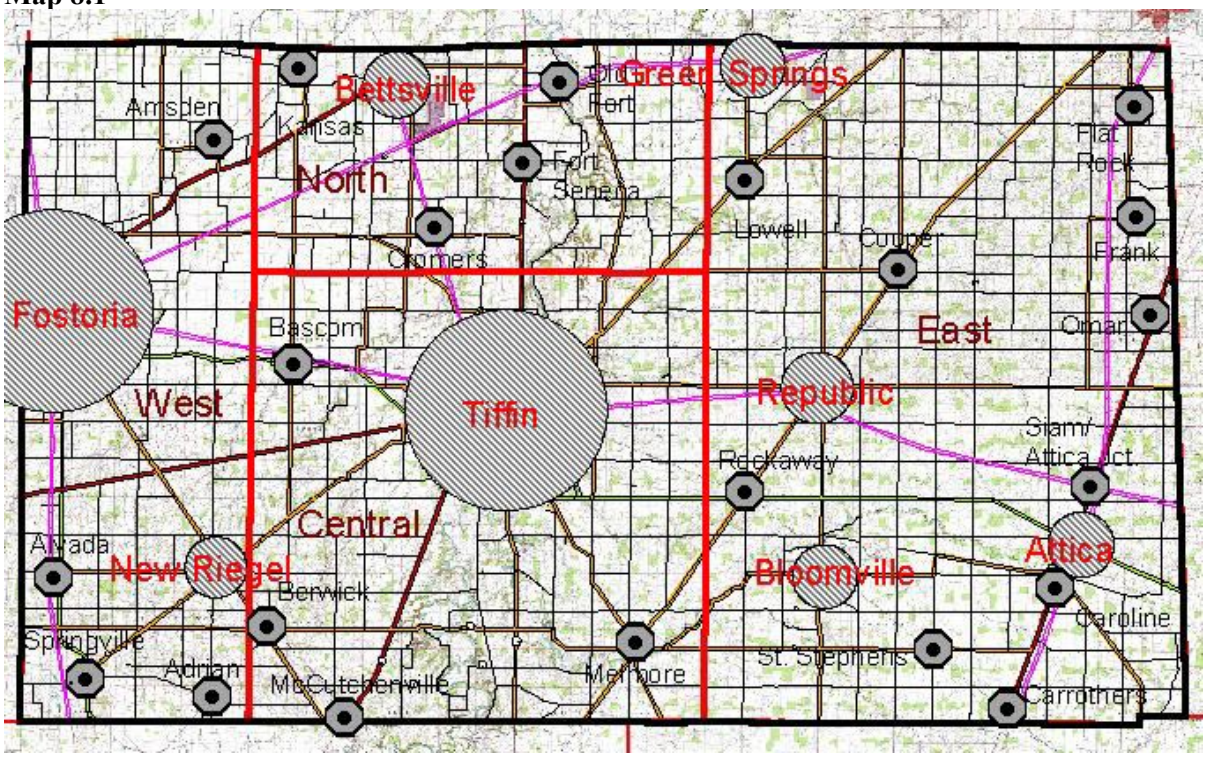
The transportation plan is based on an underlying assumption of the comprehensive plan, which is that future development should be focused into urban service areas in order to

preserve the land's rural character and the quality of life of residents in Seneca County. To achieve this goal, cooperation between all levels of government in the County will be required in the plan's implementation and enforcement of land use policies. All jurisdictions must collaborate to create incentives aimed at focusing major development into areas most suitable to development.

This development ethic has significant implications on the County's transportation system. The system must provide access to major development areas from all parts of the County as well as links between hamlets and village clusters. Also, the transportation system must provide access to the suburban areas of the County while facilitating traffic into downtown areas to support existing businesses and industries.

Map 8.1 shows the network of Seneca County's major cities, villages, and hamlets, where the larger circles represent larger resident populations. It is necessary that all of the County's municipalities and hamlets be included and integrated into the transportation system. While many of the recommendations in this section focus on improvements in particular locations, they are also aimed at enhancing the functionality of the system as a whole.

Map 8.1



EXISTING CONDITIONS

The purpose of the existing conditions section is to give a general overview of the County's transportation system as it is today. Included in this summary are roadway widths, surface types, traffic volume, functional classifications, traffic accident reports, planned projects and

improvements, and more. This summary is based on available information provided by the Seneca County Engineer's Office, the Seneca Regional Planning Commission, and the Ohio Department of Transportation (ODOT). A more detailed analysis of costs and benefits of any improvements to any deficient areas identified in this section should be conducted prior to expenditure of County funds on such projects.

GENERAL

The road system in Seneca County is composed of approximately 222 miles of state highways, 373 miles of County roads, 634 miles of township roads, and 130 miles of municipal roads. Table 8.1 summarizes the County's route system by jurisdiction.

Over half of Seneca County's 1,420 roadway miles are paved with bituminous concrete, sheet asphalt, or rock asphalt. Also, the majority of roadways in the County are two-lane roadways with lane widths of nine to ten feet. Current design standards recommend lane widths of 11 to 12 feet to ensure adequate capacity for shoulders. Tables 8.2 and 8.3 summarize the surface types and number of lanes of the County's roads.

Table 8.1

Seneca County Route System Summary by Jurisdiction			
Jurisdiction	**Number of Segments**	**Miles**	**Percent**
US & State	232	222.48	16.35 %
County	389	373.00	27.42 %
Township	995	634.40	46.63 %
Municipality	782	130.50	9.59 %
Total	**2,398**	**1360.38**	**100.00 %**

Source: ODOT Database, 2001

Table 8.2

Seneca County Route System Summary by Number of Lanes			
Lanes*	**Number of Segments**	**Miles**	**Percent**
Unknown	12	1.90	0.13 %
1	1,141	615.34	43.33 %
2	1,088	763.85	53.78 %
3	118	31.05	2.19 %
4	39	8.12	0.57 %
Total	**2,398**	**1,420.26**	**100.00%**

* Method of calculating number of lanes:

1. ODOT Road Inventory Database is used for the state routes;

2. For all routes, the numbers of lanes are estimated from the surface width.

Source: ODOT Database, 1999

Table 8.3

Seneca County Route System Summary by Surface Type			
Surface Type	**Number of Segments**	**Miles**	**Percent**
Unimproved	9	2.73	0.19 %
Graded & drained earth road	50	17.67	1.24 %
Gravel road	148	26.11	1.84 %
Bituminous (surface treated)	202	33.87	2.38 %
Mixed bituminous road (combined base and surface under 7 inches)	123	59.35	4.18 %
Mixed bituminous road (combined base and surface 7 inches or more)	601	472.70	33.28 %
Bituminous penetration (combined base and surface under 7 inches)	23	4.41	0.31 %
Bituminous penetration (combined base and surface 7 inches or more)	54	30.42	2.14 %
Bituminous concrete, sheet asphalt, or rock asphalt road	1,126	761.74	53.63 %
Portland cement concrete road	12	1.48	0.10 %
Brick road	38	7.88	0.55 %
Block road	4	0.60	0.04 %
Unknown	8	1.30	0.09 %
Total	**2,398**	**1,420**	**100.00%**

Source: ODOT Database, 1999

TRAFFIC VOLUME

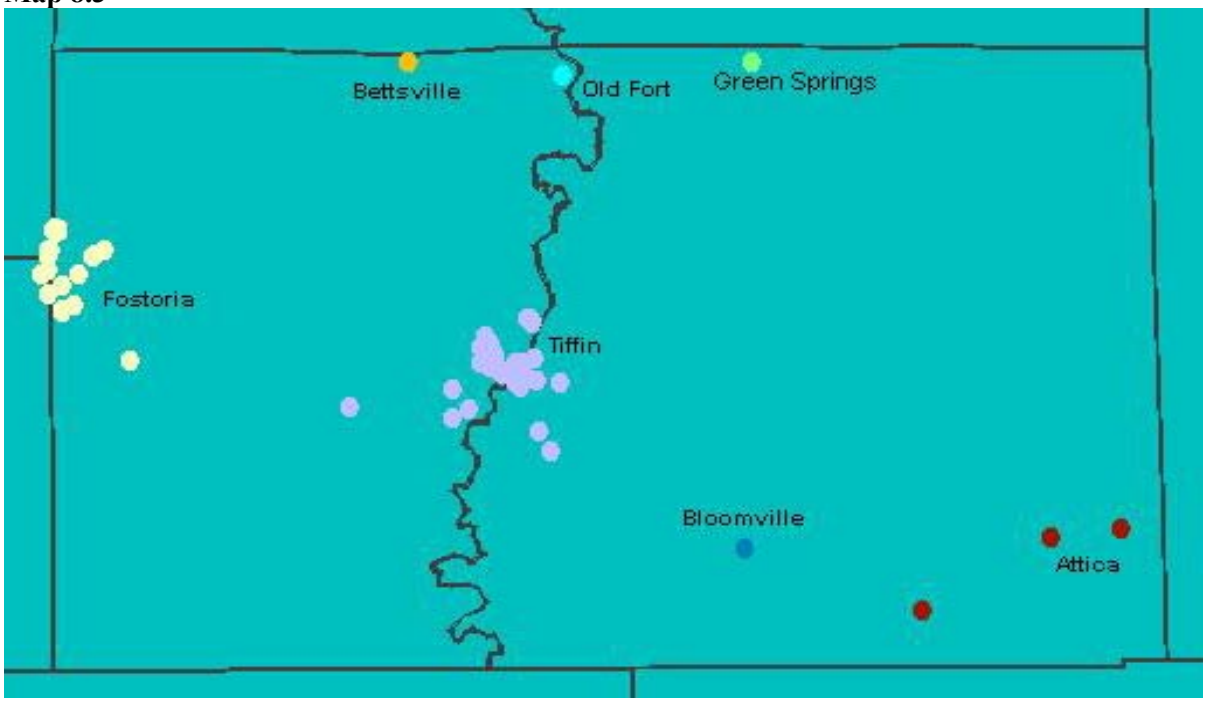
Traffic volume statistics based on ODOT counts of average daily traffic indicate that traffic is heaviest around and through Seneca County's two major municipalities, Tiffin and Fostoria. Map 8.2 illustrates Seneca County's 1997 average daily traffic measured by passenger cars per day. Truck traffic has been converted to an equivalent measure of passenger traffic based upon the size of the vehicle, so that larger trucks represent a higher number of equivalent passenger cars than smaller trucks.

Specifically, the greatest traffic volume in the County is found on US Route 224, US Route 23, and State Route (SR) 53. US 23 and SR 53 carry traffic north and south across the County while US 224 moves traffic east and west. Several other highways including SR 18, SR 101, and SR 4 serve primarily as arterial and collector routes that carry traffic through the County. Other County and township roads serve mostly as collector and local roads with a small number serving as minor arterials. Arterial routes are mostly radial to Tiffin and Fostoria. One exception is SR 4, which crosses the southeast corner of the County.

The type of land uses in a region significantly impacts traffic volume. Commercial and industrial uses are heavy traffic generators of both passenger and truck traffic, whereas low-

density residential areas produce considerably less traffic. Therefore, it is important to look at where the traffic generating activities are located in the County. Map 8.3 shows the locations of Seneca County's major businesses and industries. The vast majority is located in the Cities of Tiffin and Fostoria with few in the outlying areas of the County. The map provides another way of determining traffic volume and demonstrates the need to consider land use when planning transportation systems.

Map 8.3



Source: Seneca Industrial and Economic Development Corporation

RAILROAD CROSSINGS

The active rail lines in Seneca County are indicated in pink in Map 8.1. Two lines pass through the City of Tiffin and three lines pass through the City of Fostoria. Each of the rail lines also passes through numerous villages and hamlets in the County. In particular, the three Fostoria lines experience significant train traffic. The most heavily used line is the CSX line passing through Tiffin, Bascom, Fostoria, and Tiffin, which serves 63 trains per day.* Also, a second CSX line running north-south through the City serves 41 trains per day.* The Norfolk Southern Railroad running east-west through Fostoria to Bellevue serves 34 trains per day.* In the eastern region of the County, the Norfolk Southern Railroad running north-south through Attica serves over 25 trains per day.

All of the rail lines serving the region have many crossing points in Seneca County. The greatest concern with railroad crossings is at the locations where they cross major thoroughfares with high traffic volumes—in and around Tiffin and Fostoria. In most cases,

* Source: City of Fostoria Loop Road Study

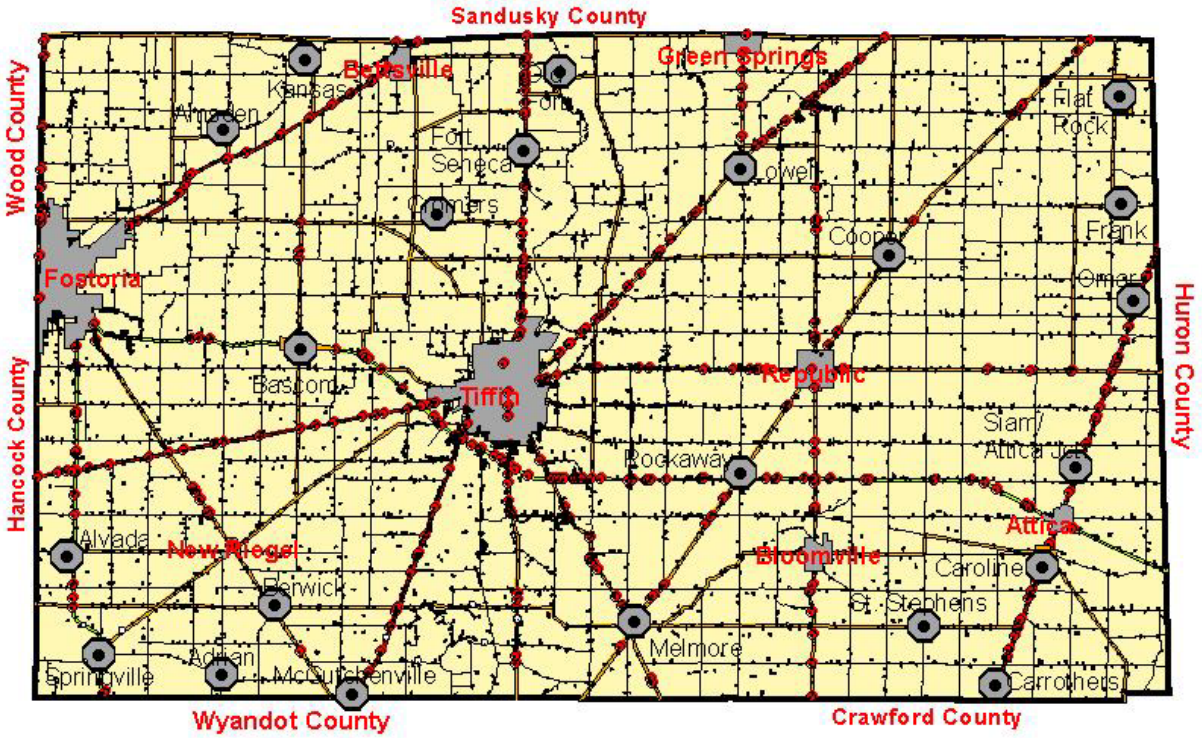
there are no grade separations to prevent rail interference with traffic flow. Safety is also a serious issue at these locations.

ACCIDENTS

Accident records were obtained from ODOT from the years 1992 to 1997. Map 8.4 indicates the location of these accidents on Seneca County's state routes as red dots. The map also shows the location of households in the County indicated in black. It is apparent that most households in the County have frontage along State, County, or Township routes--the majority having direct access to the roadways.

According to the map, many of the accident locations correspond to intersections. There is also a notable correlation between accidents and strip residential development. As the number of curb cuts increase along major roadways, the potential for accidents also increases. Traffic conflicts may be more likely to occur as vehicles enter or exit the roadway from residential driveways.

Map 8.4



FUNCTIONAL CLASSIFICATION

According to ODOT, functional classification is the grouping of roads, streets, and highways in a hierarchy based on the type of highway service they provide. Map 8.5 shows Seneca County's route system by functional classification. Note that several of the County's major roadways have two or even three different classifications. In several cases, portions of roads

have the highest classifications through major urban areas. This may indicate a traffic volume and type that interferes with the pedestrian and business activities of the downtowns.

Additionally, many of the County's roadways do not meet the design criteria of their functional classifications. However, this situation is frequent in rural areas with low traffic volume, and it does not seem to present an immediate problem. To prevent future problems, the County should consider making the necessary improvements to roadways not meeting their functional classifications over time, starting with roads carrying the greatest traffic volume.

FINDINGS

The existing conditions analysis has provided a snapshot of Seneca County's transportation system. The major concerns expressed in the analysis are addressed in the transportation improvement plan. In summary, the major conclusions of the existing conditions analysis are as follows:

- The overall transportation system density and functional classification assignments are currently adequate for the types of land uses in Seneca County.
- The majority of the system's roads are substandard as to meeting the criteria of their functional classification; however, this is not an urgent problem.
- The level of traffic, particularly truck traffic, through and near Tiffin and Fostoria has a negative impact on infrastructure maintenance, pedestrian safety, and local business.
- Traffic circulation around Tiffin and Fostoria is heavy, and the current roads are inadequate for the heavy traffic generators located there such as commercial and industrial enterprises.
- In two or three areas around Tiffin and Fostoria, railroad-crossings are inadequate and interfere with safety and traffic flow.

The following sections discuss proposed transportation projects and future plans, as well as this plan's recommendations for system improvements in Seneca County.

CURRENT PLANS

Proposed projects were reviewed from ODOT District 2's project listings and as outlined by the County's municipalities. There are numerous widening, resurfacing, and bridge and culvert replacement projects planned in the County in the next five years. Furthermore, two loop road projects are planned at the local level to control traffic flow around the City of Tiffin and the City of Fostoria. ODOT's planned projects and the two loop systems are discussed in greater detail below.

ODOT DISTRICT 2 PLANNING AND PROGRAMS

Between 2001 and 2005, ODOT's District 2 has nine road improvement projects scheduled representing a $4.54 million investment in Seneca County. The Seneca County Engineer has five road and bridge projects totaling $7.26 million. These project descriptions including the relevant roadway and location, project length, and estimated cost are described in Table 8.4.

