

Clinton County Gateway Local Comprehensive Plan

Chester, Adams, Vernon Townships and Village of Clarksville

June 2009

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CHAPTER 1

Socio-Economic Characteristics and Growth Trends

Introduction to Data and Analysis

Data and analyses of existing conditions, including population, population projections and population studies, are essential foundations for the Comprehensive Plan for Adams, Chester and Vernon Townships and the Village of Clarksville.

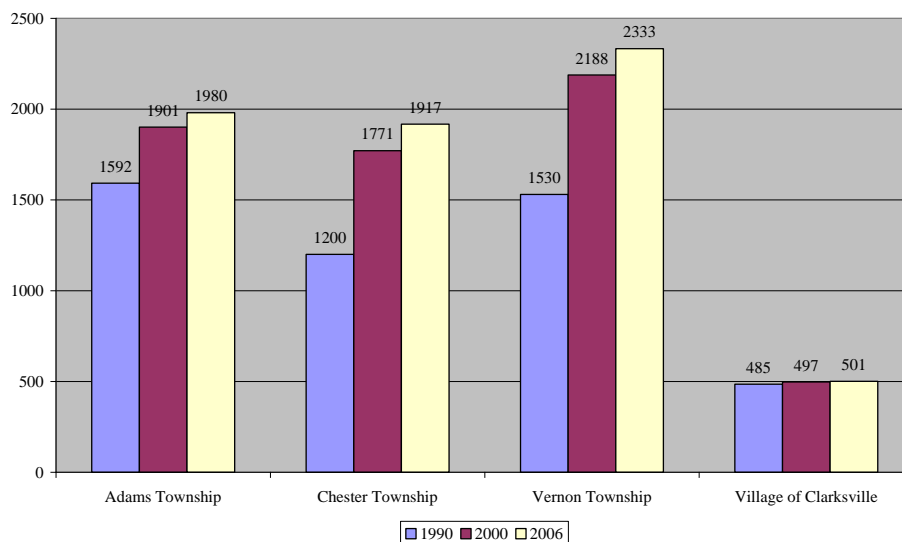
All findings, conclusions, goals, objectives, and policies within this comprehensive plan should be based upon relevant and appropriate data and analyses applicable to each element. This Comprehensive Plan does not include original data collection, but makes use of the best data from professionally accepted existing sources, such as information from the United States Census, the State Data Center and affiliate agencies, the Clinton County Regional Planning Commission and the OKI Regional Council of Governments.

Population Characteristics

According to the US Census, Adams, Chester and Vernon Townships saw large to moderate increases in population from 1990 to 2000 (19%, 48%, and 43%, respectively). Estimated growth from 2000 to 2006 was slower, with Adams Township seeing 4%, Chester Township seeing 8% and Vernon Township seeing 7%. The Village of Clarksville also saw slight increases over the two time periods, 2% from 1990 to 2000, and 1% from 2000 to 2006 (Figure 1-1).

Clinton County as a whole experienced an approximately 14% increase in population between 1990 and 2000, but only an estimated 7% increase from 2000 to 2006. From 1990 to 2000 Adams, Chester and Vernon Township outpaced the County's growth.

Figure 1-1
Population Trends

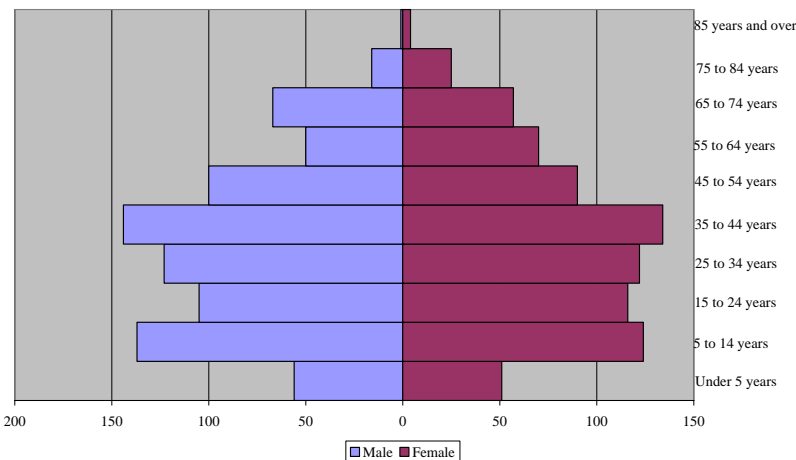


Source: 1990 Summary Tape File 1 (STF 1), Census 2000 Summary File 1 (SF 1) and 2006 Population Estimates

The age cohorts in Adams Township as from the US Census are shown in Figure 1-2 and 1-3. The Township population is evenly split between men and women. In 2000 the population was split fifty-fifty. This is a slight change from 1990 when 51% percent of the population was male, and 49% percent was female. In 1990 the largest age category was the 35 to 44 category range, holding 17% of the population. In 2000, the highest percentage of people was in the 45 to 54 category range at just over 18%, reflecting the 10 year shift, and was closely followed by the 35 to 44 to category range (just under 18%). The median age of Adams Township residents in 2000 was 37.2.

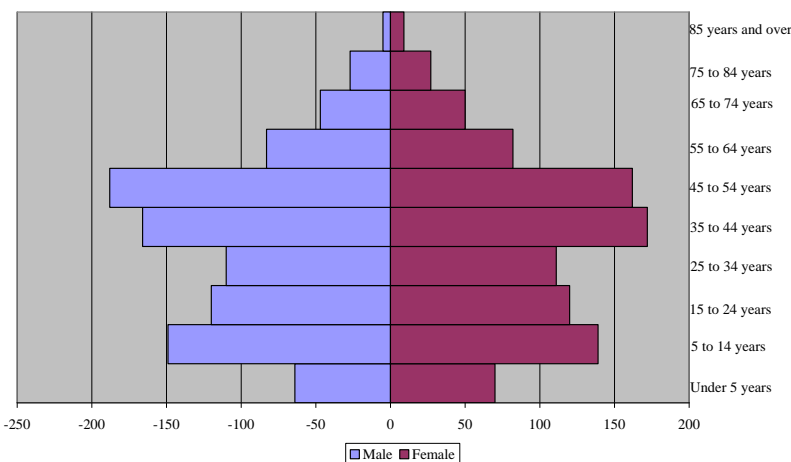
In 2000, over one-third of the Township's population was between the age of 35 and 54. Over the next 20 years, as these people continue to age, their needs for transportation, housing and services will also change. Another third of the population in 2000 was between the ages of 5 and 24. Over the next 20 years, as these people move through child-bearing age, local schools may see an increase in enrollment.

Figure 1-2
Population Pyramid 1990
Adams Township, Clinton County, OH



Source: US Census, 1990 Summary
Tape File 1 (STF 1)

Figure 1-3
Population Pyramid 2000
Adams Township, Clinton County, OH



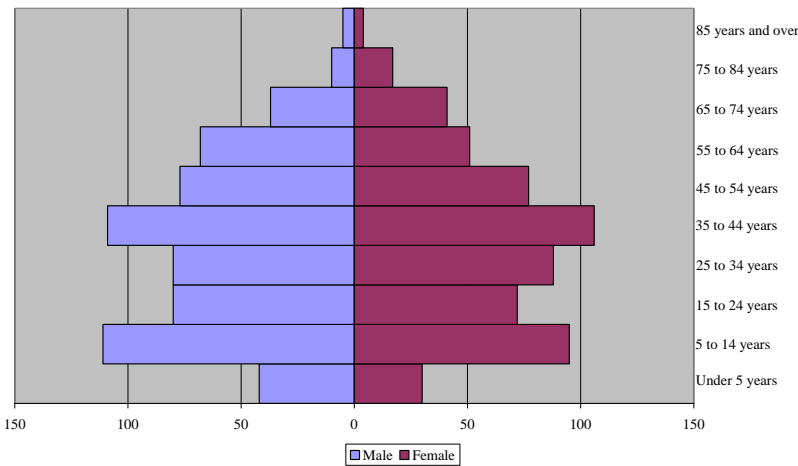
Source: US Census, 2000 Summary File
1 (SF 1)

The age cohorts from the US Census in Chester Township are shown in Figure 1-4 and 1-5. The Township population is evenly split between men and women. In 2000, 52% of the population was male, and 48% was female. This is a slight change from 1990 when 51% of the population

was male, and 49% was female. The large increase in population from 1990 to 2000 is reflected most in the age categories from 35 to 44 (up from 18% of the total population in 1990 to 21% in 2000). This category was the largest age category in both 1990 and 2000. The median age of Chester Township residents in 2000 was 37.7.

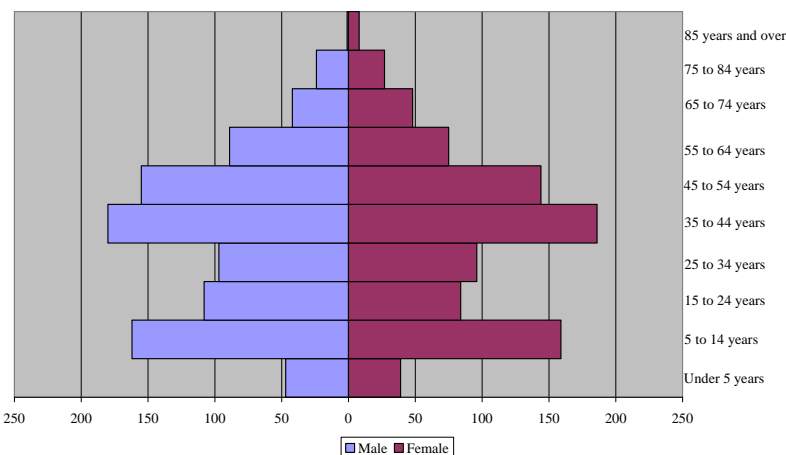
In 2000, almost half of the Township's population was between the age of 35 and 64. Over the next 20 years, as these people continue to age, their needs for transportation, housing and services will also change.

Figure 1-4
Population Pyramid 1990
Chester Township, Clinton County, OH



Source: US Census, 1990 Summary
Tape File 1 (STF 1)

Figure 1-5
Population Pyramid 2000
Chester Township, Clinton County, OH



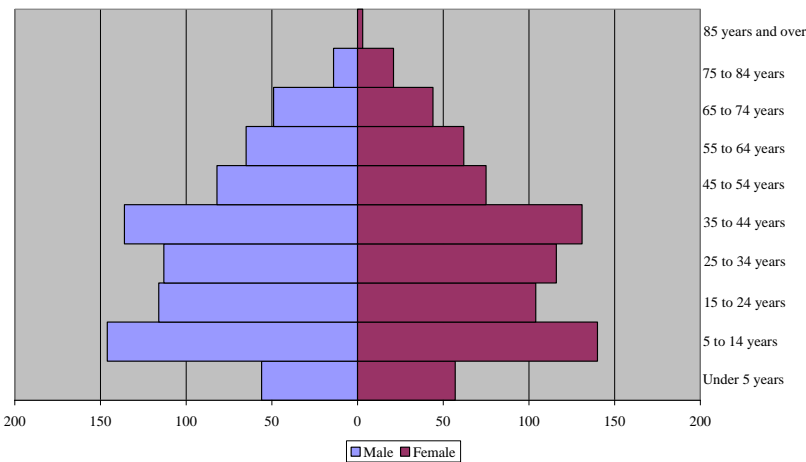
Source: US Census, 2000 Summary File 1
(SF 1)

The age cohorts from the US Census in Vernon Township are shown in Figures 1-6 and 1-7. The Township population is evenly split between men and women. This is a slight change from 1990 when 51% of the population was male, and 49% was female. An increase in population from 1990 to 2000 is reflected in most of the age categories, but the largest increase is seen in the age category of 35 to 44. The highest percentage of the population in 1990 was in the age 5 to

14 category (19%). Similarly, in 2000 this was also the largest category (17.4%), although the age category of 35 to 44 was close behind (17.1%). The median age of Vernon Township residents in 2000 was 34.9.

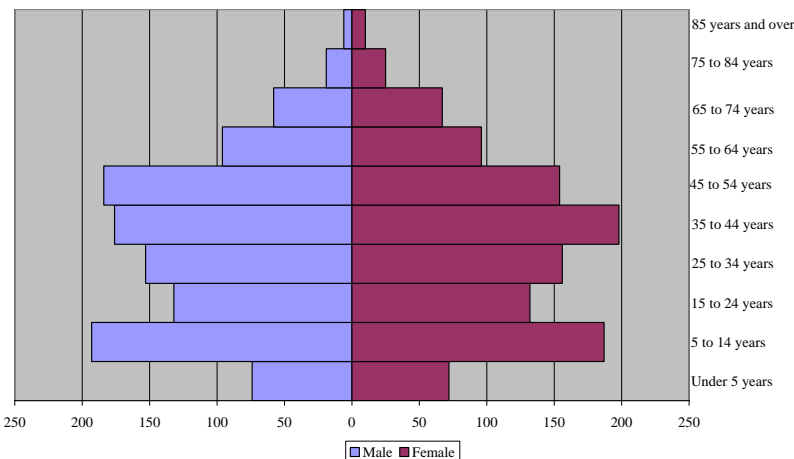
In 1990 one-third of the population was in between the ages of 5 and 24. This percentage was slightly reduced in 2000. In 2000, one-third of the Township's population was between the age of 35 and 54. In 1990 this number had only been 17%.

Figure 1-6
Population Pyramid 1990
Vernon Township, Clinton County, OH



Source: US Census, 1990 Summary Tape File 1 (STF 1)

Figure 1-7
Population Pyramid 2000
Vernon Township, Clinton County, OH



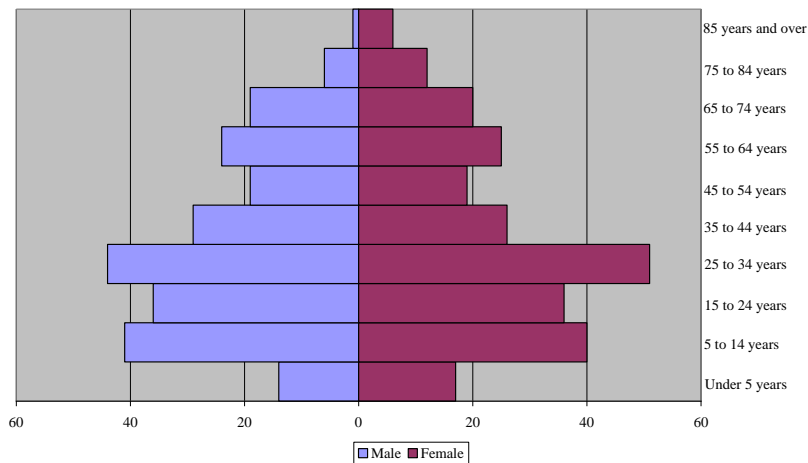
Source: US Census, 2000 Summary File 1 (SF 1)

The age cohorts from the US Census in the Village of Clarksville are shown in Figures 1-8 and 1-9. The Village population is somewhat evenly split between men and women. In 2000, 47% of the population was male, and 53% was female. This is a slight change from 1990 when 48% of the population was male, and 52% was female. Interestingly, in comparison to the Townships' population where the majority is male, the majority Village population is female. The highest percentage of the population in 1990 was in the age 25 to 34 category (20%). Similarly, in 2000

this was the largest category (17%), and the age category of 35 to 44 was also 17%. The median age of Clarksville residents in 2000 was 31.2.

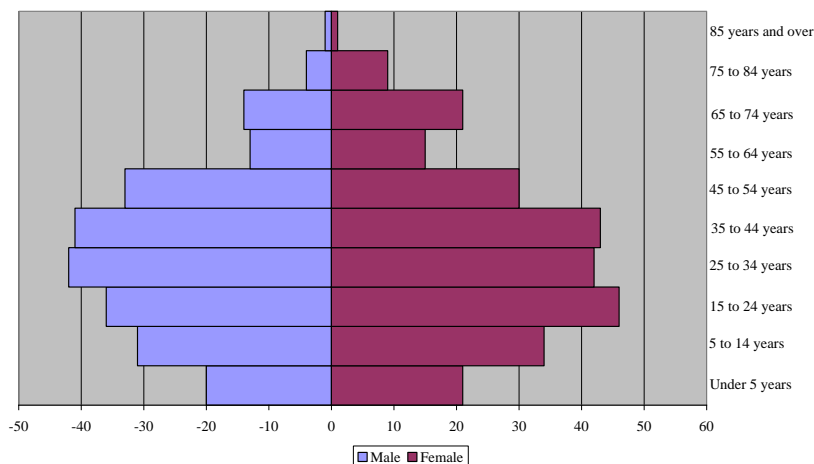
In 1990 one-third of the population was in between the ages of 15 and 34. Reflecting the 10 year shift, in 2000, one third of the Village's population was between the ages of 25 and 44. This percentage was slightly lower in 1990.

Figure 1-8
Population Pyramid 1990
Village of Clarksville, Clinton County, OH



Source: US Census, 1990 Summary
Tape File 1 (STF 1)

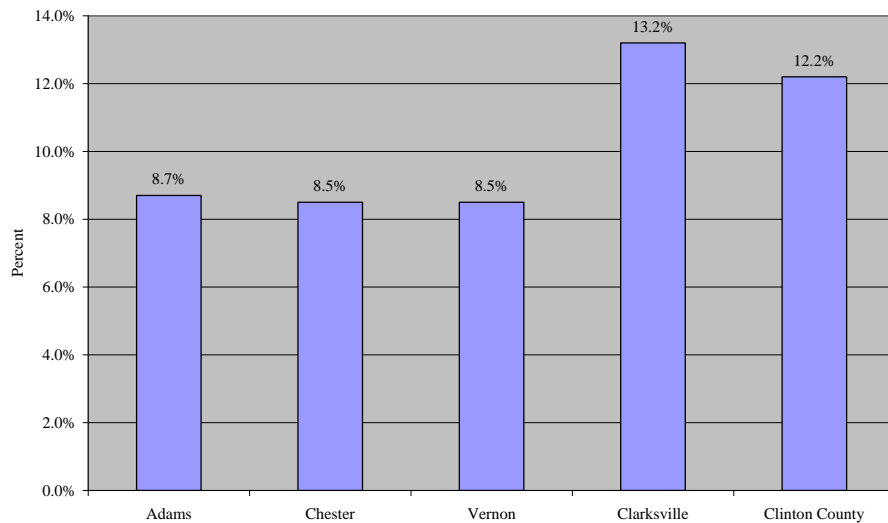
Figure 1-9
Population Pyramid 2000
Village of Clarksville, Clinton County, OH



Source: US Census, 2000 Summary File
1 (SF 1)

In 2000, approximately 9% of the population in Adams, Chester and Vernon Township was over the age of 65, which is lower than the County rate, of approximately 12%. The Village of Clarksville had a bit higher percent of population over age 65, at approximately 13% (Figure 1-10).

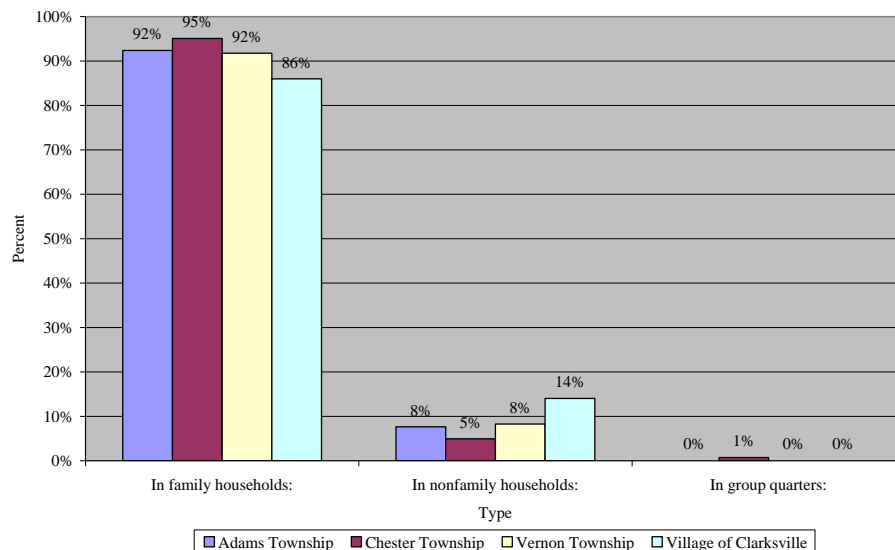
Figure 1-10
Percent Population over age 65



Source: US Census, 2000 Summary File 1 (SF 1)

In 2000, Adams, Chester and Vernon Townships had over 90% of the population living in family households. Only 13 people lived in group quarters overall. The percentage of those living in a family household in the Townships is high compared to that of the County (87%). The Village of Clarksville has just slightly fewer at 86% (Figure 1-11).

Figure 1-11
Household Type

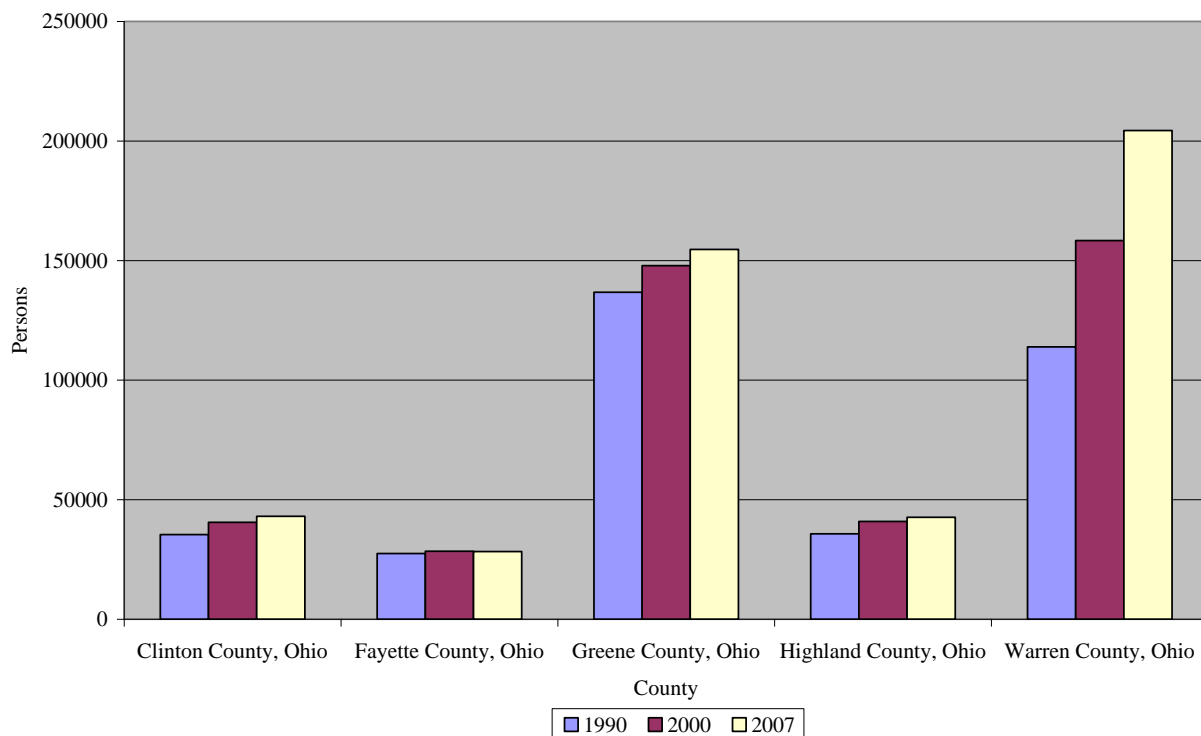


Source: US Census 2000 Summary File 3 (SF 3)

Population Growth in Surrounding Counties

From 1990 to 2000 Warren County experienced the largest growth increase (39%) compared to Clinton and other surrounding Counties. Both Clinton and Highland Counties experienced 14% growth during that same period. From 2000 to 2007, estimates show that growth continued, but has slowed in these areas. Clinton County's population increase during this period was 6%, Greene County's was 8% and Warren County's was 29% (Figure 1-12). According to Warren County staff, growth is occurring in areas around Hamilton, Clearcreek and Turtlecreek Townships. The areas of Wayne, Washington and Harlan Townships have seen only moderate growth in the form of 5 to 10 acre lot splits. Washington Township's rate of growth has been high only due to the existing low population in the area. For the future, there is some potential for growth in Wayne Township, dependent of the expansion of the existing Harveysburg sewer facility. The existing service is currently limited to force mains.

Figure 1-12
Population Change



Source: US Census 2007 Population Estimates

Education and Economic Characteristics

Figure 1-13 shows the educational attainment in 2000. In each township and the village the largest percentage of people are high school graduates, followed by those with some college experience but no degree. Chester Township has the highest percentage of college graduates.

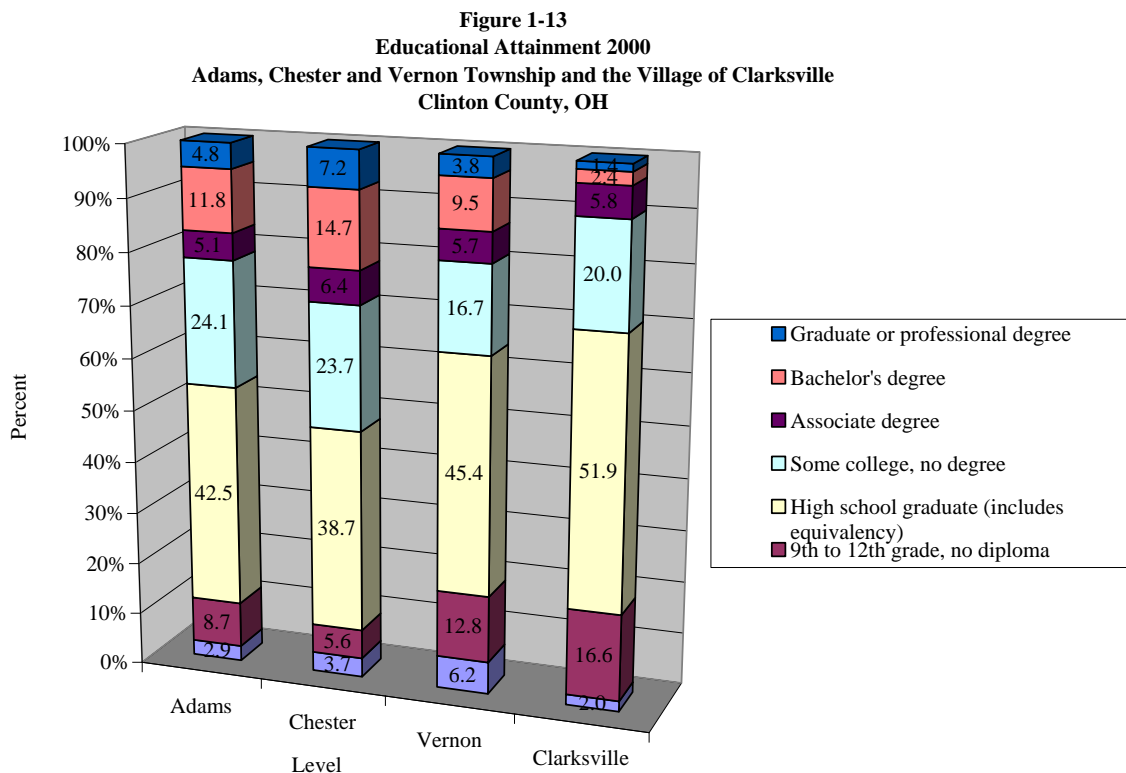
Figure 1-14 shows the industries in which residents of the townships and the village work. This information is from the US Census and was based on the 1997 North American Industry Classification System (NAICS) published by the Office of Management and Budget, Executive

Office of the President. NAICS is an industry description system that groups establishments into industries based on the activities in which they are primarily engaged.

The top three industries in Adams, Chester and Vernon Township are transportation, warehousing and utilities, manufacturing and education, health and social services. In Clarksville the top three are transportation, warehousing and utilities, manufacturing and retail trade.

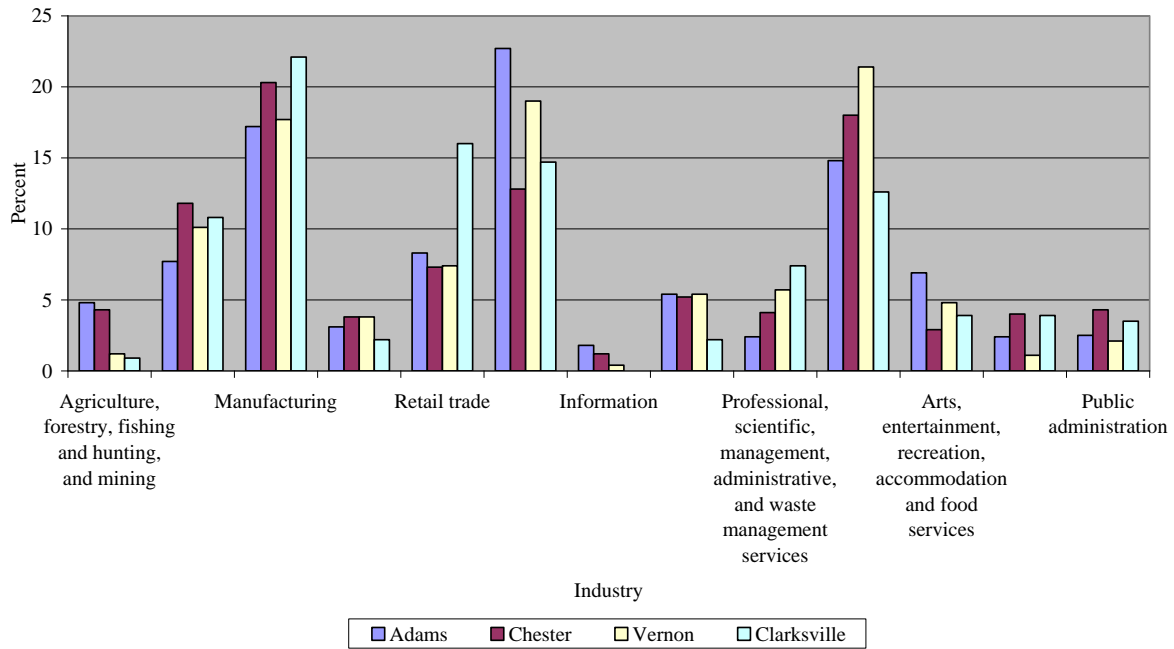
Figure 1-15 shows employment and unemployment in 2000 in the townships and the village. Unemployment rates are lower than the County's 4.4% in each except Chester Township, with 5.3%.

Figure 1-16 shows the household income ranges in 2000 for the townships and the village. The median household income for Adams Township was \$46,042, for Chester Township was \$57,898, for Vernon Township was \$49,325 and for the Village of Clarksville was \$32,250. In Adams, Chester and Vernon Township the highest percentage of household income was seen in the \$50,000 to \$74,999 category. In Clarksville the highest percentage was the \$35,000 to \$49,999 category.



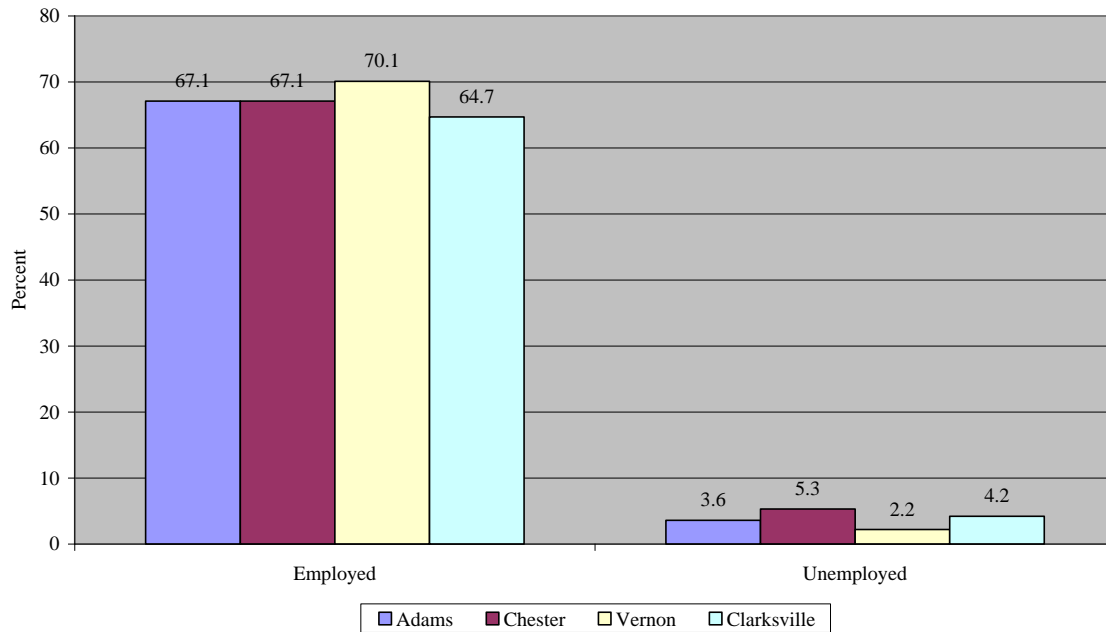
Source: US Census 2000 Summary File 3 (SF 3)

Figure 1-14
Industry of Workers
Adams, Chester and Vernon Township and the Village of Clarksville
Clinton County, OH



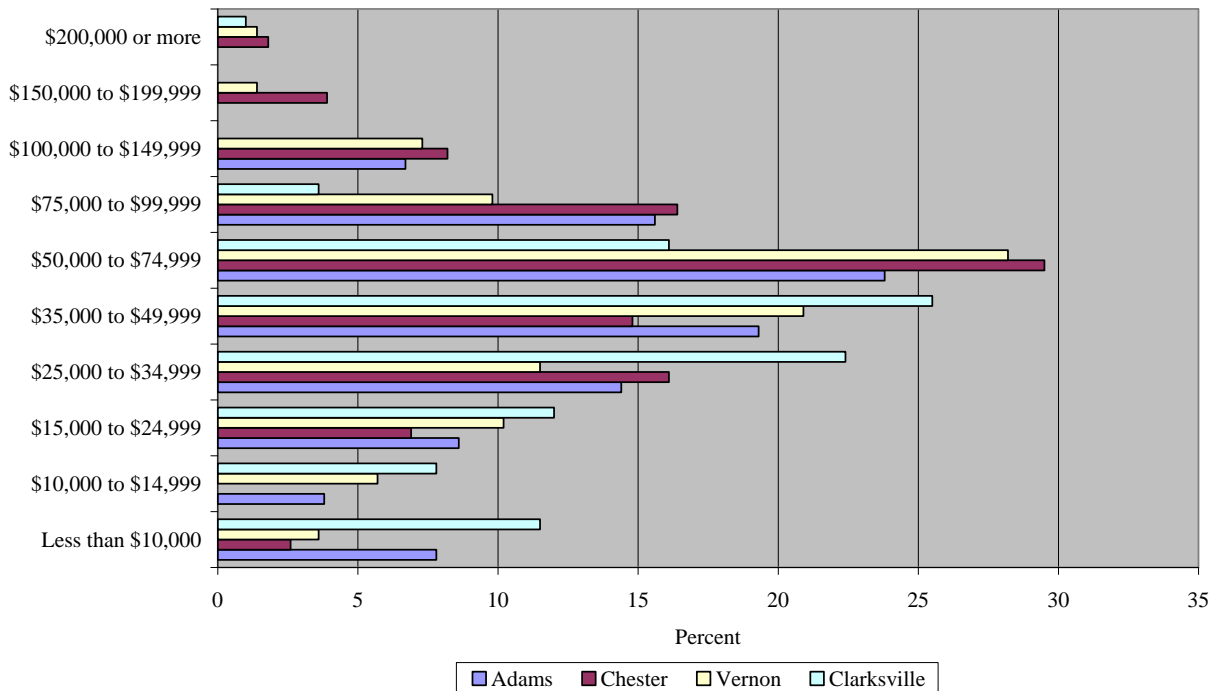
Source: US Census 2000 Summary File 3 (SF 3)

Figure 1-15
Employment 2000
Adams, Chester and Vernon Township and the Village of Clarksville
Clinton County, OH



Source: US Census 2000 Summary File 3 (SF 3)

Figure 1-16
Household Income 2000
Adams, Chester and Vernon Township and the Village of Clarksville
Clinton County, OH



Source: US Census 2000 Summary File 3 (SF 3)

Populations with Specific Needs

Different sectors of the population may have different needs. Residents and stakeholders of the study area identified populations with specific needs and highlighted what those needs may be. The need for a retirement or senior care facility and more affordable condos that would cater to seniors was recognized. For youth in the community, the need for daycare, youth entertainment, sports fields, and additional funding for schools to teach special needs children was acknowledged. For young professionals and adults the need for a professional organization, activities and entertainment was identified. Similarly, for the workforce entertainment and commuting were issues. The importance of providing easy access to voting facilities for the disabled was noted. Substandard housing and property maintenance was identified issues in poverty stricken areas in the community. Adult education programs were seen as a need to encourage greater skills and literacy. The farming community needs were also identified including issues such as noise and traffic.

Population Projections

Linear, geometric, parabolic, modified exponential, gompertz, and logistic methods were calculated to get population projections for each Township and the Village. Population projections were created using trends from 2000 to 2007 Census estimates. Three sets of projections were proposed as optimistic, moderate and conservative. Using the moderate population projections, Adams Township is projected to grow by 17% by 2030, Chester Township by 33%, Vernon Township by 26% and Clarksville by 3%. Based on input from the steering committee the optimistic projections were selected to be the base for further analysis in

this plan. The committee considered future prospects for economic development growth and resulting housing needs and concluded that the optimistic projection was most appropriate.

Figure 1-17
Population Projections
Adams Township
2010 - 2030

Year	Census Estimates	<i>Optimistic</i>	Moderate	Conservative
2000	1,901			
2005	1,969			
2010		2,035	2,034	2,033
2015		2,103	2,101	2,096
2020		2,173	2,168	2,160
2025		2,245	2,237	2,223
2030		2,320	2,308	2,286

Figure 1-18
Population Projections, 2000-2030
Adams Township, Clinton County, OH

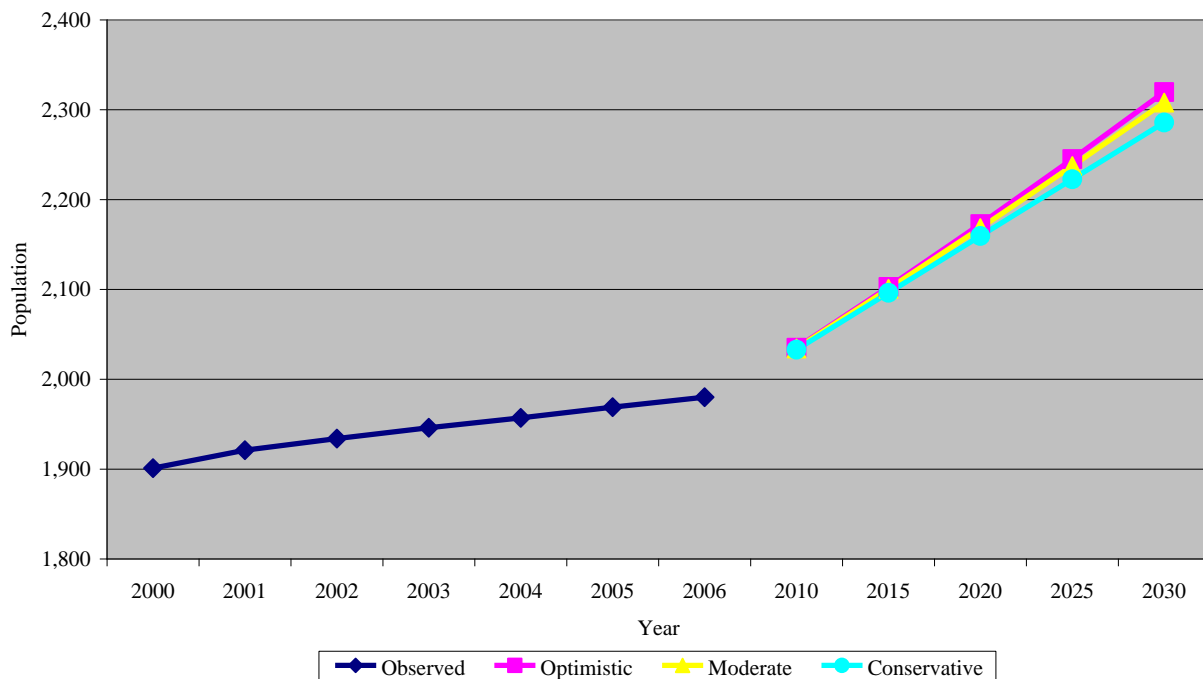


Figure 1-19
Population Projections
Chester Township
2010 - 2030

Year	Census Estimates	<i>Optimistic</i>	Moderate	Conservative
2000	1,771			
2005	1,862			
2010		1,989	1,988	1,984
2015		2,110	2,104	2,092
2020		2,238	2,225	2,199
2025		2,374	2,350	2,307
2030		2,519	2,480	2,413

Figure 1-20
Population Projections, 2000-2030
Chester Township, Clinton County, OH

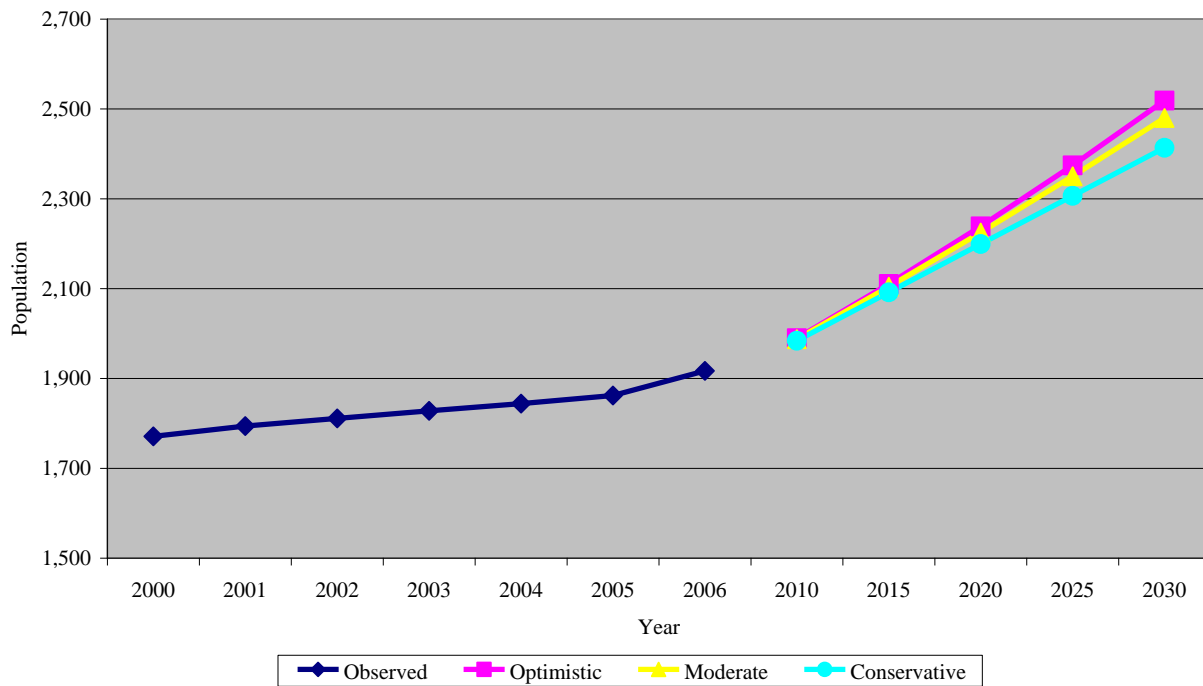


Figure 1-21
Population Projections
Vernon Township
2010 - 2030

Year	Census Estimates	<i>Optimistic</i>	Moderate	Conservative
2000	2,188			
2005	2,274			
2010		2,400	2,398	2,396
2015		2,514	2,509	2,500
2020		2,634	2,623	2,604
2025		2,759	2,740	2,708
2030		2,890	2,860	2,811

Figure 1-22
Population Projections, 2000-2030
Vernon Township, Clinton County, OH

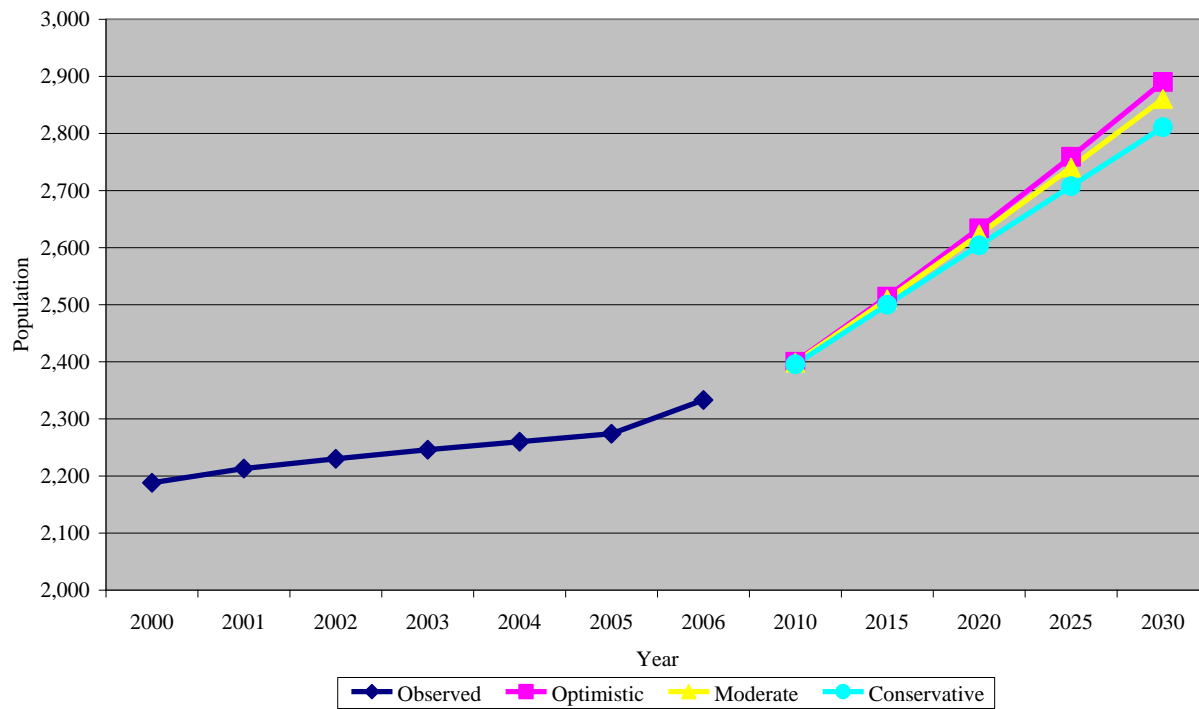
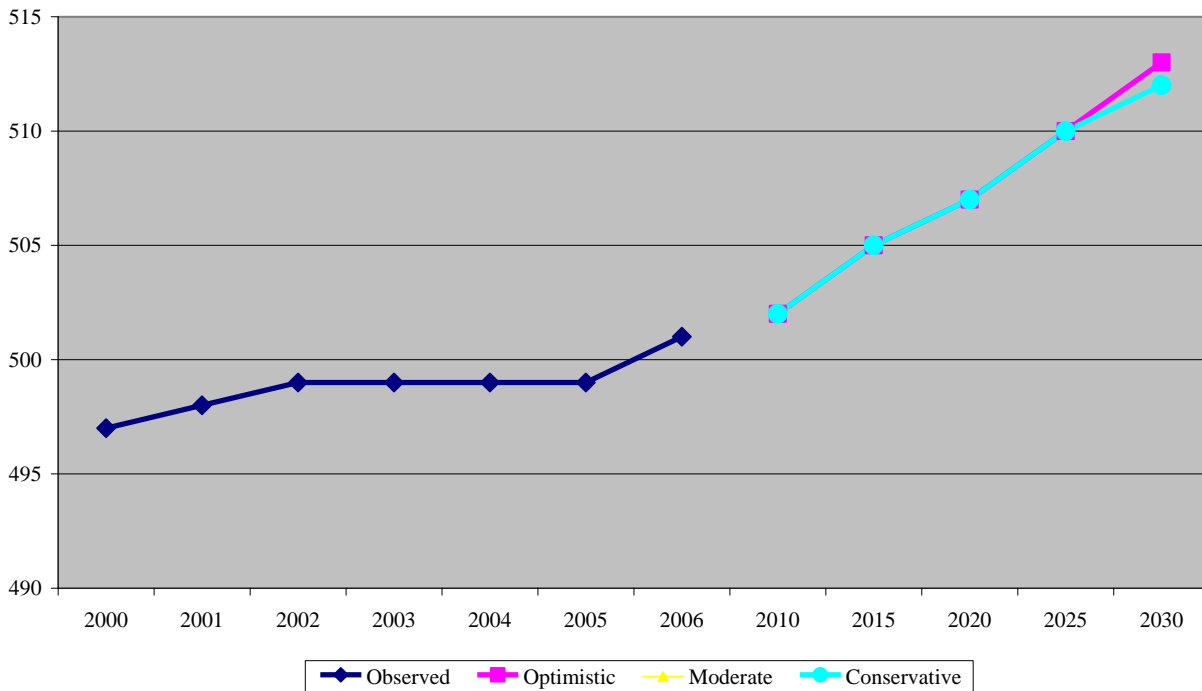


Figure 1-23
Population Projections
Village of Clarksville
2010 - 2030

Year	Census Estimates	<i>Optimistic</i>	Moderate	Conservative
2000	497			
2005	499			
2010		502	502	502
2015		505	505	505
2020		507	507	507
2025		510	510	510
2030		513	512	512

Figure 1-24
Population Projections, 2000 - 2030
Village of Clarksville, Clinton County OH



CHAPTER 2

Housing Characteristics

Introduction

The purpose of this chapter is to establish baselines upon which Adams, Chester and Vernon Township and the Village of Clarksville can provide policy guidance to maintain a housing stock that meets the needs of all area residents. This chapter includes inventory and analyses that address public sector activities, as well as provides direction and assistance to the efforts of the private sector.

Inventory of Housing Characteristics

In 2000 the US Census Bureau identified 716 housing units within Adams Township, 637 housing units within Chester Township, 823 housing units within Vernon Township, and 216 housing units within the Village of Clarksville.

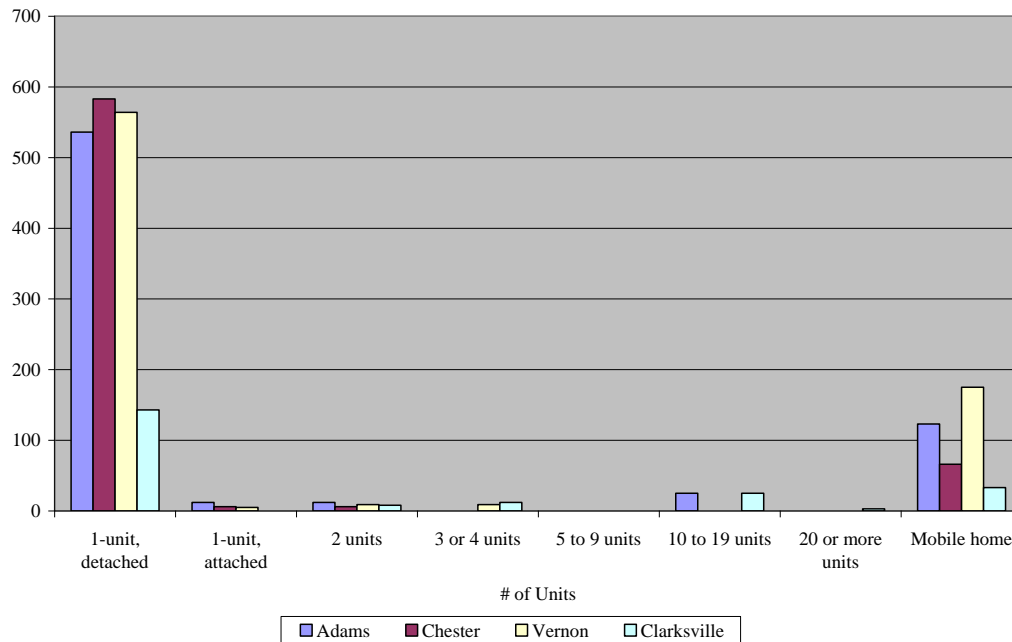
Each community had high percentages of detached single family units as shown in Figure 2-1. Approximately 76% of Adams Township's housing stock was detached single family units, as was 88% of Chester Township's housing stock, 74% of Vernon Township's housing stock, and 63.8% of Clarksville's housing stock.

The average household size in each community was comparable, with 2.75 people per household in Adams Township, 2.85 people per household in Chester Township, 2.87 people per household in Vernon Township and 2.6 people per household in the Village of Clarksville.

The second largest housing type in each study area was mobile homes. The majority of the mobile homes in the area are scattered site.

In Adams Township, 17% of the housing stock is mobile homes (Figure 2-1). In Chester Township, 10% of the housing stock is mobile homes (Figure 2-1). One mobile home park is located in the Township on State Route 380 just south of State Route 73. In Vernon Township 23% of the housing stock are mobile homes (Figure 2-1). One mobile home park is located in the Township on State Route 350 west of State Route 730. In Clarksville, 14.7% of the housing stock is mobile homes (Figure 2-1).

Attached housing and multi-family housing opportunities are limited for residents in all areas.

**Figure 2-1
Housing Type, 2000**

Source: US Census 2000 Summary File 3 (SF 3)

The 2000 U.S. Census shows that approximately 97% of the total housing units in Adams Township were occupied (Figure 2-2). Approximately 600 of these housing units in the Township were owner-occupied (Figure 2-3). Less than 100 units were renter-occupied and less than 25 units were vacant.

In Chester Township, approximately 97% of the total housing units were occupied (Figure 2-4). Approximately 550 of these housing units in the Township were owner-occupied (Figure 2-5). Seventy units were renter-occupied and less than 25 units were vacant.

Approximately 86% of the total housing units in Vernon Township were occupied (Figure 2-6). Approximately 657 of these housing units in the Township were owner-occupied (Figure 2-7). Just over 100 units were renter-occupied and 60 units were vacant.

In the Village of Clarksville, approximately 88% of the total housing units were occupied (Figure 2-8). Approximately 137 of these housing units in the Township were owner-occupied (Figure 2-9). Just over 50 units were renter-occupied and 25 units were vacant.

The rate of home ownership in Adams Township, Chester Township, Vernon Township, and the Village of Clarksville is 87%, 89%, 86.1%, and 71.7%, respectively, which are all well above Clinton County as a whole (69%).

