Berlin Township

Comprehensive Land Use Plan

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Adopted **Date**

Background information in this Comprehensive Plan was compiled and presented between May 2021 and February 2022. Data was current as of the date it was presented, or as noted, although some tables have been updated throughout the process.

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Executive Summary

Berlin Township was the fourth-fastest growing township from 1990-2000, and the third fastest from 2000-2010 in percentage of growth in the fastest growing county in Ohio. After a 67% growth rate from 1990-2000, the rate jumped to 96% for 2000-2010. The decade 2010 to 2020 saw a growth rate of 19.7%. However, based on activity within the last two years, DCRPC projects the township grew another 7.3% between 2020 and 2022.

Berlin's neighbor to the south, Orange Township, has grown at a decade rate of 229% in the 1990s, 78% in the 2000s, and 28% in the 2010s. This growth wave is pushing north along the sanitary sewer line on South Old State Road, changing agriculture into suburban residential development.

Berlin Township 2022 – Land Use Facts and Issues:

1. Developers have annexed 8.15% of the Township (or 1,366 acres) has been annexed into the City of Delaware.
2. Population grew from 1,978 in 1990 to 3,315 in 2000 for an increase of 67%. Population grew to 6,496 in 2010 for an increase of 96% and to 7,774 in 2020 for an increase of 19.7%.
3. From 2000 to 2010 there were 758 new house lots zoned, 415 new multi-family units zoned, and 231 new acres of commercial and industrial ground zoned.
4. Since 2010, there have been 3,698 new single-family lots zoned, 306 multi-family units zoned (all single-family condos), and 354 acres of commercial and industrial ground zoned.
5. The year 2016 represented a large part of this change, with 1,234 future single-family lots and 314 acres of commercial in Evans Farm and 425 lots in the adjacent "Peachblow Land" rezoning.
6. The current housing mix indicates that Single-Family lots represent 92% of the housing units while Multi-Family represents 8% (including single-detached condos).
7. There is a 13-year supply of house lots in the subdivision process in the County.
8. The township saw 2,625 acres rezoned since 2010. The only area with large tracts of agriculture are along US 36/SR 37.
9. Traffic continues to be a significant problem, at certain locations during certain times of the day. Various road improvements have been completed recently, including roundabouts at Glenn Road/Berlin Station, Cheshire Road/Lackey Old State, Cheshire Road/Piatt Road, Cheshire Road/3 Bs K, and Piatt Road/Berlin Station; the Piatt Road extension; a segment of North Road at Peachblow, the Four Winds Drive relocation, and various widenings at Africa, Cheshire, and Gregory Roads.
10. There is a commitment to and interest in more open space, environmental protection, and recreational amenities.

11. Berlin Township has significant natural beauty in its ravines and other natural land around the Alum Creek Reservoir. These natural features need to be protected.

12. There are 3,147 housing units within the boundaries of Berlin Township. Of the total, 2,895 or 92%, are single family homes and 252 are multi-family housing units (including single-family detached condos).

13. Economic conditions are comparatively good in Berlin Township and Delaware County. The current county unemployment rate in the county is 2.4%, with the state of Ohio at 3.6%. As of August, 2022, the Columbus housing market is ranked tenth in the nation based on the number of days it take to sell a home. Median income in the county (2020) is the state's highest at $104,322 for household income and $122,435 for family. Intel announced plans to construct semiconductor chip plants in New Albany, which promises to usher in thousands of jobs with an average salary of $135,000, plus thousands more indirect jobs in surrounding areas.

14. The Polaris area has been a huge job and traffic generator. It has boosted Delaware County and the city of Columbus but continues to impact Berlin Township with school-related growth and increased traffic.

15. In late 2020, the Berlin Business Park was zoned through two overlays, impacting just under 1,900 acres in the northern part of Berlin Township. The overlay will provide a variety of limited uses, depending on location, including light industrial, professional, search, office, commercial, and multi-family uses. Delaware County is moving forward with a sanitary sewer pump station near Lackey Old State and Del-Co is planning on constructing a water tower at the same location.

16. Township collector roads were built in the 1800s for farm-to-market use and are often too narrow for today's traffic. Some township collector roads have been widened and some key intersections have been improved, and narrow roads are considered part of the scenic character, as long as they are safe.

17. U.S. 23 is a major four-lane highway that is losing its ability to move through-traffic as it becomes a commercial frontage road. Access management principles that limit curb cuts can help prevent the deterioration of this important highway.

18. ODOT's Access Management Plan for U.S. 36/S.R. 37 continues to guide future planning for the location of backage roads and signalized intersections.

19. There is adequate potable water supplied by the Del-Co Water Company, but summertime lawn watering taxes its ability to maintain treatment and pressure. A year-round alternate-day watering ban was instituted in July 1999 and continues to be in effect.

20. Except for a few locations where topography is a limiting factor, sanitary sewer service will eventually be available for the entire township. Sewer design densities are typically between 1.5 and 1.85 housing units per acre.

21. The Olentangy School system is adding approximately 1,000 new students every year. Regular levies are being passed for operations and new construction, but the pace of growth is an ongoing concern for the district. Olentangy maintains an excellent academic record for student proficiency test scores. Since the previous plan, Cheshire Elementary was completed on Gregory Road, Olentagy Berlin High School was completed on Berlin Station Road, and Berlin Middle School was completed just north of Cheshire Elementary. In addition, Shale Meadows Elementary was completed on North Road at Peachblow, and Berkshire Middle School was completed just east, in Berkshire Township on 3 Bs and K Road. Only two of these schools was referenced as future facilities in the previous plan.
22. A future school site is located on Sweeney Road and Berlin Station Road. Future development proposals and the transportation network should consider these future facilities in their planning.
23. The Village of Cheshire represents an opportunity for economic growth, attracting visitors to the state park and becoming an identifiable center of the township.
24. There is some township parkland at the new fire station, and Alum Creek State Park provides passive open space and recreation. There is a need for active recreation such as baseball and soccer fields, as well as other recreational activities that should be determined by ongoing work of the township's parks committee.
25. There is a desire to see more trails and bikeways both for recreational purposes and for alternative transportation. A specific goal is the placement of a path along Piatt and Cheshire Roads, although any improvements to existing roads and all new subdivisions should consider sidewalks and bike/pedestrian facilities.

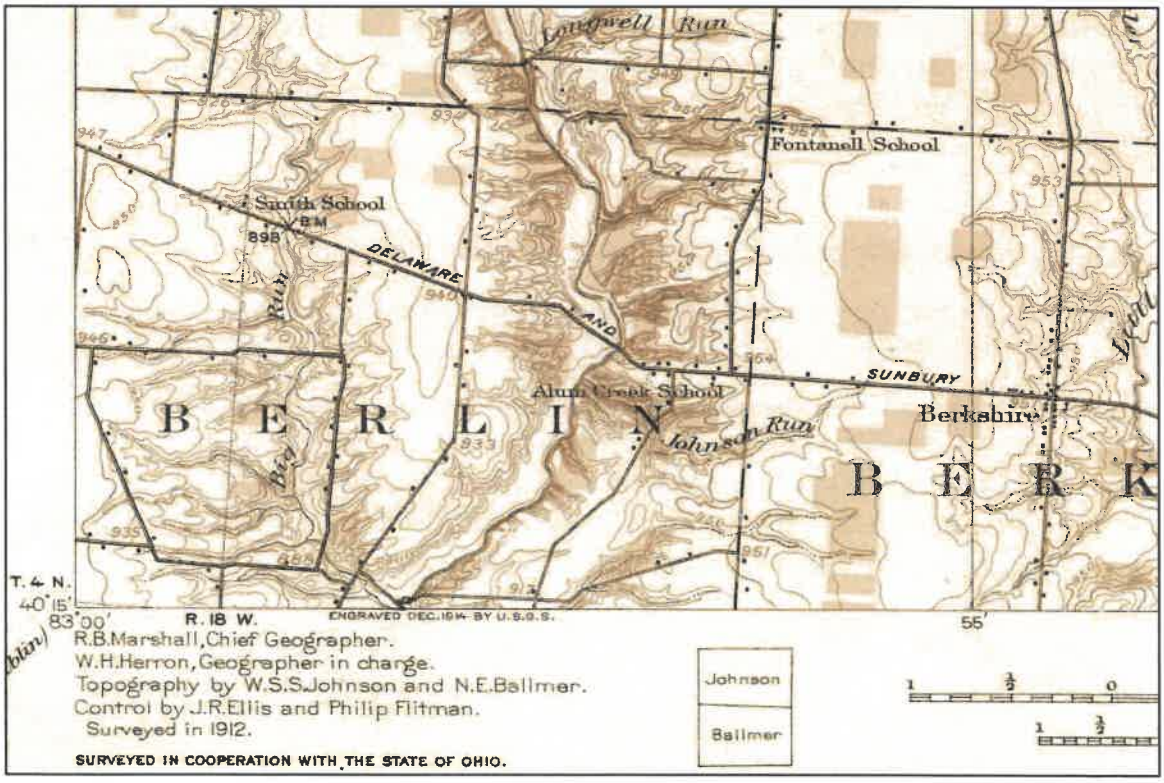
Chapter 1
Introduction
Berlin Township

- A brief history adapted from "History of Delaware County and Ohio," 1880

Beginnings

Township 4, Range 18, of the United States Military Survey, was divided between the townships of Berkshire, Delaware and Liberty from 1806 to 1820. In 1806, Sections 1 and 4 were, with the rest of Berkshire Township, as it then was, erected into a township. This was the shape of Berlin when the first settlers came here. Col. Byxbe owned Section 1 of the fourth township in Range 18, a fact which probably accounts for the strange division of townships when Berkshire was laid off, and it was not until January 8, 1820, that Berlin Township was erected, taking sections from Berkshire, Delaware, and Liberty Townships. The township has two centralized communities, the one about Cheshire, a small hamlet on Alum Creek, and Berlin Station, on the railway.

The first purchaser of land was Joseph Constant, of Peekskill, NY, paying two dollars per acre, and receiving a deed signed by John Adams. In the Berlin settlement there were some who bought as much as 1,000 acres of land, others 250 and 100 acres of hind, but all were on the same level of social equality. There was a novelty at first which dispelled discontent, and, later, the pressing duties of the settlement gave it no place. All wore the same kind of home-made clothing, made in the cabin from the flax of their own growing.



At the end of the first decade of Berlin's history there were about forty families in the township. About twenty of these had come from Waterbury, Conn., and settled on the Constant purchase in the southeast part of the township.

The first school in this township was taught by Joseph Eaton, in a cabin which stood west of Alum Creek, and a half or three-quarters of a mile north of the old Baptist meeting-house. The second was taught by Lucy Caulkins, in a cabin near where the block-house stood, about 1810. The children of that day were not different from those of to-day. Full of mischief, they watched the teacher's eye, and were on furtive mischief bent at all times.

- Adapted from "History of Delaware County and Ohio," 1880

Why Plan?

City and community planning in the United States is a fairly recent effort, with a foundation in the City Beautiful movement at the turn of the 20th Century. At that time, open space was seen as a deliverance from the stuffy, overcrowded, and disease-filled tenements of American cities in the late 1800s. The City Beautiful movement used parks and public open spaces as centerpieces of the future city, oases of respite from the typical hustle and bustle.

The intent of the city planning movement was to plan for the future. In some communities, there was a plan, which was the basis for the zoning map and resolution. However, in most communities, zoning itself was seen to be the plan. Zoning was tested immediately and found to be an appropriate legislative power.

Ohio has never taken the additional step to *require* land use planning as a mandatory underpinning of zoning or other land use controls. It is recommended by the American Planning Association, and the American Institute of Certified Planners. It is suggested by the Ohio Revised Code (ORC), and it is bolstered by Ohio and United States Supreme Court cases that a comprehensive plan strengthens a community's police power to zone and control its growth.

How Planning Relates to Zoning and the Community Vision

By Ohio law (Ohio Revised Code 519.05) it is the duty of the zoning commission to submit a plan, both text and maps, to the Trustees to control land use and as a basis for zoning.

The Berlin Township Zoning Commission convened on March 10, 2009 for the purpose of updating the 1999 Berlin Township Land Use Plan. That plan was adopted in 2010. In early 2022, the Zoning Commission convened for the purposes of updating the 2010 plan to conform to recent change in the Township. These changes included significant residential development and rezonings, as well as the creation of the Berlin Business Park.

Source: "The Atlas of Delaware County, Ohio" by F.W. Beers, 1866

Updating the Comprehensive Plan

The Berlin Township Zoning Commission convened on March 8, 2022 for the purpose of beginning an update to its 2010 Comprehensive Land Use Plan. By Ohio law (ORC 519.05) it is the duty of the Zoning Commission to submit a plan, both text and maps, to the Trustees to control land use and as a basis for zoning.

The Berlin Township Comprehensive Land Use Plan (update) is intended to:

1. Review recent changes in land use, population, utility services, roads, and boundaries;
2. Review recent changes in economic, legislative, judicial, and regulatory conditions;

3. Review previous goals and policies; judge whether they are still representative of the community's values and vision of its future, and if the goals and policies conform to current federal and state land use legislation and court decisions;
4. Amend goals and objectives for future growth;
5. Create a revised text and map for the recommended land use on a site-specific basis to guide future growth;
6. Recommend amendments to local zoning, and development policies to assure that the Township will be what it has envisioned.

The Comprehensive Plan is policies, goals, and a recommended land use map for the future development of the Township. After the adoption of the Comprehensive Plan, the Township could amend their zoning code, as needed, to implement its recommendations.

The Comprehensive Land Use plan is intended to be the township's vision for the next five to ten years. It is based upon economic and environmental conditions, availability of utilities, adequacy of roads, and the values of the township regarding density of housing and the look of the community when completely developed. It makes site-specific land use recommendations for each parcel in the township. It is subject to review and possible amendment whenever requested by a landowner, or as part of a potential rezoning.

How Digital Information Affects the Township's Ability to Plan

The Delaware County Auditor maintains a Geographic Information System (GIS) for the primary purpose of accurately mapping tax parcels. DCRPC maintains various layers to add to this system. The system is a very accurate computer-mapping format offering tabular and graphic real estate data about each of more than 90,000 tax parcels. It has a cadastral (property line) layer and topography layer. In addition, the office has created soil maps and digital ortho imagery with structure outlines.

Maps can be created with accuracy to a scale of 1 inch = 100 feet. Planners may view each parcel individually at any scale. This allows the DCRPC to make a Comprehensive Land Use Plan that is site-specific. Parcel data provided by the County Auditor forms the foundation of the GIS system. The software used is ArcMap and ArcInfo by ESRI.