Table 8.4

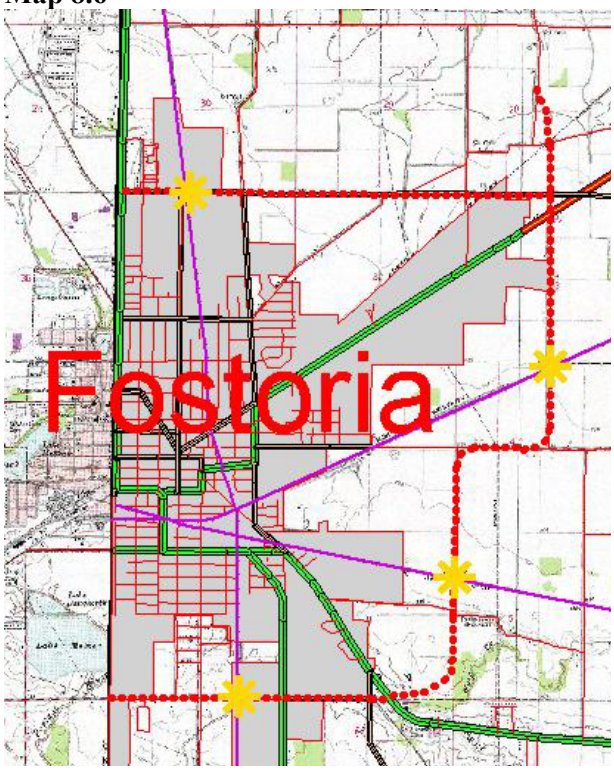
ODOT DISTRICT 2 PROJECTS (2001-2005)				
Route	**Total Project Length** (miles)	**Description**	**Cost Estimate**	**Approx. Location**
US 23	0.161	Replace culvert; provide adequate approaches	$135,000	CR 10, over Wolf Creek
SR 12	1.880	Relocate ditch and resurface	$234,000	Bettsville
SR 53	--	Replace bridge with a precast box culvert		Over Bells Run
SR 590	0.480	Replace bridge and resurface	$630,000	Bettsville, over Wolf Creek
US 224	--	Replace structure with minimal roadway involvement	$880,000	TR 113
SR 19	--	Replace bridge with minimal roadway involvement	$820,000	Republic, over Rock Creek
SR 19	0.010	Replace culvert	$200,000	Bloomville
SR 67	7.520	Two lane resurfacing and pavement repair	$1,300,000	Republic
SR 19	--	Two lane resurfacing and pavement repair		Green Springs
Total Number of Projects 9		*Total Construction Cost $4,540,000*		
SENECA COUNTY PROJECTS				
CR 6	20.300	Resurface three sections		Hancock Co. to US 23
TR 165	0.100	Replace single span truss bridge with wider structure	$350,000	Eden Twp, over Rock Creek
TR 88	0.100	Replace single arch bridge with wider structure	$1,021,000	Bloom Twp, over Honey Creek
CR 6	0.100	Replace single span arch bridge with wider structure	$1,190,000	Eden Twp, over Honey Creek
CR 33	0.100	Replace single span truss bridge with wider structure on new alignment	$3,500,000	Pleasant Twp, over Sandusky River
Total Number of Projects 5		*Total Construction Cost $7,260,000*		

Source: ODOT District 2

CITY OF FOSTORIA

In making recommendations for improvements to its transportation system, the City of Fostoria recognized the numerous traffic problems along its highways. In particular, truck traffic through the City has damaged the streets and infrastructure and has increased congestion. In parts of the City, up to four state and federal routes are combined onto a single corridor. Furthermore, rail traffic through Fostoria often blocks several main traffic arteries, also creating congestion.

Map 8.6



In 1997, ODOT evaluated the possibility of a bypass around Fostoria to alleviate truck traffic through the downtown. In its recommendations, ODOT suggested that a loop road system be considered in lieu of a bypass. The loop road around Fostoria in combination with recommendations for signal upgrades, new overhead signs, and new pavement markings in the City should ultimately reduce truck traffic in the downtown while increasing safety and accessibility for passenger traffic.

The proposed loop road would maximize the use of existing roadways while minimizing new construction. Map 8.6 shows the Seneca County portion of the proposed loop road. As shown in the map, the possible road alignment is illustrated by red dashes. The loop road would also consist of four grade separations at rail crossings to eliminate the conflict between rail and vehicular traffic. The locations of these grade separations are indicated with yellow asterisks.

Table 8.5

Fostoria Loop Road Construction Estimate (Seneca County)	
Construction Cost	$ 12,519,000
Right of Way Acquisition	$ 1,294,500
Soil Testing	$ 53,421
Environmental	$ 69,250
Engineering & Surveying	$ 1,502,280
15% Contingency	$ 2,315,768
Total Project Cost	$ 17,754,219
Estimated Project Cost	**$ 17,760,000**

Source: ODOT

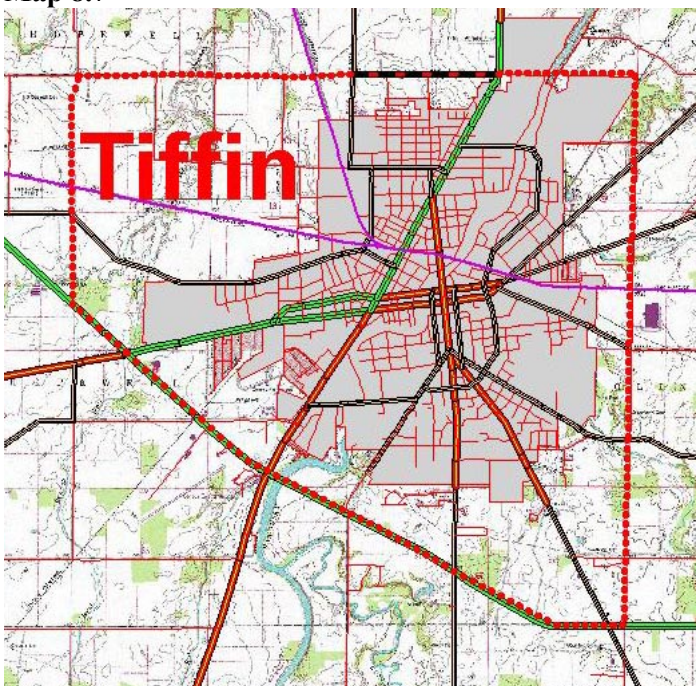
The proposed loop road is estimated to cost approximately $30 million over a three-county area. The bulk of the project cost is budgeted for Seneca County, while the remainder is split between Wood and Hancock Counties. The following table shows the breakdown of the construction cost for the Seneca County portion of the project.

In addition to improving traffic flow, access, and safety, it is anticipated that the loop road would enhance economic development in and around the City by providing infrastructure to prospective industrial and commercial areas. According to Fostoria's Updated Comprehensive Land Use Plan, a large area on the east side of the City has been designated as a future commercial and industrial corridor. The area will be serviced by the loop road as well as the railroad on the southern edge of the corridor.

CITY OF TIFFIN

As with Fostoria, the City of Tiffin has experienced traffic problems as many of the County's major thoroughfares pass through the community. Not only has truck and vehicle traffic placed a burden on the City's road system, but also increasing volumes of through traffic discourage the local use of the downtown by pedestrians.

Map 8.7



In order to improve traffic circulation around the City and to control internal traffic flow, Tiffin has similarly proposed a possible loop road around the community. The loop road will, for the most part, make use of existing roads. US 224 forms the southern portion of the loop, while a large portion of the eastern side is formed by Greenlawn Drive (CR 13). New roads are proposed on the northern and western sides of the loop road.

While the loop road system would cross existing rail lines at three different points, the Tiffin plan does not propose the creation of grade separations at these locations.

TRANSPORTATION IMPROVEMENT PLAN

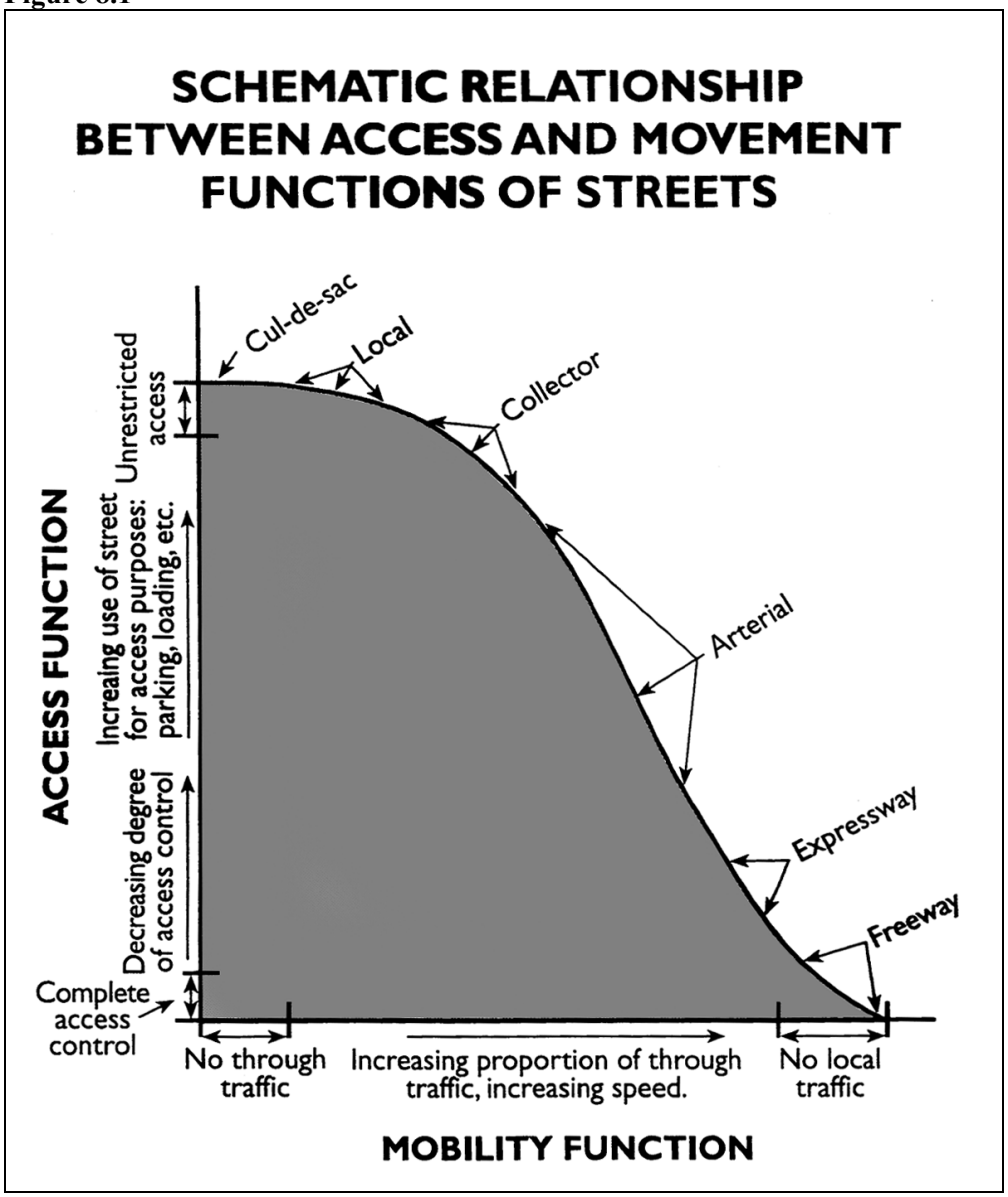
The existing conditions analysis highlighted a number of areas in Seneca County that will require significant roadway improvements. The transportation improvement plan consists of recommended new construction, improvements to existing roads, and access management strategies. This plan is based on a 20-year horizon, yet it should be updated regularly to coordinate with the plans of other County agencies. The plan includes recommendations necessary to meet the basic system, capacity, and safety needs of Seneca County. In order to implement the goals and objectives outlined in the plan, a more detailed document should be

developed by the County that prioritizes projects, identifies potential funding sources, and sets a timetable for the necessary improvements.

FUNCTIONAL CLASSIFICATION

As previously stated, functional classification is the grouping of roads, streets, and highways in a hierarchy based on the type of highway service they provide. Roads have two main functions: to provide traffic mobility or land access.

Figure 8.1



Source: US Dept. of Transportation Federal Highway Administration

Functional classification is determined by ranking the proportion of each of these two functions the road serves. Roads that function primarily to move traffic are arterials while

roads that provide access to particular land uses are local roads. Figure 8.1 illustrates this hierarchy.

Given the great differences in geography, population, and land use between states, assigning roads functional classifications cannot be a strictly quantitative process. Rather, it is based upon a qualitative assessment of trip lengths, traffic volumes, spacing of routes, and size of area population centers. There are also separate classifications for urban and rural roadways. Furthermore, the FHWA provides classification standards so that all systems should have proportionate mileages of road in each class.

Functional classifications are useful as funding and management tools. For example, functional classifications determine which roads are eligible for federal funding, as the road must be classified higher than local. Also, classifications establish standards for maintenance as well as design criteria such as lane and shoulder width, horizontal and vertical clearances, and design speeds. The following descriptions and graphics further describe the hierarchy of roads by their function.

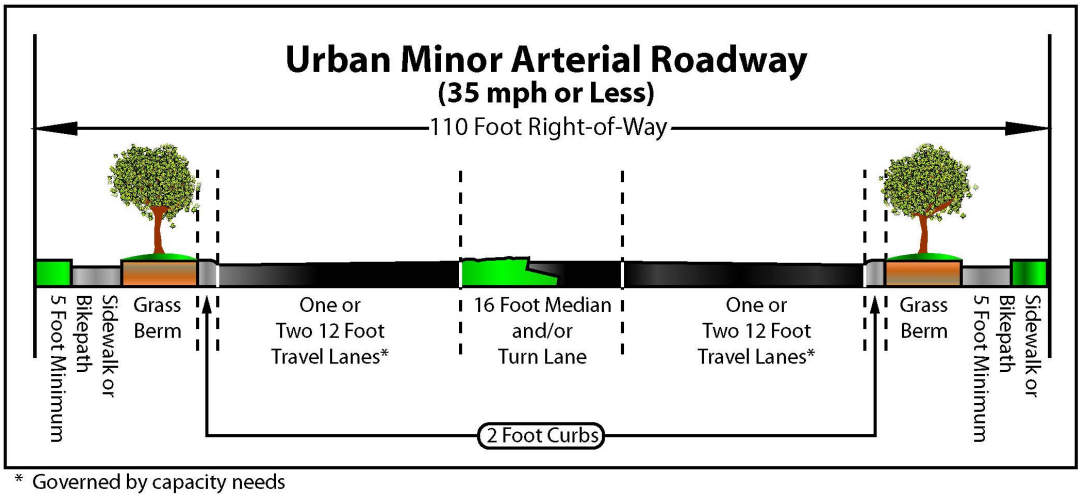
PRINCIPAL ARTERIAL

Principal arterials serve statewide or interstate travel as well as major activity centers and high volume corridors. In rural areas, this road classification provides an integrated network of continuous routes serving major population centers. In urban areas, principal arterials connect downtowns with outlying residential areas as well as provide continuity between major rural corridors and traffic moving through the urban area.

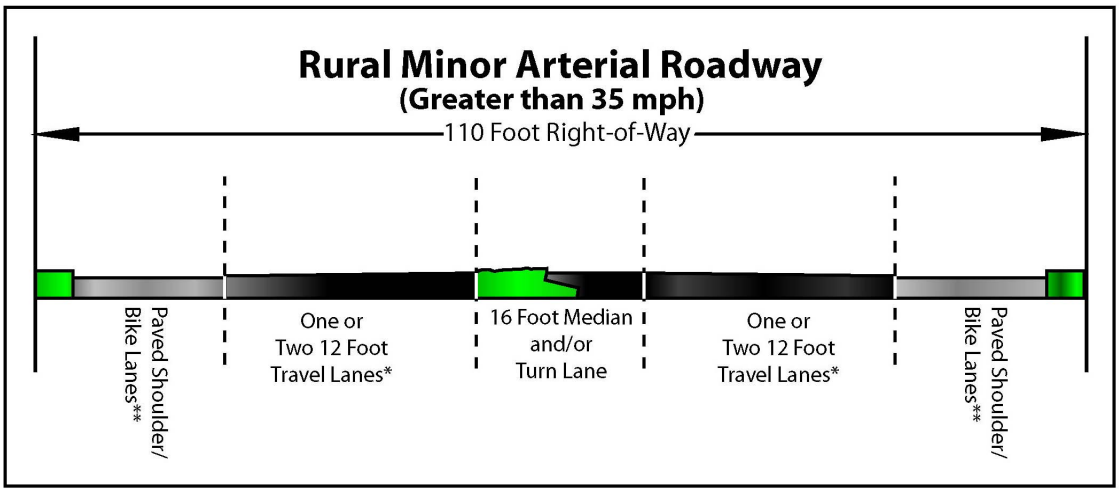
MINOR ARTERIAL

Minor arterials also connect cities and larger towns and supplement the principal arterials. In rural areas, minor arterials have fairly high travel speeds and service traffic volume greater than rural collectors. In urban areas, minor arterials service areas smaller than principal arterials and provide access to more areas without actually entering neighborhoods.