Figure 2-2
Occupancy, 2000
Adams Township, Clinton County, OH

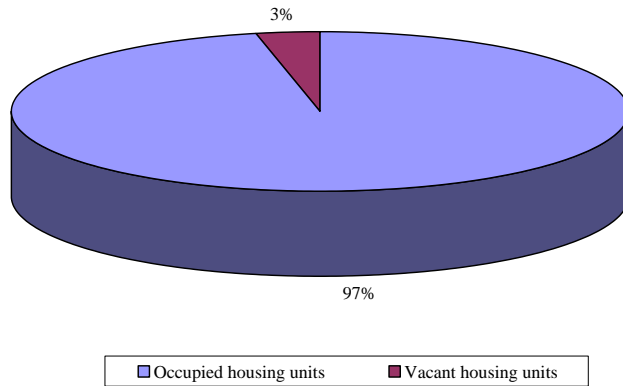


Figure 2-3
Tenure 2000
Adams Township, Clinton County, OH

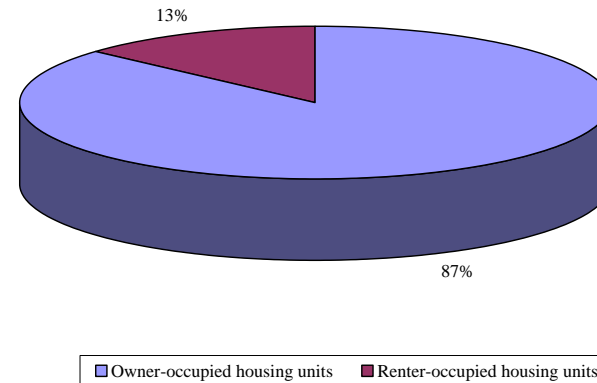


Figure 2-4
Occupancy, 2000
Chester Township, Clinton County, OH

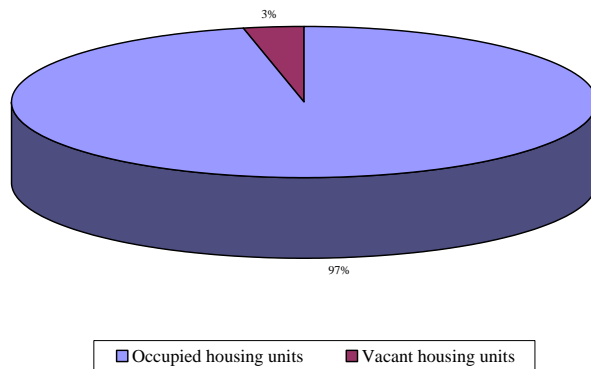


Figure 2-5
Tenure, 2000
Chester Township, Clinton County, OH

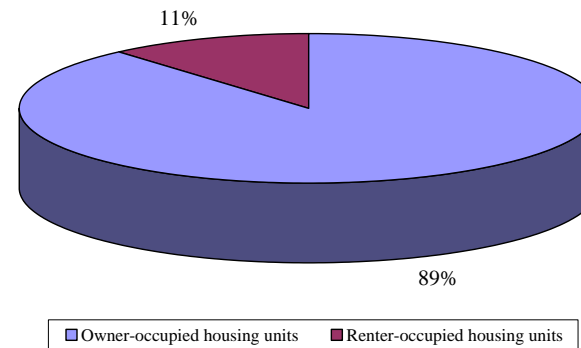


Figure 2-6
Occupancy, 2000
Vernon Township, Clinton County, OH

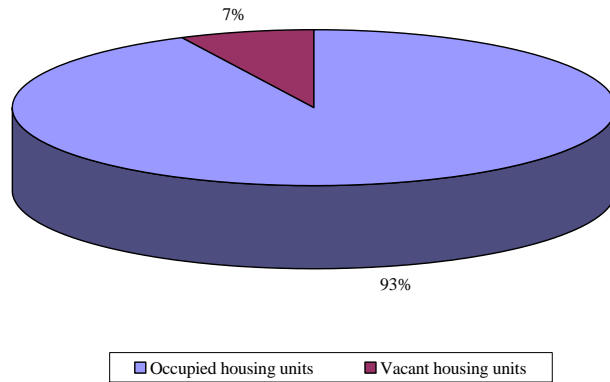


Figure 2-7
Tenure, 2000
Vernon Township, Clinton County, OH

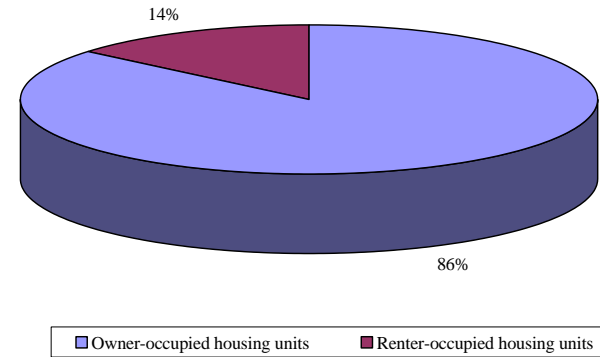


Figure 2-8
Occupancy, 2000
Village of Clarksville, Clinton County, OH

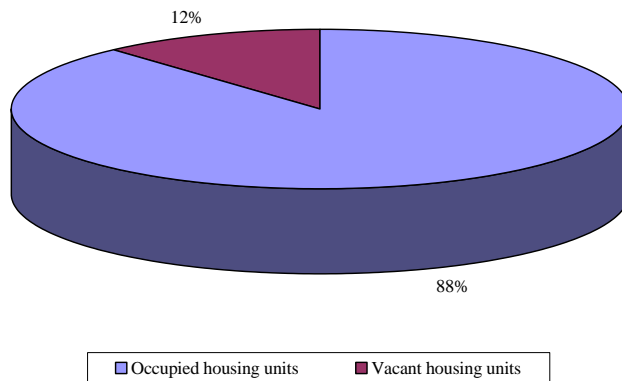
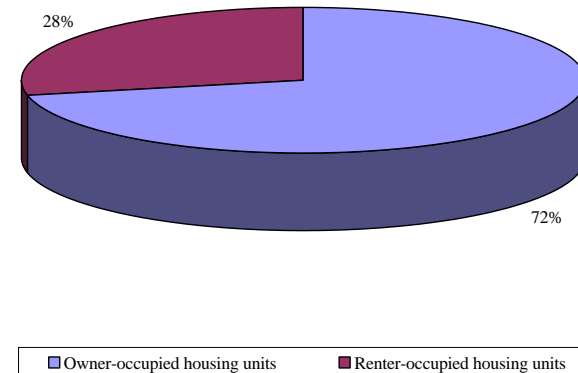


Figure 2-9
Tenure, 2000
Village of Clarksville, Clinton County, OH



The majority of the housing stock in Adams, Chester and Vernon Townships was constructed before 1970 (60%, 64%, and 67%, respectively). In Adams Township, 22% of the housing structures were constructed in or before 1939 (Figure 2-10). Just over 17% of the housing structures were constructed in or before 1939 in Chester Township (Figure 2-11). In Vernon Township just over 14% of the housing structures were built in or before 1939 (Figure 2-12).

Conversely 59% of the housing stock in the Village of Clarksville was constructed before 1939. Only 21% of the housing structures were constructed after 1970 (Figure 2-13).

Figure 2-10
Year Structure Built 2000
Adams Township, Clinton County, OH

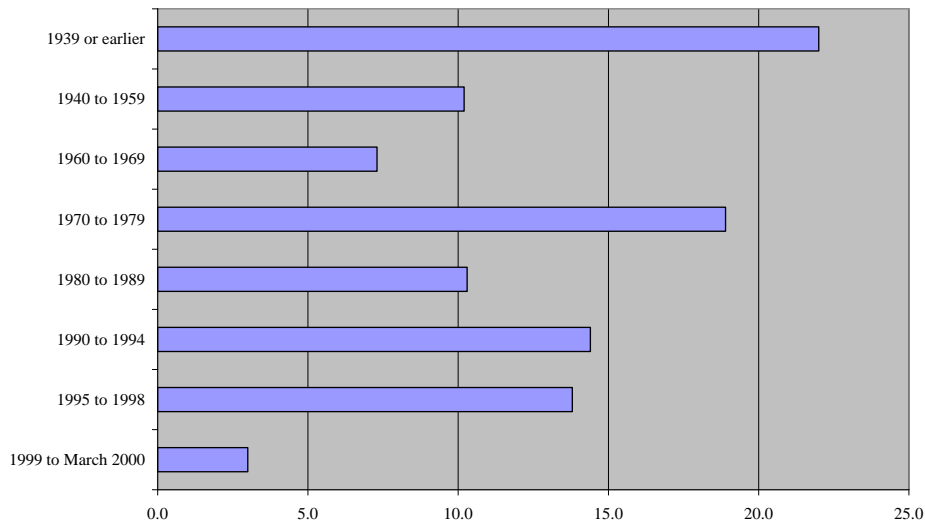


Figure 2-11
Year Structure Built, 2000
Chester Township, Clinton County, OH

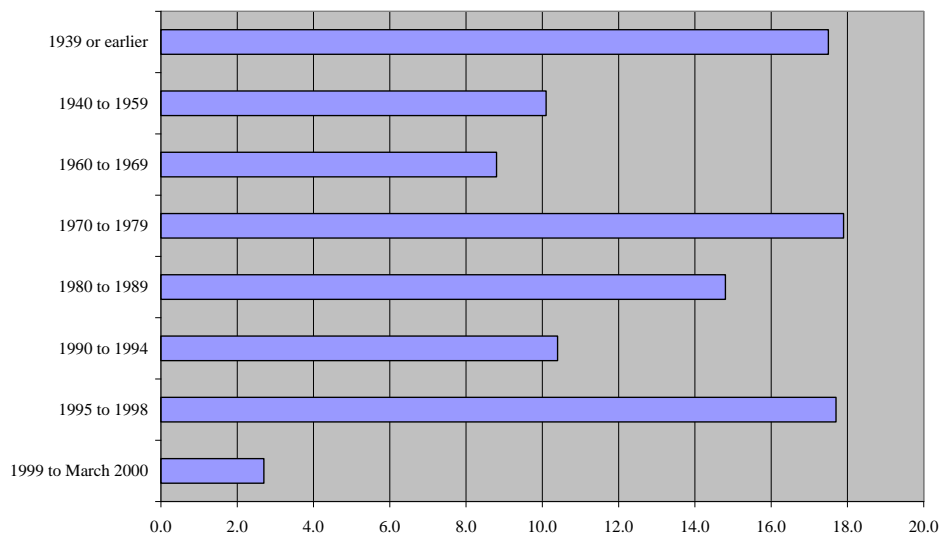


Figure 2-12
Year Structure Built, 2000
Vernon Township, Clinton County, OH

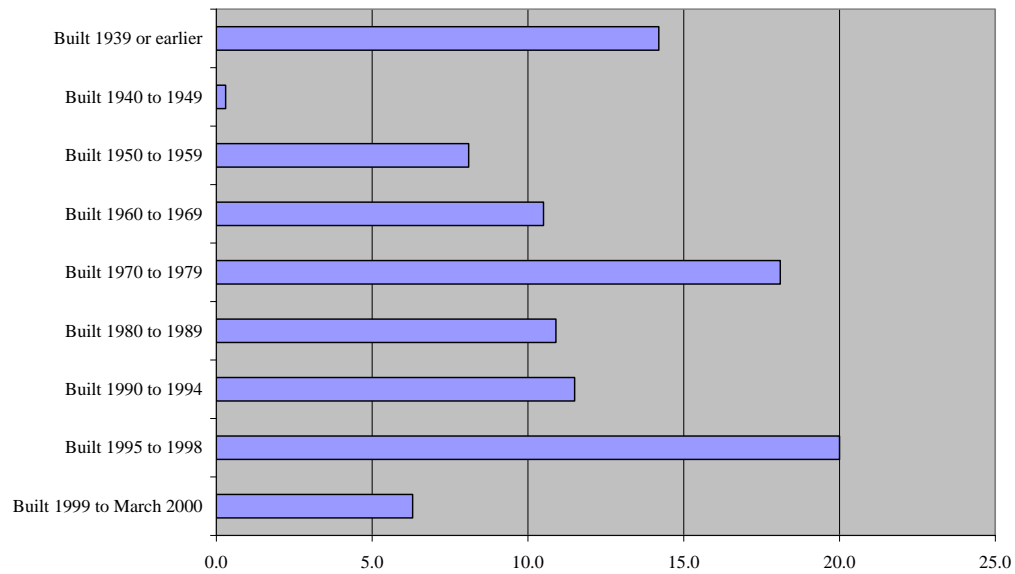
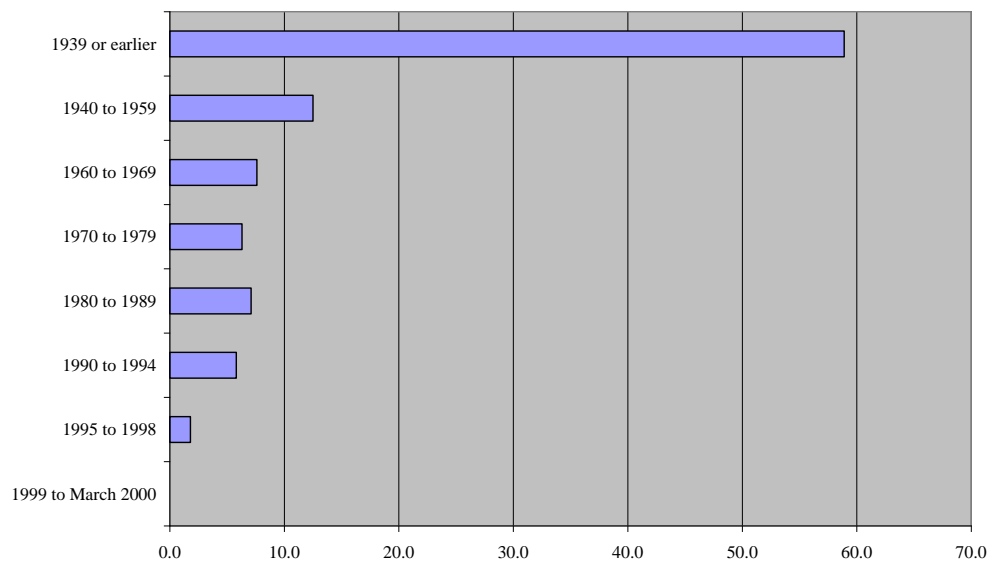


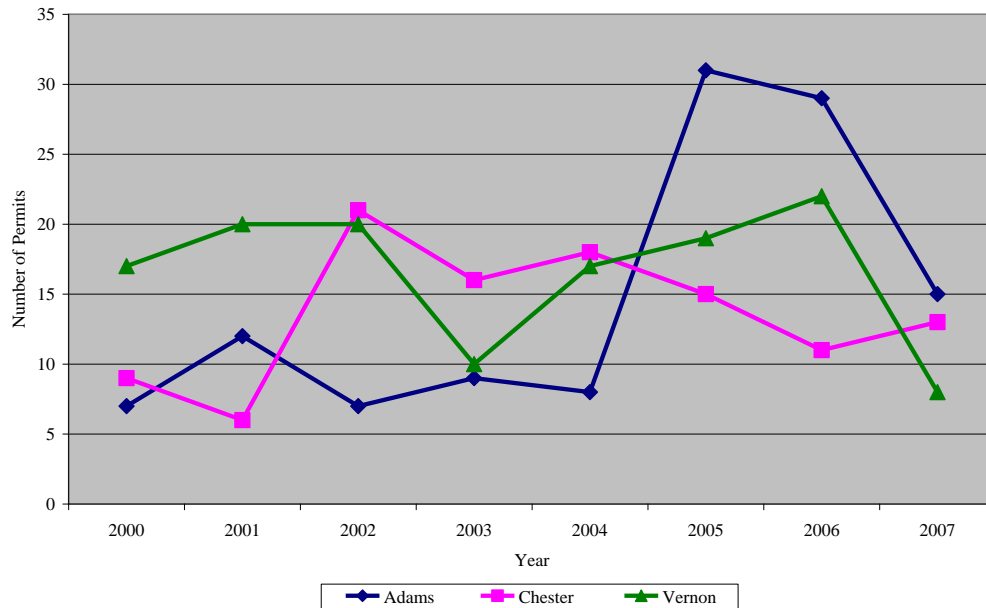
Figure 2-13
Year Structure Built, 2000
Village of Clarksville, Clinton County, OH



Source: US Census 2000 Summary File 3 (SF 3)

From 2000 to 2007 only 360 new single family residential units were constructed in the three townships. From January to March 2008 four were permitted. Over the seven-year period of 2000-2007, the increase in housing stock was just below 17% (Figure 2-14).

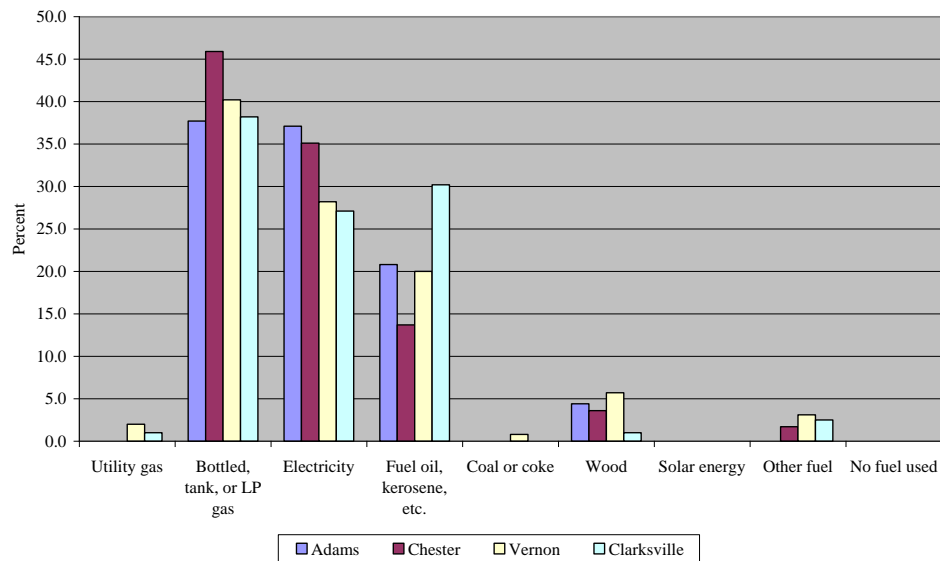
Figure 2-14
Building Permits 2000 - 2007



Source: Clinton County Regional Planning Commission

Most of the homes in Adams, Chester, Vernon Township and the Village of Clarksville are heated by bottled, tank or LP gas, fuel oil, kerosene, or electricity (Figure 2-15). Very few (1.1%) of the homes in the Adams Township do not have plumbing facilities and/or kitchen facilities. Over three percent (3.9%) of the homes in Chester Township do not have complete plumbing facilities. Less than one percent (0.8%) of the homes in Vernon Township do not have plumbing facilities and/or kitchen facilities. All homes in the Village of Clarksville have plumbing facilities and/or kitchen facilities.

Figure 2-15
 Home Heating Fuel, 2000

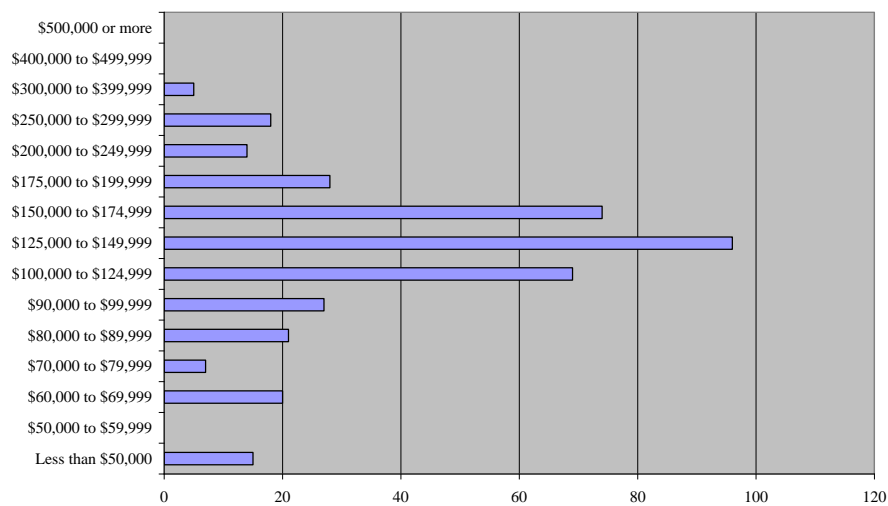


Source: US Census 2000 Summary File 3 (SF 3)

Housing Value

The characteristic of housing value as collected by the U.S. Census is the "price asked" for vacant units. Owner-occupied housing values in Adams Township range from \$10,000 to \$400,000. As seen in Figure 2-16, the value range prominent in the Township is from \$100,000 to 174,999, with 61% of the owner occupied homes in this category. In addition there are very few homes available within the Township valued at more than \$300,000.

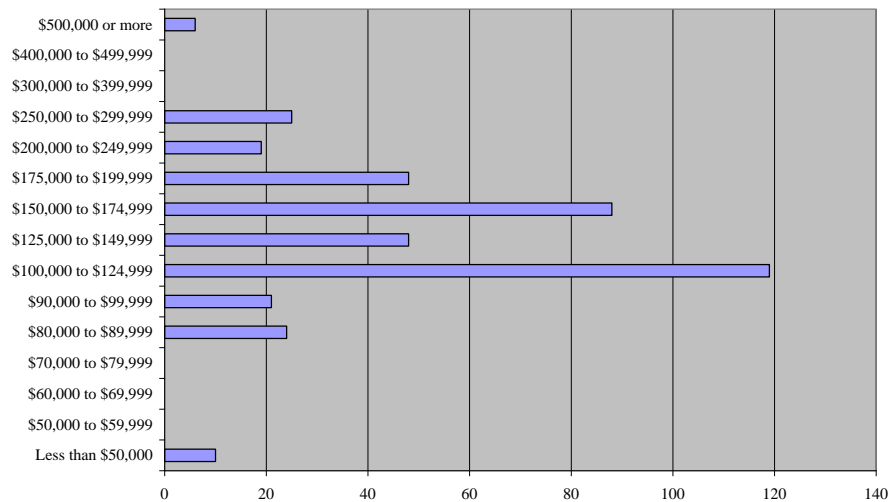
Figure 2-16
 Housing Value, 2000
 Adams Township, Clinton County, OH



Source: Census 2000 Summary File 3 (SF 3) - Sample Data

Owner-occupied housing values in Chester Township range from \$10,000 to \$500,000. As seen in Figure 2-17, two value ranges prominent in the Township are from \$100,000 to \$124,999 and \$150,000 to \$174,999, with 29% and 22% of the owner occupied homes, respectively. In addition there are very few homes available within the Township valued at more than \$300,000 or less than \$70,000.

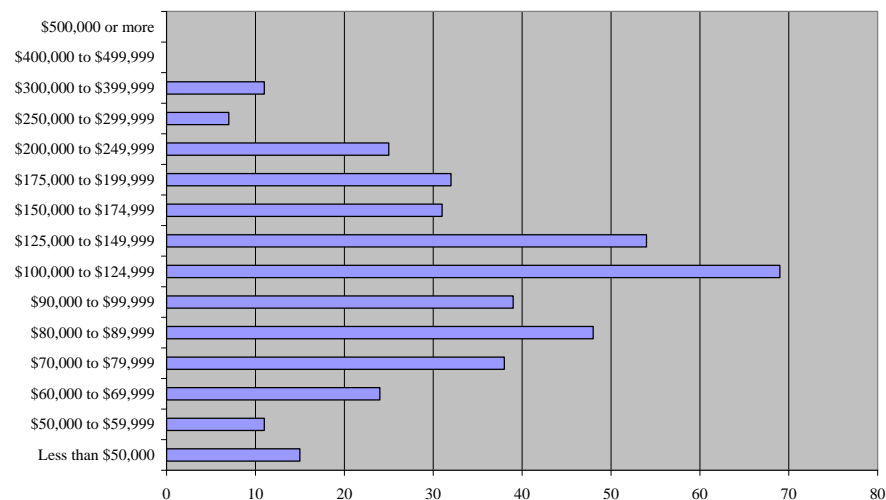
Figure 2-17
Housing Value, 2000
Chester Township, Clinton County, OH



Source: Census 2000 Summary File 3 (SF 3) - Sample Data

Owner-occupied housing values in Vernon Township range from \$35,000 to \$400,000. As seen in Figure 2-18, two value ranges prominent in the Township are from \$100,000 to \$124,999 and \$125,000 to \$149,999, at 17% and 13% of the owner occupied homes, respectively. In addition there are very few homes available within the Township valued at more than \$300,000.

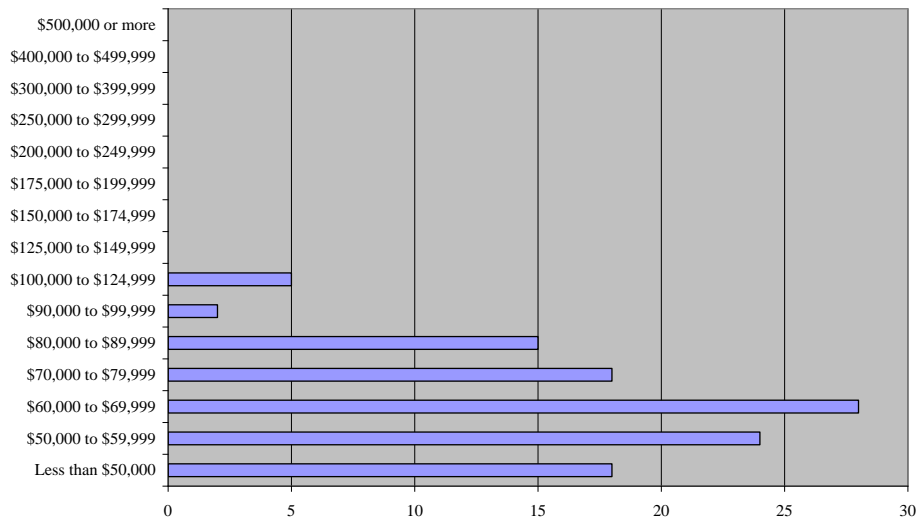
Figure 2-18
Housing Value, 2000
Vernon Township, Clinton County, OH



Source: Census 2000 Summary File 3 (SF 3) - Sample Data

Owner-occupied housing values in Clarksville range from \$15,000 to \$125,000. As seen in Figure 2-19, the value range prominent in the Township are from \$60,000 to \$69,999 with 25% of the owner occupied homes in this category. In addition there are few homes available within the Township valued at more than \$125,000.

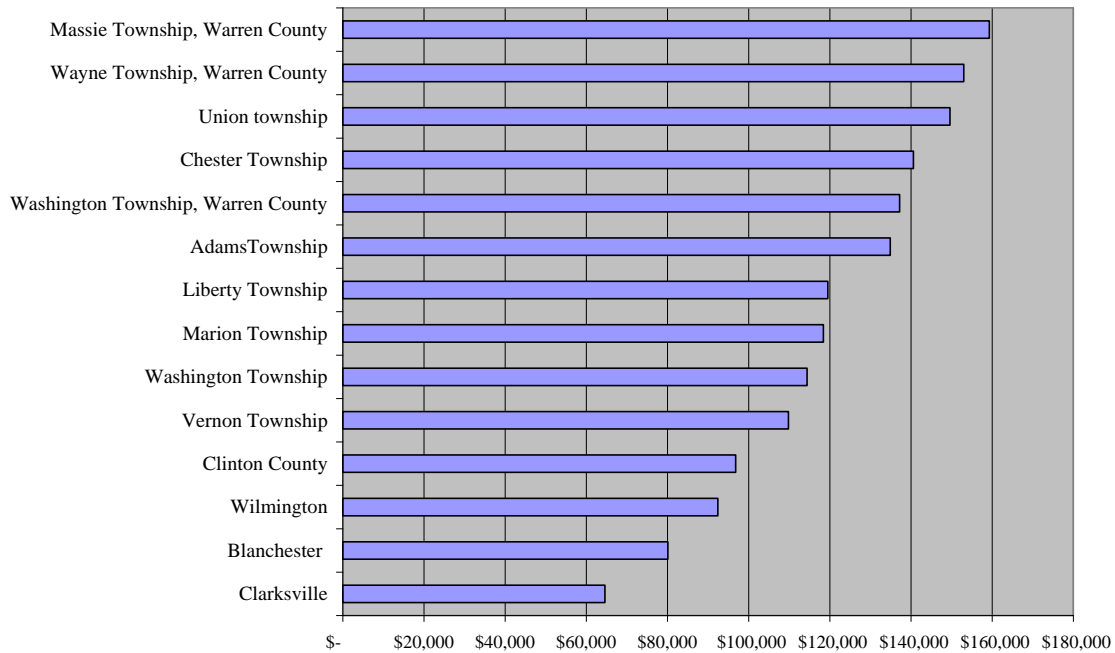
Figure 2-19
Housing Value, 2000
Village of Clarksville, Clinton County, OH



Source: Census 2000 Summary File 3 (SF 3) - Sample Data

Adams and Chester townships' median home value for owner-occupied housing are on par with their neighboring townships. Vernon Township's median home value for owner-occupied housing is just below average. Clarksville's median home value for owner-occupied housing is comparatively low (Figure 2-20).

The median home value in the Adams, Chester and Vernon Township area (\$134,900, \$140,600, and \$109,800, respectively) is above the median home value of Clinton County as a whole (\$96,800). The median home value in Clarksville is \$64,600, well below Clinton County's median value. The highest median home value among the surrounding cities and townships is found in Massie Township, in Warren County at \$159,300.

Figure 2-20
Median Household Value, 2000

Source: Census 2000 Summary File 3 (SF 3) - Sample Data

Housing Costs

The US Department of Housing and Urban Development (HUD) requires that lenders consider debt-to-income ratios when figuring mortgage loan amounts. According to the Federal Housing Administration (FHA), monthly mortgage payments should be no more than 31% of gross household income. Mortgage payments combined with non-housing expenses should total no more than 43% of income.

Monthly costs include payments for mortgages, deeds of trust, contracts to purchase or similar debts on the property, real estate taxes, fire, hazard and flood insurance, utilities and fuel. For specified housing types in Adams and Chester townships the majority of monthly owner costs are above \$1,000 (Figure 2-21 and 2-22). For specified housing types in Vernon Township the majority of monthly owner costs are between \$800 and \$1,250 and in Clarksville the majority of monthly owner costs are between \$500 and \$800 ((Figure 2-23 and 2-24).

The median monthly owner cost (with a mortgage) in Adams Township is \$1,126, in Chester Township is \$1,100, and in Vernon Township is \$926 are all above the County's median, which is \$888. The median monthly owner cost (with a mortgage) in Clarksville of \$683 is below the County's median.

Median monthly costs as a percentage of household income for housing units with a mortgage in Adams Township are 21.9%, in Chester Township are 22.8%, and in Clarksville are 24%. Clinton County's median percentage is only slightly lower at 21%. Vernon Township's median percentage is slightly lower than that of the County, at 20.2%.

Figure 2-21
Monthly Owner Costs, 2000
Adams Township, Clinton County, OH

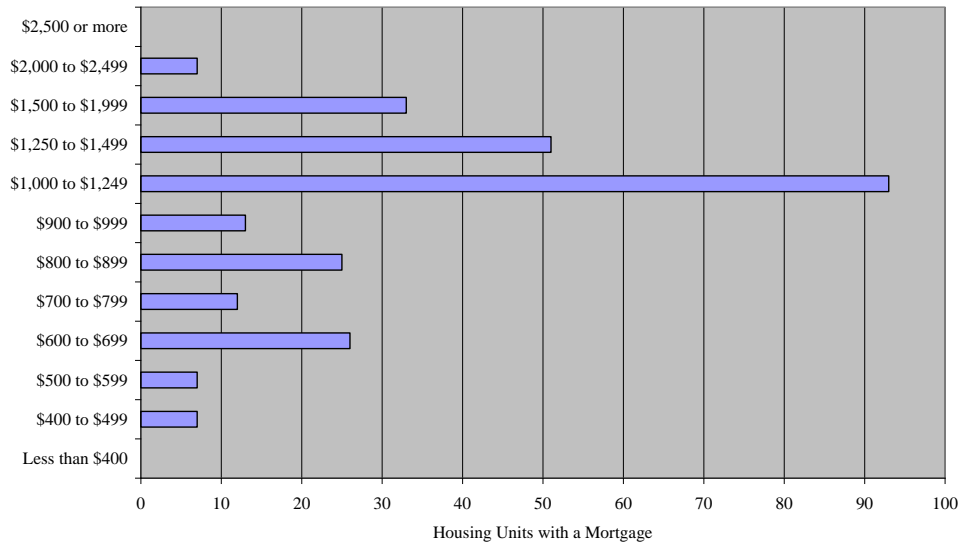


Figure 2-22
Monthly Owner Costs, 2000
Chester Township, Clinton County, OH

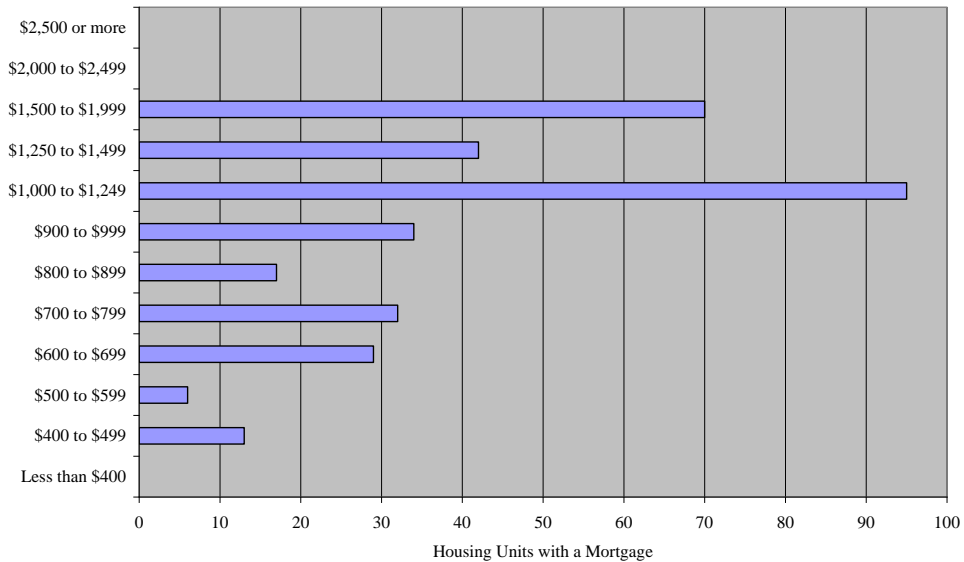


Figure 2-23
Monthly Owner Costs, 2000
Vernon Township, Clinton County, OH

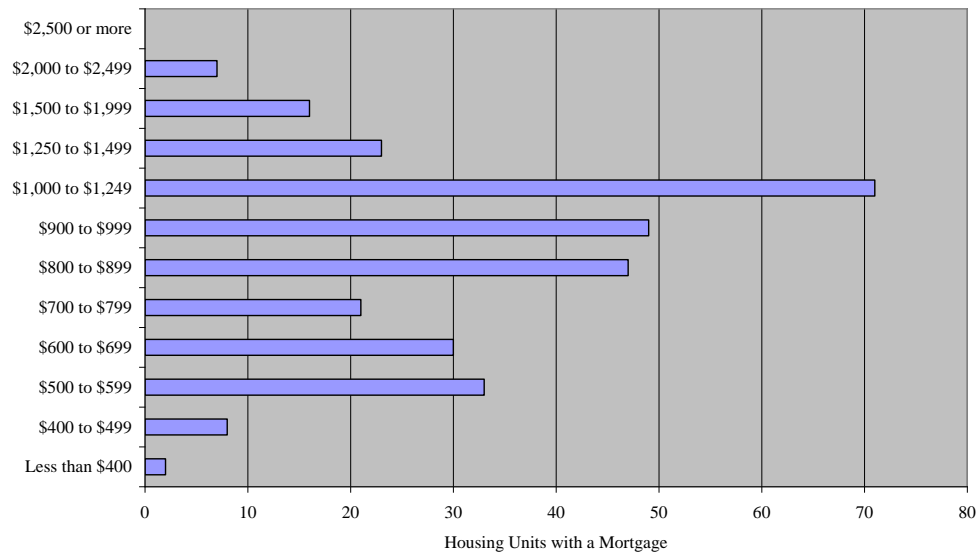
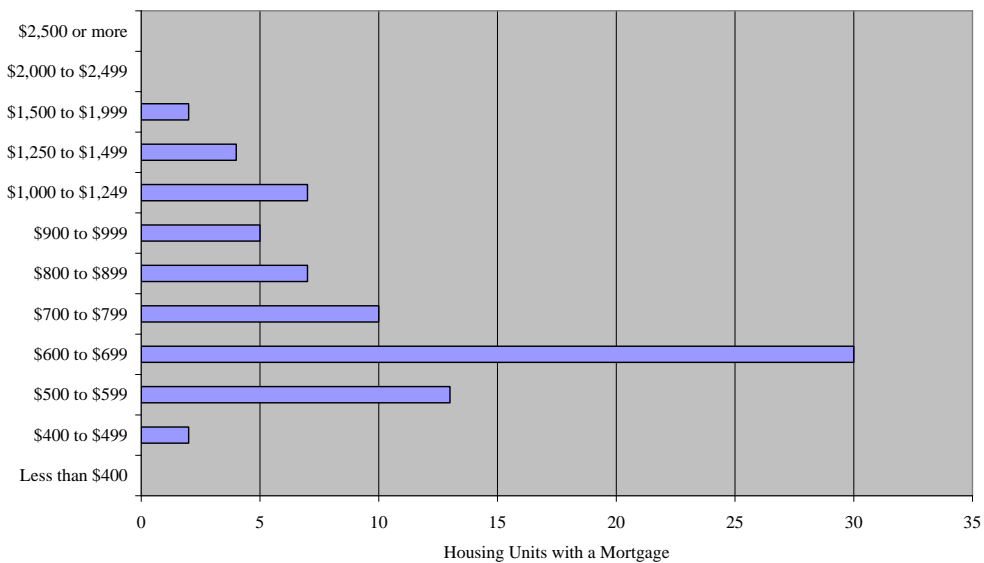


Figure 2-24
Monthly Owner Costs, 2000
Village of Clarksville, Clinton County, OH



Source: Census 2000 Summary File 3 (SF 3) - Sample Data

Most of the gross rental values for renter-occupied housing units in Adams Township were under \$550 a month (Figure 2-25). Most of the gross rental values for renter-occupied housing units in Chester Township were under \$650 a month (Figure 2-26). There were no units with gross rental values under \$500 in Chester Township. About half of the gross rental values for renter-occupied housing units in Vernon Township are below \$600 a month (Figure 2-27). There were

no units with gross rental values under \$300 in Vernon Township. Over half of the gross rental values for renter-occupied housing units in Clarksville are below \$600 a month (Figure 2-28). There were no units with gross rental values under \$350 in Clarksville.

The median gross rent for Clinton County is \$494. The median gross rents for Adams Township was \$540, for Chester Township was \$600, for Vernon Township was \$597, and for Clarksville was \$550, which are all higher than that of the County.

Figure 2-25
Gross Rent, 2000
Adams Township, Clinton County, OH

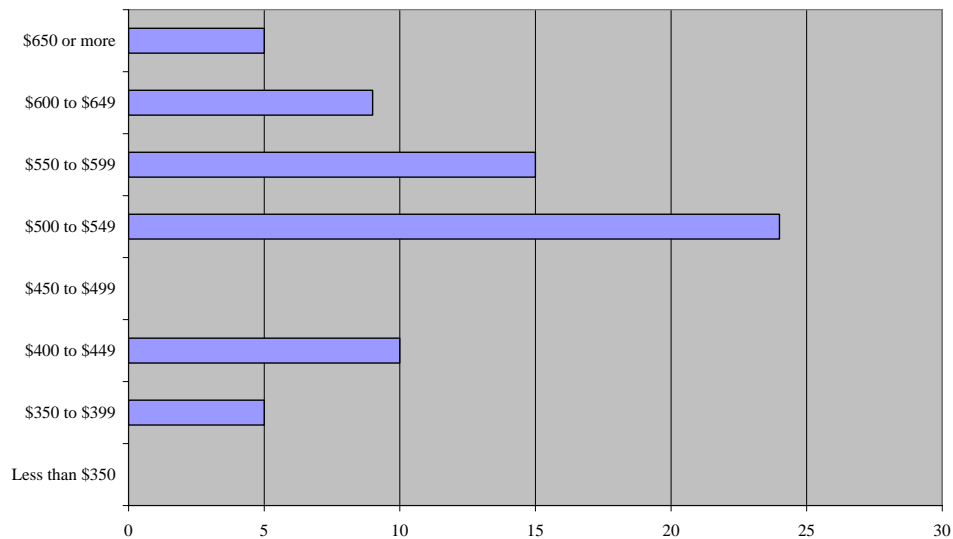


Figure 2-26
Gross Rent, 2000
Chester Township, Clinton County, OH

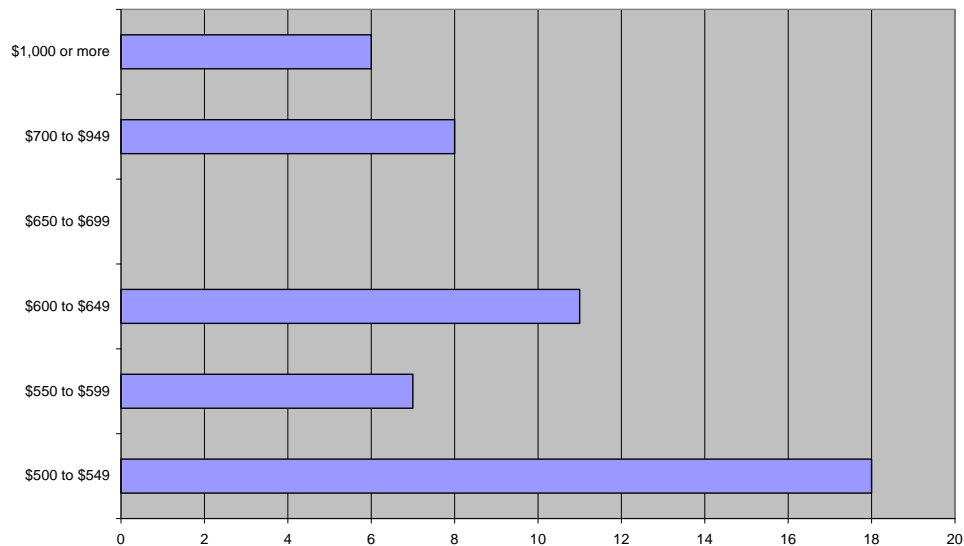


Figure 2-27
Gross Rent, 2000
Vernon Township, Clinton County, OH

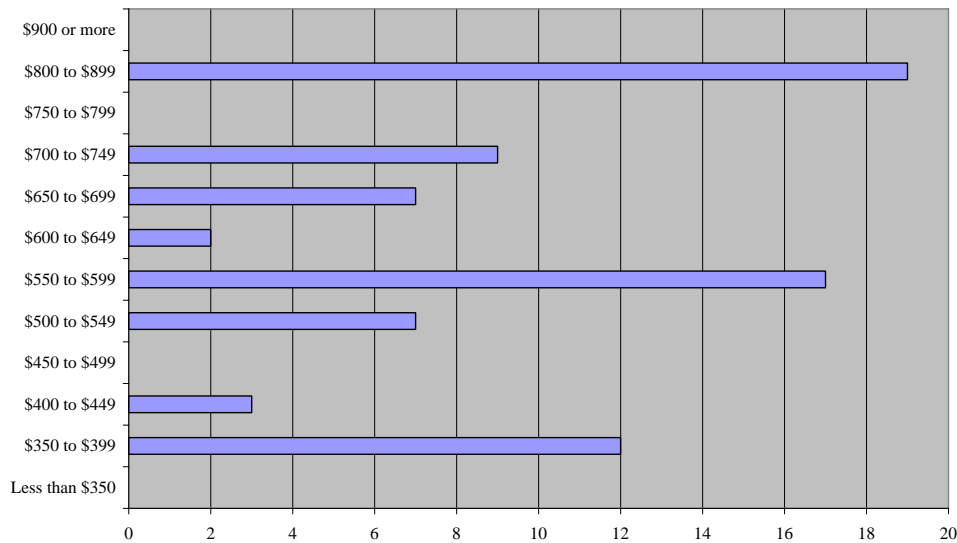
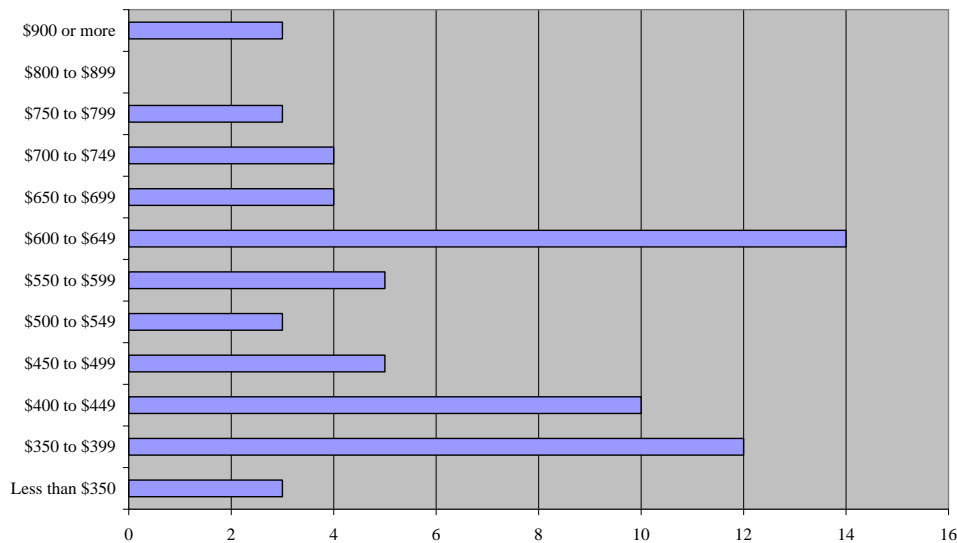


Figure 2-28
Gross Rent, 2000
Village of Clarksville, Clinton County, OH



Source: Census 2000 Summary File 3 (SF 3) - Sample Data

Eighty-two percent (82%) of rental households in Adams Township pay less than 30% of their household income toward rent. Approximately 18% of renters pay 50% or more of their household income toward gross rent (Figure 2-29). Fifty-three percent (53%) of rental households in Chester Township pay less than 30% of their household income toward rent (Figure 2-30). Fifty-eight percent (58%) of rental households in Vernon Township pay less than 30% of their household income toward rent (Figure 2-31). Fifty-eight percent (58%) of rental

households in Clarksville pay less than 30% of their household income toward rent (Figure 2-32).

Figure 2-29
Gross Rent as a Percentage of Household Income, 1999
Adams Township, Clinton County, OH

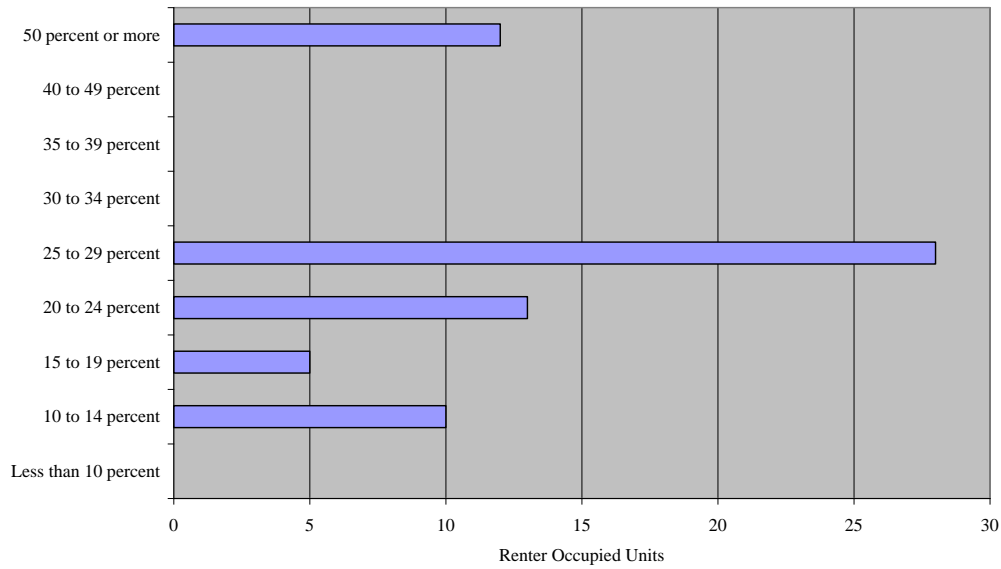


Figure 2-30
Gross Rent as a Percentage of Household Income, 1999
Chester Township, Clinton County, OH

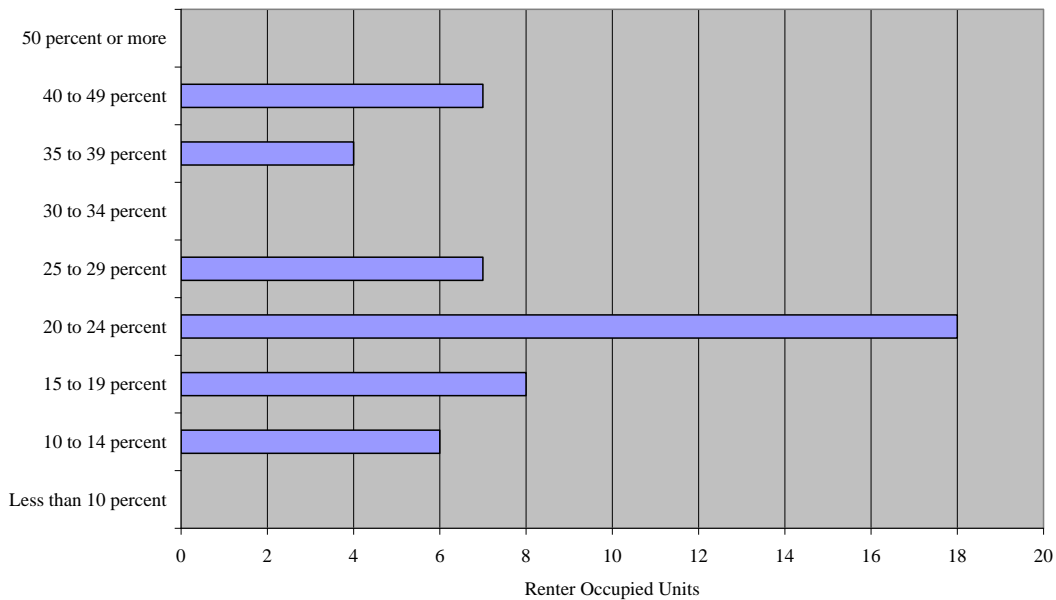


Figure 2-31
Gross Rent as a Percentage of Household Income, 1999
Vernon Township, Clinton County, OH

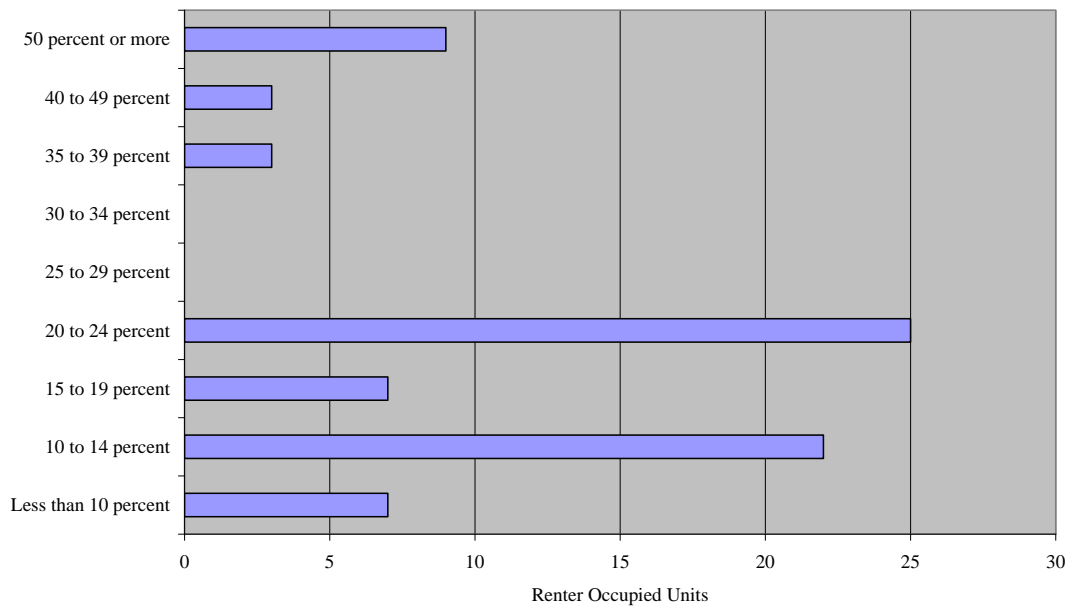
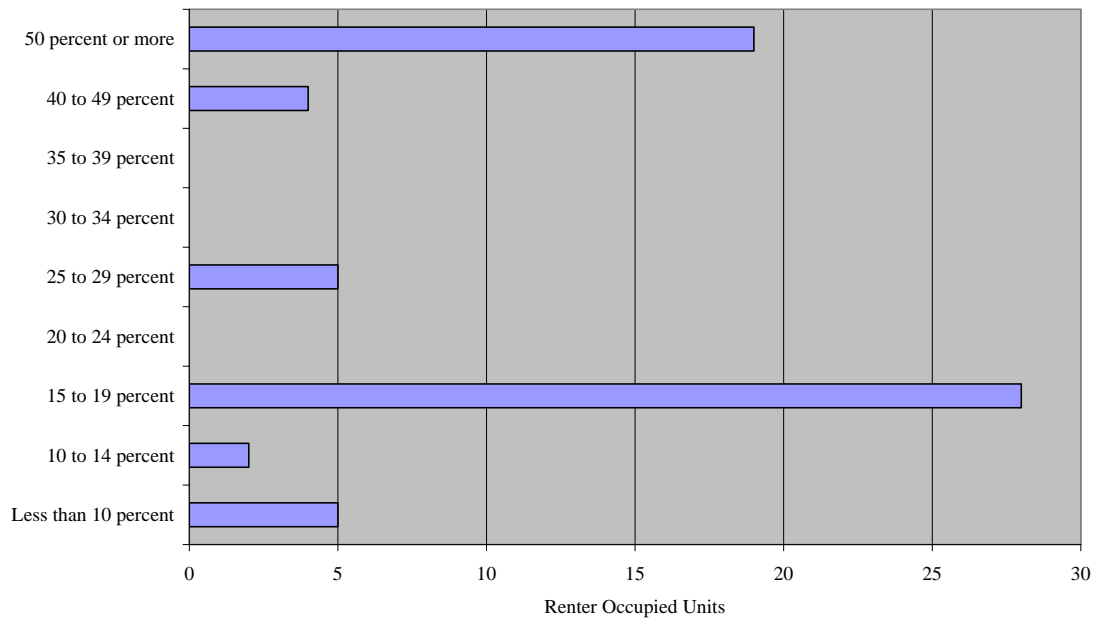


Figure 2-32
Gross Rent as a Percentage of Household Income, 1999
Village of Clarksville, Clinton County, OH



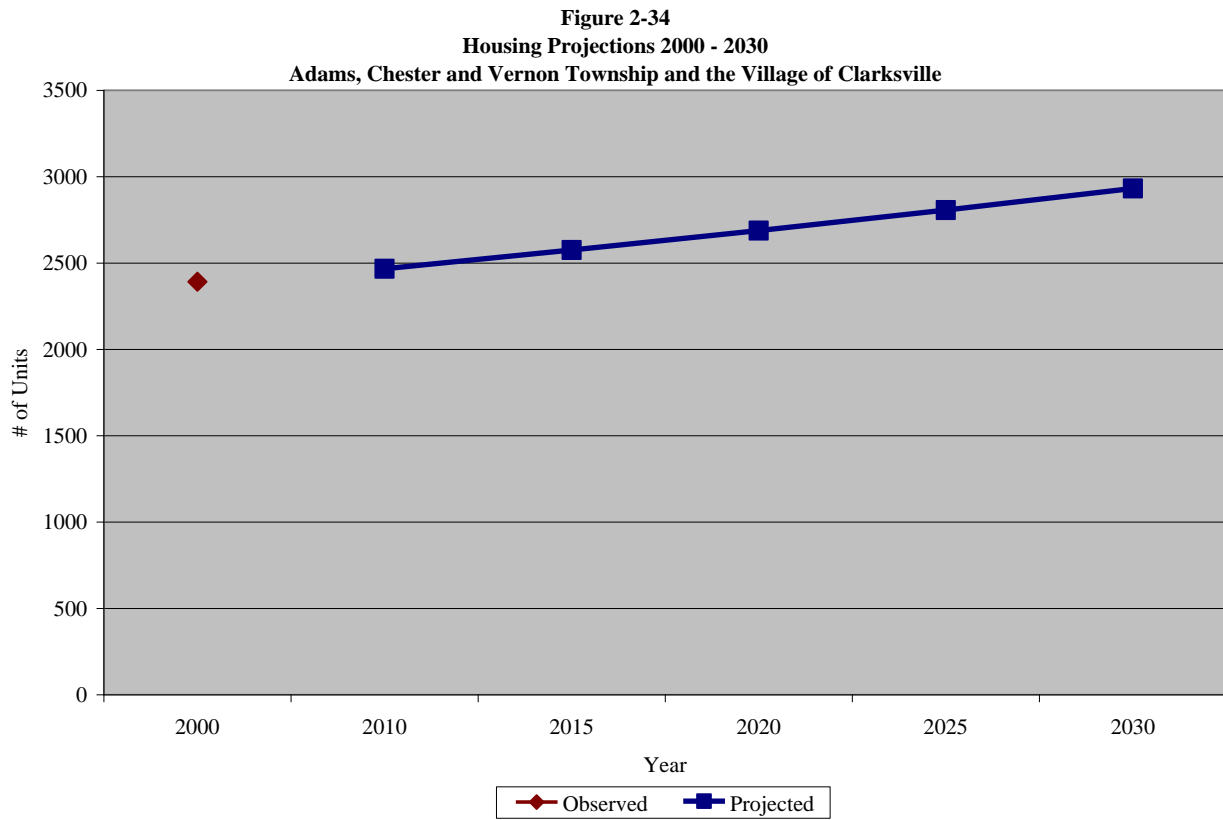
Source: Census 2000 Summary File 3 (SF 3) - Sample Data

Housing Analysis

According to the US Census, in 2000, the total number of households in the study area was 2,392. Based on optimistic population projections, the total number of households anticipated by the year 2030 is approximately 2,932, an increase of approximately 23%. In the short term, by the year 2010, households are projected to increase by approximately 3%. These projections were based on the trends shown from estimated population change from 2000 to 2007 (Figure 2-33). Actual growth will depend on the availability of land, demand and the availability of infrastructure such as water, sewer and transportation options.

Figure 2-33
Housing Projections 2010-2030
Adams, Chester and Vernon Township and the Village of Clarksville

Year	Housing Projections	Percent Increase since 2000	Additional Acreage	% Increase in Residential Land
2010	2,467	3.1%	320	3%
2015	2,575	7.7%	779	6%
2020	2,688	12.4%	1,259	10%
2025	2,807	17.3%	1,763	14%
2030	2,932	22.6%	2,294	18%



Source: OKI Regional Council of Governments

Considering the age and value of the housing stock in 2000, it can be anticipated that an increase in the number of higher priced housing units would help the study area to balance its range of housing choice. In addition, the percentage of renter occupied housing units in the study area is somewhat low. This may be because of the affordable costs of housing in the area. Looking at occupied housing types, it also appears that many of the rental units are single family detached houses.

In 2000, the percentages of the population over age 65 in the Townships and the Village all remained under 11%. However, as the large groups of citizens identified in 2000 to be ages 35 to 55 continue to age the number of senior citizens will continue to increase. This may create increased demand for affordable convenient housing to meet the needs of the aging population. This trend is being seen throughout the nation as baby boomers continue to age.

