

LICKING TOWNSHIP
COMPREHENSIVE PLANNING COMMITTEE

Licking County, Ohio

March 2002

Dear Resident of Licking Township:

In September 1999 the Licking Township Trustees formed the Licking Township Comprehensive Planning Committee. The committee's purpose was to develop a comprehensive plan to help provide for the logical development of the township consistent with the desires and interests of the township residents.

The committee held monthly public meetings, conducted a township survey, held a public dream session, and had outside experts present data about our township in order to have the information needed to develop the plan being presented to the Township Trustees. The committee believes that this comprehensive plan reflects the desires and interests of the residents for land use in Licking Township.

I would like to thank the members of the Licking Township Comprehensive Planning Committee and the Licking County Planning Commission for their efforts in the development of this plan. I believe that the effort put forth by the committee, planning commission and the people of Licking Township has provided the township with an important tool to help the township achieve its land use goals.

Sincerely,

Joe Castner
Chairperson
Licking Township Comprehensive Planning Committee

RESOLUTION FOR ADOPTION

The Licking Township Trustees formed the Licking Township Planning Committee in 1999 to make recommendations concerning short, intermediate, and long-range planning for the township. The Licking Township Planning Committee and the Licking County Planning Commission developed the Licking Township 2002 Plan. The comprehensive plan constitutes a logical development plan for the township, and is consistent with public opinion gathered at March 2000 Community Survey, the September 2000 Nominal Group Technique, and public meetings and hearings held over the past few years.

The Licking Township Trustees adopt the Licking Township 2002 Comprehensive Plan as a general policy to guide decisions concerning future land use and development of Licking Township. The Licking Township 2002 Comprehensive Plan is adopted as Resolution

_____.

Ronald Acord

Date

Joe Cooper

Date

Dave Miller

Date

The assistance of the following individuals with the preparation of the Licking Township Plan is greatly appreciated.

Members Of The 2002 LICKING TOWNSHIP PLANNING COMMITTEE

Appointed Officials

Joe Castner (Chair)
Gerald and June Moore (Vice-Chair)
John and Marty Freas (Secretary)

Volunteer Citizens

Richard "Butch" Bindley
David Brimgardner
Artistia Clark
Joe Cooper
John Cormican
Fred Culp
Jim Dusthimer
John Holman
Bill and Debbie May
Dave Miller
Randy Swihart

Township Trustees

Ron Acord
Joe Cooper (term began Jan. 2002)
Dave Miller (term began Jan. 2002)
Jim Cormican (term ended Dec. 2001)
Phil Linn (term ended Dec. 2001)

Licking County Planning Commission

Jerry Brems, Director
Tom Frederick, Assistant Director
Lee Brown, Planner
Kristi Stephens, Planner

TABLE OF CONTENTS

Letter From The Chairman.....	i
Resolution For Adoption.....	ii
2002 Licking Township Planning Committee.....	iii
Table Of Contents.....	iv
List Of Figures.....	vi

PART I

Introduction	2
<i>Purpose And Use Of A Comprehensive Plan</i>	2
<i>Why Adopt A Comprehensive Plan?</i>	3
Location And Planning Area.....	4
History.....	5
<i>The History Of Licking Township</i>	5
The Mounds	5
Early Settlers	5
The National Road.....	6
Communities In Licking Township.....	6
Burning Tree Mastodon	7
Licking Township Today	7
<i>Important Sites/Places to Remember</i>	8
Archeological	8
Historical.....	9
Natural	10
Demographics.....	11
<i>Population</i>	11
<i>Age And Gender</i>	14
<i>Education And Income</i>	15
<i>Employment</i>	17
Land Capability	18
<i>Climate</i>	18
<i>Topography</i>	18
<i>Groundwater</i>	21
<i>Soils</i>	25
<i>Floodplains And Wetlands</i>	29
<i>Drainage</i>	33
Infrastructure	34
<i>Central Water and Sewer Service</i>	34
<i>Roads</i>	39
Community Services and Facilities	40
<i>Township Government</i>	40
<i>Fire and Emergency Medical Services</i>	42
<i>Police Services</i>	43
<i>Hospital and Medical Facilities</i>	45
<i>Schools</i>	47

<i>Local Libraries</i>	51
<i>Parks and Recreation</i>	52
Buckeye Lake.....	52
Buckeye Central Scenic Railroad.....	54
Dawes Arboretum.....	56
Golf Courses.....	60
<i>Civic Organizations</i>	61
<i>Churches</i>	63
<i>Other Services</i>	66
Licking Township Facts-at-a-Glance	67
Economic Development	70
<i>Economy and Employment</i>	70

PART II

Public Input.....	73
<i>Community Survey</i>	73
<i>Nominal Group Technique</i>	74
Goals and Objectives.....	76
<i>What is a Goal?</i>	76
<i>Land Use</i>	76
<i>Residential Development</i>	77
<i>Commercial and Industrial Development</i>	78
<i>Transportation</i>	78
<i>Natural Resources</i>	79
<i>Community Services</i>	79
<i>Parks and Recreation</i>	80

PART III

Land Use.....	82
Future Land Use Development Strategies	85
<i>Agriculture</i>	85
<i>Residential</i>	85
Rural Residential	85
High-Density Residential.....	85
Cluster Development	86
<i>Commercial</i>	88
Local Business.....	88
General Business	88
<i>Industrial</i>	89
<i>Parks and Recreation</i>	89

APPENDICES

Appendix I: Community Survey	91
Appendix II: Planning Glossary.....	104

LIST OF FIGURES

Figure 1:	Licking Township Location Map	4
Figure 2:	Licking Township Population 1940-2000.....	11
Figure 3:	Township Growth Comparisons.....	12
Figure 4:	Licking County Population 1940-2000.....	13
Figure 5:	Licking Township Population by Age and Sex	14
Figure 6:	Educational Attainment Comparison.....	15
Figure 7:	Households by Income.....	16
Figure 8:	Employment by Occupation.....	17
Figure 9:	Slope Requirements for Various Land Uses	19
Figure 10:	Percent of Slope.....	20
Figure 11:	Groundwater Yield	22
Figure 12:	Minimum Lot Size Based on Groundwater Pollution Potential	24
Figure 13:	General Soil Type Characteristics	25
Figure 14:	General Soil Map.....	26
Figure 15:	Prime Farmland	28
Figure 16:	Floodplain Map	30
Figure 17:	Land Use (Including Wetlands).....	32
Figure 18:	Existing and Projected Central Water and Sewer Service	36
Figure 19:	Licking Township Government.....	34
Figure 19:	Licking Township Survey Sections	37
Figure 20:	Licking Township Survey Responses Regarding Water & Sewer	38
Figure 21:	Ashto Safe Stopping Distances	39
Figure 22:	Driveway Spacing Requirements	39
Figure 23:	Licking Township Government.....	40
Figure 24:	Licking Township Facilities.....	41
Figure 25:	Licking Township Fire Company.....	42
Figure 26:	Licking Township Fire Equipment.....	43
Figure 27:	Licking Township Sheriff's Department	44
Figure 28:	Hospital/Surgery Facilities.....	45
Figure 29:	Licking County Nursing Homes.....	47
Figure 30:	Lakewood Facilities.....	48
Figure 31:	Lakewood School Enrollment	48
Figure 32:	Licking County School Districts	50
Figure 33:	Licking County Libraries	51
Figure 34:	Buckeye Lake Boat Racing	54
Figure 35:	Buckeye Central Scenic Railroad Route	55
Figure 36:	Dawes Arboretum.....	56
Figure 37:	Golf Courses in Licking Township.....	60
Figure 38:	Licking Township Area Clubs and Organizations.....	61
Figure 39:	Licking Township Churches	63
Figure 40:	Local vs. Toll Calls.....	66
Figure 41:	Licking County Utilities.....	67
Figure 42:	Newark Temperature Records and Averages	69
Figure 43:	Licking Township Industry	70
Figure 44:	Businesses Located in Licking Township.....	71
Figure 45:	Licking Township 2020 Vision	75
Figure 46:	Licking Township Zoning Map.....	83
Figure 47:	Licking Township Future Land Use Map	84

PART I

INTRODUCTION

Purpose and Use of a Comprehensive Plan

A comprehensive plan serves several purposes for a community. It gathers all relevant information about the physical, social, and economic features of a community. Then the plan develops a consensus about how the community should develop and redevelop. **A comprehensive plan provides a long-range vision of the future for a community.** It does this by taking the community's consensus and creating a road map of policies and initiatives to be put in place to achieve those goals. Finally, a comprehensive master plan provides a solid legal foundation upon which to base zoning regulations and community decisions should they be challenged in court.

Local planning and land use regulation rests with the enabling legislation granted to counties, municipalities, and townships by the state constitution. The State of Ohio grants its counties, municipalities, and townships two broad powers that allow for planning. These are corporate power and police power. Corporate power is the authority to collect money through bonds, fees, assessments, and taxes to fund community services and facilities such as streets, parks, fire protection, and sewage disposal, among many others. Police power is the authority to protect and promote the health, safety, morals, and general welfare of the public. This authority gives rise to regulations such as standards for building a safe bridge, preventing an adult bookstore from locating next to a school, or ensuring that a new subdivision provides access for emergency vehicles and school busses. Comprehensive planning and zoning rest primarily on this police power and the democratic voice and wishes of the community.

The legal foundation for local planning and land use regulation dates back to a 1926 United States Supreme Court decision. In the case of *Village of Euclid, Ohio v. Ambler Realty Company*, all aspects of comprehensive zoning were contested. The Court ruled in favor of the Village of Euclid, upholding its plan and the constitutionality of zoning. Since this time, courts have continued to give more emphasis to comprehensive/master plans, considering zoning ordinances quasi-judicial and dependent on an adopted comprehensive plan.

A comprehensive plan, with its collection of community data, input, and statements of policies, should provide a basis for all local development decisions. While changes in development or services may make some portions of the plan dated, the underlying principles and policies of the plan will remain useful as guidelines. It is understood that many land use issues are very site-specific, and individual review of each development proposal should be exercised. Relationships between land uses, such as the use of parkland as a buffer between industrial and residential areas, and general land use issues, such as the appropriate location for a new business, should, however, be maintained and followed as described in the plan.

Because changes in services, development, and priorities do take place, there should be periodic review of the comprehensive plan. Such review allows for updating the technical data as well as refocusing on goals and developing new ones, while maintaining the overall integrity of the plan. The frequency of comprehensive plan review will depend on the pace of growth in the community, with rapid growth calling for more frequent reviews and updates.

For the Licking Township Comprehensive Plan, scheduled reviews should occur about every five years, barring any substantial changes in development or services (such as the provision of central water or sewer in new areas). The citizens of Licking Township, and more particularly the township trustees and zoning commission members, should monitor the effectiveness of this comprehensive plan in meeting the goals of the township and providing for its welfare. If a divergence or new need becomes apparent, a committee should be appointed by the trustees to “fine-tune” this document.