Figure 8.2



* Governed by capacity needs

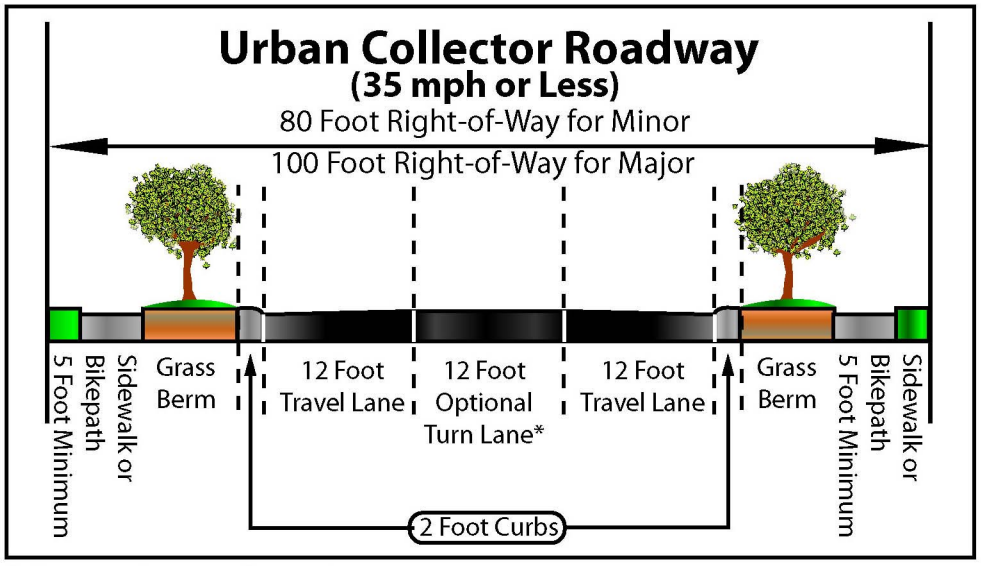


* Governed by capacity needs
** Width per appropriate design criteria (5' minimum)

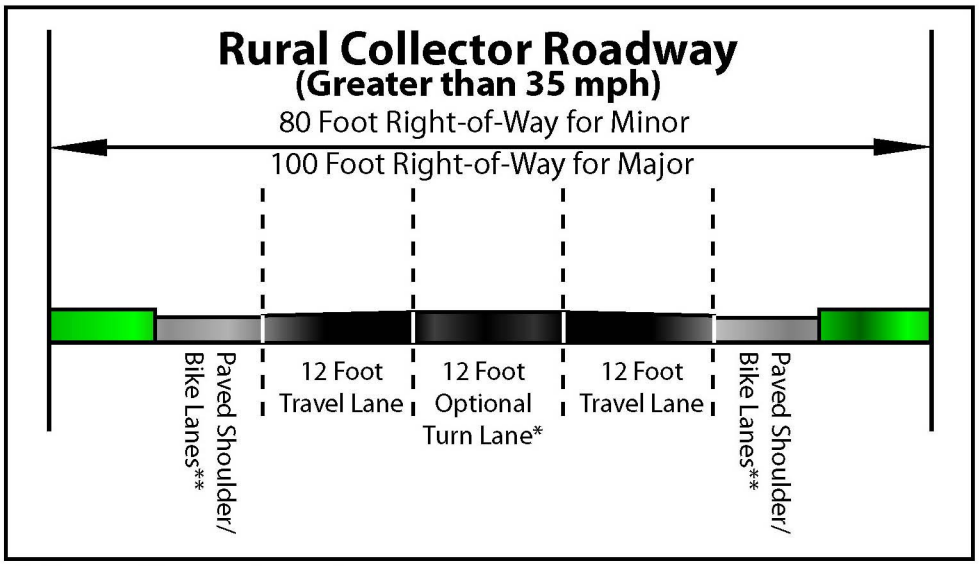
COLLECTOR

Collectors provide service within a county rather than within the state, and they have more moderate travel speeds and volumes than arterials. Collectors are spaced to collect traffic from local roads and bring developed areas within range of access. In rural areas, collectors serve towns and major county destinations not served by arterials. In urban areas, collectors funnel local traffic to and from arterials while also providing access and circulation within residential neighborhoods.

Figure 8.3



* Governed by capacity needs

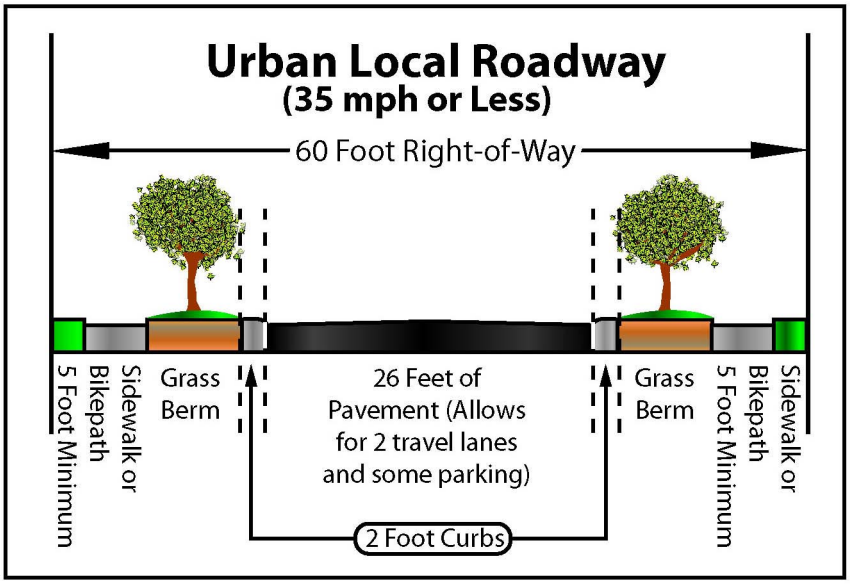


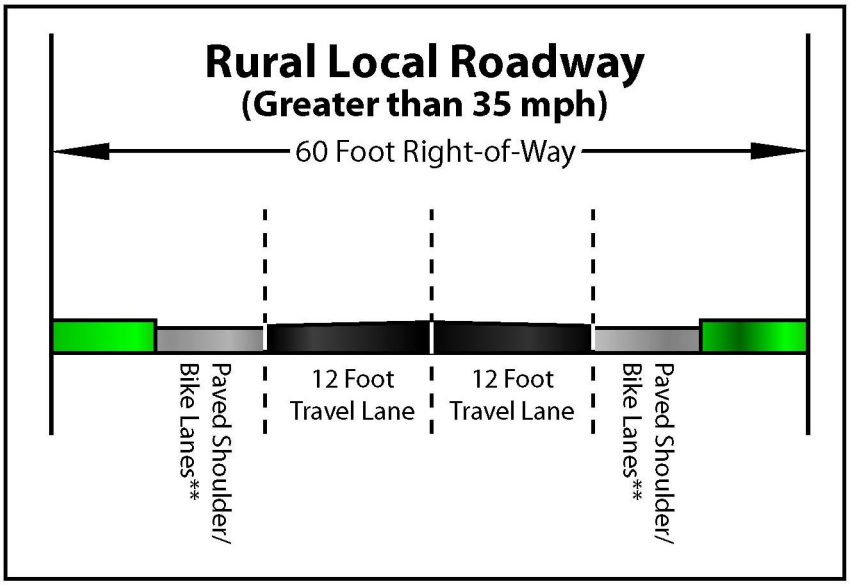
* Governed by capacity needs
** Width per appropriate design criteria (5' minimum)

LOCAL

Local roads provide access to adjacent land uses and serve travel over short distances. Local roads are not carriers of through traffic; instead, they provide access to higher road classifications.

Figure 8.4





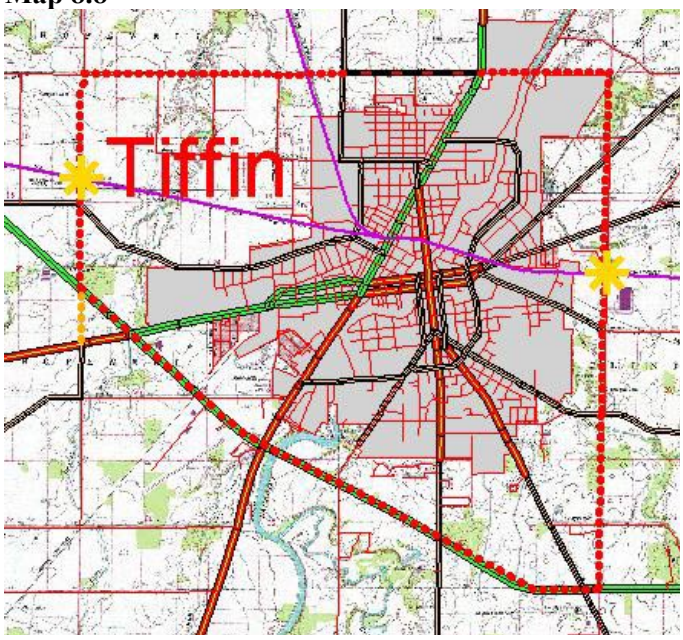
** Width per appropriate design criteria (5' minimum)

NEW CONSTRUCTION

This transportation plan supports all of the new construction and improvement projects proposed by ODOT, Seneca County, the City of Tiffin, and the City of Fostoria. Additionally, this plan contains recommendations for construction of new roads and grade separations, which are limited to areas around the Cities of Tiffin and Fostoria where the greatest traffic volume is located. The proposed roads are all connections between existing roadways needed to facilitate movement around these cities.

CITY OF TIFFIN

Map 8.8



The possible loop road system around the City of Tiffin will both utilize existing roadways and require new road construction. The most significant amount of new construction is a connection between SR 53 and Center Road just west of SR 101 on the north side of the City. A second significant connection is between CR 48 and SR 18 crossing CR 26 on the west side of Tiffin. This road would align with Knepper Road (TR 123) to the north.

The loop road system, as suggested, will have an awkward

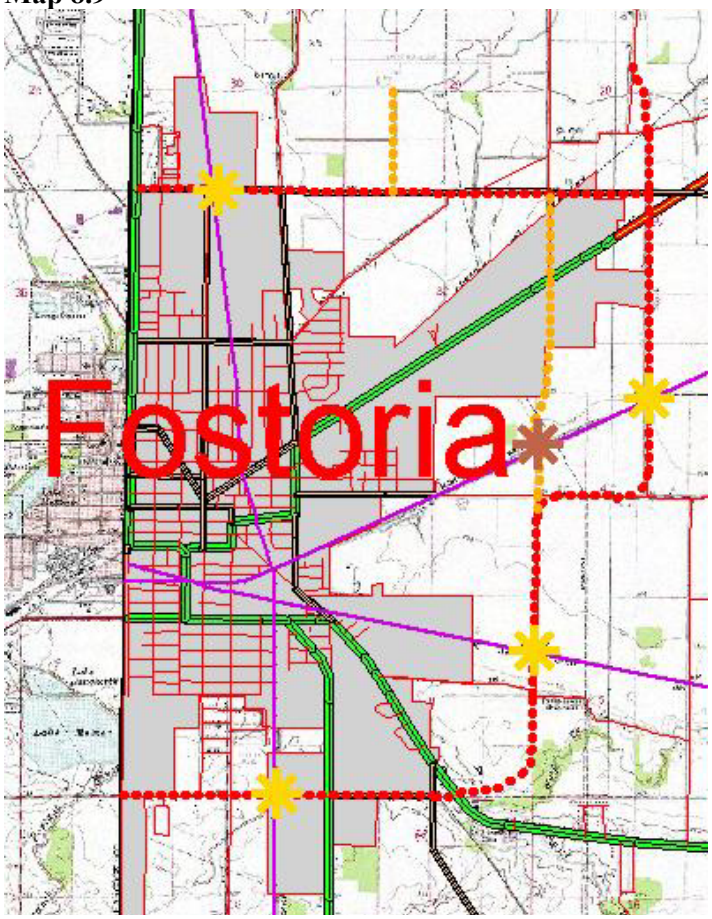
intersection on the west side of the City at US 224 and SR 18. As the intersection meets at an angle, trucks may find it difficult to make the turn safely onto the loop road. A small connection between US 224 and SR18 to the west of that intersection would improve traffic flow and provide a direct connection to CR 591. This connection is shown in yellow in Map 8.8.

The loop road will cross two active rail lines at three points: one on the north side of the City, one on the west side, and one on the east side. It is recommended that grade separations be constructed at the east and west side locations to improve general traffic flow and improve emergency vehicle accessibility around the loop road. Train traffic on the north side of Tiffin is not sufficient to require a grade separation at the third crossing point.

CITY OF FOSTORIA

The proposed loop road around the City of Fostoria also utilizes a combination of existing roads and new construction. The most significant new construction in the Seneca County portion of the loop road would connect Zeller Road (TR 114) on the south side of the City to Ward Road (TR 43) on the east side. Another proposed new construction would provide a smoother, direct connection between the legs of Yochum Road (TR 47) on the northeast side of the City.

Map 8.9



It is this plan's recommendation that the loop road alignment on the east side of the City be modified so that a new road is constructed between Weaver Road (TR 45) and Ward Road, as shown in Map 8.9 in orange. While this alignment would require more new construction, the modification would provide an easier, more straightforward route for traffic around the City. It is also recommended that another connection be constructed on the north side of the City to create greater land accessibility to the Fostoria Airport. This road would stretch north from CR 592 between CR 25 and Weaver Road. The proposed road is shown in the map in yellow dashes.

The proposed loop road system includes four grade separations on the north and east sides of the City. No additional grade separations along the Fostoria loop road system are recommended. However, if the loop road alignment on the east side was modified, the location of the crossing would move to the point illustrated in the brown asterisk in Map 8.9.

SYSTEM IMPROVEMENTS

Several major thoroughfares in the County have more than one functional classification. For example, SR 53, SR 18, and SR 12 have multiple classifications as they traverse the County. SR 18 is categorized variously as a principle arterial, arterial, and collector.

As different functional classifications have different design, capacity, and speed criteria, it is preferable that each roadway has a single classification, if possible. This will prevent traffic conflicts in the areas where the roadways transition from one classification to another.

It is also recommended that the classifications of the future roads in the loop systems around the City of Tiffin and the City of Fostoria be upgraded to arterials. This will provide adequate capacity for increasing truck and passenger traffic on these routes in the years ahead. This may require widening in some areas for the roads to satisfy ODOT functional classification standards.

Recommended classification changes:

- Decrease functional classification of SR 18 and SR 53 through Tiffin from principle arterial to minor arterial.
- Decrease functional classification of SR 12 and SR 18 through Fostoria from principle arterial to minor arterial.
- Increase the functional classifications of roads in the Tiffin and Fostoria loop road systems to at least minor arterial.

ACCESS MANAGEMENT

According to ODOT, access management is a tool used to balance the competing demands on a transportation system for traffic mobility and land access. In other words, it is the planning and implementation of transportation and land use strategies that control the flow of traffic between roads and the land they serve. Access management strategies include standards for the frequency, location, and design of driveways, intersections, signals, medians, turn lanes, and other features based upon the functional classification of the roadway. As access management involves elements of both land use and transportation, it requires cooperation within and across government agencies responsible for transportation and development decisions.

In order to promote the safety and functionality of state thoroughfares, ODOT developed the *State Highway Access Management Manual* in recognition that the "failure to manage access…is a leading cause of accidents, congestion, decline in operating speed, loss of traffic carrying capacity, and increased traffic delays." While the principles in the manual are aimed at managing access to and from state highways, they can and should be adapted to benefit locally maintained roads as well.

ACCESS CATEGORIES

Table 8.6

OHIO STATE HIGHWAY ACCESS CATEGORY TABLE		
Cat	**Traffic Function**	**Design Standards**
I	High speed, high volume, long distance through traffic for interstate, intrastate, intercity travel; all Interstate and Freeway type facilities are included in this category.	Multi-lane; median; access at interchange; no direct private access allowed.
II	Relatively high speed, high volume, long distance through traffic for interstate, interregional, intercity, and some intracity travel. Typically includes Expressways and facilities in an early stage of design, intended to become Category I as funding and priorities allow.	Access at interchange or public street intersection; no direct private access allowed unless property retains deeded rights and then for RT. LT may be allowed if (1) the access does not have potential for signal, and (2) travel circuity exceeds two miles, and (3) the Department determines that the LT can meet all safety, design and operational standards. This is the highest category allowing at-grade intersections.
III	Moderate to high speeds, volumes, and distances for interregional, intercity, and intracity travel. Typically includes rural arterials, high-speed urban arterials, and some urban collectors.	No direct private access if property has other reasonable alternative access or opportunity to obtain such access; when allowed, generally for RT only. LT may be allowed if (1) the LT does not have potential for signal, and if (2) the Department determines that the LT does not cause congestion or safety problem or lower the level of service, and (3) alternatives to the LT would cause roadway and intersection operation and safety problems, and (4) the LT does not interfere with operation of street system or access to adjacent properties.
IV	Balanced service for access and mobility at moderate to high speeds and volumes in rural areas for moderate to short distances and low to moderate speeds and volumes in urban areas providing intercity, intracity, and intracommunity travel. Typically includes rural collectors, low to moderate speed urban arterials, and most urban collectors.	One direct access allowed per parcel; additional access may be allowed if the Department determines it meets access safety, design, and operational standards. All turn movements may be allowed if the Department determines they meet safety, design, and operational standards.
V	Low to moderate volumes, speed, and distance serving intracity, intracommunity traffic. Typically includes most rural and urban local streets and roads providing local land access.	All turning movements allowed subject only to safety considerations.

Before access management regulations can be effectively implemented, County officials must have a clear understanding of the region's entire roadway network including the primary functions of its roads and how future growth may likely affect the system. The access categories table is a classification system used in conjunction with functional classification to understand a County roadway network. While considered together, a road's access category and functional classification may or may not correlate. The use of the two systems provides the necessary flexibility to anticipate and plan for the protection of important corridors in the future.

Each roadway should be assigned an access category to identify the degree of access that will be allowed between that roadway and the land that abuts it. It is recommended that Seneca County adopt the same access category definitions as have been adopted by the Ohio Department of Transportation. Access categories in ODOT's system are ranked from I to V, respectively, from the most restrictive to the least restrictive. Table taken from ODOT's *State Highway Access Management Manual* defines each access category and the basic design standards for each.

Map 8.10 shows the suggested access category designations for the County's major roadways. Table 8.7 shows a summary of the mileage of the County's route system by access category classification. Note that no roadways in the County fall under Class I.

Table 8.7

Seneca County Road Access Category Summary		
Access Category	**Miles**	**Percent**
Class-II	106.28	7.48 %
Class-III	151.07	10.64 %
Class-IV & V	1,162.91	81.88 %
Total	**1,420.26**	**100.00 %**

Access can be managed in several ways including design standards, zoning regulations, subdivision regulations, and the driveway permit process. The following paragraphs describe some of these methods.