As mentioned before, large increases in population and the need for housing will only be accommodated if infrastructure is available. Housing issues identified by the community include concerns related to zoning, lot size, enforcement, property maintenance and demolition. Ideas related to the provision of water and sewer for new housing development were raised, as were the need for sidewalks and trails and housing types for the elderly. Concerns emerged about housing development in the floodplain and the use of agricultural land for development.

Based on current trends, the average number of acres per housing unit is 4.25. Approximately 21% of the study area is in residential development (12,766 acres). Based on population projections, by 2020 approximately 1,259 additional acres will be needed to accommodate new housing needs. Development of that acreage would mean that approximately 23% of the study area would be residential by 2020. This number could change based on development techniques applied, such as conservation design, or low impact development or large lot subdivisions. Additional information on this subject will be addressed in the Land Use Chapter of this Plan.

Public Input

Public comment related to housing included the need for zoning categories of rural residential (two acre lots) and agricultural zoning for parcels five acres or more in size. Many comments related to the need to enforce zoning and housing regulations related to blight, property maintenance, condemnation and demolition. Additionally water and sewer provision for new development was recognized. The provision of temporary senior or elder care housing on private lots was also an issue.

CHAPTER 3

School Facilities

Introduction

The purpose of this chapter is to provide an inventory of the necessary public school facilities and services correlated to future land use projections for Adams, Chester and Vernon townships and the Village of Clarksville. Public and private schools are an essential component of this plan because of the interrelationships between land use and school locations and enrollment.

Existing School Facilities

The Clinton-Massie School District serves students in the Adams, Chester and Vernon township areas and the Village of Clarksville. The Clinton-Massie School site is located at 2556 Lebanon Road, in Adams Township.

According to the Ohio Department of Education, from 2000 to 2007 Clinton-Massie School District enrollment increased by approximately 14% overall (Figure 3-1). This change was experienced throughout the district with increases in the elementary, middle and high schools. Total capacity for the Clinton-Massie School District is 2,200 students.

The Clinton-Massie Local School District's service area is approximately 123 square miles and extends into Warren County (Figure 3-3). The elementary, middle and high school buildings are all on one campus of about 70 acres. The total number of students attending in 2007-2008 was 1,914. The approximate number of students from Clinton County was 1,230 (Figure 3-2). Approximately 64% of the students in the District come from Clinton County.

Enrollment numbers from 2007 indicate that the elementary school is currently over capacity; however a new elementary building is expected to open in 2009. This building will increase capacity, adding 110,000 square feet for grades Pre-K through 5. Renovations at the middle school are slated to be complete by 2009. The new 120,000 square foot high school opened in 2004 and existing capacity still exists for future increases in enrollment.

Figure 3-1
Clinton Massie Schools – Enrollment 2000-2007

School Enrollment	2000	2001	2002	2003	2004	2005	2006	2007
Clinton-Massie Elementary School	764	793	790	808	809	800	821	850
Clinton-Massie Middle School	402	400	413	425	425	432	432	469
Clinton-Massie High School	502	507	526	523	540	551	562	578
Total:	1,668	1,700	1,729	1,756	1,774	1,783	1,815	1,897

Source: Ohio Department of Education

Figure 3-2
Public Schools Serving Adams, Chester and Vernon Township and the Village of Clarksville, 2007-2008

School Name	Grades Served	Total # of Students (2007-2008)	Approx # of Clinton County Students	Capacity	# of Classrooms
Clinton-Massie Elementary School	K-5	865	570	800 (1000 in '09)	55
Clinton-Massie Middle School	6-8	461	300	500	25
Clinton-Massie High School	9-12	588	360	900	33

Source: Clinton Massie School District

School Projections

In 2005 the DeJONG educational planning firm was contracted by the Ohio School Facilities Commission to develop enrollment projections for the Clinton-Massie Local School District. These projections were created using multiple layers of data including historic enrollment, live birth data, survival ratios, housing projections, land saturation analysis and migration. The projections from this document are found in Figures 3-4 and 3-5. A final document was not created and data reflected represent working drafts.

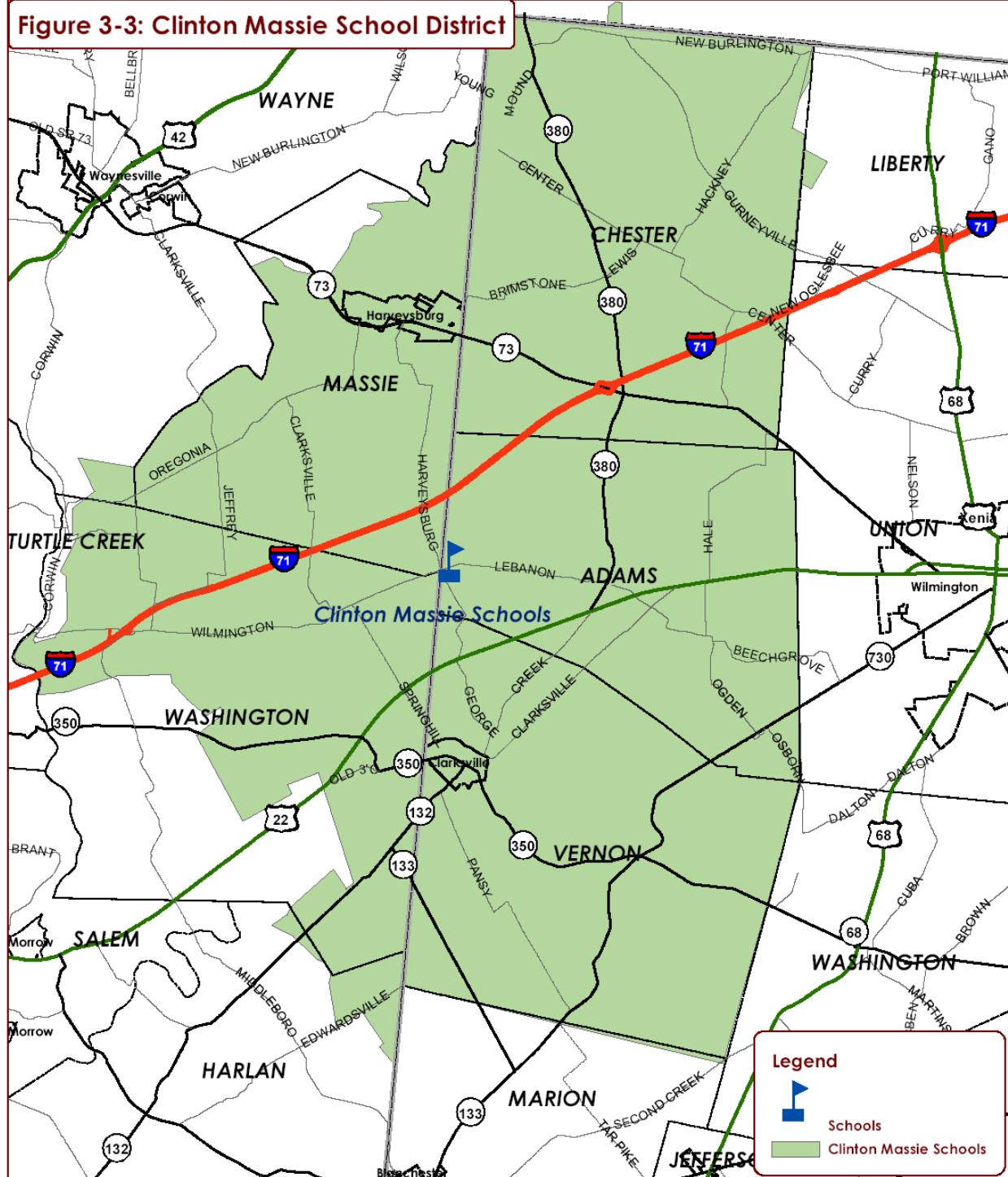
According to the Clinton-Massie School District, enrollment in 2007-2008 totaled 1,914 students. The DeJONG study estimated 1,882 for this time period. This reflects only a 1.7% difference (32 students). The DeJONG estimates were slightly lower than the actual number. According to the study from 2007 to 2010 enrollment will increase by 4%, and from 2007 to 2015 by 7%. If these rates are applied to the existing 2007 enrolment, by 2010 the district would see approximately 72 additional students, and by 2015 a total of 130 additional students. In 2007 an estimated 64% of students in the district were coming from Clinton County. Using this percentage, in 2010 approximately 46 additional students will come from Clinton County and by 2015 this number will total approximately 83 students.

Clinton-Massie School capacity is shown in Figure 3-2. According to the DeJONG projections, the District will have ample capacity to absorb additional students in the elementary and high school in 2015. The estimates for the middle school, however, show that the facility will be slightly over capacity. Several factors can affect change in the projected school enrollment. Zoning changes and unanticipated development or lack of development can have an impact of the number of school children entering the district.

Public Input

Overwhelmingly, public comment on the topic of schools revolves around funding and fiscal management. Additional comments and concerns included maintaining quality education systems and providing additional programming.

Figure 3-3: Clinton Massie School District



2008 COMPREHENSIVE PLAN
 Adams, Chester and Vernon
 Townships and the Village of
 Clarksville, Clinton County Ohio



1 inch equals 2 miles

Source: Clinton County Geographic Information Systems
 Department and OKI Regional Council of Governments

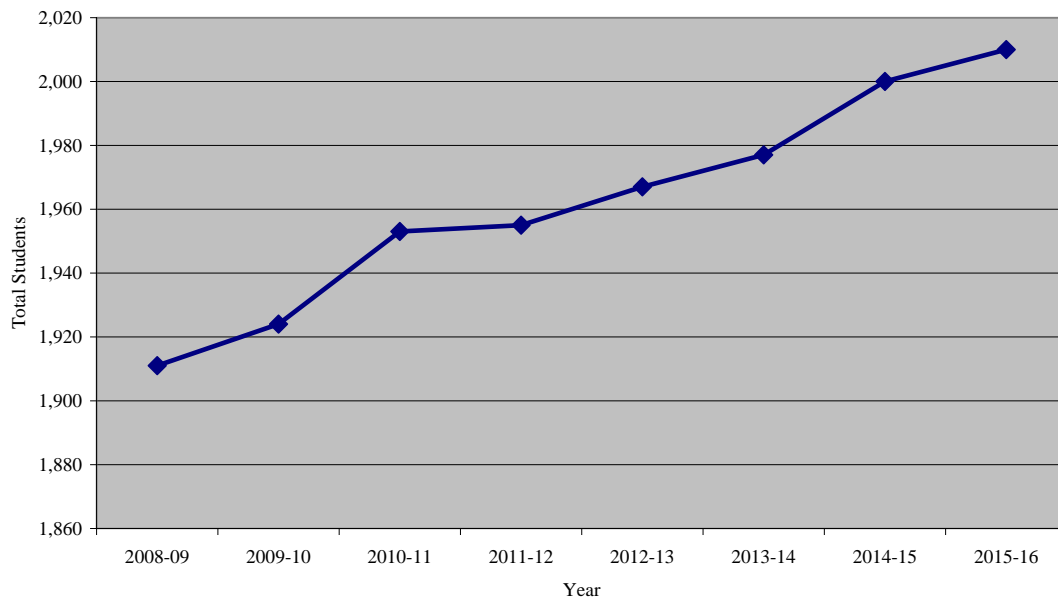


Figure 3-4
Projected Enrollment by Grade Group
Clinton-Massie Local School District

Grade	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
K-5	831	843	855	882	886	877	883	879	881	879
6-8	480	466	466	447	458	480	504	510	499	507
9-12	546	573	590	595	609	598	580	588	620	624
K-12 Total	1,857	1,882	1,911	1,924	1,953	1,955	1,967	1,977	2,000	2,010
Grand Total	1,857	1,882	1,911	1,924	1,953	1,955	1,967	1,977	2,000	2,010

Source: DeJONG, 2005

Figure 3-5
Projected School Enrollment
Clinton-Massie Schools



CHAPTER 4

Parks and Recreation

Introduction

The purposes of this chapter are to identify existing parks and recreation facilities, and to plan for the necessary facilities for the future in Adams, Chester and Vernon townships and the Village of Clarksville. Recreation and open space involves unique planning, land acquisition, and maintenance responsibilities for local governments. This chapter attempts to deal with both active and passive recreation; for example, ball fields and playgrounds, as well as land and water areas retained for use as recreation areas or for resource protection.

Existing Parks and Recreation

Currently there are seven public and five private park and recreation areas located in the study area. Caesar Creek State Park, Cowan Lake State Park and Culberson State Nature Preserve are state facilities. Caesar Creek State Park is located in Warren, Clinton and Greene counties. Facilities at the park include camping, cabin rentals, boating, trails, fishing and hunting, picnicking, swimming, and a nature center. The 2,830-acre lake is only a portion of over 10,000 acres of park land. The lake provides for flood reduction. Only a small portion of the lake is located within the study area.

Cowan Lake State Park, containing approximately 1,776 acres, is located in Vernon and Washington Townships within Clinton County. The lake itself is just over 700 acres in size. Facilities include cottages, camping, boating, fishing and hunting, swimming, trails and natural areas, shelter houses and meeting rooms. Culberson State Nature Preserve, containing approximately 238 acres, is one of the few examples of a pin oak and red maple swamp forest and showcases many species of plant and animal life. There is a parking lot and display area at this facility.

The Clinton County Park District also owns property in the study area. The Anliot Davidson Nature Preserve in Adams Township, the Terrell Hanaghan Nature Preserve in Vernon Township and the Collett Woods Nature Preserve in Chester Township provide nature trail opportunities. Volunteers have been used to install and maintain the trail systems. The Collett Woods Nature Preserve was donated to the Park District by local land owners. The Anliot Davidson Nature Preserve and the Terrell Hanaghan Nature Preserve were purchased with assistance from the Clean Ohio Fund. The Clean Ohio Program provides four hundred million dollars over four years for "Brownfield" environmental clean up projects and "Greenfield" open space and conservation preservation projects. The Clean Ohio Program has four sub-programs, one of which is open space and watershed conservation. Approximately \$255,000 was secured for purchase of the Anliot Davidson Nature Preserve and the Terrell Hanaghan Nature Preserves.

The Clinton County Park District, an independent district, receives no funding from Clinton County. The District gets most of its funding through donations and programs like the Clean Ohio Fund. The District also owns additional park property outside the study area. These

properties include the East Fork Riparian Reserve in Clark Township (70 acres) and the Lytle Creek Prairie and Woods in Union Township (11 acres).

The parks listed in this chapter are located within the boundaries of Adams, Chester and Vernon townships and the Village of Clarksville. Many additional parks and recreational opportunities lie just outside these boundaries. These parks are also valuable resources for the citizens of the township.

Figure 4-1
Existing Public and Private Parks
Adams, Chester and Vernon Township and the Village of Clarksville

Park Name	Address	Facilities	Acreage	Park Category
Caesar Creek State Park (only a small portion of the park is located in Clinton County)	8570 E State Route 73, Chester Township	Camping, cabin rentals, boating, trails, fishing and hunting, picnicking, swimming, natural areas and cultural history	10,500	Regional/State
Cowan Lake State Park (only a portion of the park is located in the study area)	1750 Osborn Road, Vernon Township	Cottages, camping, boating, fishing and hunting, swimming, trails and meeting areas	1,776	Regional/State
Culberson State Nature Preserve	SR 73, Vernon Township	Nature preserve, pin oak and red maple swamp forest	238	Regional/State
Anliot Davidson Nature Preserve	Pyle Road, Adams Township	Nature preserve, trails, high level of bio-diversity	58	Community
Collett Woods Nature Preserve	SR 73, east of Caesar Creek Flea Market, Chester Township	Hiking trail, Canadian granite erratic rocks, mature beech maple climax forest	60	Community
Terrell Hanaghan Nature Preserve	Clarksville Road, Vernon Township	Nature preserve, trails, preserved riparian corridor	60	Community
Chester Township Ballfields	Lewis Road, Chester Township	Ballfield	5	Neighborhood
Majestic Springs Golf Course	1631 Todd's Fork Road, Adams Township	18 hole golf	215	Private
Camp Kirkwood	5719 St. Rt. 73 West Chester and Adams Township	Conference center, small lake for fishing and canoeing, creek, open fields, gently rolling hills, RV park, lodge, outdoor in ground pool, and summer and winter cabins.	214	Private
Thousand Trails Campground	1786 St. Rt. 380, Adams Township	Hiking, camping, kayaking, fishing	107	Private
Green Meadows Campground	4880 St. Rt. 350, Vernon Township	Camping	14	Private

The Tecumseh Land Trust owns easements within the study area. The Tecumseh Land Trust is a private, not-for-profit conservation organization. Its purpose is to preserve agricultural land, open space, and historic structures in voluntary cooperation with landowners and their heirs, and

to educate the public about methods of private land conservation. Its mission is to assist land owners in finding ways to protect their valuable farm land and significant historic or natural sites. The organization works primarily with land owners who can benefit from donating or selling conservation easements. These easements are perpetual and the properties are monitored annually. Approximately 18 acres are held in conservation easements in Vernon Township and 84 acres in Adams Township.

Clinton County Open Lands also hold easements on property in the study area. This organization was established in 2004 to protect important natural area or wildlife habitat, open space, water resources, wetlands, working farms and ranchlands and working forest lands. Easements of approximately 67 acres and 112 acres are held in Adams Township and Vernon Township respectively, with none in Chester Township.

Additional parks and recreation facilities are available at Clinton Massie Schools in Adams Township. Many of the school facilities are open to public use, including tennis courts, football, baseball, and gym facilities. The school also includes a land laboratory consisting of a three acre pond and four acres of wooded area. Recreational organizations (pee wee football, softball, etc) assist the school to maintain the facilities for their use; however the school's budget also is affected by providing these services. This relationship is important because providing convenient access to schools and recreational opportunities for those in surrounding neighborhoods makes efficient use of community facilities. There is opportunity for continued coordination between the schools and the County for continued use and expansion of these facilities as well.

Agri-Tourism

Also shown on Figure 4-3 are two areas identified as agri-attractions, or areas of agri-tourism in the study area. In general, agri-tourism is the practice of attracting travelers or visitors to an area or areas used primarily for agricultural purposes. These farm opportunities can make a farm more profitable and provide wonderful on-farm experiences. By selling through its own farm stand, a farm eliminates the need for a middleman and increases its profit margin by receiving retail price for its products. It also provides the public affordable, family-oriented recreational activities and opportunities to learn about the production of food and agricultural products while helping to encourage the preservation of agricultural lands. Roughly 3 acres of *That Guy's Family Farm* property has been placed in a conservation easement held by Little Miami, Inc. Additionally, the Ohio Department of Transportation has recently selected an 18 acre site adjacent to the property for mitigation stemming from the Wilmington Bypass.

Public Input

The public input received regarding parks and recreation largely revolves around the need for bike path connections. Additional topics include funding for parks, coordination with the schools, tourism plans and youth entertainment.

NRPA Standards

The National Recreation and Park Association (NRPA) sets forth standards for communities to use as guidelines for providing adequate parks and recreation facilities based on population. These standards categorize parks into types based on the use of the facility, the size and the

characteristics of the facility. The recommended acreage amounts are based on every 1,000 people in the jurisdictions and are broken down by park type. (See Figure 4-2).

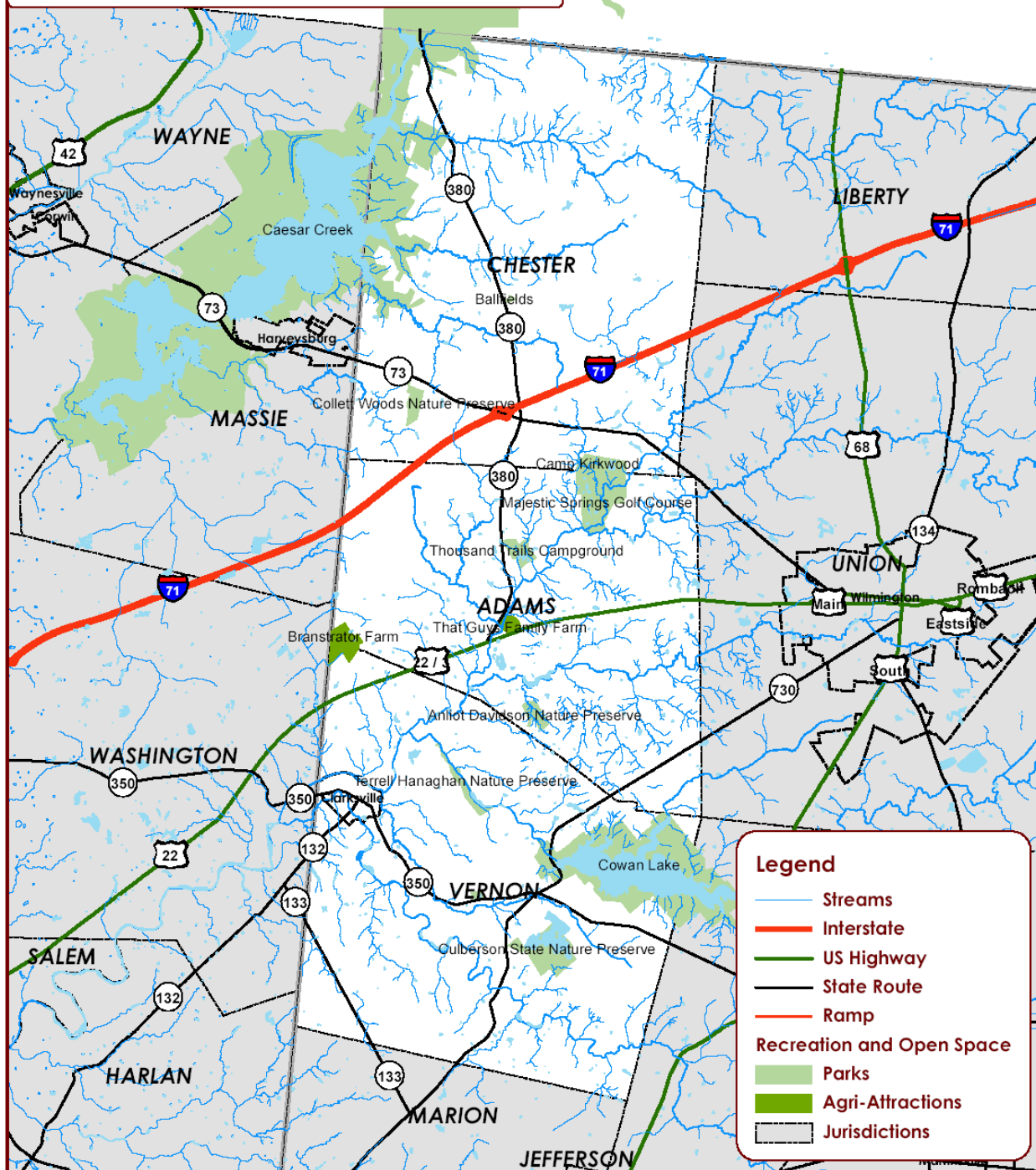
Using the NRPA standards, Caesar Creek, Cowan Lake and Culberson Nature Preserve are categorized as a Regional/State parks because of their size, ownership and activities. Anliot Davidson, Collett Woods, and Terrell Hanaghan Nature Preserves are identified as Community Parks because of their size and characteristics. As mentioned previously, these parks are passive recreation only, with preserved greenspace and trail access for the public. Ballfields located in Chester Township are categorized as a Neighborhood Park because of the use. The Majestic Springs Golf Course, Camp Kirkwood, Thousand Trails Campground and Green Meadows Campground are categorized as private facilities.

Figure 4-2
National Recreation and Park Association Standards

Type	Use	Service Area	Size	Acres / 1000 Population	Characteristics
Mini-park	Specialized facilities that serve a concentrated or limited population or specific group, such as tots or senior citizens.	Less than 1/4 miles radius	1 acre or less	0.25 to 0.5	With neighborhoods and in close proximity to apartment complexes, townhouse development or housing for the elderly.
Neighborhood Park or Playground	Area for intense recreational activities, such as field games, crafts, playground apparatus areas, skating, picnicking, wading pools, etc.	1/4 to 1/2 mile radius to serve a population up to 5,000 (a neighborhood)	15 + acres	1.0 to 2.0	Suited for intense development. Easily accessible to neighborhood population (geographically centered for safe walking and biking access). May be developed as a school park facility.
Community Park	Area of diverse environmental quality. May include areas suited for intense recreation facilities, such as athletic complexes, large swimming pools. May be an area of natural quality for outdoor recreation, such as walking, viewing, sitting, picnicking. May be any combination of the above, depending upon site suitability and community need.	1 to 2 mile radius (several neighborhoods)	25 + acres	5.0 to 8.0	May include natural features, such as water bodies and areas suited for intense development. Easily accessible to neighborhood served.
Regional/State Park	Areas include special-use features such as a lake, reservoir, protected natural area, and historic preservation. Typically offers a large variety of passive recreational opportunities to the user such as organized playing surfaces, boating, fishing, mountain biking and hiking.	30+ mile service radius to serve several counties or region of the state.	50-1000 acres		State or multi-county agency operated parks. Attracts visitors from multiple counties. Main attraction could include a lodge, outstanding natural features, historical features, trail system or other unique characteristics.

Source: National Recreation and Park Association

Figure 4-3: Existing Parks and Open Spaces



2008 COMPREHENSIVE PLAN
 Adams, Chester and Vernon
 Townships and the Village of
 Clarksville, Clinton County Ohio



1 inch equals 2 miles

Source: Clinton County Geographic Information Systems
 Department and OKI Regional Council of Governments



Future Park Needs

Using existing population and moderate projected increases in population, combined with the NRPA standards, Figure 4-4 shows the number of acres per park type that would be needed for the Adams, Chester, and Vernon townships and the Village of Clarksville population.

Anliot Davidson, Collett Woods, and Terrell Hanaghan Nature Preserves alone meet the acreage needs for Community Parks through 2030. Because of the location and passive nature of the preserves, however, the surplus acreage in the Community Park category does not make up for the deficit in Mini-parks and Neighborhood Parks. Recreational needs occur in the Mini-park and Neighborhood Park categories through 2030 if no new parks are introduced. Using the NRPA standards will provide the townships and the Village with a guide for future park development should the opportunity arise.

Diversity in the types of park facilities, in location, and in the size of the site is important to consider when planning for recreational opportunities. A balance of active and passive recreation in areas throughout the study area can enhance the park system.

Although not included in the existing acreage calculations below, the existence of the state parks in the area is a clear benefit to the townships and the Village. The availability of such parks, however, does not provide the types of benefits that the dispersal of mini and neighborhood parks would provide, such as easy accessibility and to meet potential needs of future more intense types of development. There are also additional private recreational opportunities benefit the area, and there are many properties in the study area are under easement and will be preserved as open space; however, these are private properties not open to the general public and therefore not accounted for in the proposed park needs.

Figure 4-4
Proposed Park Needs – 2006-2030

	Existing Acres	2006 Needs	2010 Needs	2020 Needs	2030 Needs	2006 Deficiency/ Surplus	2010 Deficiency/ Surplus	2020 Deficiency/ Surplus	2030 Deficiency/ Surplus
Mini	0.0	3.4	3.5	3.8	4.1	-3.4	-3.5	-3.8	-4.1
Neighborhood	5.0	13.5	13.9	15.1	16.5	-8.5	-8.9	-10.1	-11.5
Community	178.0	53.8	55.4	60.4	65.9	124.2	122.6	117.6	112.1
Total	185.0	70.7	72.7	79.3	86.5	-11.8	-12.3	-13.9	-15.6
% of total acreage	0.3%	0.1%	0.1%	0.2%	0.2%				

* The Community surplus was not used in calculating this number, since a surplus in one area does not make up for a deficiency in another.

Source: OKI Regional Council of Governments

Several issues and ideas related to recreation, open space and cultural activities were raised by members of the community. Natural areas, preserves, state, county and municipal parks were identified as important assets for the community. Bike trails were noted as an opportunity as well, including the use of proposed bikeway corridors for homeland security purposes. Some specific ideas for new recreational opportunities were also noted, including improved playgrounds and ball fields and basketball courts, frisbee golf, skate parks, dog parks, improved access to streams for fishing, kayaking and canoeing, and a community theater. The relationship

between recreation and entertainment and the economy was recognized as was the need for additional funding to develop facilities and programs. The potential for development of historical auto tours of churches, barns, bridges and historic buildings was identified. An enhanced use of school facilities for recreation was also suggested. Finally, there was some recognition of the potential differences in the expectation for recreational opportunities between new residents and long time residents.

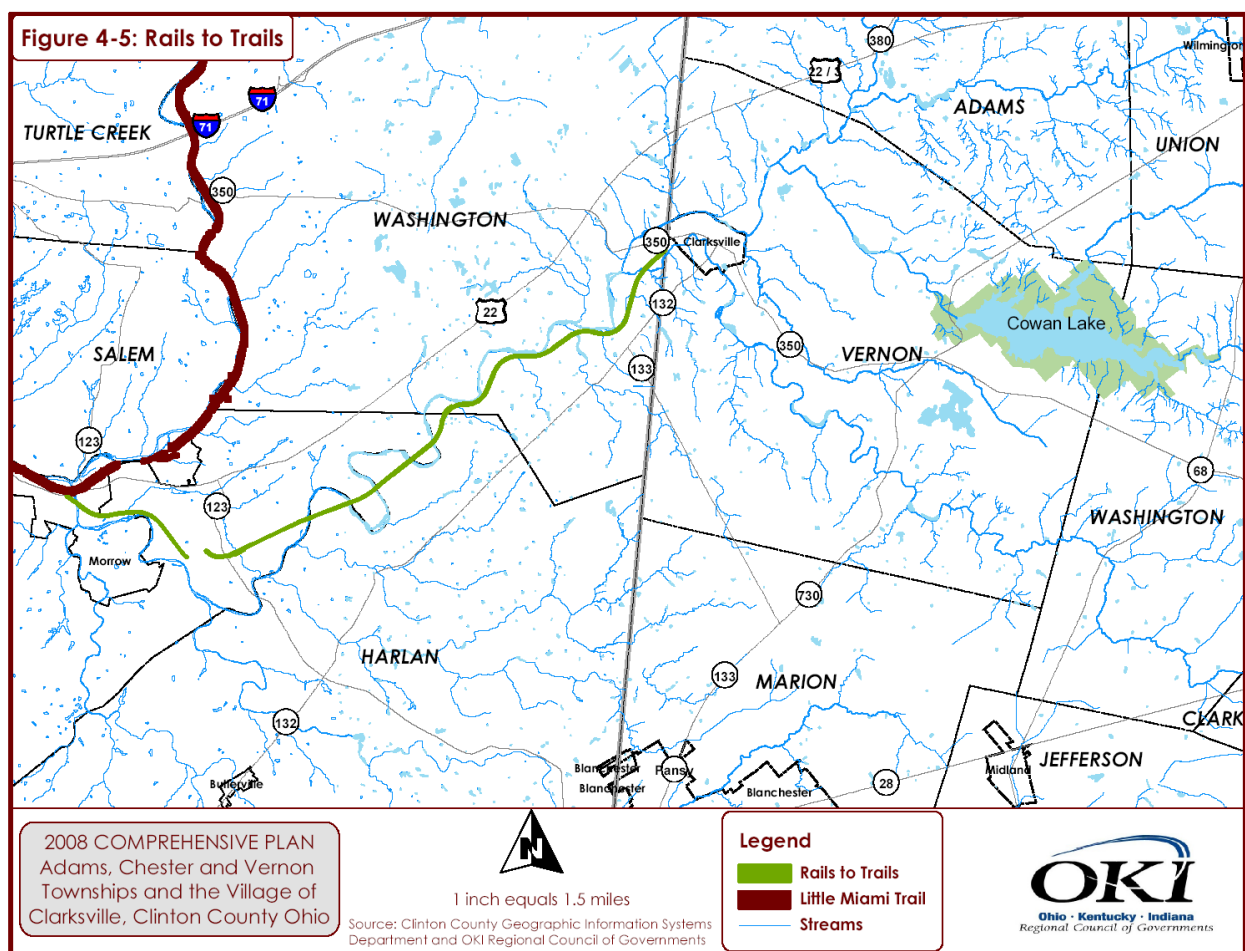
Clinton Rails-to-Trails

The Clinton Rails-to-Trails Coalition is a non-profit, volunteer organization that was established in 1990. The coalition's purpose is to create a public interest for rails-to-trails and to construct a recreational trail, using abandoned railroad right-of-ways where possible through Clinton and adjoining counties. The purpose of the trail will be for bicycling, walking, cross-country skiing, horseback riding, backpacking, roller skating, and wildlife conservation.

Coalition bylaws were purposely set up to allow the purchase of land not only in Clinton County, but adjoining counties as well. This was done because the group envisioned a developed Clinton County trail as a spur off of the Little Miami Trail. To realize this goal, 7.5 miles of rail corridor land, 73 acres in size, was purchased in 1992 from the Penn Central Corporation. This corridor stretches from the Warren County line through Salem, Harlan, and Washington Townships (See Figure 4-5).

In the early 1980s Congress became concerned about the dramatic decline in the nation's railroad infrastructure. With so many railroads abandoning corridors, it became apparent to Congress that something needed to be done to preserve the nation's rail system for future transportation uses. So in 1983 Congress amended Section 8(d) of the National Trails System Act to create a program to preserve rail corridors with a program called "railbanking," a method by which corridors that would otherwise be abandoned can be preserved for future rail use by converting them to interim trails. The old inactive railroad route survives but is repurposed for other — potentially temporary — trail uses. The railbanking statute allows a railroad to remove all of its equipment, with the exception of bridges, tunnels and culverts, from a corridor, and to turn the corridor over to any qualified private organization or public agency that has agreed to maintain it for future rail use. This property transfer precludes abandonment.

The national Rails-to-Trails Conservancy also works with communities to preserve unused rail corridors by transforming them into trails, enhancing the health of America's environment, economy, neighborhoods and people. Rails-to-Trails Conservancy is currently working to build the most comprehensive resource for rail-trail development. The Trail-Building Toolbox includes an index of topics to help inform and assist trail managers, advocates and builders (www.railtrails.org/whatwedo/trailbuilding/technicalassistance/toolbox/toolbox_index.html).



Funding

The Ohio Department of Transportation's Metropark Program provides funding assistance to Park Districts in Ohio. The Ohio Parks and Recreation Association (OPRA) assists in determining whether a county or township park qualifies for program funds. Primarily, a park district must own land or have a 15-year lease on land to qualify. Funds can be used for materials and labor necessary for construction or reconstruction of park drives, park roads, new or replacement bridges, park access roads and parking lots. The funds also may be used for the purchase and hauling of materials for the improvement, repair, and maintenance of park drives, park roads, park access roads, and parking lots, and rental of labor and equipment. Ineligible projects include bikeways and items such as shelter houses, wells, pumps, restroom facilities, and park buildings. All projects must be associated with public vehicular access to be eligible for funding. Funds may be used for eligible construction costs, including construction engineering (i.e. testing and inspection) of let projects. (www.opraonline.org/)

NatureWorks identifies projects funded by the Ohio Parks and Natural Resources Bond Issue which was approved by Ohio voters in November 1993. The Ohio Department of Natural Resources, Division of Real Estate and Land Management has been designated as the state agency directly responsible for program administration and coordination. (www.dnr.state.oh.us/realms/about/tabid/9410/Default.aspx)

The NatureWorks grant program provides up to 75% reimbursement assistance for local government subdivisions (townships, villages, cities, counties, park districts, joint recreation

districts, and conservancy districts) to for the acquisition, development, and rehabilitation of recreational areas. Development of school board property is ineligible. The agency must have proper control (title or at least a 15-year non-revocable lease) to be eligible for a development or rehabilitation grant. Eligible government agencies within each county compete for grants. All projects must be completed within one-and-a-half to two years.

Since NatureWorks' inception, it has funded over 1,300 applications totaling over \$63 million. In 2007 the Village of Sabina in Clinton County was awarded \$5,029 for the development of a community stage at Sabina Village Park

The Federal Land and Water Conservation Fund Act was passed by Congress in September 1964, and became effective January 1965. The Ohio Department of Natural Resources, Division of Real Estate and Land Management has been designated as the state agency directly responsible for program administration and coordination.

The Land and Water Conservation Fund grant program provides up to 50% reimbursement assistance for state and local government subdivisions (townships, villages, cities, counties, park districts, joint recreation districts, and conservancy districts) for the acquisition, development, and rehabilitation of recreational areas.

Funding is issued to the state and it is at the state's discretion how much of that funding will be made available for local government. Since the Land and Water Conservation Fund grant program became effective, the State of Ohio has received over \$140 million. Over half of this funding has been used for local parks projects. Congress has not yet determined what funding will be provided for the FY 2008 stateside LWCF program.

In November 2000, Ohio voters approved State Issue 1, the Clean Ohio Fund. The Clean Ohio Trails Fund received \$25 million that were made available to help communities and non-profit groups acquire and develop recreational trails. Funding was allocated in four rounds of \$6.25 million each. There is currently no funding available for the Clean Ohio Trails Fund grant program. The Ohio Department of Natural Resources, Division of Real Estate and Land Management has been designated as the state agency directly responsible for program administration and coordination.

Should this program be funded again, local governments, park and joint recreation districts, conservancy districts, soil and water conservation districts, and non-profit organizations are eligible to receive grants for conservation projects from the Clean Ohio Fund. Applicants must provide a 25% local match, which can include contributions of land, labor or materials. Special emphasis is given to projects that: are consistent with the statewide trail plan; complete regional trail systems and links to the statewide trail plan; link population centers with outdoor recreation area and facilities; involve the purchase of rail lines linked to the statewide trail plan; preserve natural corridors; and provide links in urban areas to support commuter access and provide economic benefit.

The Recreational Trails Program (RTP) is an assistance program of the Department of Transportation's Federal Highway Administration (FHWA). This grant program is administered by the Ohio Department of Natural Resources in cooperation with the FHWA. The RTP funds come from the Federal Highway Trust Fund, and represent a portion of the motor fuel excise tax collected from non-highway recreational fuel use: fuel used for off-highway recreation by

snowmobiles, all-terrain vehicles, off-highway motorcycles, and off-highway light trucks (www.fhwa.dot.gov/environment/rectrails/).

The RTP is a reimbursement grant program that provides up to 80% funding for recreational trail projects. RTP funding is available to, cities, villages, counties, townships, special districts such as park districts, joint recreation boards and conservancy districts, jointly sponsored projects between political subdivisions, state government agencies, federal government agencies and non-profit (501(c)(3)) organizations.

Eligible projects include new recreational trail construction (non-motorized, motorized, and water trails); trail maintenance/restoration; trailside and trailhead facilities; purchase/lease of recreational trail construction and maintenance equipment; acquisition of easements and property for recreational trails or recreational trail corridors; educational programs, publications and patrols promoting trail safety and environmental protection; maintenance of existing trails; and improving access for people with disabilities

(www.dnr.state.oh.us/realm/grants/default/tabid/9423/Default.aspx).

CHAPTER 5

Infrastructure

Introduction

The purpose of this chapter is to inventory and describe the locations, capacities and current operations of basic infrastructure within the study area, including sewer systems, on-site household sewage treatment systems, water systems and solid waste management. Future levels of demand for public sewer and water systems have been provided to highlight potential growth in the study area and assist local officials in developing plans and policies that will help meet future infrastructure needs in an efficient and timely manner.

Existing Sewer Systems

The only portion of the study area that is currently served by public sanitary sewer systems is the Village of Clarksville. Sewage from Clarksville is treated at the Clarksville wastewater treatment plant. The plant has an average daily flow of 0.03 MGD (millions of gallons per day), with a total designed capacity of 0.09 MGD.

One expansion project will connect the Clinton-Massie School District sewer system to the Village sewer system through the installation of a 6-inch force main approximately 3.5 miles in length. The line is to be extended north from Clarksville along Creek Road and George Road to the School site on Lebanon Road. (See Figure 5-1.) The project is being implemented because current daily flow at the school district's wastewater treatment plant is 0.023 MGD, approaching the total designed capacity of 0.025 MGD. No other systems or buildings will be linked to the Clarksville sewer as part of the force main project, and it is unlikely that future tap-ins will be made because of technical limitations. It is expected that the force main will be installed and operating by the start of the 2008-2009 school year.

After the force main installation is complete, average daily flow at the Clarksville wastewater treatment plant will increase to roughly 0.053 MGD, leaving 0.037 MGD of unused capacity for additional sewer expansion in Clarksville. Using a scenario of optimistic population growth for the Village of Clarksville, and an assumption of 100 gallons per day per person for average sewage treatment demand, additional demand would be 300 gallons per day (GPD) for 2010, 800 GPD for 2020, and 1,400 GPD in 2030. These projected additional sewage treatment demands are safely within the remaining capacity of the Clarksville plant.

According to the Clinton County Sewer District, the force main installation is the only sewer project underway in the study area. There are no other County sewers within or progressing toward the study area, nor are any sewer projects currently planned or anticipated for the three Townships or the Village of Clarksville.

The Village of Waynesville in Warren County operates a sewer system which extends east along State Route 73 to the Village of Harveysburg on the border with Chester Township. The Waynesville sewer system has an average daily flow of 0.31 MGD with a total daily capacity of 0.71 MGD. The Waynesville sewer does not currently extend across the County border.

The Clinton County Commissioners hired ME Companies to inventory existing water and sewer systems in the County, and to determine opportunities for the modification, expansion or creation of new water and sewer systems in an effort to prepare for future growth in the County. The study is in its initial stages.

Household Sewage Treatment Systems

Unincorporated areas of Adams, Chester and Vernon townships primarily use on-site septic tanks for waste disposal, although most soils in the Townships are poorly suited to treat effluent from these systems. (See Figures 5-2, 5-3, and 5-4.) Many local soils have restricted permeability, limiting the absorption and proper treatment of septic tank effluent. Additionally, the seasonally high water table and inclination of some soils toward ponding places significant limits on effluent treatment in certain parts of the townships. Expensive measures may be necessary to lower the water table in these areas.

Regulations for household sewage treatment systems (HSTS) in Adams, Chester and Vernon Townships are set forth by the Ohio Administrative Code (OAC) and monitored and enforced by the Groundwater Protection Division of the Clinton County Health Department (CCHD). According to the OAC, a household sewage treatment system is any sewage disposal or treatment system for a single family, two-family, or three-family dwelling that produces sewage. An HSTS may not be installed without a permit from the local health department.

The CCHD currently evaluates the suitability of lots for HSTS installation based on soil quality and acreage. The minimum acreage required for a new lot with soils deemed unlimited, slight, or very good to excellent, is one acre. For soils deemed somewhat limited, or moderate, 1.5 acres is the minimum lot size. Any lot with soils deemed very limited, severe, or poor to very poor must be at least two acres in size. One and a half and two acre lots (and larger) are the most common lot sizes in Clinton County.

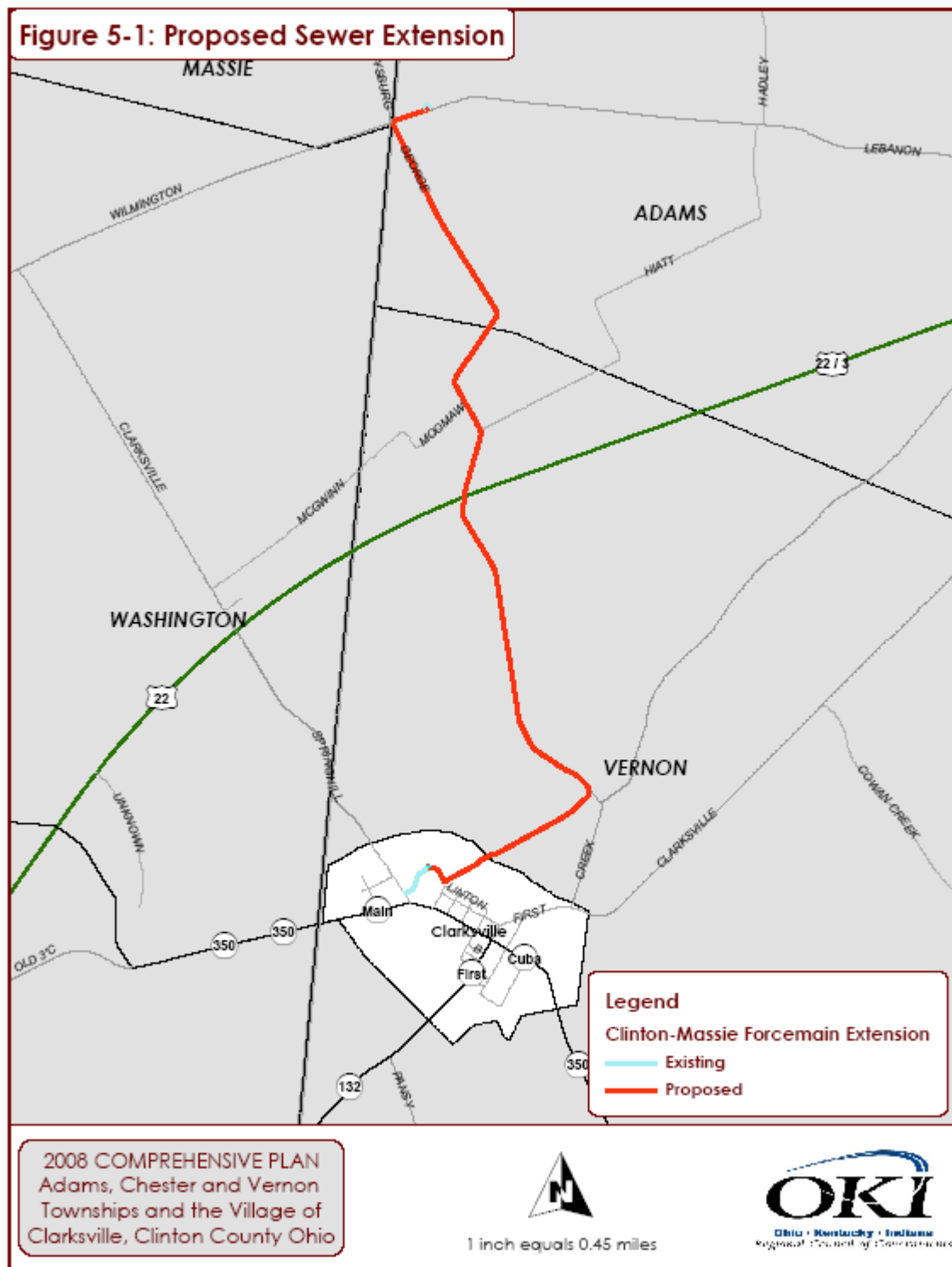
With the exception of the Village of Clarksville, all homes in Adams, Chester and Vernon townships are served by HSTSs. Most HSTSs in the three township area are on-site soil absorption systems, although around 15% are off-lot discharging systems, and less than 10% are aerobic systems. The Clinton County Health Department keeps no records regarding HSTS failures, but Department staff acknowledges that there are some failures in the area. When the Department learns of a failed system, it is required to be brought into compliance.

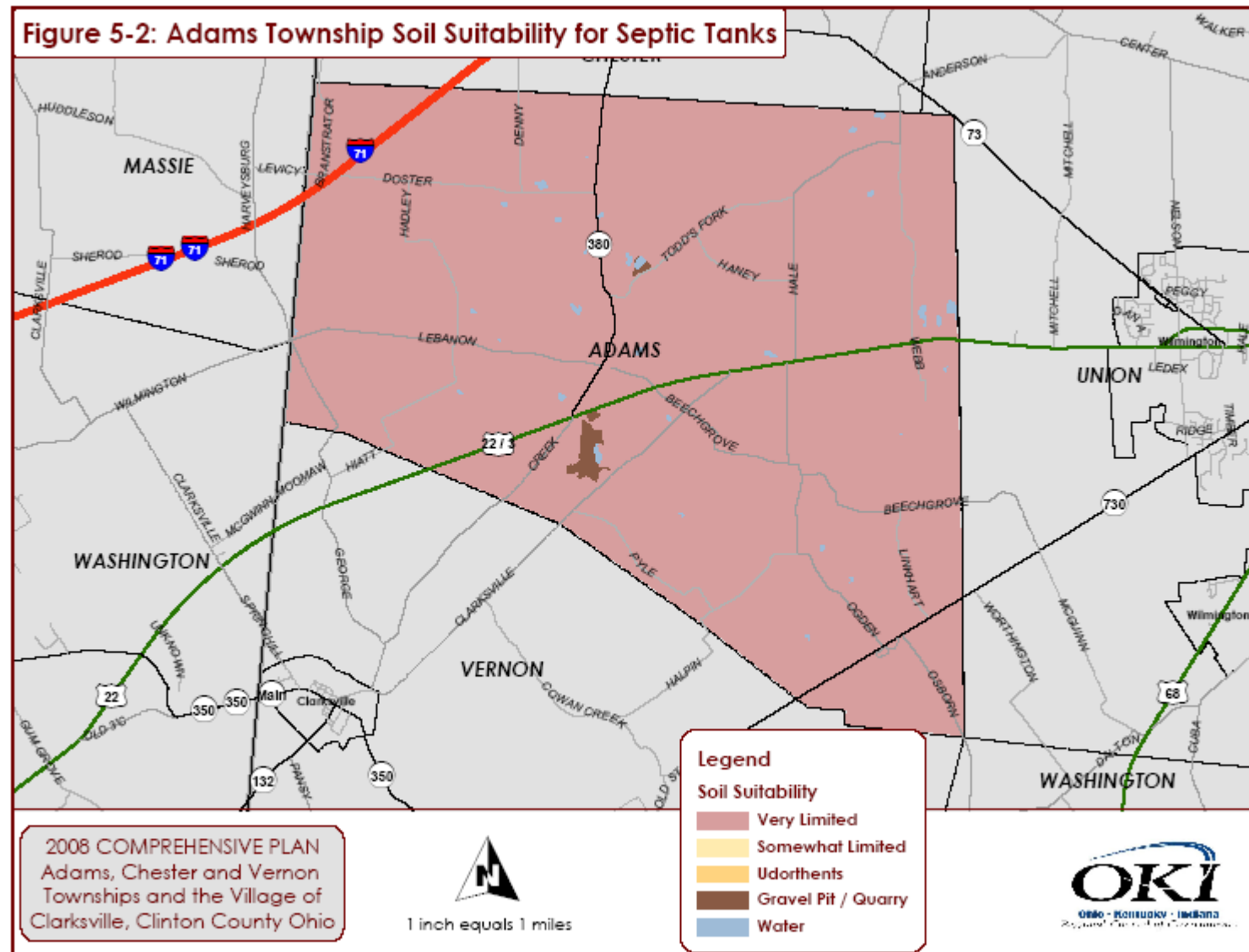
The Clinton County Health Department believes that soils in the three townships continue to be suitable for on-site household sewage treatment. The Department has not identified any areas that should be targeted for sewer expansion in the townships, other than the force main installation linking Clinton-Massie Schools with the Village of Clarksville.

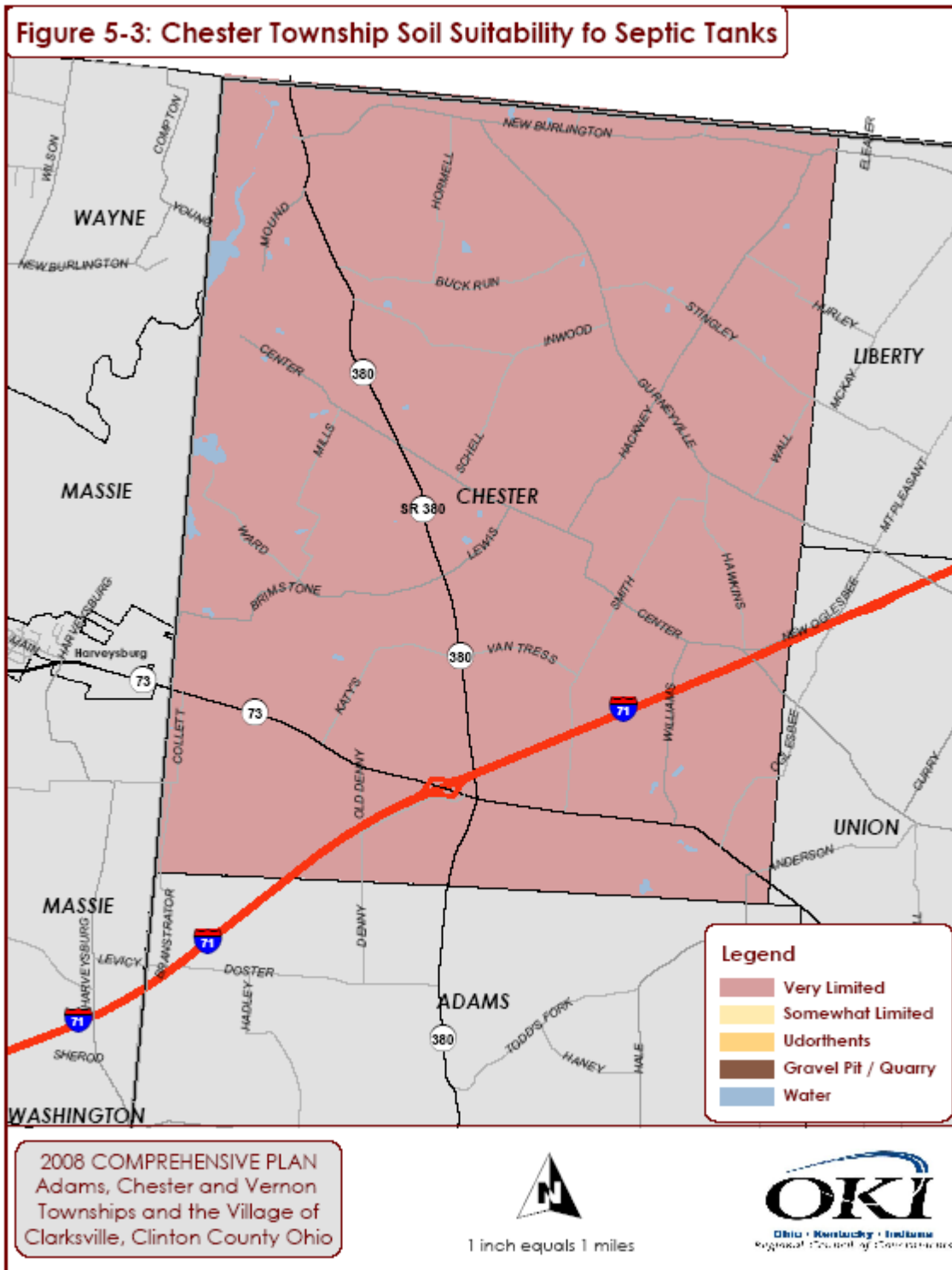
Water Systems

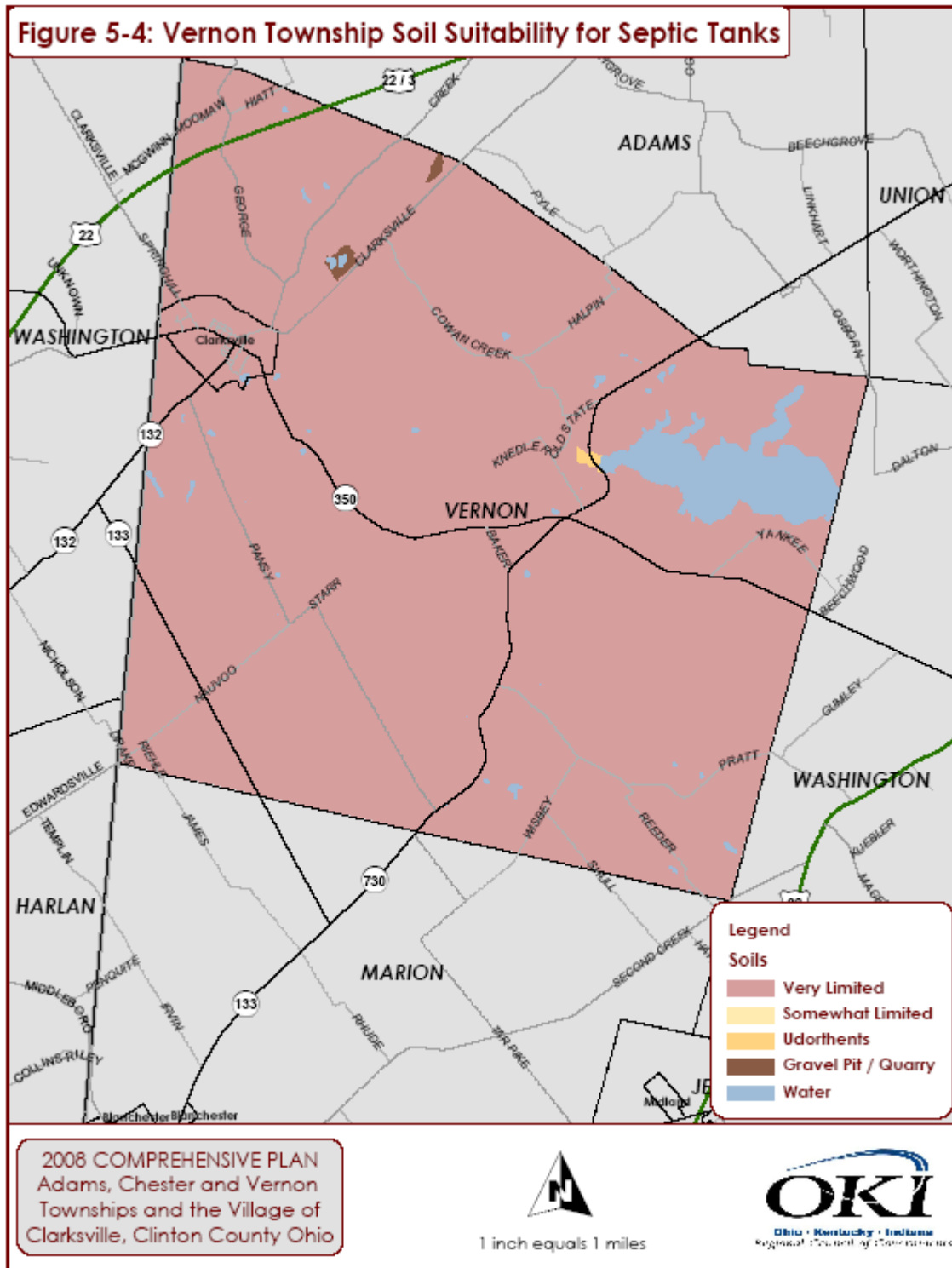
As shown in Figure 5-5, many residents in Chester, Adams and Vernon Townships and the Village of Clarksville have the option to access water through the Western Water Company. Western Water draws 56% of its water from the Little Miami River Aquifer in Warren County.