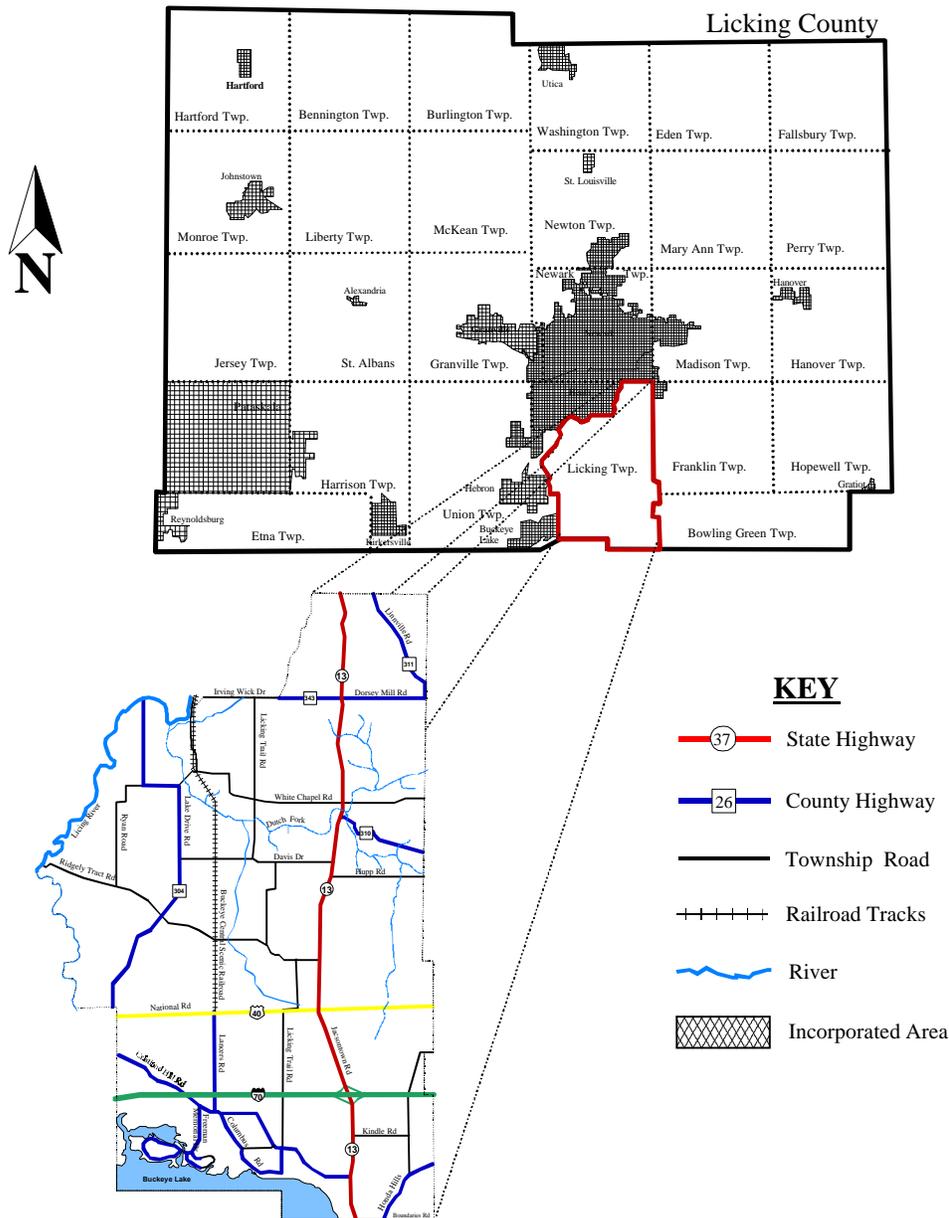
Why Adopt a Comprehensive Plan?

A comprehensive plan provides an overall policy guide and statement of goals for a community. It is a testament of the Licking Township community and is a powerful tool to ensure that the rural character of the township is respected and protected. Once adopted, it is a legal document. The Licking Township Comprehensive Plan provides an outline for development for both township officials and for those residents, developers, and businesspersons interested in locating and/or working in the community. If this adopted comprehensive plan is not followed, residents should take up the issue and township officials should be prepared to defend any actions taken that were not in accordance with this plan. However, provided this comprehensive plan is adopted, maintained, and followed, the Licking Township officials may use the plan as a very solid, strong defense of their actions in court. Furthermore, the comprehensive plan should be seen as a positive and useful guide for the entire community - to be referenced and consulted when making decisions that affect the future of Licking Township and the general good of its inhabitants. Many ideas and potential solutions are contained in this document.

LOCATION AND PLANNING AREA

Licking Township is a mostly rural township that occupies 27 square miles in south-central Licking County (See Figure 1). Licking Township borders the City of Heath on the north and the Villages of Hebron and Buckeye Lake on the west, and is home to the towns of Vanburen and Jacksontown. Vanburen is a small community in the northeast portion of the township, located at the crossroads of S.R. 13 and Hirst Road. Jacksontown is further south on S.R. 13, at the junction of National Road (US 40). Several other villages and major cities, including Newark, Columbus and Zanesville, are within easy driving distance of the planning area.

FIGURE 1: LICKING TOWNSHIP LOCATION MAP



HISTORY

The History of Licking Township

Licking Township was the first township in Licking County (which was so named for the Licking River and its nearby salt licks). Though originally part of Fairfield County, Licking Township became part of Licking County when the county was formed by act in 1808. Covering 27 square miles, Licking Township is one of the largest townships within the county. The township shares boundaries with Franklin Township and Bowling Green Township on the east, Perry County on the south, Union Township on the west, and the City of Heath on the north.

The Mounds

The earliest known peoples in the territory were the mound-building Native Americans. William C. Mills, in his 1914 *Archeological Atlas of Ohio*, lists fifteen mounds and two enclosures built by these peoples in Licking Township. One of the most interesting was a stone mound about a mile south of Jacksontown. Located on a high isolated hill overlooking what is now Buckeye Lake, the mound was dubbed the “Great Stone Mound” and was possibly 189’ by 207’ at its base, and 55’ in height. Between 10,000 and 15,000 wagonloads of stone were removed from the mound in the 1830’s and used in the construction of the banks at Buckeye Lake or built into cellar walls of homes in the area. Up to sixteen smaller earthen mounds, some containing human remains, were uncovered at under the stone mound. While the Great Stone Mound is gone today, an earth mound (the Fairmount Mound) can easily be seen adjacent to the Fairmount Presbyterian Church, near the Licking-Franklin Township line just off National Road.

In more recent times, a Native American trail ran through the township from near Dresden to Buckeye Lake and then on toward Pickerington (in Fairfield County). Wyandots, Delawares and perhaps Shawnees were the most common tribes in the area, attracted by the excellent water resources and an abundance of game.

Early Settlers

The first white pioneers to settle in Licking Township were Phillip Sutton, Job Rathbone, John Gillespie and George Gillespie, all of whom arrived in 1801. Benjamin Green, Richard Pitzer and John Stadden settled in 1802, and were followed by Major Anthony Pitzer, Jacob Swisher, Stephen Robinson and others in 1803. Other early settlers included Isaac, Jehu and Joseph Sutton; Michael and Adam Kite; Samuel Davis; Nicholas Shaver; James Evans; John and Martin Grove; Anthony Geiger; Samuel Moore; John Brumback; Thomas Beard; Thomas Harris; Samuel Parr; Samuel Hupp; Joseph Kelso; Job Rathbone; George Orr; John Hughes; Willis Lake; Derrick Crusen; and Samuel Meredith.

Isaac Stadden was the first justice of the peace, and was elected in January 1802. The election was held at the cabin of Elias Hughes on the Bowling Green, who was the first settler in

Licking County. Hughes was elected Captain of the Militia at the same election. Another early justice of the peace was Alexander Holden, who also served as County Commissioner and was elected to the State Legislature in 1808. Two other pioneers of the township were Nicholas Shaver, a tax collector, and Samuel Patterson, who was elected to the Ohio Senate in 1848.

The National Road

The National Road, which bisects the lower half of Licking Township, brought easy access to Licking County and beyond. The first cries for a “national road” were heard in the mid-1700’s, by several groups including land speculators, the military, farmers, traders, and government officials. George Washington supported a national road, saying a “smooth way” was needed to “open a wide door” to the West – such a road would be the “cement of the union.” In 1806 Jefferson signed legislation officially establishing a national highway, which would run from Cumberland to the Mississippi. Work actually began in 1811 at Cumberland. Interestingly, no use of eminent domain was made in the construction of National Road. No compensation was offered the landowners, because it was felt that the road brought “nothing but benefits and blessings” in its wake. Most farmers happily donated their 66’ strip of land, knowing it would benefit them in the long run. The actual building of National Road was very hard work. First the land had to be cleared of trees, stumps and brush, and hills had to be leveled and hollows filled. The road was then built with layers of stone, a method invented by Scottish engineer John Macadam. By 1824, the road was complete to Wheeling; construction in Ohio began in 1825, continued through Indiana by 1834, and ended in Vandalia, Illinois in 1852.¹

The completion of National Road brought many people through Licking County and Licking Township. People from all walks of life, from all trades, of all religions stepped or rode along the route. One important official use of the road was mail delivery; another heavy presence on the road were the teamsters who hauled freight. Finally, the group probably most associated with the road were the settlers using it as an avenue to the west. Traffic was constant, and many businesses sprung up to serve the needs of the travelers. Blacksmith shops to make repairs, stores sell provisions, and livery stables to provide for horses, lined the road. Perhaps the most numerous of these services were the inns and hotels. One estimate says inns averaged one each mile in Ohio.²

In 1879, the federal government ceded control of the National Road to the states; in return, the US was absolved in any further responsibility or liability for the road.

Communities in Licking Township

Jacksontown was one of the towns that prospered after the completion of the National Road (finished through Licking County in 1825). Thomas Harris laid out Jacksontown in 1829, naming the community Jacksontown after then-President Andrew Jackson (needless to say, Harris was a zealous Jacksonian). The town was originally called Jackson, but was changed

¹ *Road Through the Wilderness: The Making of National Road*, 1994, Timothy Crumrin

² *Road Through the Wilderness: The Making of National Road*, 1994, Timothy Crumrin

to Jacksontown because of another town called Jackson located in Jackson County. Two hotels were built in Jacksontown to service travelers; Headley Hotel, located on the northeast corner of SR 13 and National Road, once hosted Andrew Jackson himself. Clark's Hotel was built in 1918 on the northwest corner. A third hotel was located about ½ mile west of Jacksontown, at a place called Etnier, which is where the Buckeye Scenic Railroad is stationed today. The Licking Township house was built in 1896 and was known as the Jacksontown Town Hall. Basketball games were played there prior to 1936, and today the hall is used for various township meetings.

Vanburen (Van Buren or Fleatown) is located on SR 13 north of Jacksontown, and just south of Township Road 306. In the early days of the township, Vanburen was little more than a wide spot in the road with Hog Run Stream passing through it. Cows and hogs populated the area because of the stream, making fleas a problem. A traveler who spent the night in the town suggested that the name of the community be "Flea-town," and the name stuck. However, county maps still show the town as "Vanburen." A church known as Friendship, then Hog Run, was once located here, but all that remains today is a Baptist Cemetery.

Still a little farther north on SR 13, at the intersection of Dorsey Mill Road, was a little town known alternately as Lloyd's Shop, and/or Mechanicsburg. Avondale was a railroad station at Buckeye Lake, which was once popular as a resort and fishing area.

Burning Tree Mastodon

On December 12, 1989, while excavating for a pond on the Burning Tree Golf Course (4600 Ridgely Tract Rd), the extremely well-preserved and nearly complete skeletal remains of a mastodon were discovered. The mastodon's skeletal remains showed evidence of cut marks, indicating that prehistoric Native Americans butchered the animal. This significant find included the recovery of a portion of the mastodon's intestinal contents, which yielded eight, ancient live bacteria. Dated at about 11,600 years old, this bacterium was the oldest living bacteria ever discovered. A noted paleontologist, Dr. J. Gordon Ogden, stated

"There's nothing that even approaches the research potential of this find. There is almost a lifetime of research in this one animal. In my view, this is one of the most important finds that has ever been made....ever."

Licking Township Today

Interstate 70 and the closeness of the township to the Newark/Heath area has brought about somewhat of a suburban environment. Farming is still an important industry in the township, with Dawes Arboretum and the Buckeye Scenic Railroad as major tourist and educational attractions. Township trustees as of January 2002 are Ronald Acord, Joe Cooper and Dave Miller.