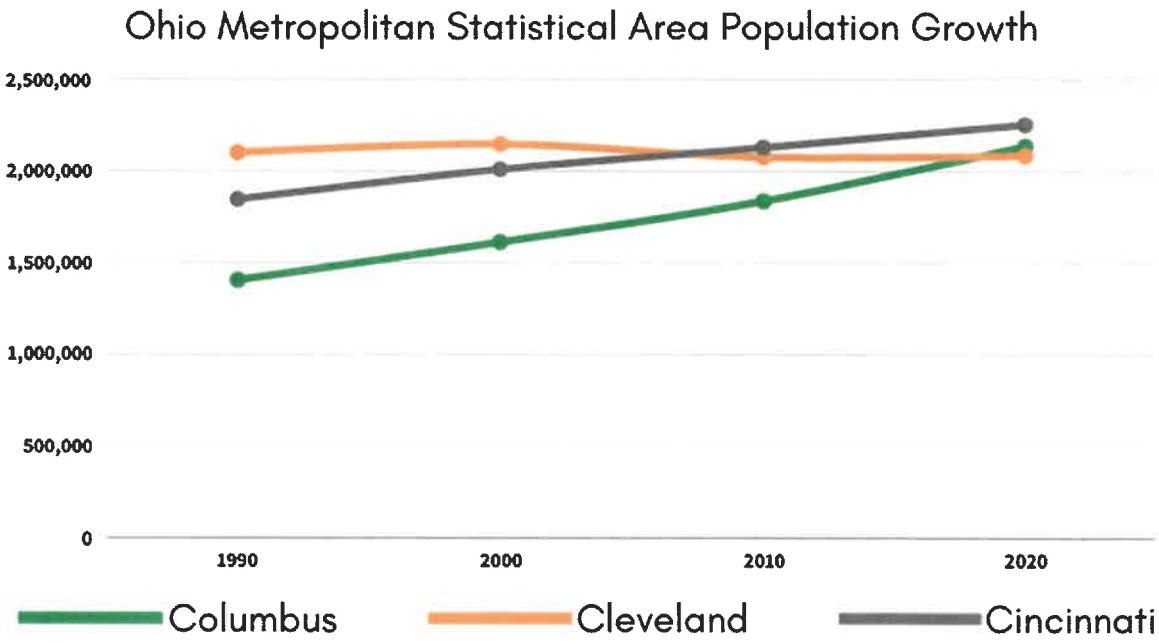
Chapter 2A
Population & Demographics
Delaware County

Regional Population

The Columbus Metropolitan Statistical Area (MSA) is the fastest growing MSA in the state of Ohio. Over the last 30 years, the Columbus MSA has added over 733,000 people; a 50% increase in population since 1990. Comparatively, Cleveland has lost about half a percent, while Cincinnati has gained just over 22%. This difference is most notable when looking at the population changes between the 2010 and 2020 decennial census, where Columbus gained 16.4% of its population (302,390 people) compared to Cleveland's 0.5% growth (11,011 people) and Cincinnati's 5.9% growth (126,733 people).

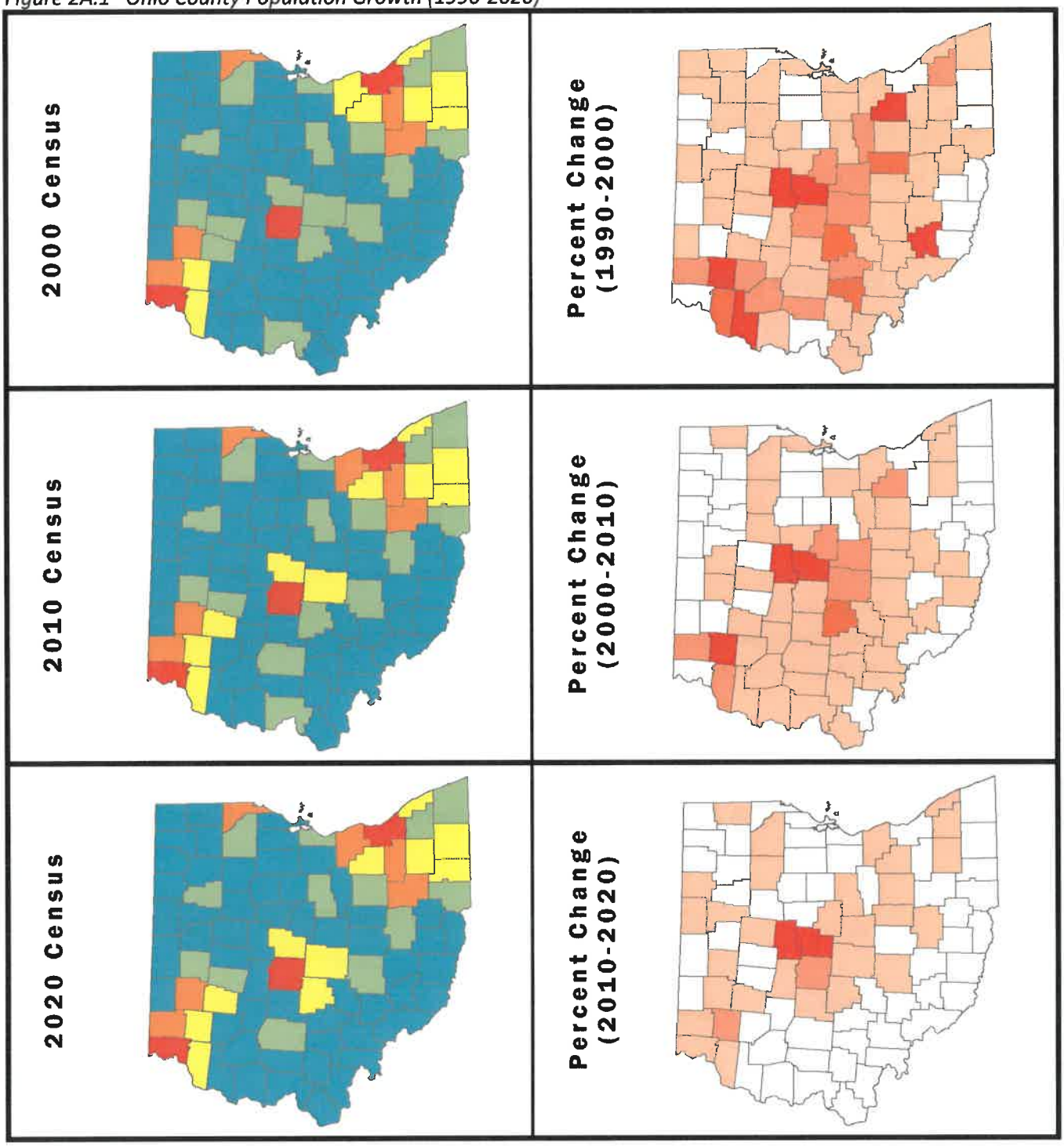
During those three periods of change (1990 to 2000, 2000 to 2010, and 2010 to 2020), Delaware County was the fastest growing, by percentage of population, in the State of Ohio. In 1990, Delaware County had a population of 66,929, and has increased to 214,124 people in 2020; an increase of 219%.

Figure 2A.1 Central Ohio Growth Rates (2010-2018)



**ACS 5-Year Estimates: Total Population, Age & Sex*

Figure 2A.1 Ohio County Population Growth (1990-2020)



Population Growth (1990-2020)

Delaware County

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Prepared by: Delaware County Regional Planning Commission (740-833-2260)
www.dcrpc.org (3/5/2021)

Population
- Under 75,000
- 75,001 to 150,000
- 150,001 to 300,000
- 300,001 to 750,000
- 750,001 - 1,393,978

Percent Growth
- Lost Population
- Less than 10% Growth
- 10% to 15% Growth
- 15% to 20% Growth
- Over 20% Growth

Figure 2A.3 Population Growth in Central Ohio Relative to Fastest Growing Ohio Counties (2000-2018)

County	2010 Population	2020 Population	Difference/ Percent Change	Rank
By Volume				
Franklin County	1,163,414	1,323,807	160,393	1
Delaware County	**174,214**	**214,124**	**39,910**	**2**
Warren County	212,693	242,337	29,644	3
Hamilton County	802,374	830,639	28,265	4
Butler County	368,130	390,357	22,227	5
By Percent Change				
Delaware County	**174,214**	**214,124**	**22.9%**	**1**
Union County	52,300	62,784	20.0%	2
Warren County	212,693	242,337	13.9%	3
Franklin County	1,163,414	1,323,807	13.8%	4
Fairfield County	146,156	158,921	8.7%	5

**Source: 2010 and 2020 Decennial Census*

Figure 2A.4 Central Ohio Intra-Migration (2015-2019)

Central Ohio Migration Patterns		Destination								
		Delaware County	Fairfield County	Franklin County	Licking County	Madison County	Pickaway County	Union County	**Gross Out Migration**	**Net Out Migration**
Origin	Delaware County	-	310	4,662	278	48	16	480	**5,794**	-
	Fairfield County	281	-	2,488	1,140	0	150	13	**4,072**	-
	Franklin County	6,478	4,110	-	4,133	1,175	1,723	1,688	**19,307**	**4,671**
	Licking County	271	362	3,080	-	120	57	41	**3,931**	-
	Madison County	4	90	477	0	-	222	153	**946**	-
	Pickaway County	13	570	1,333	13	371	-	16	**2,316**	**132**
	Union County	315	0	1,102	0	111	16	-	**1,544**	-
	Gross In Migration	**7,362**	**5,442**	**13,142**	**5,564**	**1,825**	**2,184**	**2,391**	**37,910**	-
	Net In Migration	**1,568**	**1,370**	-	**1,633**	**879**	-	**847**	-	-

Similarly, in the last ten years, Delaware County and Franklin County were the only two counties to be in the top 5 Ohio counties for growth in both volume and percentage of population in 2010, while both Union County and Fairfield County—other Central Ohio counties—were also in the top 5 Ohio counties in growth by percent change. These factors all indicate that Central Ohio is continuing to grow and add population, and should continue to do so in the future.

Migration Patterns & Demographics

Migration patterns between 2015 and 2019 show that Delaware County is the primary destination for residents moving out of Franklin County with about 34% of people moving out of Columbus—but staying in Central Ohio – choosing Delaware County as their new home. In fact, of all Central Ohioans choosing to relocate to Delaware County, 88% (6,478 people) are relocating from Franklin County.

In 2000, the three most common age groups were 35 to 39 years, 40 to 44 years, and 45 to 49 years; constituting a combined 27.4% of Delaware County's population. By 2010, the primary demographic changed slightly. The 35 to 39 years and 40 to 44 years age ranges remained two of the three most common, however, the 5 to 9 year age range increased to 9% of the population, becoming the third most prevalent. These age ranges all remained relatively constant, with the 40 to 44 years age cohort shifting to 45 to 49 years.

The fluctuation in age ranges could be related to the intra-migration patterns seen in Table 2A.3. Residents of Central Ohio with children are relocating to Delaware County schools.

Figure 2A.5 Central Ohio Inter-migration (2015-2019)

Area A	Area B	Migration from B to A	Migration from A to B	Net Migration Between A & B	Gross Migration Between A & B
State of Ohio	All Other States + PR	201,348	206,132	-4,784	407,480
	Foreign	41,985	n/a	n/a	n/a
	Totals	**243,333**	**206,132**	**-4,784**	**407,480**
Central Ohio	Ohio	77,606	71,210	6,396	148,816
	All Other States + PR	37,506	38,254	-748	75,760
	Foreign	11,433	n/a	n/a	n/a
	Totals	**126,545**	**109,464**	**5,648**	**224,576**
Delaware County	Ohio	9,971	8,968	1,003	18,939
	All Other States + PR	3,740	3,254	486	6,994
	Foreign	1089	n/a	n/a	n/a
	Totals	**14,800**	**12,222**	**1,489**	**25,933**

**"n/a" represent estimates that are not available because data is not collected from other countries*
***Central Ohio consists of Delaware, Fairfield, Franklin, Licking, Madison, Pickaway, and Union Counties*
Source: U.S. Census Bureau, 2015-2019 American Community Survey

Though younger adults in early professional careers are most likely living in more urban areas until they're either ready to start a family, or their children become school-aged.

This rationale is supported when looking at the migration patterns of both Delaware and Franklin Counties. Franklin County has seen a net migration outward of 4,671 people, while Delaware County has seen an net migration inward of 1,568 people.

Figure 2A.6 Age and Sex of Delaware County Residents (2000-2018)

	2000*			2010*			2019**			Difference (2000-2019)		
	Total	M	F	Total	M	F	Total	M	F	Total	M	F
Under 5 years	7.9%	8.2%	7.5%	7.5%	7.7%	7.2%	5.8%	5.9%	5.6%	-2.1%	-2.3%	-1.9%
5 to 9 years	8.3%	8.6%	7.9%	9.0%	9.3%	8.7%	8.7%	8.4%	7.2%	-0.5%	-0.2%	-0.7%
10 to 14 years	7.6%	7.9%	7.3%	8.1%	8.4%	7.8%	7.7%	7.6%	7.8%	0.1%	-0.3%	0.5%
15 to 19 years	7.1%	7.4%	6.7%	6.7%	7.0%	6.3%	7.6%	8.1%	7.1%	0.5%	0.7%	0.4%
20 to 24 years	5.0%	5.0%	5.1%	4.1%	4.1%	4.1%	4.9%	5.2%	4.7%	-0.1%	0.2%	-0.4%
25 to 29 years	5.9%	5.7%	6.1%	4.5%	4.4%	4.7%	4.1%	3.6%	4.5%	-1.8%	-2.1%	-1.6%
30 to 34 years	7.7%	7.5%	8.0%	6.4%	6.1%	6.7%	5.5%	5.2%	5.8%	-2.2%	-2.3%	-2.2%
35 to 39 years	9.7%	9.5%	9.9%	8.5%	8.4%	8.6%	7.8%	7.4%	8.3%	-1.9%	-2.1%	-1.6%
40 to 44 years	9.3%	9.3%	9.3%	8.7%	8.7%	8.7%	7.6%	8.2%	7.0%	-1.7%	-1.1%	-2.3%
45 to 49 years	8.4%	8.6%	8.2%	8.4%	8.5%	8.3%	8.0%	8.5%	7.6%	-0.4%	-0.1%	-0.6%
50 to 54 years	6.9%	7.0%	6.7%	7.3%	7.3%	7.4%	6.9%	7.1%	6.8%	0.0%	0.1%	0.1%
55 to 59 years	4.7%	4.7%	4.7%	6.3%	6.3%	6.2%	6.5%	6.9%	6.1%	1.8%	2.2%	1.4%
60 to 64 years	3.4%	3.4%	3.3%	5.1%	5.1%	5.1%	5.7%	5.2%	6.2%	2.3%	1.8%	2.9%
65 to 69 years	2.6%	2.5%	2.6%	3.4%	3.2%	3.5%	5.0%	4.5%	5.4%	2.4%	2.0%	2.8%
70 to 74 years	2.2%	2.0%	2.4%	2.3%	2.2%	2.4%	3.8%	3.6%	4.0%	1.6%	1.6%	1.6%
75 to 79 years	1.6%	1.3%	1.9%	1.6%	1.5%	1.8%	2.8%	2.9%	2.7%	1.2%	1.6%	0.8%
80 to 84 years	1.0%	0.7%	1.2%	1.2%	1.0%	1.4%	1.0%	0.9%	1.0%	0.0%	0.2%	-0.2%
85+ years	0.8%	0.4%	1.1%	1.0%	0.6%	1.2%	1.5%	0.8%	2.2%	0.7%	0.4%	1.1%
Pop. (#)	109,989	54,435	55,554	174,214	85,925	88,289	209,177	104,139	105,038	87,019	43,069	43,950
Pop. (%)	-	49.5%	50.5%	-	49.3%	50.7%	-	49.8%	50.2%	-	0.0%	0.0%
Median Age	35.3	34.8	35.7	37.4	36.9	37.9	39.1	39	39.2	3.8	4.2	3.5

**Age Groups and Sex: 2000 & 2010 Census Summary File 1*
***Age by Sex: 2019 American Community Survey 5-year Estimate (2020 Census Data not yet released for this data)*

From a diversity standpoint, Delaware County is becoming a more diverse county. In 2000 Delaware County was 94.2% White, which dropped to 89.7% in 2010. According to the 2020 Decennial Census, Delaware County is now 66.81% white, with the largest increases occurring in Black, Asian, and Multi-Racial populations. From an ethnicity perspective, Hispanic or Latino populations increased 432% in 2020 from 2000; from 1,109 people to 5,903.