An additional 5% is purchased from the Brown County Rural Water Association, and the remaining 39% is purchased from Cincinnati Water Works. Within Adams, Chester and Vernon Townships and the Village of Clarksville, there are approximately 1,800 customers using 1.5 million gallons a month. The total Western Water system pumps an average of 3 MGD, and the ability to purchase additional water from Cincinnati Water Works places total production capacity at approximately 8 MGD. With an excess capacity of roughly 5 MGD, the Western Water system far exceeds any additional treatment demand associated with projected growth in the three townships and the Village of Clarksville through 2030. An additional 62,500 people throughout the Western Water service area (including neighboring counties) could be served under current operations.









The Western Water system was created with the purpose of providing potable drinking water to residents of rural areas and only receives funding for these purposes. The system consists primarily of 4- and 6-inch lines, with some 8- and 12-inch lines. Western Water has no plants or treatment systems located within Clinton County. A majority of the system has been designed without fire flow capabilities. While some maintenance flushing hydrants have been installed

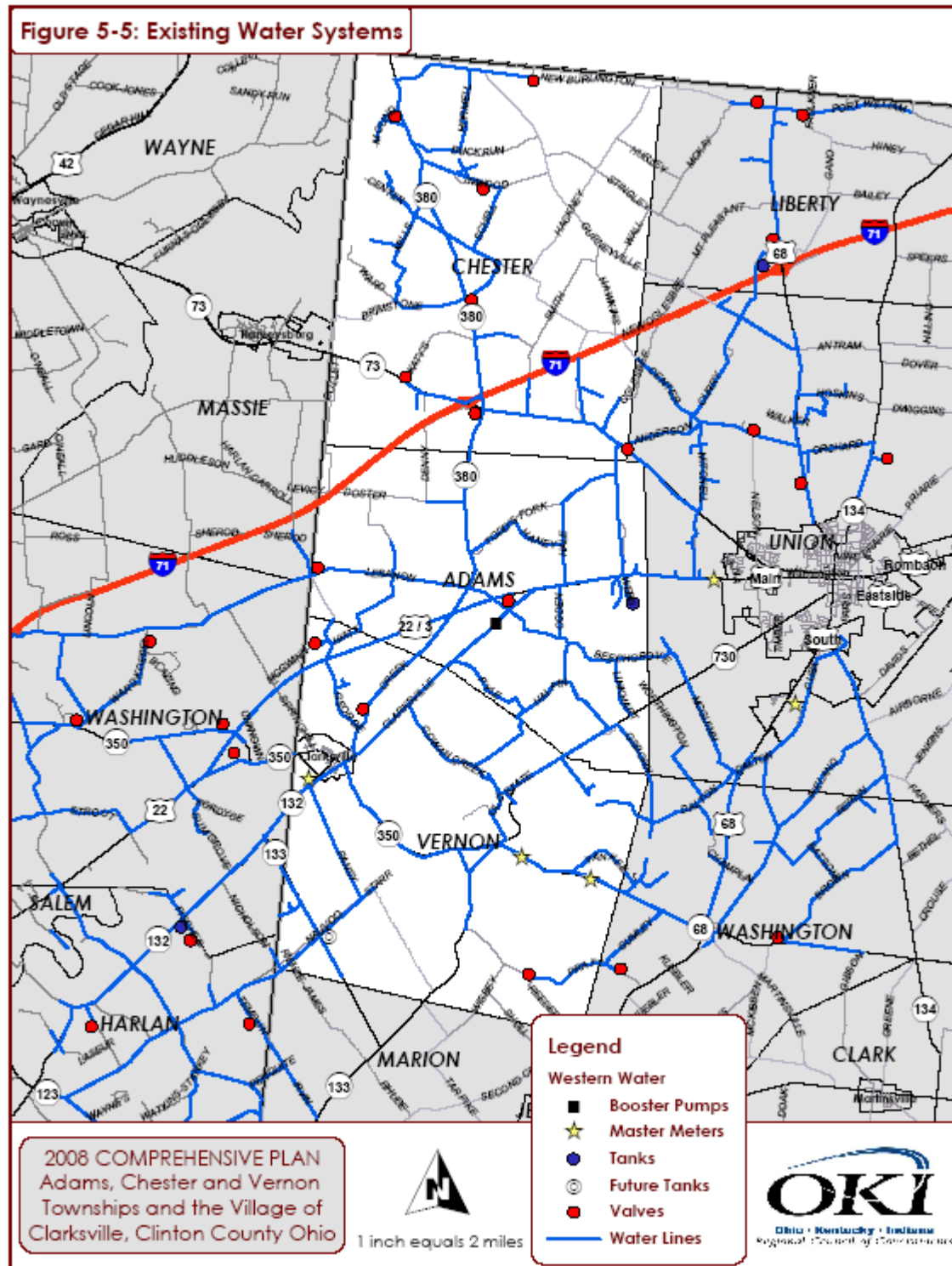
along existing and new 12-inch lines, these are sporadically placed and are only be used to fill fire tankers, not usually for pumping. Developers, residents and commercial uses may choose to create sufficient fire flow by placing a water tank on-site at personal expense.

The Western Water Company makes upgrades and installations of water lines and facilities based on need, practical requests from prospective customers, and economic feasibility. Within the three township area, 12-inch water mains are being installed to provide new service along Anderson Road in Chester Township, and parallel lines are planned to upgrade service along Webb and Hale Roads in Adams Township. As part of the upgrades, a booster will be eliminated at the intersection of Mitchell Road and State Route 22/3. Additional water line installations may be made to complete small gaps and loops throughout the existing system. One example is the potential for the connection of lines along New Burlington Road in northern Chester Township.

Boundaries have been established between the area served by City of Wilmington and area served by Western Water. The Western Water service boundaries include all of Adams, Chester, and Vernon Townships. Future land annexations from Wilmington or other incorporated areas would not supersede the Western Water domain with municipal water services.

A private water system is any well, cistern, hauled water tank, pond, or spring developed as a residential drinking water source. Residents outside the Western Water service area and those who choose to opt out of the public water system may install a private water system after obtaining a private water systems permit from the Clinton County Health District. Within the three townships, a total of 738 permits have been issued: 222 in Adams Township, 377 in Chester Township, and 139 in Vernon Township. These totals exclude older hand-dug wells.

According to the Clinton County Health Department, there are no serious water quality issues for wells drilled in the three townships, although iron and other minerals contribute to the hardness of local water. The presence of these minerals, however, has no effect on the potability of water drawn from private systems.



Solid Waste Management

The Ohio EPA Division of Solid and Infectious Waste Management thoroughly defines solid waste as “such unwanted residual solid or semi-solid material, including but not limited to, garbage, scrap tires, combustible and noncombustible material, street dirt and debris, as results from industrial, commercial, agricultural and community operations, excluding earth or material from construction, mining, or demolition operations, or other waste materials of the type that would normally be included in demolition debris, nontoxic fly ash and bottom ash, including at least ash that results from combustion of coal, biomass fuels, and ash that results from the combustion of coal in combination with scrap tires where scrap tires comprise not more than fifty percent of heat input in any month, spent nontoxic foundry sand, and slag and other materials that are not inimical to public health, and includes, but is not limited to, garbage, scrap tires, combustible and noncombustible material, street dirt, and debris. Solid waste does not include any material that is an infectious waste or a hazardous waste.”

The Clinton County Solid Waste Management District (SWMD) plans for solid waste management in the County. Individual households are responsible for solid waste collection and disposal in the three townships. Rumpke and Waste Management, Inc., two private solid waste companies provide disposal service. The companies take solid waste out of the County to their landfill sites. Residents living outside of Wilmington may also deposit solid waste at the Wilmington municipal landfill for a fee. The Wilmington landfill is the County’s sole landfill.

There are no licensed solid waste facilities in Adams, Chester, or Vernon townships. No solid waste facilities are anticipated for development in the area, nor are there any foreseeable issues with solid waste management in the three townships.

In an effort to encourage local recycling and litter prevention, the SWMD has established three recycling drop-off containers located in Clarksville, Sligo, and Kingman. These three sites are among the smaller drop-off locations in Clinton County, and are currently emptied bi-weekly. Recyclable materials are taken outside of the County for sorting and recycling. Use of the containers is steady and adequate. There are currently no plans to expand the number of recycling drop-off containers in the three townships.

Rockies Express Pipeline

Rockies Express Pipeline LLC (REX) intends to construct a 42-inch natural gas pipeline underneath 638 miles of land between Audrain County, Missouri and Monroe County, Ohio. The pipeline will pass along the northern edge of Chester Township, north of I-71 and intersect SR 380. The area’s land uses are predominantly recreational and agricultural, with some residential parcels near or along the pipeline path. REX and federal and state regulatory agencies will offer opportunities for landowners and other interested parties to provide input and ask questions.

REX – East sought final approval from the Federal Energy Regulatory Commission in the summer of 2008 and planned to begin construction in late summer 2008, with a partial in-service date of December 2008. It was expected that REX-East would be fully in service by June 2009.

Public Input

The top issue identified by the public was the need for sanitary sewer and the minimization of on-site septic systems. Additional topics related to infrastructure that were mentioned included the expansion of water for fire protection and funding of public infrastructure.

Chapter 6

Inventory and Analysis of Natural Systems

Introduction

The purpose of this chapter is to promote the conservation, preservation and protection of natural resources, including: rivers; lakes; wetlands; groundwater; air; floodplains; commercially valuable minerals; areas experiencing soil erosion; and areas of recreation and commercially important fish, wildlife, and vegetative communities. There is a difficult balance to achieve between the protection of these natural systems and the need for development. The optimum is achieved when protection can enhance the value of development or vice versa. When communities know the values and functions of their natural systems, they can take steps to avoid public investments that degrade valuable resources, and, perhaps more important, to avoid additional public investments to mitigate or restore degraded resources.

Air Quality

Growing national concern about air pollution led to the passage of the Clean Air Act of 1970 and subsequent updates, including the 1990 amendments. This legislation mandated the study of air quality in communities across the United States.

The Clean Air Act considers a locality where air pollution levels persistently exceed National Ambient Air Quality Standards a “nonattainment area.” There are two separate standards of measurement to determine whether an area is nonattainment: ozone levels measured over an eight-hour period, and fine particulate matter. The nonattainment designation is a formal rulemaking process and the U.S. EPA generally takes this action only after air quality standards have been exceeded for a number of consecutive years. These areas must implement a plan to reduce ambient concentrations below the maximum pollution standards.

In accordance with the provisions of the Clean Air Act Amendments of 1990, the United States Environmental Protection Agency (U.S. EPA) designated a nine-county area in the Cincinnati region as a basic nonattainment area for ozone under the eight-hour ozone standard in April 2004. This means that these counties have recorded ozone levels exceeding the new 2008 federal air quality standard of a maximum of 0.075 parts per million (ppm) as measured during an 8-hour period. The Greater Cincinnati nonattainment area for ozone includes Clinton County. From 2001-2003, Clinton County’s recorded ozone levels averaged 0.096 ppm, 0.021 ppm above the most recent federal standard.

The OKI Regional Council of Governments, as the Metropolitan Planning Organization (MPO) for the Greater Cincinnati region, consists of Dearborn, Boone, Campbell, Kenton, Butler, Clermont, Hamilton and Warren counties and is responsible for the air quality conformity determination for the region’s Transportation Plan and Transportation Improvement Program. Although Clinton County is outside of the official OKI region, it is considered part of the regional nonattainment area. The Ohio Department of Transportation (ODOT) is the lead planning agency for air quality issues in Clinton County.

In December 2004, the U.S. EPA designated OKI's Kentucky and Ohio counties and a portion of Dearborn County as nonattainment for another standard, the fine particulate matter (PM_{2.5}) standard. Clinton County is outside of this nonattainment area, and is considered attainment for the PM_{2.5} standard.

Surface Water and Waterways

Portions of two Little Miami River tributaries, Todd's Fork and Caesar Creek, are located within Adams, Chester, and Vernon Townships and the Village of Clarksville. Figures 6-2, 6-3, and 6-4 show the locations of these and other smaller waterways. The Little Miami River and its tributaries drain all or portions of 21 Ohio counties, including a majority of Clinton County, in an area of over 1,700 square miles. Drainage of the Little Miami is to the south-southwest; all streams in the watershed ultimately drain to the Ohio River.

In addition to river systems in the study area, Cowan Lake in Vernon Township comprises roughly 700 of the 877 acres of lakes in Clinton County.

Surface waters are affected by the types of soil and topography of neighboring lands. Land uses such as residential and commercial development, farm production, and other construction can alter the amount of sediment entering local streams and other bodies of water. Local soils also have an impact on surface waters because of infiltration capacity. Some soils may allow precipitation to run off, while others permit rapid ground infiltration.

Watersheds & 2008 Ohio Integrated Water Quality Monitoring and Assessment Report

The Clean Water Act includes a variety of regulatory and non-regulatory tools to sharply reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. Evolution of Clean Water Act programs over the past decade has also included a shift to more holistic watershed-based strategies. Under the watershed approach, equal emphasis is placed on protecting healthy waters and restoring impaired ones.

According to the EPA, a watershed is "that area of land, a bounded hydrologic system, within which all living things are inextricably linked by their common water course and where, as humans settled, simple logic demanded that they become part of a community." The watershed approach framework focuses on partnerships, targeting activities to areas that drain to surface water bodies, or that recharge or overlay ground waters, or a combination of both, and using sound management techniques based on scientific data.

The 2008 Ohio Integrated Water Quality Monitoring and Assessment Report is required by the federal Clean Water Act to provide a summary of the status of the state's surface waters and to develop a list of waters that fail to meet established goals. These are identified as "impaired waters." Under the Clean Water Act, once impaired waters are identified, the state must take action to improve them. Typically, the actions include developing restoration plans, total daily maximum loads (TDMLs), water quality based permits, and non-point pollution control measures.

(www.epa.state.oh.us/dsw/tmdl/2008IntReport/2008OhioIntegratedReport.html)

Water pollutants are typically characterized as coming from point source pollution or non-point source pollution. Non-point source pollution is a generalized and untraceable discharge of waste into a body of water. As water from rainfall and snowmelt flows over and through a landscape, it picks up and carries contaminants from a number of sources. This is non-point source pollution or runoff. The polluted water may end up in streams, lakes, and oceans by directly flowing in, or by entering untreated storm drains. Water can also carry pollutants into below-ground drinking water sources as they soak into the soil. Conversely, point pollution is any discrete conveyance, usually including pipes, ditches, channels, or tunnels from which wastes may be discharged to water bodies.

Watershed protection techniques include land use planning and site design, buffers, erosion and sediment controls, and storm water best management practices (BMPs).

The Ohio Integrated Report provides information about 11-digit hydrologic units with an associated code (HUC). An 11-digit HUC is a drainage watershed between 40,000 and 250,000 acres in size. Figure 6-1 shows the 11-digit HUCs that encompass the study area. Figures 6-5, 6-6, and 6-7 show the boundaries of these HUCs as well as the boundaries of smaller 14-digit HUCs. A 14-digit hydrologic unit is a drainage sub-watershed typically between 10,000 and 40,000 acres in size, but with a minimum of 3,000 acres. Each 14-digit HUC is completely contained within one 11-digit HUC.

Figure 6-1
Hydrologic Units in Adams, Chester, and Vernon Townships
and the Village of Clarksville

Hydrologic Unit Code	Description	Size (acres)
05090202 040	Anderson Fork Caesar Creek	60,680
05090202 050	Caesar Creek [excluding Anderson Fork]	94,670
05090202 070	Todd's Fork (headwaters to above Little East Fork)	94,106
05090202 080	Todd's Fork (above Little East Fork to Little Miami River)	73,313

The Integrated Report's 303(d) list indicates the waterways of Ohio that are currently impaired and may require the development of a total maximum daily load (TMDL) in order to meet water quality standards. A TMDL is a written, quantitative assessment of water quality problems in a water body and contributing sources of pollution. It specifies the amount that a pollutant needs to be reduced to meet water quality standards, allocates pollutant load reductions, and provides the basis for taking actions needed to restore a water body. The Integrated Report provides projected dates for TMDL completion, with the Todd's Fork segments expected to be complete in 2010, and Caesar Creek projected for 2019.

A TMDL also lays out the implementation plan for achieving set standards that may include BMPs and the process for monitoring the effectiveness of that plan. Implementation of a TMDL can have an impact on development. For example, if sewer overflows are identified as a pollutant source in a TMDL study, it may constrain the provision of additional sewer services even if additional capacity is available at the treatment plant.

According to the 303(d) list, Caesar Creek has been found to have impairments of water quality standards for aquatic life and recreation use. Todd's Fork to upstream Little East Fork has a

water quality impairment for aquatic life, and Todd's Fork between the Little East Fork and Little Miami also has a water quality impairment for aquatic life. These stream segments are listed on the 303(d) list of prioritized impaired waters compiled by the state of Ohio. The major source of these impairments is excessive nutrient loading from wastewater treatment plants and agricultural uses, which increase nitrogen and nitrate levels in the water and produce excess algae. Anderson Fork at Caesar Creek has no listed impairments.

A watershed action plan for Todd's Fork was prepared by the Little Miami River Partnership and endorsed by the State of Ohio in May 2006. Among its findings was that Dutch Creek, before it meets Todd's Fork in Adams Township, was classified as having "exceptional warm water habitat" – an indication of very good water quality. In addition to data about the Todd's Fork watershed, the watershed action plan listed several problem statements, restoration goals and projects aimed at protecting this resource.

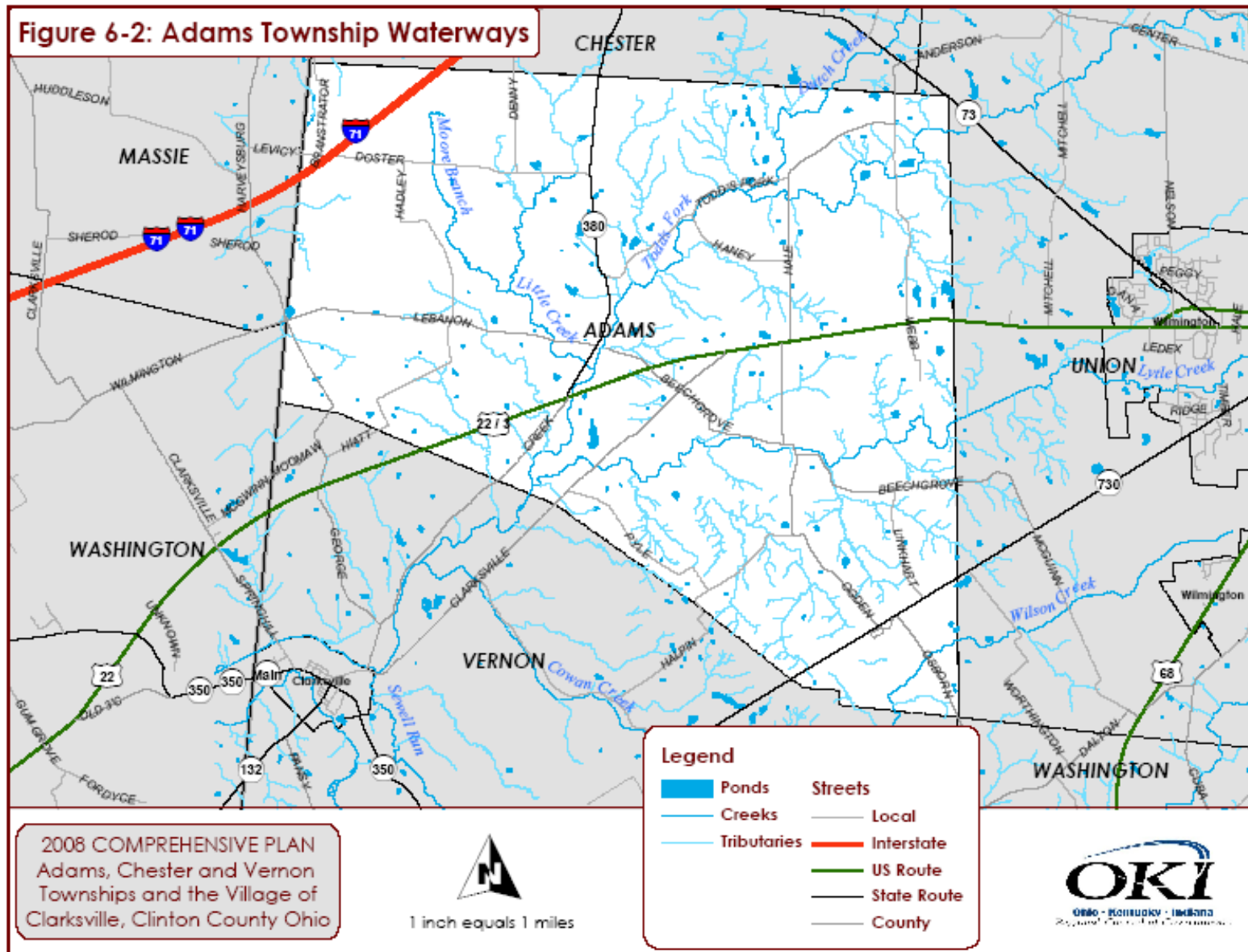
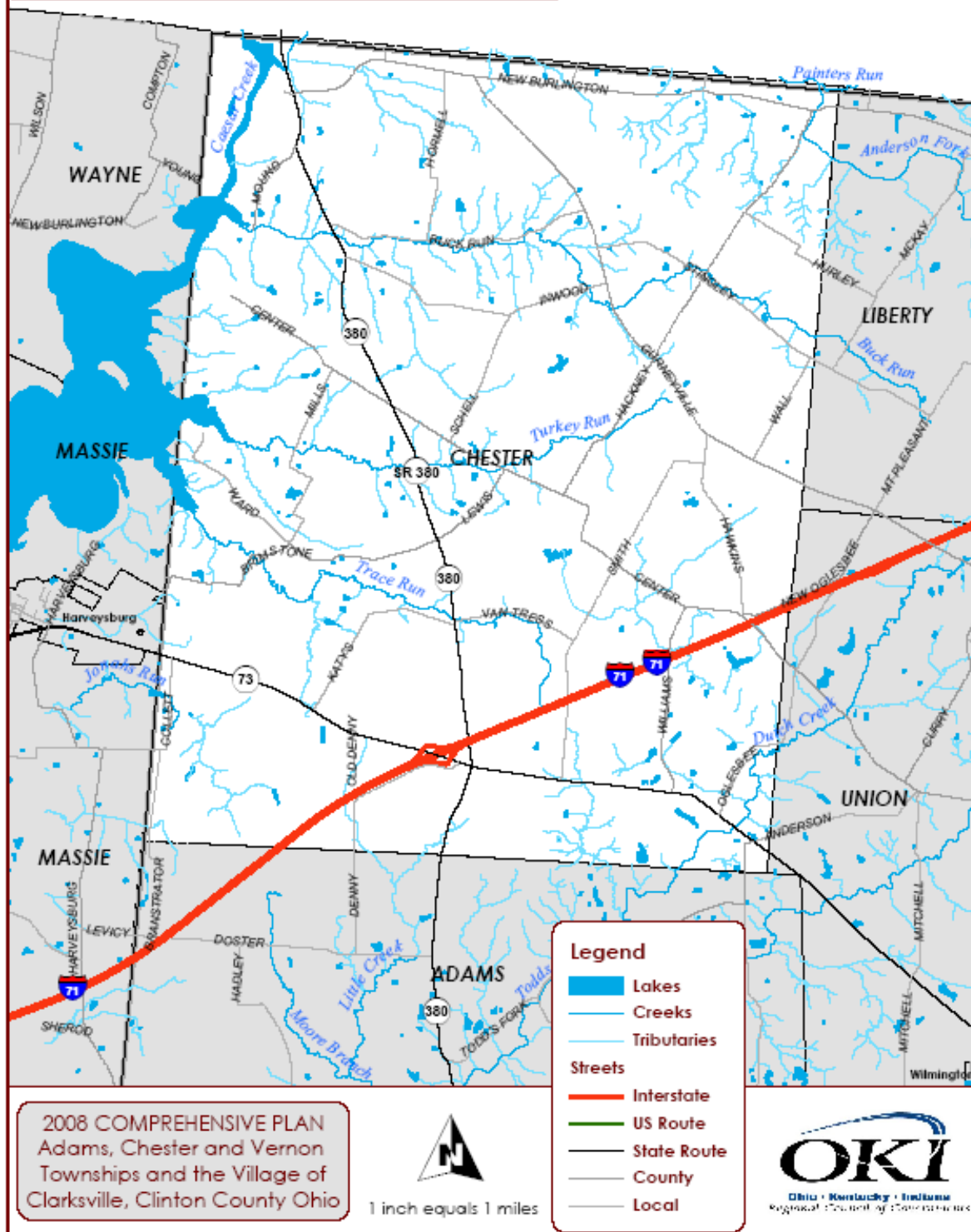
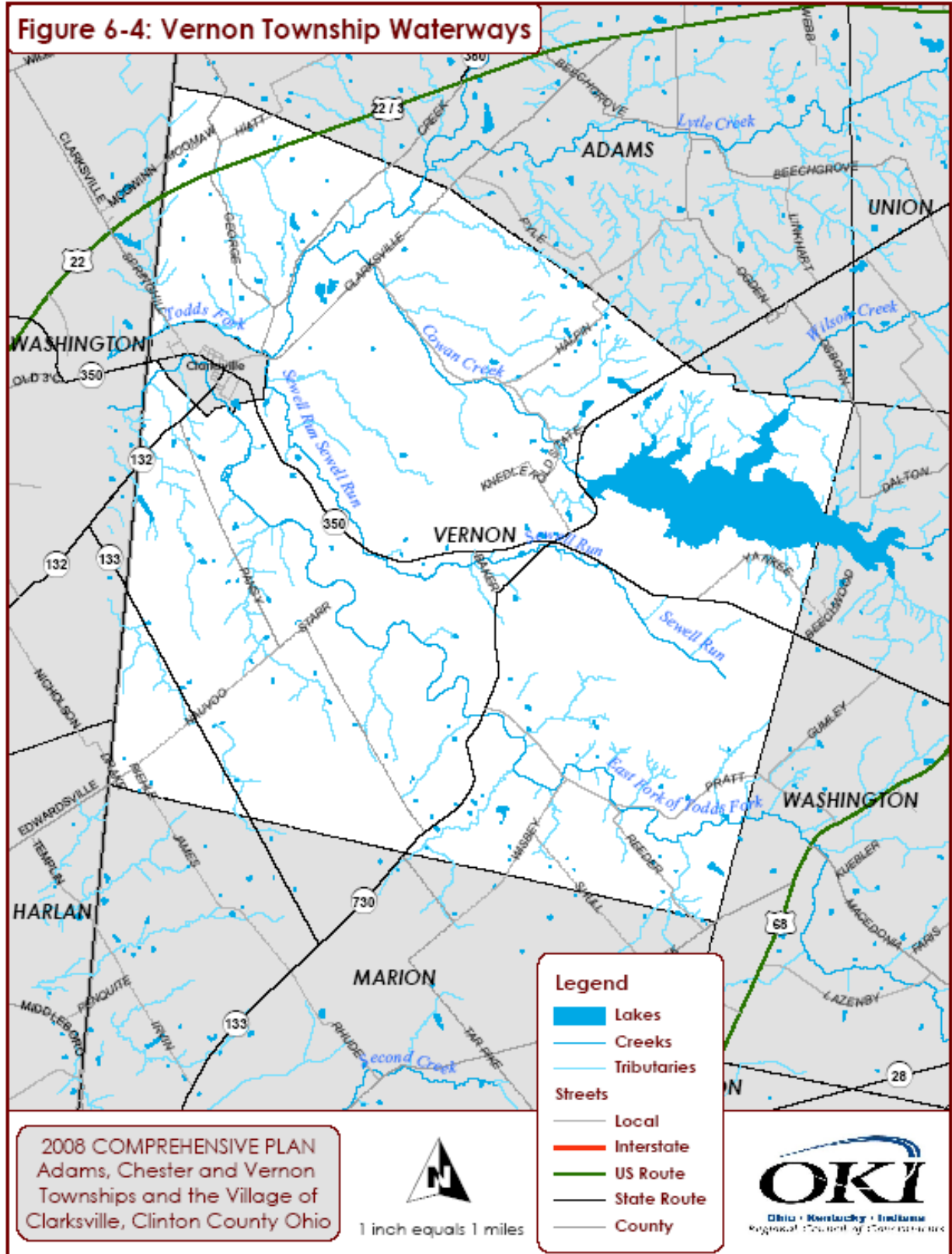
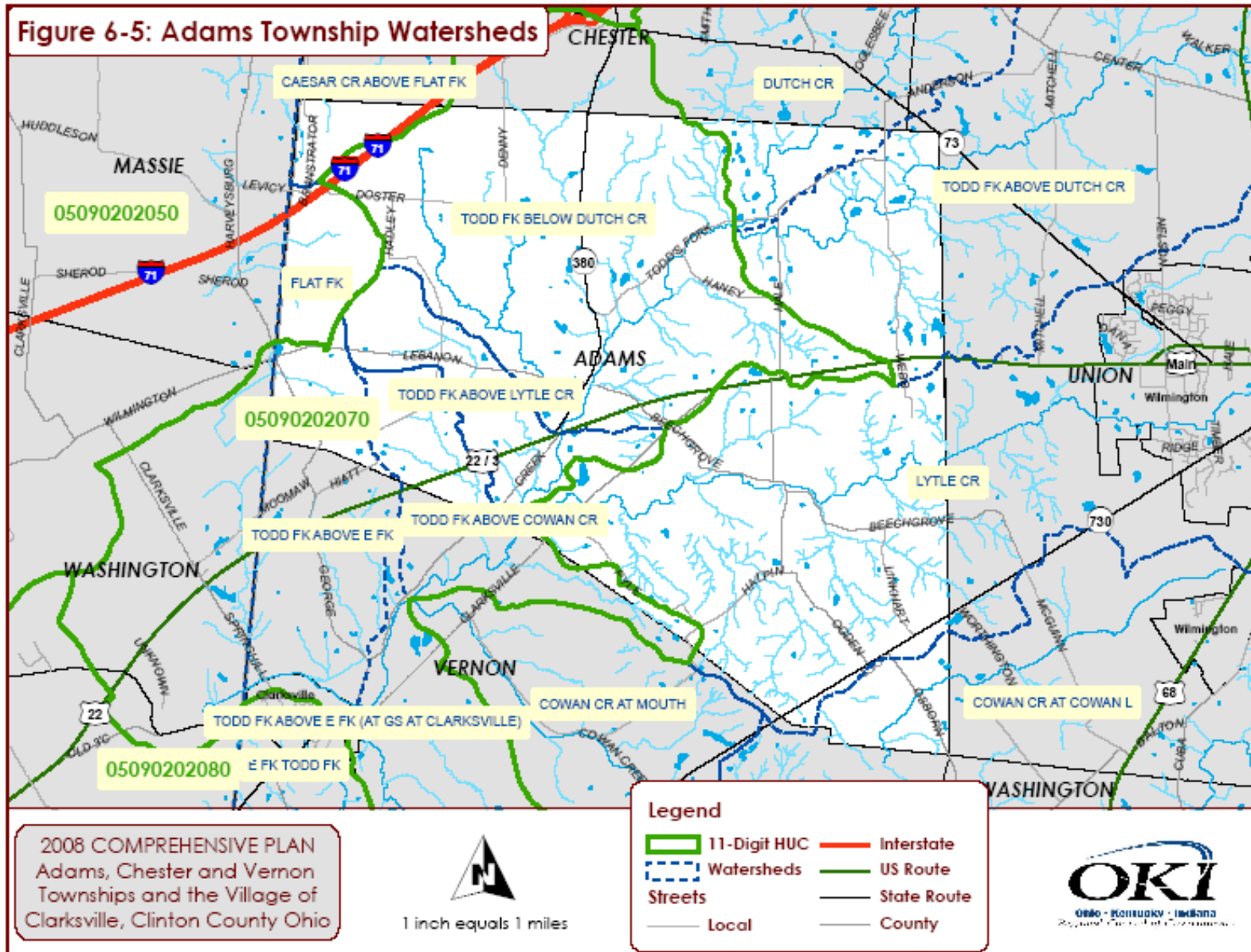
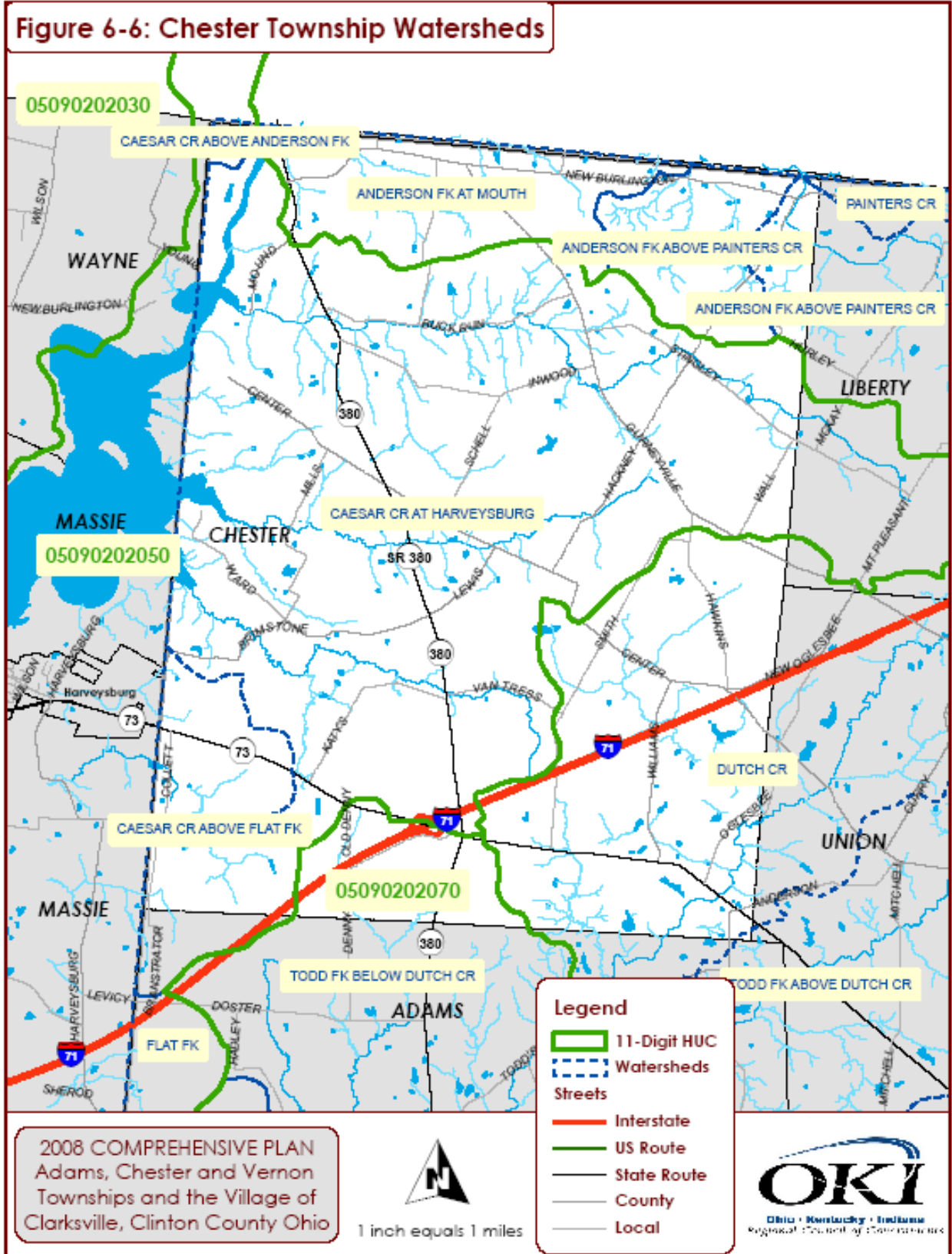


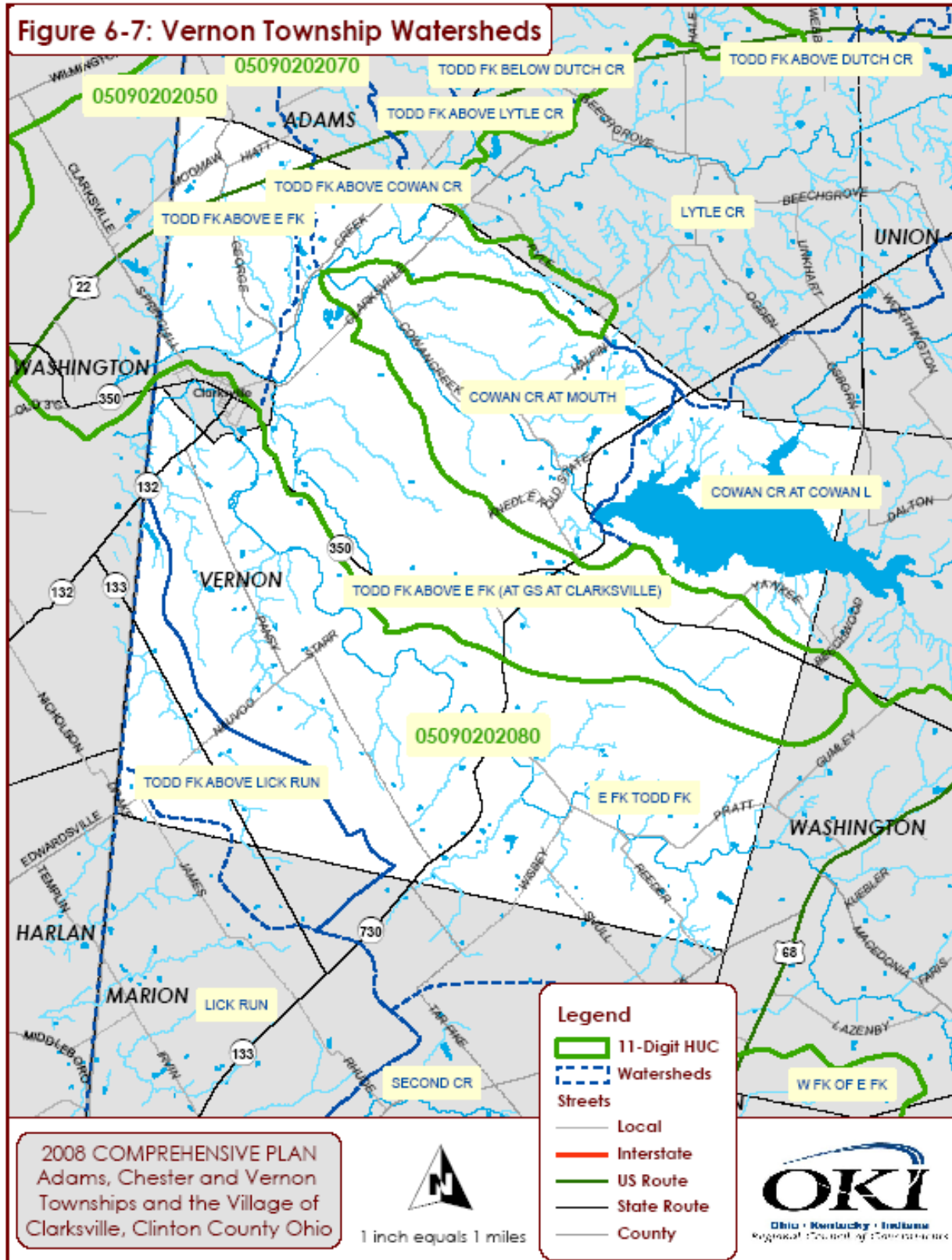
Figure 6-3: Chester Township Waterways











Floodplains

The 100 year floodplain is the area subject to a one percent and/or greater chance of flooding in any given year (also referred to as the base flood). A floodway is the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge a base flood without cumulatively increasing the water surface elevation more than one foot.

Certain restrictions are included in the Clinton County Subdivision Regulations for areas in the 100 year floodplain and within in the floodway. These regulations discourage building in the floodplain, although the Clinton County Regional Planning Commission may approve a subdivision proposed to be located in the 100 year floodplain if it meets all of the building standards, health codes, zoning regulations, and floodplain regulations. The Clinton County Subdivision Regulations also require that no buildings or structures be permitted in the floodway, and only agricultural or recreational uses or pervious off-street parking may be placed in these areas.

Figures 6-8, 6-9, and 6-10 represent the 100-year floodplain in the study area as illustrated on the Federal Emergency Management Agency (FEMA) NFIP maps. Currently 596 parcels in the study area intersect the floodplain: 79 in Clarksville, 154 in Chester Township, 157 in Adams Township, and 206 in Vernon Township. Land uses currently in the floodplain are predominantly agricultural and residential, with public/semi-public, recreational, and vacant uses also present.

Wetlands

As defined by the US Fish and Wildlife Service (FWS), wetlands are “lands where saturation with water is the dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface. The single feature that most wetlands share is soil or substrate that is at least periodically saturated with or covered by water. The water creates severe physiological problems for all plants and animals except those that are adapted for life in water or in saturated soil.” Wetlands are complex ecosystems that provide many valuable functions. Wetlands and adjacent floodplains often form natural floodways that convey flood waters from uplands to downstream points. These functions become increasingly important in urban areas where development can increase the rate and volume of runoff.

Other wetlands functions include surface water storage, shoreline stabilization, streamflow maintenance, groundwater recharge, sediment removal and nutrient cycling, supporting aquatic productivity, production of trees, production of palatable herbaceous growth, production of peaty soils, and provision of plant and wildlife habitat. Figures 6-11, 6-12, and 6-13 show the location of wetlands in the study area. This information comes from the Ohio Wetlands Inventory. This inventory is based on analysis of satellite data and is intended solely as an indicator of wetland sites where field reviews should be conducted. The satellite data reflect conditions during the specific year and season the data was acquired and all wetlands may not be indicated.

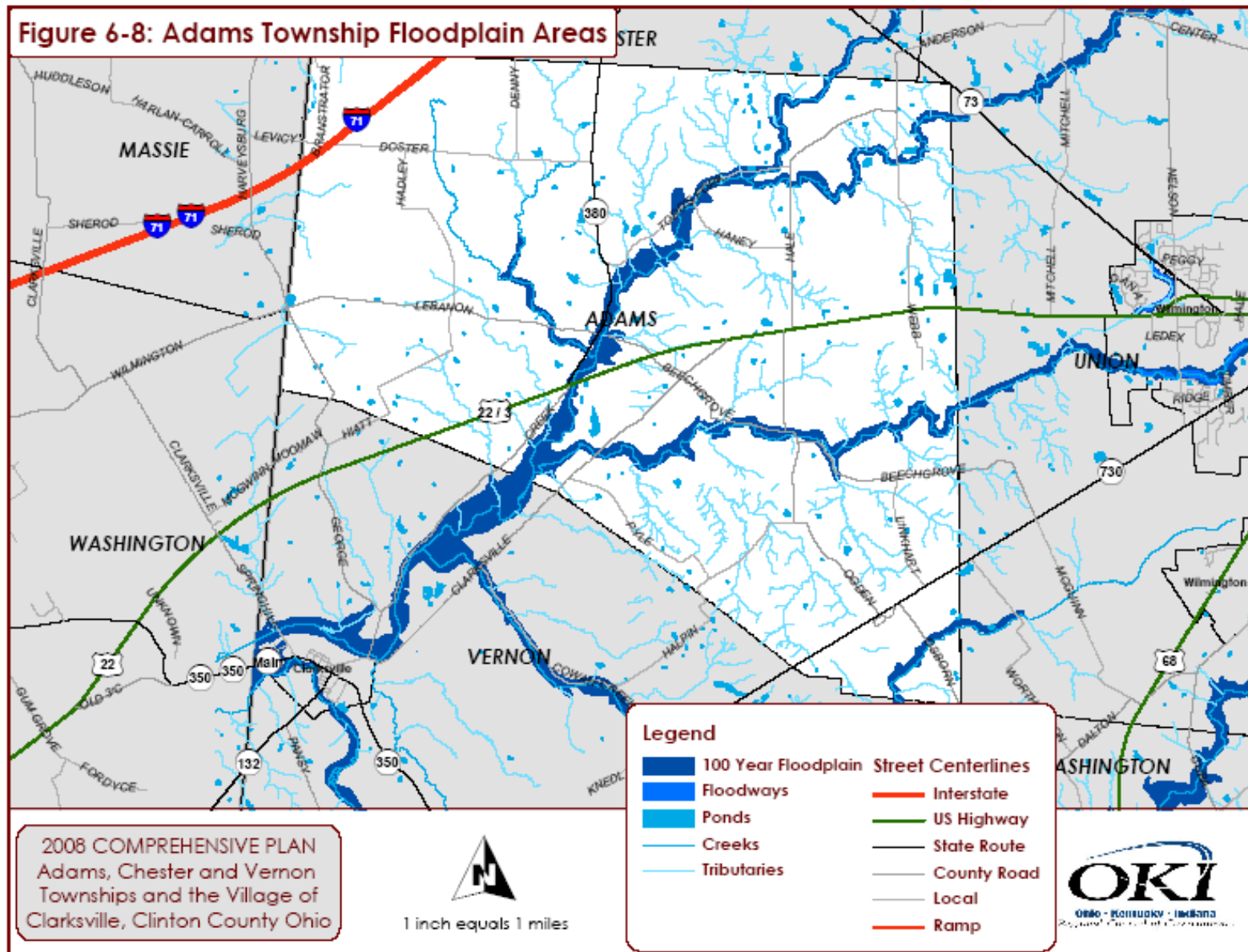
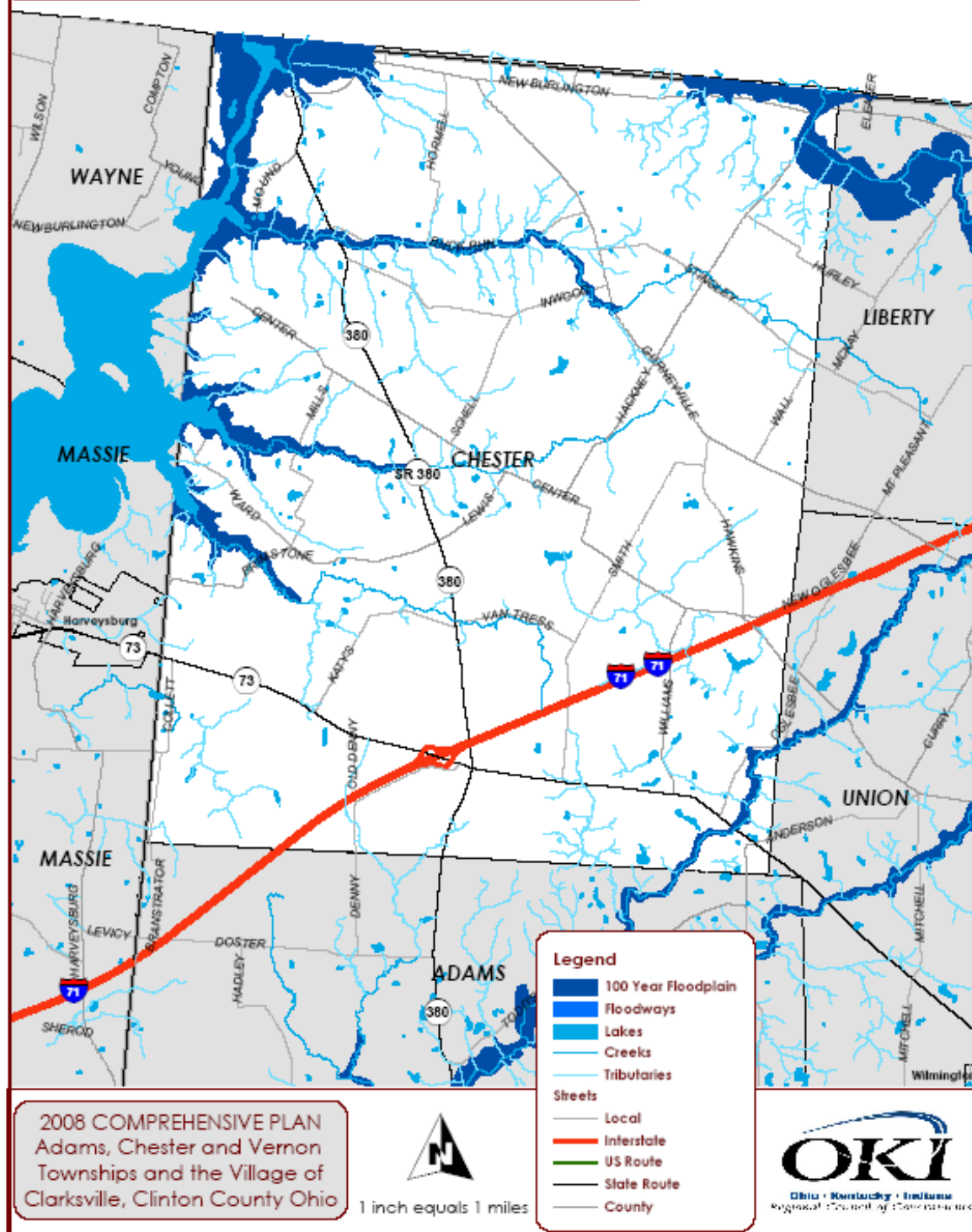
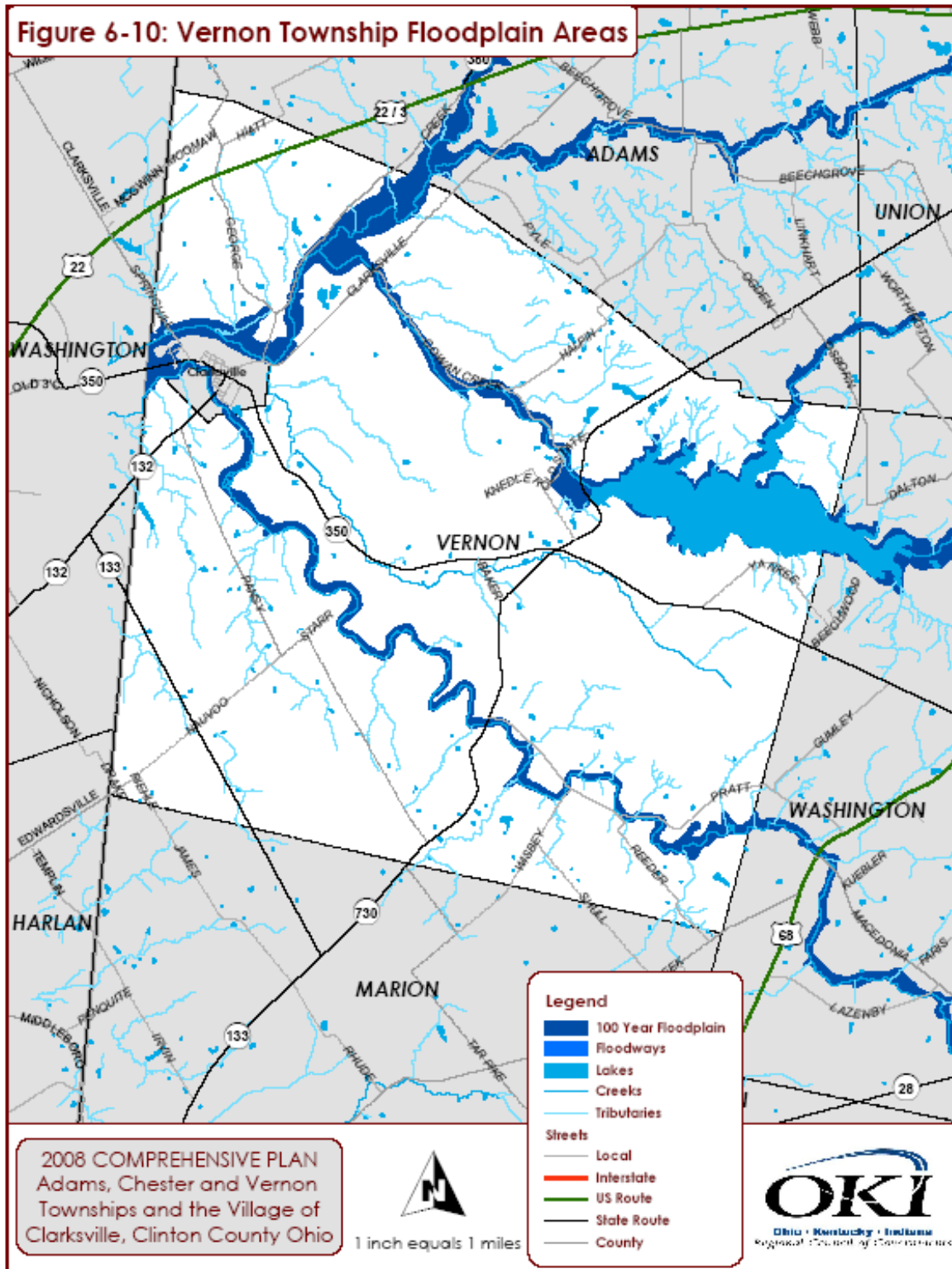


Figure 6-9: Chester Township Floodplain Areas





The Ohio Wetland Inventory shows areas of shallow marsh (emergent vegetation in water three feet or less), scrub shrub wetland (emergent woody vegetation three feet or less), forested wetland (mature woods with hydric soils), wet meadows (wet grass areas in water less than six inches on hydric soils) and farmed wetland (wet meadow in agriculture areas on hydric soils). A hydric soil is one that is frequently flooded and/or waterlogged. Technically, any soil that is covered by water for two weeks or longer during the growing season in most years is considered a hydric soil. If hydric soils are present at construction sites, additional studies or permits may be required.

Wetlands present in the study area are generally small and patchy, but they increase in size in the southern portion of the study area, especially in Vernon Township, where woods on hydric soil (forested wetlands) are prevalent. Other wetland types present in the study area include shallow marshes, predominantly around Caesar Creek and Cowan Lakes; scrub wetlands; and farmed wetlands in Chester Township.

Soil Suitability

The most recent soil survey for Clinton County was published in 2003. This survey was completed as a part of the National Cooperative Soil Survey, which was a joint effort by the U.S. Department of Agriculture Soil Conservation Service and the Ohio Department of Natural Resources. The Soil Survey Geographic (SSURGO) Database is the most detailed level of soil mapping done by the Natural Resources Conservation Service (NRCS). SSURGO digitizing duplicates the original soil survey maps. These two resources were used to create Figures 6-14, 6-15, and 6-16.

These figures show soil suitability for building site development, specifically for dwellings with a basement, as listed by the USDA Soil Survey. Issues such as a high water table, depth to bedrock or to a cemented pan, large stones, and flooding affect the ease of excavation and construction for dwellings with a basement.

The soil limitations are listed as not limited if soil properties and site features are generally favorable and limitations are minor and easily overcome. Somewhat limited soils have properties or site features that are not favorable, and special planning, design or maintenance is needed to overcome or minimize the limitations. Very limited soil areas have features that are so unfavorable or difficult to overcome that special design, significant increases in construction costs and possibly increased maintenance are required. These areas may need feasibility studies.

The location of somewhat and very limited soils does not indicate that development cannot or will not occur. This indicator is for identifying features that may become a cost factor for construction or installation of public facilities. Depth to bedrock, for example, can become an issue if time and resources must be allocated to chisel through bedrock for development.

Other conditions listed on the map include udorthents and dumps, which consist of cut and fill areas in the soil or where the underlying material has been greatly modified, or where areas were filled or covered artificially with miscellaneous material including trash, stones and industrial waste. Gravel pits are also identified where open excavation has occurred.