Important Sites/Places To Remember:

Archeological

1. Indian mound on State Route 13 north of Irvingwick
2. Site of Blacks Mill on the end of Ridgely Tract Road
3. Site of old brick factory, east of the Golfworks on SR 13.
4. Sites of one room school houses, either existing (Brumbach House at Dawes and one on Ridgely Tract Road) or foundation locations³:
 - **ROLEY SCHOOL**- one room brick located between Jacksontown and Thornport, on SR 13. It was located on the west side of the road, near the top of the hill.
 - **MESSMORE SCHOOL** -It was a frame building at the S. E. side of the woods near the railroad track and the intersection of Lancers Rd (Twp. #327) and County Road #596 (Cristland Hill Road). Driving north on Lancer Road, drive under the Interstate and the school was on the left side (west) of the road.
 - **JACKSONTOWN INDEPENDENT SCHOOL** - It was built in 1860 and was erected behind the Methodist Church, off SR 13, south of the center of Jacksontown. Later became the Grange Hall.
 - **OLD SCHOOL ON WALLACE PROPERTY** - It was on Route 40, just about 2 miles east of Jacksontown. The building was torn down in the late 1940's.
 - **OLD BRUMBACH SCHOOL** - The school was located on the north side of Ridgely Tract Road, east of the Lake Drive intersection and west of the Shawnee Railroad Track. It was on the Benjamin Green property. Recordings show students at this school in the 1860's. Mr. Green was a large property owner, with over 400 acres, and donated the land for the school.
 - **OLD RIDGELY TRACT SCHOOL** - This early school (1852) was on the Burrel Swartz property, next to what is now the Burning Tree Golf Course.
 - **NEW RIDGELY TRACT SCHOOL** -This building is still standing and is now a house. The school was built around 1875 and closed in 1916, and is located across the road from the Burrel Swartz property and the golf course.

³ Information about the above listed schools comes from a document entitled *History Of Licking Township Schools* written by Burrel Swartz and Donna Braig.

- NEW BRUMBACH SCHCOL - The Brumbach's gave land for a school in 1836 and the school was built in the 1850's. The building is now a home on the Dawes Arboretum property on Route 13, between Davis Road and Licking Trails Rd.
- LOCUST GROVE SCHOOL - School, now gone, was located on the south side of White Chapel Road, beside the Shawnee Railroad and the South Fork. It was west of the Pitzer Property.
- SCHOOL AT VAN BURENTOWN (FLEATOWN). This is at the intersection of White Chapel Road and State Route 13. It was in the area of the old Baptist Church and graveyard.
- KINNEY SCHOOL - This school was located in the northwest corner of the Township, on the west end of Dorsey Mill Road, and in general area of old Cluggish farm.
- LLOYDS SHOP SCHOOL - Located at the corner of Dorsey Mill Road and Route 13.

5. Ghost Town Sites

- Hog Run (Fleatown, VanBuren(town) - Intersection of St. Rte. 13 and White Chapel Road
- Avondale - Near intersection of Avondale Road and Licking Trails Road
- Lloyd's Shop - Intersection of St. Rte. 13 and Dorsey Mill Road
- Moscow c. 1830 - Two miles east of Hebron on U.S. 40
- Melgren c. 1888 - Intersection of U.S. 40 and Somerset Road
- National Road (Atherton) c. 1925-1934- Located in the northwest one-quarter of the southwest one-quarter of Section 4, Licking Township
- Reservoir c. 1886-1888- Intersection of Cristland Hill and Jacksontown Roads
- Harbor Hills c. 1927-1943 - Located in the northeast one-quarter of the northeast one-quarter of Section 18, Licking Township

Historical

1. Licking Township Hall
2. National Road and the mile markers in the township
3. White Chapel Church - Longest continuously meeting religious organization in the township and county
4. Cooper property - National Register of Historic Places

Natural

1. Dawes Arboretum
2. 93 mature Catalpa trees growing in a row on White Chapel Road west of St. Rte. 13
3. Aquifer running south along State Route 13 to Dawes Arboretum

DEMOGRAPHICS

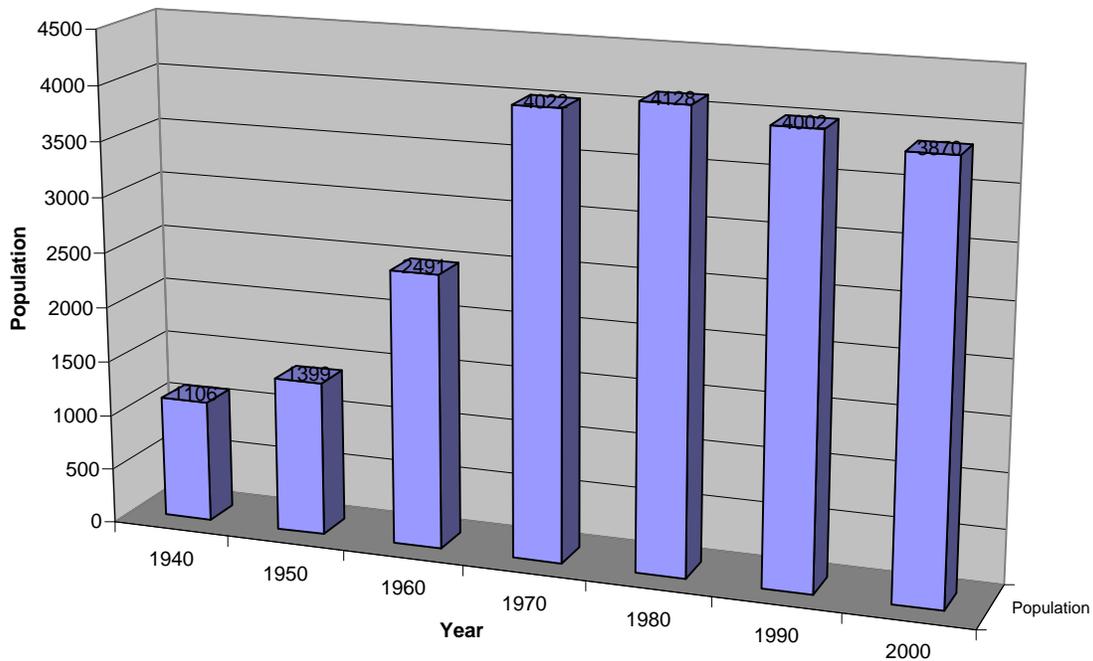
Demographic information can be used to project the direction of development in an area. For example, an increase in the number of families with young children or an increase in young couples entering an area can signal the need for new school buildings. Various demographic information, available from the U.S. Census Bureau, is discussed below.

Population

The preliminary 2000 Census figures put the population of Licking Township at 3870, a number that includes Jacksontown and Vanburen but excludes any incorporated areas. This is a 3.3% decrease in population from 1990. The township population increased steadily from 1940 to 1970, peaked in 1980, and has declined since. Though the population seems to be shrinking, often minimal growth or declines in population can be attributed to annexation to neighboring cities or villages. This seems to be the case in Licking Township, as the township has lost almost 1000 acres of land to Heath since 1970.

FIGURE 2: LICKING TOWNSHIP POPULATION 1940-2000

Source: U.S. Census



One way to predict the future growth of Licking Township is to examine the growth patterns of neighboring townships with similar characteristics. Licking Township is adjacent to several other townships with similar populations: Bowling Green, Franklin, Madison, and Union are good examples. The population growth of these townships is shown in Figure 3 below.

FIGURE 3: TOWNSHIP GROWTH COMPARISONS

Source: U.S. Census

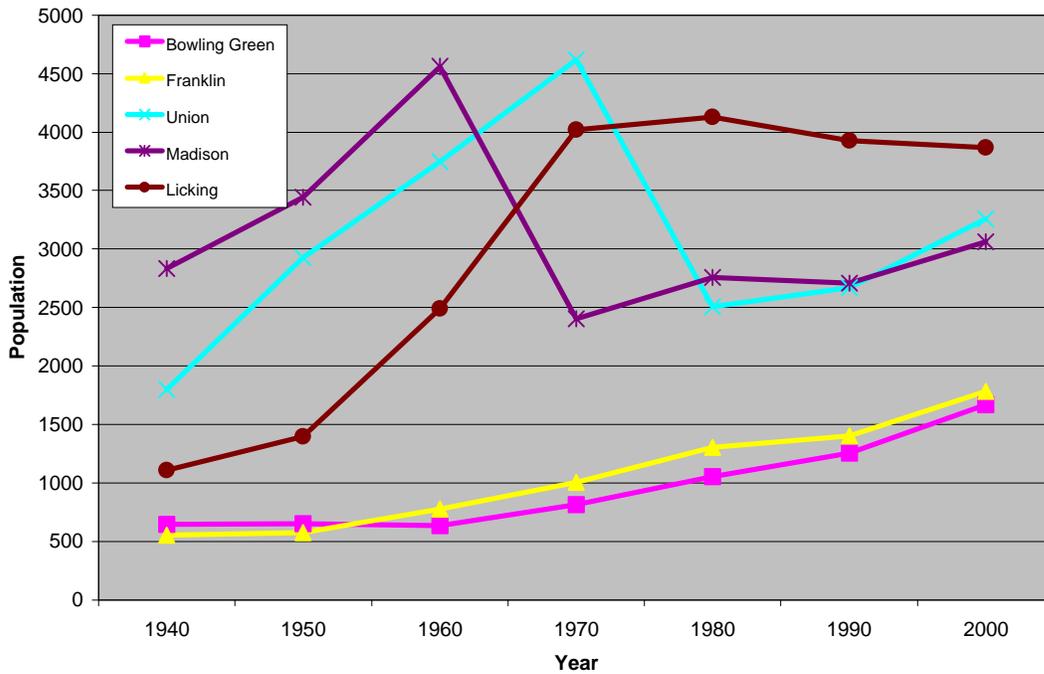


Figure 3 demonstrates the obvious effect annexation can have on population growth. Note the sharp population drops in Madison Township, which is adjacent to the City of Newark, and Union Township, which is adjacent to the Cities of Newark and Heath and the Villages of Hebron and Buckeye Lake. In stark contrast are the smooth growth curves of Bowling Green and Franklin Township, which have not yet been affected by annexation as their neighbors have. Licking Township gained population in pace with Madison Township and Union Township, but has not yet experienced the drastic population drop that those townships have. Since 1980, the growth patterns of all five townships have been remarkably similar.

The increasing population in the Cities of Newark and Heath will affect Licking Township. Populations are often affected by the growth of surrounding cities. For example, Columbus’s growth has led to increased populations in Pataskala and New Albany. Newark and Heath, which lie directly north of Licking Township, could affect the township’s future population in a similar way. According to preliminary 2000 Census figures, the population in the City of Newark grew 3% between 1990 and 2000, while Heath’s population jumped 16%.

Figure 4 shows the population changes throughout Licking County over the last fifty years.