Population Projections

The Ohio Department of Development (ODOD) also publishes population projections for the counties in Ohio. Map 2A.2 demonstrates the data that the ODOD published and illustrates the consistent large increases in population that Delaware County is forecasted to see in to 2040. Delaware County has the highest percent increase in population when compared to 2020 with a 31.8% increase in population projected. Of the 11 counties that are projected to see increases above 7.5%, 7 counties (the entire Central Ohio region) are among them; including the top 4.

The Delaware County Regional Planning Commission conducts population projections for the individual townships and municipalities that makeup the County. See Chapter 2B for more information.

Population Growth Summary

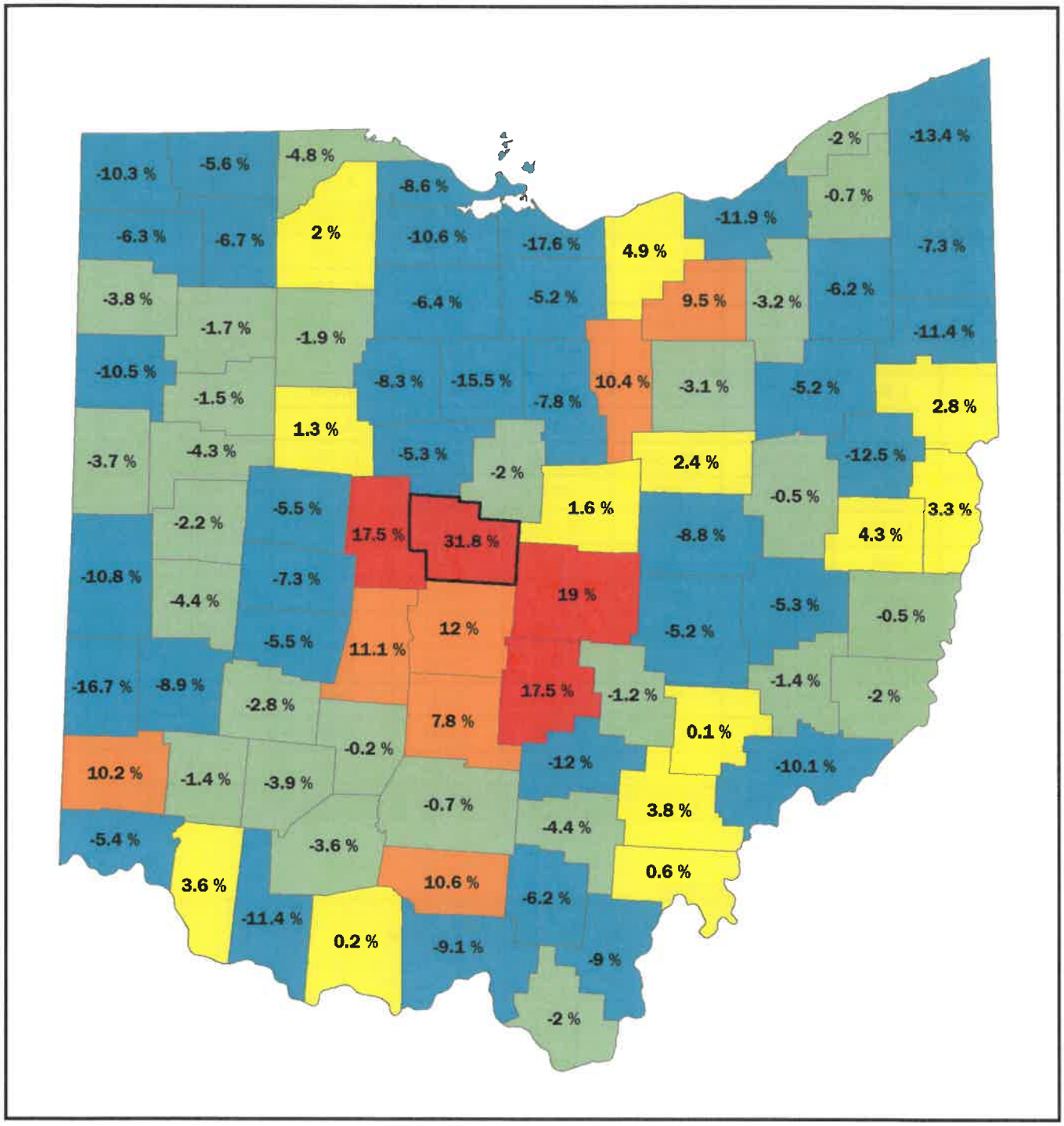
Delaware County is repeatedly the fastest growing county in Ohio, and that growth is projected to continue. Simultaneously, the County is becoming more diverse, increasing the varied needs by the County's population. Future development pressures will largely be dependent on the availability of water and sewer service and/or whether annexations consume land to achieve the desired land uses if the Townships can not accommodate. Subsequently, if utilities are not available, developers may seek annexation in order to obtain the infrastructure needed for their development.

Figure 2A.7 Delaware County Demographic Diversity (2000-2020)

	2000*		2010*		2020**		2000-2020	
	Total	Percent	Total	Percent	Total	Percent	Difference	Percent
Total Population	**109,989**	-	**174,214**	-	**214,124**	-	**104,135**	-
White	103,663	94.20%	156,328	89.70%	173,231	80.90%	69,568	66.81%
Black or African American	2,774	2.50%	5,837	3.40%	7,840	3.66%	5,066	4.86%
American Indian and Alaska Native	157	0.10%	252	0.10%	324	0.15%	167	0.16%
Asian	1,690	1.50%	7,436	4.30%	18,216	8.51%	16,526	15.87%
Native Hawaiian and Other Pacific Islander	38	0.00%	51	0.00%	75	0.04%	37	0.04%
Other	416	0.40%	1,097	0.60%	2460	1.15%	2044	1.96%
Two or More	1,251	1.10%	3,213	1.80%	11,978	5.59%	10,727	10.30%
Hispanic or Latino	1,109	1.00%	3,669	2.10%	7,012	3.27%	5,903	5.67%

**Race and Hispanic or Latino: 2000 and 2010 Census Summary File 1*
***Race: 2020 Decennial Census*

Figure 2A.8 Ohio Department of Development Projected Population Growth to 2040



Population Growth (2040)

Delaware County

Delaware County

2020 to 2040 Population Growth

- Less than -5% Growth
- -5% to 0% Growth
- 0% to 7.5% Growth
- 7.5% to 15% Growth
- Over 15% Growth

Prepared by: Delaware County Regional Planning Commission (740-833-2260)
www.dcrpc.org (3/5/2021)

The next table shows the population projections calculated by the DCRPC for all communities in Delaware County. The projections may change drastically based upon major developments. The maximum build-out population is a

Table 2A.6. Township Population Projections (by DCRPC Housing Unit Meth-

	2000 US	2010 US	2015	2018	2020*	2025*	2030*	Maximum Build-out**
Berkshire	1,946	2,428	2,923	3,490	3,770	4,654	5,479	20,936
Berlin	3,315	6,496	7,140	7,627	7,795	8,547	9,249	23,537
Brown	1,290	1,416	1,471	1,508	1,528	1,595	1,657	17,645
Concord	4,088	9,294	10,547	10,902	11,267	12,144	12,963	40,049
Delaware	1,559	1,964	2,061	2,093	2,123	2,194	2,259	15,014
Genoa	11,293	23,090	25,195	25,979	26,496	28,027	28,454	28,454
Harlem	3,762	3,953	4,134	4,345	4,428	4,749	5,050	29,069
Kingston	1,603	2,156	2,256	2,309	2,339	2,431	2,516	26,994
Liberty	9,182	14,581	16,246	17,319	17,890	19,763	21,511	29,900
Marlboro	227	281	290	293	295	302	308	5,499
Orange	12,464	23,762	27,084	29,369	30,507	34,374	37,038	37,038
Oxford	854	987	1,008	1,016	1,023	1,040	1,057	14,291
Porter	1,696	1,923	2,052	2,146	2,200	2,361	2,512	25,000
Radnor	1,335	1,540	1,598	1,643	1,665	1,746	1,821	20,404
Scioto	2,122	2,350	2,459	2,582	2,628	2,820	2,999	25,588
Thompson	558	684	712	725	733	756	778	13,771
Trenton	2,137	2,190	2,241	2,286	2,309	2,384	2,454	11,684
Troy	2,021	2,115	2,157	2,198	2,225	2,297	2,365	13,737
Total Twps	**61,450**	**101,210**	**111,572**	**117,830**	**121,221**	**132,184**	**140,470**	

Table 2A.7. Municipal Population Projections

	2000 US CENSUS	2010 US CENSUS	2016	2017	2020*	2025*	2030*	Maximum Build-out**
Delaware	25,243	34,753	38,495	39,842	40,990	43,478	45,459	106,061
Galena	305	653	781	825	868	953	1,021	1,500
Sunbury	2,630	4,389	5,093	5,421	5,663	6,202	6,632	11,638
Shawnee Hills	419	681	779	813	847	918	974	1,290
Powell	6,247	11,500	13,411	14,420	14,983	15,605	15,605	15,605
Ashley	1,216	1,330	1,344	1,349	1,353	1,360	1,367	4,705
Ostrander	405	643	862	970	1,055	1,087	1,087	1,087
Dublin	4,283	4,018	4,031	4,115	4,195	4,354	4,407	4,407
Westerville	5,900	7,792	9,076	9,651	10,152	10,650	10,650	10,650
Columbus	1,891	7,245	12,244	12,963	13,380	14,191	14,191	14,191
Total	**48,539**	**73,004**	**86,116**	**90,369**	**93,486**	**98,798**	**101,393**	

**Based on historical trends, estimates are subject to localized increases/decreases and do not include the potential for annexations and resulting changes in density.*

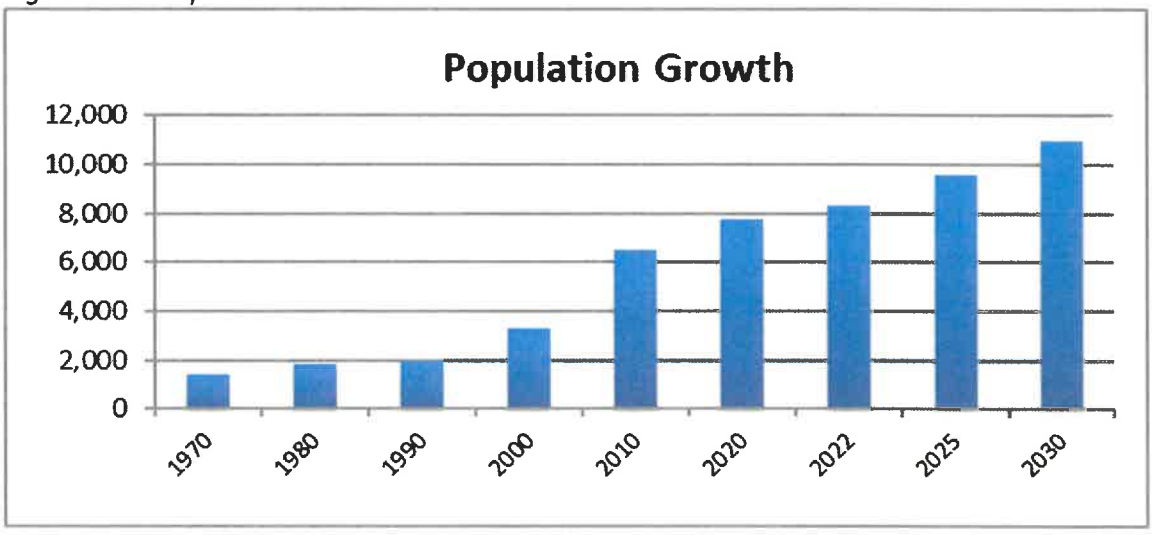
Chapter 2B
Population & Demographics
Berlin Township

Township Population

The U.S. Census shows certain other profiles of Berlin Township's population. The picture is of an affluent, educated, mostly white population, two-thirds of whom are 18 or older.

Berlin Township's population was determined to be 7,774 by the Census Bureau in 2020. This represents an increase of 1,278 people since 2010, when the population was 6,496. While the increase between 2000 and 2010 was 96%, the increase between 2010 and 2020 was only a 20% increase. With the current number of residential units "in the pipeline" in Berlin Township, increases this decade are proposed to be significant. The DCRPC is projecting a 42% increase in population by 2030.