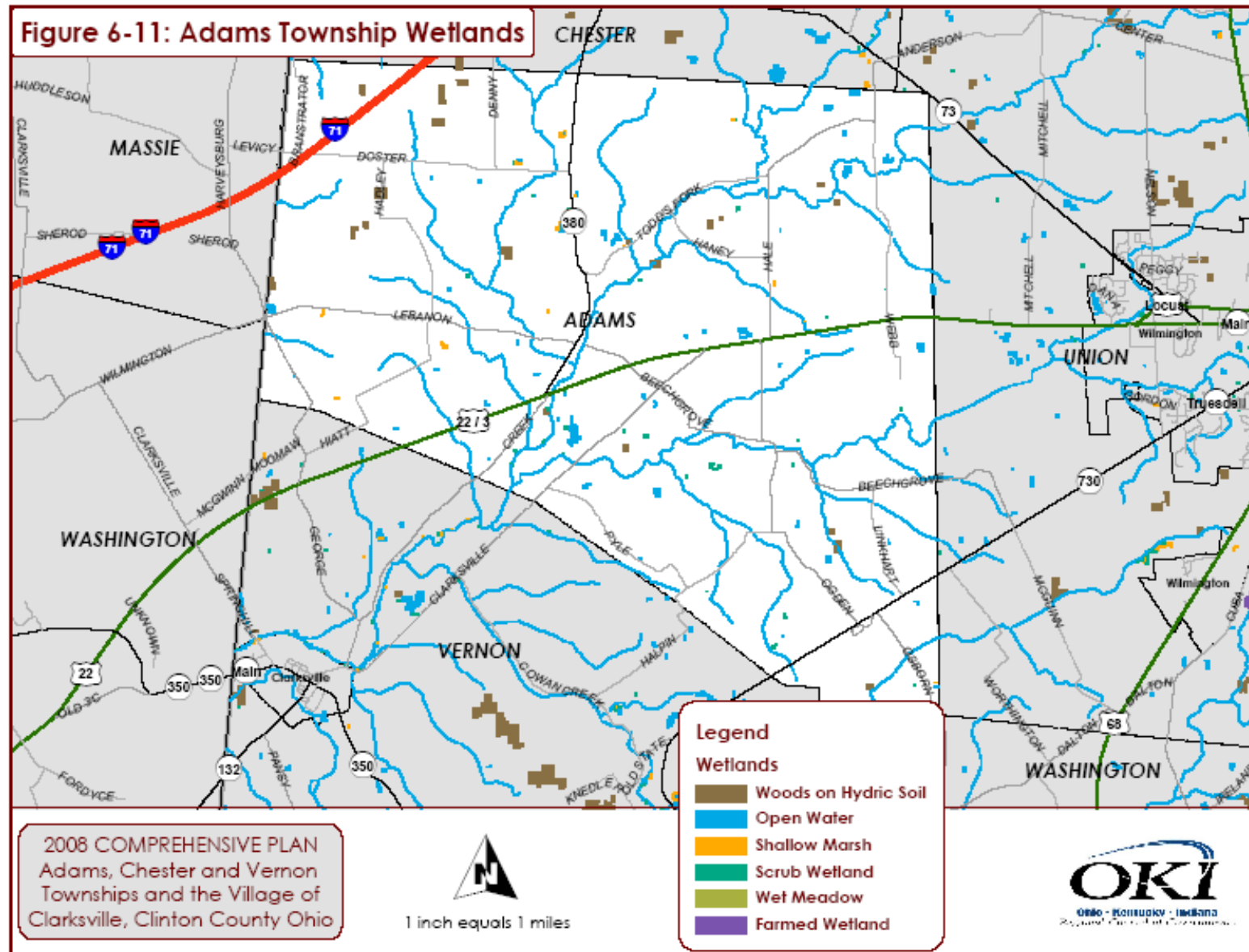
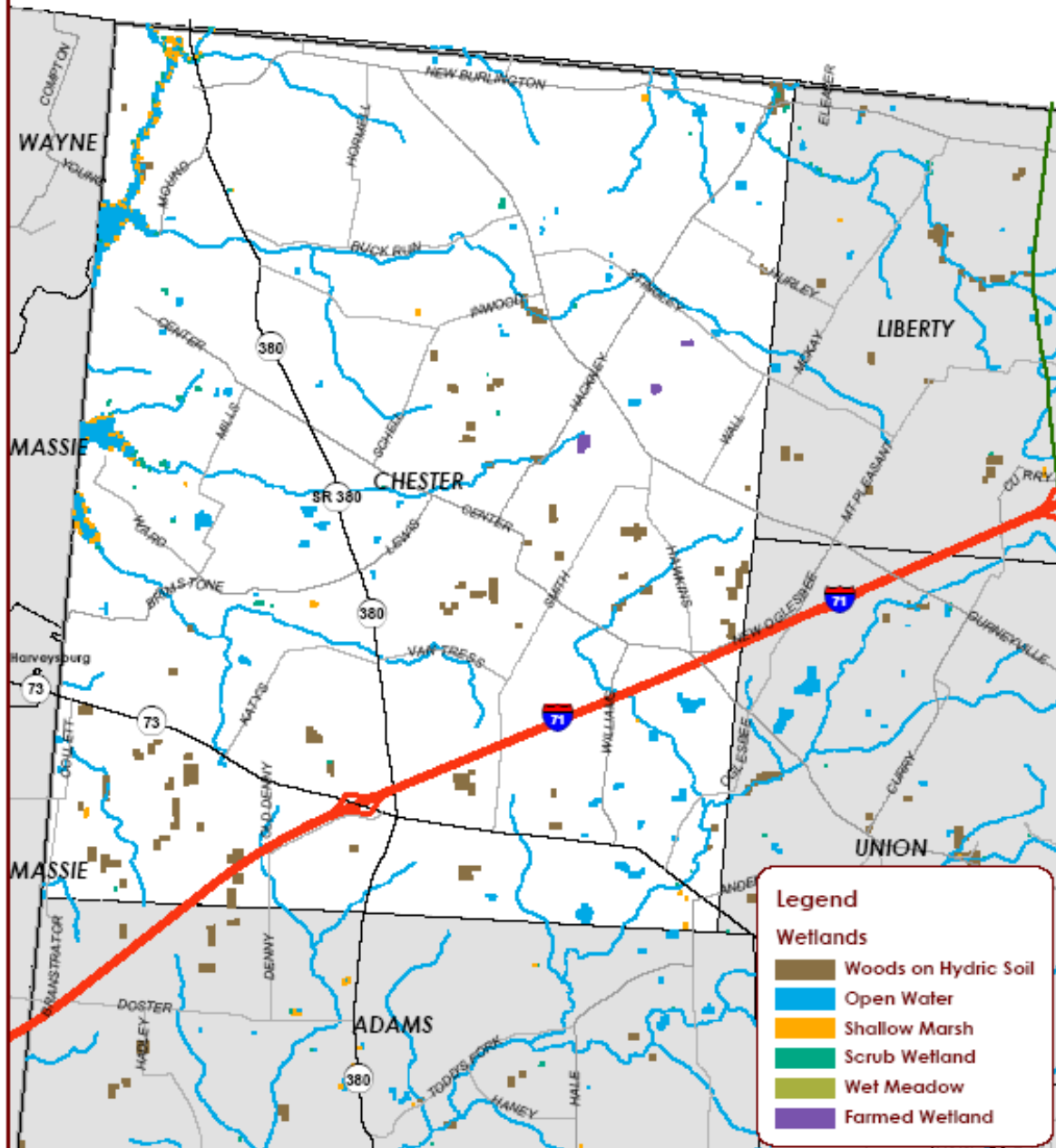


Figure 6-12: Chester Township Wetlands



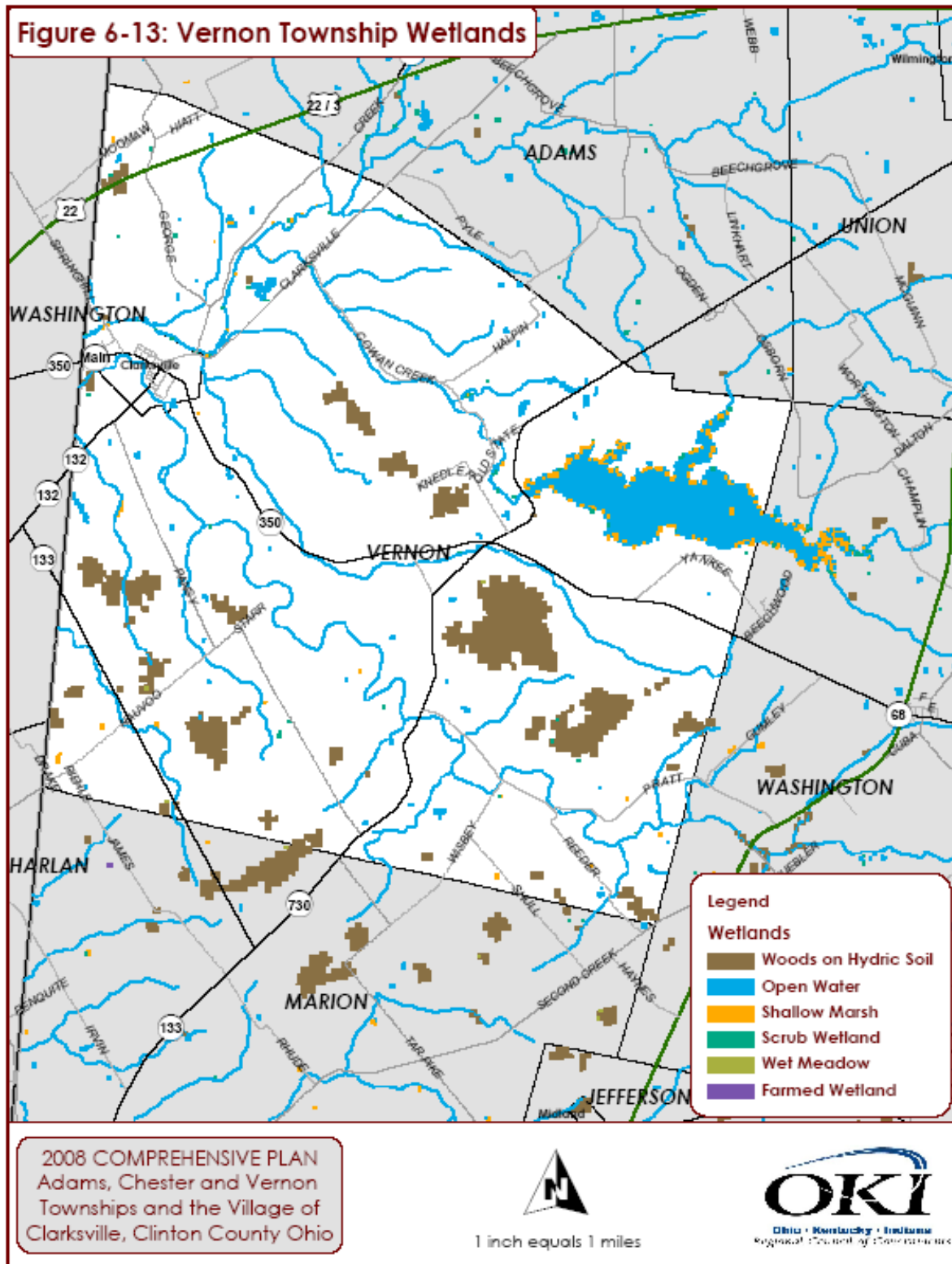
2008 COMPREHENSIVE PLAN
Adams, Chester and Vernon
Townships and the Village of
Clarksville, Clinton County Ohio



1 inch equals 1 miles



Ohio • Kentucky • Indiana
Regional Council of Governments



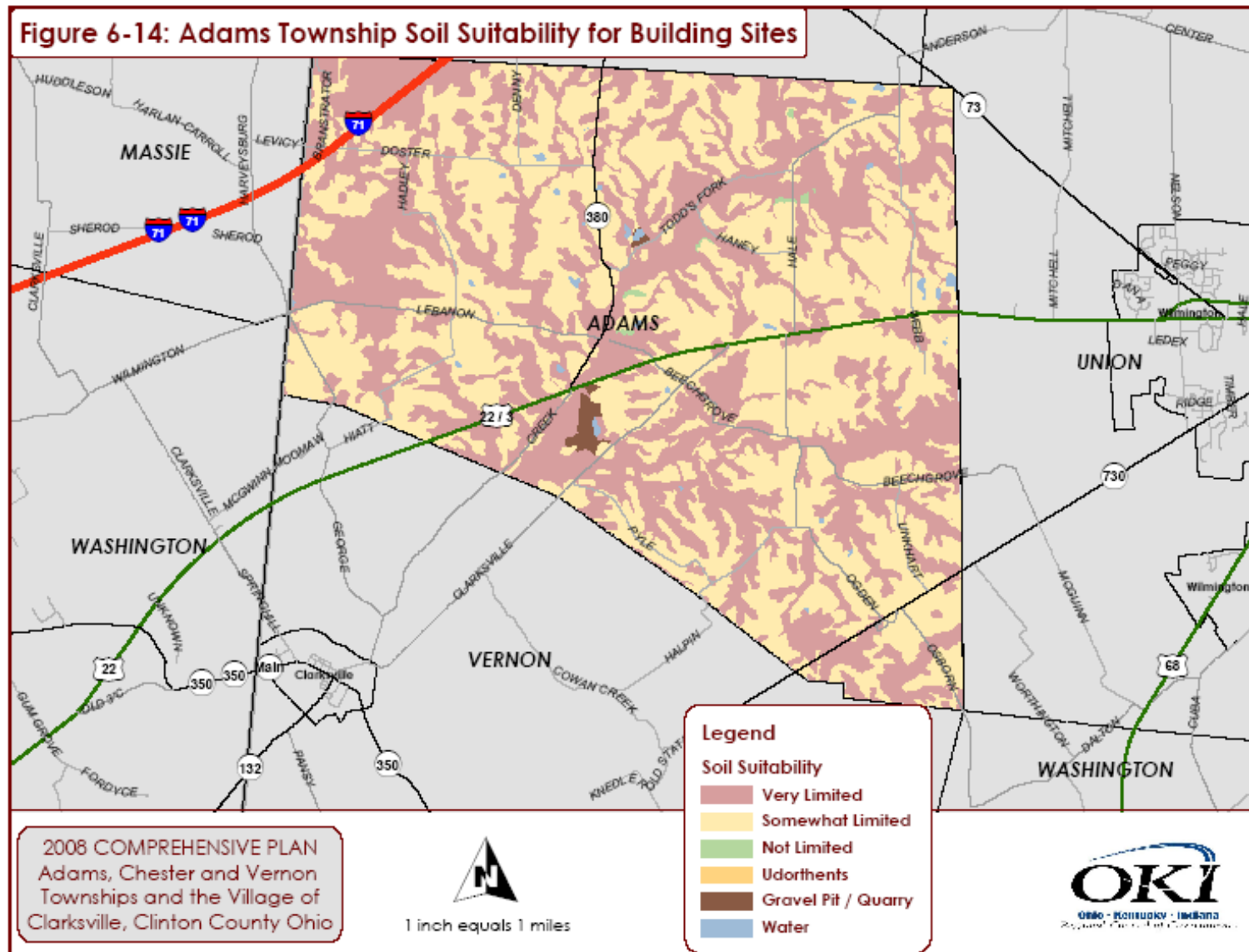
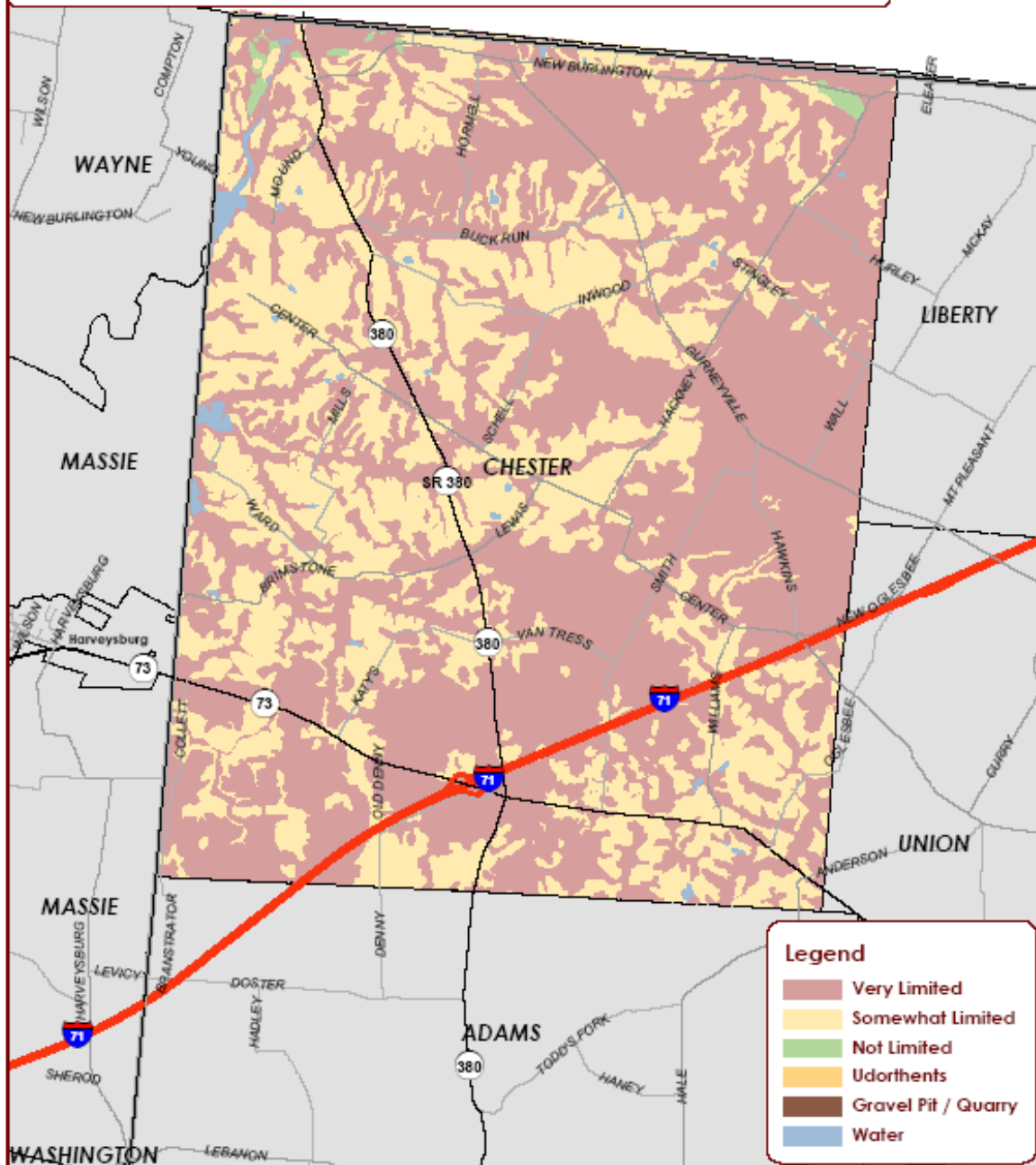


Figure 6-15: Chester Township Soil Suitability for Building Sites

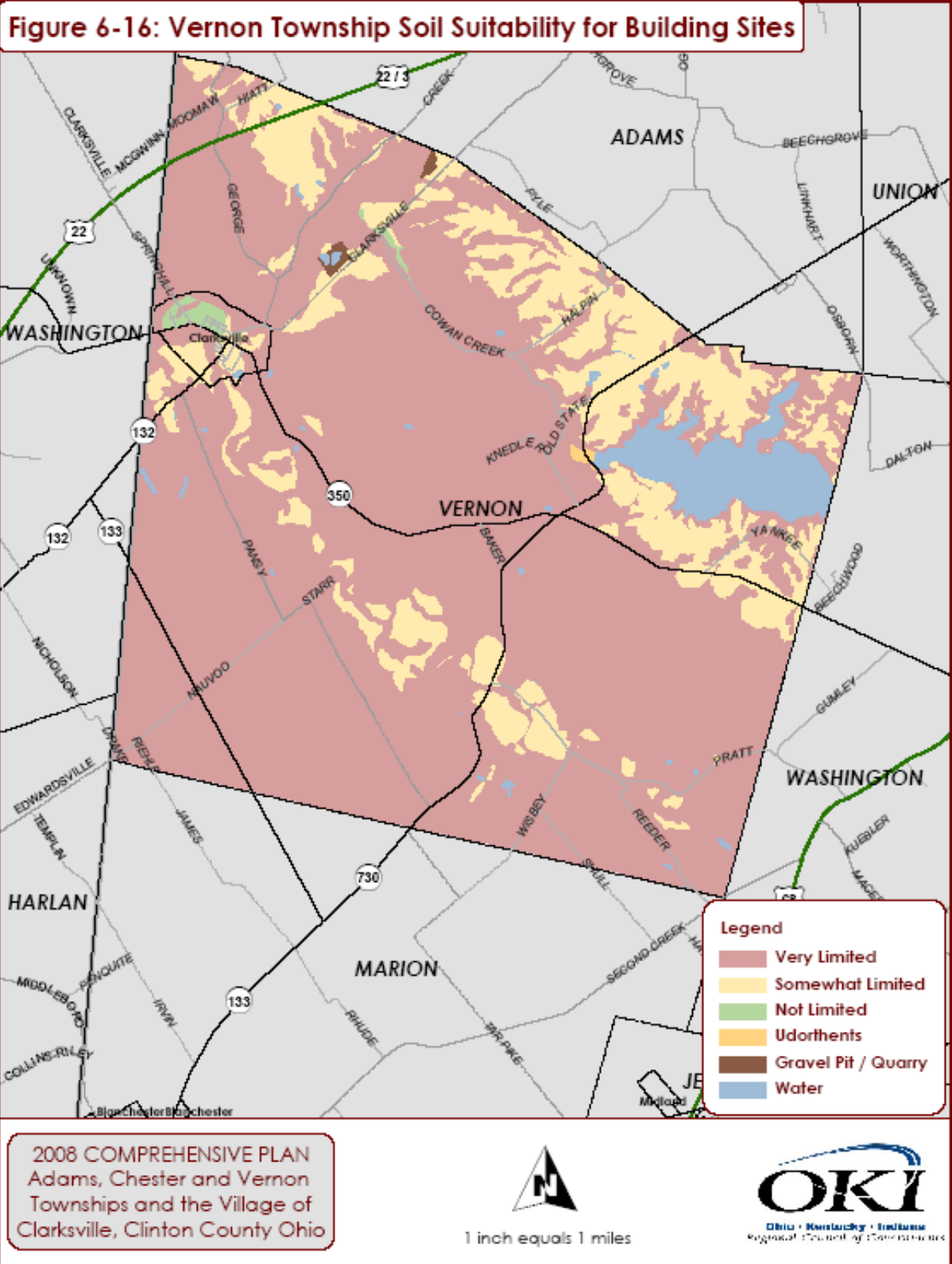


2008 COMPREHENSIVE PLAN
Adams, Chester and Vernon
Townships and the Village of
Clarksville, Clinton County Ohio



1 inch equals 1 miles





An additional soils tool is available for reference and may be useful for future analysis. The Web Soil Survey (WSS) was created to provide soil data and information produced by the National Cooperative Soil Survey. It is operated by the USDA Natural Resources Conservation Service (NRCS). The site is updated and maintained online as the single authoritative source of soil survey information. (<http://websoilsurvey.nrcs.usda.gov/app/>)

Slopes

The Clinton County subdivision regulations define areas with hillside slopes of 15% or greater as “steep.” Highly erodible soils are identified as areas that are characterized by steep slopes or long slopes. Figures 6-17, 6-18, and 6-19 shows slopes for the study area. Some areas of the townships are characterized by steep slopes (15% or greater), as indicated by the maps’ darker colors. Slopes can be a major concern for development and potential land slides. According to the Ohio Department of Natural Resources, steep slopes, jointed rocks, fine-grained, permeable rock or sediment, clay or shale units subject to lubrication and large amounts of water can be causes of landslides.

(www.ohiodnr.com/geosurvey/geo_fact/geo_f08/tabid/7865/Default.aspx)

As previously seen in Figures 6-14, 6-15, and 6-16, many of the soils in the area are classified as moderately or severely limited for construction because of wetness, slope or low strength soil. The characteristics of these soils combined with steep slopes can serve as an alert to potential landslide problems. The length and steepness of slope, soil type, upslope drainage, groundwater conditions and slope stabilization must all be considered for building construction in these areas and may require additional geotechnical investigations.

Threatened and Endangered Species

According to the Endangered Species Act, “endangered species” means a native species or subspecies threatened with extirpation from Ohio. The danger may result from one or more causes, such as habitat loss, pollution, predation, interspecific competition, or disease. The term “threatened species” means a species or subspecies whose survival in Ohio is not in immediate jeopardy, but to which a threat exists. Continued or increased stress will result in its becoming endangered.

The current US Fish and Wildlife Service (USFWS) list of federally endangered, threatened and candidate species indicate the Indiana bat (*Myotis sodalis*) and the eastern massasauga (*Sistrurus catenatus*) are the only federally listed species located within Clinton County, Ohio. The Indiana bat is considered endangered. The Indiana bat is of particular concern due to its federal listing in every Ohio county. The typical habitat of this species includes trees, caves, and abandoned mines. The eastern massasauga is a candidate species. Candidate species are plants and animals for which the U.S. Fish and Wildlife Service (FWS) has sufficient information to propose them as endangered or threatened under the Endangered Species Act (ESA), but the development of a proposed listing regulation is excluded by other higher priority listing species.

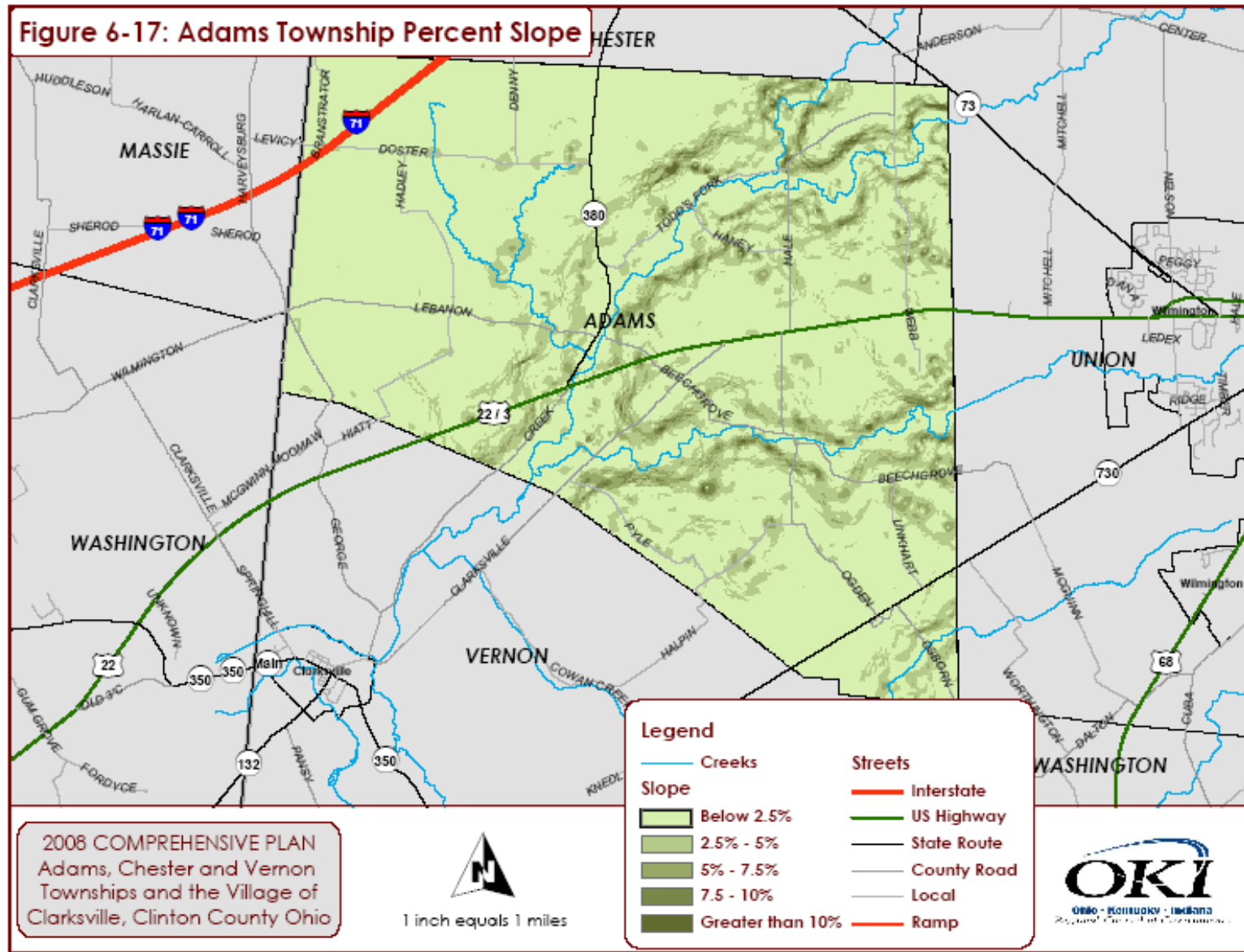
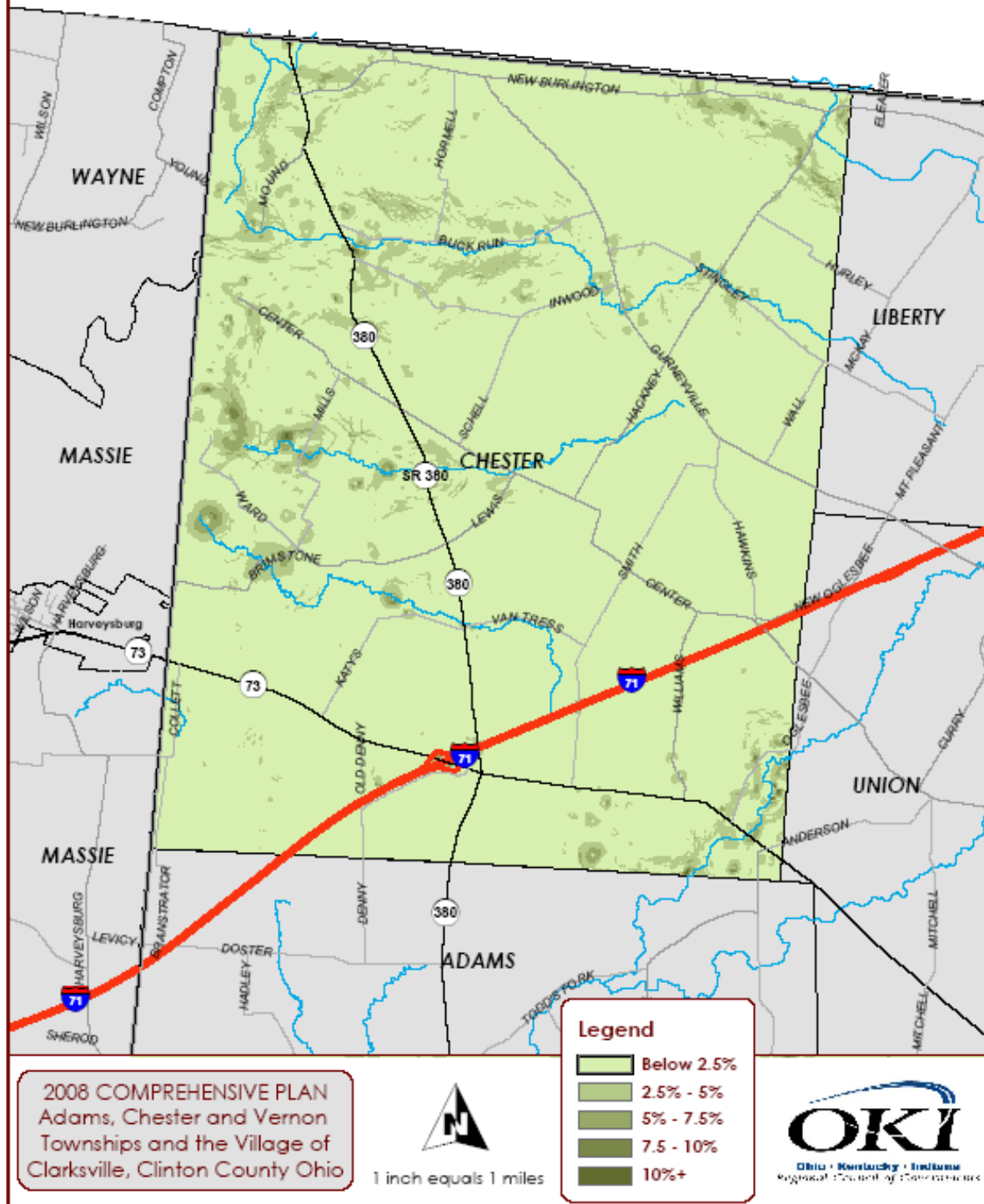
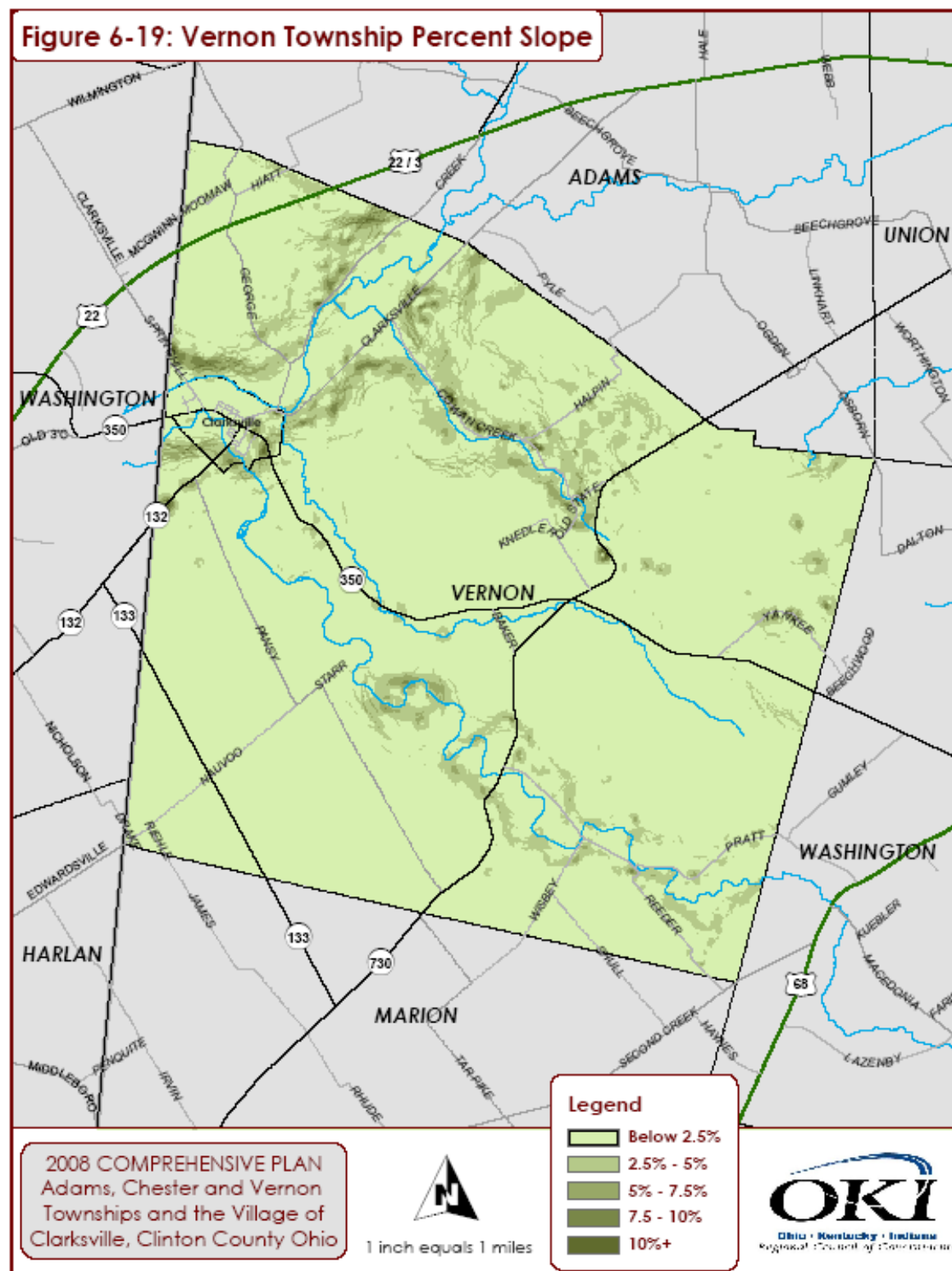


Figure 6-18: Chester Township Percent Slope





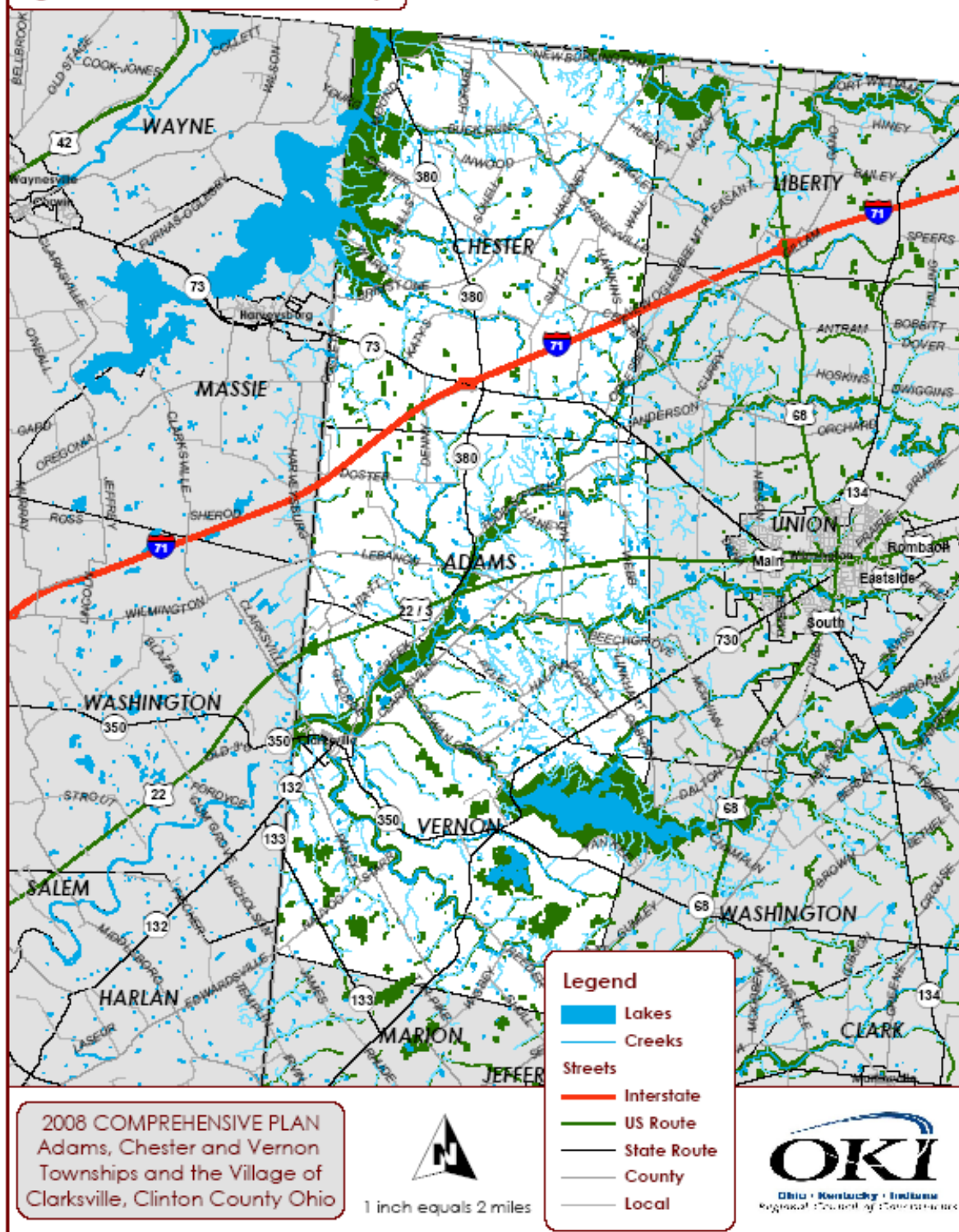
Potential Greenways

A greenway is generally defined as a linear open space established along either a natural corridor, such as a riverfront, stream valley, or ridgeline, or along a railroad right-of-way converted to recreational use, a canal, a scenic road, or other route. It can include bicycle and pedestrian facilities and may provide linkages to active parks or other cultural facilities. Some are designed strictly for environmental or scenic protection.

Greenways can benefit a community in many ways, including recreational opportunities, transportation alternatives, economic value through tourism and increased property values, environmental education, increased tree cover, floodplain management and stream protection, conservation of habitat corridors, aesthetics and quality of life.

Figure 6-20 depicts places in the study area that may be appropriate for a greenway. The green areas on the map include existing parks, areas with slopes of 15% or greater, floodplains, wetlands, and wooded areas (taken from Ohio Wetlands Inventory). These areas could be improved, conserved or linked to other open spaces to take advantage of many of the greenway benefits listed above.

Figure 6-20: Potential Greenways



PROGRAMS

Clinton StreamKeepers

Clinton StreamKeepers is an affiliate of the Clinton County Environmental Preservation Association (CCEPA). The main focus of the group began as Anderson Fork in Wilson Township, a stream that commonly floods with significant rainfall or snowmelt and is located near proposed mining sites. The StreamKeepers have posted two monitoring sites on Clinton County streams and hold streamwalks year-round throughout the County.

Lytle Creek Conservators

The goal of the Lytle Creek Conservators is to make Lytle Creek accessible, fishable, swimmable, and designated as a tributary extension of the State and National Scenic Little Miami River. Since 2003, the League has worked to encourage landowners to dedicate their portions of the Lytle Creek corridor for public access. From these efforts, the Conservators have made accessible the upper four miles of the Creek for a riparian linear park with bike and/or nature trails.

The Conservation Reserve Program

The Conservation Reserve Program (CRP) is administered by the Butler County office of the USDA Farm Service Agency (FSA). The CRP program is a voluntary program that helps agricultural producers safeguard environmentally sensitive land. CRP participants plant long-term, resource-conserving covers to improve the quality of water, control soil erosion, and enhance wildlife habitat. In return, FSA provides participants with rental payments and cost-share assistance.

The program protects millions of acres of American topsoil from erosion and is designed to safeguard the nation's natural resources. By reducing water runoff and sedimentation, the CRP protects groundwater and helps improve the condition of lakes, rivers, ponds, and streams. Participating lands must be eligible and suitable for any of the following conservation practices: riparian buffers; wildlife habitat buffers; wetland buffers; filter strips; wetland restoration; grass waterways; shelterbelts; living snow fences; contour grass strips; salt tolerant vegetation; and shallow water areas for wildlife.

The Environmental Quality Incentives Program (EQIP)

EQIP is a voluntary program that provides assistance to farmers and ranchers who face threats to soil, water, air, and related natural resources on their land. The objective of EQIP is to optimize environmental benefits, and this objective is achieved through a process that begins with the definition of national priorities. The national priorities are: reduction of non-point source pollution, such as nutrients, sediment, pesticides, or excess salinity in impaired watersheds, consistent with Total Maximum Daily Loads (TMDLs) where available, as well as reduction of groundwater contamination and conservation of ground and surface water resources; reduction of emissions, such as particulate matter, nitrogen oxides (NOx), volatile organic compounds, and ozone precursors and depleters that contribute to air quality impairment violations of National Ambient Air Quality Standards; reduction in soil erosion and sedimentation from unacceptable levels on agricultural land; and promotion of at-risk species habitat conservation.

Wildlife Habitats Incentives Program

The Wildlife Habitat Incentives Program (WHIP) is a voluntary program for people who want to develop or improve wildlife habitat on private lands. Landowners agree to prepare and implement a wildlife habitat development plan. The U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) provides technical and financial assistance to implement the wildlife habitat restoration practices. Each state develops a program implementation plan including state objectives, wildlife priorities, partnership involvement, an explanation of the ranking process and criteria, and a process for measuring success of the program. In Ohio, priority projects include:

- restoration and enhancement of habitat for specific species including federally-listed vertebrate and invertebrate wildlife including candidate, threatened and endangered species, wildlife listed as endangered by the Ohio Division of Wildlife, and species of concern identified by other organizations or wildlife plans
- restoration of habitat and wildlife diversity in wetlands and wetland complexes with appropriate upland buffers and connections and in early successional habitat, especially in conjunction with agricultural lands, forested riparian corridors, and grasslands, especially large, contiguous, diverse grasslands in association with other grasslands
- those that address problems such as fragmentation, invasive plants, and lack of management which degrade existing habitat
- those practices which provide the most benefit and are primarily geared toward habitat improvement.

The Wetland Reserve Program

The Natural Resources Conservation Service administers the Wetland Reserve Program. This is a voluntary program that provides technical and financial assistance to eligible land owners to address wetlands, wildlife habitat, soil, water, and related natural resource concerns on private lands. The program provides an opportunity for landowners to receive financial incentives to protect, restore and enhance wetlands on their property through perpetual easements, 30 year easements or Land Treatment Contracts.

CHAPTER 7

Land Use and Zoning

Introduction

This section analyzes existing land uses and zoning in Adams, Chester, and Vernon townships and the Village of Clarksville. The total area of these jurisdictions is over 51,000 acres. Adams Township is nearly 14,000 acres in size, Chester Township is over 20,000 acres in size, Vernon Township is over 17,500 acres in size, and the Village of Clarksville is nearly 300 acres in size. Existing land uses in the study area include agricultural, commercial, public/semi-public, recreational, residential, and vacant uses. Existing land use information was obtained from geographic information system (GIS) information made available by the Clinton County GIS Department and confirmed and updated through aerial photographs and windshield surveys conducted in the study area.

Existing Land Use and Zoning

NOTE: In late 2008, Clinton County adopted a new Zoning Resolution, which the townships highlighted are subject to- this sections analysis uses certain terminology that matches the old Clinton County Zoning Resolution.

Figures 7-1 through 7-12 provide a breakdown of existing land uses in each township and the Village (in acres), the percentage of total land area in each township and the Village dedicated to a particular land use, and corresponding maps to depict the spatial pattern of these land uses. As seen in the figures below, agricultural uses are the predominant uses within the study area townships. These agricultural uses make up 78.6% of land in Adams Township, 76.4% of land in Chester Township, and 73.1% of land in Vernon Township. Residential uses are the second largest category of land uses in all three townships, with 15.4% of land in Adams Township, 13.0% of land in Chester Township, and 16.7% of land in Vernon Township dedicated to residential uses. Approximately 9% of land in Chester and Vernon Townships is dedicated to recreational purposes, reflecting the presence of Caesar Creek and Cowan Lake State Parks in these areas. Other uses in the study area townships occur in significantly smaller amounts.

Residential uses are the predominant uses within the Village of Clarksville, comprising more than 46% of land in the jurisdiction. Agricultural uses make up 28.2% of land in Clarksville. These agricultural uses are on several large parcels that stretch to the perimeter of the Village in most cases. Future development may be possible in these areas if the Village experiences significant growth. Public/semi-public uses follow closely behind with nearly 21% of land in the Village.

Zoning in the study area includes Agriculture (A-1, A-2), Farm Security (FS), Business (B-1, B-2), Business/Industrial (B/I) and Residential (R-1, R-2) zones. The Village of Clarksville is unzoned. A breakdown of land area under each zone and corresponding zoning maps for the three townships can be seen in Figures 7-13 through 7-21. Figures 7-22, 7-24, and 7-26 compare the existing land uses in each township with existing zoning designations. Figures 7-23, 7-25, and 7-27 give these numbers in percentages.

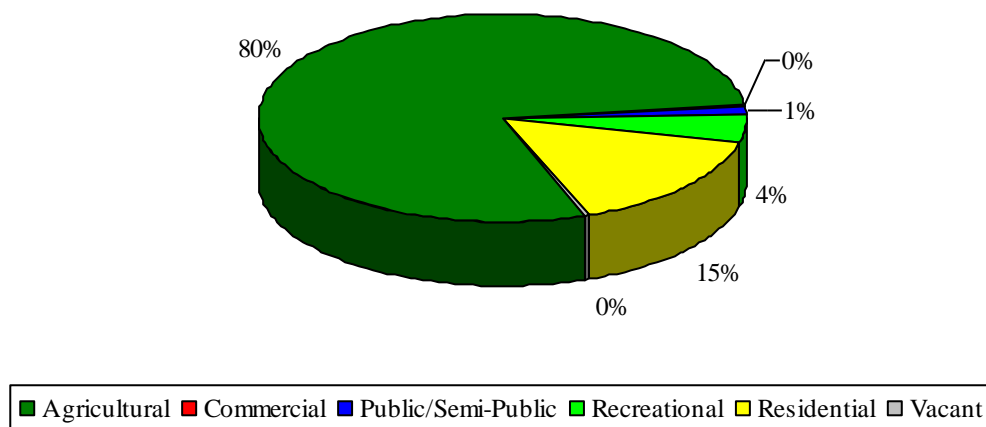
The majority of all three townships are zoned for Agriculture, with at least 96% of each township located in an A-1 or A-2 zone. In addition to agricultural uses, these zones also permit single-family non-farm residential development and mobile homes on lots of at least one or two acres in size, respectively. A-1 zones permit a larger number of conditional uses, while A-2 zones have more limitations beyond agricultural or residential uses. In Adams Township, the next largest zoning designation is R-1, with approximately 2% of township land located in this zone. The R-1 zones permit single-family residential uses and mobile homes with lots not smaller than one acre in size. The next largest zone in Chester Township, with approximately 4% of the township land, is a B/I zone centered around the I-71, U.S. 73, and S.R. 380 interchange. This zone permits a range of business and industrial activities, including office, retail, and warehousing and distribution. Virtually all of Vernon Township is zoned for Agricultural uses, with only 1.6 acres zoned otherwise in a B-2 district. Farm Security zones have been established to promote the continuance of agriculture in the study area, and these zones do not permit residential, commercial, or other uses except as conditional uses. Out of the entire study area, only a small portion of Adams Township is within a farm security zone.

“Non-conforming uses” are those uses of land or buildings which are lawful as of the effective date of the Zoning Resolution, but do not conform with the use regulations in the district where the use or building has been zoned under the Zoning Resolution. Non-conforming uses can be determined by locating the acreages under the existing land use columns in Figures 7-22, 7-24, and 7-26 that do not conform to the regulations of the zoning districts listed under the “Zone” column. For example, in Chester Township, 76.3% of land (approximately 27 acres) in the B-2 district is used for residential uses that do not conform with the Zoning Resolution, although this is a relatively small area in size. Other non-conforming uses in the three townships are minimal.