DESIGN STANDARDS

In ODOT's *State Highway Access Management Manual*, there are suggested guidelines for driveway location and design, driveway spacing, corner clearance, joint and cross access, and turn lane requirements. It is recommended that Seneca County adopt ODOT's access management design standards as they provide consistent and comprehensive guidelines in a format that is easy to implement. Furthermore, such standards are easier to defend than local guidelines, and they are updated by ODOT, representing a cost and time savings to the County. If specific additions to, deletions from, or modifications of ODOT's policies are desired, the County can specifically state these differences in its access management policies.

ZONING REGULATIONS

Zoning regulations can also be implemented that support access management in the County. Such regulations can be applied through direct inclusion in township zoning codes, adopting Countywide zoning regulations, or by establishing corridor overlay zones, which add special requirements to an existing zoning district while retaining other requirements of the underlying zone.

One zoning recommendation is to set minimum lot frontage requirements greater than or equal to the minimum driveway spacing requirements for the adjacent roadway. Also, minimum setback standards should be set to preserve future right-of-way requirements of the roadway. Other zoning recommendations are the implementation of cluster zoning in high traffic corridors and the implementation of planned unit developments in commercial areas to promote a mix of uses with shared use driveways.

SUBDIVISION REGULATIONS

County subdivision regulations may also be modified to support access management. Three areas where subdivision regulations have an impact on access management are in minor subdivision and lot split guidelines, major subdivision and site plan review guidelines, and traffic impact study requirements.

Subdivision regulations should require congestion prevention and capacity preservation review as part of the site plan review process for both minor and major subdivisions. Additionally, special requirements should be created for minor subdivisions or lots splits with concerns such as flag lots, outparcels, and parcels with double frontage to reduce access problems.

Furthermore, a traffic impact study should be required when a land development or change in use is expected to generate significant traffic, might impact an already congested or high-accident location, and/or has specific site access and safety issues as determined by the County Engineer. The study should be conducted by a traffic engineer based on site-specific information. Some components of the study include a description of the proposed land use and impacted study area, an existing conditions analysis, identification of system deficiencies, description of trip generation and distribution, projection of future traffic, and a description of the necessary system improvements. The Institute of Transportation Engineers' *Traffic Access and Impact Studies for Site Development, A Recommended Practice* should be used as a guideline for the preparation and review of traffic impact studies.

TRANSPORTATION STRATEGIES & POLICIES

- Maintain and enhance the existing County road system, focusing on roads that necessitate upgrading to meet their functional classification requirements.

- Encourage the adoption and use of strong and effective access management strategies.

- Provide preferential funding support for arterial road capacity improvements within urban growth areas and major connectors between municipalities.

- Identify the location and alignment of new roads in advance of future need to coordinate establishment of right-of-way requirements and access control.

- Discourage random driveway cuts along State and County roads.

- Where necessary, construct grade separations at rail crossings to increase safety, traffic flow, and emergency access.

UTILITIES

Approximately 60 percent of Seneca County's population is served by a centralized water system. The largest water supplier is the Ohio American Water Company, which supplies the greater Tiffin area. The next largest system belongs to the City of Fostoria. All of the Villages except for New Riegel have their own local systems.

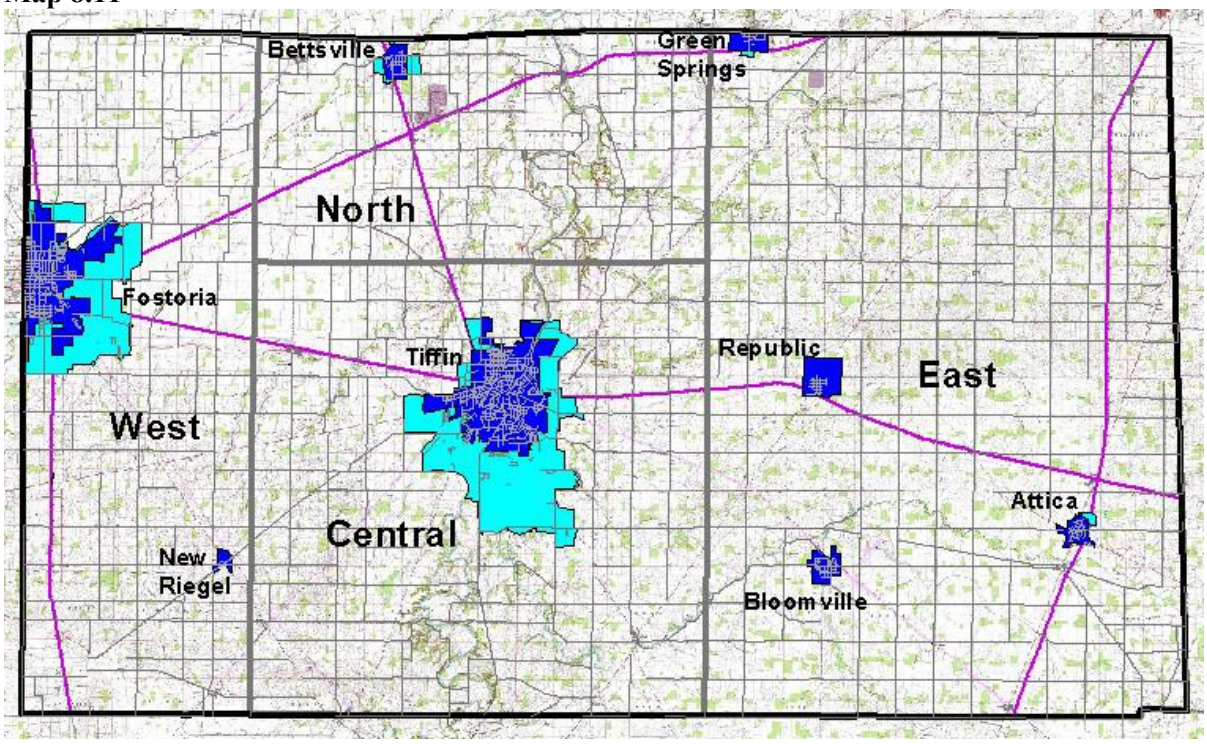
Approximately 60 percent of the households are serviced by centralized wastewater systems. The major wastewater systems are located in the cities of Fostoria and Tiffin. The Villages are serviced either by local systems or are in the process of obtaining centralized sewer service.

The data included herein was obtained through survey forms, telephone interviews, and on-site interviews. The data is summarized in Tables 8.8 and 8.9. Maps 8.11 and 8.12 show existing and projected (2020) service areas. Projections were based on projected land use maps (see elsewhere in this document), population projections developed as part of this project (also provided elsewhere in this document), and information developed from the survey/interview process.

CENTRALIZED WATER SYSTEMS

Map 8.11 illustrates water service areas in Seneca County. The dark blue shaded areas represent current service areas while the aqua shaded areas represent proposed service areas.

Map 8.11



CITY OF TIFFIN

The largest water system in the County supplies the City of Tiffin and immediate surroundings. The system is operated by the Ohio American Water Company, a private corporation. Raw water is drawn from two sources with a present total reliable source supply of 5.0 million gallons per day (MGD). The primary source is the Sandusky River and the secondary source is a well system consisting of six ground wells that are rated at between 160 and 400 gpm.

The raw water from these sources is pumped to a mixing tank, then treated physically by coagulation, flocculation, and filtration. Powdered activated carbon is added to the filter influent. The filtered water is then disinfected with chlorine and fluoridated prior to distribution. The treatment plant has a capacity of 3.4 MGD.

The service area for this system extends beyond the city limits and services 7,395 accounts. Average daily demand is approximately 2.2 MGD with a peak daily demand recorded in 1999 at 2.8 MGD. Service rates are based on a graduated rate per cubic feet of water metered.

Distribution storage consists of two elevated storage tanks capable of storing 1.3 million gallons (MG) for distribution. The older of these two tanks is 64 years old. The reported condition of both is excellent. Storage capacity also includes one 1.0 MG concrete clearwell located at the treatment plant. This clearwell was built in 1994 and it is also reported to be in excellent condition. Distribution storage capacity is well short (~1.0 MG) of Ohio Environmental Protection Agency (OEPA) criteria for storage, which is that distribution storage capacity be at least equal to average daily demand.

The distribution system consists of cast iron, asbestos concrete, ductile iron, PVC, and polyethylene piping ranging from 6 months to 122 years old. Piping sizes vary from three-quarter inch to 16 inches in diameter. Replacement piping is made of ductile iron, PVC, and polyethylene. System pressure is reported to be adequate and the general condition of the distribution system is reported as good. There are 538 fire hydrants throughout the system. The lines are flushed bi-annually. The distribution system underwent a $6.2 million upgrade that was completed in 1994.

The treatment system has good capacity for expansion. Treatment processes are currently at 65 percent of plant capacity, based on average daily demand. The system has been digitally mapped. However, the City's current storage capacity shortfall must be addressed prior to account expansion. Upgrades to the distribution system should ensure good system pressure for future use. The company is currently in the design phase for clarification improvements that should increase treatment capabilities.

CITY OF FOSTORIA

The City of Fostoria receives its raw water supply from six surface water reservoirs (East Branch Portage River) with a total capacity of 2.5 billion gallons. The system also has three

standby wells for use during drought conditions. The water is pumped to the treatment facility then chemically treated with alum and filtered, lime softened, passed through a carbon adsorption system, and recarbonated. The water is then disinfected with gas chlorine and fluoridated before being sent through the distribution lines. The treatment plant has a capacity of 6.0 MGD.

The service area for the system extends beyond the city limits and services 5,500 accounts. Average daily demand is reported to be 2.3 MG with a peak reported in 1999 at 3.7 MG. Water use rates are based on a charge per 100 cubic feet of water used.

Distribution storage consists of two elevated storage tanks with a total capacity of 2.0 MG. Both tanks are hydropillar-type and are reported to be in good condition. The oldest tank is 19 years old and was scheduled to be painted in 2001. Additional clear well storage of 1.5 MG exists for a total on hand storage capacity of 3.5 MG.

The distribution system consists of cast iron and ductile iron piping ranging in size from 6 inches to 14 inches. Replacement materials are also made of cast and ductile iron. The age of the system is reported to be up to 70 years in some sections. Hydrants are installed every 300 feet and are flushed annually by the Fire Department. System pressure is reported to be adequate.

The treatment system has capacity for expansion. The treatment plant is currently operating at approximately 40 percent for average flows and could accommodate approximately another 3,000 accounts. Recent upgrades to the treatment processes include the retrofit of the solids contact unit in 1999 and upgrades including new filter equipment with computer controls, and a new lime feeder/slaker unit. These upgrades should further increase treatment efficiencies of the system. However, storage capacity shortfalls currently limit expansion of the water system.

VILLAGE OF ATTICA

The Village of Attica receives raw water from Honey Creek, a tributary of the Sandusky River. Ferric chloride is added to the raw to aid flocculation and then the water is settled. Powdered activated carbon is the added and the water is passed through sand filters. Caustic soda is added for pH control. The water is then recarbonated and disinfected with gas chlorine. Fluoride is added prior to pumping the treated water through the distribution system. The treatment plant has a reported capacity of 0.4 MGD.

The service area for the system extends outside the Village limits north to Siam Township, and south to Caroline Township. The system services 550 accounts. Average daily demand is reported at 0.25 MGD with a peak demand reported in 1999 of 0.3 MGD. The plant facilities were built in 1916 and the general condition of the plant is reported to be fair.

Distribution storage consists of two elevated storage tanks with a total storage capacity of 230,000 gallons. The oldest tank was erected in 1916. Both tanks are reported to be in fair

condition. During summer months, the tank capacity is less than average daily demand. The OEPA criteria require storage capacity to be at least equal to average daily demand.

The Village distribution system is made up of cast iron and plastic pipe ranging in size from 4 inches to 10 inches. Replacement lines are manufactured from C900 PVC. System pressure is reported to be adequate except for two low-pressure spots in the Village. Plans are to install two booster pumps in these areas to increase pressure. There are 78 hydrants installed throughout the Village and they are flushed bi-annually.

This system has capacity available for expansion. The plant currently operates at 63 percent capacity. However, before expansion is considered, an engineering study should be completed to assess the condition of the plant and associated distribution components. This study should focus on the age of the treatment plant and storage tanks and ascertain whether improvements are needed to support expansion.

VILLAGE OF BETTSVILLE

The Village of Bettsville receives its raw water supply from two ground wells with a reported total source supply of 0.79 MGD. Raw water is disinfected with sodium hypochlorite before being sent to the distribution system. This is the only treatment provided. Treatment plant capacity is reported to be 0.58 MGD.

The service boundary for the system is entirely within the Village limits and serves 304 accounts. Average daily demand is reported to be 0.06 MGD with a peak demand reported in 1999 at 0.08 MGD. Water usage charges are based on a flat rate for the first 6,000 gallons, then a graduated rate per each additional 1,000 gallons.

Distribution storage consists of one 75,000 gallon elevated tank, built in 1950. This tank was scheduled for painting sometime in 2000.

The distribution system is composed of cast iron and plastic pipes ranging in size from 2 inches to 6 inches. Replacement pipes are made of cast iron. There are 78 hydrants in the Village and pressure is reported to be adequate. The general condition of the system is reported as fair to good. Hydrants are flushed when the system experiences problems with high iron content, or "red water." The Fire Department performs pressure checks once per year.

This system has excellent capacity for expansion. The treatment plant is operating at approximately 10 percent of total capacity. The processes are simple and could easily be expanded. An engineering study should be undertaken to develop plans for increased storage should expansion occur. The distribution system has been recently upgraded with the installation of 260 new meters within the last three years, two new hydrants per year for the last two years, and a computer information database for better monitoring and tracking. The Village has been providing funds since 1996 for maintenance and procurement of new equipment.

New federal regulations may affect systems like Bettsville's that provide only disinfection. The "Ground Water Rule," which was scheduled for promulgation in late 2000, requires either increased microbial surveillance in source and finished water or construction of additional treatment systems (filters) to ensure microbial removal or deactivation prior to distribution of drinking water. The exact impact will not be known until the rules are finalized. However, it is expected that some resources will have to be provided to comply with the rule. The amount may have an impact on how much additional service can be extended by the water system.

VILLAGE OF REPUBLIC

The Village of Republic obtains its raw supply from three wells with capacities of 110 gpm, 80 gpm, and 125 gpm, respectively. Treatment consists of disinfection by chlorine gas. This is the only treatment provided. The treatment plant has a reported capacity of 0.3 MGD.

The system service area is limited to the Village boundary with the exception of one residence outside that boundary. The average daily demand is reported to be 0.05 MGD with a peak demand in 1999 reported at 0.11 MGD. Service charges are based on a flat fee for the first 3,000 gallons, then a graduated rate per amount used thereafter.

Distribution system storage consists of one 100,000-gallon steel-legged tank, built in 1940. The tank's exterior was painted in 1997 and the interior in 1998. The general condition of the tank was reported to be good.

The distribution system consists of asbestos concrete, ductile iron, and PVC piping in sizes from 4 inches to 6 inches. Replacement materials consist of PVC. The general condition of the system is reported to be good. The distribution system is digitally modeled. There are hydrants distributed throughout the system and pressure is reported to be adequate. A major valve and hydrant replacement program was completed in 1999.

This system has excellent potential for expansion. The treatment plant is operating at approximately 20 percent for average demand. Although there have been no recent upgrades to the plant, there are plans for disinfection detention and iron removal that should increase the quality of the water through the system. The Village is also planning for new main line extensions that would support expansion plans. Republic's water system may also be impacted by the "Ground Water Rule," as discussed earlier.

VILLAGE OF BLOOMVILLE

The Village of Bloomville water system services 385 accounts within the Village limits. The Village obtains its raw water from two wells that are rated at 200 gpm. Treatment consists of disinfection by the addition of granular chlorine solution. The treatment plant has a reported capacity of 0.58 MGD.

Average daily demand is reported to be 0.08 MGD with a peak daily flow in 1999 at 0.13 MGD. Service charges are based on a flat fee for the first 1,800 gallons metered, then assessed at rate per 1,000 gallons thereafter.

System storage consists of one 100,000 gallon elevated steel tank. This tank is painted every five years and its overall condition is reported as good.

The distribution system is predominantly cast iron piping, approximately 60 years old, in pipe sizes ranging from 4 inches to 6 inches. The general condition of the system is reported to be good. The Village has 43 hydrants installed in the system and pressure is reported to be adequate. Hydrants are flushed once per month during the months of April through October.

The system operates reasonably well according to the Village utilities operator. No major expansions or improvements are planned for the system. In 1995, the Village replaced the main valves in the distribution system. In 1998 and 2000, both well pumps were replaced. During a site visit to the plant, the operator confirmed that each component in the system is exercised at least bi-annually to insure operation. The treatment plant operates at well below maximum capacity and could easily handle new accounts. The replacement of the pumps and valves would also appear to provide room for expansion within this system. Bloomville's water system may also be impacted by the "Ground Water Rule."

VILLAGE OF GREEN SPRINGS

The Village of Green Springs obtains raw water from three wells, two of which are in constant use, each delivering water at a rate of 350 gpm. The Village system supplies 509 accounts within the Village limits. The third well is rarely used due to high sulfur content. Treatment plant capacity is reported to be 0.48 MGD.

The water is treated by ion exchange softening, then disinfected with gas chlorinating. Automated controls monitor storage levels, flows, and chemical feeds. If a problem with the treatment plant or storage level develops after normal duty hours, the system is designed to alert the operator by means of a paging system. The two original softening units were installed in 1991/1992, with a third unit installed in 1998. Average daily demand is 0.18 MGD. The peak daily demand from 1999 was reported as 0.24 MGD. Usage fees are based on a flat rate per 1,000 gallons used.

Distribution system storage consists of one 75,000 gallon elevated steel tank. The tank was built in the 1930s and is regularly scheduled for maintenance and painting every three to five years. Storage capacity is significantly below the OEPA criteria (~100,000 gallon shortfall).

System distribution consists of ductile iron, plastic, and asbestos/concrete transite piping in sizes ranging from 2 inches to 8 inches. Replacement piping is made of plastic. General condition of the piping is reported to be fair to good. The system is 70 years old. There are 57 hydrants distributed in the system and these are flushed twice per year. System pressure to the hydrants is reported to be adequate.