FIGURE 4: LICKING COUNTY POPULATION 1940-2000

	1940	1950	1960	1970	1980	1990	2000*
Bennington Township	582	581	663	655	837	957	1265
Bowling Green Township	646	650	636	813	1052	1278	1668
Burlington Township	732	771	801	807	904	958	1073
Eden Township	432	450	532	627	971	1174	1243
Etna Township Total	1091	1750	2405	3453	6107	6592	11091
<i>Etna Township Unincorporated</i>	1091	1750	2405	3444	5114	5196	5410
<i>Reynoldsburg (Portion in Etna Twp)</i>				9	993	1361	5681
Fallsbury Township	532	516	644	669	653	738	865
Franklin Township	550	573	778	1003	1306	1310	1782
Granville Township Total	2831	4521	5532	6771	7515	7786	8994
<i>Granville Township Unincorporated</i>	1329	1868	2664	2808	3664	3460	5827
<i>Granville Village</i>	1502	2653	2868	3963	3851	4326	3167
Hanover Township Total	1220	1289	1293	1794	2501	2531	2731
<i>Hanover Township Unincorporated</i>	895	981	1026	1168	1575	1702	1846
<i>Hanover Village</i>	325	308	267	626	926	829	885
Harrison Township Total	1163	1277	1927	2271	4278	4888	6494
<i>Harrison Township Unincorporated</i>	899	978	1510	1693	3652	4371	5974
<i>Kirkersville Village</i>	264	299	417	578	626	517	520
Hartford Township Total	1020	1032	1075	1102	1080	1186	1290
<i>Hartford Township Unincorporated</i>	667	676	678	647	636	761	878
<i>Hartford Village</i>	353	356	397	455	444	425	412
Heath City			2426	6768	6969	7309	8527
Hopewell Township Total	701	669	749	898	961	1099	1200
<i>Hopewell Township Unincorporated</i>	701	558	588	773	860	988	1104
<i>Gratiot Village</i>		111	161	125	101	111	96
Jersey Township	1006	1080	1372	1615	2196	2488	2841
Liberty Township	644	673	693	778	1300	1484	1797
Licking Township	1106	1399	2491	4022	4128	4002	3870
Lima Township (inc. Pataskala)**	3010	3383	4905	5189	6627	7444	10249
<i>Old Lima Township Unincorporated</i>	2186	2455	3859	3358	4343	4398	
<i>Old Pataskala Village</i>	824	928	1046	1831	2284	3046	
McKean Township	709	772	887	994	1197	1376	1516
Madison Township	2834	3444	4561	2403	2758	2630	3061
Mary Ann Township	657	679	859	1244	1747	1796	2118
Monroe Township Total	1726	1889	3730	4297	5057	5158	5523
<i>Monroe Township Unincorporated</i>	662	669	849	1089	1899	1890	2083
<i>Johnstown Village</i>	1064	1220	2881	3208	3158	3268	3440
Newark City	31487	34275	41790	41836	41200	44902	46279
Newark Township	802	1278	1311	2403	3179	2066	1967
Newton Township Total	1214	1350	2003	3182	3309	3098	3111
<i>Newton Township Unincorporated</i>	916	1014	1654	2797	2934	2728	2765
<i>St. Louisville Village</i>	298	336	349	385	375	370	346
Perry Township	644	589	660	779	1128	1313	1492
St. Albans Township	1196	1215	1442	1710	1946	2170	2060
<i>St. Albans Township Unincorporated</i>	771	751	990	1122	1457	1717	1975
<i>Alexandria Village</i>	425	464	452	588	489	453	85
Union Township Total	2523	3791	5009	6316	7054	7673	8339
<i>Union Township Unincorporated</i>	1800	2927	3749	4617	2504	2543	3259
<i>Buckeye Lake Village</i>					2515	2962	3046
<i>Hebron Village</i>	723	864	1260	1699	2035	2168	2034
Washington Township Total	2045	2178	2540	2811	3021	2958	3045
<i>Washington Township Unincorporated</i>	669	668	686	834	800	786	917
<i>Utica Village</i>	1376	1510	1854	1977	2221	2172	2128
LICKING COUNTY UNINCORPORATED TOTAL	24,462	28,750	37,546	43,162	52,794	54,110	58,596
LICKING COUNTY INCORPORATED TOTAL (Including Reynoldsburg)	38,641	43,324	56,168	64,048	68,187	74,219	86,895
LICKING COUNTY TOTAL (Including Reynoldsburg and including all other incorporated & unincorporated areas)	63,103	72,074	93,714	107,210	120,981	128,329	145,491

*The 2000 figures are preliminary figures released by the Ohio Department of Development, Office of Strategic Research

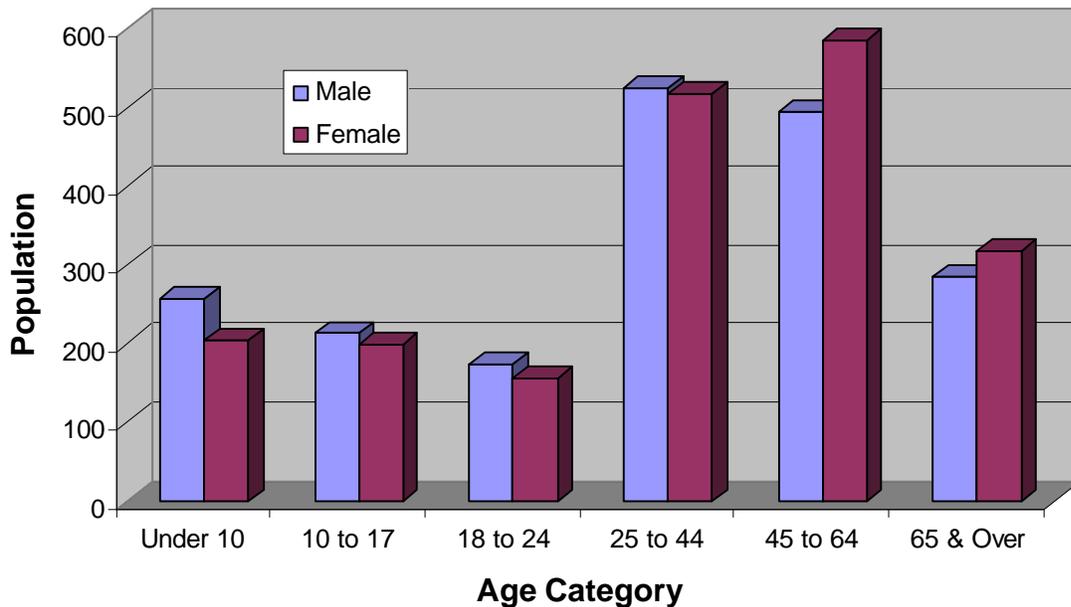
**Lima Township merged with Pataskala Village to form the City of Pataskala in January 1996

Age and Gender

The breakdown of the population by age and gender may be used to plan for current and future facilities needs. Young children and the elderly are often the focus of such facilities planning.

FIGURE 5: LICKING TOWNSHIP POPULATION BY AGE AND SEX

Source: U.S. Census 1990



As Figure 5 shows, about 12% of the population of Licking Township was under the age of 10 in 1990. Most of these children, now between the ages of 10 and 20, are still using the local school system and whatever special programs are available for children. Recreational facilities may also be needed for this group. About 15% of the population was over 65 in 1990. With many of those from the 45-64 age group included in the over 65 age group now, this percentage will probably be closer to 20% in the 2000 Census figures. Typically, this age group has a higher percentage of females, and this is true of Licking Township. This age group will also require special programs and housing opportunities that meet its needs.

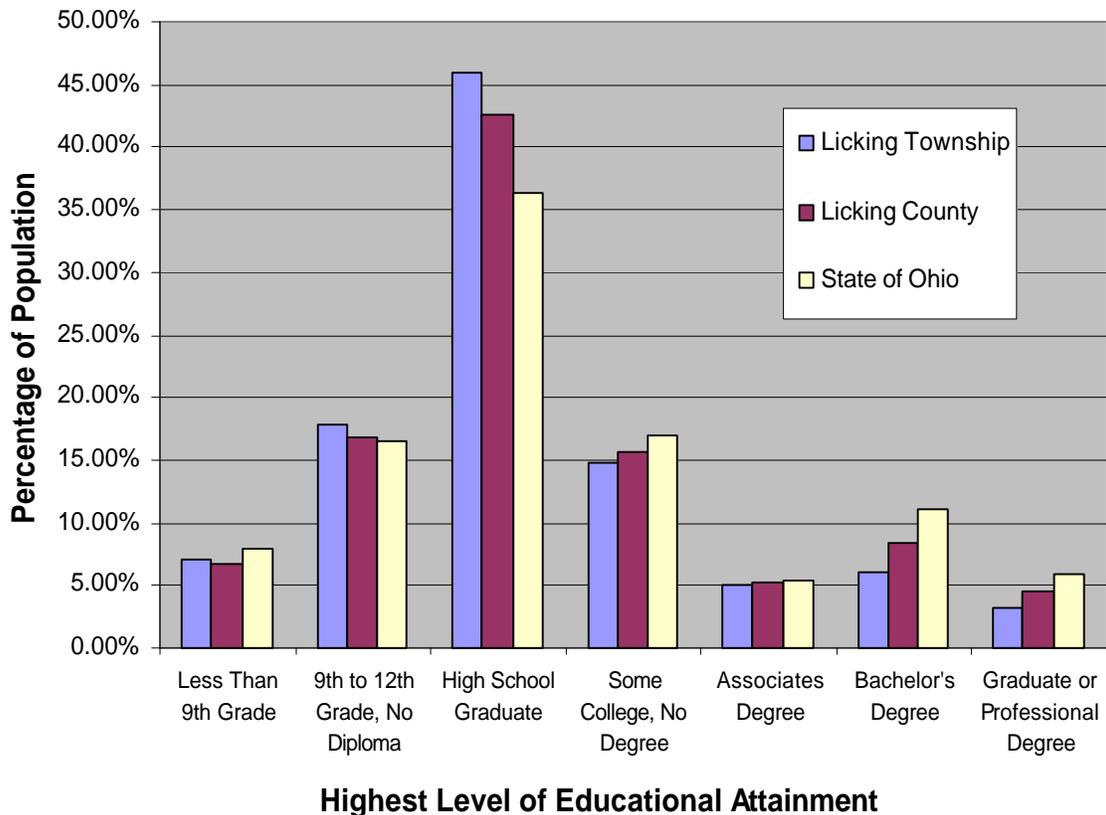
Education and Income

The education and income characteristics of the population can help to define the general needs of a population. Marketing studies often use this type of information to show whether or not a particular store, for example, will be successful in a given location. Income levels also may be used to qualify an area for certain funding available for projects benefiting low-income persons.

In 1990 in Licking Township, about 75% of the adult population had completed high school (this figure includes those who had also gone to college) (Figure 6). This is comparable with Licking County and the State of Ohio, who had 76% and 75% of the adults completing high school, respectively. About 30% of Licking Township's adults have at least some college education, compared to about 34% for Licking County and 39% for the state as a whole.

FIGURE 6: EDUCATIONAL ATTAINMENT COMPARISON

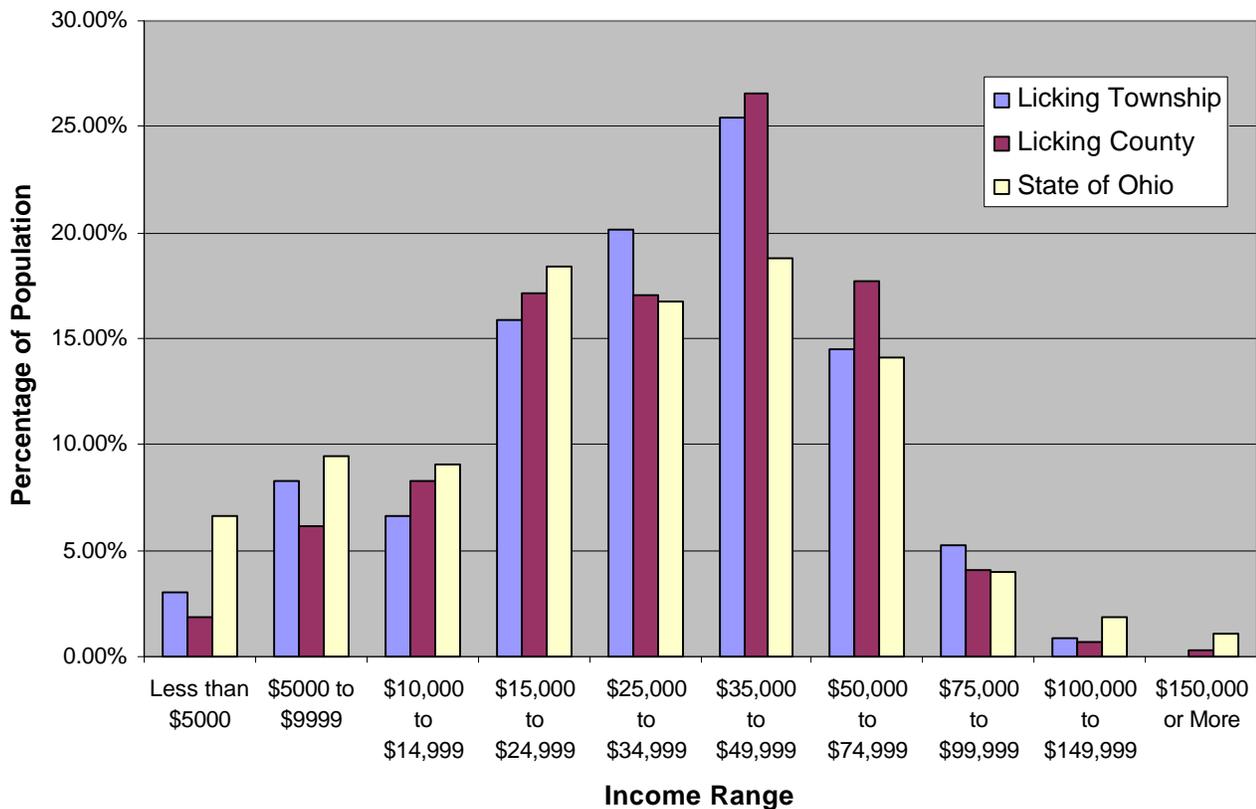
Source: U.S. Census 1990



Household income is shown in Figure 7. The largest percentage of households in Licking Township, 25.46%, fall into the \$35,000 to \$49,999 income range; this category also encompasses the largest percentage of households in Licking County and the State of Ohio. In 1990, when these figures were gathered, the poverty level for a family of four was \$12,700. Over 11% of Licking Township households reported incomes of less than \$9999, slightly less than the statewide figure of 16. Six percent of Licking Township households had incomes of more than \$75,000.