Figure 7-1
Adams Township Existing Land Use

Existing Land Use	Acres	% of Total
Agricultural	10,934.0	78.6%
Commercial	29.9	0.2%
Public/Semi-Public	175.6	1.3%
Recreational	612.1	4.4%
Residential	2,139.0	15.4%
Vacant	22.0	0.2%
Total	13,912.7	

Figure 7-2
Percent of Total Land Area by Land Use
Adams Township, Clinton County, OH



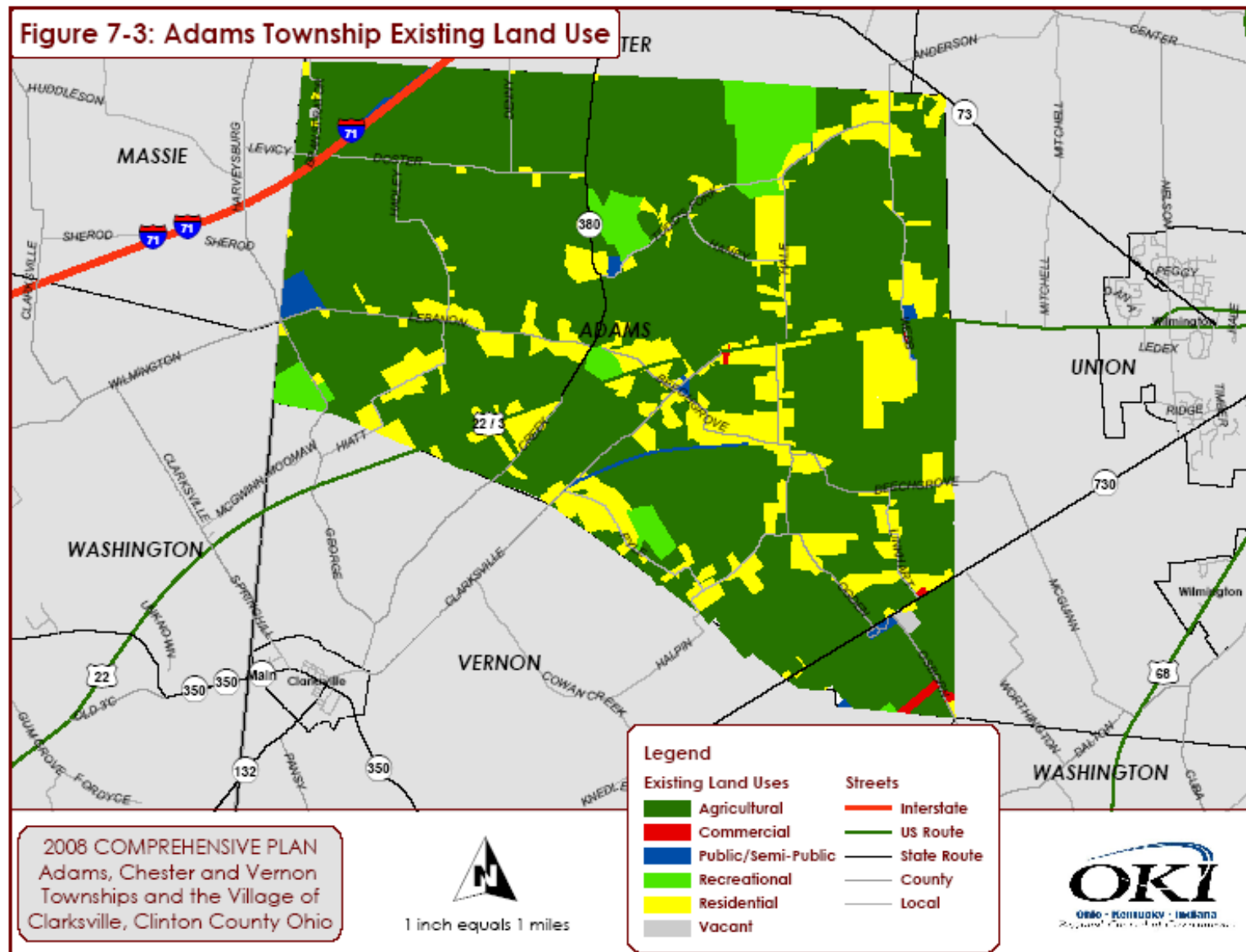
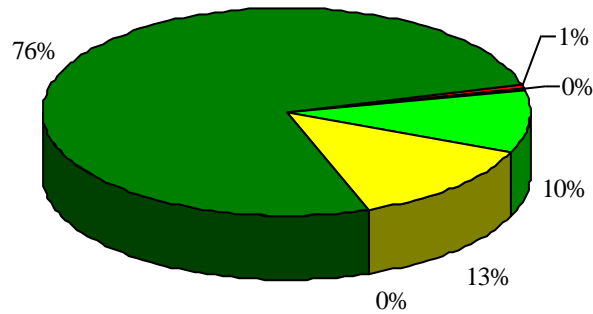


Figure 7-4
Chester Township Existing Land Use

Existing Land Use	Acres	% of Total
Agricultural	15,491.9	76.4%
Commercial	127.4	0.6%
Public/Semi-Public	48.4	0.2%
Recreational	1,972.2	9.7%
Residential	2,626.6	13.0%
Vacant	0	0.0%
Total	20,266.5	

Figure 7-5
Percent of Total Land Area by Land Use
Chester Township, Clinton County, OH



■ Agricultural ■ Commercial ■ Public/Semi-Public ■ Recreational ■ Residential ■ Vacant

Figure 7-6: Chester Township Existing Land Use

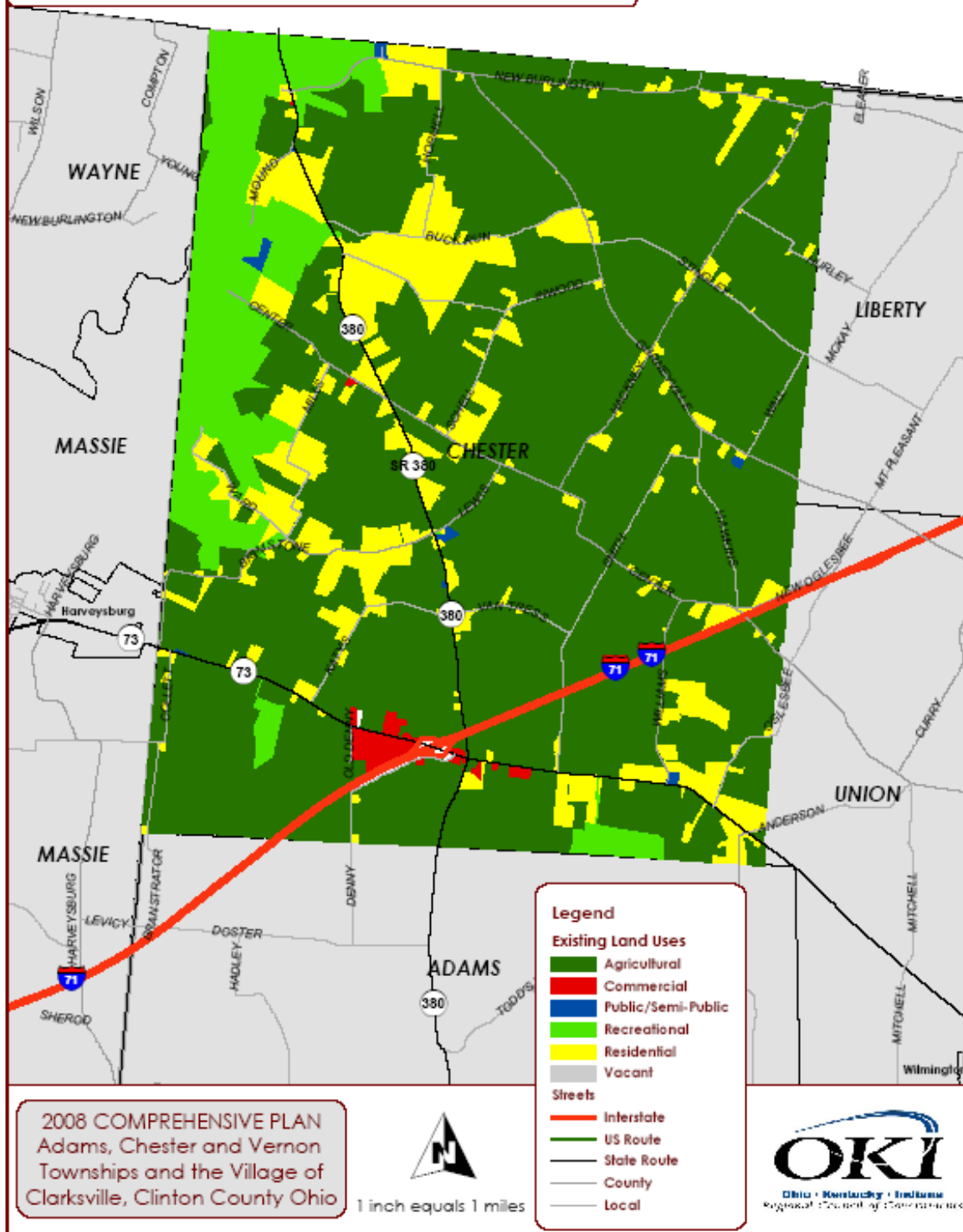
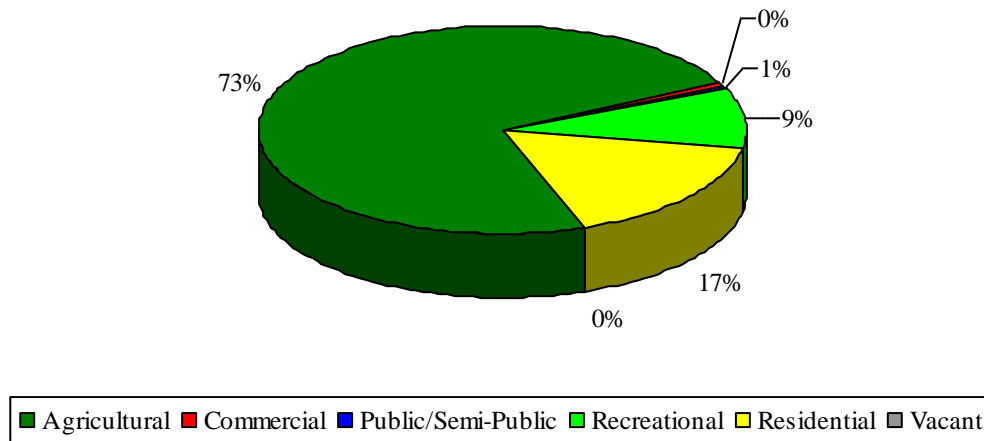


Figure 7-7
Vernon Township Existing Land Use

Existing Land Use	Acres	% of Total
Agricultural	12,893.9	73.1%
Commercial	73.0	0.4%
Public/Semi-Public	112.9	0.6%
Recreational	1,615.0	9.2%
Residential	2,944.4	16.7%
Vacant	2.1	0.0%
Total	17,641.3	

Figure 7-8
Percent of Total Land Area by Land Use
Vernon Township, Clinton County, OH



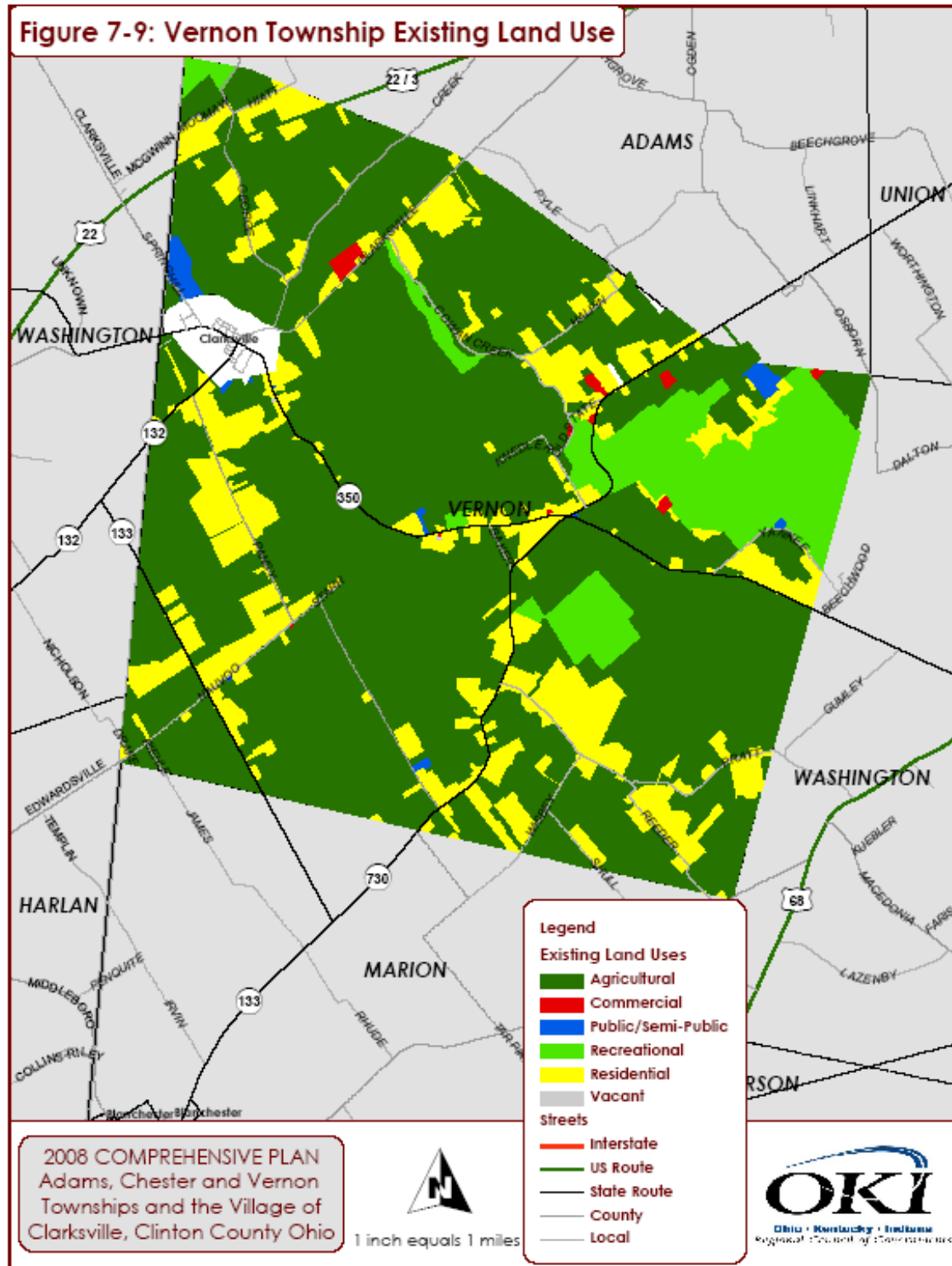
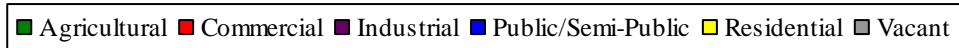
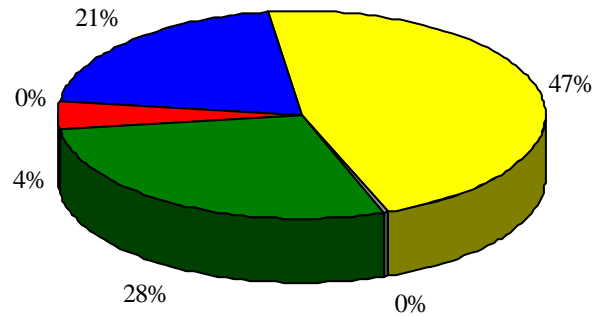


Figure 7-10
Village of Clarksville Existing Land Use

Existing Land Use	Acres	% of Total
Agricultural	83.2	28.2%
Commercial	13.2	4.5%
Industrial	0.0	0.0%
Public/Semi-Public	60.8	20.6%
Residential	136.5	46.3%
Vacant	1.0	0.4%
Total	294.7	

Figure 7-11
Percent of Total Land Area by Land Use
Village of Clarksville, Clinton County, OH



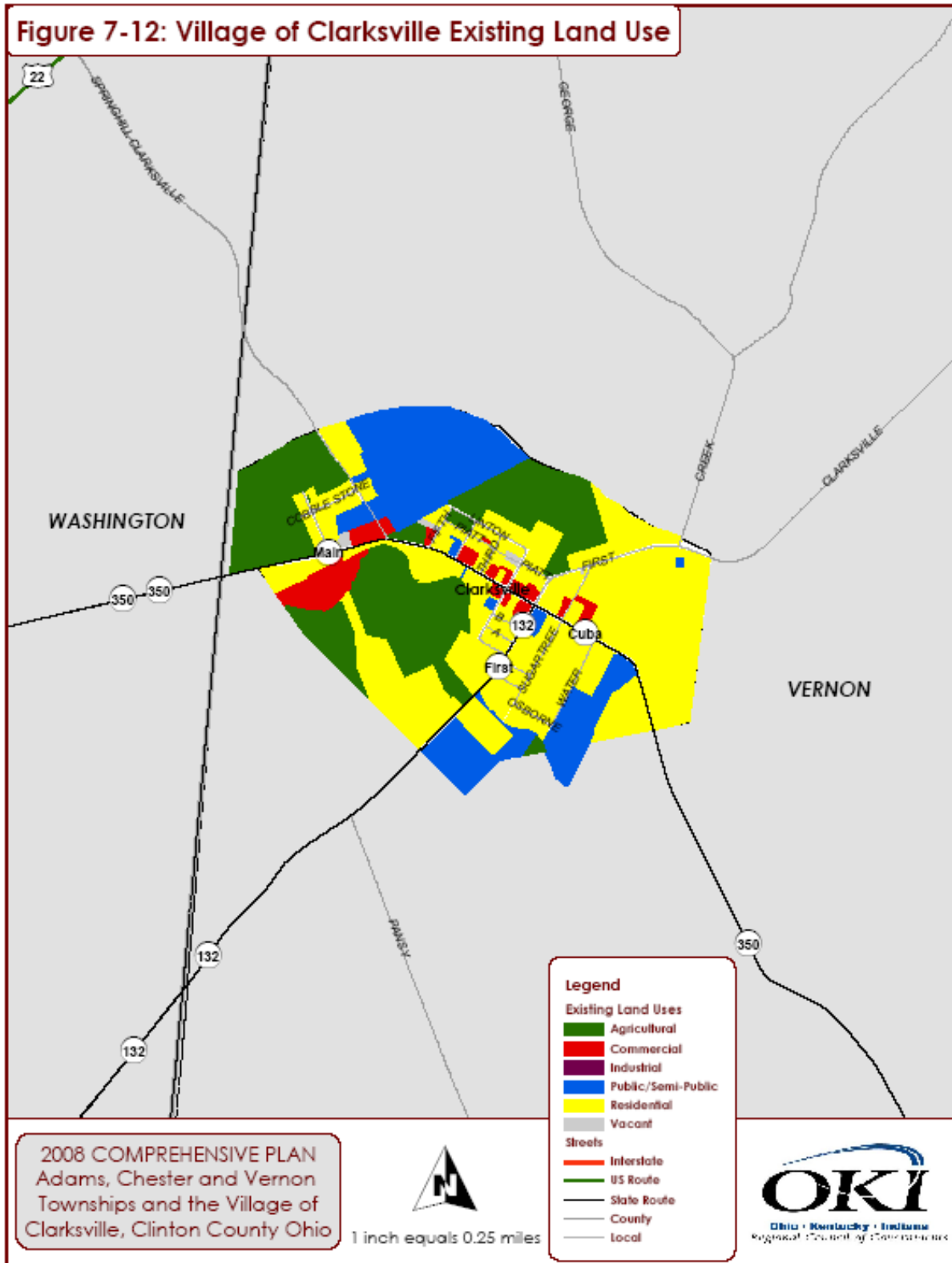
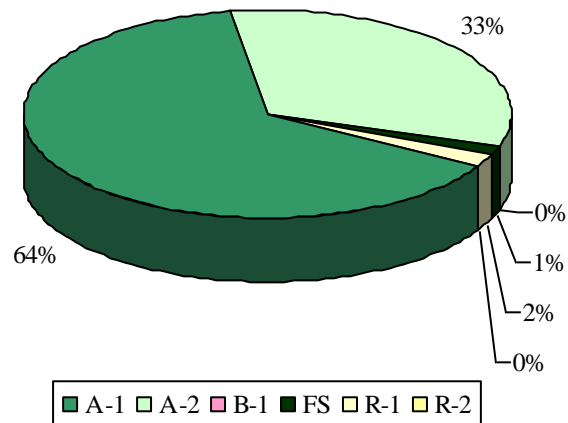


Figure 7-13
Adams Township Existing Zoning

Zone	Acres	% of Total
A-1	8,890.5	64.1%
A-2	4,513.5	32.6%
B-1	0.4	0.0%
FS	193.0	1.4%
R-1	265.1	1.9%
R-2	1.1	0.0%
Total	13,863.6	

Figure 7-14
Percent of Total Land by Zoning Type
Adams Township, Clinton County, OH



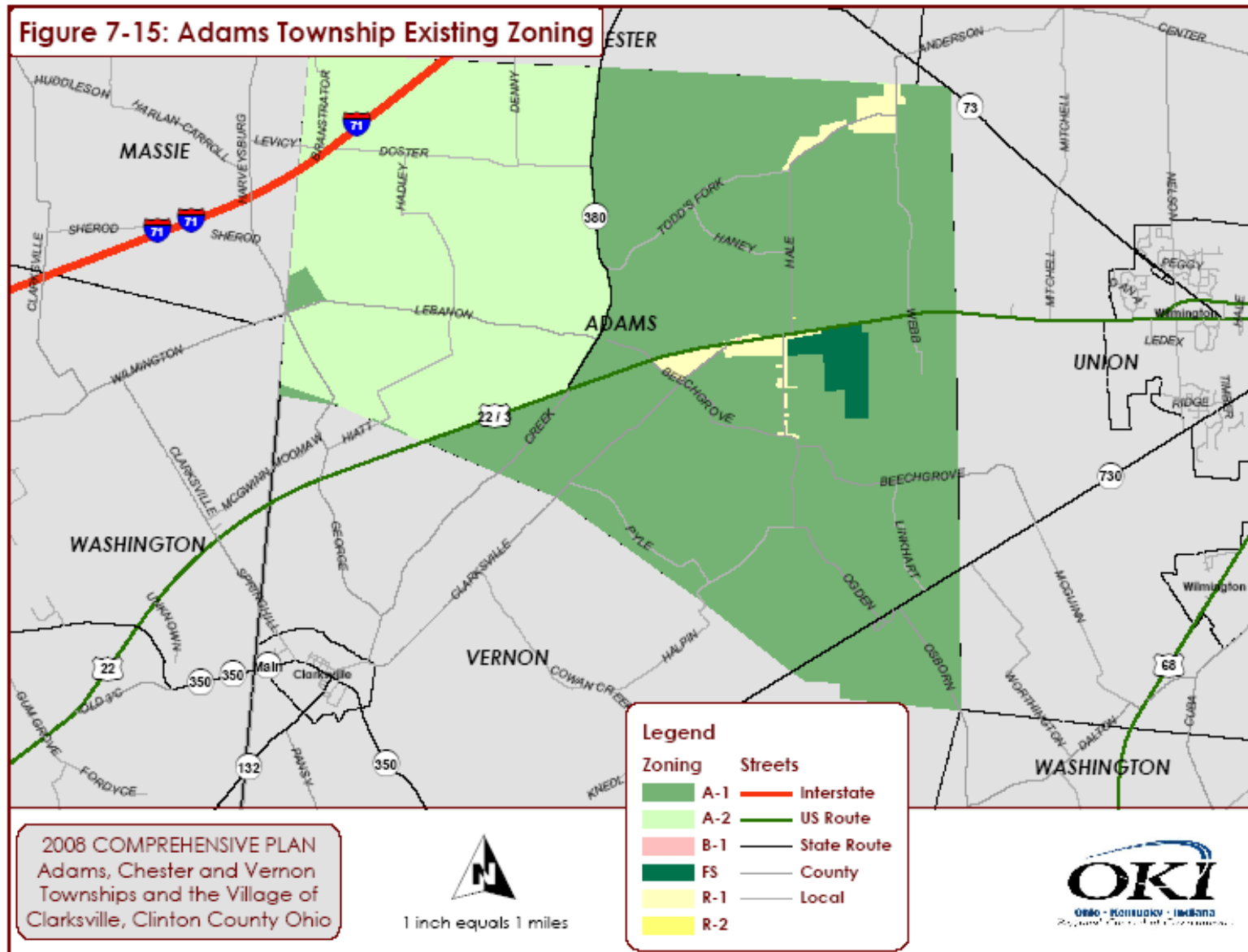


Figure 7-16
Chester Township Existing Zoning

Zone	Acres	% of Total
A-1	4,069.7	20.1%
A-2	15,438.4	76.1%
B-2	34.8	0.2%
B/I	736.2	3.6%
Total	20,279.2	

Figure 7-17
Percent of Total Land by Zoning Type
Chester Township, Clinton County, OH

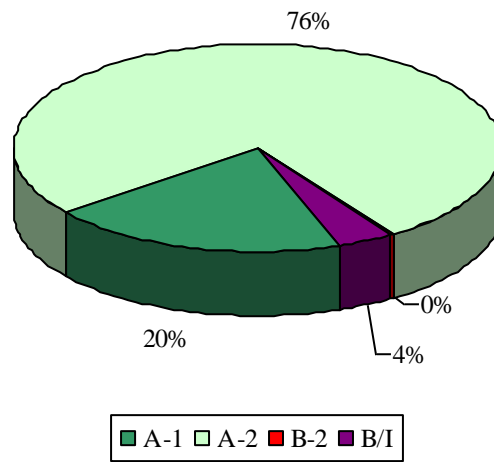


Figure 7-18: Chester Township Existing Zoning

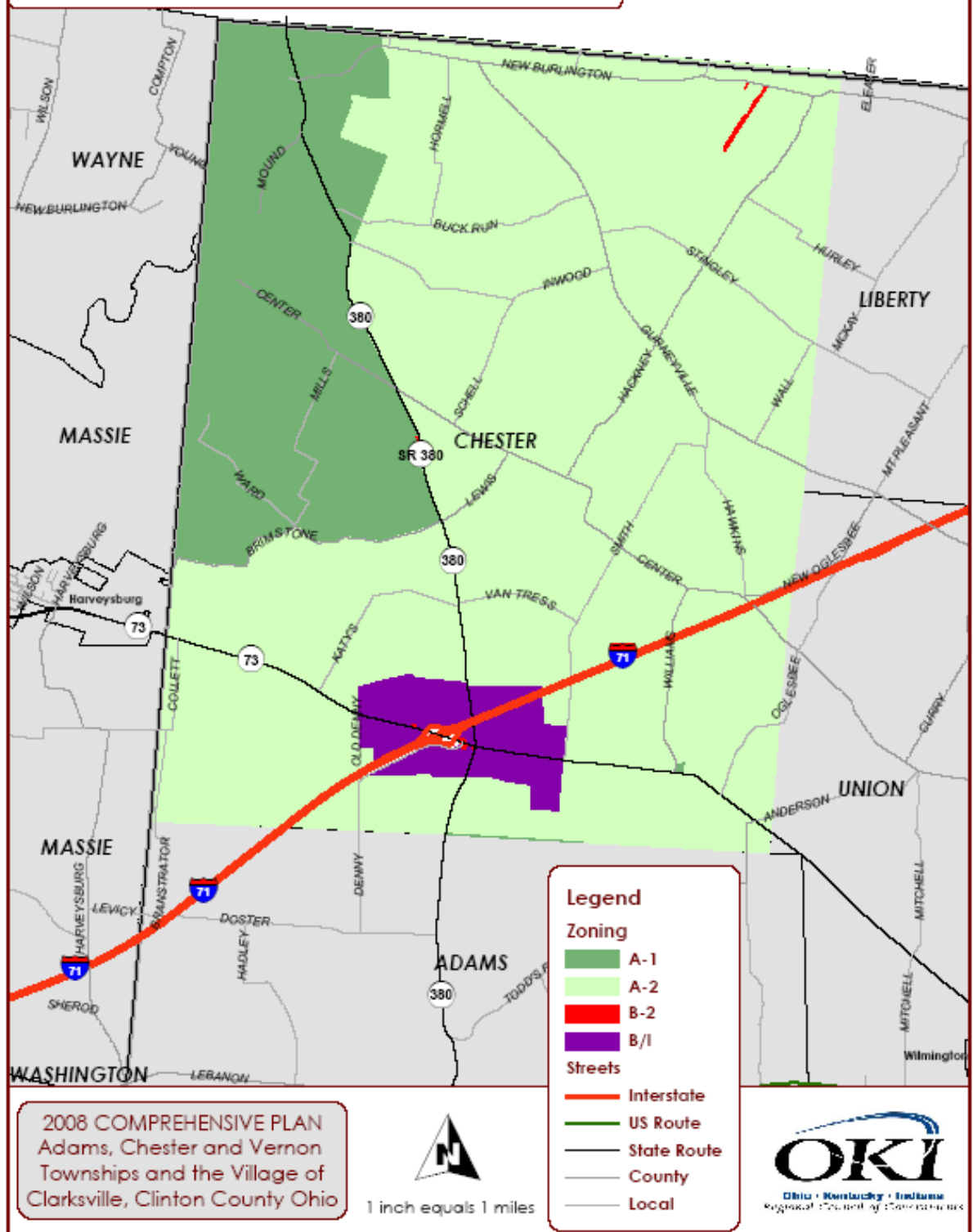
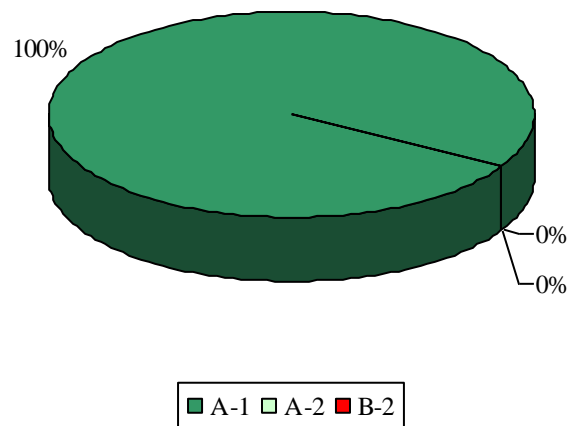


Figure 7-19
Vernon Township Existing Zoning

Zone	Acres	% of Total
A-1	17,577.6	98.2%
A-2	2.0	0.0%
B-2	1.6	0.0%
Total	17,892.6	

Figure 7-20
Percent of Total Land by Zoning Type
Vernon Township, Clinton County, OH



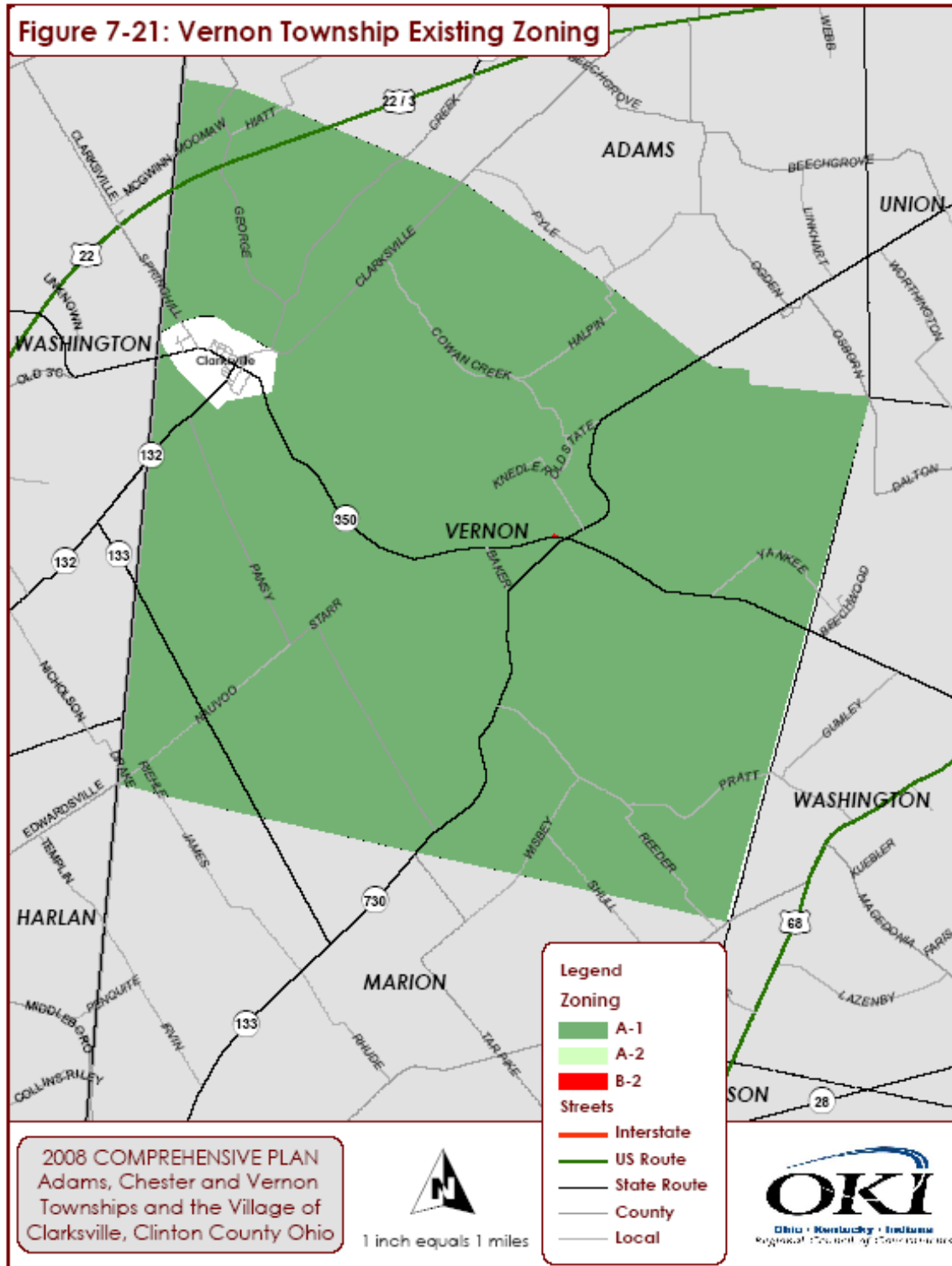


Figure 7-22
Adams Township Existing Land Uses by Zone (in Acres)

Zone	Agricultural	Commercial	Public/Semi-Public	Recreational	Residential	Vacant	Total
A-1	6,898.5	25.8	103.2	543.5	1,517.3	17.0	9,105.4
A-2	3,836.6	0.0	17.6	75.8	392.8	3.2	4,326.0
B-1	0.0	0.0	0.0	0.0	0.4	0.0	0.4
B-2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B/I	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FS	193.3	0.0	0.0	0.0	0.0	0.0	193.3
R-1	16.2	4.1	2.2	0.0	227.9	1.8	252.2
R-2	0.0	0.0	0.0	0.0	1.1	0.0	1.1
Total	10,944.6	29.9	123.0	619.4	2,139.5	22.0	13,878.3

Figure 7-23
Adams Township Existing Land Uses by Zone (Percentages)

Zone	Agricultural	Commercial	Public/Semi-Public	Recreational	Residential	Vacant	% of Total Land Area
A-1	75.8%	0.3%	1.1%	6.0%	16.7%	0.2%	65.6%
A-2	88.7%	0.0%	0.4%	1.8%	9.1%	0.1%	31.2%
B-1	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%
B-2	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
B/I	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
FS	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%
R-1	6.4%	1.6%	0.9%	0.0%	90.4%	0.7%	1.8%
R-2	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%

Figure 7-24

Zone	Agricultural	Commercial	Public/Semi-Public	Recreational	Residential	Vacant	Total
A-1	1,526.4	2.2	26.3	1,803.8	742.9	0.0	4,101.7
A-2	13,408.8	0.0	22.0	167.6	1,829.7	0.0	15,428.2
B-1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B-2	0.0	7.6	0.0	0.7	26.8	0.0	35.2
B/I	620.2	117.5	0.0	0.0	27.1	0.0	764.9
FS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R-1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R-2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	15,555.4	127.4	48.4	1,972.2	2,626.6	0.0	20,330.0

Figure 7-25

[illegible]

Figure 7-26

Zone	Agricultural	Commercial	Public/Semi-Public	Recreational	Residential	Vacant	Total
A-1	12,886.1	73.0	117.8	1,615.0	2,934.8	2.1	17,628.8
A-2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B-1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B-2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B/I	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R-1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R-2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	12,886.1	73.0	117.8	1,615.0	2,934.8	2.1	17,628.8

Figure 7-27

[illegible]

Land Use and Natural Systems

Figures 7-28, 7-29, 7-30, and 7-31 identify land within the study area by two categories of potential environmental constraints. The amount of land within floodplain and steeply sloped areas was identified and broken down by existing land use type for each of the townships and the Village.

Areas located within a 100 year floodplain are subject to a 1% or greater chance of flooding in any given year. Floodways are those areas within the floodplain of a stream channel or other watercourse that must be reserved to discharge a base flood without cumulatively increasing the elevation of the water surface by more than one foot (1'). Floodways lie within the floodplain area, but have more stringent restrictions against development than floodplains. Standards, requirements, and administrative procedures regarding development within a floodplain district are provided in detail through the Flood Damage Prevention Regulations adopted by the Clinton County Commissioners. Steep slopes occur in locations with a grade of 15% or higher.

These two constraint types are important to consider because land use and development potential may be limited at these locations. Identifying these areas as constrained does not mean that land in these locations is not or may not be developed; it only means that certain characteristics are present which could make development more challenging. Special construction techniques, permits, or additional studies may be required for projects in constrained development areas.

Figures 7-28, 7-29, 7-30, and 7-31 also show the sum of constrained land in each of the townships and Village. This sum includes area affected by any or all of the limiting natural features. The sum of non-constrained land column in the tables is the total land in the study area which is not affected by any of the limiting features.

The total land area in Adams Township affected by floodplains and steep slopes is 7.7%, or approximately 1,074 acres. In Chester Township, 12.1% of land (2,446 acres) is affected by the limiting factors. Vernon Township is the most affected Township, with 20.9% of land (3,684 acres) limited mainly by steep slopes. The Village of Clarksville is the least affected portion of the study area, with 0.4% of land, or 72 acres, constrained by the two factors. Figures 7-32, 7-33, and 7-34 show the locations of these natural constraints in the study area.

The existing land use with the largest amount of constraining features in every portion of the study area is agricultural (between 6% and 7% in Adams and Chester Townships, more than 13% in Vernon Township, and 0.2% in Clarksville). Between 4% and 5% of recreational uses in Chester and Vernon Townships are also constrained. Only small percentages of land in other categories are affected. Virtually none of the vacant land in the study area is constrained. Since agricultural and vacant land uses are those most likely to be developed in the future, techniques for protection or mitigation may be a consideration for the constrained agricultural uses.

Figures 7-28, 7-29, 7-30, and 7-31 also break down each land use by the percentage of that land use located within each constraining natural feature. In each of the three townships, the type of existing land use most affected by constraining features is recreation. Over 18% of that land use in Adams Township, 47.7% in Chester Township, and 55.2% in Vernon Township are located in floodplain or steep slope areas, with the majority located in floodplain areas. This is not surprising, since recreational uses are often used to protect these types of natural features, and

may be placed in areas where other more intensive land uses could be damaged or threatened by floods. Similarly, public/semi-public land uses are the most constrained in Clarksville, with approximately 18% of that use constrained mainly by floodplains.

Taking into consideration all of the residential uses, 5.4% of these land uses in Adams Township, 4.8% in Chester Township, 12.3% in Vernon Township, and 0.7% in Clarksville are located in a constrained area. A majority of this land in Adams and Chester Townships and the Village of Clarksville is located in the floodplain. While these percentages may appear fairly low, a number of individual properties may be affected.

A small number of existing commercial land uses in the three townships are located in a constrained area, mostly in steeply sloped areas. In Clarksville, however, 6.5% of commercial uses are in the floodplain. Given the limited amount of commercial land uses in the Village, this is a significant number.

Figure 7-28
Adams Township Land Use and Natural Systems

	Total Land		Floodplain			Steep Slopes			Sum of Constrained Land*			Non-Constrained Land		
Existing Land Use	Acres	Percent of Total Land Area	Acres	% of Use	% of Total Land Area	Acres	% of Use	% of Total Land Area	Acres	% of Use	% of Total Land Area	Acres	% of Use	% of Total Land Area
Agricultural	10,914.8	78.5%	542.0	5.0%	3.9%	340.4	3.1%	2.4%	863.0	7.9%	6.2%	10,051.8	92.1%	72.2%
Commercial	171.5	1.2%	0.0	0.0%	0.0%	1.2	0.7%	0.0%	1.0	0.6%	0.0%	170.5	99.4%	1.2%
Public/Semi-Public	286.4	2.1%	14.0	4.9%	0.1%	10.3	3.6%	0.1%	24.0	8.4%	0.2%	262.4	91.6%	1.9%
Recreational	392.6	2.8%	69.0	17.6%	0.5%	3.6	0.9%	0.0%	71.0	18.1%	0.5%	321.6	81.9%	2.3%
Residential	2,125.4	15.3%	96.9	4.6%	0.7%	18.0	0.8%	0.1%	114.0	5.4%	0.8%	2,011.4	94.6%	14.5%
Vacant	22.0	0.2%	0.0	0.0%	0.0%	1.1	5.0%	0.0%	1.0	4.5%	0.0%	21.0	95.5%	0.2%
Totals	13,912.7	100.0%	721.9		5.2%	374.6		2.7%	1,074.0		7.7%	12,838.7	92.3%	92.3%

Figure 7-29
Chester Township Land Use and Natural Systems

	Total Land		Floodplain			Steep Slopes			Sum of Constrained Land*			Non-Constrained Land		
Existing Land Use	Acres	Percent of Total Land Area	Acres	% of Use	% of Total Land Area	Acres	% of Use	% of Total Land Area	Acres	% of Use	% of Total Land Area	Acres	% of Use	% of Total Land Area
Agricultural	15,496.7	76.4%	287.7	1.9%	1.4%	1,145.1	7.4%	5.6%	1,428.0	9.2%	7.0%	14,068.7	90.8%	69.4%
Commercial	106.8	0.5%	0.0	0.0%	0.0%	4.7	4.4%	0.0%	5.0	4.7%	0.0%	101.8	95.3%	0.5%
Public/Semi-Public	160.2	0.8%	0.3	0.2%	0.0%	0.9	0.6%	0.0%	1.0	0.6%	0.0%	159.2	99.4%	0.8%
Recreational	1,860.1	9.2%	881.8	47.4%	4.4%	11.8	0.6%	0.1%	887.0	47.7%	4.4%	973.1	52.3%	4.8%
Residential	2,624.2	12.9%	66.5	2.5%	0.3%	58.6	2.2%	0.3%	125.0	4.8%	0.6%	2,499.2	95.2%	12.3%
Vacant	23.2	0.1%	0.0	0.0%	0.0%	0.3	1.3%	0.0%	0.0	0.0%	0.0%	23.2	100.0%	0.1%
Totals	20,271.2	100.0%	1,236.3		6.1%	1,221.5		6.0%	2,446.0		12.1%	17,825.2	87.9%	87.9%

Figure 7-30
Vernon Township Land Use and Natural Systems

	Total Land		Floodplain			Steep Slopes			Sum of Constrained Land*			Non-Constrained Land		
Existing Land Use	Acres	Percent of Total Land Area	Acres	% of Use	% of Total Land Area	Acres	% of Use	% of Total Land Area	Acres	% of Use	% of Total Land Area	Acres	% of Use	% of Total Land Area
Agricultural	12,902.1	73.1%	675.5	5.2%	3.8%	1,764.8	13.7%	10.0%	2,422.0	18.8%	13.7%	10,480.1	81.2%	59.4%
Commercial	85.5	0.5%	1.8	2.1%	0.0%	1.9	2.2%	0.0%	4.0	4.7%	0.0%	81.5	95.3%	0.5%
Public/Semi-Public	104.8	0.6%	7.0	6.7%	0.0%	3.2	3.1%	0.0%	10.0	9.5%	0.1%	94.8	90.5%	0.5%
Recreational	1,601.0	9.1%	726.0	45.3%	4.1%	186.3	11.6%	1.1%	884.0	55.2%	5.0%	717.0	44.8%	4.1%
Residential	2,945.9	16.7%	136.6	4.6%	0.8%	235.8	8.0%	1.3%	363.0	12.3%	2.1%	2,582.9	87.7%	14.6%
Vacant	2.1	0.0%	0.7	33.7%	0.0%	0.0	1.8%	0.0%	1.0	47.6%	0.0%	1.1	52.4%	0.0%
Totals	17,641.4	100.0%	1,547.6		8.8%	2,192.2		12.4%	3,684.0		20.9%	13,957.4	79.1%	79.1%

Figure 7-31
Village of Clarksville Land Use and Natural Systems

	Total Land		Floodplain			Steep Slopes			Sum of Constrained Land*			Non-Constrained Land		
Existing Land Use	Acres	Percent of Total Land Area	Acres	% of Use	% of Total Land Area	Acres	% of Use	% of Total Land Area	Acres	% of Use	% of Total Land Area	Acres	% of Use	% of Total Land Area
Agricultural	12,902.1	73.1%	26.0	0.2%	0.1%	3.7	0.0%	0.0%	27.0	0.2%	0.2%	12,875.1	99.8%	73.0%
Commercial	85.5	0.5%	5.6	6.5%	0.0%	0.2	0.3%	0.0%	6.0	7.0%	0.0%	79.5	93.0%	0.5%
Public/Semi-Public	104.8	0.6%	16.4	15.6%	0.1%	2.9	2.8%	0.0%	19.0	18.1%	0.1%	85.8	81.9%	0.5%
Recreational	1,601.0	9.1%	0.0	0.0%	0.0%	0.0	0.0%	0.0%	0.0	0.0%	0.0%	1,601.0	100.0%	9.1%
Residential	2,945.9	16.7%	19.2	0.7%	0.1%	0.7	0.0%	0.0%	20.0	0.7%	0.1%	2,925.9	99.3%	16.6%
Vacant	2.1	0.0%	0.1	3.0%	0.0%	0.0	0.2%	0.0%	0.0	0.0%	0.0%	2.1	100.0%	0.0%
Totals	17,641.4	100.0%	67.3		0.4%	7.6		0.0%	72.0		0.4%	17,569.4	99.6%	99.6%

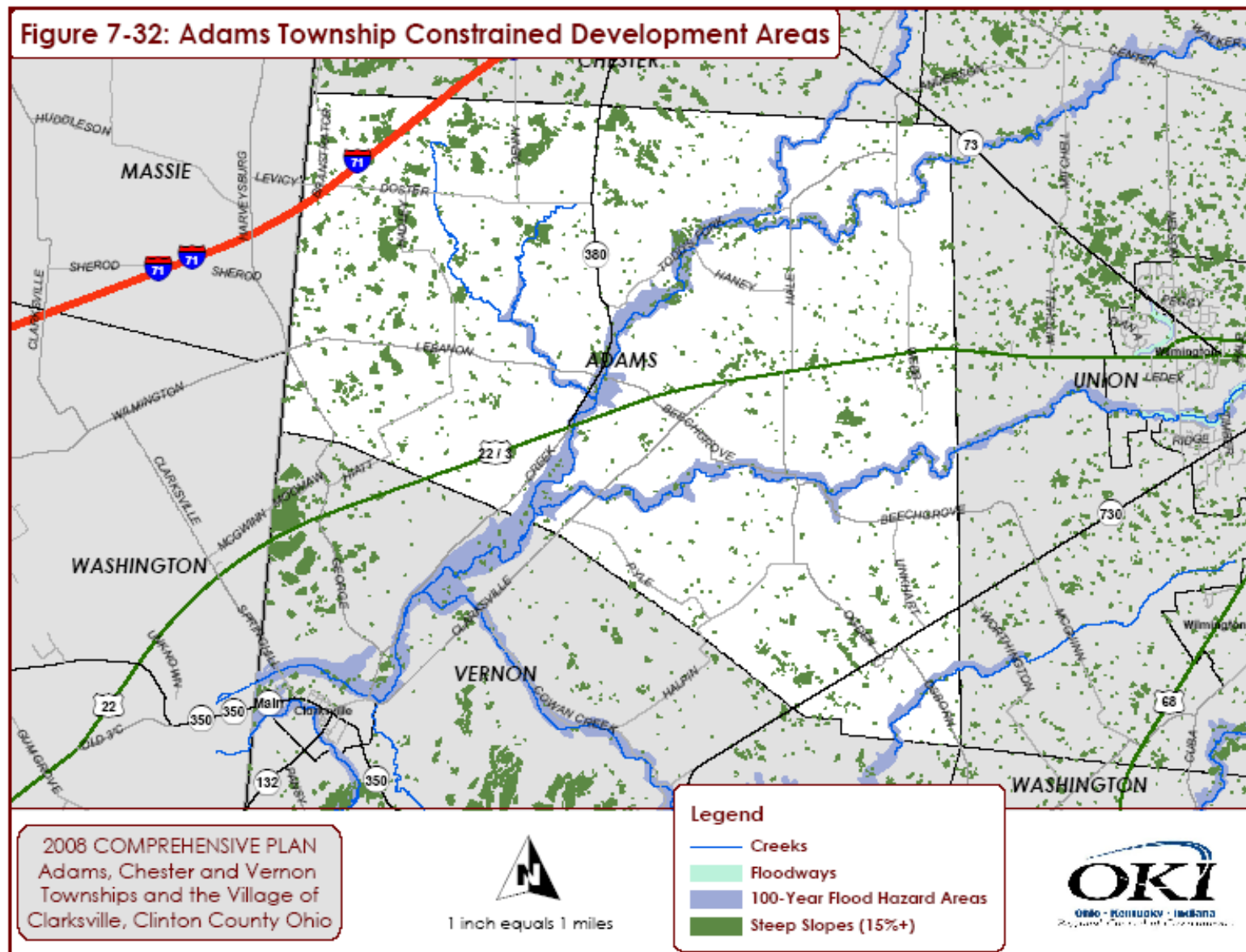


Figure 7-33: Chester Township Constrained Development Areas

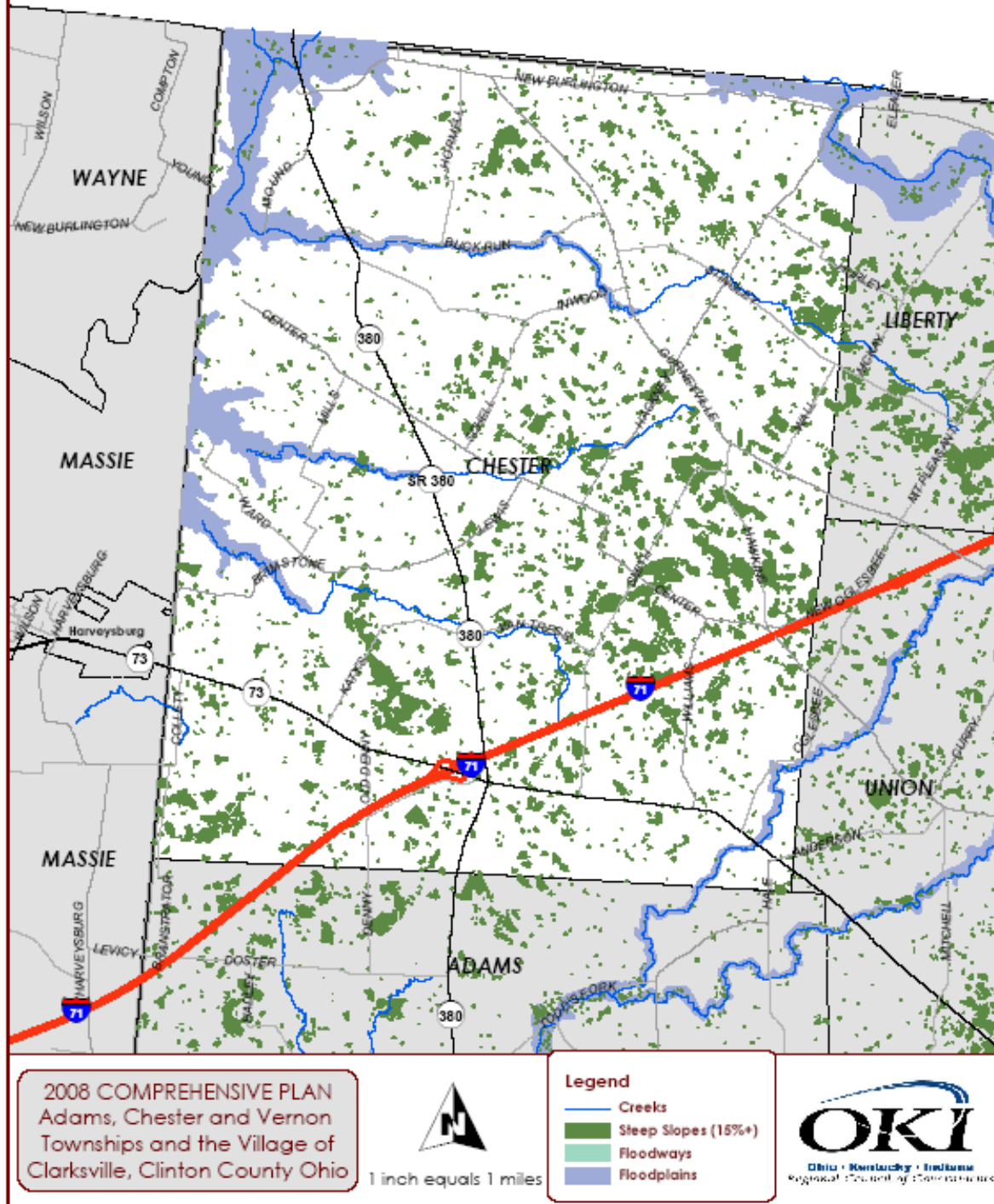
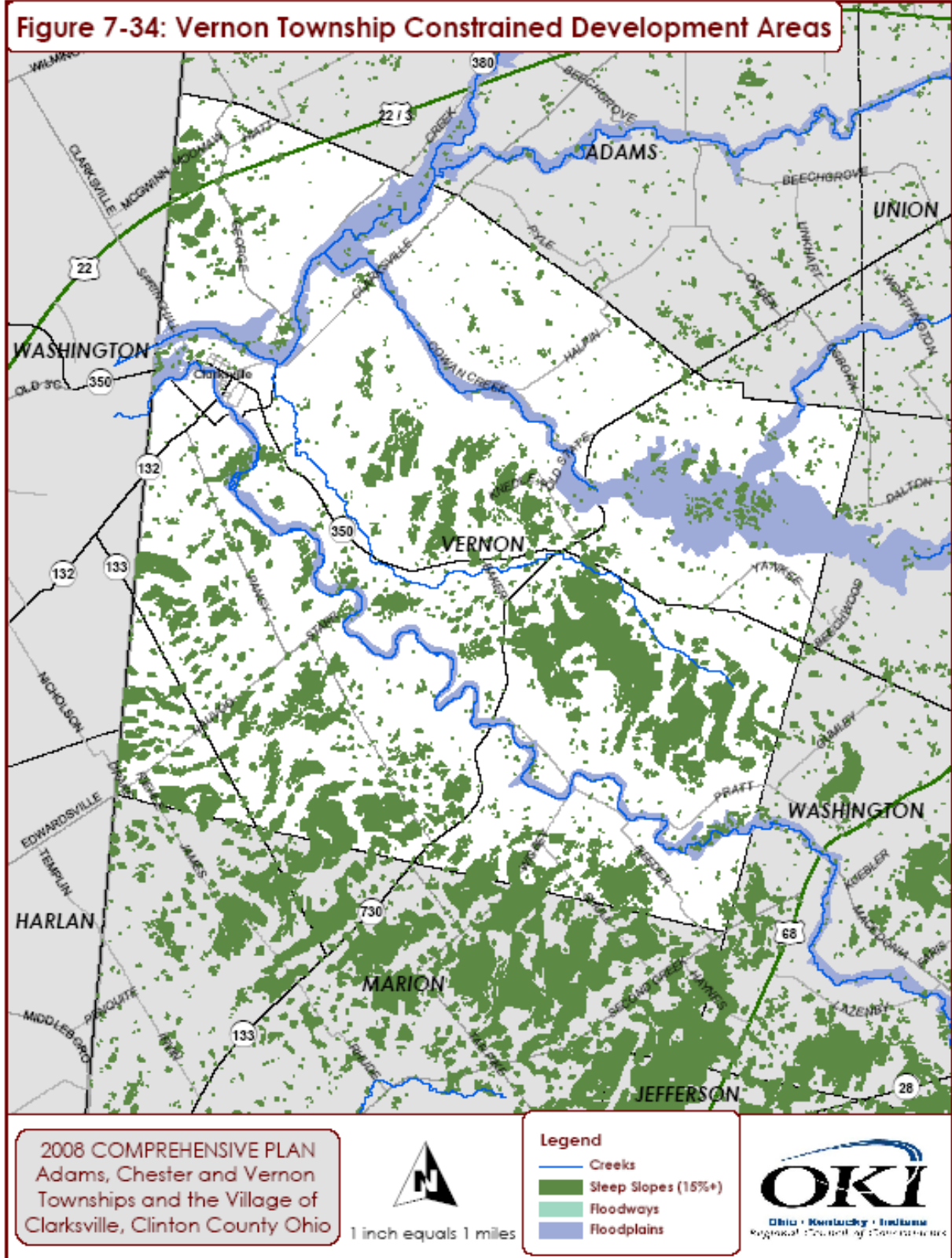


Figure 7-34: Vernon Township Constrained Development Areas



Future Land Use Needs

If current land use trends continue, 3,383 acres would need to be developed to accommodate the area's projected 2030 population. So, if current trends continue, the total developed land area in 2030 would be 20,998 acres – an area about the size of Chester Township itself. This projection is broken down by traditional land use category in Figure 7-35. These numbers are based on the optimistic population projections presented in the Population Chapter of this plan. The study area's 2020 population is estimated to be 7,552, a 19% increase from 2000; its population in 2030 is projected to be approximately 8,242. This plan should ensure the availability of adequate land and public facilities and services during the planning period to serve these new residents.

The total area needed to accommodate the study area's population in 2030 (20,998 acres) represents a 19% increase in developed acres over the developed area in 2006 (17,615 acres). Approximately 21% of the study area is currently in residential development (12,766 acres). The greatest amount of additional acreage needed to support the projected population is for residential land uses (an additional 2,294 acres) assuming overall average residential lot size remains at 4.25 acres. The projected additional commercial acreage totals 94 acres over the planning period, or an average annual increment of approximately four (3.92) acres. As a result, approximately 25% of the study area would be in residential development. This number could change based on development techniques applied, such as conservation design, transit-friendly development, low impact development or large lot subdivisions.

An adequate supply of suitable vacant and agricultural land is available in the study area to accommodate the needs of the projected population, depending on the timing, location and cost of new development, and depending on the importance or worth of the agricultural sector to the area. To that end, the unavailability of centralized sewer may limit growth.

Methodology: Gross Acreage Needed to Accommodate Projected Population

The methodology used to determine the gross acreage required in each conventional land use category to accommodate projected population was very conservative and relatively unsophisticated. The first step was to assume that natural and historical resources would not change significantly with increases in population. It was also assumed that the development of land would result in a decrease in the existing vacant and agricultural land use categories.

The acreage needed to accommodate future commercial, industrial and public, semi-public and park uses was calculated for each category based on the acreage per person per category in 2006. Based on the study area's estimated 2006 population of 6,731, per capita acreage by category was calculated as 0.1 acres for commercial uses, and 0.0 acres for industrial uses, and 0.7 acres for public, semi-public and park uses. These ratios were then used as a standard and applied to the populations projected for 2020 and 2030.

The acreage needed to accommodate future Residential land use was calculated on a household basis. That is, housing projections from Chapter 2 were multiplied by 4.25 acres per unit (the

overall average size for existing residential land uses in 2006). These ratios were then used as a standard and applied to the populations projected for 2020 and 2030.

The acreage required to accommodate the study area's projected population will vary if growth occurs at a slower or faster actual rate, and as the trend in residential parcel sizes changes. Population projections are based on best available information, and are planning tools which can be amended as trends and conditions change.

Figure 7-35
Projected Land Use Needs, 2005 - 2025

	Total Acres 2006	Acres Per Person 2006	Total Acres Needed 2020	Total Acres Needed 2030	% Increase 2006-2030
Residential	12,766	1.9	14,025	15,060	18%
Commercial	423	0.1	474	517	22%
Industrial	0.61	0.0	0.68	0.74	22%
Public/Semi Public & Parks & Recreation	4,426	0.7	4966	5,420	22%
Total	17,615		19,466	20,998	19%

Future Land Use and Public Facilities

Existing public facilities in the study area are limited. As noted in Chapter 5, only the Village of Clarksville has public sanitary sewers at this time. Only one expansion project is underway, which will connect the Village sewer system with the Clinton-Massie Schools sewer system. No other facilities will be linked to the Clarksville sewer as part of that project. Following the expansion, excess capacity would seem to be available to serve projected growth in the Village.

The closest sewer system outside of the study area is operated by the Village of Waynesville in Warren County and extends east along State Route 73 to the Village of Harveysburg on the border with Chester Township. The system currently has excess capacity available, but does not extend across the County border.

The Clinton County Commissioners hired ME Companies to inventory existing water and sewer systems in the County, and to determine opportunities for the modification, expansion, or creation of new water and sewer systems in an effort to prepare for future growth in the County. The study is in its initial stages.

Western Water is the sole public water provider in the study area and has indicated that excess capacity is available, and will available for foreseeable future developments in the area.

Limitations with the existing infrastructure may affect growth within the study area. As noted in Chapter 5, soils in the area can limit the use of on-site sewage treatment systems. Plans for compact and efficient development would be hindered by the lack of centralized sewer throughout much of the study area.

Land Use and Transportation

In order to maintain the levels of service currently provided as growth occurs in the townships and the village, several options are available. The relationship between land use and transportation is reciprocal. Development patterns shape travel patterns in that the design of

suburban residential and commercial areas can make transit and walking a challenge and the separation between land uses in low-density developments typically make driving a necessity.

Local land use and transportation techniques, implemented concurrently, and focusing on moving people, moving fewer people fewer miles, and improving travel quality can benefit the transportation system. The concept of Transportation Demand Management (TDM) focuses on changing travel behavior to mitigate traffic congestion in lieu of building infrastructure to accommodate travel needs. More specifically, TDM strategies encourage using alternatives to single-occupant vehicle (SOV) travel and shifting trips out of peak travel periods, or even eliminating some trips all together.

Three objectives for managing travel demand are to reduce the number of single occupant vehicle trips, to reduce trip lengths and to increase modal choice. There are many land use planning and development strategies that can be applied locally to achieve these objectives.

Diversity and Destinations

Automobile-oriented development patterns are associated with the separation of land uses and increased distances between homes and workplaces. Focusing economic development in areas where residential growth is occurring can also help create land use diversity and provide more options for people to work close to where they live. Mixed use developments at the corridor level can reduce commute times by shortening the distance that people have to drive to get to the store, or to work.

Providing non-motorized connections with a mix of land uses and higher density development can reduce single-occupant vehicle trips. More people may choose to walk or ride a bike these shorter distances; however, facilities that accommodate pedestrians and bicyclists must also be in place. Compact nodes of mixed use can also generate centers of development that can be linked by convenient transit service. Mixed use centers of integrated office, retail, residential, and civic uses – of a scale appropriate to their surroundings – can concentrate uses in a manner that supports walking, biking, public transit and automobiles.

Density

Newer residential development in the townships is generally characterized by large lot subdivisions, largely due to the necessity of using onsite sewer systems. Higher densities in growing and infill areas can make transit more feasible by creating destinations and concentrated populations that may choose to use transit as an alternative to single-occupant automobile trips. “Transit development plans” can facilitate the design of a system that incorporates multiple modes of transit service, links stations/stops and adjacent land uses, and integrates station/stops into neighborhoods. The recommendations of transit development plans typically focus on the desired outcomes of transit-friendly development, including accessibility, walkability, and interconnectivity, and high levels of ridership.