Figure 2B.1 Population Growth

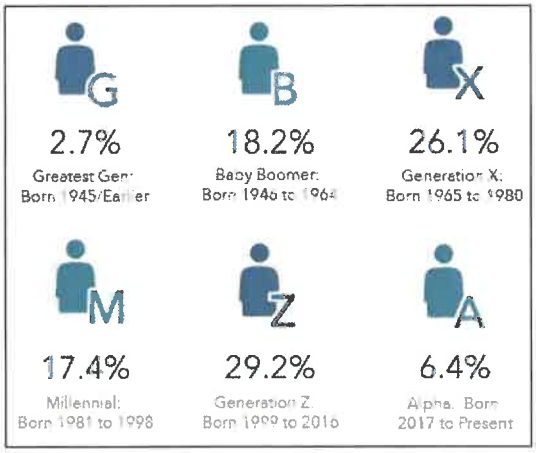


Demographic Profile

The most common age cohorts in the township were the age groups of 35 to 44 years (1,256) and 45 to 54 years (1,599). These groups constituted 37.5% of the population. The size of these age groups represents a typical trend in growing communities. These cohorts likely represent a general demographic of young families their second, or "move-up" home. These families are also likely choosing the area based on the Olentangy School District. Planning and zoning decisions will determine if and how these trends continue or change.

These age categories can also be expressed in the commonly referenced "generation" identity. In this grouping, Generation Z is the largest group, born between 1999 and 2016 (ages 6-23) make up the largest group, representing children and older kids probably still living with parents. The next larges group is Generation X, born between 1965 and 1980 (ages 42-57) again suggesting a cohort looking at the school district and a group that more likely afford to live in an affluent, growing area.

The township is predominately white; accounting for almost 84% of the population. While all ethnic groups have grown during the 2010 and 2020 Census, the percentage of growth has been the greatest in African Americans and Asians. However, African Americans represent 3% while Asians represent 4%.



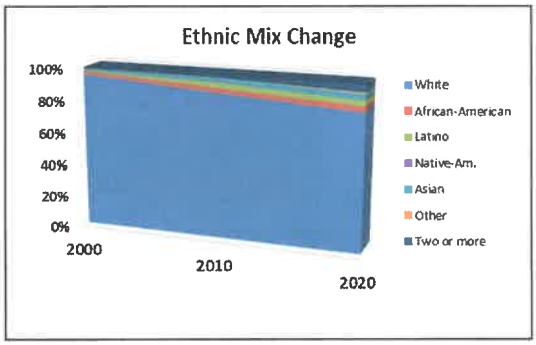


Figure 2B.2 U.S. Census Demographic Profile

U.S. Census Population Category	2010 Township Population	2020 Township Population
Total Township population	6,496 persons	7,774 persons
White	5,813	6,534
African American	170	259
Latino	233	268
American Indian	11	6
Asian	153	302
Pacific Islander	5	3
Other	8	50
Two or More	103	352
	5-yr estimates, 2019	
Med. household income	$151,034	
Unemployment	2.8%	
Male population	47.9%	
Female population	52.1%	
Median age	38.8	
Bachelor's degree	37.5%	
Graduate or prof. degree	19.9%	
Average household size	3.21	
Average family size		

Source: U.S. Census Bureau 2019 ACS 5-Year Estimates

Residents of the township are relatively affluent overall with a median household income of $151,034. Only Liberty Township is higher, at $152,384. By comparison, Delaware County as a whole had a median household income of $104,332. The township's Median Household Income is also well above the Median Household Income for the State of Ohio ($54,533) and the Columbus Metropolitan Area ($62,898).

This affluent level of income is reflected in the education of residents. Again, according to the American Community Survey, 37.5% have at least a Bachelor's degree with just under 20% maintaining a Graduate or Professional degree. Genoa and Concord are higher, each at about 45% Bachelor's.

As with most of Central Ohio, the unemployment rate is very low at 2.8%.

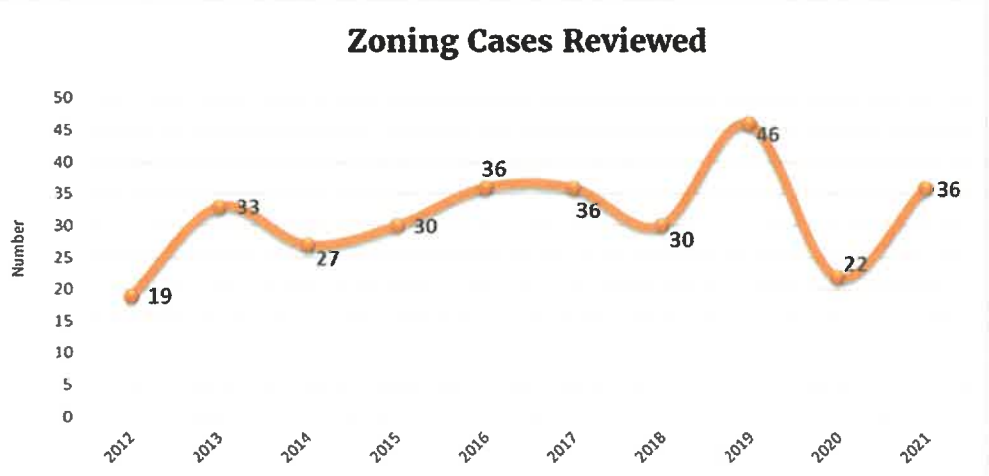
Chapter 3A
Development and Change
Delaware County

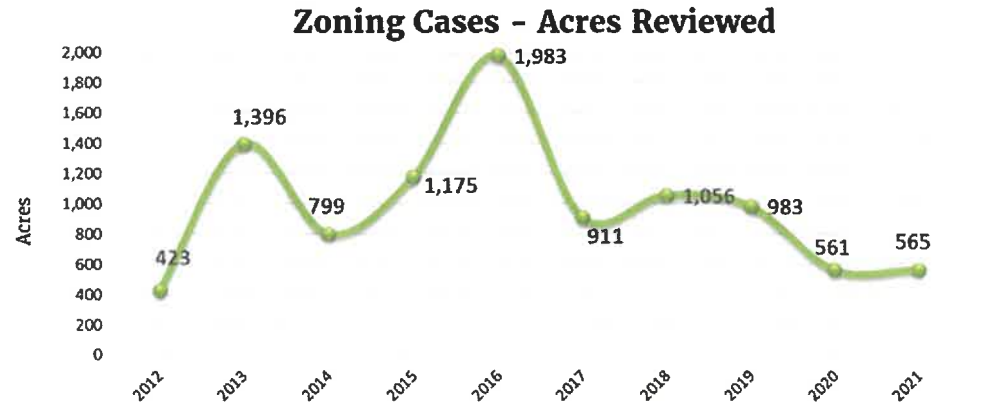
Much has been said about the growth rate of Delaware County over the last three decades. The County grew by 64.3% from 1990-2000, ranking it as the 15th fastest-growing county in the country by percentage of growth. For the period of 2000-2010, the growth was 58.4%, as the County was the 22nd fastest-growing by the same measure.

Development typically starts with the rezoning process, unless a proposed development intends to use existing zoning. Rezoning activity throughout the townships in Delaware County has been strong in the last three decades. Within the last 10 years, zoning acres reviewed peaked at just under 2,000 acres in 2016, then reducing to a range of 550-1000 acres per year since.

Figure 3A.1. Zoning Cases Reviewed

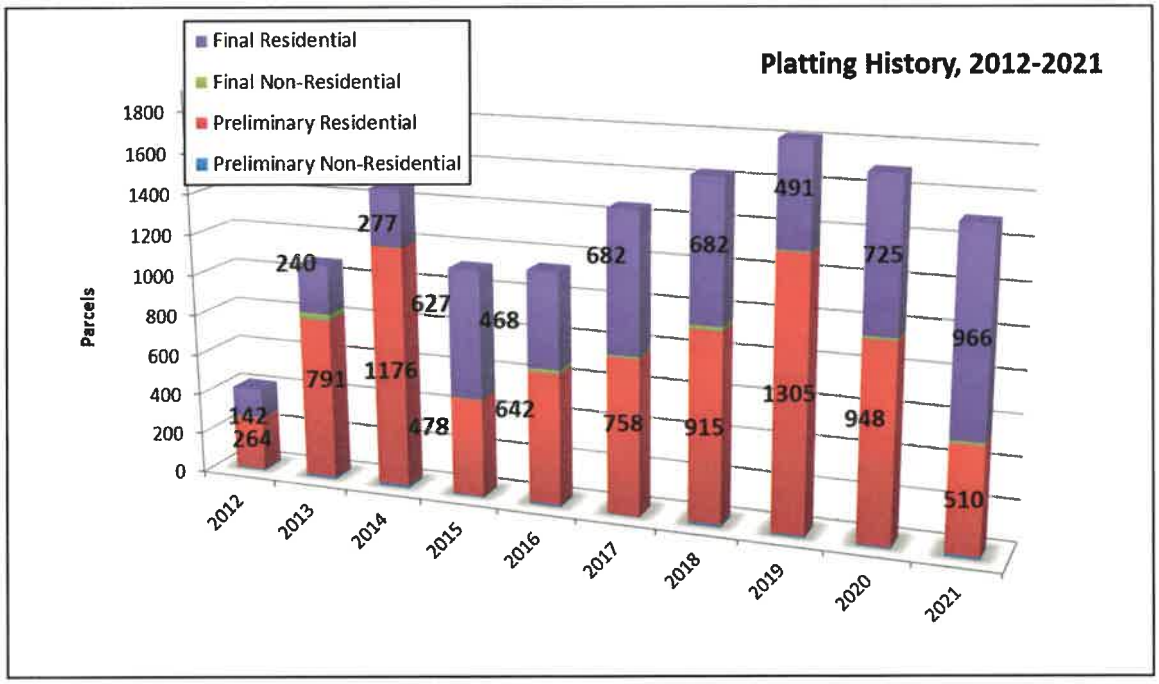
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
# of individual cases	19	33	27	30	36	36	30	46	22	36
Total acreage	423	1,396	799	1,175	1,983	911	1,056	983	561	565





This zoning activity eventually leads to the subdivision platting process. Each year, lots make their way through the subdivision process. First, lots receive a Preliminary approval before work can be started. Eventually, the platting process creates the individual parcels and open space. The following graphic indicates the number of lots reviewed by RPC throughout each year.

Figure 3A.2. Platting History 2012-2021



The following table represents the number of lots in the various stages of the development process at the end of each year. The key is to notice that the overall number of lots in the pipeline had been decreasing until 2015, when several new subdivision started through the process. The DCRPC estimates that there is still a 14-year supply of lots in the development process.

Figure 3A.3 Development Pipeline

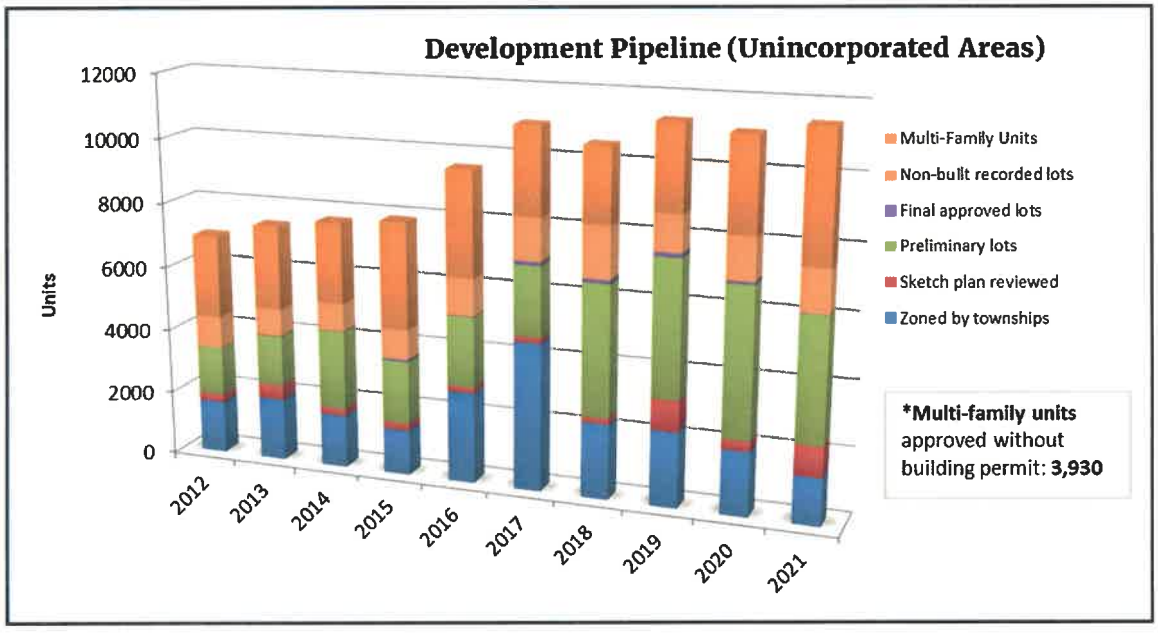
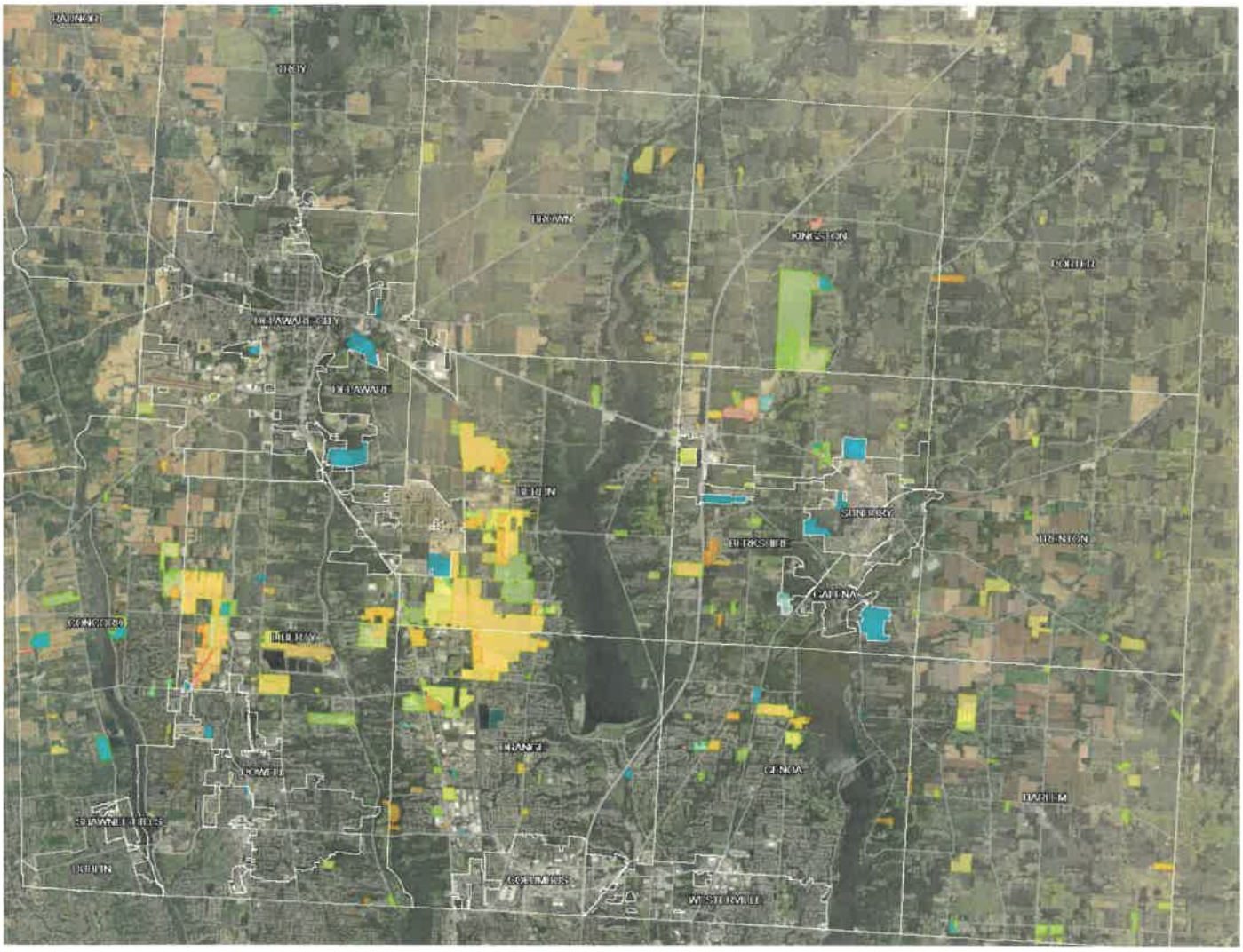