FIGURE 7: HOUSEHOLDS BY INCOME

Source: U.S. Census 1990



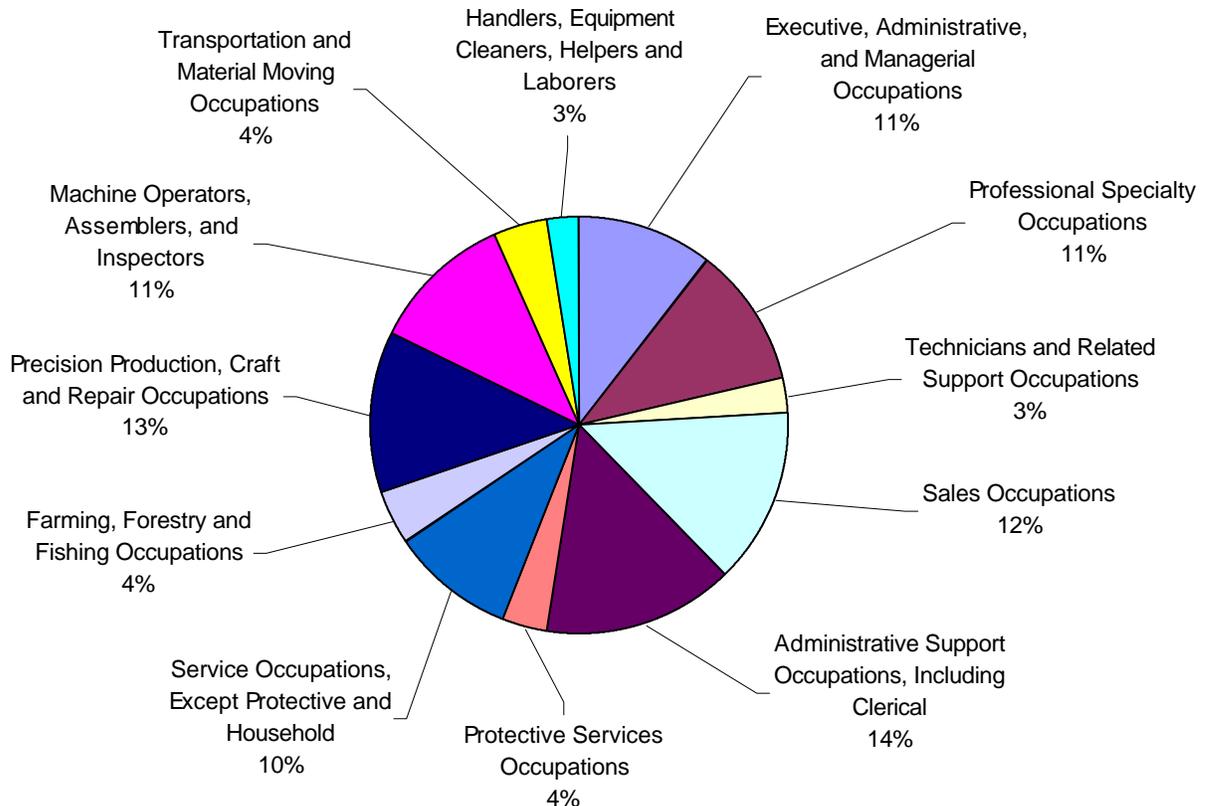
Employment

The type and location of the residents' occupations can also help to determine the types of development that are needed or desired. Interestingly, although Licking Township may be considered rural, a rather small percentage (4.17%) of the residents are employed in agriculture (Figure 8). The largest group of residents, 14.74%, is involved in administrative support occupations, followed closely by sales occupations.

FIGURE 8: EMPLOYMENT BY OCCUPATION

Source: U.S. Census 1990

Administrative Support Occupations, Inc Clerical	279	14.74%
Sales Occupations	253	13.37%
Precision Production, Craft and Repair Occupations	241	12.73%
Machine Operators, Assemblers, and Inspectors	208	10.99%
Professional Specialty Occupations	202	10.67%
Executive, Administrative, and Managerial Occupations	201	10.62%
Service Occupations, Except Protective and Household	180	9.51%
Farming, Forestry and Fishing Occupations	79	4.17%
Transportation and Material Moving Occupations	78	4.12%
Protective Services Occupations	67	3.54%
Technicians and Related Support Occupations	57	3.01%
Handlers, Equipment Cleaners, Helpers and Laborers	48	2.54%



LAND CAPABILITY

The natural resources of an area are a key component of any comprehensive plan. The ability of land to support development is of major concern to communities, especially ones experiencing growth or under growth pressures. Many factors can affect an area's capability to support new developments; among these are topography (or slope), soil type, and ground water availability. Because all of the various forms of nature are interdependent and interact to maintain a comprehensive, yet extremely delicate system, changes that affect this balance must be carefully considered. Also, there is a need to protect certain natural features from disturbance. This includes protecting and preserving wetlands, endangered plants, and endangered animals. Woodlands, prime agricultural areas, and other significant natural features or vistas should be protected from over development, as well.

Land capability information is derived from the Ohio Department of Natural Resources' Capability Analysis Program. The information contained in this section is not comprehensive, but gives general guidelines for development and land use in Licking Township. The included maps are general as well, showing approximate boundaries for each limitation or resource. Furthermore, severe limitations should not be read as an absolute prohibition against that use for which a soil is rated, but as an indication that sometimes costly measures must be undertaken to overcome such limitations. A site-specific analysis is necessary to precisely determine the suitability of a parcel of land for a particular use.

Climate

The weather station at the Newark Water Works has a mean annual temperature of 51.5 degrees Fahrenheit for a thirty-year period (1961-1990). The average temperature remains constant across Licking County. The mean annual precipitation recorded at the Newark Water Works is 41.48 inches, based on the same thirty-year period. Precipitation is slightly increased in the eastern portion of the county.

Topography

The topography of land can be measured by its slope. Slope is the ratio of change in elevation over distance, stated as a percentage rate. For instance, if a parcel of land rose four feet over 100 feet of horizontal distance, the slope for that area would be 4%. The lower the slope, the flatter the land; conversely, the higher the slope, the steeper the land.

Slope influences the effects of the natural environment. The rate of storm water runoff, performance of septic fields, and the rate of erosion all are influenced by slope. As slopes increase, the velocity of storm water runoff increases causing problems with erosion and flooding downstream. Conversely, an area that has less than 0.5 percent slope will not drain storm water at all and ponding may occur depending on the soils.

There is a definite relationship between land use and slope. Commercial and industrial buildings usually require relatively flat, or level land. Because of the larger size and weight

of commercial and industrial uses and the cost of leveling land, slopes exceeding two percent are not suitable areas for such sites. Cropland is most often limited to areas of less than 12 percent slope to enable the use of farm machinery. Roads also are limited by the topography in an area. Arterial roads and roads designed for speeds over 45 mph should not be located in areas with greater than 4 percent slope. Local streets with speeds under 30 mph can have grades as steep as ten percent.

Overall, areas with slopes greater than 4 percent are generally limited to agricultural, residential, and natural uses. When slopes exceed the 10 percent range, such as with ravines and steep hills, land uses are predominantly grazing and natural space. Houses, due to their smaller size, can be built on steep slopes using various construction techniques. This is less true, however, for major residential subdivisions when considering centralized infrastructure design limitations and costs. Furthermore, experience, such as in California, shows that nature will eventually erode these steep slopes, house and all. As a result, it is general practice to preserve and protect slopes greater than 25 percent, leaving them in their natural state.

Because slope is so closely tied to both development and the natural environment, it should be one of the top criteria used in regulating the development of a community. The following table (Figure 9) lists some standards for slope and land use development.

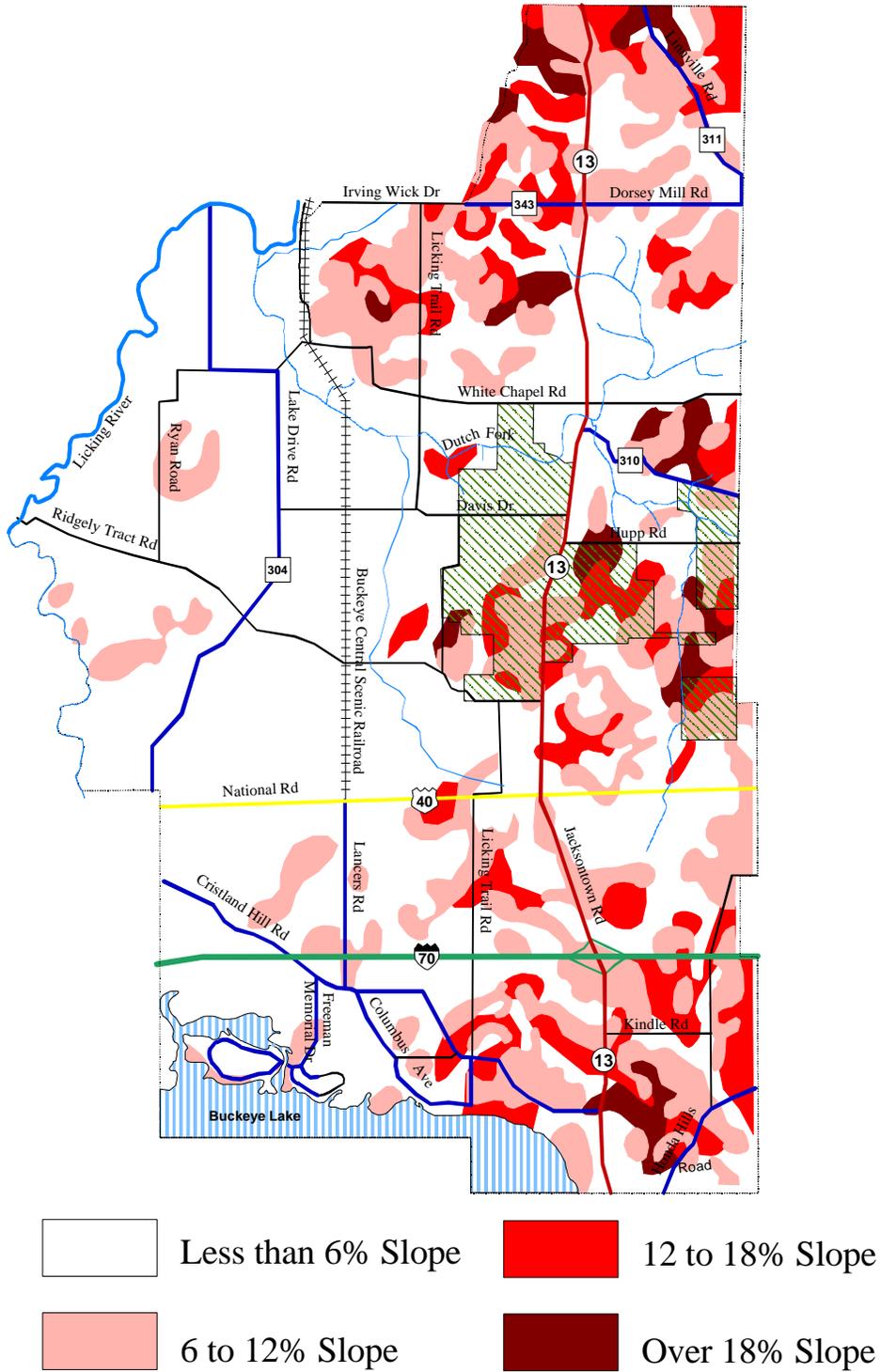
FIGURE 9: SLOPE REQUIREMENTS FOR VARIOUS LAND USES*

Land Use	Maximum Slope	Minimum Slope	Optimum Slope
House sites	20-25%	0.05%	2.00%
Playgrounds	2-3%	0.05%	1.00%
Septic fields	10%	0.00%	0.05%
Parking lots	3%	0.05%	1.00%
Streets, roads, driveways	15-17%	0.05%	1.00%
Industrial sites	3%	0.05%	1.00%

**Adapted from Landscape Planning Environmental Applications, William Marsh, 1983.*

The topography of Licking Township varies from virtually level land to severe slopes. The western portion of the township can be mainly characterized as level to gently sloping land (Figure 10). The eastern half of the township may be described as moderately sloping to very steep, with a couple level areas around National Road and Swamp Run Creek.