Design

New businesses throughout the region are typically automobile-oriented, and have large parking areas in front of the building. They are designed for the automobile, not the pedestrian. Communities that are attractive to pedestrians and bicyclists and functional for transit use can influence travel behavior. Design elements that facilitate walking and biking can reduce SOV trips and increase modal choice. The placement of buildings, parking, landscaping, lighting, architecture details, and bicycle, pedestrian and transit facilities can reduce the visual scale of

larger buildings, provide interest at the pedestrian level, and create an atmosphere that encourages multi-modal transportation. The concept of Complete Streets provides for the design and operation of streets to enable safe access for all users. Pedestrians, bicyclists, motorists and bus riders of all ages and abilities are able to safely move along and across a complete street.

Distance

People make travel route decisions based on three factors: distance, time and personal preference. Generally speaking, people will choose the shortest route in terms of distance; however, if the shortest route has a low speed limit, multiple traffic signals and curb cuts, people will take a longer route because it will save them time.

The curvilinear cul-de-sac street pattern typical of recent subdivision design usually has very long blocks and many dead end streets. This pattern offers few route options since all traffic is typically funneled out onto a small number of arterial roads which can cause congestion. Connectivity involves a system of streets providing multiple routes and connections to the same origins and destinations. Improving street connectivity by providing parallel routes and cross connections, and a small number of closed end streets can reduce traffic on arterial streets and reduce travel time.

Neighborhoods should be linked by a network of interconnected streets and walkways as part of a larger system that provides safe motorized and non-motorized access to homes, businesses, schools, recreation facilities and services, and other destinations. These networks, designed to keep local traffic off major arterials and high-speed, through-traffic off local streets, can reduce congestion and travel time. Interconnected streets incorporating traffic calming techniques, streetscape elements and other pedestrian oriented design can also create safe and more direct routes for travel by walking and biking and reduce SOV trips.

Access Management

Traffic circulation is always important when planning for development or redevelopment. The traffic demands that are created by development along major roadways can be dramatically affected by multiple curb cuts and uncoordinated access points. Access management involves planning and coordinating the location, design and operation of driveways together with internal roadway design features. Access management techniques such as driveway spacing requirements, shared access drives, cross access easements, right in/right out only access, frontage roads, and medians can provide automobile access to businesses along the corridor in a safe and efficient way. These techniques can also help maintain capacity of the roadways and drastically improve safety.

Development along a major transportation corridor can have a considerable impact on traffic patterns and congestion. Multiple curb cuts and uncoordinated access can affect traffic flow and safety along the corridor. Appropriate access management can minimize this impact. The objective of access management is to enhance mobility, maintain roadway capacity and provide adequate access to development within the corridor while at the same time improving safety.

Roadway Improvements and Expansion

A major concern about future roadway widening and construction is the preservation of right-of-way. Critical future street connections and areas where improvements need to be made to serve existing and future residents should be identified. In order to provide adequate transportation

facilities as development occurs in the townships and the village, sufficient rights-of-way for these facilities should be set aside.

Future Land Use Map

When establishing future land use patterns, each of the elements contained in this plan should be considered. This includes areas of natural resources and constraints, the location of available water and sewer service or extensions of these facilities, the capacity of the existing roadways for absorbing additional traffic, and existing land uses. Future expansion of already developed areas and compatibility of adjacent land uses should be taken into account. The costs and values of these resources and services should also be considered. All of these topics have been addressed in the previous chapters of this plan. Consideration should be given to the interrelationships among this information and future land use patterns.

The area's Future Land Use Map should illustrate the timing and location of future growth and development over the next 20 years. Managing the timing and location of new residential and commercial development helps local officials budget for and control public costs, protect public investments and balance those public expenditures with new tax receipts.

Figure 7-36 shows the Future Land Use Map that was completed as part of the 2004 County Wide Plan. This map identifies over 40,000 acres of residentially developed land. No descriptions or densities were available to define the land use categories on this map. According to the projections in this study, this amount of land will not be absorbed with growth during the planning period. If the map shows too much future residential and commercial land for the next 20 years, local management of the timing and location of that growth – and of the cost of accompanying public infrastructure and services – is weakened. The Future Land Use Map should be based on population projections and related information.

Figure 7-36 shows an alternative example scenario for future land use. The following text includes a general description of each land use category and the general locations recommended for each type of land use. It is important to emphasize that the land use categories are purposefully broad. The specific listing of what uses will be permitted in each of the zoning districts, and what densities (i.e., minimum lot size requirements) will be permitted, should be set by each of the legislative bodies through the adoption or amendment of their zoning ordinances.

Commercial Highway

Land areas so classified are either used presently, or are recommended to be used primarily for commercial activities, providing goods and services to the area's population and office or related activities. Uses may include local service, convenience shopping facilities and general retail, service and office establishments that serve a more broadly based market, and commercial and business uses that serve the motoring public.

Although scattered sites of commercial uses currently exist, the focus of additional commercial uses is recommended in this example to be on land surrounding the I-71 and SR 73 intersection. This area currently has existing commercial activity and is the location for a potential casino. One of the most important considerations in connection with commercial development will be

timing. Location of new, or expansion of existing, commercial facilities should be based upon need. Premature development, not based on sound findings of need, will work to the detriment of the area.

Legend

- ★ Unincorporated Villages
- 04 Future Land Use**
- Type_
 - Agricultural Protection
 - Very Low Density Residential
 - Low Density Residential
 - Medium to High Density Residential
 - Commercial Highway
 - Industrial - Business General Use
 - Public / Quasi-Public

1 inch equals 2 miles
Source: Clinton County Geographic Information Systems
Department and OKI Regional Council of Governments



1 inch equals 2 miles



Industrial – Business General Use

Land areas so classified are those recommended to be continued to be used, to be newly developed, or to be held in reserve for industrial purposes. Uses may include resources and services essential to industrial development, including manufacturing, office/research, warehousing and distribution, and other similar industrial uses. At this time no additional land is identified for these uses.

Residential

The density of development should be controlled by the recommended density range and the availability community facilities, transportation and infrastructure. Density is intended to be the major control of residential development; therefore, concepts such as "Cluster Type Development", "Conservation Subdivision Design" and "Planned Unit Development" are strongly encouraged. Such concepts promote flexible and innovative design, making the best use of existing landforms, and preserving and integrating natural areas into such designs. The amount of land designated as Residential in this example scenario is approximately 13,611 acres. This land does not include all of the existing residential uses in the study area, but focuses on those areas that are expected to see additional residential growth. The actual number of units that could be accommodated in this land area will vary depending on the densities of development and design of subdivisions that are approved. The three residential density categories are as follows:

Very Low Density Residential - 0.2 dwelling units per acre or less (Average >5 acre lot sizes) - Land so classified is either used presently, or is recommended to be used for agriculture, traditional farm homestead, and very low density single-family residential development in areas that do not demand high levels of public services, transportation and infrastructure.

Areas identified for Very Low Density Residential development include locations north of SR 73 and west of SR 380. This area has some potential for growth depending on the availability of sewer. Additionally, these areas contain some existing residential lots of this size. Housing demand may increase in this area if new commercial uses are implemented at the intersection of I-71 and SR 73. This area also has potential for extension of existing water lines.

Low Density Residential – 0.2 - 1.0 dwelling units per acre (Average 1-5 acre lot sizes) - Land so classified is either used presently, or is recommended to be used for low-density, single-family residential, plus customary accessory and compatible supportive uses, in areas suitable for on-site septic fields and domestic water wells.

Areas identified for Low Density Residential development include areas along the east side of SR 380 in Chester Township and along SR 730 in the southeast corner of Vernon Township that are currently developed. Additional land is identified for Low Density Residential development along the eastern border of Chester and Adams Township. This growth area could continue to develop as an extension of the growth in Union Township and the City of Wilmington. This area is currently served by water and has access to major roadways: US 22/3 and SR 73.

Medium to High Density Residential – 1.0 dwelling units per acre or more (Average <1 acre lot sizes) - Land so classified is either used presently, or is recommended to be used for single-family residential and limited multi-family residential, plus its normal accessory and compatible supportive uses, in areas where public sewer and water is available.

Areas identified for Medium to High Density Residential Development are focused in the area north of Clarksville. This area is currently served with water and has the possibility to be served by extension of sewer from Clarksville. This area has access via SR 22/3.

Public/Quasi-Public

Land so classified is either used presently, or is recommended to be used, for public and quasi public uses such as school facilities, hospitals, colleges, universities, park and recreational facilities, fire and police protection facilities, and all other types of facilities which involve provision of a public service or interest function to the area (e.g., federal, state, regional, and local government offices and other facilities, post offices, museums, cemeteries, etc.). At this time no additional land is identified for these uses.

Mixed Use

Land so classified is either used presently, or is recommended to be used for developments containing a variety of housing densities, and a mixture of residential and non-residential use.

The Village of Clarksville is identified as a mixed use area because of its unique land use patterns that include a variety of residential, commercial and public uses. An additional area south of the Village along SR 132 has also been identified for mixed uses as an extension of this development pattern.

Agricultural Protection

Land so classified is either used presently, or is recommended to be used for agricultural and related rural uses and is not anticipated or recommended to be developed for more intense purposes. Uses may include dairy farming, pasturage, cash cropping, stables (public and private), as well as other agricultural and related uses, land in which the development rights have been purchased or transferred, natural areas and ancillary residential uses.

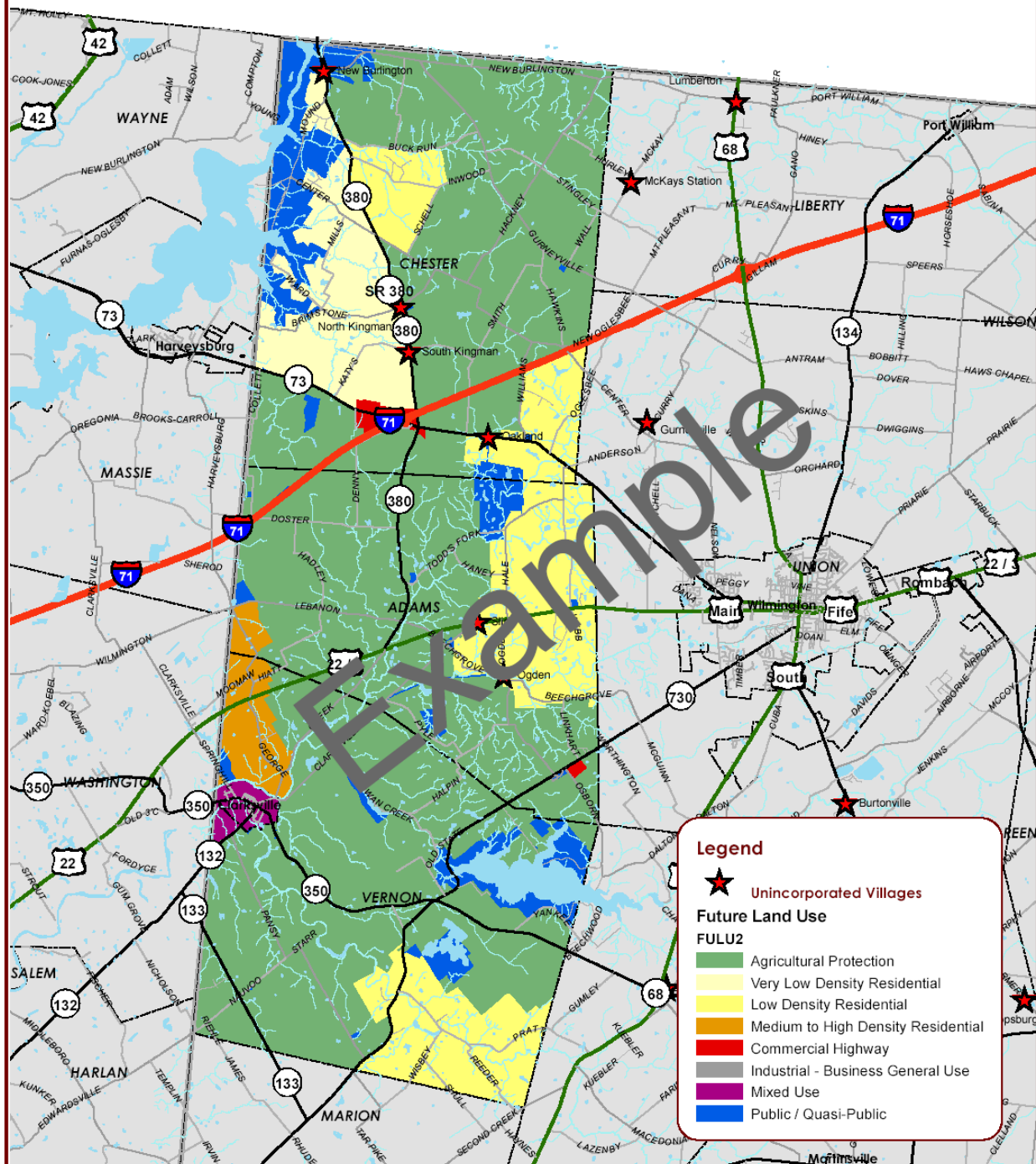
The remaining areas of the Adams, Vernon and Chester Townships are identified as Agricultural Protection areas. These areas are currently characterized by development patterns that are very large lot residential uses or active farmland. Other land characteristics in these areas include limited access to water, sewer and transportation facilities and the existence of natural features such as floodplains, hydric soils, prime agricultural soils, wetlands and steep slopes.

A comparison of the land uses, by acreage, is found in Figure 7-38. As these numbers show, the Future Land Use Example Scenario is closer to meeting the needs projected in this plan for

accommodating additional residential and commercial growth than the 2004 Future Land Use Map.

Much discussion occurred during this study regarding the potential for the location of a casino in the vicinity of the intersection of I-71 and SR 73. Should this potential become reality, the information contained within this document, including projections and land use needs, should be revisited and revised as necessary.

Figure 7-37: Future Land Use Example Scenario



2008 COMPREHENSIVE PLAN
Adams, Chester and Vernon
Townships and the Village of
Clarksville, Clinton County Ohio



1 inch equals 2 miles

Source: Clinton County Geographic Information Systems
Department and OKI Regional Council of Governments



Figure 7-38
Future Land Use Categories

Future Land Use Categories	Acres 2004 Future Land Use	Acres Example Scenario	Difference
Agricultural Protection	10,821	36,526	25,706
Very Low Density Residential	19,371	3,568	-15,804
Low Density Residential	19,636	8,773	-10,863
Medium to High Density Residential	1,236	1,270	34
Commercial Highway	343	283	-60
Public / Quasi-Public	3,332	4,210	877
Mixed Use	-	401	401
Clarksville/No Designation	291		-291

CHAPTER 8

Inventory and Analysis of Transportation

Introduction

The purpose of this element is to inventory the existing transportation system and to project future transportation needs for the townships and Clarksville.

Transportation facilities must be examined in the context of land use because different land uses generate different numbers and patterns of “trips.” That is, land development or redevelopment may increase the need for additional travel capacity, and additional capacity may encourage more land development.

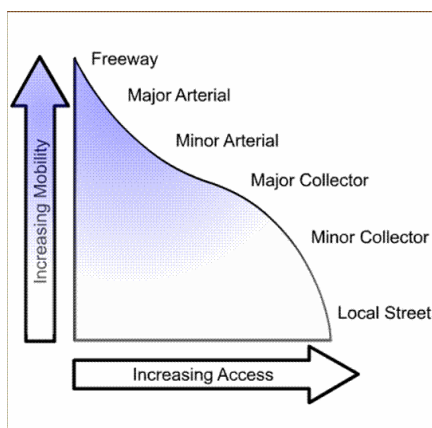
Transportation is a particularly important issue. Decisions as to which road improvements should be made, how much they cost, when they would be made, and which entity is responsible for making the improvements must be coordinated with separate decisions involving land use and the provision of public facilities and services such as sanitary sewer and potable water.

For added context, the Clinton County Comprehensive Plan envisions the county-wide transportation system as follows:

In 2015 residents of Clinton County have available a well planned and maintained transportation system that offers a variety of ways to travel. An expanded public transportation system is from the city of Wilmington. A system of bicycle and pedestrian or walking trails provide access to from Clarksville through Wilmington to Sabina and points beyond. Key visions include:

- *Public transportation is available in some form countywide, and its use is encouraged as a way to reduce automobile trips;*
- *Sidewalks and pedestrian paths or trails are found across the County where access to commercial, residential, and recreational are needed; and*
- *The roadway network is well maintained, has the capacity to handle required traffic. The public is highly involved in the decision-making processes considering new routes. Development along roadway corridors is well managed and planned.*

Figure 8-1: Mobility vs. Access



Functional Classification System

A roadway network serves the dual need for travel mobility and for access to property. Different roadways serve different functions within the overall network. The part that any individual roadway should play within the network is indicated by its “functional classification” as an arterial, a collector, or a local road. In general, an arterial provides the highest level of mobility, a collector combines functions of mobility and access, and local roads serve primarily to provide access. The functional hierarchy among arterials, collectors, and local streets should be maintained in order to insure a proper balance between the movement of traffic and access to abutting land.

An individual roadway may provide good mobility or good access, but these are conflicting functions, as indicated in Figure 8-1. For example, roadways that provide the highest levels of mobility, such as Interstates, provide little direct access to property; conversely, local streets used for accessing property are not used for traveling long distances. As development occurs along major roadways, the need for access may greatly reduce the road's ability to provide mobility unless the local community has appropriate guidelines in place for development design.

The roadway functional classification system is used as a basis for allocating funds for roadway maintenance and improvements as well as for assessing a facility's existing and future needs, determining responsibility for maintenance and improvements, designing roadways, etc. The Ohio Department of Transportation (ODOT) assigns functional classifications that are used as a basis for determining state and local responsibilities for maintenance and the sources of funding for roadway improvements.

The major categories of functional classification are summarized below and in Figure 8-2. These categories can be subdivided for urban and rural areas; however, Chester, Adams and Vernon townships and Clarksville are entirely in an area that is defined as rural.

Arterials: Arterials provide the highest level of mobility; direct access to property is limited. This category includes interstates, freeways, multilane highways, and other important roadways that connect urbanized areas, cities, and industrial centers. Arterials have the highest speeds over the longest uninterrupted distances. This category can be further subdivided into Principal Arterials and Minor Arterials.

Collectors: Collectors, which represent an intermediate functional category, serve to provide both mobility and access. Collectors include major and minor roads that connect local roads and streets with arterials. They provide less mobility than arterials at lower speeds and for shorter distances. This category can be further subdivided into Major Collectors and Minor Collectors.

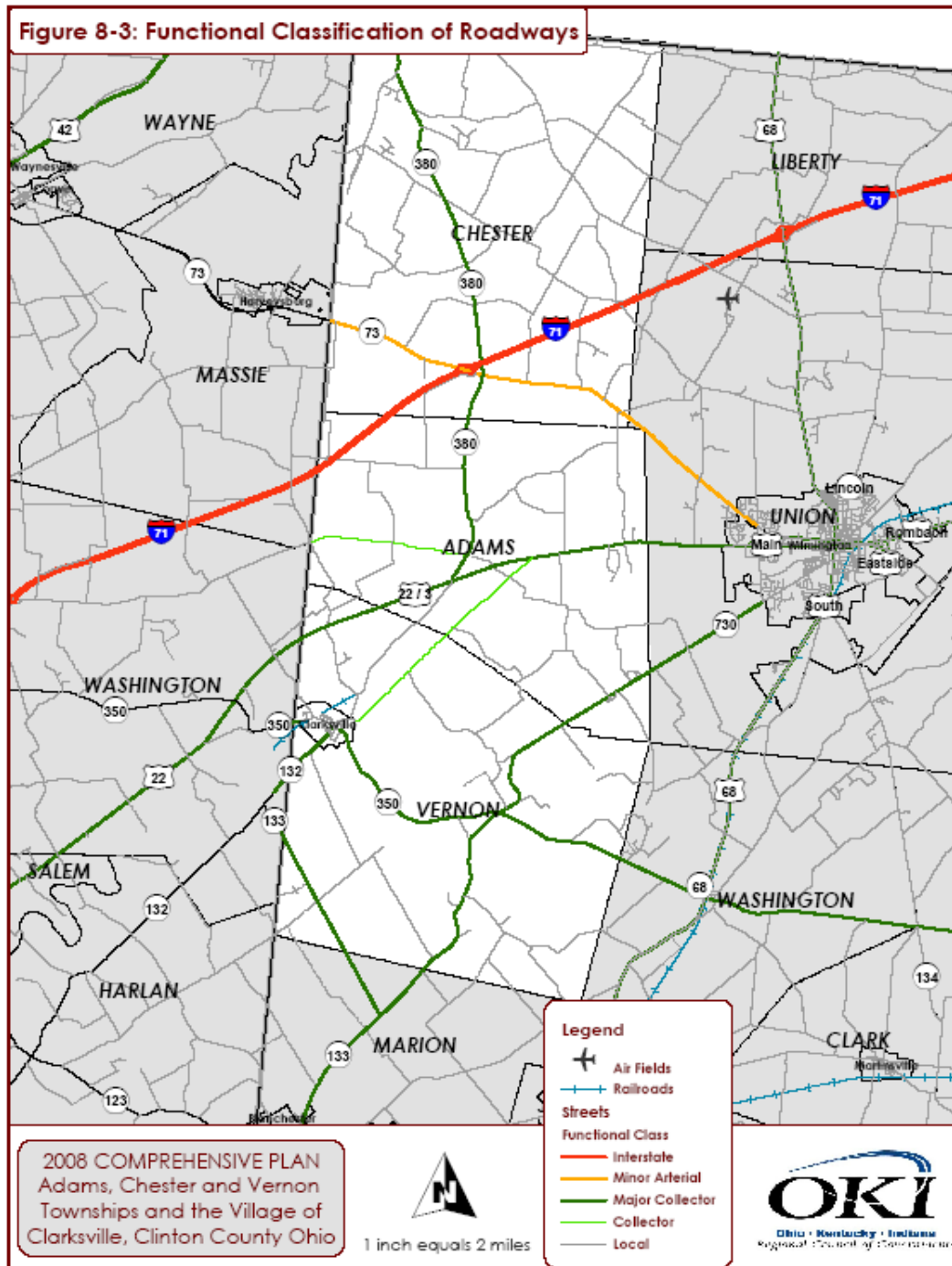
Local Roads: Local roads, as the lowest functional category, provide limited mobility and are the primary access to residential areas, business, and other properties.

Figure 8-2: System of Roadway Functional Classification

Functional Classification	Focus
Rural Principal Arterials	Statewide and interstate mobility (Classification typically includes the Interstate System and other rural freeways that serve longer distance high-volume corridors)
Rural Minor Arterials	Mobility (typically link smaller cities and towns and other statewide traffic generators not served by principal arterials)
Rural Major Collectors	Link county seats and communities not served by arterials but have an intra-county rather than statewide focus
Rural Minor Collectors	Collect traffic from local roads and smaller communities
Local Roads	Access and relatively short trips (include all other public roads)

Functional Classification of Township/Village Roadways

In addition to I-71, SR 73 is classified as a Minor Arterial, while SR 380, SR 132, SR 133, SR 350, SR 730 and US 22/SR 3 are all classified as Major Collectors, as defined in Figure 8-3. Improvements to these roads are the responsibility of the Ohio Department of Transportation. The other roads shown in Figure 8-3 are classified as local roads, or roads that lie outside the study area.



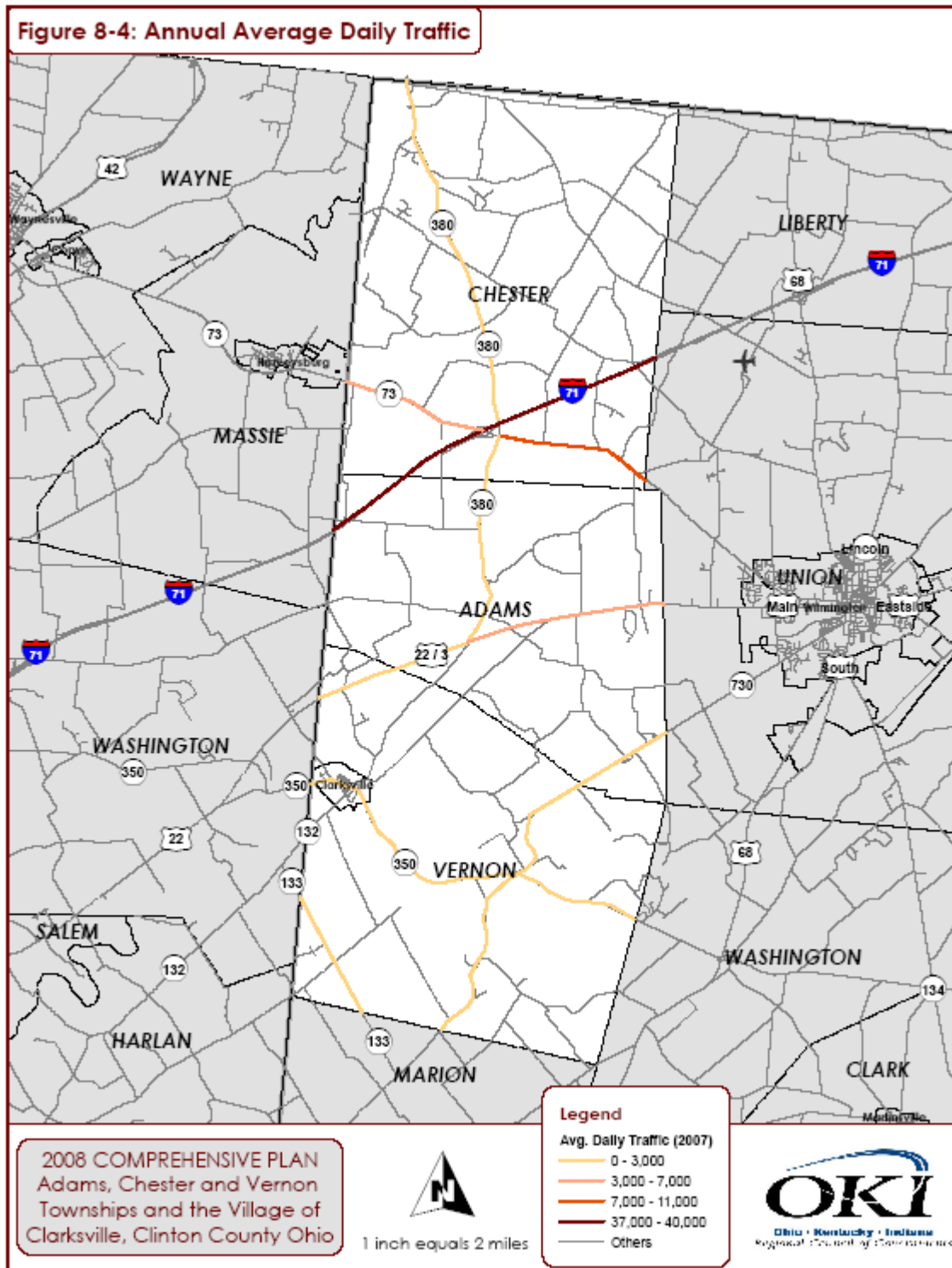
Roadway System Volumes

State routes carry most traffic in the three-township area. Annual average daily traffic (AADT) is a measure of the average weekday, 24-hour, two-way traffic volume. Ranges of AADT are shown on Figure 8-4 for those roads where recent traffic counts (from 2007) were available from ODOT.

Interstate 71 carries up to 39,800 vehicles per day from the Warren County line to SR 73, and more than 37,000 vehicles per day as it leaves Chester Township to the east. State Route 73 carries 7,900 vehicles per day between I-71 and Wilmington and 5,130 west of I-71. US 22/SR 3 is the next highest volume road in the area, carrying 5,120 vehicles per day between SR 380 and Wilmington. The area's other major routes all carry less than 3,000 vehicles per day.

In addition to the arterials and collectors, the area is served by about 30 miles of local roads which are maintained by the county engineer. Other local roads are maintained by the townships.

The county's subdivision regulations address issues of access management (summarized below) and roadway width; both very important issues to address as the area grows.



Accidents

According to accident data obtained from ODOT, there were 153 crashes in Chester Township over a three-year period ending in 2007 (54 crashes in 2005, 45 crashes in 2006 and 54 crashes in 2007). Nearly 76% of those were property-damage crashes with no injuries, 23.5% of the

crashes involved injuries, and there was one fatality. Animals were struck in 32% of the crashes, 21.5% involved a fixed or other object, 19.5% were rear-end crashes, 12.4% were angle crashes and 8% were sideswipe crashes. The remaining incidents involved backing, left turns or other low-frequency accidents.

In the same three-year period ending in 2007, there were 31 crashes in Adams Township (13 crashes in 2005, 10 crashes in 2006 and 8 crashes in 2007). A little more than 77% of those were property-damage crashes with no injuries, 19.4% of the crashes involved injuries, and there was one fatality. Animals were struck in 45% of the crashes, 32.5% involved a fixed object, 9.6% involved an angled crash, and the remaining incidents involved rear-end crashes, sideswipe crashes and left turn crashes.

In the same three-year period ending in 2007, there were 85 crashes in Vernon Township (29 crashes in 2005, 31 crashes in 2006 and 25 crashes in 2007). Property-damage crashes with no injuries accounted for 70.5% of those accidents, 28.2% of the crashes involved injuries, and there was one fatality. Fixed objects were struck in 44.7% of the crashes, 17.6% involved animals, 13% involved an angled crash, 9.4% were rear-end crashes and the remaining incidents involved sideswipe crashes, backing crashes, head-on crashes, overturning vehicles or other low-frequency accidents.

Levels of Service

Level of service (LOS) is a measure of traffic and roadway conditions; it provides an indication of a roadway's efficiency in moving traffic and the need for improvement. LOS is a very important measure that can be used to view major changes in the use of a single road or intersection over a period of time or to project the impacts of future traffic.

The LOS compares roadway capacity with traffic levels. Roadway capacity is generally defined as the maximum number of vehicles that can travel through a roadway segment. LOS, which is the ratio of traffic volume to capacity, provides an indication of whether a roadway is operating at, below, or above its capacity. Roadways operating above capacity experience congestion and unsafe conditions.

LOS is represented by a scale with six categories ranging from LOS A (the best) to LOS F (the worst), as follows. These ratings, which are presented in Figure 8-5, account for such factors as traffic volume, travel speed, travel time, traffic interruptions, a driver's freedom to maneuver, and safety.

LOS is affected by traffic conditions and by roadway design and traffic operations. The number of signalized intersections and the number of curb-cuts/driveways can greatly reduce a roadway segment's LOS. The impacts of traffic signals can be lessened by extending the amount of "green time" (the greater the amount of green time, the better the traffic flow on the arterial). The impacts of curb-cuts/driveways can be moderated through access management. Intersection improvements, lane additions, and other improvements provide options for improving LOS.

Because levels of service numbers for the major roads in the three-township area are out of date, they should be recalculated for existing conditions, with traffic volumes based on actual traffic

counts. LOS should be determined for peak traffic conditions, which are the commute times when traffic levels tend to be the highest (calculated as a proportion of average daily traffic).

Figure 8-5: Levels of Service Defined

Level of Service A

- Best operating conditions; free flow of traffic
- Freedom to select desired speeds and maneuver within the traffic stream
- Delays are minimal

Level of Service B

- Traffic conditions are beginning to deteriorate but remain acceptable
- Stable traffic flow, but noticeable presence of others in the traffic stream
- Freedom to select desired speeds but freedom to maneuver is somewhat limited
- Delays are minimal

Level of Service C

- Typically the acceptable standard
- Stable traffic flow, but interactions with other vehicles in the traffic stream begins to affect driver operations
- Freedom to select speeds and maneuver are affected by the presence of other vehicles
- Delays are noticeable

Level of Service D

- Often considered to be the limit of acceptability for planning purposes
- Stable but high-density traffic flow
- Speed and freedom to maneuver are severely restricted but traffic flow is high
- Delays are more substantial

Level of Service E

- Traffic is moving but conditions are poor
- Operating conditions are at or near capacity
- All speeds are reduced to a low but relatively uniform value
- Freedom to maneuver within the traffic stream is usually extremely difficult
- Operations at this level are usually unstable, because small increases in flow or minor disturbances within the traffic stream will cause breakdowns
- Delays approach an unacceptable level

Level of Service F

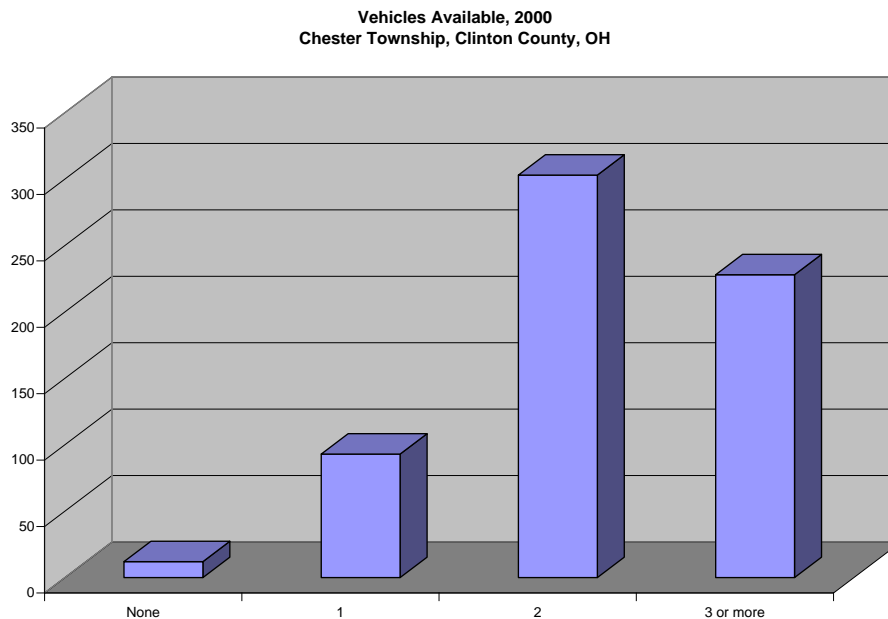
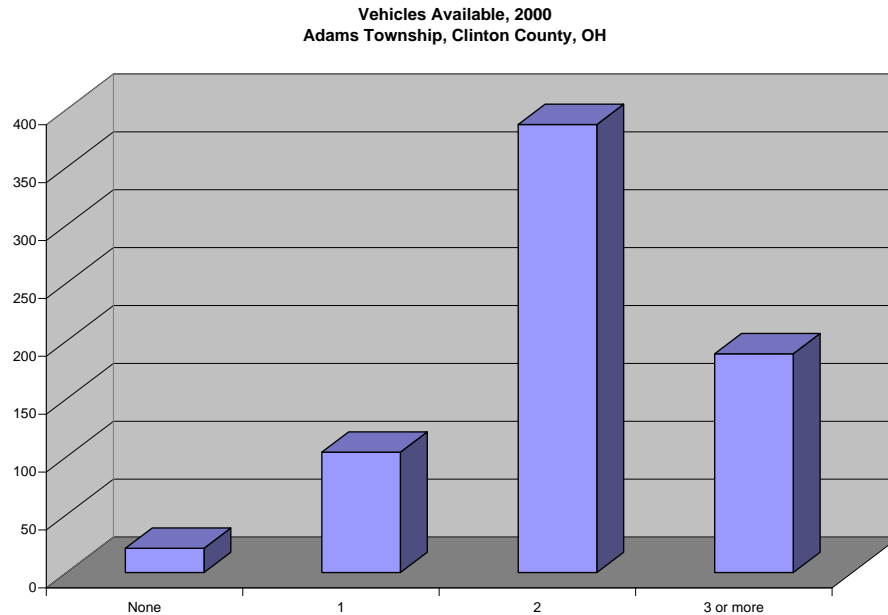
- Breakdowns of traffic flow; stop-and-go conditions
- Traffic exceeds the capacity of the structure
- Delays generally exceed limits of driver acceptability

Commuting Patterns

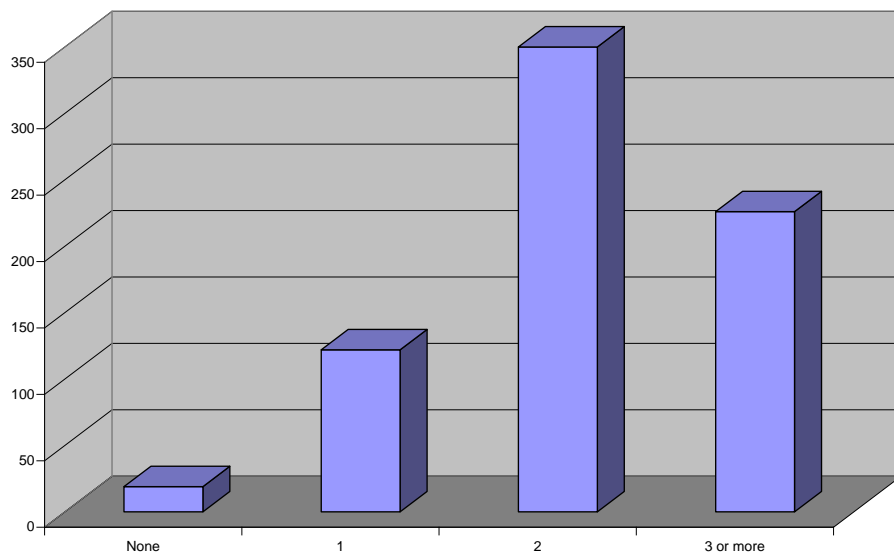
According to Census 2000, most Clinton County residents (13,879) worked in Clinton County. The next-highest numbers of Clinton County residents worked in Hamilton (1,498) and Warren (1,079) counties, followed by workers traveling to Montgomery (782), Highland (534) and Clermont (483) counties.

For jobs in Clinton County, the most workers (aside from Clinton County residents) came from Highland (3,789 workers), Fayette (1,229), Warren (1,038), Greene (808) and Brown (466) Counties.

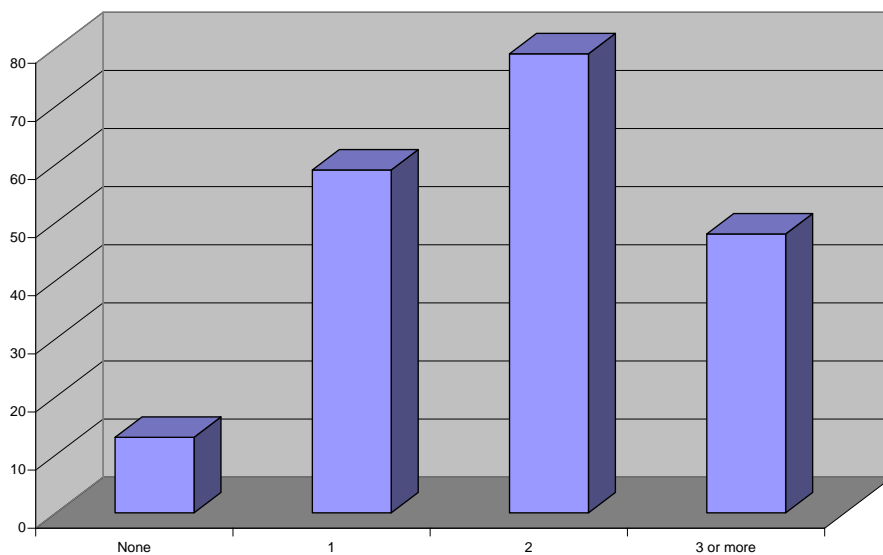
According to the Census 2000, the majority of residents in the townships and the village had access to two or more vehicles. The following figures also show that the vast majority of residents of the three-township area traveled to work by driving alone in a car, truck or van, and that a small number were part of a car pool or rideshare arrangement.



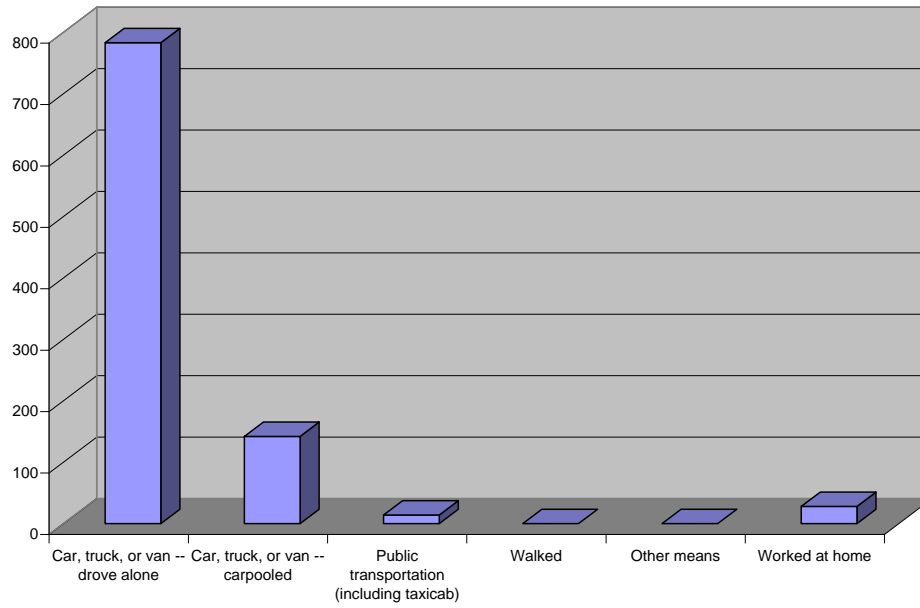
Vehicles Available, 2000
Vernon Township, Clinton County, OH



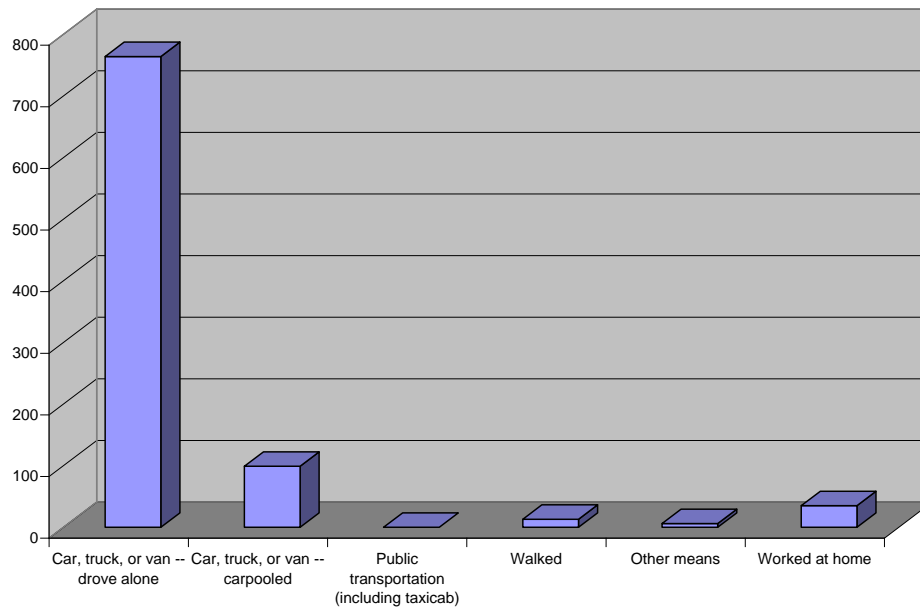
Vehicles Available, 2000
Village of Clarksville, Clinton County, OH



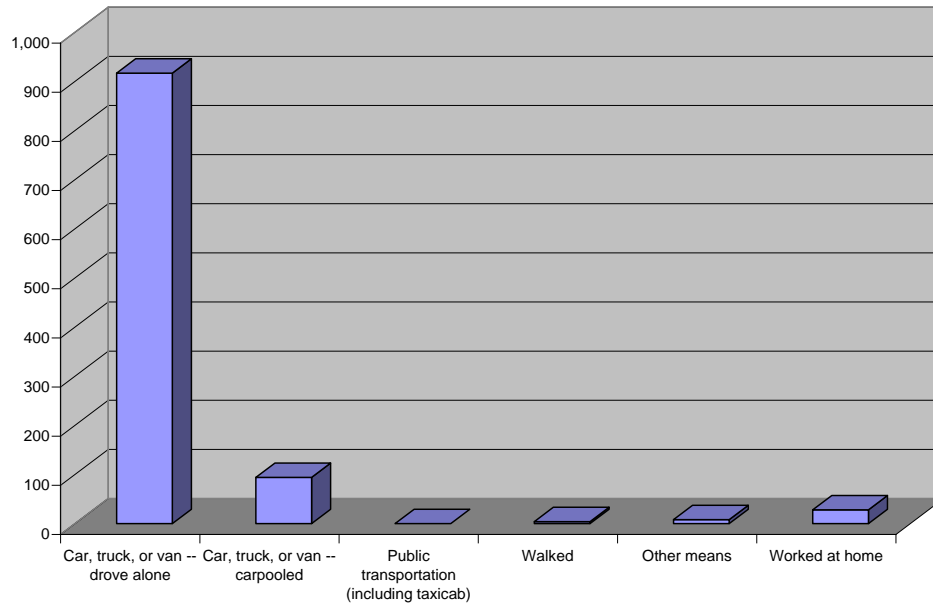
Commuting to Work, 2000
Adams Township, Clinton County, OH



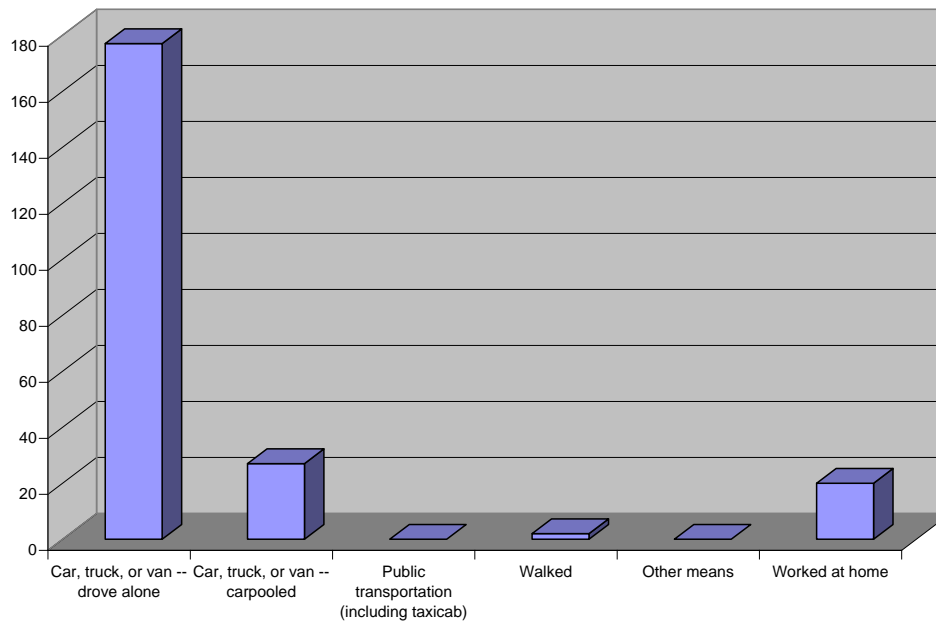
Commuting to Work, 2000
Chester Township, Clinton County, OH



Commuting to Work, 2000
Vernon Township, Clinton County, OH



Commuting to Work, 2000
Village of Clarksville, Clinton County, OH



Public Transit Service

There is no public transit service in the three-township area. Public transit service has, however, been identified as a county-wide need. To be effective, public transportation must be convenient and timely for riders. A relatively low population base, coupled with low-density land development trends, in new exurban locations like this three-township area, have worked against the establishment of convenient and timely public transit service.

Biking and Walking

Biking and walking as a means of transportation may involve facilities different than those used for recreation. The three-township area does not have any dedicated bicycle paths. A few sidewalks are available only for short distances in the area's subdivisions. According to the Clinton County Comprehensive Plan, the non-profit Clinton Rails to Trails Coalition is in the process of purchasing land for trail development. The vision is for a 29.5-mile span of walking and biking trails from Clarksville through the city of Wilmington to the village of Sabina. Plans reveal that the trail is a spur of the Little Miami Trail in Morrow.

The Wilmington segment of the trail has been initiated with a path constituting a 1.5 mile linear park that uses an abandoned railroad bed for walking, jogging, bicycling and rollerblading.

Support for the Clinton Rails to Trails Coalition activities may extend to incorporating a bike path along the shoulder of the new roadways to include the proposed Wilmington by-pass.

Access Management

Because of the three townships' relatively low population and because of anticipated growth pressure from Warren County, access management is one key to continuing the area's healthy transportation system.

Poorly located and/or closely spaced driveways and intersections typically degrade the capacity of a roadway, resulting in more traffic crashes. Nationally recognized access management practices have been proven to improve a roadway's traffic-carrying capability and reduce traffic crashes.

The practice of access management brings a balance of mobility, safety and access to adjacent properties. The benefits of access management have been well documented in recent years. Information from the Transportation Research Board Access Management Manual and the ODOT State Highway Access Manual are particularly good resources that draw upon past research.

In evaluating current research on the benefits of implementing an access management plan, four overall conclusions can be drawn:

1. *As access density increases, crash rates increase.* In a Minnesota Department of Transportation Study, crash rates increased as access density increased regardless of roadway condition and geometry. The study indicated that increasing access points by 50 percent resulted in an increase in crash rates of 41 percent.

2. *Roadways with medians are safer than undivided roadways or those with continuous two-way left turn lanes.* In 1999, NCHRP Report 420 found that the crash rates on roadways with medians were 30 percent lower than on those with continuous two-way left-turn lanes.
3. *U-turns are generally safer than direct left turns.* A 2000 Florida study found that u-turns combined with right-turn only access exhibited almost 20 percent fewer crashes than on roadways that allow left turns.
4. *Medians improve pedestrian safety.* Properly designed medians can provide a safe haven for pedestrians on crowded roadways. These refuges are not available with two-way continuous left turns lanes, like those that are present in most of the study area.

Another significant benefit of access management is an increase in operational efficiency. Again, there is extensive research on the subject. Studies found repeatedly that good access management practice helped to maintain the desired speeds and reduced congestion related delays. For example, the *Highway Capacity Manual* states that for every increase of 10 access points per mile, one can expect a 2.5 mile per hour reduction in the free flow speed of the roadway. ODOT found that roadway capacity can be increased as much as 35 percent by employing access management practices. That's an increase of 10,000 cars per day for a four-lane facility, without having to construct additional new lanes.

There are economic benefits to implementing an access management plan as well. When a roadway becomes congested, travel speeds decline and it becomes more difficult for customers to travel to and from businesses along the facility. Access management can help to reduce congestion by increasing travel speeds and improving safety. For example, if the current average roadway speed is 30 miles per hour (mph), a business is within a 15 minute drive for customers living within a seven mile radius. If the average speed of the roadway is increased by 10 mph to 40 mph with the implementation of access management techniques, the same 15 minute drive puts businesses within reach of customers within a 10-mile radius, expanding the potential customer base one and one half times.

The Clinton County Comprehensive Plan discusses access management as follows:

The major thoroughfares serve as the primary network for moving people and goods. These transportation corridors also provide access to businesses and homes and have served as the focus for commercial and residential development. If access systems are not properly designed, these thoroughfares will be unable to accommodate the access needs of development and retain their primary design function. The County must consider access management strategies to improve the safety and operation of the roadway network. Such strategies will help protect the substantial public investment in the existing transportation system and reduce the need for expensive remedial measures. Access management regulations further the orderly layout and use of land, protect community character, and conserve natural resources by promoting well-designed road and access systems and discouraging the unplanned subdivision of land.

Access management is the process of providing and managing access to land development while preserving the flow of traffic in terms of safety, capacity, and speed. The state and local thoroughfares have been categorized by function and classification for access purposes based on their level of importance, with highest priority given to interstate routes through local routes. This hierarchy of roadways should be reinforced through roadway design and access standards in the subdivision and zoning regulations of Clinton County.

The goals of access management include:

- *Protect the public investment in highway facilities*
- *Protect the function of state highways*
- *Preserve operational safety, capacity, and efficiency*
- *Promote orderly development of adjacent properties*
- *Minimize long-range adverse impacts of future improvements*
- *Minimize maintenance costs*
- *Delay or eliminate the need to expand or relocate a facility*

The goals may be achieved by managing the roadway access in the following fashion:

- *Restrict the number of driveways per lot*
- *Locate driveways away from intersections*
- *Connect parking lots and consolidate driveways*
- *Provide residential access through neighborhood streets*
- *Increase minimum lot frontage on major streets*
- *Promote a connected street system*
- *Encourage internal access to out parcels*
- *Regulate the location, spacing, and design of driveways*
- *Coordinate with the Ohio Department of Transportation.*

Airports

The region's major commercial airports provide passenger and air cargo service, while general aviation airports provide a wide range of aviation services that support businesses, recreation, training, natural resources, emergency response, military missions, and personal mobility. General aviation aircraft range from the smallest single engine Cessna to traffic and medical evacuation helicopters, from gliders and ultralight aircraft to large corporate jets.

The public use airport system supports the region's economy and life style in a wide variety of ways. Studies of the economic impact of airports show significant benefits to the region, including direct and indirect employment, public tax revenues, travel and tourism revenues, salaries and associated spending, and secondary economic impacts. The benefits of airports go beyond economic and numerical measures. The region's general aviation airports provide cost-effective alternatives to commercial air transportation for businesses and individual travelers. These include corporate, business, and charter aircraft used for business and personal travel. The region's airports provide a network of facilities for pilot training and certification, and serve a full range of student pilot programs. Many of these pilots eventually continue to become commercial airline or military pilots. In this sense, the region's airports provide an infrastructure for supplying our nation's military and commercial airlines with an essential ingredient - qualified new pilots.

Airports also serve several essential but less well known public functions, such as medical evacuation, police reconnaissance, fire fighting, aerial surveying and photography, traffic and news reporting, and emergency response. In rural areas, airports are typically used by aerial application businesses, such as crop spraying and aerial analysis of natural resources.

The area is served by the following national airports:

- Dayton International Airport in Vandalia, Ohio
- Cincinnati Northern Kentucky International Airport in Florence, Kentucky
- Port Columbus International Airport in Columbus, Ohio
- Indianapolis International Airport in Indianapolis, Indiana

The area is also served at the following Ohio locations by airport facilities that serve passenger and business needs through public and private operations:

- Union Twp Clinton Field,
 - Hollister Field, and
 - Wilmington/DHL Airpark (Private commercial operations)
- Lebanon Warren County Airport
- Xenia Xenia Airport
- Wash. CH Fayette County Airport
- Jamestown Bloom Airport

CHAPTER 9

Implementation

Introduction

A description of how the local government's programs, activities, and land development regulations will be consistently initiated and implemented is necessary once the goals, objectives and policies of the comprehensive plan have been formulated. The plan's goals, objectives and policies should establish meaningful standards for the implementation of the comprehensive plan. These should serve as guidelines for the content of more detailed land development and use regulations. This section generally identifies programs, activities, and land development regulations that can play a part in implementing the comprehensive plan.

Goals, Objectives and Policies Facilitate Implementation

While the majority of the study area is rural in nature, a few changes may be anticipated in the future. In addition to the programs listed in the previous chapters, other opportunities exist for implementation of this plan's goals, objectives and policies. Goals, objectives and policies are integral and vital operational components of each element of the comprehensive plan.

It important to establish reasonable goals, objectives and policies in each element based on the plan's relevant data and analyses. Goals, objectives and policy statements set forth the long-term, intermediate and measurable short-term ends toward which a community's programs or activities are ultimately directed. They identify a community's desired future conditions or results to be obtained for each of the plan's elements, and define the actions and measures necessary to meet those conditions or results.

Each element's goals, objectives, and policies should describe how the area local governments' programs, activities, and land development regulations will be initiated, modified or continued to implement the comprehensive plan in a consistent manner. Goals, objectives and policies should establish meaningful and predictable standards for the use and development of land and provide meaningful guidelines for the content of more detailed land development and use regulations.

The goals, objectives, and policy statements should reflect the purposes of the individual element that they serve and the purpose of the overall plan. A goal is the long-term end toward which programs or activities are ultimately directed. It is something general that the community strives to achieve. An objective is a specific, measurable, intermediate end that is achievable and marks progress toward a goal. A policy describes the way in which programs and activities are conducted to achieve an identified goal. A policy statement often addresses how a goal or objective will be implemented.

Once goals, objectives and policies are set within the various comprehensive plan elements, a policy matrix can be a useful tool for tracking implementation progress. This matrix should highlight the specific policies called for in the plan and identify the priority of that policy (short term, mid-term, long term) and assign or recognize appropriate parties and organizations that should be involved in the implementation of that policy.

Housing

As seen in the Housing element of this plan, the majority of the housing stock in the study area is owner-occupied, single-family detached housing on large lots, mostly built since the 1970s. Although areas suitable for infill are limited in the study area, it is important that infill opportunities be taken advantage of where possible since they can help preserve farmland and open space. Some opportunities for infill do exist in the Village of Clarksville.

Infill typically means using land in between existing development that can be easily and efficiently served by public facilities and services, thus limiting costs of extending infrastructure into newly developing areas. As an alternative to greenfield development, infill development can reduce the loss of land to haphazard development by focusing on the development of vacant parcels within or near existing neighborhoods.

Among other things, infill development can: (1) increase tax revenues and property values; (2) benefit businesses by increasing activity and demand for goods and services; (3) contribute to unmet commercial, economic, social, housing, or civic needs in the existing community (4) reduce growth pressure on rural areas by providing for efficient use of land and public facilities and services; (5) improve quality of life in older communities; and (6) take advantage of existing capacity rather than providing duplicative public investments in roads, water and sewer lines, schools and other infrastructure.

Infill development can be promoted by anticipating barriers to it. These barriers can include land availability, the quality of infrastructure, possible environmental contamination, financing, zoning, and conformity requirements. Identifying priority sites for redevelopment, providing information on sites through an abandoned land inventory, and targeting development in key infill locations are techniques that can be used to encourage infill development.