Figure 3A.4. Numbers of lots in various stages of the Development Pipeline

Development Process	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Zoning approved	1,626	1,925	1,636	1,401	2,816	4,558	2,317	2,312	1,978	1,453
Sketch Plan reviewed	247	464	220	228	176	171	176	958	315	929
Preliminary approved	1,523	1,563	2,454	1,934	2,161	2,153	4,030	4,190	4,568	3,800
Final Plat approved	7	36	19	83	29	124	131	146	95	25
Non-built, recorded lots	979	825	849	907	1,138	1,299	1,576	1,101	1,273	1,289
Total Lots in Pipeline	**4,382**	**4,813**	**5,178**	**4,553**	**6,320**	**8,305**	**8,230**	**8,707**	**8,229**	**7,496**
Multi-Family Units	***2,569***	***2,591***	***2,492***	***3,299***	***3,244***	***2,671***	***2,284***	***2,585***	***2,852***	***3,930***

Figure 3A.5. Location of Development Activity



The image above indicates all active projects within unincorporated areas as of 2/25/22. Green indicates zoning projects that are not yet subdivisions. Yellow indicated areas with active Preliminary Plans. Darker yellow is currently being reviewed for platting and blue is a category showing other projects, such as multi-family or commercial sites or municipal projects.

Figure 3A.6 Historical County Building Permits

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Berkshire	26	38	45	91	55	84	269	66	284	234
Berlin	26	19	28	24	50	73	62	108	125	210
Brown	4	3	6	3	6	3	4	10	6	15
Concord	83	67	32	39	31	70	185	107	212	162
Delaware	6	7	1	7	4	2	20	9	6	18
Genoa	116	110	39	66	109	77	74	46	48	45
Harlem	9	21	13	22	29	44	38	23	38	48
Kingston	1	9	5	7	10	9	33	24	26	18
Liberty	115	133	89	104	117	178	137	99	474	573
Marlboro	0	0	2	0	0	1	4	0	0	2
Orange	181	214	209	213	358	205	119	56	222	282
Oxford	1	1	1	1	1	0	7	3	2	3
Porter	5	13	10	13	11	13	15	14	10	12
Radnor	3	6	6	2	5	10	3	3	4	12
Scioto	7	8	9	9	21	22	11	33	16	50
Thompson	2	1	0	2	1	2	1	0	4	7
Trenton	3	4	4	5	9	5	11	19	14	20
Troy	5	1	3	8	7	2	4	6	2	12
Total Twps	**593**	**655**	**502**	**616**	**824**	**800**	**997**	**626**	**1,493**	**1,723**

Figure 3A.7 Historical Municipality Building Permits

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Delaware	204	313	259	186	306	246	587	646	454	506
Galena	11	4	6	7	5	10	4	63	87	120
Sunbury	34	73	36	36	31	95	91	59	34	56
Shawnee Hills	1	10	10	5	11	3	1	3	1	4
Powell	58	95	110	66	388	73	59	35	59	98
Ashley	1	1	0	0	0	1	0	0	0	0
Ostrander	10	23	12	12	7	31	25	10	29	34
Dublin*	0	0	2	0	9	18	9	5	4	7
Westerville*	89	10	121	111	136	65	0	101	16	1
Columbus*	277	921	255	560	379	0	10	557	1	2
Total Municipalities	**685**	**1,450**	**811**	**983**	**1,272**	**542**	**786**	**1,479**	**685**	**828**

**Portions within Delaware County*

Figure 3A.8 Permits for Larger Jurisdictions

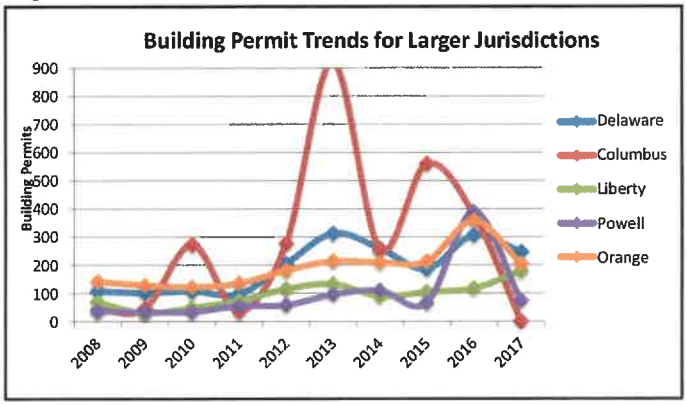
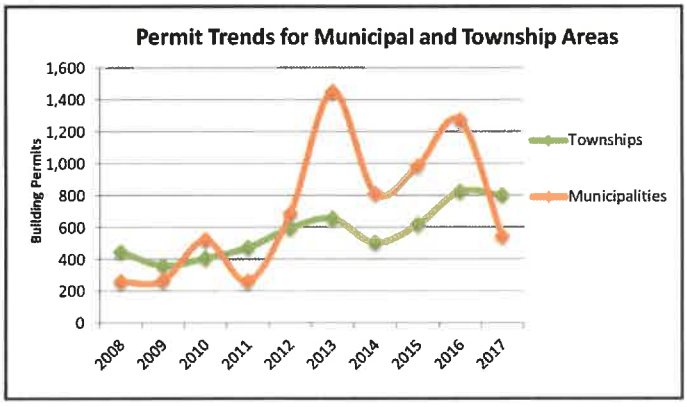


Figure 3A.9 Permits for Larger Jurisdictions



Chapter 3B
Development and Change
Berlin Township

Berlin Township Development Activity

Platting activity for new subdivisions is an indicator of future growth, as it precedes building permits. Figure 3B.1 below illustrates the amount of subdivision activity in Berlin Township over the last two decades, by number of lots and acreage platted during five-year periods.

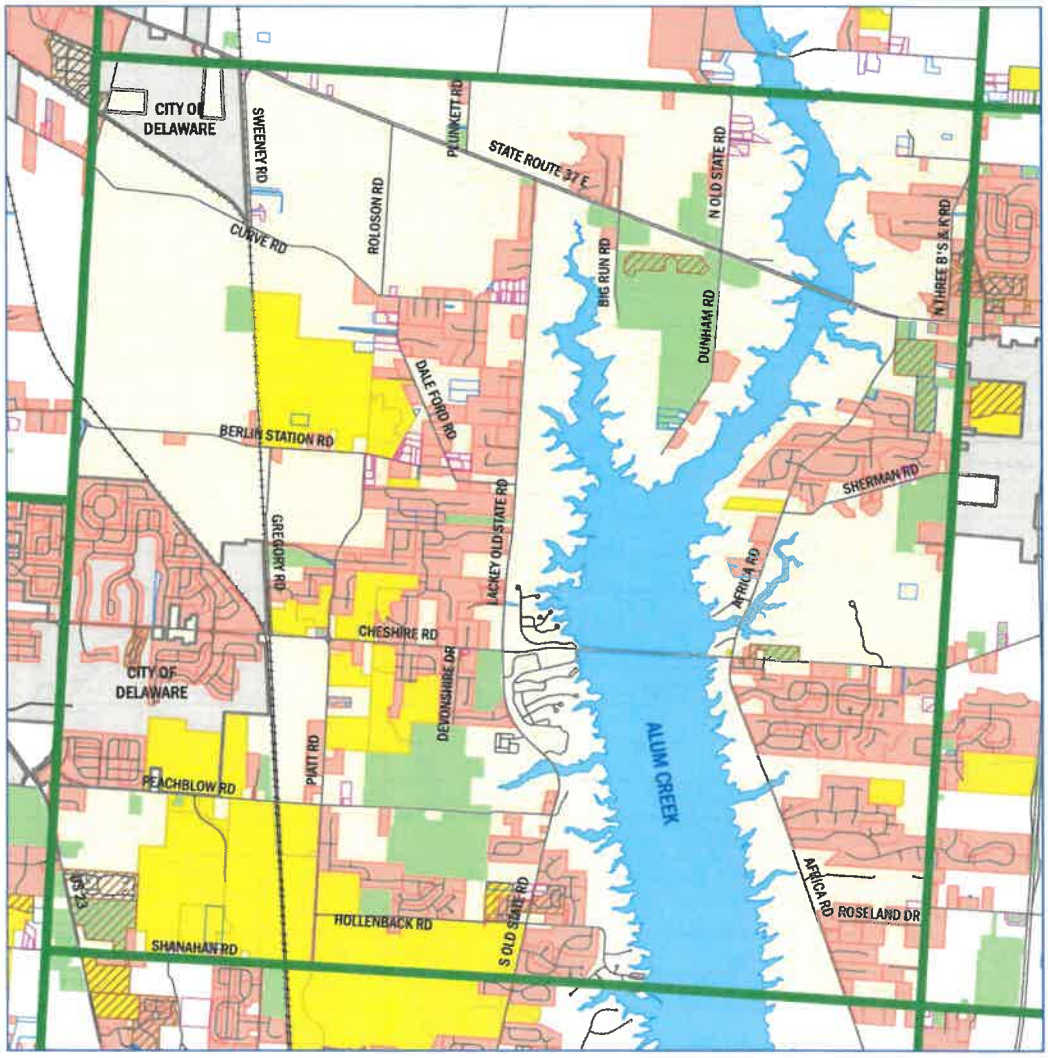


Figure 3B.2 Zoning Reviews Since 2000

RPC Date	Applicant	Type	Acreage	From	To	SF Lots	MF Lots	Twp. Status
12/28/2000	Charles Day & Bradley Walker	C	8.22	FR-1	PCD			Approved
6/28/2001	JD Partnership/T&R Prop.	SR	40.60	FR-1	PRD	68		Approved
6/28/2001	T&R Prop./Ron Sabatino	SR	61.36	FR-1	PRD	117		Approved
1/31/2002	Schumacher Homes	C	3.67	PCD	PCD			Approved
9/26/2002	Alum Creek Storage	C	19.07	PCD	PCD			Approved
12/19/2002	Humane Soc. Delaware	C	6.43	NCD	PCD			Approved
3/27/2003	*New Era Homes*	*C*	*1.13*	*PCD*	*PCD*			*Withdrawn*
5/29/2003	M/I Shottenstein	SR	51.31	FR-1	R-2	79		Approved
7/30/2003	Archie Foor Jr.	C	7.50	FR-1	PCD			Approved
4/29/2004	James Property/Ron Sabatino	SR	40.71	FR-1	PRD	34		Approved
5/27/2004	Peter Hill	C	10.69	PCD	PCD			Approved
7/29/2004	Land Five Ltd	C	1.87	NCD	PCD			Approved
8/26/2004	The Keethler Company	SR	66.43	FR-1	PRD	56		Approved
10/28/2004	American Heritage Homes	C	2.99	NCD	PCD			Approved
3/31/2005	Frank Biancone & Land Five	MR	55.89	FR-1/NCD	PCD		188	Approved
4/28/2005	Fox Haven Farms	C	21.66	FR-1/NCD	PCD			Approved
4/28/2005	Fox Haven Farms	MR	26.86	FR-1	PCD		120	Approved
4/28/2005	Fox Haven Farms	SR	222.07	FR-1	R-2/PRD	245		Approved
10/27/2005	Delaware Route 23 Dev.	C	3.17	FR-1	PID			Approved
11/17/2005	James Dietz, Trustee	C/MR	37.12	FR-1	PCD		80	Approved
2/23/2006	*Crownover Farms*	*SR*	*87.82*	*FR-1*	*R-2/PRD*	*94*		*Withdrawn*
4/26/2006	Nancy Zaiser	C	0.56	NCD	OCPUD			Approved
4/26/2006	Wayne Homes	C	2.10	PCD	PCD			Approved
5/25/2006	Mark Joseph Ciminello	MR	9.49	FR-1	PCD		27	Approved
4/26/2007	Dominion/Glenmead	SR	89.40	FR-1	R-2/PRD	65		Approved
2/28/2008	P&D Builders	C	3.51	PCD	PCD			Approved
5/29/2008	Byers Realty Inc.	C	5.64	FR-1/PCD	PID			Approved
5/29/2008	John Stambaugh	C	5.37	FR-1	PID			Approved
1/30/2012	B&N 2005/Greenery	C/MR	37.1	PCD/FR-1	TPUD		116	Approved
1/15/2013	Turbo Group	C	2.47	NCD	PCD			Approved
8/15/2013	Crownover/Brookview Manor	SR	87.843	FR-1	R-2/PRD	106		Approved
12/9/2013	Larry Nelson/Maple Glen	SR	28.9	FR-1	R-4/PRD	29		Approved
5/19/2014	Old Harbor Estates	SR	15.38	FR-1	R-3/PRD	24		Approved
10/20/2014	James Prop./Sycamore Trail	SR	21.34	FR-1	R-2/PRD	20		Approved
6/15/2015	Wilson Inv./Johnnycake	SR	21.78	FR-1	R-2/PRD	23		Approved
6/23/2016	Evans Farm Land Dev.	SR/C	607.12	FR-1	PRD	1234		Approved
6/23/2016	Evans Farm Land Dev.	SR/C	314.21	FR-1	PCD			Approved
9/19/2016	Metro Development	SR	23.838	FR-1	R-3/PRD	30		Approved
9/19/2016	Metro/Eaststone	SR	74.624	FR-1	R-2/PRD	57		Approved
9/19/2016	Metro/Westfield	SR	45.397	FR-1	R-3/PRD	63		Approved
11/8/2016	Homewood/Howard Farms	SR	141.38	FR-1	R-4/PRD	175		Approved
11/8/2016	Metro/Westfield Ext.	SR	10.104	FR-1	R-3/PRD	12		Approved
12/5/2016	M/I Homes/The Pines	SR	160.285	FR-1	R-2/PRD	191		Approved
12/5/2016	Brookdoc/Northlake Woods	MR	19.93	FR-1/PCD	TPUD		50	Approved
2/10/2017	John Wicks/Berlin Manor	SR	81.48	FR-1	R-2/PRD	89		Approved
3/17/2017	Boatman Inc.	I	24.312	NCD/FR-1	PID			Ref/App