FIGURE 10: PERCENT OF SLOPE



Source: Licking Count Soil Survey, Ohio Department of Natural Resources

Groundwater

Groundwater is a very important consideration in the preparation of a comprehensive plan because wells and natural springs are the source of most of the water that sustains residents, crops, and livestock in Licking Township. Many residential, commercial, industrial, and agricultural activities are not possible without clean, abundant groundwater. Thus an important aspect of future land use planning is locating adequate supplies of groundwater. Groundwater needs to be protected from two things: overuse (such as exceeding the safe well yield and/or aquifer recharge rates) and pollution.

Groundwater is water that lies beneath the land's surface. Just as there are streams, rivers, and ponds above ground, water can be found in similar systems underground. As rainwater and surface water flow across the land, water seeps down into the soils and underground rock. Areas underground with particularly large concentrations of groundwater are known as aquifers. Aquifers are like aboveground rivers in that they are not static. Most often, aquifers are found in underground layers of porous rock, sand, or other unconsolidated material. Groundwater flows through them while rain and surface water "recharge" (replenish) them. The geologic make-up of an aquifer includes underground spaces that are conducive to ground water storage. Such spaces may be found in the pores of sandstone, the joints and fractures of limestone, and between the grains of large deposits of sand or gravel. In some places, as groundwater slowly flows downhill through porous soils and rock, it becomes trapped between hard rock layers until it reaches the surface again further downhill, creating an artisan well. In the Licking County there are also "lenses" of trapped groundwater. These were created by the glaciers and are pockets of sand sandwiched between other soils. The lenses often contain water and can be found at varying depths and in various sizes. The groundwater in the county is much more like a pond, in that it doesn't flow and usually recharges slowly. Most of the producing water wells in Licking Township are pumping water from aquifers or glacial lenses. Groundwater sources are evaluated based on their well yield (measured in gallons per minute), their recharge rate, and their cleanliness.

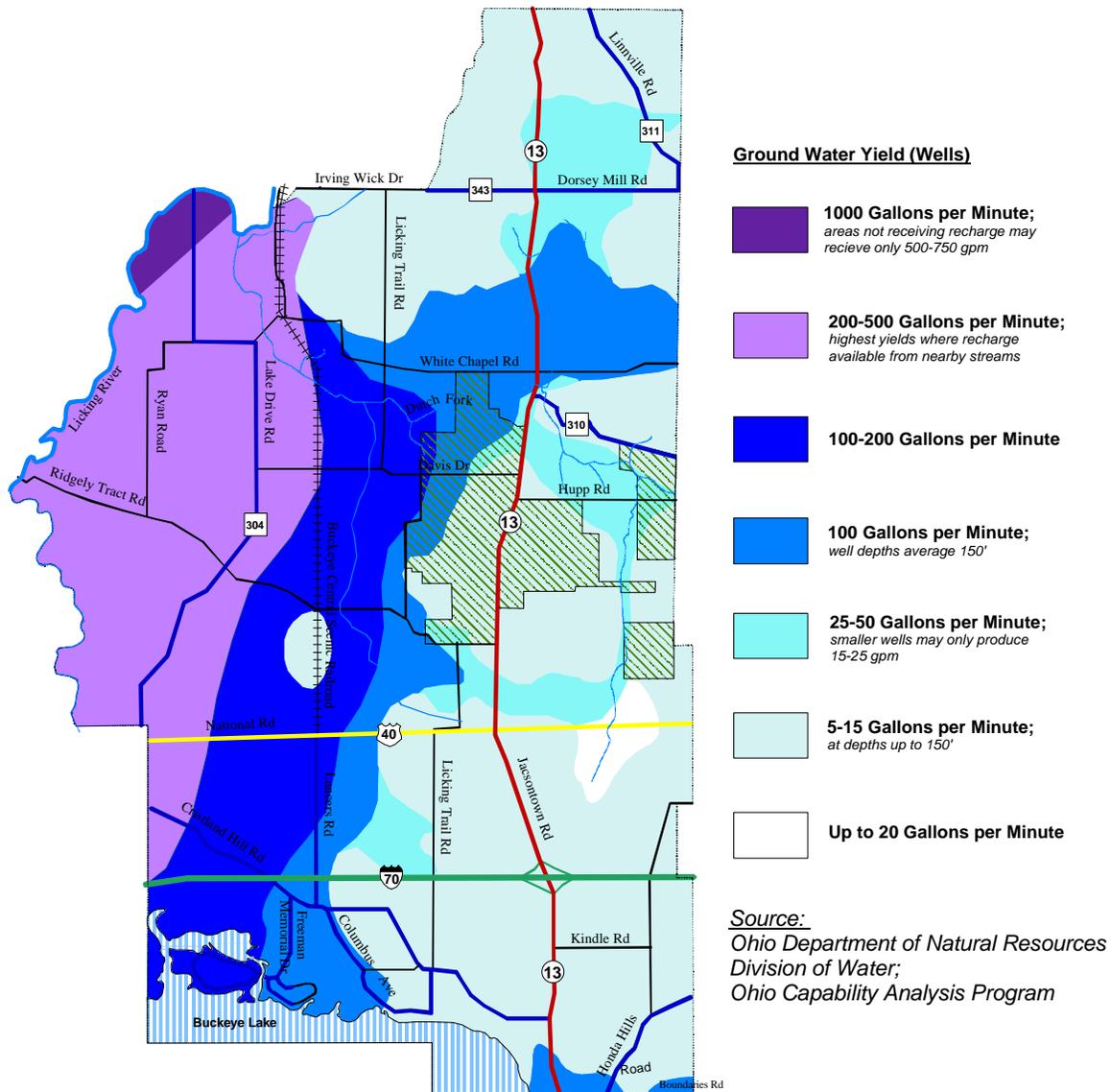
The average minimum daily household demand for groundwater is approximately five to eight gallons per minute (GPM). For commercial and industrial uses, there is no standard minimum demand. This is due to the varying nature and water needs of different commercial and industrial uses. A mini-storage facility may not use any water, while a restaurant could consume one hundred times the amount a household consumes. Evaluation of groundwater for such uses should be made on an individual use and site basis.

The groundwater characteristics of Licking County have been mapped regionally based upon interpretations of over 8,000 well records and the local geology and hydrology. Water well data on the map were selected as typical for the area (contact the Ohio Department of Natural Resources Division of Water for site-specific well data and logs).

As shown in Figure 11: Ground Water Yield, groundwater availability varies widely throughout the township. Thick valley fill deposits of sand and gravel may yield as much as 1000 gallons per minute (GPM) along the Licking River in the northwestern portion of the

township, while bordering areas that do not receive direct recharge from the river produce as much as 200-500 GPM. Wells located in the land along the smaller rivers and streams in the township will yield anywhere from 25 to 200 gallons per minute, at depths that average around 150'. The eastern portion of Licking Township has more limited groundwater resources, with most wells yielding less than 20 gallons per minute (still an ample amount for average household use). These figures would indicate that any major water users should be located in the western half of the township.

FIGURE 11: GROUNDWATER YIELD



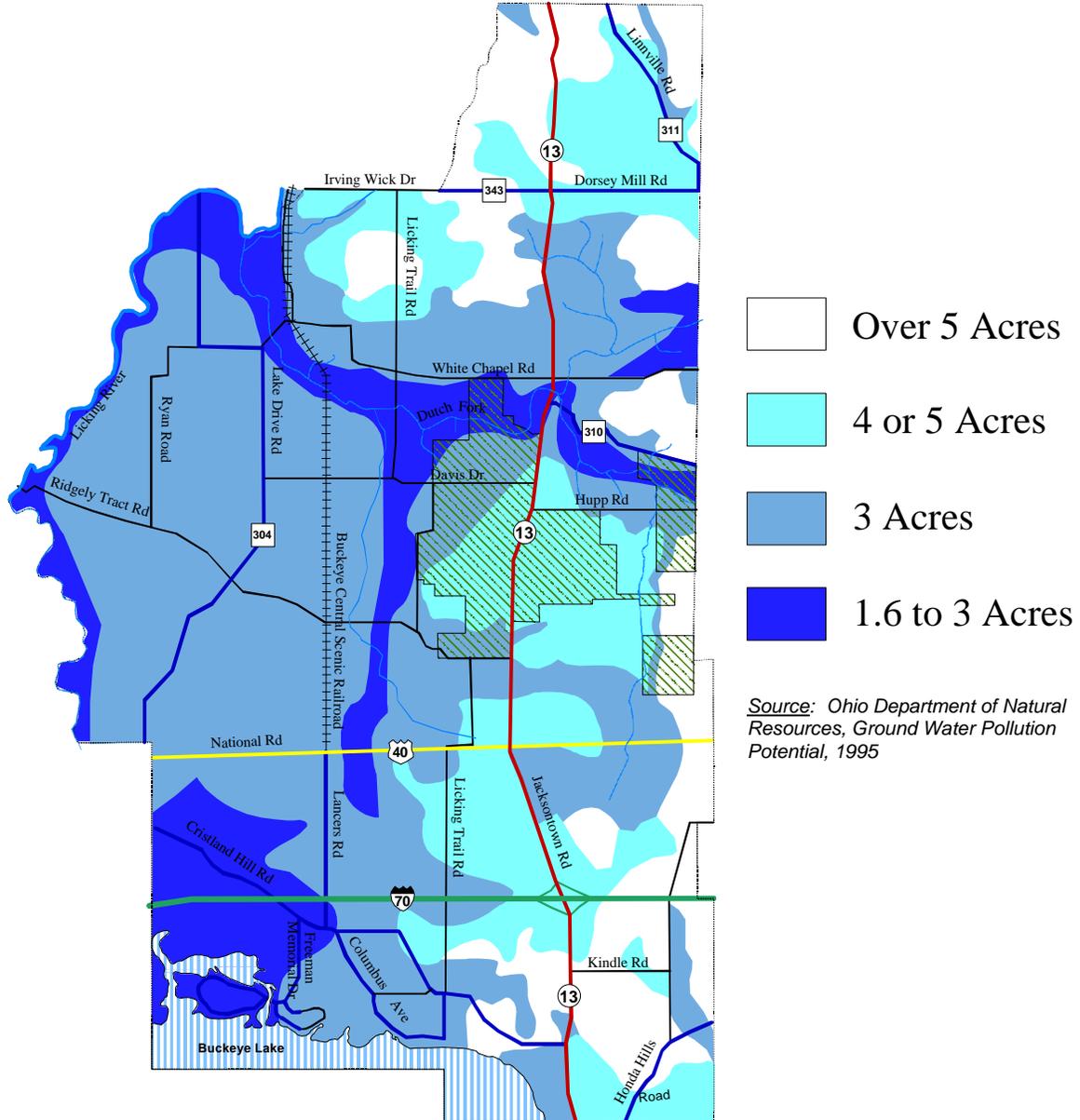
Groundwater recharge is the ability of an aquifer or glacial lens to replenish its water supply from surface sources, such as soils, wetlands, rivers, and lakes. Several factors can affect the recharge rate of an aquifer including average rainfall, soil type, surface and soils permeability, and distance to the aquifer from the surface. If the total rate of withdrawal from the aquifer or lens exceeds the recharge rate, the aquifer's water level will decline. If this overdraft or high rate of withdrawal is continued over many years, the aquifer or lens could become depleted.