Updating zoning ordinances or providing a process for administrative waivers for items like height, setbacks, bulk or parking can also help to reduce the time spent for developers. Communities may want to exempt or “grandfather” existing lots of record in order to promote infill on smaller existing lots. Design review processes and standards for infill can help ensure compatibility with existing structures. Incentives such as design assistance, marketing, capital improvement planning, marginal cost pricing (fee reduction), financial incentives such as cost sharing, land acquisition, tax credits and low interest loans can also assist in making infill development more attractive to developers.

The provision of temporary senior or elder care housing on private lots was an issue raised by citizens during the public meetings held for this plan. Accessory dwelling units include those units, for example, that are above-the-garage apartments, “granny-flats” or “mother-in-law” apartments. These can be either attached or detached. Often, zoning ordinances do not permit accessory dwelling units; however, these are most convenient affordable housing units for elderly family members or college students that can also assist first time homebuyers in supplemental income for the mortgage payment. Programs can also be offered that match seniors with other unrelated adults in mutually beneficial home sharing arrangements.

Permitting and encouraging other types of development for independent living, assisted living and continuing care communities is also key to providing adequate housing opportunities for

seniors. Independent Living Communities are designed to enable independent seniors to enjoy a lifestyle filled with recreational, educational and social activities with other seniors. Assisted Living provides a special combination of residential housing, personalized supportive services and care. Continuing Care Retirement Communities are residential campuses that provide a continuum of care -- from assisted living to skilled nursing care, all in one location. Other key land uses that support the senior population, such as pharmacies, medical offices, and grocery stores, should be located nearby these facilities, and should be convenient and easily accessible for seniors.

Local zoning codes often effectively preclude or discourage the creation of affordable housing units. Inclusion of smaller lot residential zones or overlays to create the option of smaller lots, allowing higher densities, providing density bonuses, permitting manufactured housing with compatibility and design standards, and allowing accessory dwelling units are all options that would increase the availability of housing for low and moderate income families.

If so desired, local governments can adopt zoning ordinances that require a certain percentage of the development to be affordable housing, or they may offer density bonuses to developers who choose to dedicate a portion of the development to affordable housing. Density bonuses allow a developer to build more units in a project than would otherwise be permitted under conventional zoning. By permitting the construction of more units than allowed under the zoning regulations, this technique can provide an economic incentive to set aside a number of units for affordable housing. Such a program can be mandatory or voluntary with incentives.

Public Facilities

Ensuring that infrastructure is available to meet both existing and future demands is typically a goal of local governments. Level of service (LOS) standards can be useful guideposts for the maintenance of adequate public facilities and services in a jurisdiction. LOS can be considered during the development review process so that adequate public facilities and services are available when the impacts of proposed development occur. The necessary public facilities and services may be phased, the development may be phased, or the time-certain construction of the necessary public facilities and services may be guaranteed with an enforceable instrument (such as conditional development approvals, or development agreements).

Level of service standards address those services which are typically most influenced by new development. These are likely to include roads, water supply, wastewater treatment, parks and recreation, and schools. This plan should assist in establishing level of service standards for these facilities and services. Level of service standards should be based on adequacy of existing service and careful consideration of the desired development patterns.

Level of service standards can be established by each local government for the public facilities located within its boundary. Level of service standards can be set for each individual facility or facility type and not on a system wide basis. For example, different standards may be set for arterial and collector roadways. Identification of the appropriate level of service standards may be based on accepted standards (such as state transportation agency standards or National Recreation and Park Association standards), or based on specific conditions or needs within the community. Local officials should know that maintenance of locally-established LOS standards have capital and operating cost implications.

If a formal system to manage LOS is considered, it should be understood that that local LOS management system should not mandate the creation, limitation, or elimination of regulatory authority for other agencies, nor should it require the repeal of any rules, criteria or standards of any local, regional or state agency.

Development patterns and areas planned for new growth, as depicted on the future land use map, should coincide with the availability of adequate public facilities and services, and should be reflected within the goals, objectives and policies for those services. “Service areas” may be established which are districts where a uniform level of service (e.g., classroom space per student, maximum daily traffic volume on roadways) may be maintained. The desired development patterns should be reflected in the delineation of such service area boundaries.

A LOS management system should address:

1. The maintenance of the adopted level of service standards for roads, sanitary sewer, solid waste, drainage, potable water, parks and recreation, and public transit, if applicable.
2. The inclusion of a financially feasible schedule of capital improvements (or capital improvements plan) which demonstrates that the adopted level of service standards will be achieved and maintained.
3. A system for monitoring and ensuring adherence to the adopted level of service standards, the schedule of capital improvements, and the availability of public facility capacity.
4. Guidelines for interpreting and considering level of service standards when applications for development permits are reviewed.
5. A process for assessing, receiving, and applying a fair share of the cost of providing the public facilities and services necessary to serve the proposed development. The assessment should have a reasonable relationship to the impact that is generated by the proposed development.

An adequate public facilities ordinance (APFO) is one technique that uses LOS information in the development process. Such an ordinance places conditions on development approvals related to the availability and adequacy of public facilities. This growth management tool links the timing of a new development to the availability of facilities needed to service it. APFOs typically include minimum required levels of service for water, sewer, drainage and streets. They may also specify requirements for schools, fire, police, parks, sidewalks, bicycle paths and transit.

APFOs are based on the concept of concurrency, which means that adequate public facilities must be provided at the same time, or concurrently, as the impacts of new development. Concurrency relies on basic regulatory controls already available to local governments: (1) the ability to withhold development permits for timing and sequencing of developments; and (2) the ability to budget for anticipated capital improvements.

A majority of the water system in the study area has been designed without fire flow capabilities. While some maintenance flushing hydrants have been installed along existing and new 12-inch lines, these are sporadically placed and are only be used to fill fire tankers, not usually for pumping. Developers, residents and commercial uses may choose to create sufficient fire flow by placing a water tank on-site at personal expense. Jurisdictions may elect to use an APFO to require adequate fire flow as a condition of development.

Because of poor soils in the study area, when septic systems fail and space runs out on the lot for repositioning of leach lines, an alternative such as public sewer will have to be addressed. It will be difficult to efficiently retrofit sewers in existing one- or two-acres per lot subdivisions without high assessments to property owners. A solution may be clustered housing developments near sewer systems, or again, the use of APFO to require public sewer service as a condition of development.

A fiscal impact analysis can be used to evaluate impacts of future land use plans and large development proposals on local government budgets. Fiscal impact analysis can measure the fiscal impact of a development or a land use scenario on the costs and revenues of the governmental unit(s) serving the development. It is useful for analyzing the financial implications of alternative land use plans, small area plans, large annexations, build-out scenarios, large rezoning and planned unit developments.

As rapid growth occurs, communities sometimes find that the demand for services exceeds generated tax revenues from new developments. Under such circumstances, local governments are experiencing the need to implement new and innovative funding mechanisms that can account for growth and continue to provide for existing and future populations. Planning and budgeting for adequate public facilities can be addressed in several ways.

Jurisdictions have a number of options for funding plans and development. Capital improvement programs fund multi-year projects that are rated as high-priority for the community. Impact fees are expenses billed to developers to compensate for the price of the services the municipal government will provide for the new development. Many planning tools can also be used to guide and manage development. Subdivision exactions require specific uses for pieces of land in new subdivisions. Exactions are often used for streets, rights of way for public utilities, and parks and open space. These are just a few examples of planning and funding opportunities for local jurisdictions.

Public school facilities hold a strong influence over the character of a community, as school quality has often been linked to values in the home. School capacity, the location and access to schools, can be similarly affected by development patterns.

Parks and open space are important aspects of a community. To ensure a community's residents are fully accommodated, local governments may want to set level of service standards for parks and open spaces. The use of the National Recreation and Park Association standards was discussed earlier in this plan. Open space preservation can also be bolstered by tying it to economic vitality, as some studies have quantified the positive economic impact parks and open spaces have on communities.

Natural Systems

Identification of significant natural resources such as waterways, forests, habitats or land formations, is an important first step concerning planning for such areas. Creating local criteria for evaluating and determining areas for conservation or protection is key to ensuring that a community is developed in a sustainable manner. A geographic information system (GIS) is one tool that can aid local governments in identifying areas, for example, where more than one significant natural resource exists, or where conservation of resources is most important. GIS

can be used for impervious surface buildout analysis, which effects water quality and quantity, to assist in the evaluation of potential effects of land use change, and to identify the best location of a particular land use to have a minimum impact on a community's natural environment.

Hillside protection measures are often used to preserve the visual and environmental quality of a community while encouraging development that conforms to the terrain instead of altering it. The geology and soil types in Southwest Ohio sometimes make slippage an issue when hillside property is disturbed. This could potentially impact adjacent property owners. It can also potentially increase the siltation of streams and waterways draining the sites. Communities can enact ordinances, adopt overlay zones, and/or create design standards to address land use on steep slopes. These regulatory controls generally prohibit, or carefully monitor, construction on steep slopes.

Urban and rural forests are sustainable systems that provide not only direct benefits to ecology and habitat, but also to the overall quality of life. Trees stabilize soils, improve air quality, mitigate water pollution, reduce energy costs, reduce visual and noise pollution, provide effective stormwater controls, provide a natural habitat for wildlife, provide welcome shade for people, and add color and interest to the landscape. Local governments can manage these systems in many different ways. Local tree boards are a good option to make use of grant resources and concerned citizens. Urban forest management plans can help to use or preserve forested areas within a community. Development requirements and incentives, such as mitigation, the use of native species and more detailed tree ordinances and guidelines are effective tools to help manage networks of protected greenspace with multiple purposes. Other ways to proactively preserve forest land can include working with local organizations to acquire development rights on important forestland, such as through the use of conservation easements, transfers or purchases, and giving forest landowners incentives to encourage the continuation of forests as a major land use.

Wetlands and headwater streams are beneficial because they help to filter pollutants from water, reduce flooding, provide habitats for the region's wildlife, and provide recreational opportunities. Negative impacts to wetlands and headwaters are sometimes unavoidable for development, but damage should be avoided or minimized. Adverse impacts to wetlands can be offset by improving, saving, or creating new wetlands at an acre-per-acre ratio or higher. Techniques used for wetland protection include wetland mitigation and banking, municipal wetland ordinances, wetland conservation easement programs, citizen education, and wetland restoration.

Watersheds are geographic areas where all surface and runoff water drains to the same point, generally a creek, stream, or river. Watersheds are most often divided by topographic high points or hydrologic features. It is valuable to approach land use planning from a watershed level because political boundaries rarely coincide with their watershed counterparts. Because of this, jurisdictions within a watershed share an interdependent water network. In light of this relationship, land use decisions in one jurisdiction greatly impact soil and water quality for its surrounding neighbors in the watershed.

The Federal Emergency Management Agency (FEMA) maintains flood maps for flood insurance purposes and to regulate development within floodplains. Communities can avoid siting development in floodplains and minimize the impact of flood events by using the information provided by FEMA. Local governments may also adopt regulations more strict than federal standards. Regulations can be adopted that restrict certain types of development from floodplain

areas or to manage runoff problems. These types of regulations can protect developments against damage due to occasional flooding, and can protect streams from pollution and increased volumes.

Stream corridors, sometimes termed riparian corridors, include stream banks and associated areas adjacent to a flowing waterway. Vegetated riparian areas function as stream buffer zones, performing many important functions including protection from erosion, flood abatement, groundwater recharge, and filtering water pollutants (e.g., toxic chemicals, nutrients, and sediment) from runoff entering streams. The linear corridors provided by stream bank setbacks enhance wildlife movement and migration for sensitive species. In addition to the environmental importance, riparian corridors also possess significant economic value. Riparian corridors provide for recreational and health benefits, cultural enhancement, increased property values, and an improved quality of life. By contributing to human welfare, both directly and indirectly, riparian corridors represent part of the total economic value of natural resources.

Riparian buffer ordinances are a helpful tool for stream corridor protection. Overlay zoning may assign riparian buffer zoning to properties, or incorporate riparian setbacks or buffer widths. A freestanding stream corridor protection ordinance may be necessary for those municipalities that do not have zoning. Floodplain protection ordinances, as previously discussed can also be successful. Other techniques such as relaxation of design standards that mandate excessive impervious surfaces, reducing minimum road widths and parking requirements, allowing grassed swales as an alternative to concrete gutters are beneficial. Non-regulatory tools can also assist in stream bank protection, such as transferable development rights, density transfers, conservation easements and outright land acquisition.

Stormwater, erosion, and sedimentation are contributors to nonpoint source pollution, which has been attributed as one of the largest causes of water pollution today. Wetlands can be of assistance to naturally filter out pollutants, to help reduce flooding, create animal habitats, and prevent erosion. Replanting native vegetation along stream banks and around wetlands also helps slow runoff. Provisions for erosion and sediment control can also be included in site plans and considered during construction projects. These, and other best management practices (BMPs) such as reducing the amount of impervious surface and revitalization of floodplains can address polluted stormwater runoff.

Innovative approaches to development and design can lead to new developments with lower ecological impacts, mitigating environmental problems in the future. Conservation-oriented development plans, low impact development, transfer/purchase of development rights, brownfield redevelopment, smart growth and greenspace techniques are examples of innovative approaches to site design and development.

The 2004 Clinton County Comprehensive Plan sets forth some recommended policies related to environmentally critical areas. An excerpt from this plan is presented in the table below.

Figure 9-1
Recommended Policies by Type of Critical Area

Type of Critical Area	Land Use Importance	Recommended Development Conservation Policy
Surface Water	Scenic value; provide refuge for wildlife, water supply	No development
Wetlands.	Serves as wildlife refuge, water storage and purification, scenic value and very unstable areas.	Parks, forestry, agriculture, limited residential development on large lots.
Woodlands with slopes greater than 15 percent	Provide refuge for wildlife, reduce flooding runoff and drought, prevent topsoil from being washed away, scenic values, climate control and wind reduction, difficult to build on.	Parks, forestry, limited residential development on large lots.
Woodlands with slopes less than 14 percent	Provides refuge for wildlife, climate effects, improve air quality, and scenic values	Parks, forestry, agriculture, residential development on 1.5-acre lots, lights commerce and industry, and cluster development.
Aquifers and Aquifer Recharge areas	Underground geologic formations carrying water – care must be taken to avoid pollution.	Parks, forestry, agriculture, and limited residential development on 2-acre lots light industry, and development with public-central sanitary sewers and groundwater recharge ponds.
Poor Drainage Areas	Bedrock close to surface, high groundwater table, impervious soils, and similar traits make drainage poor for septic systems.	Limited residential development on larger lots unless public water and/or sanitary sewer are available.
Floodplains	Subject to inundation, therefore susceptible to flood damage, scenic values.	Parks, forestry, agriculture, limited development with septic system located outside of the floodplain.
Prime Agricultural Lands and Locally Important Lands	Best soils for active farming	Encourage existing farm use and if residential development is to be allowed, density should be limited by restricting the lot size or number of lots. Promote compatible land uses.

Source: Clinton County Comprehensive Plan, 2004

Preserving greenspace offers a wide range of benefits. Greenspace provides the community with spaces for recreation, socialization, and education, creating a venue for strengthening social cohesion. Environmentally, greenspace promotes biodiversity and wildlife habitats, reduces flooding, and offers other natural amenities. Economically, open space attracts investment and economic development, increases property values, and creates a more attractive location image.

It is often a struggle for local governments to plan for and maintain green infrastructure in the same manner as they do for other public facilities such as roads, water, and sewer. A city, county or state would never build a road, water and electrical system piece by piece, without advanced planning or coordination between different system components and jurisdictions. These built infrastructure systems are planned, designed and invested in far before their actual use. Green infrastructure can be planned, designed and invested in following the same principles and approaches that are used for built infrastructure.

It is difficult to quantify all of the public benefits which green spaces provide, especially in monetary terms. Traditional support of green space has been founded upon the need for protecting environmentally sensitive lands, not on economic considerations; however, the benefits of green infrastructure are numerous.

Transportation

Several options are available to maintain the levels of service currently provided as growth occurs in the townships and the village. The relationship between land use and transportation is reciprocal. Development patterns shape travel patterns in that the design of suburban residential and commercial areas can make convenient transit service and walking a challenge and the separation between land uses in low-density developments typically make driving a necessity. Local land use and transportation techniques, implemented concurrently, and focusing on moving people, moving fewer people fewer miles, and improving travel quality can benefit the transportation system.

Access management refers to transportation tools employed to manage traffic by addressing safety, capacity, and speed. Access management controls the location, spacing, design, and operation of driveways, median openings, interchanges, and street connections to a roadway. By implementing access management policies, jurisdictions can ensure a smoother flow of traffic that is safer from the threats of accidents, congestion, and other obstacles to individuals' automobile trips. Access management is also discussed in the Transportation and Land Use elements of this plan.

Connectivity involves a system of streets providing multiple routes and connections to the same origins and destinations. Connectivity relates to how an entire area is connected by the street system, not only to the number of intersections along a street segment. A highly connected area includes a system of parallel routes and cross connections, few closed-end streets, many points of access, and narrow streets with sidewalks or off-street paths. Frequent intersections are provided which create a pedestrian scale block pattern. Local officials should keep this concept in mind as the three-township area grows and develops over time.

By contrast, a typical cul-de-sac street pattern has very long blocks and many dead end streets. This pattern offers few route options since traffic from each subdivision is funneled out onto a small number of collector and arterial roads, which can cause congestion. In addition, arterial roadways typically are designed to handle only motor vehicle traffic, and are not accommodating to pedestrian and bicycle traffic. A pattern of streets with numerous connections and short blocks makes it easier to move around.

Increased connectivity can: (1) decrease traffic on arterial streets; (2) reduce travel time; (3) create shorter travel distances and reduce the number of vehicle miles traveled; (4) provide continuous and more direct routes for travel by walking and biking; (5) provide greater emergency vehicle access and reduced response time; (6) provide improved utility connections, easier maintenance, and more efficient trash and recycling pick up; and (7) lower speeds and reduce accident severity.

An evaluation of the community's future land uses and the streets required to support new development is the first step in achieving desired connectivity. Many communities find it beneficial to create future street plan maps within the local comprehensive plan.

To effectively implement connectivity standards, some communities choose to study the traffic impacts of increasing the number of local street connections. Results of such a study would provide a proper range of the number of street connections per mile that will give the greatest benefit. Study results may also show how much traffic delay would be reduced.

Typical standards for connectivity create connections to existing or planned street intersections and extensions, provide direct and logical access to surrounding areas, and limit the number of cul-de-sacs and closed end streets. The spacing of access points between full street connections is also limited, except where prevented by barriers. Closed end streets also have a length limit or a limit on the number of dwelling units that can be served by that street.

When street connections are not possible because of physical constraints such as topography, provisions for bicycle and pedestrian access on public easements are suggested. Short public right-of-way routes that can connect residential neighborhoods with neighborhood services, schools, parks and other neighborhood facilities can also encourage pedestrian travel. Street systems in well-connected neighborhoods serve a mix of development types with continuous street patterns. In addition, narrow street design alternatives should be a consideration. In areas that are already developed without street connections, extending and connecting streets from nearby areas incrementally may be appropriate.

Bicycling and walking can be attractive alternatives to automobile use, can reduce the number of vehicle trips that are necessary, and can improve the health of the region. Jurisdictions can promote pedestrian and bicycle trips by designing with these alternative transportation modes in mind.

Bicycle and pedestrian facilities can: (1) provide transportation options for households who don't own cars; (2) provide efficient alternative transportation options; (3) provide continuous and more direct routes for travel by walking and biking; and (4) provide a well functioning multi-modal transportation network.

Bicycle facilities primarily include shared roadways, signed shared roadways, wide right travel lanes, wider shoulders, bike lanes, and shared-use paths. Other bicycle facilities include bicycle parking, bicycle racks on buses, showers and clothing lockers at work to promote employees' use of bicycle commuting, and bicycle route maps.

Pedestrian facilities include sidewalks, trails, and when other options are not available, roads. Walking is a fundamental form of transportation that is important to our communities. The construction of pedestrian facilities during development and redevelopment is an opportunity to incorporate new and better maintained sidewalks, walking trails, and new crosswalk markings. Traffic calming facilities such as islands and signage along with crosswalk markings can also help to alert drivers to pedestrian activity.

It is also helpful to identify where improvements need to be made or where pedestrian and bicycle activity currently exists and why it is successful. An inventory of existing facilities can help determine how walkable or bicycle friendly a community is. Attention can be paid to

details such as whether or not sidewalks are continuous or in disrepair, whether or not the street, adjacent buildings and landscaping provide a pleasant environment, and whether or not the sidewalks are wide enough for two or more people to pass each other. These evaluations will begin to identify the areas that may need to be addressed for redevelopment or new development. Similarly, with bicycling, an audit or inventory can determine whether or not there are sufficient road widths along a given route or whether or not bicycle parking is available. This will help to identify existing routes that can currently be used for cycling and those that need improvements.

Many design manuals for effective pedestrian and bicycle facilities exist from various sources such as the US Department of Justice (Americans with Disabilities Act (ADA) Standards for Accessible Design), the Federal Highway Administration (FHWA), Active Living by Design, and American Association of State Highway and Transportation Officials (AASHTO).

The federal Safe, Accountable, Flexible, Efficient Transportation Equity Act – a Legacy for Users (SAFETEA-LU) includes a Safe Routes to School Program. This program provides funding for state departments of transportation which can be passed through to local communities. The general purpose of such programs is to facilitate projects that will enable and encourage children to safely walk and bicycle to school, promote healthier lifestyles, and reduce traffic.

Zoning and Development Techniques

The zoning ordinance is a fundamental tool for guiding land use and development within a jurisdiction. Zoning ordinances are integral to implementing local comprehensive plans and achieving the vision of the community. Zoning ordinances should be continually reevaluated and revised to meet the changing needs of the community. As zoning amendments are made, their impact on the comprehensive plan should be considered. For example, if an area identified for agricultural use in the comprehensive plan is re-zoned or developed as commercial property, an evaluation of the area surrounding that property should be undertaken to assess the appropriateness of the plan's land use recommendations for that property or area. An amendment to the comprehensive plan may also be necessary.

Subdivision regulations help ensure adequate provisions for streets, water and other infrastructure to support appropriate development. Development patterns can be regulated by subdivision regulations, which are important implementation tools for a local comprehensive plan.

Changes to the zoning ordinance and subdivision regulations should be consistent with the adopted comprehensive plan. The comprehensive plan's data, analyses, goals, objectives and policies, along with the future land use map should be evaluated to determine if zoning and subdivision regulation changes are in accordance with the comprehensive plan. The comprehensive plan should be considered for the timing and location of development, the efficient use of land and public and environmental resources, and the impacts on facilities or community characteristics. Formal findings should be established in order to evaluate proposed amendments to the zoning ordinance and subdivision regulations. These findings may state that the amendment is in agreement with the adopted comprehensive plan, including the bases for that finding. In the event that existing regulations are found to be inappropriate, or if there have been major changes in the community that were not anticipated by the comprehensive plan, the

basis for these findings should also be made part of public record and amendments to the plan should follow.

Proposed development should be considered in terms of appropriate intensity and density, it should discourage leapfrog development, it should discourage strip type development emanating from existing developments and it should encourage efficient compact development, services available to the development, the timing of development, mix of uses, and the developments relationship to functional open space, natural resources and rural land.

Many development techniques that further and implement the comprehensive plan can be encouraged and achieved through zoning and subdivision regulations. Conservation subdivisions preserve open spaces and natural lands by clustering housing units on smaller lots around larger communal grounds. The goal of conservation development is to set aside a substantial portion of available usable land as open space. Conservation subdivision development is advantageous in exurban areas because it promotes healthy water quality, protects animal habitats, and lowers infrastructure costs and maintenance.

Conservation design practices incorporate the conservation of land, natural features, and open space into the project design, resulting in substantial natural systems protection that would not be possible under traditional zoning and subdivision standards. Conservation design practices include shared driveways, stormwater runoff reduction, relaxed setback standards, smaller lots, and cluster housing. Local jurisdictions can develop and adopt updated zoning and subdivision regulations that support implementation of the local comprehensive plan goals, objectives, and policies, such as conservation design practices for new residential and commercial developments.

The 2004 Clinton County Comprehensive Plan discusses the use of conservation subdivisions related to growth management. For context, an excerpt from this plan is presented below.

DEVELOPMENT ALTERNATIVES FOR GROWTH MANAGEMENT

Conservation Subdivision

Conservation subdivisions represent an alternative approach to the conventional lot-by-lot division of land in rural environs, which tends to spread development evenly throughout a parcel with little regard to impacts on the natural and cultural features of the landscape. This site design alternative may be suitable in a variety of settings, including urban areas, in transition vicinity between clearly rural and urban areas or in rural surroundings. Conservation subdivision may be defined as a residential development in a rural area that is characterized by compact lots and common open spaces, and where the natural features of land are maintained or at least the impact mitigated. The conservation subdivision allows the landowners to develop parcels by clustering residences on smaller lots while protecting the remaining open spaces.

Generally, the conservation subdivision allows for an adjustment in the location of residential dwelling units on a parcel of land as long as the ultimate density does not exceed the number of units prescribed by the zoning resolution for that district. The dwelling units are grouped or clustered on only a portion of the land to be subdivided. The balance of the site is preserved as open space, farmland, or as an environmentally and culturally sensitive area. This clustering of the dwellings into a small area is made possible by reducing the individual lot sizes. The open space is permanently protected and held in common ownership. The conservation subdivision concept allows the developer to concentrate units on the most usable portion of the site, preserving natural drainage systems, open space, and environmentally and culturally sensitive

areas. The design alternative is a more sustainable alternative to the often-used 2.0, 5.01, and 10- acre estate lots found in typical growth counties.

The conservation subdivision is not the solution to all development activities. The concept promotes and encourages the clustering of homes so as to create an interconnected network of permanent open spaces. A homeowners association, non-profit conservation organization such as a land trust, a unit of local government, or an individual who complies with the permanent conservation restrictions typically manage the open spaces and common facilities, such as joint septic and water systems.

Advantages of the conservation subdivision concept include:

- Fostering a sense of community through carefully sited smaller lots and shared spaces*
- Protecting and restoring significant resources such as prime farmland, historic buildings, archaeological sites, mature woodlands, streams, ponds, and scenic views*
- Preserving the rural character, with its external effect on land values.*

Conservation subdivisions are not the best answer to saving large tracts of agricultural land, nor are they the best measures to protect farming as a viable lifestyle. In order to sustain an agricultural community and ensure farming as a viable lifestyle, large blocks of contiguous land need to be protected. Conservation subdivisions can however, protect small blocks of agricultural land and promote areas where agricultural and residential activities can co-exist.

The minimum size of the conservation subdivision must be sufficiently large to accommodate the creative design and to protect the open space. The size and number of dwelling lots must be tailored to the unique aspects of the site. The minimum size used by many communities for conservation subdivision is from 10 to 40 acres. Further options may be to make a mandatory for division of 20 acres or more into at least 4 parcels. The amount of open space requirements must be adequate to protect the natural resources and preserve the rural character in the conservation subdivision. In many models the amount of open space is 40 to 50 percent of the total acreage.

The County should embrace the conservation subdivision concept and encourage homeowners associations as a tool to maintain the open space. Also, the deed restrictions should include restriction on farm animals, kennels and keeping the open space open.

Low impact development (LID) is an engineering/development approach aimed at maintaining the pre-growth integrity of hydrologic systems during and after the development phase. LID reduces runoff by assimilating open space, natural landscaping, natural hydrologic systems, and other techniques that help manage stormwater pollution. LID systems are more cost effective to install than conventional stormwater management systems, and maintenance is less expensive as well. LID can also improve quality of life as it minimizes water pollution and provides more vegetation and green space for communities, increases property values, protects natural spaces, lowers energy costs, decreases flooding, and provides many more benefits. Techniques include the use of bio-retention areas, reducing the amount of clearing and grading, reducing impervious surfaces, using permeable pavement, swales and other alternative approaches to storm water management.

Suburban expansion continues to extend further into rural communities. Agricultural preservation and rural land uses are vital in helping maintain a community's bucolic identity and a component of the regional and state economies. It is thought that continued volatile fuel prices will increase demand for locally-produced agricultural products. Tools exist for protecting agricultural land that also promote efficient use of land and economic development.

A conservation easement is a legal agreement between a landowner and a private, nonprofit organization or a government agency that permanently limits a property's uses to protect conservation values. Transfer of development rights and purchase of development rights (TDR/PDR) programs use this technique to establish locations for protection and development. The TDR program identifies "sending" and "receiving" areas for preservation and growth, respectively. A TDR program, for example, allows the landowner to sell the development rights to a developer who then uses those development rights to increase the density of houses on another piece of property at another location. When a property owner donates or sells a conservation easement, he or she permanently gives up a portion of the bundle of rights associated with the property. This legal agreement can be tailored to protect conservation values and to meet the financial and personal needs of each landowner. In some cases, a conservation easement may apply to just a portion of the property, leaving the option of development open for the remaining part. A conservation easement is a land trust's primary tool.

The 2004 Clinton County Comprehensive Plan discusses the use of purchase of development rights. For context, an excerpt from this plan is presented below.

Purchase of Development Rights

The Purchase of Development Rights (PDR) represents a program whereby land is permanently restricted to the development. The program complements the community's decision to direct new growth to urbanizing areas and away from rural lands with significant resources. Zoning changes can direct development away from an area, but zoning changes are not necessarily permanent.

The PDR programs compensate individual landowners for voluntarily selling development rights and providing protection for the community. As part of an integrated growth management program, PDR programs can balance the perceived negative action of regulatory changes by offering compensation to landowners who voluntarily and permanently restrict their land to protect community resources.

The state of Ohio has allocated \$25 million of the \$400 million Clean Ohio Fund to be used over a four year period for the purchase of development rights. The ultimate long-term goal is to preserve viable "blocks of farmland" in perpetuity.

Overlay zones are a zoning technique that can assist communities by addressing special conditions or needs in a specific area. Overlay zones are often used in areas where multiple zoning districts exist, all of which are experiencing similar issues or contain special characteristics. Transportation, historic preservation and natural resource protection are topics that are commonly addressed. Overlay zones are applied in these situations as additional layers of regulation that are superimposed over the underlying existing zones to address these special conditions. This technique is a common way to address special environmentally significant characteristics in a given area, such as areas prone to flooding, for stream protection, for wetlands or for hillside preservation. Overlay zones can also be appropriate for economic development purposes, to create community character, to implement a specific plan, or for infrastructure protection, such as roadway access and level of service standards.

Overlays zones can also be used to create flexibility within an underlying zone. This flexibility can come in the form of relaxed setbacks, density bonuses, or other development techniques that

may not be permitted under a typical zoning district. This flexibility is sometimes essential when promoting redevelopment or when dealing with a challenging development site.

Form-based codes are used to influence the form and function of development. Rather than focusing on land uses, form based codes are more concerned with the relationships between buildings, streets, and open spaces. These codes speak primarily to the function of and the physical characteristics of a site rather than the specific uses within the site.

Mixed-use development refers to a tract of land or structure with more than one type of use (such as a mix of office, retail, residential, entertainment, cultural, recreation, etc.), all of which are physically and functionally integrated and are mutually supporting.

Compact, higher intensity, pedestrian-oriented, mixed uses consume less land, and can cost less for supporting roads, utilities, housing, and for other fiscal impacts, such as infrastructure maintenance. For example, compact development requires less infrastructure investment for pavement and pipe for water and sewer, which can also affect housing costs. Similarly, residents of mixed-use developments may have shorter trips to grocery and hardware stores, healthcare, restaurants, and jobs. This can translate into savings on transportation costs since they can more easily travel by foot or bicycle.¹

Mixed use development can: (1) broaden the tax base; (2) promote multi-modal transportation options; (3) promote community centers (4) provide for varying densities and intensities to serve a diverse population (5) bring people closer to the things they need on a daily basis; (6) facilitate the efficient use of land; (7) preserve open space; and (8) increase job opportunity.

Areas within a community that are served by adequate public facilities such as roadways, water and sewer can benefit from mixed use development. Providing for development that permits a range of land uses can enhance the use of transit, pedestrian and bicycle facilities. Complementary land uses that allow residents to drop their kids at daycare, work out, and grab a cup of coffee all in one stop will reduce the number of single occupant vehicle trips.

A comprehensive plan's goals, objectives, and policies of may lead to the revision of ordinances to allow mixed-use development where appropriate. Additional market research will be necessary to determine the proper mix of land uses that will be supported by the community and that are appropriate for the site. How the mix of uses is accommodated at the small area-level will also need to be determined, either by a mix of uses in one building or in adjacent buildings. Additionally, characteristics of the community should be taken into consideration, such as its urban, suburban or rural nature, and how mixed use zoning will best apply, either through the use of an overlay, a planned unit development or a stand-alone, by-right zoning district.

In order to ensure that a proposed development will meet the goals of a community, it is useful to include a requirement and process for reviewing a concept plan of the development in the mixed use zoning ordinance. These concept plans should include enough information for staff and the developer to discuss any potential issues prior to the submittal of a zoning amendment or a development plan. Details related to the conformance with the comprehensive plan, the land use breakdown, development phasing, density or floor area ratios, vehicular and pedestrian access and circulation, on-site amenities, open space, landscaping and buffers, the location of existing

¹ Duncan, 1989; Frank, 1989; Burchell, 1992, cited in Smart Growth Network, 2000.

and proposed buildings as well as adjacent buildings and land uses, the provision of transit facilities, parking and utilities, the capacity of infrastructure, signage, and lighting are all issues that should be considered to maintain an orderly development that addresses the needs of the community.

Incentives can also be used to promote mixed use development. Flexibility in the zoning ordinance will be attractive to developers who may be cautious due to the perceived risk with mixed use development. Providing for flexibility will enable any unanticipated site characteristics or opportunities to be worked through.

Some communities use tax increment financing districts or other public private partnerships to achieve design and development goals. Funding assistance, for example tax incentives or small business loans, is an excellent incentive for developers who may be hesitant to invest in a mixed use development.

Issues that should be addressed related to mixed use development are traffic, density, safety, and compatibility issues such as noise, traffic and visual impacts between existing development and a new mixed use development. Ensuring the proper mix of uses can also be a challenge. Providing residential development sufficient to support retail or providing employment opportunities for residents of the development should be determined by the community's goals. Parking should also be balanced between uses. Retail and office uses, for example, see peak parking needs during different times of the day. The use of shared parking to reduce impervious surfaces while still meeting the needs of the businesses within the development should be examined.

Traditional Neighborhood Development (TND) includes neighborhoods that have a mix of uses and housing types, typically include neighborhood centers and parks, and interconnecting streets and alleys. This mix of uses and multiple transportation options facilitates residents walking to work, shopping and recreation. This type of development can foster the development of comprehensively planned, pedestrian-oriented neighborhoods.

The 2004 Clinton County Comprehensive Plan includes additional variations to traditional zoning:

Variations to the Traditional Zoning

Zoning became established during a time that witnessed the purpose of land use regulations as separating residential from commercial and/or industrial activities. The segregation of uses became known as Euclidian Zoning after the court case in which it was upheld. As advances in transportation and communications, the migration of people and industry from urban centers to suburban and rural locations, changes in lifestyles and living arrangements, and the changing demands for natural resources, challenges to the traditional zoning techniques increase.

Regardless of the limitations, zoning has continued to be the primary land use regulatory tool. The tools used in Clinton County should be enhanced to consider aspects of flexible zoning techniques. Flexible zoning tools entail negotiation between the developer and the administering agency to tailor the development proposals to community needs and standards. Professional staff, the planning commission and the governing body become more involved in the evaluation/negotiation processes.

Of particular interest to Clinton County is the bonus and incentive zoning concepts. Bonus and incentive zoning allow government to grant a bonus, usually in the form of density or the size of

the development, in exchange for amenities such as increased open space, pedestrian paths, and landscaping. Density bonuses may be offered to encourage cluster (open space subdivision) development. In many cases, the use of bonus and incentive zoning is tied to the site plan approval process.

The Clinton County Rural Zoning Resolution should be reviewed and revised as needed at least every 5 to 7 years. Further, the Resolution should be revised to include overlay zones. An overlay zone, for example, is designed to protect important resources and sensitive areas. The floodplain represents one example of a sensitive area having an overlay zone. Others that should be considered are woodlands, steep sloping areas and Municipal wellhead protection areas. The underlying zoning regulates the type of uses permitted, such as residential or commercial, while the overlay zone imposes specific requirements to provide additional protection.

The Clinton County Zoning Resolution should also be revised to include standards for the locating and/or the placement of sanitary landfills and stone excavation operations. Specific standards could not impinge upon the state's authority; however, the community standards such as clay liners, test wells, and property borders, should be interpreted and incorporated therein.

The County Plan also includes some general implementation techniques and concepts for its established goals, objectives and policies that are of interest to this plan:

Implementation Techniques

Implement and enforce zoning regulations and codes to:

- *Neighborhood commercial uses in low- and medium-density residential areas to include sign control.*
- *Extensive commercial and/or industrial development should be permitted only in areas with community water and sewerage service.*
- *Commercial and industrial waste disposal.*
- *Storm water management techniques should be adopted and implemented.*
- *Traffic impact studies should be required with the developer addressing new impacts.*

Growth Centers

The growth center concept introduced in the original Comprehensive Plan appears to be applicable to the present Clinton County. Therefore, the recommendations contained in the 1995 edition are incorporated herein and are summarized as:

- *City of Wilmington – Primary Growth Center.*
- *Villages of Blanchester, Sabina, and New Vienna – Secondary Growth Centers.*
- *With the advent of the sanitary sewer systems, the villages of Clarksville, Midland and Martinsville serve as Secondary Growth Centers. The village of Port William upon being served with public water and/or sanitary sewer will be identified as a Secondary Growth Center.*
- *The hamlets of New Antioch, Reesville, Cuba, Westboro, Sligo, North Kingman serves as Rural Growth Centers*

Economic Development

The economic development needs of each municipality, township and county in the region are different. Some communities are choosing to encourage large scale retail development for economic development purposes, to stimulate the economy and to bring in new sales tax revenue

and jobs. Other communities are increasingly concerned about the impacts that large scale retail development can have on community character, the homogeneity of retail uses, the potential traffic impacts and the unanticipated demand for capital investment in public facilities and services. All of these factors lead to the desire in some communities to address these issues through zoning regulations.

Business development in southwest Ohio has a tendency to occur on undeveloped land at the fringe of the urbanized areas. These new business are typically oriented toward the roadway and have large parking areas in front of the building. Businesses that are isolated from residential uses, not pedestrian oriented, and often not serviced by transit require workers and patrons to use an automobile to get there.

One of the greatest challenges communities face today is how to best promote economic development while preserving community character. Standards relating to site location, design, landscaping, lighting, and architecture details can assist communities and developers in creating a desirable retail product. Design guidelines that affect parking, the placement of buildings, and bicycle, pedestrian and transit facilities can reduce the visual scale of larger buildings, provide interest at the pedestrian level, and create an atmosphere that encourages multi-modal transportation. In order to maintain a given character, a community may address the architecture of retail structures. Some communities even choose to limit the size of the building itself, or require additional outdoor community spaces that help to attract the public and enhance the businesses. Communities should tailor standards to their own local political and economic contexts. Some communities have established a qualified design review board to help ensure that local goals are achieved.

Large scale retail standards can: (1) respond to local concerns about the impacts of large scale retail development; (2) encourage development that contributes to the character and identity of the community; (3) encourage positive integration of new businesses into the community; (4) encourage appropriate architectural variety and compatible scales of development; and (5) provide improved pedestrian, bicycle and transit access.

The completion of a local government sponsored market analysis is another way for to determine if a community can support large scale retail development or other types of economic growth. When undertaken by a local government as part of a planning effort, this tool can help to identify land uses that will be competitive in the marketplace, and can also provide a tool for existing residents or developers to market their property if they wish to do so. This analysis assists the community by identifying how well consumers are being served by existing businesses and by identifying the most likely users of a new development. Communities also need to know their economic development goals and how they will be implemented, how much land is currently zoned for commercial (including office and retail) uses, and the potential impacts of new retail development on the existing community.

Business retention, business attraction and new business/entrepreneurship development are all important to a community's health and diversified business climate. Expanding and diversifying the types of businesses in a community increases employment opportunities, generates additional tax revenues, diversifies the economic base, and improves the quality of life for residents. Jurisdictions should cooperate with economic development agencies and major institutions in the region to provide information about sites and services available for new and expanding businesses. Programs for the expansion of existing businesses and the recruitment of new

businesses include the creation of business assistance centers, low interest loans, and other mechanisms for reducing the cost of doing business. Business incubators can assist start up companies by providing companies with business support services and resources tailored to new firms. Incubation programs help to create jobs in a community, enhance a community's entrepreneurial climate, retain businesses in a community, build or accelerate growth in a local industry, and diversify local economies. Providing facilities, access to customers, reducing business costs, and providing a high quality of life for employees can also assist in business attraction and new business development.

The expansion of existing businesses and the creation of new businesses should be encouraged in areas currently served by public facilities and services or in areas that are planned for infrastructure expansion. Clusters of related industries and businesses that export outside the region should also be promoted. New businesses should also be located relative to other surrounding uses, surrounding workforce populations, and transportation options. An inventory of brownfields, adaptive reuse opportunities, and underutilized or vacant properties can provide opportunities for communities to cooperate with economic development agencies. The promotion of brownfields redevelopment through public/private partnerships can benefit the community by providing development sites that are currently served by infrastructure. Business expansion and retention plays an important role in infill development. Properly locating service and employment centers can attract residents to move to, as well as maintain, communities in infill areas. The use of performance standards may be necessary for uses that potentially have negative impacts on surrounding areas. The use of architectural design guidelines and compatibility standards may be necessary to ensure that new or expanding development complements existing community character.

The strength of the workforce is integral to economic development. Improving the skills of local residents not only raises their marketability and wage earning potential, but also introduces more money in the local economy. Housing a skilled workforce is also an attractor that helps recruit new businesses to the region.

Quality of life in the region is another important factor to consider when promoting economic development. Competitive jurisdictions must provide amenities and create an environment that is attractive to a skilled, educated workforce. Today, we are learning that as we shift towards a knowledge-based economy, it is imperative that we retain a "creative class" of young professionals that will help attract new firms seeking qualified employees to the region.

Numerous potential funding sources exist to help finance infrastructure and services to serve new development projects as well as to spur new economic development. Impact fees are charged to developers to pay for the costs on government to provide services for new developments. The impact fees may help fund an extended road or utility network. Tax increment financing is a tool that allows a jurisdiction to use increased property tax revenues generated by a new development to repay itself for the initial investment in the development. There are many tools available for jurisdictions to employ for funding growth and development.

All local economic development projects should be pursued in cooperation with the greater region. Local jurisdictions should not see each other as economic competitors, battling to attract the best businesses. Rather, jurisdictions should complement each other, and work towards creating a stronger, economically vibrant region.

Intergovernmental Coordination

Intergovernmental coordination is key to identifying and resolving incompatible goals, objectives, policies and development proposed in local jurisdictions; and to determine and respond to the needs for coordination with adjacent local governments, and with regional and state agencies. The essential idea is that plans of other governmental agencies should be examined and coordinated or integrated into a community's comprehensive plan as much as possible.

To enable efficient intergovernmental coordination during the development process, an inventory of the existing coordination mechanisms and the nature of the relationship should be completed for surrounding jurisdictions, school boards, independent special districts, boards of health, regional planning agencies, state agencies with which the local government coordinates, including those with land use or environmental regulatory authority, public and private gas, water, sewer, electric, telephone, and wireless telecommunications utilities, emergency management departments, economic development agencies and agricultural, neighborhood, historic preservation, conservation, and homebuilding organizations.

Similarly, during the development review process other affected jurisdictions or organizations should be involved. This could occur through a pre-submittal meeting for zoning amendments or subdivision plats. Comments could be requested from other organizations related to proposed development if meetings are not feasible. The comments and suggestions stemming from these affected jurisdictions and organizations should be considered in the approval process. For example, if a school district does not have capacity for additional students that may be generated by new development, this factor should be considered in the approval process.

Capital Improvements

Addressing capital improvements within a comprehensive plan serves several purposes:

- To evaluate the need for public facilities and services identified in the various plan elements, and estimate the cost of improvements for which a local government has fiscal responsibility;
- To analyze the local government's fiscal capacity to finance and construct improvements;
- To adopt financial policies that guide the funding of necessary improvements; and
- To schedule the funding and construction of improvements such that they are available when required based on needs identified in the other comprehensive plan elements.

Addressing capital improvements within a comprehensive plan can also provide clear links between the local comprehensive plan and public facilities and services, economic development planning, and their adequate funding. This should provide a basis for the plan to be financially feasible, focusing on the location of improvements, the timing of improvements to coincide with expected development or to remedy deficiencies, and the cost of and responsibility for carrying out the improvements. Needed capital improvements

should include those that are necessary to meet level of service standards identified in other elements of the plan

Other Broad Strategies

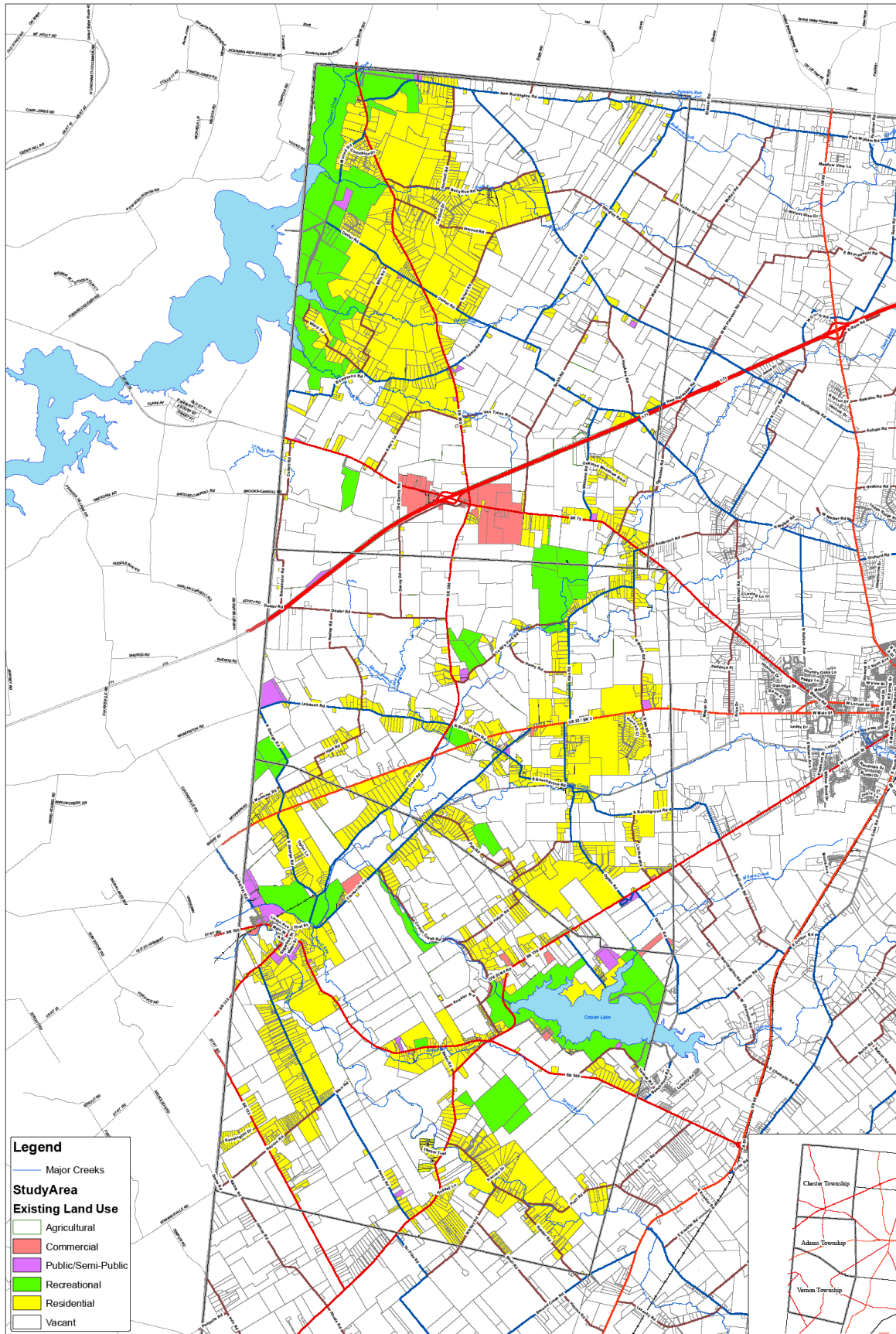
The 2004 Clinton County Comprehensive Plan also includes other broad strategies for implementation:

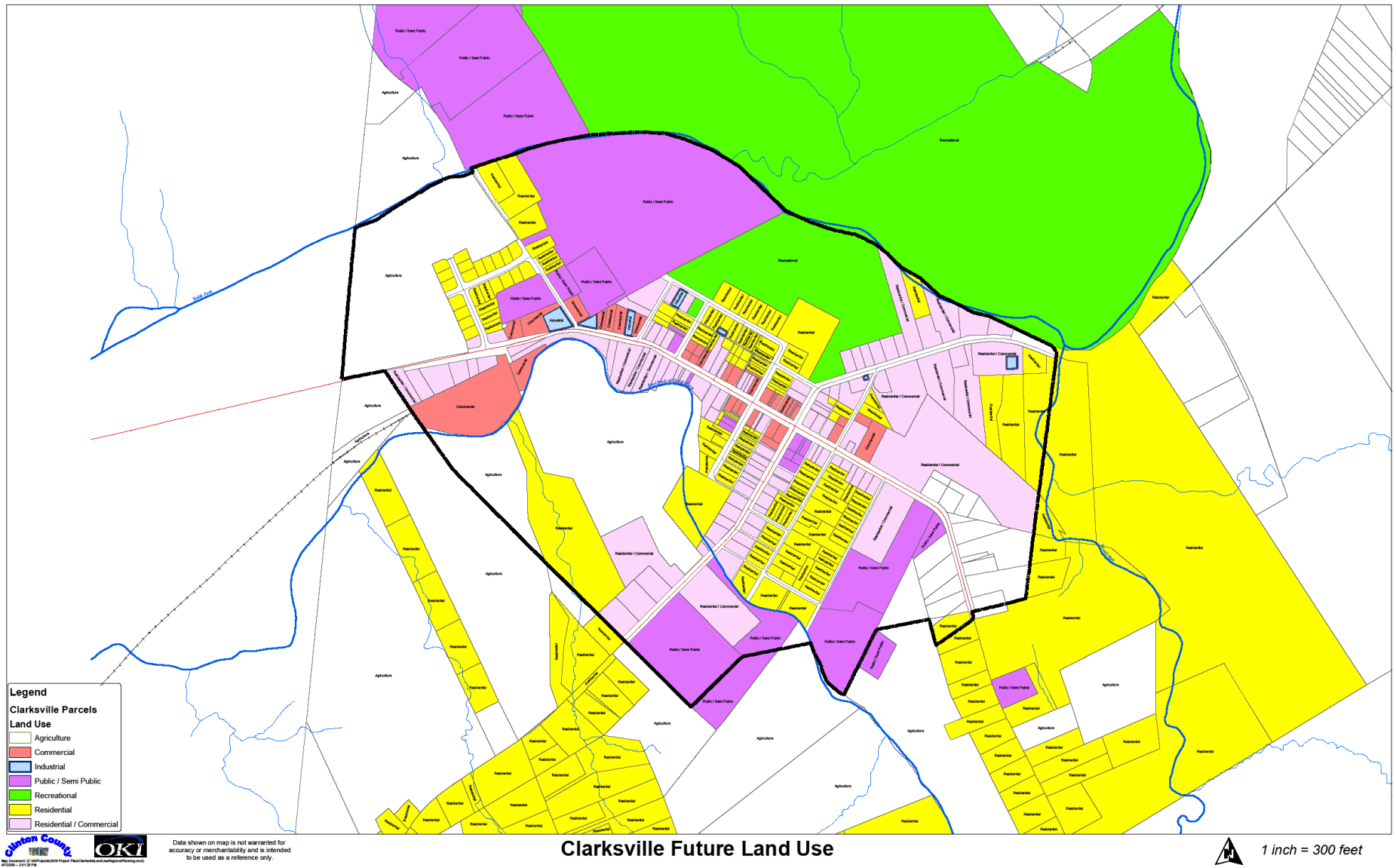
Other Broad Strategies

- *Advocate enactment of legislation to implement private water systems program improvements related to contractor certification and enforcement.*
- *Continue implementation of pollution prevention programs to promote and adopt pollution prevention strategies.*
- *Continue development and implementation of the Phase II Storm water program.*
- *Support and promote TMDL watershed restoration plans as vehicles to protect, restore, and manage the waters of Clinton County.*
- *Support the emphasis of the Open Space and Watershed Conservation Program of the Clean Ohio Fund for the protection and restoration of streams, wetlands, and open spaces.*
- *Promote coordination with and among regional and local planning efforts.*
- *Collaborate on environmental education initiatives.*
- *Encourage the protection of in-door and out-door clean air.*
- *Encourage landowners to consider the County Park District as an alternative for land donations.*
- *Encourage communities relying on ground water to prepare and implement a municipal wellhead protection program.*
- *Focus activities linking natural green spaces rather than preserving small islands of woodlands or spaces.*
- *Work closely with the County GIS and Auditors offices to develop a formal monitoring process thereby recording the frequency of lot splits from host parcels.*
- *Amend the Zoning Resolution to embrace the concept of maximum lot size of say 3 to 4 acres in lieu of the minimum lot size, and embrace a strict agriculture protection area and standards.*
- *Consider a policy of requiring property audits for the transfer of property.*
- *Design – construct the by-pass around the city of Wilmington.*
- *Create and adopt an access management plan for the major thoroughfares in Clinton County.*
- *Inform local governments about the benefits of and encourage local governments to adopt a pavement management system thus extending life of the pavement.*
- *Work with neighboring counties, the Ohio Department of Transportation and the Ohio Department of Development in achieving sub-regional objectives. (Region IV - Governor's office of Economic Development)*
- *Protect the availability of the exiting housing stock by providing funds to preserve federally subsidized housing.*
- *Continue the Community Housing Improvement Program (CHIP) to distribute approximately \$500,000 per program year to the greater community of Clinton County to support housing rehabilitation, repair, homebuyer, rental assistance and other housing programs.*
- *Continue participation in the state's Formula Allocation Program (CDBG) thereby providing a degree of flexibility to the local communities regarding public facility needs, public infrastructure needs, public service needs, and similar requirements.*

-
- *Create through the County's existing support structure, a public information and education program. The primary mission of the program is to inform the residents of Clinton County about the resources and the delivery systems available.*
 - *Support the housing needs of the special populations in particular the Domestic Violence Agency and the Homeless Shelter.*
 - *Create and maintain affordable life-cycle housing through housing construction and rehabilitation of property.*
 - *Develop and nourish human and social assets in the community through shared community learning, inclusive and informed decision-making using resources.*
 - *Develop and expand financing assets in the community through asset creation, debt reduction, and local investment opportunities.*
 - *Achieve economic activities that build wealth for all through expanding the export economy, job creation, diversifying the economy and reducing the cost of living, in conjunction with the office of Economic Development, County Port Authority, and Foreign Trade Zone.*

Pursuant to Ohio law and the 2008 and 2009 Clinton County Zoning Resolutions, the adopted comprehensive plan shall serve as land use guidance for future zoning decisions by the Board of Zoning Appeals and the Rural Zoning Commission. This Plan and the Future Land Use maps shall serve as the official comprehensive plan for the subject twps.





CHAPTER 10

Monitoring and Evaluation

Evaluating and Updating the Comprehensive Plan

This plan should be evaluated and updated every 5 years, or more frequently as conditions warrant. The process of evaluating and updating the plan should be methodical and similar to its creation and adoption.

The purpose in evaluating the Comprehensive Plan is to determine whether the plan has resulted in progress in achieving the development the people want for their communities. The comprehensive plan describes the way the three townships and Clarksville will develop and grow, it lists goals and objectives for the three-township area, and lists the policies that will direct programs, budgets, and decisions.

Over time the area will change. Some changes will be consistent with the growth anticipated and planned for. Other circumstances may bring changes to the area that were not anticipated. The comprehensive plan will continue to be useful in guiding growth and development if it is kept up to date to reflect changes and new circumstances. The process of preparing an evaluation and update provides an organized way to look at the plan and determine how well it fits the three-township area's current and future needs and desires.

Township and Clarksville officials should address the subjects within the plan that are important issues for the area. Involving many groups in a discussion of the plan's evaluation and update is a very useful and important step in the process, and is strongly recommended.

The evaluation and update should be an audit useful to the area in modifying its plan so that the plan does direct growth and development to achieve the area's goals. The evaluation and update should be most useful when it focuses on subject matter of local importance in the context of:

- The area's existing and projected population and rate of population growth;
- The geography and size of the area's jurisdictions, and the extent or existence of undeveloped land;
- The existence of natural resource features such as groundwater recharge areas, waterwells, soil conditions, wildlife habitat, and areas subject to flooding;
- The scale and adequacy of public facilities and services the area provides or is projected to provide as they relate to the level of capital improvements planning required; and
- The area's planning and implementation resources, and associated local and regional public and private institutions, such as the Clinton County Regional Planning Commission, Miami Valley Regional Planning Commission and the OKI Regional Council of Governments.