Note: SF=Single-Family, MF=Multi-Family

RPC Date	Applicant	Type	Acreage	From	To	SF Lots	MF Lots	Twp. Status
10/18/2017	Timberlake - Liberty	C	3.872	FR-1	PCD			Approved
4/16/2018	Peachblow Land II (Revised)	SR	193.3	FR-1	R-3/PRD	425		Approved
9/27/2018	AAT Properties	C	3.000	FR-1	PCD			Approved
9/27/2018	John Wicks RPDD	MR	46.080	FR-1	TPUD		140	Approved
12/20/2018	Longhill Limited Partnership	SR	301.944	FR-1	R-3/PRD	531		Approved
1/31/2019	Metro—Berlin Meadows	SR	183.810	FR-1	R-3/PRD	384		Approved
1/31/2019	Metro—Berlin Meadows Comm.	C	20.850	FR-1/PID	PCD			Approved
6/27/2019	Westport Homes	SR	22.129	FR-1	R3/PRD	30		Approved
6/27/2019	Evans Farm Land Dev. Co.	SR	42.760	FR-1	R3/PRD	72		Approved
4/30/2020	M/I Homes	SR	62.700	FR-1	R3/PRD	91		Approved
11/19/2020	Celebration Real Estate	I	4.073	FR-1	PID			Approved
1/28/2021	America's Home Place	C	1.263	NCD	PC			Approved
6/24/2021	Buckeye Swim Club	C	10.000	FR-1	PC			Approved
6/24/2021	Maeve Meadows LLC	SR	23.838	R-3/PRD	TPUD	43		Pending
7/29/2021	Berlin Village LLC	SR	54.183	R-2/PRD	R-3/PRD	69		Approved
1/27/2022	OPTEK INC.	MR	11.000	NCD	TPUD		32	Pending

C=Commercial, I=Industrial, SR=Single-Family Residential, MR=Multi-Family Residential

The DCRPC approves platting for the unincorporated areas of the County. The County development trends over the past 15 years demonstrate that growth in the southern tier is different from growth at the interchange, but that is starting to change.

A more simplified No Plat subdivision (NPA), or "lot split," is another option for creating lots that is illustrative of development history. The Ohio Revised Code (ORC) permits a division of a parcel of land along a public street not involving the opening, widening, or extension of any street or road, and involving no more than five lots after the original tract has been completely subdivided. An application for a lot split is approved by the DCRPC without a plat. The No Plat subdivision procedure is required for lots 5 acres or smaller.

Figure 10 indicates a relatively modest amount of No Plat lot split activity in the Township from 2006 to 2017, including the new building lots created.

Subdivision platting and No Plat activity does not account for divisions that result in lots that are greater than 5 acres.

Another indicator of development and change in the Township is rezoning activity. Figure 11 indicates the change in acreage as a result of rezoning requests approved by the Berlin Township Zoning Commission since 2000.

Figure 3B.3 Recorded Single-Family Subdivisions, by date recorded, in Berlin Township (since 2000)

Date Recorded	Subdivision Name	Lots	Built	Acres	Calc Density
1/26/2000	PIATT MEADOWS PH 2	21	21	12.580	1.67
3/31/2000	CHESHIRE COVE SEC 1	31	30	20.250	1.53
8/4/2000	PIATT MEADOWS SEC 2 PH 1	23	23	10.030	2.29
10/25/2000	HARBOR POINTE SEC 1	46	46	26.370	1.74
12/21/2000	ARBORS AT CHESHIRE SUB	21	21	8.440	2.49
1/9/2001	ROESLAND SUB NO 7	3	3	8.760	0.34
2/16/2001	SUMMERWOOD SEC 1	59	59	82.900	0.71
5/24/2001	PIATT MEADOWS SEC 2 PH 2	28	28	11.160	2.51
5/24/2001	PIATT MEADOWS SEC 2 PH 3	24	24	9.740	2.46
6/25/2001	THE MEADOWS AT CHESHIRE SEC 3 PT 3	30	30	16.270	1.84
8/15/2001	WHISPERING CREEK SUB	14	13	24.510	0.57
9/13/2001	WINDING CREEK ESTATES 3	15	15	34.120	0.44
9/27/2001	HARBOR POINTE SEC 2 PH A	23	23	16.380	1.40
11/13/2001	TWIN HICKORY FARM SUB	17	9	62.680	0.27
12/7/2001	SUMMERWOOD SEC 2	12	12	17.000	0.71
1/14/2002	CHESHIRE COVE SEC 2	37	37	23.990	1.54
3/13/2002	HIDDEN MEADOWS AT ALUM CREEK	11	11	25.360	0.43
5/16/2002	HARBOR POINTE SEC 2 PH B	15	15	7.140	2.10
11/15/2002	HARBOR POINTE SEC 3 PH A	35	35	21.510	1.63
5/22/2003	HARBOR POINTE SEC 3 PH B	14	14	6.393	2.19
8/13/2003	DEWEY SUB	3	3	7.640	0.39
10/3/2003	SHERMAN LAKES SUB SEC 2	82	76	15.00	1.13
10/3/2003	HARBOR POINTE SEC 4 PH A	17	17	25.00	1.00
10/3/2003	HARBOR POINTE SEC 4 PH B	25	25	42.81	1.92
10/29/2003	WINDING CREEK ESTATES 4	10	10	15.49	0.65
8/11/2004	HARBOR POINTE SEC 5	14	14	36.59	0.38
8/13/2004	SHERMAN LAKES SUB SEC 1 PH A & B	35	35	18.52	1.89
10/14/2004	OLDEFIELD ESTATES	79	79	51.05	1.55
2/22/2005	THE RAVINES OF ALUM CREEK	67	64	38.22	1.76
12/29/2005	SUMMERWOOD EXTENSION	68	68	83.12	0.82
5/9/2007	WAYNE HOMES SUB	1	1	2.099	0.48
12/30/2009	RANBRIDGE RAVINES	10	10	26.930	0.37
7/11/2012	THE ESTATES AT SHERMAN LAKES	39	39	40.709	0.96
6/12/2013	SHERMAN LAKES SEC 2 1615, 1618, 1619	5	5	2.471	2.02
3/10/2015	OLD HARBOR ESTATES SEC 1	41	41	26.270	1.56
10/19/2015	BROOKVIEW MANOR SEC 1	28	27	26.607	1.05
10/3/2016	BROOKVIEW MANOR SEC 2	34	32	34.336	0.99
3/15/2017	GLENMEAD SEC 1 PH A	9	5	25.090	0.36
10/18/2017	THE CORNERS AT JOHNNYCAKE	23	23	21.952	1.05
12/20/2017	GLENMEAD SEC 1 PH B	30	29	19.93	1.50
4/12/2018	OLD HARBOR ESTATES SEC 2	24	19	15.478	1.55
10/19/2018	BERLIN MANOR, SEC 1	34	32	30.13	1.13
11/20/2018	THE PINES, SEC 1, PH A	60	54	48.93	1.23
1/16/2019	SYCAMORE TRAIL	18	8	21.29	0.85
6/12/2019	THE PINES, SEC 1, PH B	35	32	26.92	1.30
7/2/2019	BROOKVIEW MANOR, SEC 3	26	22	29.016	0.90
9/24/2019	HOWARD FARMS SEC 1 PH A	19	12	26.300	0.72
3/18/2020	MAPLE GLEN	14	13	18.900	0.74
4/14/2020	THE PINES, SEC 2	29	1	14.270	2.03
4/20/2020	THE PINES, SEC 3	60	54	69.990	0.86
1/26/2021	PIATT PRESERVE SEC 2	22	22	19.159	1.15
2/19/2021	BERLIN MANOR SEC 3	40	10	46.150	0.87
3/9/2021	HOWARD FARMS, SEC 1, PH B	25	4	13.425	1.86
7/14/2021	PIATT PRESERVE SEC 1 PH A	12	3	10.647	1.13
8/20/2021	PIATT PRESERVE SEC 1 PH B	37	3	20.548	1.80

Date Recorded	Subdivision Name	Lots	Built	Acres	Gross Density
7/16/2021	The Villas at Old Harbor East	50	0	16.237	3.08
7/16/2021	The Villas at Old Harbor West Sec 1	31	0	16.285	1.42
9/17/2021	Glenmead Sec 2	26	0	21.899	1.19

Figure 3B.4 Homes Built by Year Map

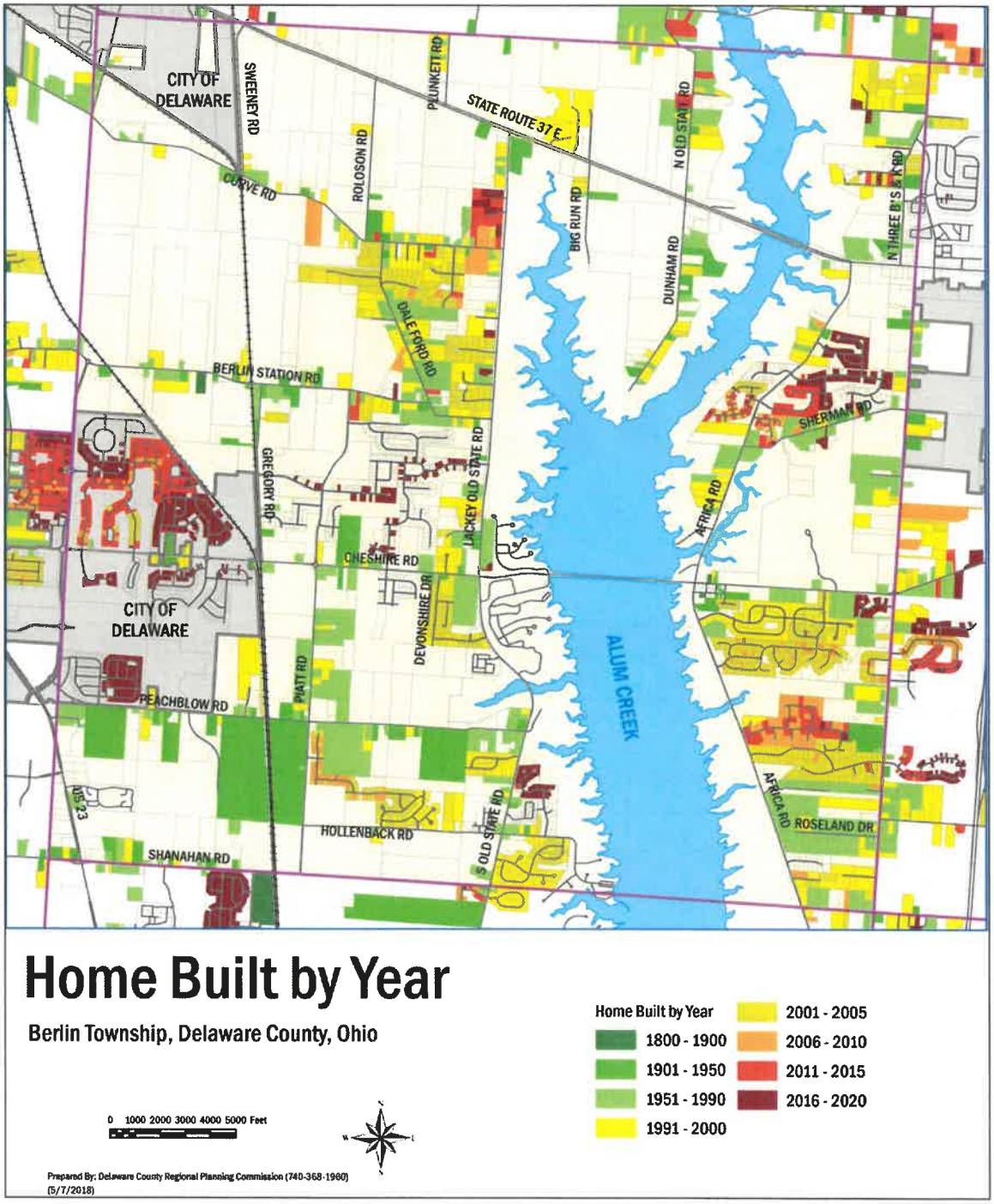
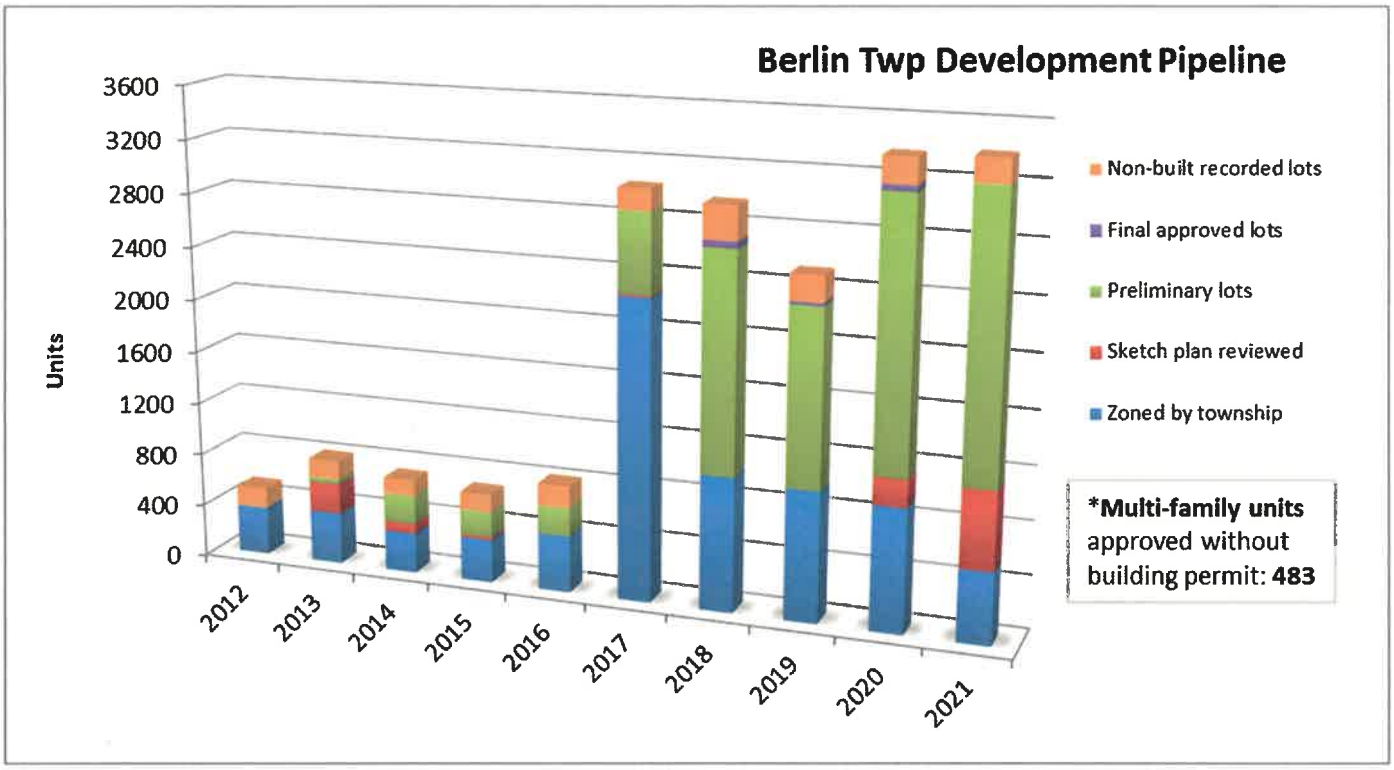