The Ohio Department of Natural Resources (ODNR), Division of Water studies, among other things, the topography, soils, and aquifers in Licking County, in order to determine which areas could support higher densities of development based solely on groundwater recharge rates and pollution potential. In areas of low recharge rates and/or high pollution potential, density requirements should be adjusted in order to assure that adequate recharge area remains available so that groundwater can be replenished to such a level as to sustain residents.

Using this ODNR information, the minimum residential lot sizes that could safely be allowed in Licking Township based on groundwater recharge rates and pollution potential can be calculated. Such calculations are shown in Figure 12: Minimum Lot Size Based on Groundwater Pollution Potential. It is important to understand that *this assumes primarily residential and agricultural uses and no availability of central water and sewer systems*. If large industrial or commercial uses were planned, the minimum lot size would be much lower. Also, if central water and sewer services were used rather than wells and septic systems, groundwater recharge rates and pollution potential becomes much less of a controlling issue.

In Licking Township, minimum lot size as determined by net recharge varies from 1.6 to five acres. The smaller lots are recommended in the west, and the larger lots are recommended in the eastern half of the township due to a slower recharge rate.

FIGURE 12: MINIMUM LOT SIZE BASED ON GROUNDWATER POLLUTION POTENTIAL



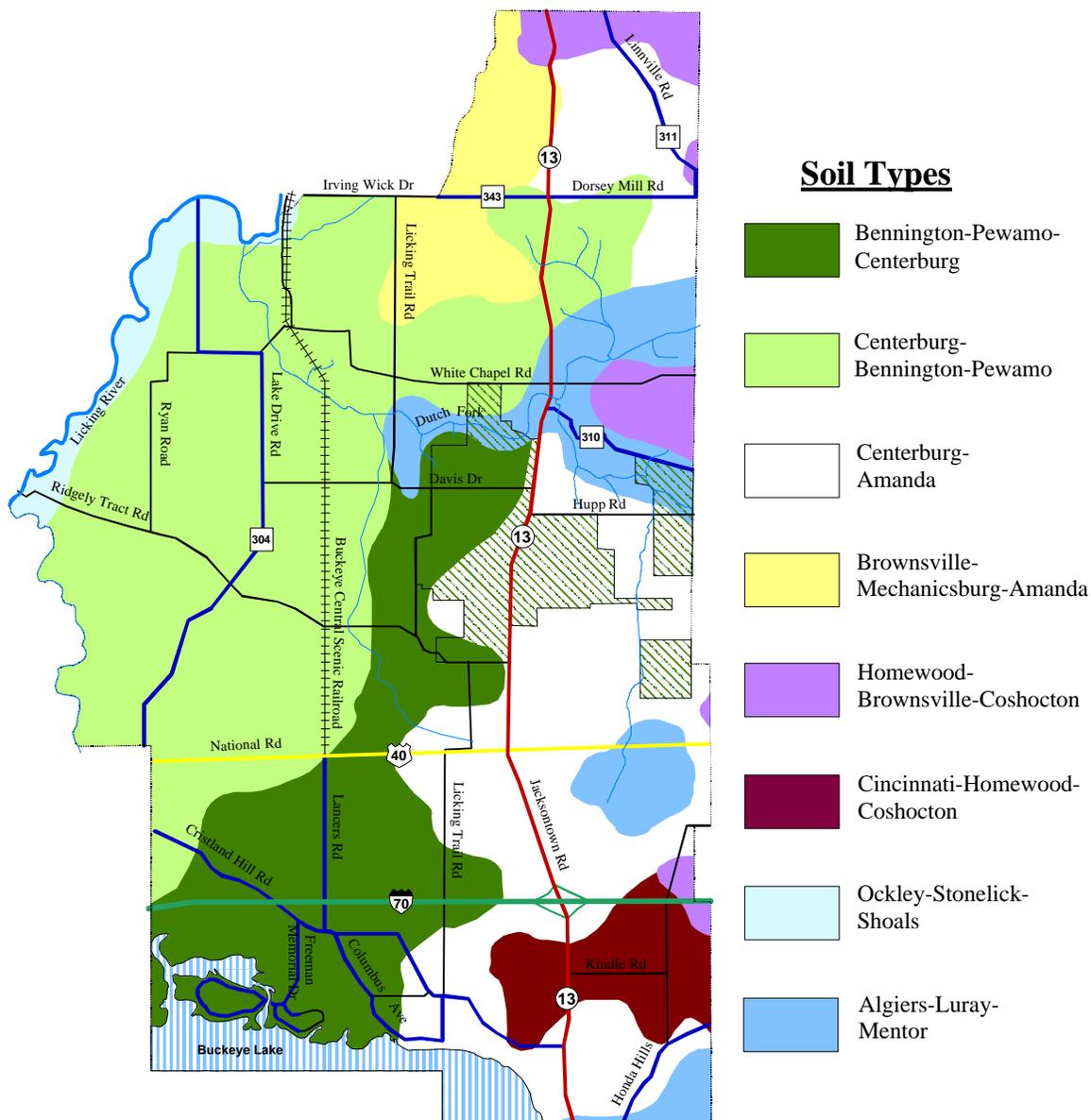
Soils

Soils are very important in determining land use capabilities because many factors are associated with certain types of soils, including everything from drainage to permeability to ground water level. Several soil types are found within the planning area (Figure 13, Figure 14).

FIGURE 13: GENERAL SOIL TYPE CHARACTERISTICS

Nearly Level to Sloping Soils Formed in Glacial Till		
	Bennington-Pewamo-Centerburg Soil Association	Nearly level and gently sloping, somewhat poorly drained, very poorly drained, and moderately well drained soils; on till plains.
	Centerburg-Bennington-Pewamo Soil Association	Nearly level to sloping, moderately well drained, somewhat poorly drained, and very poorly drained soils; on till plains
	Centerburg-Amanda Soil Association	Gently sloping to very steep, moderately well drained and well-drained soils; on dissected parts of till plains.
	Brownsville-Mechanicsburg-Amanda Soil Association	Gently sloping to very steep, well-drained soils; on glaciated and unglaciated uplands.
Gently Sloping to Very Steep Soils Formed in Loess, Glacial Till, Colluvium, and Residuum		
	Homewood-Brownsville-Coshocton Soil Association	Gently sloping to very steep, well-drained and moderately well-drained soils; on glaciated and unglaciated uplands.
	Cincinnati-Homewood-Coshocton Soil Association	Gently sloping to steep, well-drained and moderately well-drained soils; on glaciated and unglaciated uplands.
Nearly Level to Moderately Steep Soils Formed in Loess, Glacial Outwash, Alluvium, and Lacustrine Sediment		
	Ockley-Stonelick-Shoals Soil Association	Nearly level to sloping, well-drained and somewhat poorly drained soils; on outwash terraces and flood plains.
	Algiers-Luray-Mentor Soil Association	Nearly level to moderately steep, somewhat poorly drained, very poorly drained, and well-drained soils; on flood plains, lake plains, and terraces.

FIGURE 14: GENERAL SOIL MAP

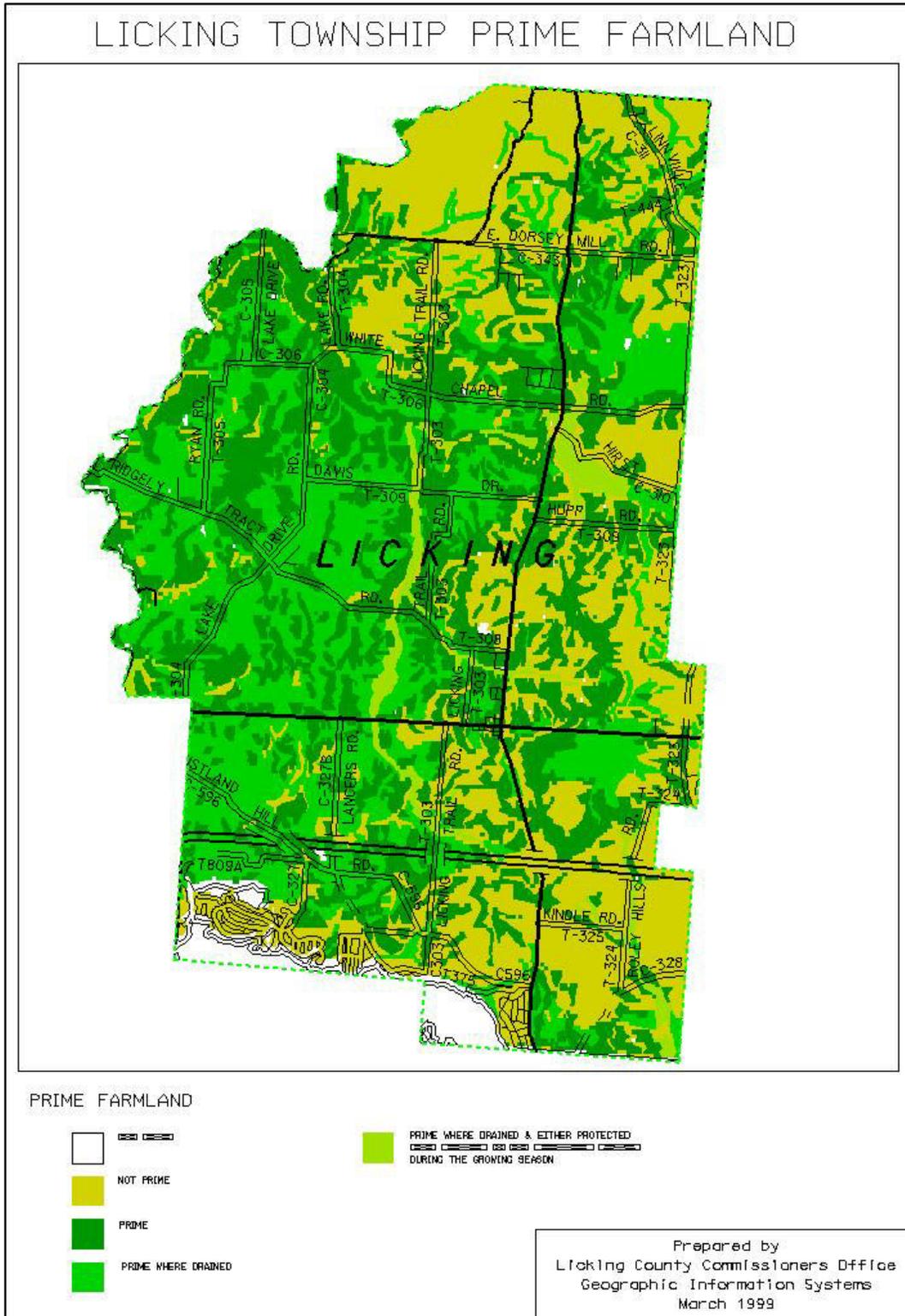


The largest proportions of soils in Licking Township are the nearly level to sloping soils formed in glacial till – the Bennington-Pewamo-Centerburg Association, Centerburg-Bennington-Pewamo Association, and Centerburg-Amanda Association. These soils make up about 33% of Licking County, and are used mainly as cropland or pasture.

Ockley Silt Loam, Stonelick Loam, Alford Silt Loam, and Rush Silt Loam are among several soil types considered prime for agriculture (Figure 15). The majority of the eastern part of Licking Township is considered prime farmland.

Prime agricultural land, woodlands, and wetlands not only have important environmental qualities, but provide aesthetic and scenic value, as well. For instance, woodlands provide natural screens between conflicting uses, and agricultural land promotes a rural atmosphere. Proposed developments that would be detrimental to any such features should be mitigated in order to minimize their impact.

FIGURE 15: PRIME FARMLAND



Floodplains and Wetlands

A floodplain is any land area susceptible to inundation by floodwaters from any source. Floodplains are measured in terms of the amount of storm water that it takes to cover them. Storm events are measured in years such as 5-year, 10-year, 20-year, 50-year, 100-year, and 500-year. The standard measurement is the 100-year storm and floodplain. A 100-year floodplain is the land area having a 1 in 100 chance of flooding in any given year. However, the 100-year floodplain is somewhat of a misnomer because an area could have a 100-year flood two years in a row -- unlikely, but it is possible. Figure 16 shows the 100-year, or base, flood plains of Licking Township as identified by Federal Emergency Management Agency (FEMA) on their Flood Insurance Rate Map (FIRM). These FIRM maps are used by banks to determine the need for flood insurance for structures.