Since the treatment system is operating at approximately 50 percent maximum capacity, expansion can be supported. This is a fairly modern system for the size of operations and should be able to accept expansion easily. However, distribution storage is currently inadequate with respect to OEPA guidelines and should be increased prior to account expansion.

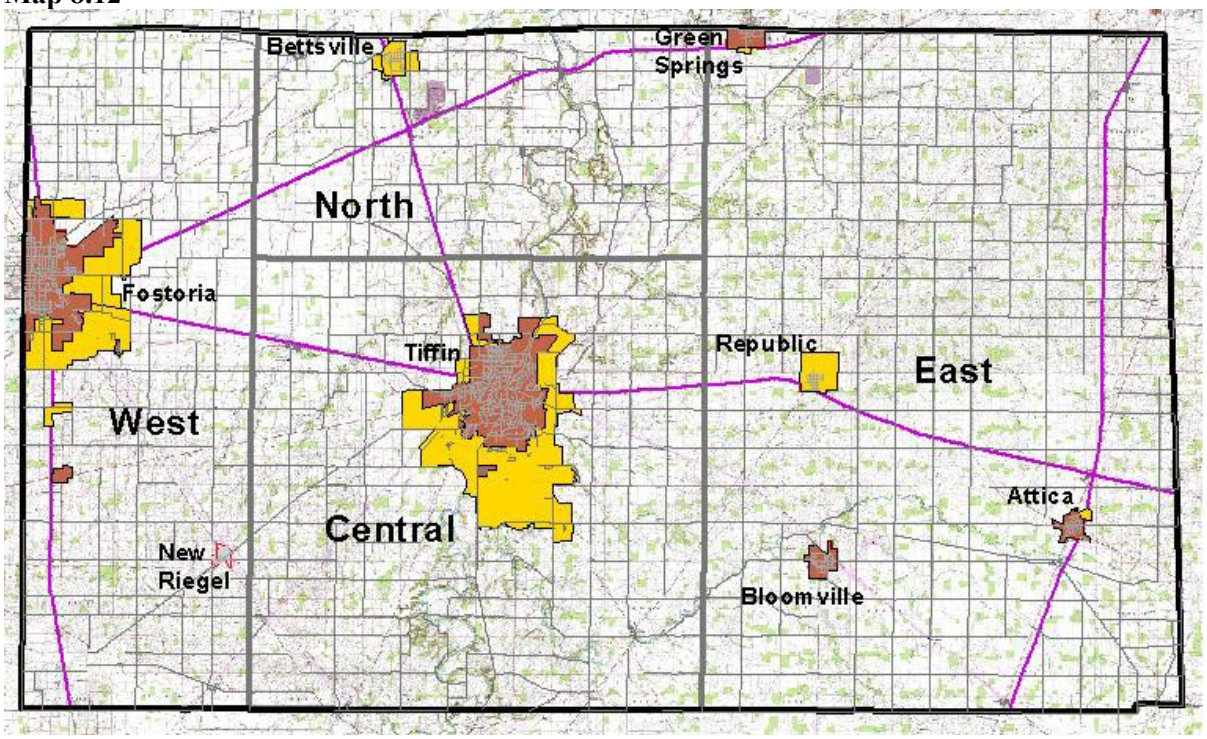
VILLAGE OF NEW RIEGEL

The Village of Riegel currently has no centralized water treatment facilities. The survey returned by the Mayor of the Village indicated there are no plans or engineering studies in progress to construct a centralized system.

CENTRALIZED WASTEWATER SYSTEMS

Map 8.12 illustrates water service areas in Seneca County. The brown shaded areas represent current service areas while the yellow shaded areas represent proposed service areas.

Map 8.12



CITY OF TIFFIN

The City of Tiffin operates a wastewater treatment system consisting of primary and secondary clarifiers, and an activated sludge system. The system services approximately 7,400 accounts. Treatment plant capacity is reported to be 4.0 MGD with a normal dry weather flow at 3.23 MGD. Peak flow in 1999 was reported to be 16.0 MGD. This high flow is reportedly due to a combined storm/sanitary sewer collection system that results in

very high flows during periods of rainfall. A site visit to the plant on May 9, 2000 revealed the plant to be in good shape, both physically and operationally.

The collection system is mostly a gravity feed combined storm/sanitary system made up of approximately 65 percent brick or tile, 30 percent concrete, and 5 percent plastic piping. The actual age of the system is unknown. Because it is a combined system, flows into the treatment plant are very high during rain events. When possible, storm water is recycled to the primary treatment portion of the plant. When this is not possible, the storm water is disinfected with chlorine and discharged to the Sandusky River. The City has an ongoing study for separating the combined sewer system.

The treatment plant is reportedly complying with the requirements set forth in National Pollutant Discharge Elimination System Permit (NPDES) #2PD00025JD*AD. Treated effluent is discharged to the Sandusky River. Sludges are dewatered and treated by aerobic digestion prior to land application. Between 300 and 500 dry tons of sludge are produced annually and applied to area farmlands.

The City uses a metered service rate based on a fee per 100 cubic feet of water usage per account.

The City is in phase one of seven major separation projects concerning the combined system. There are no other planned upgrades at the facility at this time. The City has completed an extension for collecting wastewater from along State Route 100 from the south of the city limits. The plant operates at approximately 80 percent capacity during dry weather and could reasonably be expected to accommodate another 1,000 customers once the I/I situation is resolved[1].

CITY OF FOSTORIA

The City of Fostoria operates a secondary treatment plant that services 5,500 customers within the City limits. Treatment plant capacity is reported to be 12.0 MGD with an average daily dry flow reported at 3.59 MGD. Peak flow in 1999 was reported to be 14.4 MGD. High flows exceed plant capacity primarily due to a combined storm/sanitary sewer collection system. The combined system overloads plant capacity during rainfall periods. The plant was built in the early 1900's. The last major upgrade was in 1994, which included the addition of a new aerobic digester, new sludge dewatering system, and new primary treatment. Observations made during a site visit on May 9, 2000 indicate the plant facilities are in good physical condition, and run efficiently by plant staff.

The existing collection system is a combination storm/sanitary (CSO) sewer collection system made up of mostly vitrified clay pipe, with approximately 10 percent of the system being plastic. Collection is a combination of gravity feed and force mains, with several lift stations. The system is 100 years old in places, and contributes significantly to I/I and plant

[1] Infiltration: The water entering a sewer system and service connections from the ground, through defective pipes, pipe joints, connections, or manhole walls. Inflow: The water discharged into a sewer system and service connections such as yard and area drains, foundations and catch basins.

overloading during periods of rainfall. The City and plant staffs have completed the process of establishing CSO sampling stations, and installing new pipes and check valves to deal with this problem.

The plant discharges effluent to the East Branch of Portage River under NPDES Permit #2PD00031*MD. The plant is currently reportedly in compliance with the requirements of this permit. Sludge is treated by aerobic digestion and dewatered using lime stabilization. It is then applied to area farm fields. The plant generates approximately 1,100 dry tons per year.

The City charges a monthly service rate based on a fixed rate per amount metered. The rates are graduated per increase in metered water flow.

The wastewater treatment plant is included in a City capital improvement budget for replacement and repair of facilities. In addition to the upgrades previously mentioned, the City has projected an increase of 300 customers through the year 2004. Once the separation of the combined storm/sanitary system is completed, account expansion for this plant should be easily accomplished.

VILLAGE OF ATTICA

The Village of Attica wastewater treatment plant services 390 customers within the Village limits and extends service to the Attica Fairgrounds. Treatment consists of two oxidation ditches, final clarification, and an aerated lagoon. Plant capacity is reported to be 0.60 MGD with an average daily dry flow at 0.25 MGD. The peak flow reported for 1999 was 1.0 MGD. This flow exceeded the plant capacity and is due to a combined storm/sanitary sewer collection system that overloads the plant during periods of rainfall. The plant was built in the 1970's with no major upgrades to the facilities since then.

Collection system piping consists of approximately 50 percent PVC and 50 percent gasketed clay materials. The system is 100 percent gravity fed. The Village is in the process of separating the storm and sanitary sewers which will increase plant stability and reduce the I/I situation. In addition, the Village plans to conduct camera and smoke tests after separation of the system to locate I/I problems. Separation operations are tentatively scheduled to begin in June 2000.

The plant discharges effluent to the Work County Ditch under NPDES Permit #2PB0001*DD. The plant is reportedly currently complying with the requirements in this permit. Sludge is collected into drying beds, and then land applied to area farms. The plant generates approximately 15 tons of sludge per year.

The Village uses a metered rate system for sewer service charges. Service is based on a rate per 100 cubic feet of sewage metered.

Although the plant has had no major upgrades since its construction, a site visit conducted revealed operations were efficiently run with no major problems except the overflow

conditions due to the combined collection system. As previously mentioned, the Village is in the process of separating the sewers. Additional improvements to the facility include installing polymer tiles and building a protective cover for the sludge dying beds. The plant operates at significantly less than capacity during dry periods and could readily accept expansion once the sewer separation project is complete.

VILLAGE OF BLOOMVILLE

The Village of Bloomville employs an aerated lagoon system to treat wastewater from 400 accounts. Treatment capacity is reported to be 0.25 MGD with an average flow reported at 0.08 MGD. Peak flow for 1999 is reported to be 0.30 MGD, exceeding plant capacity. During a site visit in May 2000, the operator of the plant commented that this excess flow did not normally affect his treatment operations. The plant was built in 1967.

The collection system is composed of 100 percent PVC piping and is 100 percent gravity fed. The operator stated that I/I problems due to customer sump pump use contributed to excess flows reported to the plant in 1999. The collection system was installed in 1992 and replaced an existing combined sewer.

The lagoon discharges treated effluent under NPDES Permit #2PB00053*CD to Honey Creek via Griffin Ditch. The plant has experienced some problems with maintaining BOD within permit limits. The operator attributed this to an algae situation in the lagoon. He is working with Ohio EPA to address this problem.

The Village charges a flat rate per 1,000 gallons of sewage per connection with a minimum monthly fee assessed.

This treatment system has excellent capacity for expansion. The collection system is relatively new and in good working order. During average dry flows, the plant treats at approximately 35 percent capacity. An interview with the operator during a site visit revealed no significant problems with the system.

VILLAGE OF GREEN SPRINGS

The Village of Green Springs utilizes an aerated lagoon to treat wastewater from 509 accounts within the Village limits. The maximum plant capacity was unknown by the operators. Average daily flows are reported to be 0.17 MGD with a peak flow in 1999 reported at 0.57 MGD.

The collection system is a combined storm/sanitary sewer system. The Village is currently working to separate the system into two sewers. Piping consists of 98 percent glazed clay tile and 2 percent PVC. The collection system is 100 percent gravity fed. The collection system is reported to be 70 years old in some areas. The combined sewers significantly contribute to high flow conditions at the plant.

The treatment lagoon discharges effluent to Flag Run Creek under NPDES Permit #2PB00026*ED. The operator stated they have experienced some problems with high levels of total suspended solids as a result of algae buildup in the lagoon. They are working with Ohio EPA to correct the situation.

The Village charges a flat rate per 1,000 gallons of sewage as metered at each connection.

There are currently no plans for expansion of this system. Work is progressing to separate the storm and sanitary collection lines, which should enable the treatment lagoon to accept increased flows.

VILLAGE OF REPUBLIC

The Village of Republic does not currently have centralized wastewater collection or treatment. However, the Village has contracted for a design to construct a collection system and an aerated lagoon to treat wastewater from 282 accounts within the Village limits. The design capacity for the system is 0.75 MGD. The collection system will be composed of 100 percent PVC piping and completely gravity fed. Accounts are to be charged a flat rate for service. The expected completion date for construction is sometime in 2002.

VILLAGE OF BETTSVILLE

The Village of Bettsville does not currently have a collection or wastewater treatment system in operation. An engineering design is in progress for a 0.15 MGD, mechanically aerated lagoon system to service 403 accounts. The service boundaries will include the village plus a one-half mile radius in each direction in addition to the Village of Burgoon in Sandusky County. The composition of the pipe materials is yet to be determined. The collection system will be 100 percent gravity feed. Sludge management will consist of dewatering, and then land application. Expected construction completion is in 2002.

VILLAGE OF NEW RIEGEL

The Village of New Riegel also does not have a centralized wastewater system in operation, but it is under OEPA orders to provide collection and treatment for wastewater generated by the Village. A preliminary engineering report has been completed. The Village is considering two options; (1) discharge effluent to a lagoon for treatment, or (2) pump effluent to the City of Fostoria for treatment. Maximum design capacity will be contingent on whether the Riegel Foods facility utilizes the Village system or continues to use its own treatment facility. With the addition of Riegel Foods wastewater, the maximum flows will be about 0.095 MGD. Without Riegel Foods, the design flow will be approximately 0.035 MGD. The system will service 327 accounts within the village limits, excluding Riegel Foods. The collection system is to be composed of 100 percent PVC piping and be totally gravity fed. An expected completion date has not been decided upon at the time of this report.

SUMMARY

The water needs of Seneca County are being adequately met by the current water systems in operation. During a site visit to Ohio American Water Company's Tiffin plant, the superintendent indicated that his company had been approached about supplying water to the northeast quarter of Seneca County under a regional water system plan. He asserted that his company was ready and able to take part in such an agreement. Site visits conducted to each of the systems in the County revealed that, for the most part, the water treatment and distribution systems are healthy and operating in good order. The two major systems are most readily expandable due to their size condition of facilities. Several of the smaller villages, including Green Springs and Bloomville, have recently modernized their systems to more efficiently supply water to the customers. Storage capacity was noted to be below OEPA criteria for two of the systems.

The wastewater systems throughout the County are generally in need of some attention. The major bottleneck to expansion is the existence of combined storm/sanitary collection systems, which tend to hydraulically overload treatment plant capacities during rainfall. Only one of the five plants visited has separated these combined sewers. Three of the systems are currently addressing this problem. Once these sewers are separated, actual treatment capacities can be analyzed to see if expansion for these systems is feasible. All systems in the County were adequately meeting the needs of customers during dry flow periods. New collection and/or treatment systems are in planning or design stages for three Villages: Republic, Bettsville, and New Riegel.

Table 8.8a: Water Treatment

Site/ POC	Avg Daily Demand mgd	Peak Daily Demand mgd	Capacity mgd	Wells/Source ID# - capacity	Treatment
City of Fostoria Timothy Haagen Water Plant Chief 435-2793	2.33	3.67	6	Surface Water 6 reservoirs ~2.5 billion gallons capacity 3 standby wells (not used since 1994)	Coagulation (alum) & filtration Softening (lime) Carbon Adsorption Recarbonation (CO2) Polyphospate Potassium Permanganate Gas Chlorine, Fluoridation Built 1930, good condition.
Village of Republic Tom Fishbaugh Village Administrator 585-5981	0.05	0.11	0.3	3 wells #1 - 110 gpm #2 - 80 gpm #3 - 125 gpm	Gas Chlorination Built 1940, good condition.
Village of Bettsville Jerry Hade Water Plant Supt. (419)986-5636	0.06	0.08	0.576	2 wells #3 - 250 gpm #4 - 300 gpm	Chlorination - sodium hypo-chlorite Built 1950, good condition.
City of Tiffin Ohio American Water Company Leo Tracy Operations Supt. (419)447-8815	2.2	2.8	3.43	Sandusky River and 6 wells #20 - 400 gpm #10 - 225 gpm #11 - 160 gpm #21 - 285 gpm #24 - 200 gpm #25 - 300 gpm	Coagulation, flocculation (alum, polymer), sedimentation, PAC, filters, gas chlorination, fluoridation.
Village of Attica Gary Weis Water Plant Supt. (419)426-8815	0.1 (winter) 0.25 (summer)	0.3	0.4	Honey Creek	Primary, secondary settling with alum and ferric chloride, PAC, sand filtration, soda ash, gas chlorination, fluoridation. Built 1916, fair condition.
Village of Green Springs Ray Strait Chief Operator (419)639-2355	0.24	0.18	0.48	3 wells @350 gpm 2 wells in use well #3 high sulfur	Chlorination - gas ion exchange Built 1930, good condition.
Village of Bloomville Darin Brown Water Plant Supt. (419)983-4745	0.13	0.08	0.58	2 wells both @ 200 gpm	Chlorination - granular solution Built 1937, good condition.

Table 8.8b: Water Distribution

Site/ POC	Upgrades & Notes	# of Accounts	Age years	Existing Materials	New Materials	Size Range	Pressure	Hydrants	Notes
City of Fostoria Bill Podach Water Plant Chief 435-2486	Retrofit of solids contact unit completed in 1997. Upgrade filter system. New lime feeder/slaker planned.	5500	70	CI DI	CI DI	6" - 14"	Adequate	650	Annual flushing program Replace lines to improve fire flows. Not modeled.
Village of Republic Tom Fishbaugh Village Administrator 585-5981	New iron removal facilities planned. Disinfection detention planned.	245	60	DI AC PVC	PVC	4" - 6"	Adequate	yes	Annual flushing program On WaterCad
	Major valve and hydrant replacement program completed in 1999.								
Village of Bettsville Jerry Hade Water Plant Supt. (419)986-5636	260 new meters w/I last three years. Two new hydrants/year last two years. Computer info database.	304	50	CI Plastic	CI	2" 6"	Adequate	37	Flushed when necessary. FD press ck once/yr.
City of Tiffin Ohio American Water Company Dave Little Operations Supt. (419)447-8815	In upgrade process for clarification improv-ments - design phase.	7,395	122	CI AC DI PVC PE	DI PVC PE	3/4" 16"	Adequate	538	Flushed bi-ennially. System upgraded in 1994. Modeled by SCADA
Village of Attica Gary Weis Water Plant Supt. (419)426-8815	Planned two pump station by Aug 2000.	550	84	CI Plastic	C900 Plastic	4" 10"	No, two spots low. Boosters planned.	78	Flushed biannually. Not modeled.
Village of Green Springs Ray Strait Chief Operator (419)639-2355	Third softening unit added 1998.	509	70	DI Plastic Transite	Plastic	2" 8"	Adequate	57	Flushed bi-ennially Not Modeled
Village of Bloomville Darin Brown Water Plant Supt. (419)983-4745	None	385	60	CI	CI	4" 6"	Adequate	43	Flushed 1/ month, Apr - Oct. Not modeled.