Figure 3B.5 No Plat Lot Splits 2005-2021

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Splits	3	0	2	0	0	1	1	4	0	5	1	2	6
New lots	2	0	1	0	0	1	1	0	0	4	1	0	4

Figure 3B.6 Development pipeline in Berlin Township

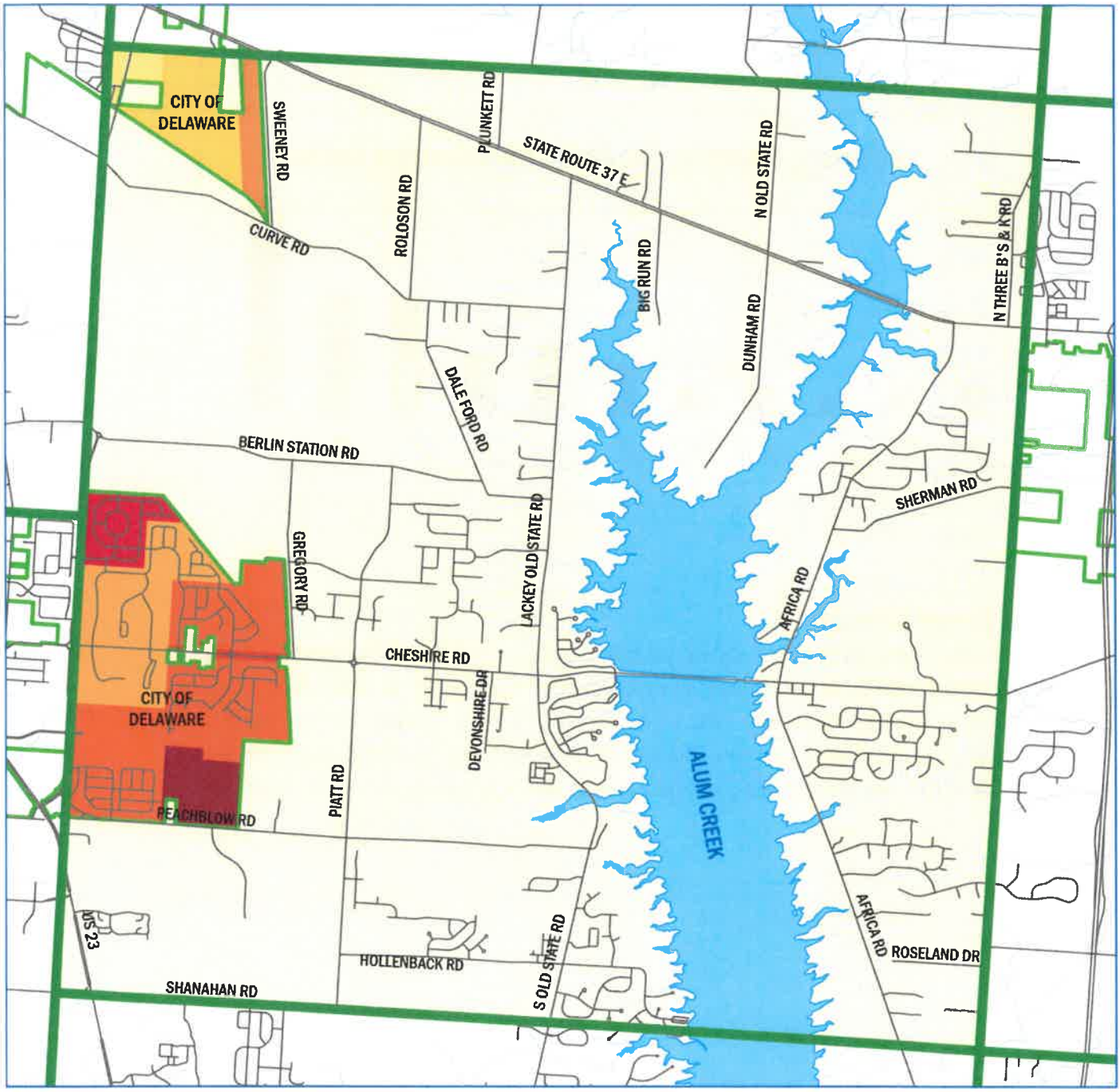


Development Process	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Zoning approved	366	389	301	324	429	2,258	1,012	979	927	539
Sketch Plan reviewed	0	231	77	24	0	14	0	0	205	581
Preliminary approved	0	41	222	193	217	601	1,640	1,319	1,992	2,094
Final Plat approved	0	0	0	0	0	0	53	25	47	0
Non-built, recorded lots	153	141	119	135	162	158	252	193	192	179
Total in Pipeline	**519**	**802**	**719**	**676**	**808**	**3,031**	**2,957**	**2,516**	**3,363**	**3,393**

Source: DCRPC, 2019

The annexation of unincorporated land into adjacent municipalities presents a set of challenges for a township as utilities like sewer and water start to become available. Land uses need to be coordinated, especially related to streets and other public and private utilities. It is important that communities work with each other as development occurs so that these utilities and services can be provided in the most efficient manner possible. Over the years, the City of Delaware has increased its municipal boundaries when landowners and developers have requested it. In total the City has annexed 137 acres from the Township. The annexation map also shows how Sunbury has expanded in Berkshire Township to the west side of the Interstate.

Figure 3B.7 Annexation Map



Annexation Map

Berlin Township, Delaware County, Ohio

0 1000 2000 3000 4000 5000 Feet

Prepared By: Delaware County Regional Planning Commission (740-368-1960)
(5/7/2018)

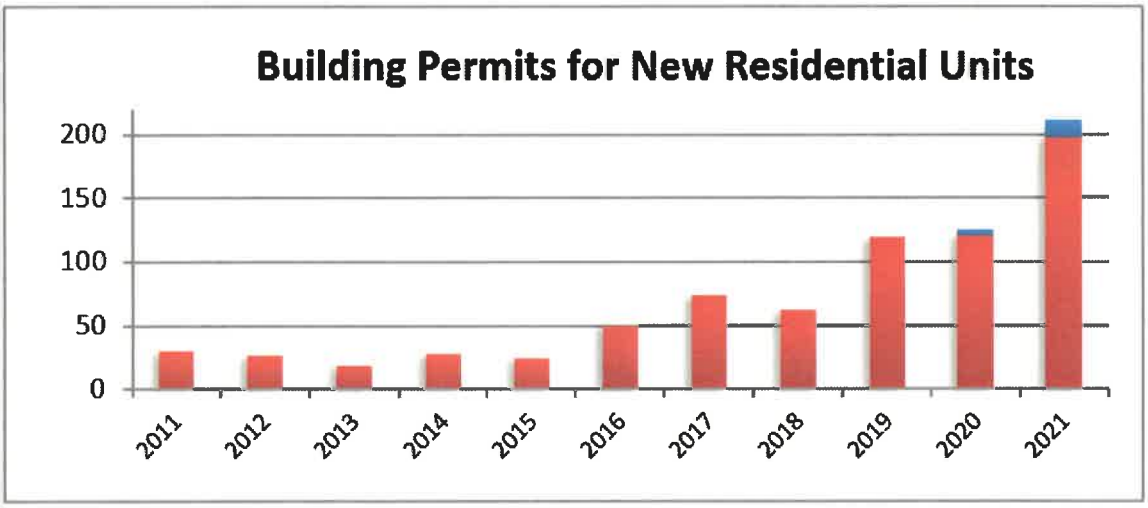
Township Boundary
Incorporated Areas

Annexation by Year

- 2019 (100.65 Acres)
- 2015 (100.65 Acres)
- 2012 (13.57 Acres)
- 2006 (571.21 Acres)
- 2004 (61.22 Acres)
- 2003 (309.66 Acres)
- 1996 (163.42 Acres)
- 1991 (42.41 Acres)

Figure 3B.8 Berlin Township New Residential Building Permits 2011-2021

Yr	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
SF	30	26	19	28	24	50	73	62	119	121	197
MF	0	0	0	0	0	0	0	0	0	4	14



Township Growth Summary

Delaware County continues to be the fastest growing county in Ohio by percentage of growth. The growth rate in Berlin Township has mirrored that of the County as centralized sewer service extended into the Township. The transition from a rural farming community to a suburbanizing community presents new challenges. How well the Township plans for the future growth in the next 5 to 10 years will be a critical factor in shaping the Berlin Township identity.

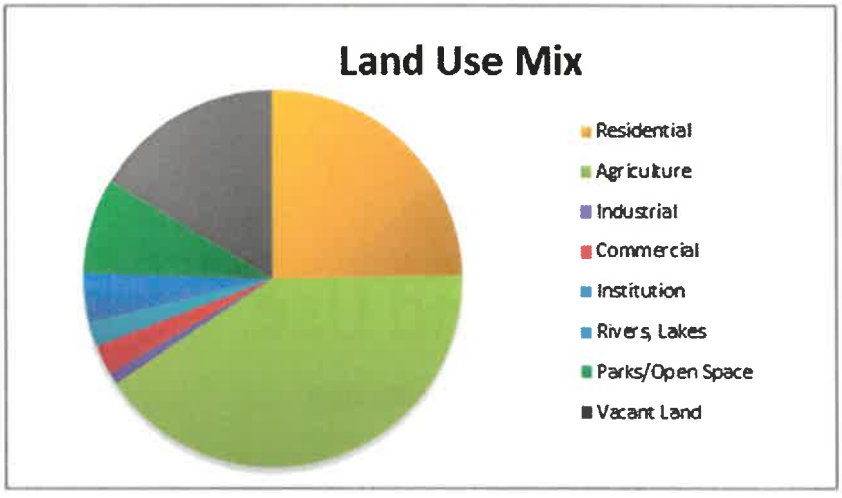
Chapter 4A
Existing Land Use
Delaware County

Land Use in Delaware County

The following tables, pie charts, and map shows the land use percentages across Delaware County.

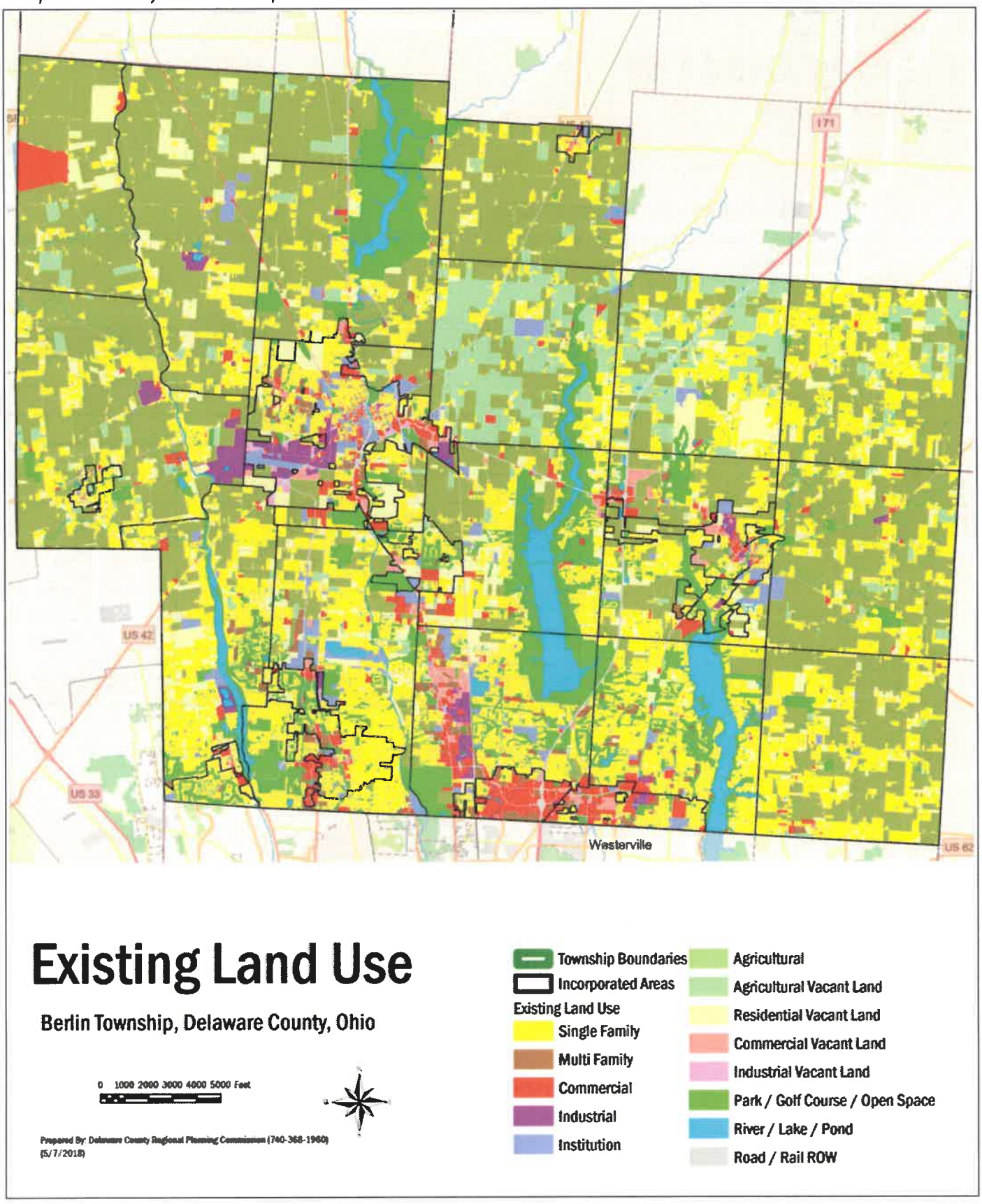
Figure 4A.1. Delaware County Land Use 4/2018

LAND USE	ACREAGE	PERCENTAGE
Residential	69,158	25%
Commercial	7,119	3%
Industrial	2,841	1%
Institution	5,930	2%
Agricultural	113,922	41%
Residential Vacant Land	26,797	10%
Com/Ind Vacant Land	2,590	1%
Agricultural Vacant	16,377	6%
Parks/Open Spaces	22,652	8%
ROW	13,486	(not calculated)
River/Lakes/Ponds	11,845	4%
Total	**279,232**	**100%**



The following map shows the Auditor's land use categorization throughout the entire county.