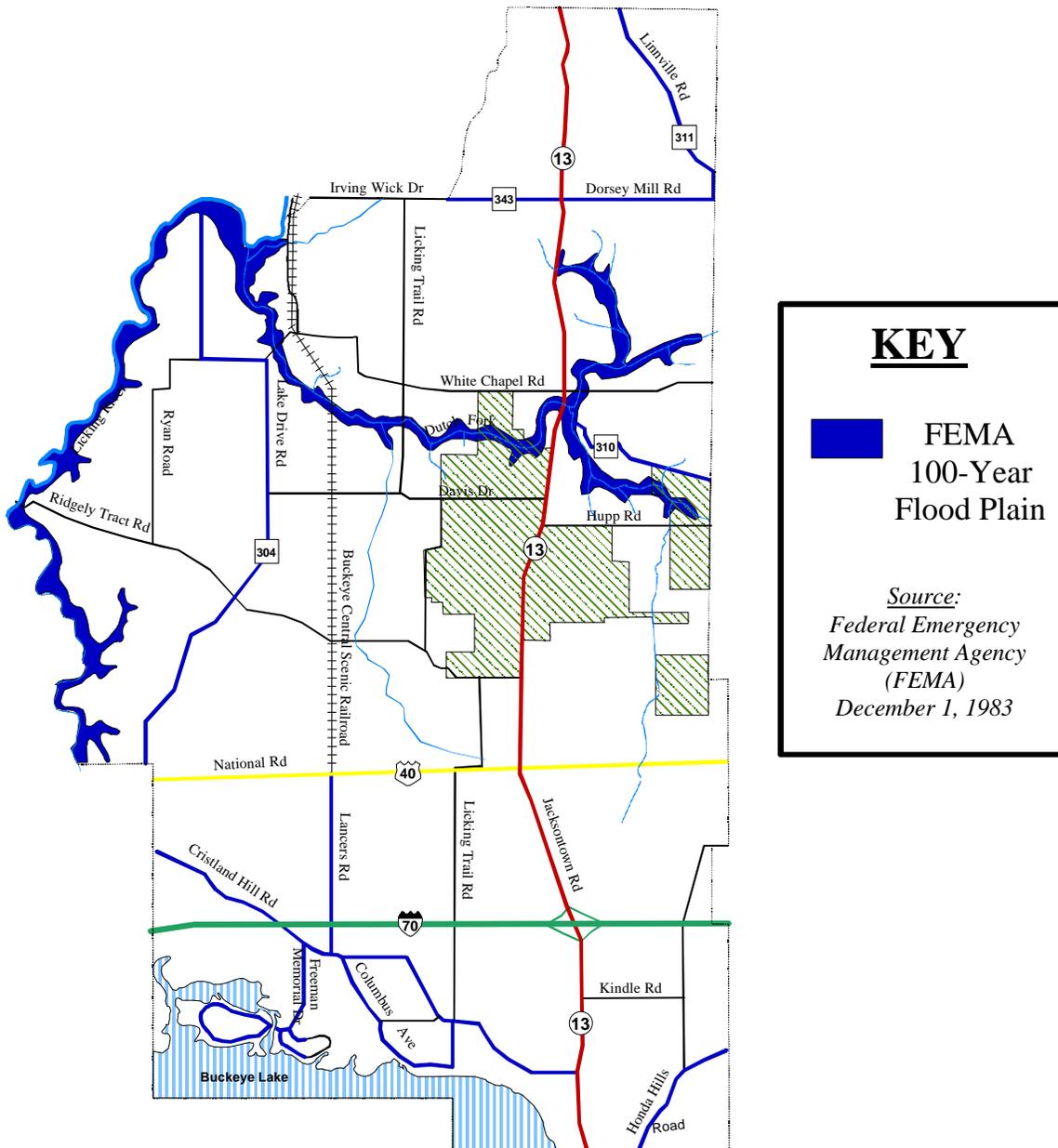
Because floodplains were carved by streams and rivers and are prone to flooding, they are an important planning consideration. Any development within floodplains can impact the direction, flow, and level of the watercourse during periods of high water or flooding. In other words, if fill material is placed or a house constructed in a flood plain, it will alter the boundaries of the flood plain downstream. This is because structures or fill utilize valuable space that would otherwise act as a natural retaining area for floodwaters to spread and slow. Enough fill or development could change the probability of flooding downstream from 1 in 100 each year, to 1 in 75 or less. This development and careless filling of the flood plain has increased flooding in this nation, as seen in many parts of the country, including the Great Mississippi Flood of 1993. Not only does development in the flood plain increase dangers downstream, developments within the flood plain are at higher risk of damage due to flooding. This damage includes fill material and debris from destroyed structures upstream colliding with structures in the flood plain downstream. Many bridges are washed out in floods because house and/or construction debris clog their free-flow area, compromising their structural integrity.

Because the potential for public and private damage, the loss of life, and affected insurance rate decisions all are affected by materials and structures in flood plains, Licking County has recently tightened regulations for floodplains. Permits must be obtained from the Licking County Planning Commission before any development, including filling and excavating, can take place in an identified 100-year floodplain. In addition, no new lots may be created that have less than 1.6 acres of land lying outside of a 100-year floodplain. Further protection of the flood plains through township zoning will assist in protecting unsuspecting residents from personal danger and loss of property.

Protecting floodplains from development offers several benefits in addition to reducing the risk of loss of property and life. Floodplains are natural floodwater storage areas. They reduce the impact of any given storm, slowing the water so that it does not become a flash flood. In addition, floodplains are prime areas where groundwater is replenished. Thus the type of land use activity that occurs in these areas must not pollute the surface water, as it will serve as a source of aquifer replenishment. These same floodplains and adjacent land also provide a habitat for a wide variety of plants and animals. Floodplains also have important scenic and aesthetic value, providing a natural area for passive recreation activities such as

nature trails or hiking paths. In more urban and suburban areas, floodplains provide the single best place for trails and recreation because they are linear, visually interesting, close to nature, and undeveloped. The waterways with 100-year flood plains of importance to Licking Township are Hog Run, Swamp Run, Dutch Fork, and the South Fork of the Licking River.

FIGURE 16: FLOODPLAIN MAP

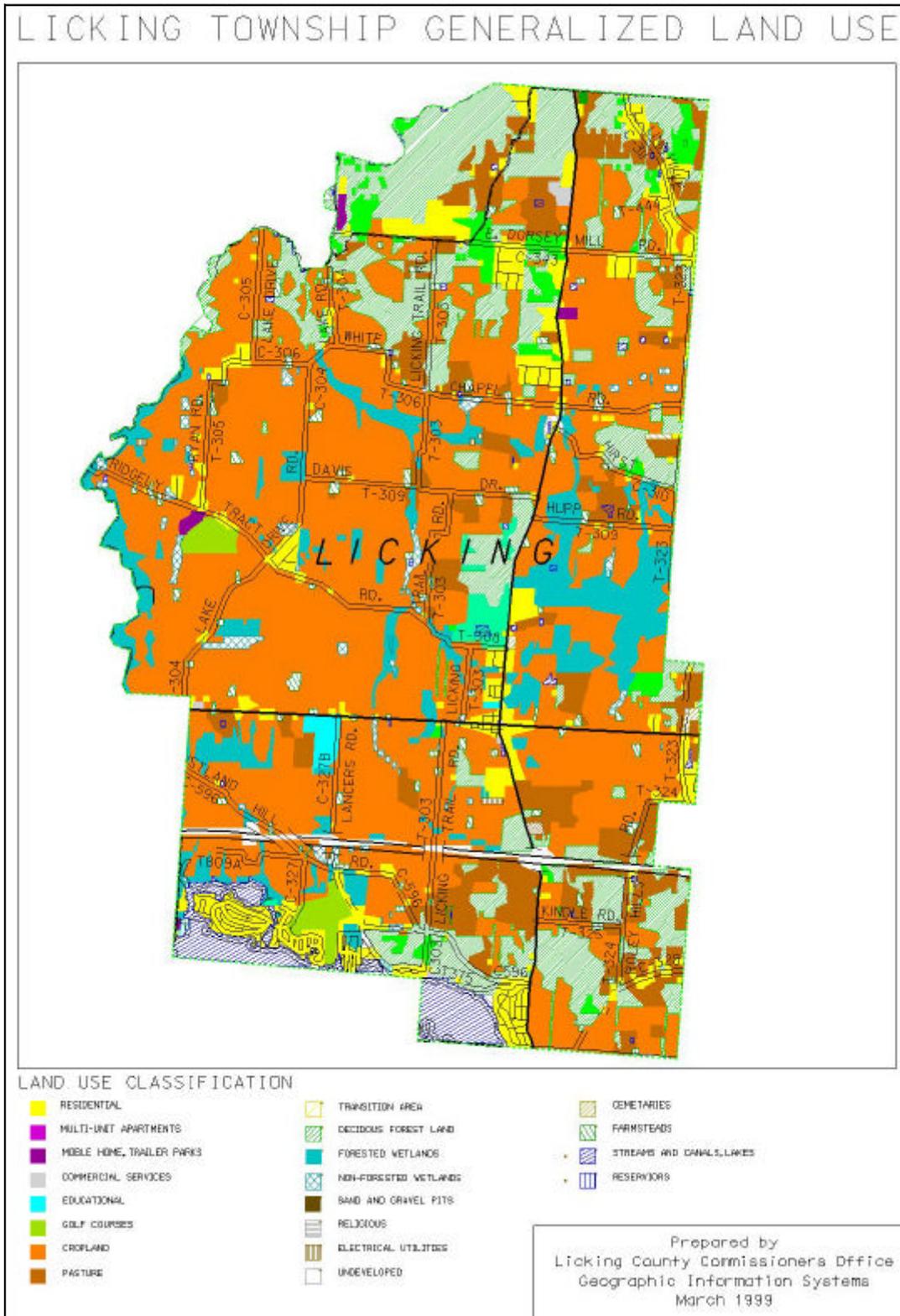


Aside from the flood plain, there are several wetland areas in Licking Township. Wetland areas are defined in a number of ways, depending on the agency involved. Methods of identifying wetlands include examining the plant species present, checking for standing water, and identifying characteristic soil types. Wetlands in Licking Township identified by the Ohio Department of Natural Resources are shown on Figure 17, along with other land cover including pasture, deciduous forestland, and cropland.

Wetlands are important resources for several reasons. First, there are many unique plants and animals that make their homes in these areas. Second, wetlands provide valuable groundwater recharge by acting as filters for surface runoff percolating back into the aquifers below. Third, wetlands are an important resource because they serve to join surface and groundwater sources, which can improve stream flow during drought periods. Fourth, during rainy periods, wetlands can absorb excess water and then let it slowly back into the surrounding land, averting potential flood damage. Finally, wetlands provide a valuable recreation resource.

Depending on the size and location of a wetland, various types of permits may be required for fill or development of the wetland.

FIGURE 17: LAND USE (INCLUDING WETLANDS)



Drainage

The vast majority of Licking County ultimately drains into the Muskingum River watershed. Most of the county is drained by the Licking River, which merges with the Muskingum River in Zanesville. Major tributaries of the Licking River include the North Fork of the Licking River, the South Fork of the Licking River (including Buckeye Lake), Raccoon Creek, Dry Creek, Clear Fork, Rocky Fork, and Brushy Fork (south of Hanover). The far southeastern corner of Licking County drains into Jonathan Creek, which flows into the Muskingum River in southern Muskingum County. The far northeastern corner of the county drains into Wakatomika Creek, which eventually joins the Muskingum River in Dresden. The westernmost fringe of the county drains into the Scioto River watershed. The headwaters of the numerous small tributaries west of the drainage divide eventually flow into (moving north to south) Big Walnut Creek, Blacklick Creek, and Little Walnut Creek. For a detailed explanation of the Pre- and Inter-glacial Drainage and Topography, see *Ground Water Pollution Potential of Licking County, Ohio*, published by the Ohio Department of Natural Resources, Division of Water, 1995.