Table 8.8c: Water Storage

Site/ POC	Tanks	Capacity	Age years	Type	Notes
City of Fostoria Bill Podach Water Plant Chief 435-2486	1 1	1,000,000 1,000,000	19 6	hydro- pillar hydro- pillar	To be painted 2001 1.5 mil gallon clear well storage available Total storage capacity – 3.5MG Excellent condition
Village of Republic Tom Fishbaugh Village Administrator 585-5981	1	100,000	60	Legged	Exterior painted in 1997 Interior "good" condition
Village of Bettsville Jerry Hade Water Plant Supt. (419)986-5636	1	75,000	50	Elevated	Sched. paint 2000
City of Tiffin Ohio American Water Company Dave Little Operations Supt. (419)447-8815	1 1	1.0 MG 300,000	3 64	Elevated Elevated	Excellent Excellent
Village of Attica Gary Weis Water Plant Supt. (419)426-8815	1 1	80,000 150,000	84 46	Elevated Elevated	"Fair" condition
Village of Green Springs Ray Strait Chief Operator (419)639-2355	1	75,000	70	Elevated	"Good" condition
Village of Bloomville Darin Brown Water Plant Supt. (419)983-4745	1	100,000	61	Elevated	Good

Table 8.9a: Wastewater Treatment

Location POC	Homes Served	Design Capacity MGD	Average Flow MGD	Max Flow MGD	Treatment System Age (years)	Treatment
Village of Attica Gary L. Weis - Supt. (419)-426-9611	390	0.6	0.2	1.0	~30	Oxidation ditches settling, chlorine disinfection, lagoon.
City of Tiffin Bradley Borer - Supt. (419)448-5440	7,395	4.0	3.2	16.0	25	Primary & secondary clarifiers, aeration, and chlorine disinfection
City of Fostoria Mike Ritter - Supt. (419)435-3263	5,500	12.0	3.59	14.4	90	Primary, secondary clarifiers, settling, aeration, ultra violet disinfection.
Village of Green Springs Ray Strait - Chief Operator (419)639-2355	509	unknown by operators	0.17	0.57	70	Aerated lagoon
Village of Bloomville Darrin Brown - Supt. (419)983-4745	400	0.25	0.08	0.3	33	Chlorine disinfection, dechlorination, aerated lagoon
Village of Republic (design) Poggemeyer Engr. - D. Lindsay (419)352-2548	245					Aerated lagoon
Village of Bettsville (design) URS Greiner - Jim Seta (614)464-9138	403	0.15				Mechanically aerated lagoon
Village of New Riegel (design) Peterman Associates (419)422-6672	327	0.095* 0.035** Preliminary Engineering report completed				Two options under consideration: 1. Lagoon 2. Pump to Fostoria

Table 8.9b: Wastewater Collection

Location POC	Collection	Types and Approx. Fraction of Pipe Materials	Sludge	Expansion Notes
Village of Attica Gary L. Weis - Supt. (419)-426-9611	100% gravity CSO	PVC SDR35 50% Clay gasketed 50%	Drying beds, land application.	In process of CSO/SSO separation. Then planned smoke/camera testing. Sludge drying bed upgrade planned.
City of Tiffin Bradley Borer - Supt. (419)448-5440	90% gravity	65% brick or tile, 30% Cement, 5% Plastic	Aerobic digestion, land application.	Ongoing process to separate sanitary/ storm sewers, reduce I/I.
City of Fostoria Mike Ritter - Supt. (419)435-3263	CSO Significant I/I ~100 yrs. Old	90% Clay, 10% Plastic	Aerobic digestion Lime stabilization, Land application	Planned expansion to 300 additional homes by 2004. Last major upgrade 1994, new aerobic digester, sludge dewatering system, primary treatment.
Village of Green Springs Ray Strait - Chief Operator (419)639-2355	100% gravity	98% Glazed clay tile, 2% PVC.	n/a	Work in progress to separate combined sanitary/storm sewers.
Village of Bloomville Darrin Brown - Supt. (419)983-4745	100% gravity	100% PVC	n/a	1992, new separate sanitary sewer installed.
Village of Republic (design) Poggemeyer Engr-D. Lindsay (419)352-2548	100% gravity		n/a	Expected completion 2002.
Village of Bettsville (design) URS Greiner - Jim Seta (614)464-9138	100% gravity		Dewatering, land application.	Expected completion 2002.
Village of New Riegel (design) Peterman Associates (419)422-6672	100% gravity	100% PVC		*Riegel Foods has own WWTP. Design flows calculated if Riegel Foods decides to use Village system. **Flows without Reigel Foods.

9.

STRATEGIC IMPLEMENTATION

9

1. Maintain and enhance the standard of living for all citizens of Seneca County.

1.1 Increase the economic development potential of the County.

a. Support business growth aimed at retaining and expanding existing businesses and encouraging new business recruitment.
   - Locate industrial and commercial development in clusters rather than in isolated scattered locations.
   - Promote the identity of individual communities and reinforce the existing design patterns within the community when locating new facilities.

b. Maintain viable central business districts and historic preservation efforts within existing downtown areas.
   - Create downtown centers within the County's hamlets that provide limited commercial services to the local community.
   - Encourage municipalities to establish ongoing downtown revitalization programs.

c. Broaden and diversify the economic base of the County by seeking an appropriate mix of industrial, commercial, and office uses.
   - Strengthen the roles of the Seneca Industrial and Economic Development Corporation and the Fostoria Economic Development Corporation to coordinate regional marketing strategies.
   - Explore partnerships and economic incentives to encourage microenterprise and cottage industries.

d. Include tourism as an economic development strategy.
   - Conduct an inventory of all County tourism destinations and historic sites.
   - Promote agritourism opportunities countywide.

1.2 Provide a range of housing choices for all residents.

a. Provide a safe, decent, and sanitary housing stock.
   - Partner with local jurisdictions to create a unified and comprehensive code enforcement system to insure that existing homes remain in sound repair.

b. Ensure a broad range of housing types so that all County residents have the opportunity to purchase or rent standard housing supported by adequate public services.
   - Expand existing regulations to permit and encourage a greater diversity of housing types, sizes, and densities to meet the needs of all economic levels and living styles.
   - Provide appropriate housing opportunities for empty-nesters or seniors transitioning to smaller households close to transportation nodes and services.
   - Promote programs that assist seniors to "age in place."
   - Encourage/facilitate home additions that accommodate home sharing with extended family.

c. Provide incentives for increasing the use of mixed-use development to promote more efficient, compact nodes of growth within urban service boundaries.
   - Offer incentives such as density transfers and streamlined development review processes to encourage this development pattern.
   - Promote residential development characterized by higher densities with dedicated open space.
   - Encourage mixed densities within residential developments.

d. Amend/create zoning and building codes that accommodate and encourage "work at home" employment that has no adverse impacts on neighbors.

1.3 Ensure all residents have access to quality open space and recreation opportunities.

a. Develop a balance of neighborhood, community, and County district parks.

b. Give priority to the park/school concept in order to more efficiently meet local park and recreation needs.

c. Continue to cooperate with local jurisdictions and associations in the provision of park and recreation services to avoid duplication of efforts and encourage maximum use of available resources.

d. Preserve points of historic and scenic interest when developing parks and open space areas.

e. Create incentives that will encourage landowner/developer participation in the establishment of greenways and trails.

f. Encourage appropriate conversions of railway abandonments to the greenways and trails system linking housing, services, and recreation.

g. Consider strategic purchases of critical open space areas to preserve these areas and to provide important trail and habitat linkages.

1.4 Preserve and protect historic sites and structures in the context of their natural settings.
   a. Encourage the design of signs and buildings to be harmonious with existing historic structures and settlements.
   b. Promote private and public partnerships that seek to conserve the significant historic resources in the County.
   c. Explore methods for strategically purchasing critical historic structures.

1.5 Maintain the rural character of the County.
   a. Develop a countywide access management plan to discourage strip development and indiscriminate curb cuts along State, County, and township routes.
   b. Provide strong support for retaining and protecting scenic and natural areas such as greenbelts, streams, creeks, woodlands, wetlands, and historic sites.
   c. Provide for a smooth transition from rural to urban development.
      - Soften the impacts of development by requiring greater levels of screening between uses as land use densities increase.
      - Respect existing hamlet development patterns by perpetuating them in future development areas where possible.
   d. Preserve prime farmland.

2. Encourage growth that focuses upon existing urban areas and respects the intrinsic values of the land.

2.1 Encourage growth that builds upon existing municipalities, and support new residential, commercial, and industrial growth only within identified urban growth boundaries where public infrastructure is available.
   a. Support rehabilitation and redevelopment of existing sites rather than scattered, new development.
      - Explore state funding opportunities for redevelopment of brownfields.
   b. Encourage new development to function as extensions of existing development patterns rather than standing in contrast to them.
   c. Discourage leap-frog, sprawl, and strip-type development.
   d. Direct new commercial growth to areas with existing and planned infrastructure and easy access to major thoroughfares.

2.2 Utilize growth management principles.
   a. Develop model zoning ordinances to be available to the townships in order to provide a countywide system of consistent regulations.
   b. Promote the unified enforcement of zoning and subdivision regulations countywide.
   c. Promote the conservation concept in zoning and subdivision regulations.
   d. Encourage conservation or hamlet development patterns when development is proposed outside targeted urban growth boundaries.

2.3 Preserve prime farmland recognizing agriculture as a viable economic resource.

a. Develop and implement an aggressive program to preserve agricultural uses in those areas identified for permanent agricultural preservation.
b. Preserve the top 70 percent of the County's prime farmland.
c. Develop an incentive based land management system, utilizing the LESA model, which provides cluster (hamlet/conservation) alternatives for areas suitable for development.

2.4 Protect sensitive environmental areas such as wetlands, woodlands, native species habitats, and flora and fauna from the impacts of development.

a. Restrict development in karst terrain.
b. Restrict development in critical resource areas such as in the 100-year flood plain and in perennial stream buffers.
c. Evaluate and improve the County's current environmental protection practices.
d. Encourage developers to consider alternative land use designs that provide the best protection for existing natural features through density incentives.
e. Maintain and preserve natural open space corridors that are important to wildlife and plant life habitats.

2.5 Encourage intergovernmental cooperation and collaboration among political jurisdictions and between governmental agencies.

a. Collaborate with all levels of government within the County to establish a regional economic development marketing strategy.
b. Strengthen intergovernmental agreements aimed at creating incentives that reinforce the public policy of concentrated development patterns and an equitable distribution of tax benefits.
c. Support the formation of a multi-county development group with adjacent counties.

3. Ensure timely and orderly development within the County by making strategic public investments in infrastructure and services.

3.1 Preserve the character of existing rural highways and promote a safe and efficient transportation system.

a. Maintain and enhance the existing County road system, focusing on roads that necessitate upgrading to meet their functional classification requirements.
b. Encourage the adoption and use of strong and effective access management strategies.
c. Provide preferential funding support for arterial road capacity improvements within urban growth areas and major connectors between municipalities.

d. Identify the location and alignment of new roads in advance of future need to coordinate establishment of right-of-way requirements and access control.
e. Discourage random driveway cuts along State and County roads.
f. Where necessary, construct grade separations at rail crossings to increase safety, traffic flow, and emergency access.

3.2 Minimize private and public costs of installing and maintaining public utility lines by limiting service provision to urban growth areas.
a. Water and sewer service areas should conform to growth areas as specified in the Plan.
b. Encourage clustering of residential units, where possible in urban service areas, to reduce costs of maintaining utility lines.
c. Ensure that areas identified for development on well and septic systems can be accommodated by the area's natural setting.

3.3 Continually monitor the level of community services and the capacity of facilities against growth demands.
a. Encourage the joint use of all County facilities where feasible.
b. Support a system of private utilities such as electricity, natural gas, telephone, cellular communication, and other services to be installed in a manner that minimizes environmental and community impacts.
c. Maximize use of the County's school and university facilities.

10.

APPENDICES

APPENDIX A

POPULATION PROJECTIONS

AGGREGATE METHODS

LINEAR GROWTH MODEL

$P_n = P_o + na$

P_n = population at time n
P_o = initial population
n = time in years
a = annual population change

Seneca County Population	
1990 Census	59,733
2000 Census	58,683
Population Change	-1,050
Annual Change (a)	-105

$P_5 = 58,158$ $P_{15} = 57,108$
$P_{10} = 57,633$ $P_{20} = 56,583$

CONSTANT GROWTH MODEL

$P_n = P_o (1 + r)^n$

P_n = population at time n
P_o = initial population
n = time in years
r = annual rate of population change

Seneca County Population	
1990 Census	59,733
2000 Census	58,683
Population Change	-1,050
Avg. Rate of Change (r)	-0.176 %

$P_5 = 58,168$ $P_{15} = 57,153$
$P_{10} = 57,658$ $P_{20} = 56,652$

COHORT COMPONENT METHOD

The cohort component method uses matrices / matrix algebra to project a population using five-year age cohorts using the formula: $P_n = P_0C^n + M$

P_n = population after n time periods
P_0 = initial population
C = matrix containing birth and survivorship data
n = number of time periods
M = migration

Matrix Methodology:

Female projection matrices include birth rates and survivor rates. Migration rates are then taken into consideration. The male matrix projections include only survivorship rates since the men are not at risk of giving birth. To determine the number of births for the 0-4 male cohort, use the number in the female 0-4 cohort for 1995, and then multiply that number by 1.05. This gives you the number of male babies born to the women. This same process of determining male births was used throughout the rest of the stages to reach the 2020 population figure.

Birth Rates					
Age Group	Birth Rate	Age Group	Birth Rate	Age Group	Birth Rate
0-4	0	30-34	0.14463	60-64	0
5-9	0	35-39	0.03976	65-69	0
10-14	0	40-44	0.00317	70-74	0
15-19	0.12073	45-49	0	75-79	0
20-24	0.41731	50-54	0	80-84	0
25-29	0.35244	55-59	0	85+	0

Source: ODOD, Office of Strategic Research

Survival Rates for Males					
Age Group	Survival Rate	Age Group	Survival Rate	Age Group	Survival Rate
0-4	0.99283	30-34	0.99205	60-64	0.93398
5-9	0.99341	35-39	0.99539	65-69	0.89303
10-14	0.9973	40-44	0.99283	70-74	0.81323
15-19	0.99773	45-49	0.98085	75-79	0.74297
20-24	0.99023	50-54	0.96753	80-84	0.625
25-29	0.99096	55-59	0.95467	85+	0.29298
Survival Rates for Females					
Age Group	Survival Rate	Age Group	Survival Rate	Age Group	Survival Rate
0-4	0.99466	30-34	0.99521	60-64	0.96215
5-9	0.99847	35-39	0.99628	65-69	0.94725
10-14	0.99881	40-44	0.99466	70-74	0.91468
15-19	0.99844	45-49	0.98147	75-79	0.85031
20-24	0.99782	50-54	0.9831	80-84	0.76429
25-29	0.99889	55-59	0.97494	85+	0.33887

Source: ODOD, Department of Strategic Research

APPENDIX B

EMPLOYMENT DATA

County Business Patterns Data Set: 1993, 1995, 1997									
	Seneca County			Ohio			United States		
	1997	1995	1993	1997	1995	1993	1997	1995	1993
Agricultural Services	**96**	**84**	**96**	**27,148**	**23,124**	**22,033**	**727,344**	**630,157**	**588,362**
SIC 07	96	84	96	26,268	22,811	21,442	685,704	595,842	555,686
SIC 08	0	0	0	60	87	55	26,530	20,488	17,716
SIC 09	0	0	0	60	36	99	12,589	11,871	12,704
Mining	**90**	**90**	**175**	**13,964**	**14,447**	**16,888**	**586,227**	**627,483**	**608,277**
SIC 10	0	0	0	20	175	375	49,357	48,105	49,491
SIC 12	0	0	0	4,100	4,154	4,186	93,182	104,204	113,948
SIC 13	15	15	10	3,421	4,879	5,000	268,645	295,990	257,694
SIC 14	60	75	165	4,318	4,670	4,275	98,792	99,182	95,952
Construction	**1,189**	**918**	**819**	**212,790**	**200,139**	**180,108**	**5,512,547**	**5,038,839**	**4,524,110**
SIC 15	327	287	240	50,920	47,002	42,468	1,274,707	1,222,061	1,096,289
SIC 16	293	152	140	22,763	23,541	22,175	768,283	707,811	679,578
SIC 17	569	479	439	138,450	129,023	114,885	3,447,485	3,091,307	2,731,774
Manufacturing	**7,859**	**6,766**	**6,832**	**1,005,457**	**1,093,560**	**1,046,039**	**17,378,229**	**18,612,597**	**18,183,381**
SIC 20	381	390	337	53,261	52,361	51,244	1,539,682	1,525,070	1,498,078
SIC 21	0	0	0	10	0	10	34,166	30,411	37,189
SIC 22	0	0	0	3,750	3,562	3,750	553,198	624,005	615,683
SIC 23	10	10	10	13,421	14,347	12,923	835,219	910,919	972,060
SIC 24	112	89	13	25,835	24,401	20,439	745,254	730,144	675,081
SIC 25	375	455	407	15,168	15,914	14,508	514,504	505,956	476,488
SIC 26	175	106	60	31,649	32,609	30,749	621,072	634,737	627,746
SIC 27	322	300	322	73,650	68,754	68,987	1,501,714	1,505,794	1,500,580
SIC 28	175	175	175	43,199	42,220	42,180	832,546	826,839	851,720
SIC 29	0	10	10	5,606	5,322	5,152	107,829	111,369	112,984
SIC 30	375	430	451	95,011	94,548	85,559	1,015,177	1,001,010	915,166
SIC 31	0	0	0	1,750	1,922	1,750	83,387	95,151	104,747
SIC 32	858	825	947	37,539	38,534	37,915	500,828	491,795	471,639
SIC 33	484	274	271	79,188	82,243	77,045	686,161	684,703	655,556
SIC 34	328	190	234	138,045	134,562	126,436	1,537,591	1,450,089	1,371,072
SIC 35	1,856	1,998	1,824	146,921	149,851	135,961	1,954,761	1,883,431	1,749,735
SIC 36	1,750	1,750	1,750	71,338	72,233	68,524	1,528,348	1,503,923	1,424,351
SIC 37	60	175	375	125,247	125,210	129,935	1,573,789	1,543,731	1,601,554

SIC 38	60	60	0	27,480	27,446	28,072	813,612	832,706	878,379
SIC 39	60	60	60	17,389	16,670	15,143	399,391	394,287	375,501
Transportation, Comm, & Utilities	**478**	**496**	**459**	**230,467**	**222,686**	**207,103**	**6,246,593**	**5,924,252**	**5,621,550**
SIC 41	23	21	31	12,707	10,323	9,308	451,196	403,025	366,657
SIC 42	208	310	253	88,884	87,429	73,762	1,940,123	1,808,949	1,633,543
SIC 44	0	0	0	3,479	3,171	3,029	178,281	164,920	162,478
SIC 45	23	10	10	21,783	12,688	11,823	796,445	715,137	689,644
SIC 46	0	0	0	398	689	551	15,023	16,395	17,143
SIC 47	23	12	10	11,354	10,343	8,982	421,621	391,340	363,103
SIC 48	58	54	60	48,049	44,140	46,819	1,413,655	1,340,061	1,299,658
SIC 49	142	89	95	39,080	43,768	45,463	839,970	908,820	924,373
Wholesale Trade	**912**	**969**	**910**	**306,962**	**298,491**	**282,033**	**6,810,072**	**6,606,186**	**6,258,154**
SIC 50	594	470	411	176,808	171,245	156,322	3,850,321	3,683,301	3,414,441
SIC 51	318	499	499	109,853	107,126	105,876	2,636,490	2,582,397	2,504,260
Retail Trade	**3,817**	**3,775**	**3,474**	**1,024,081**	**988,550**	**899,845**	**22,002,559**	**21,084,574**	**19,776,732**
SIC 52	181	209	187	39,069	33,741	31,994	856,865	739,615	696,228
SIC 53	326	320	293	122,198	109,258	101,672	2,445,425	2,290,572	2,141,964
SIC 54	661	633	643	134,289	140,801	130,493	3,162,132	3,188,462	3,027,828
SIC 55	440	483	415	104,564	97,903	89,777	2,311,582	2,189,767	1,992,774
SIC 56	200	151	184	38,161	41,299	42,215	1,084,560	1,147,856	1,194,121
SIC 57	127	149	120	38,207	36,839	31,361	866,807	859,460	754,024
SIC 58	1,206	1,397	1,182	359,941	348,801	316,565	7,597,133	7,208,158	6,727,618
SIC 59	492	433	450	130,730	120,006	106,449	2,807,467	2,610,918	2,422,923
Finance, Insurance, Real Estate	**531**	**558**	**523**	**294,854**	**270,106**	**263,324**	**7,366,687**	**6,998,156**	**6,905,493**
SIC 60	294	308	312	96,055	87,924	83,936	2,066,890	2,079,264	2,095,049
SIC 61	20	32	13	24,921	18,656	18,593	566,999	489,804	483,133
SIC 62	8	10	8	14,766	10,593	9,541	674,821	522,895	449,826
SIC 63	33	41	30	70,962	61,994	67,419	1,561,115	1,502,920	1,570,356
SIC 64	105	96	91	27,790	26,575	24,248	718,531	676,602	656,007
SIC 65	63	61	61	49,144	52,174	49,066	1,417,634	1,402,828	1,335,048
SIC 67	8	10	8	6,579	8,566	8,879	269,358	255,044	254,172
Services Division	**5,977**	**6,839**	**6,018**	**1,508,115**	**1,436,027**	**1,343,487**	**37,380,074**	**34,707,165**	**32,258,944**
SIC 70	77	45	72	34,736	32,509	33,748	1,696,642	1,575,077	1,527,126
SIC 72	237	224	229	63,213	66,165	63,269	1,287,106	1,281,898	1,252,777
SIC 73	537	1,550	1,263	313,500	283,762	243,646	8,017,839	6,824,962	5,832,261
SIC 75	120	124	128	46,264	42,436	38,672	1,107,152	990,658	903,806
SIC 76	57	69	52	20,990	24,128	22,226	423,502	456,425	439,495
SIC 78	44	51	91	14,437	15,102	14,278	555,926	511,651	500,889

SIC 79	328	229	206	49,033	45,127	44,293	1,466,346	1,324,194	1,201,248
SIC 80	2,196	2,414	2,320	527,074	506,271	486,945	11,348,141	10,851,331	10,403,118
SIC 81	73	68	67	32,114	30,961	30,591	971,998	960,693	962,374
SIC 82	1,307	1,077	509	81,540	77,005	72,239	2,183,438	2,066,531	1,967,024
SIC 83	220	301	457	91,449	94,177	86,671	2,246,164	2,263,314	2,028,694
SIC 84	13	9	0	4,461	3,890	3,878	90,117	76,079	73,874
SIC 86	572	555	519	101,336	102,696	96,802	2,207,886	2,151,350	2,062,501
SIC 87	183	123	105	110,469	95,530	90,787	3,181,353	2,795,304	2,589,839
SIC 89	13	0	0	3,012	2,399	2,466	99,865	100,472	84,960
Nonclassifiable Establishments	**3**	**60**	**10**	**819**	**3,460**	**2,388**	**34,324**	**105,336**	**64,441**

BASIC AND NON-BASIC EMPLOYMENT

FORMULAS

Non-basic employment (N) is determined by applying the national rate of employment in a particular sector to a local employed population.

$$N_i = (E_i/E_t)e_t$$

Basic employment (B) is calculated by subtracting non-basic employment in a particular sector from the total employment in that sector.

$$B_i = e_i - (E_i/E_t)e_t$$

The location quotient (LQ) is the ratio of local to national employment in a given sector as a percentage of total employment.

$$LQ_i = (e_i/e_t) / (E_i/E_t)$$

If the location quotient is greater than 1, then the rate of regional employment in industry i is greater than the national rate of employment in industry i. Therefore, the region is exporting in industry i. In other words, where the location quotient is greater than 1, the region has both basic and non-basic employment in that employment sector. Where the location quotient is less than 1, the region has a lower rate of employment in industry i than the nation, and therefore has only non-basic employment in that industrial sector.

DATA

Seneca County Employment: 1993, 1995, 1997									
	1997			**1995**			**1993**		
	NB	**Basic**	**LQ**	**NB**	**Basic**	**LQ**	**NB**	**Basic**	**LQ**
Agricultural Services Division	**96**	**0**	**0.66**	**84**	**0**	**0.65**	**96**	**0**	**0.80**
SIC 07 Agricultural services	96	0	0.70	84	0	0.69	96	0	0.85
SIC 08 Forestry	0	0	0.00	0	0	0.00	0	0	0.00

SIC 09 Fishing, hunting, and trapping	0	0	0.00	0	0	0.00	0	0	0.00
Mining Division	**90**	**0**	**0.76**	**90**	**0**	**0.70**	**124**	**51**	**1.41**
SIC 10 Metal mining	0	0	0.00	0	0	0.00	0	0	0.00
SIC 12 Coal mining	0	0	0.00	0	0	0.00	0	0	0.00
SIC 13 Oil and gas extraction	15	0	0.28	15	0	0.25	10	0	0.19
SIC 14 Nonmetallic minerals, except fuels	20	40	3.02	20	55	3.69	20	145	8.44
Construction Division	**1,110**	**79**	**1.07**	**918**	**0**	**0.89**	**819**	**0**	**0.89**
SIC 15 General contractors & operative builder	257	70	1.27	250	37	1.15	223	17	1.07
SIC 16 Heavy construction, except building	155	138	1.89	145	7	1.05	138	2	1.01
SIC 17 Special trade contractors	569	0	0.82	479	0	0.76	439	0	0.79
Manufacturing Division	**3,500**	**4,359**	**2.25**	**3,813**	**2,953**	**1.77**	**3,705**	**3,127**	**1.84**
SIC 20 Food and kindred products	310	71	1.23	312	78	1.25	305	32	1.10
SIC 21 Tobacco products	0	0	0.00	0	0	0.00	0	0	0.00
SIC 22 Textile mill products	0	0	0.00	0	0	0.00	0	0	0.00
SIC 23 Apparel and other textile products	10	0	0.06	10	0	0.05	10	0	0.05
SIC 24 Lumber and wood products	112	0	0.75	89	0	0.59	13	0	0.09
SIC 25 Furniture and fixtures	104	271	3.62	104	351	4.39	97	310	4.19
SIC 26 Paper and allied products	125	50	1.40	106	0	0.82	60	0	0.47
SIC 27 Printing and publishing	302	20	1.06	300	0	0.97	306	16	1.05
SIC 28 Chemicals and allied products	168	7	1.04	169	6	1.03	174	1	1.01
SIC 29 Petroleum and coal products	0	0	0.00	10	0	0.44	10	0	0.43
SIC 30 Rubber and misc. plastics products	204	171	1.83	205	225	2.10	186	265	2.42
SIC 31 Leather and leather products	0	0	0.00	19	0	0.00	0	0	0.00
SIC 32 Stone, clay, and glass products	101	757	8.51	101	724	8.19	96	851	9.85
SIC 33 Primary metal industries	138	346	3.50	140	134	1.95	134	137	2.03
SIC 34 Fabricated metal products	310	18	1.06	190	0	0.64	234	0	0.84
SIC 35 Industrial machinery and equipment	394	1,462	4.71	386	1,612	5.18	357	1,467	5.12
SIC 36 Electronic & other electric equipment	308	1,442	5.69	308	1,442	5.68	290	1,460	6.03
SIC 37 Transportation equipment	60	0	0.19	175	0	0.55	326	49	1.15
SIC 38 Instruments and related products	60	0	0.37	60	0	0.35	0	0	0.00
SIC 39 Miscellaneous manufacturing industries	60	0	0.75	60	0	0.74	60	0	0.78
Transportation, Comm., & Utilities Division	**478**	**0**	**0.38**	**496**	**0**	**0.41**	**459**	**0**	**0.40**
SIC 41 Local and interurban passenger transit	23	0	0.25	21	0	0.25	31	0	0.41
SIC 42 Trucking and warehousing	208	0	0.53	310	0	0.84	253	0	0.76
SIC 44 Water transportation	0	0	0.00	0	0	0.00	0	0	0.00
SIC 45 Transportation by air	23	0	0.14	10	0	0.07	10	0	0.07

SIC 46 Pipelines, except natural gas	0	0	0.00	0	0	0.00	0	0	0.00
SIC 47 Transportation services	23	0	0.27	12	0	0.15	10	0	0.14
SIC 48 Communication	58	0	0.20	54	0	0.20	60	0	0.23
SIC 49 Electric, gas, and sanitary services	142	0	0.84	89	0	0.48	95	0	0.50
Wholesale Trade Division	**912**	**0**	**0.67**	**969**	**0**	**0.72**	**910**	**0**	**0.71**
SIC 50 Wholesale trade-durable goods	594	0	0.77	470	0	0.62	411	0	0.59
SIC 51 Wholesale trade-nondurable goods	318	0	0.60	499	0	0.94	499	0	0.98
Retail Trade Division	**3,817**	**0**	**0.86**	**3,775**	**0**	**0.87**	**3,474**	**0**	**0.86**
SIC 52 Building materials & garden supplies	173	8	1.05	152	57	1.38	142	45	1.32
SIC 53 General merchandise stores	326	0	0.66	320	0	0.68	293	0	0.67
SIC 54 Food stores	637	24	1.04	633	0	0.97	617	26	1.04
SIC 55 Automotive dealers & service stations	440	0	0.95	449	34	1.08	406	9	1.02
SIC 56 Apparel and accessory stores	200	0	0.92	151	0	0.64	184	0	0.76
SIC 57 Furniture and home furnishings stores	127	0	0.73	149	0	0.85	120	0	0.78
SIC 58 Eating and drinking places	1,206	0	0.79	1,397	0	0.95	1,182	0	0.86
SIC 59 Miscellaneous retail	492	0	0.87	433	0	0.81	450	0	0.91
Finance, Insurance, Real Estate Division	**531**	**0**	**0.36**	**558**	**0**	**0.39**	**523**	**0**	**0.37**
SIC 60 Depository institutions	294	0	0.71	308	0	0.72	312	0	0.73
SIC 61 Nondepository institutions	20	0	0.18	32	0	0.32	13	0	0.13
SIC 62 Security and commodity brokers	8	0	0.06	10	0	0.09	8	0	0.09
SIC 63 Insurance carriers	33	0	0.10	41	0	0.13	30	0	0.09
SIC 64 Insurance agents, brokers, & service	105	0	0.73	96	0	0.69	91	0	0.68
SIC 65 Real estate	63	0	0.22	61	0	0.21	61	0	0.22
SIC 67 Holding and other investment offices	8	0	0.15	10	0	0.19	8	0	0.15
Services Division	**5,977**	**0**	**0.79**	**6,839**	**0**	**0.96**	**6,018**	**0**	**0.92**
SIC 70 Hotels and other lodging places	77	0	0.23	45	0	0.14	72	0	0.23
SIC 72 Personal services	237	0	0.91	224	0	0.85	229	0	0.90
SIC 73 Business services	537	0	0.33	1,398	152	1.11	1,188	75	1.06
SIC 75 Auto repair, services, and parking	120	0	0.54	124	0	0.61	128	0	0.69
SIC 76 Miscellaneous repair services	57	0	0.67	69	0	0.74	52	0	0.58
SIC 78 Motion pictures	44	0	0.39	51	0	0.49	91	0	0.89
SIC 79 Amusement & recreation services	295	33	1.11	229	0	0.84	206	0	0.84
SIC 80 Health services	2,196	0	0.96	2,223	191	1.09	2,120	200	1.09
SIC 81 Legal services	73	0	0.37	68	0	0.35	67	0	0.34
SIC 82 Educational services	440	867	2.97	423	654	2.54	401	108	1.27
SIC 83 Social services	220	0	0.49	301	0	0.65	413	44	1.11

SIC 84 Museums, botanical, zoological gardens	13	0	0.72	9	0	0.58	0	0	0.00
SIC 86 Membership organizations	445	127	1.29	441	114	1.26	420	99	1.23
SIC 87 Engineering & management services	183	0	0.29	123	0	0.21	105	0	0.20
SIC 89 Services, n.e.c.	13	0	0.65	0	0	0.00	0	0	0.00
Nonclassifiable Establishments Division	**3**	**0**	**0.43**	**22**	**38**	**2.78**	**10**	**0**	**0.76**

SHIFT SHARE ANALYSIS

FORMULAS

National share (NS) calculates the number of employees in sector i for the region if growth rates were to occur at national levels between time period t-1 and t.

$$NS_i = e_i^{t-1} (E^t / E^{t-1})$$

Industry mix (IM) represents the number of regional employees in surplus or deficit of the national ratio given the difference between national sector growth rates and the total national growth rate; IM shows a sector advantage or disadvantage.

$$IM_i = e_i^{t-1} (E_i^t / E_i^{t-1} – E^t / E^{t-1})$$

Regional shift (RS) also calculates a sector advantage or disadvantage. RS represents the number of regional employees in surplus or deficit of the national ratio given the difference between regional sector growth rates and the total national growth rate.

$$RS_i = e_i^{t-1} (e_i^t / e_i^{t-1} – E^t / E^{t-1})$$

Regional Proportion (RP) is the employment in a particular regional sector given national growth rates in that sector.

$$RP_i = NS_i + IM_i$$

The following annotations describe the variables in the shift share formulas for national share, industry mix, regional shift, and regional proportion.

e_i^t = county employment in sector i, time t
e_i^{t-1} = county employment in sector i, time t-1
E^t = total national employment, time t
E^{t-1} = total national employment, time t-1
E_i^t = total national employment in sector i, time t
E_i^{t-1} = total national employment in sector i, time t-1

Employment forecasts enable researchers to estimate future levels of employment by industrial sector.

$$e_i^{t+1} = (RP + (RP_i^t * \text{national growth rate})) + RS_{avg}$$

The projected employment is found by adding the average regional shift to the regional proportion for the period t+1. This value is calculated by the using the national growth rate to inflate the regional proportion to its estimated future value.

SHIFT SHARE DATA

Seneca County Employment Data: 1993 to 1997, 2001 Projection							
	NS	**IM**	**RS**	**Nat'l Growth**	**RP**	**2001**	**Gain/ Loss**
Agricultural Services Division	**105**	**13**	**-9**	**0.24**	**119**	**137**	**41**
SIC 07 Agricultural services	105	13	-9	0.23	118	137	41
SIC 08 Forestry	0	0	na	0.50	0	0	0
SIC 09 Fishing, hunting, and trapping	0	0	na	-0.01	0	0	0
Mining Division	**192**	**-23**	**-102**	**-0.04**	**169**	**60**	**-30**
SIC 10 Metal mining	0	0	na	0.00	0	0	0
SIC 12 Coal mining	0	0	na	-0.18	0	0	0
SIC 13 Oil and gas extraction	11	-1	4	0.04	10	15	0
SIC 14 Nonmetallic minerals, except fuels	181	-11	-121	0.03	170	54	-6
Construction Division	**899**	**99**	**290**	**0.22**	**998**	**1,506**	**317**
SIC 15 General contractors & operative builders	263	16	64	0.16	279	388	61
SIC 16 Heavy construction, except building	154	5	139	0.13	158	318	25
SIC 17 Special trade contractors	482	72	87	0.26	554	786	217
Manufacturing Division	**7,499**	**-970**	**360**	**-0.04**	**6,529**	**6,600**	**-1,259**
SIC 20 Food and kindred products	370	-24	11	0.03	346	367	-14
SIC 21 Tobacco products	0	0	na	-0.08	0	0	0
SIC 22 Textile mill products	0	0	na	-0.10	0	0	0
SIC 23 Apparel and other textile products	11	-2	-1	-0.14	9	6	-4
SIC 24 Lumber and wood products	14	0	98	0.10	14	114	2
SIC 25 Furniture and fixtures	447	-7	-72	0.08	439	403	28
SIC 26 Paper and allied products	66	-6	109	-0.01	59	168	-7
SIC 27 Printing and publishing	353	-31	-31	0.00	322	291	-31
SIC 28 Chemicals and allied products	192	-21	-17	-0.02	171	150	-25
SIC 29 Petroleum and coal products	11	-1	-11	-0.05	10	-2	-2
SIC 30 Rubber and misc. plastics products	495	5	-120	0.11	500	435	60
SIC 31 Leather and leather products	0	0	na	-0.20	0	0	0
SIC 32 Stone, clay, and glass product	1,039	-34	-181	0.06	1,006	886	28
SIC 33 Primary metal industries	297	-14	187	0.05	284	483	-1
SIC 34 Fabricated metal products	257	6	71	0.12	262	365	37
SIC 35 Industrial machinery and equipment	2,002	36	-146	0.12	2,038	2,130	274
SIC 36 Electronic & other electric equipment	1,921	-43	-171	0.07	1,878	1,844	94
SIC 37 Transportation equipment	412	-43	-352	-0.02	368	10	-50
SIC 38 Instruments and related product	0	0	na	-0.07	0	0	-60
SIC 39 Miscellaneous manufacturing industries	66	-2	-6	0.06	64	62	2

Transportation, Comm., & Utilities Division	**504**	**6**	**-26**	**0.11**	**510**	**541**	**63**
SIC 41 Local and interurban passenger transit	34	4	-11	0.23	38	36	13
SIC 42 Trucking and warehousing	278	23	-70	0.19	300	287	79
SIC 44 Water transportation	0	0	na	0.10	0	0	0
SIC 45 Transportation by air	11	1	12	0.15	12	25	2
SIC 46 Pipelines, except natural gas	0	0	na	-0.12	0	0	0
SIC 47 Transportation services	11	1	12	0.16	12	26	3
SIC 48 Communication	66	-1	-8	0.09	65	63	5
SIC 49 Electric, gas, and sanitary services	104	-18	38	-0.09	86	116	-26
Wholesale Trade Division	**999**	**-9**	**-87**	**0.09**	**990**	**991**	**79**
SIC 50 Wholesale tradedurable goods	451	12	143	0.13	463	666	72
SIC 51 Wholesale tradenondurable goods	548	-22	-230	0.05	525	323	5
Retail Trade Division	**3,813**	**52**	**4**	**0.11**	**3,865**	**4,304**	**487**
SIC 52 Building materials & garden supplies	205	25	-24	0.23	230	259	78
SIC 53 General merchandise stores	322	13	4	0.14	335	386	60
SIC 54 Food stores	706	-34	-45	0.04	672	657	-4
SIC 55 Automotive dealers & service stations	456	26	-16	0.16	481	543	103
SIC 56 Apparel and accessory stores	202	-35	-2	-0.09	167	150	-50
SIC 57 Furniture and homefurnishings stores	132	6	-5	0.15	138	154	27
SIC 58 Eating and drinking places	1,297	37	-91	0.13	1,335	1,416	210
SIC 59 Miscellaneous retail	494	27	-2	0.16	521	602	110
Finance, Insurance, Real Estate Division	**574**	**-16**	**-43**	**0.07**	**558**	**552**	**21**
SIC 60 Depository institutions	342	-35	-48	-0.01	308	255	-39
SIC 61 Nondepository institutions	14	1	6	0.17	15	24	4
SIC 62 Security and commodity brokers	9	3	-1	0.50	12	17	9
SIC 63 Insurance carriers	33	-3	0	-0.01	30	30	-3
SIC 64 Insurance agents, brokers, & service	100	0	5	0.10	100	114	9
SIC 65 Real estate	67	-2	-4	0.06	65	65	2
SIC 67 Holding and other investment offices	9	0	-1	0.06	8	8	0
Services Division	**6,606**	**368**	**-629**	**0.16**	**6,973**	**7,452**	**1,475**
SIC 70 Hotels and other lodging places	79	1	-2	0.11	80	87	10
SIC 72 Personal services	251	-16	-14	0.03	235	227	-10
SIC 73 Business services	1,386	350	-849	0.37	1,736	1,538	1,001
SIC 75 Auto repair, services, and parking	140	16	-20	0.22	157	172	52
SIC 76 Miscellaneous repair services	57	-7	0	-0.04	50	48	-9
SIC 78 Motion pictures	100	1	-56	0.11	101	56	12
SIC 79 Amusement & recreation services	226	25	102	0.22	251	409	81
SIC 80 Health services	2,547	-16	-351	0.09	2,531	2,410	214
SIC 81 Legal services	74	-6	-1	0.01	68	68	-5
SIC 82 Educational services	559	6	748	0.11	565	1,375	68
SIC 83 Social services	502	4	-282	0.11	506	279	59
SIC 84 Museums, botanical, zoological gardens	0	0	na	0.22	0	0	-13

SIC 86 Membership organizations	570	-14	2	0.07	556	597	25
SIC 87 Engineering & management services	115	14	68	0.23	129	226	43
SIC 89 Services, n.e.c.	0	0	na	0.18	0	0	-13
Nonclassifiable Establishments Division	**11**	**-6**	**-8**	**-0.47**	**5**	**-5**	**-8**

APPENDIX C

SENECA COUNTY OFFICIALS SURVEY

1. What are the County's strengths?
    - Good school systems, public and private (2)
    - Heidelberg College and Tiffin University (2)
    - Strong families with "roots" in this community (2)
        - o People know each other and care about their friends and neighbors
        - o Most are still two parent families
        - o Most people are still members of church, or hold traditional values
    - Excellent agricultural land for farming (1)
    - Hard working individuals (1)
        - o Dedicated County employees, some of whom work for less wages than others
    - Leadership from commissioners (1)
    - Safe place to live
    - Tiffin parks and YMCA
    - Central location to major urban markets of Cleveland, Columbus, Detroit, Chicago
    - Infrastructure
    - Diversity of industries
    - Scenic river
    - Agricultural based economy

2. What are the County's weaknesses?
    - Road system (2)
        - o Lack of adequate routes such as 4 lane highways to reach larger markets, which could attract industry
        - o Needs updating
        - o Poor township roads
    - Lack of quality local shopping, retail, restaurants, and entertainment (2)
    - Inadequate land use planning / lack of development plan (1)
    - Lack of industry (1)
        - o Diminishing industrial job base
        - o Needed to keep our younger citizens, who do not want to enter a profession, working
    - Distance to interstate
    - Regressive County Commissioners
    - Views most things as costs; not investments
    - Lack of adequate airport runway length
    - Lack of good paying jobs
    - Unwillingness of voters to support schools in future
    - Satisfied with the way things are

3. What are the major development pressures facing Seneca County? Do you consider these pressures to be positive or negative for the County?
    - Growth and expansion without upheaval of existing structures such as farmland, small-town atmosphere, etc. (+)
    - Tiffin must grow and develop a better job base of good paying jobs (+)

    - Efforts like North Star and the downtown projects sponsored by SIEDC are needed; township resistance to development of Tiffin hurts the entire County
- Lack of transportation routes (-)
- Conflict between agriculture and industry concerning land use (-)
- Loss of industry (-)
- Being ready for development by planning, having infrastructure available
- Service (water and sewer) availability
- Random construction of single family homes (-)
- Unexpected developments like the automobile "mixing" plant near Fostoria (?)
- Conversion of farmland (-)

4. Should the County promote or manage development? If yes, what are the County's most effective tools for doing so?

- Yes / both (all respondents)
- Regional / countywide planning (6)
    - Manage development through a process of providing incentives/disincentives
    - Promote compact community development on least productive soil or inside existing city, village or town limits
    - Board of Commissioners must be out front with regional planning or necessary leadership will not occur to educate and influence the public
- Political leaders / local officials (1)
- Development Corps (FEDC and SIEDC) (1)
- Business / community leaders (1)
- Sewer, water, utilities, road services, recreation, schools, zoning codes
- Citizens and colleges

5. How do the policies and development decisions of neighboring jurisdictions (e.g. the surrounding counties and municipalities) affect the County? How should the County respond to these jurisdictions?

- Form regional development group among several counties (2)
    - Promote managed development
    - Provide pool of resources
    - Cooperation with neighboring cities and counties to plan for future (1)
- They move more expeditiously; the County should act now with planning, utilities and services
- They have more often indirect impact
- Leadership is needed
- Ideals are different
- Growth can be contagious. But, with growth can come other issues that we need to take a proactive, not reactive, response to.
- Outside the city of Tiffin there is no need for township trustees or these little village governments. They are little more than a source of health insurance and retirement funds for individuals. Their need ended in the 1930's.
- Some inequities occur; suggest the County coordinates differences between jurisdictions if a need arises; we must first determine what is the best policy for our County
- Need to promote the County's strengths and consider some of the same concessions that the other jurisdictions are giving

6. Have utilities (i.e. gas, sewer) and services (i.e. fire, ambulance) been a concern for the County? Explain.

- Sewers, especially (2)
    - Sewers - both sanitary and storm - are needed in many parts of the County (1)
    - Who gets annexed and who doesn't
    - County has been working very hard on sewer issues through the sewer district; they have new agreements for treatment with municipalities and have developed a General Plan
- Expansion and growth require an increase of services (2)
    - Need will grow, surpassing the ability of volunteer units (1)
- Infrastructure and emergency services should be a higher priority for the County
- In rural areas, grants and other means are being explored.
- Fire and Ambulance has always been a priority through grants, (CDBG) and Public Safety Dept.
- Yes, local townships provide fire coverage

7. Are you concerned about strip development along County and township roads? How does it affect traffic flow and safety?

- Yes (6)
    - It can cause traffic and safety issues (2)
    - Planned development is the only answer (2)
    - Development of housing sites should be in a subdivision to control land loss and waste collection
    - Needs to be County zoning and enforcement: controlled development in the center city and limited, restricted development in the County
    - Development is important for the growth of our area, but traffic flow and safety must be of concern
- Not as long as it remains in specified areas

8. Please identify three natural or historic features you would like to see preserved?

- Sandusky River including water front and scenic corridor (7)
- Downtown Tiffin including historic buildings (2)
- Parks and recreation areas (2)
    - In other areas of the County in addition to in the cities and villages - more should be established for preservation purposes
    - Hedges-Boyer Park
- Fort Ball area (1)
- Designated rural areas with natural features to prevent unwanted residential or commercial development.
- Court House
- Downtown Fostoria
- Seneca Caverns (sinkhole, karst area)
- Springville and Bloomville marshes
- NOT the County Courthouse or County jail

9. Has there been a good balance between development needs and farmland preservation?

- No (3)
    - Competing interests need to be at the same table to discuss issues, form relationships, agree on future development needs

    - Right now it's almost every man for himself; regional planning has heightened awareness, but no process / plan is in place to permit consideration of alternatives
    - Too much concern for farmland / out of balance; need to preserve rural life for those who wish to have it but not on SR 100 or SR 18 next to Tiffin
- Yes / for the most part (1)
    - Industrial parks have consolidated industrial growth but there is a lot of frontage being sold for housing
    - If strip development is reduced
- More concrete guidelines need to be drawn
- We have tried to develop a balance, but farmland is losing
- Municipalities keep spreading and taking more land, while the inner core is ignored

10. Do you perceive farming as an essential economic resource for Seneca County?
    - Yes (7)
        - Number one industry in the County due to natural features
        - But not when it injures or restricts development of Tiffin
        - Mainly because of our distance from rapidly growing metropolitan areas
        - It must be combined with good paying manufacturing jobs since farming is so mechanized it doesn't require much labor

11. What is your most urgent goal for the Farmland Preservation Plan?
    - Maintain prime farmland while allowing development to continue in restricted, specific areas (1)
    - Identify areas to preserve, and implement the plan
    - To adopt or approve a process, including incentives/disincentives, which requires the evaluation of farmland prior to conversion. Money raised would be used to upgrade cities and/or provide monies that farmers can use to buy land when developers want it.
    - Zoning
    - Be realistic about the need for the growth and development of Tiffin, and let free enterprise take care of the number of farms
    - There are others involved in farmland preservation
    - Plan the development of sites so non-productive land is used for housing and factories; use brownfields first, then the least productive land

12. What is your most urgent goal for the Comprehensive Plan?
    - A 5, 10, and 30 year plan for the projected growth of the County
    - Controlled development of Tiffin
    - Identify issues, discuss concerns, reach decisions mutually concerning competing interests
    - Long term plan and affect on the County
    - Sewers
    - Include farmland preservation as the first component
    - Zoning that promotes a pleasant setting for Seneca County residents, both in and out of Tiffin

SENECA COUNTY REALTORS SURVEY

1. How would you describe the current housing market in Seneca County?
    - Strong sellers' market (6)
        - Across the board (1)

    - $60-$90K range is the best
    - High demand for $100-$130K range
- Good / above average (2)
    - Slower at the highest end
    - Buyers' market between $50-$70K
- Strong / great (1)
    - More than in previous decades
    - Especially in western half of the county
- Moderate
- Slow / leveling off
    - Insufficient number of homes, especially at low end
    - Limited number of homes between $90-$150K
- Changing: more houses on the market than last year but not enough to meet demand
- Fostoria has a tough time selling at the top end, above $120K, because no higher end and no retail

2. Is there a big demand for new homes?
    - Yes (5)
        - Especially at the $50 to $100,000 range (2)
        - Across the board
        - Need for $125-$175K homes
    - No (2)
        - People want them, but cannot afford them, so the market is weak
        - Movement mostly into existing units
    - There are many being built, so there must be demand (1)
    - Some / relative amounts (1)
    - More in the last few years

3. Where are most new homes being constructed?
    - Single lots in the country / outside city limits (4)
        - Over $100K
        - City / county sewer deal opening up outer areas for development
        - Major development on Molmoor Street
    - Southern areas of Tiffin (2)
        - South parts of Tiffin, north and south of Rt. 224
        - Outside the city
        - Scattered: fill in holes in Tiffin
    - Fostoria (1)
        - Some in city, most in suburbs
        - Not sure about areas east of city
    - Condos at the end of Coe St., on the edge of town.
    - Economically mixed housing being built.
    - Primarily "Old Fort," largest being 1500-3000 square feet, costing $100-175K
    - 64 units behind Burger King, behind Westmarket
    - Oakbridge
    - Meadow Lake

4. What is the average housing price of homes in Seneca County?
    - $70,000 +

- $73,000
- $80,000 - $85,000 (1)
- $85,000 - $90,000 (2)
- $90,000 (1)
- $100,000
- $100,000 - $175,000
- $30,000 to $350,000
- Unsure

5. What is the average price of a newly constructed home?
   - $80,000 - $85,000.
   - $80,000 - $100,000
   - 100,000+ (1)
   - 120,000
   - 120,000 - $130,000 for single family
   - $120,000 - $150,000
   - $150,000+
   - $150,000 - $200,000
   - $170,000 - $300,000
   - $200,000
   - $200,000+, no lower end being built
   - $275,000 ++ in Forest Hills, just south of Rte 224 (15 lots)
   - Varies

6. The average newly constructed home consists of ___ feet^2, ___ bedrooms and ___ baths.

Square Feet	Bedrooms	Bathrooms
1200-1400 (2)	3+ (4)	2 (4)
1500-1600 (3)	3 (4)	2+ (3)
1800	2 – 3	1.5
1800-2200 (1)		2.5
2000-2500		
2500+		
3000		

7. Is one area of the county (city) growing faster? If so, what part(s)?
   - Clinton Township (5)
     - Hopewell (1)
     - Mohawk and north of town condo sites
     - Toward Republic and south
   - Tiffin (5)
     - Tiffin city school district (1)
     - Suburban development outside town (1)
     - Area by golf course
     - Three mile radius around city
   - Fostoria (2)
     - Fairway Estates
     - Suburban development outside town

    - Near high school
- Southern area (1)
    - Areas near Hancock and Wood Counties
    - Loudon Meadows
- Eaton Township
- "Corners" of the county are NOT growing

8. How would you describe the typical "higher priced" home buyer?
    - Executive / Professional (7)
        - Move-ups (2)
        - From out of town (2)
        - School-aged children (2)
        - Two income households
        - Upset with scarcity of housing
    - Older / retired (2)
        - Demand for smaller homes / condos (2)
        - Grown children (1)
    - Blue collar with school aged children
    - Moving up with school aged children

SENECA COUNTY ATTITUDE SURVEY

1. In your opinion, what are the County's strengths?
    - County Engineer / Engineering Dept. (5)
    - Agriculture base / prime farmland (4)
    - Two colleges (3)
    - Elderly well taken care of
    - Revitalization of downtown Tiffin
    - Road program
    - County Prosecutor, Commissioners, Auditor, Treasurer, Recorder, Judges
    - County-wide sewer district

2. In your opinion, what are the County's weaknesses?
    - Law enforcement (3)
    - Through roads better and safer (3)
    - Too much unchecked development
    - No long term continuity in leadership
    - Very little cooperation between governing units
    - Railroad delays
    - County Sheriff

3. Describe your township's current housing stock.
    - Adequate (Seneca-1, Eden-3) (5)
    - Good
    - None (Pleasant)
    - Low to moderate (Thompson)

4. Approximately how many new homes have been constructed in your township from 1990 to present?
   - 50 / 50+ (Eden) (3)
   - 50-60 (Loudon) (2)
   - 40 (Thompson)
   - 40 (Seneca)
   - Approximately 125+
   - A lot (Loudon)
   - 10-40
   - Unknown (Pleasant)

5. In your opinion, is new development encroaching on farmland?
   - Yes (9)
   - No

6. Do you perceive farming as a viable economic resource in your township?
   - Yes (11)

7. What is your most urgent goal for the Farmland Preservation Plan?
   - Protect prime farmland (3)
   - No two acre lot requirement (2)
   - Unsure
   - Keep farms together / keep them from being split up
   - Restrictions on building on farmland

8. What is your most urgent goal for the Comprehensive Plan?
   - Protect farmland (5)
   - Unsure (2)