Map 4A.2. County Land Use map



Chapter 4B
Existing Land Use
Berlin Township

Berlin Township Land Use

The existing land use of Berlin Township, its surrounding jurisdictions, and the area within the township boundary is displayed and by type according to the County Auditor's Geographic Information System (GIS) and tax code.

Figure 4B.1 Comparison of Existing Land Use Acreage 2009-2021

LAND USE TYPE	2009		2021	
Single-Family	3,257.38	19.45%	3,331.93	21.66%
Multi-Family	19.18	0.11%	87.27	0.57%
Commercial	242.13	1.45%	514.22	3.34%
Industrial	11.73	0.07%	11.96	0.08%
Institution	121.55	0.73%	79.16	0.51%
Agricultural	3,912.98	25.08%	3,252.32	21.14%
Residential Vacant Land	2,394.41	14.30%	1,822.87	11.85%
Other Uses Vacant Land	54.92	0.33%	304.30	1.98%
Parks	2,801.9*	16.73%	3,116.96*	20.26%
ROW	685.4	4.09%	812.64	5.28%
Rivers/Lakes/Ponds	2,099	12.53%	2,050.41	13.33%
Total Township	**15,600.59**	**100%**	**15,384.04**	**100%**
Incorporated Area	1,148.45	6.86%	1,366.35	
Total Acreage	**16,750.56**			

**Parks include golf course acreage.*

Figure 4B.2 Berlin Land Use 12/2021

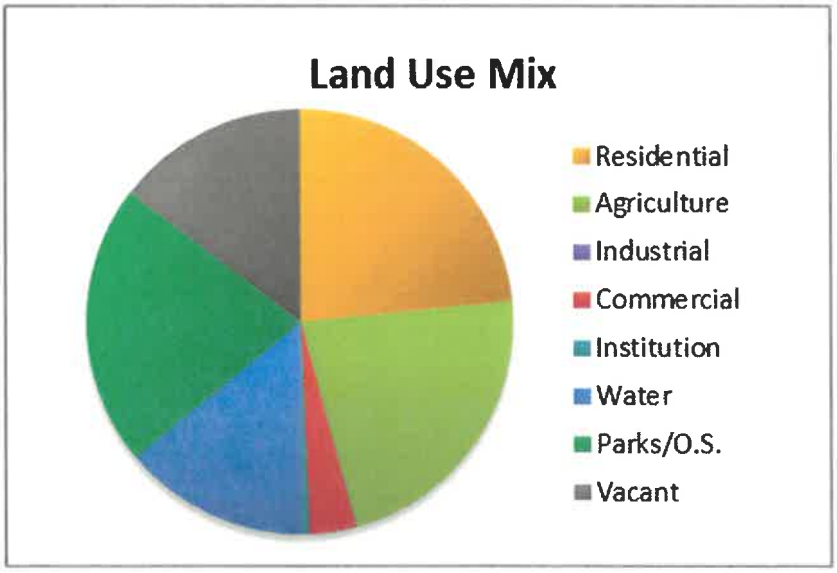


Figure 4B.3 Delaware City Land Use (in Berlin) 12/2018

LAND USE	ACREAGE	PERCENTAGE
Single-Family	128.22	10.13%
Multi-Family	13.17	1.04%
Commercial	109.04	8.62%
Industrial	151.27	11.96%
Institution	0.02	0.002%
Agricultural	167.74	13.26%
Residential Vacant Land	327.47	25.88%
Other Uses Vacant Land	33.97	2.68%
Parks	68.91	5.45%
Golf Course	152.78	12.08%
ROW	94.16	7.44%
Rivers/Lakes/Ponds	18.45	1.46%
Total	**1,265.19**	**100%**

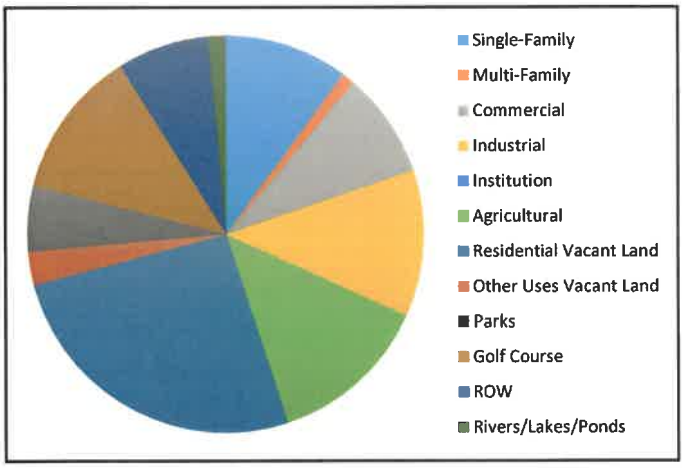


Figure 4B.4 Berlin and Delaware Land Use 12/2018

LAND USE	ACREAGE	PERCENTAGE
Single-Family	3,471.09	20.72%
Multi-Family	47.34	0.28%
Commercial	430.08	2.57%
Industrial	163.27	0.97%
Institution	111.40	0.67%
Agricultural	3,977.26	23.74%
Residential Vacant Land	2,245.52	13.41%
Other Uses Vacant Land	119.01	0.71%
Parks	2,879.74	17.19%
Golf Course	424.86	2.54%
ROW	812.11	4.85%
River/Lakes/Ponds	2,068.91	12.35%
Total	**16,750.56**	**100%**

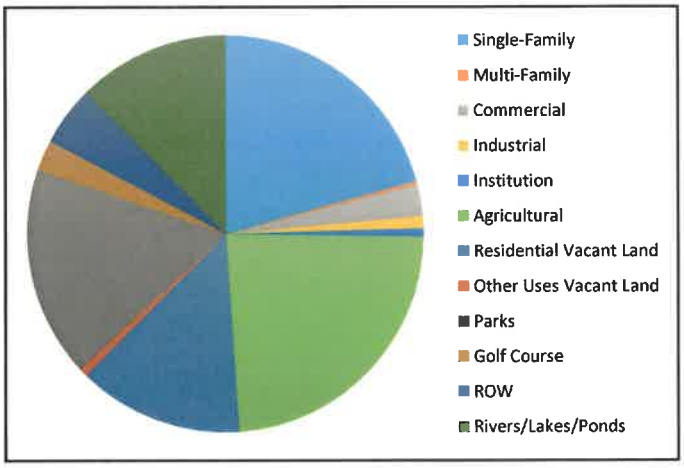
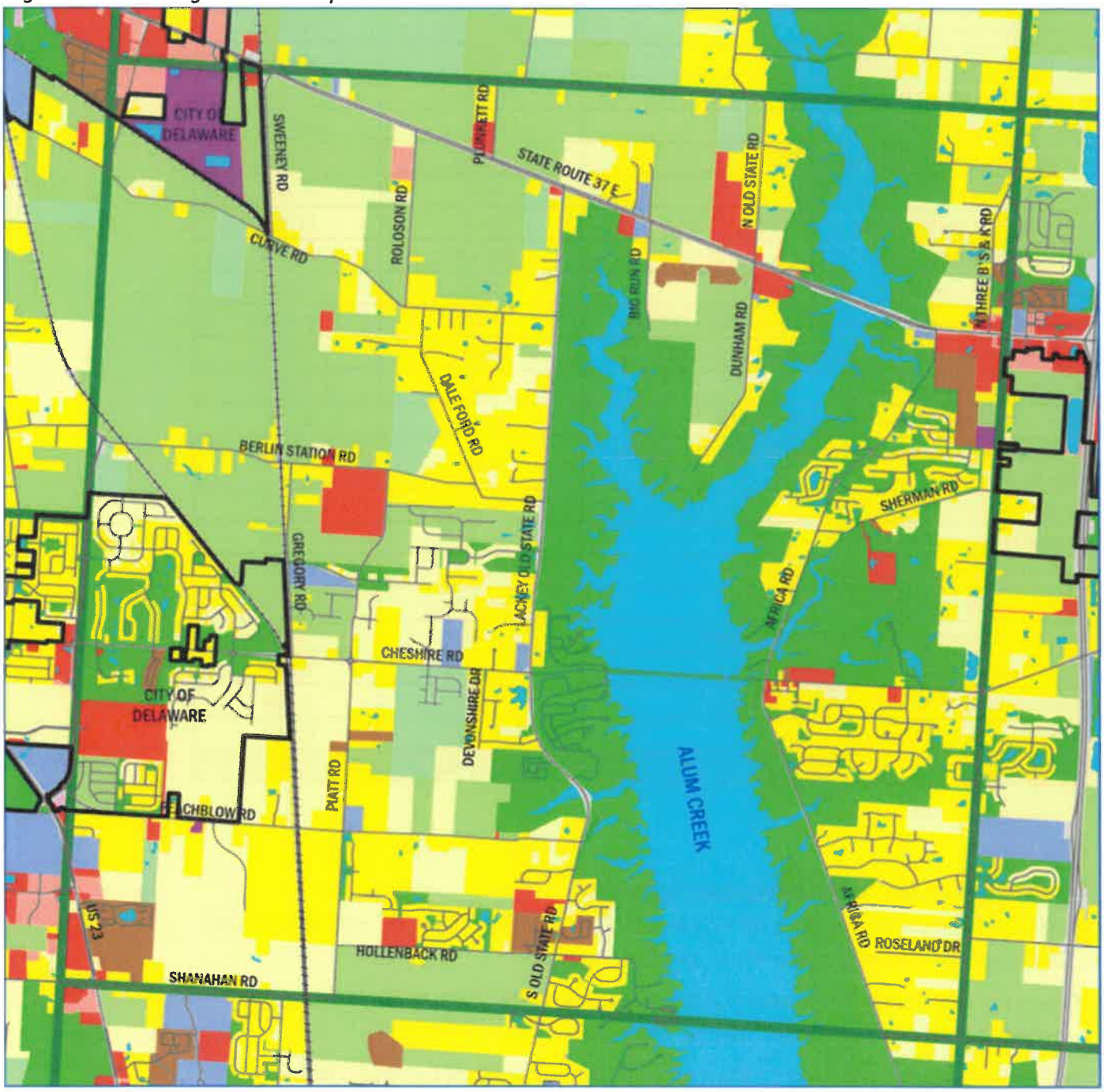


Figure 4B.5 Existing Land Use Map



Existing Land Use

Berlin Township, Delaware County, Ohio

0 1000 2000 3000 4000 5000 Feet

Prepared By: Delaware County Regional Planning Commission (740-368-1960)
(5/7/2018)

- Township Boundaries
- Incorporated Areas

Existing Land Use

- Single Family
- Multi Family
- Commercial
- Industrial
- Institution
- Agricultural
- Agricultural Vacant Land
- Residential Vacant Land
- Commercial Vacant Land
- Industrial Vacant Land
- Park / Golf Course / Open Space
- River / Lake / Pond
- Road / Rail ROW

Figure 4B.6 Total Acreage Within Each Zoning District

Zoning District	Acreage	% of Total
Farm Residential District (FR-1)	6,583.25	39.30%
Low Density Residential District (R-2)	73.01	0.44%
R-2 with PRD overlay (R-2/PRD)	702.58	4.19%
Multi-Type Residential District (R-3)	4.12	0.02%
R-3 with PRD Overlay District (R-3/PRD)	674.66	4.03%
Multi-Type Residential District (R-4)	0.00	0.00%
R-4 with PRD Overlay District (R-4/PRD)	131.85	0.79%
Planned Residential District (PRD)	1,421.44	8.49%
Neighborhood Commercial District (NCD)	75.76	0.45%
Transitional Planned Unit Development District (TPUD)	74.94	0.45%
Planned Age-Resiricted Residential District (PARRD)	0.00	0.00%
Planned Office District (POD)	5.01	0.03%
Planned Commercial and Office District (PCD)	312.64	1.87%
Old Cheshire Planned Unit Development District Applied (OCPUD Applied)	0.96	0.01%
Industrial District (I)	16.77	0.10%
Planned Industrial District (PID)	36.46	0.22%
Agricultural Conservation District (A-1)	74.09	0.44%
Floodplain Regulatory District (FPRD)	648.05	3.87%
Alum Creek State Park (Zoning Not Applicable)	1,908.23	11.39%
City of Delaware (Zoning Not Applicable)	1,366.35	8.16%
Road ROW/Rail ROW (Zoning Not Applicable)	704.24	4.20%
Lakes/River (Zoning Not Applicable)	1,935.97	11.56%
Total Acreage	**16,750.62**	**100%**

Observations on Berlin Township 2021 Land Use:

Agriculture has again decreased in recent years. It is still the largest land use, with 25% of total land area, but is steadily giving way to new development.

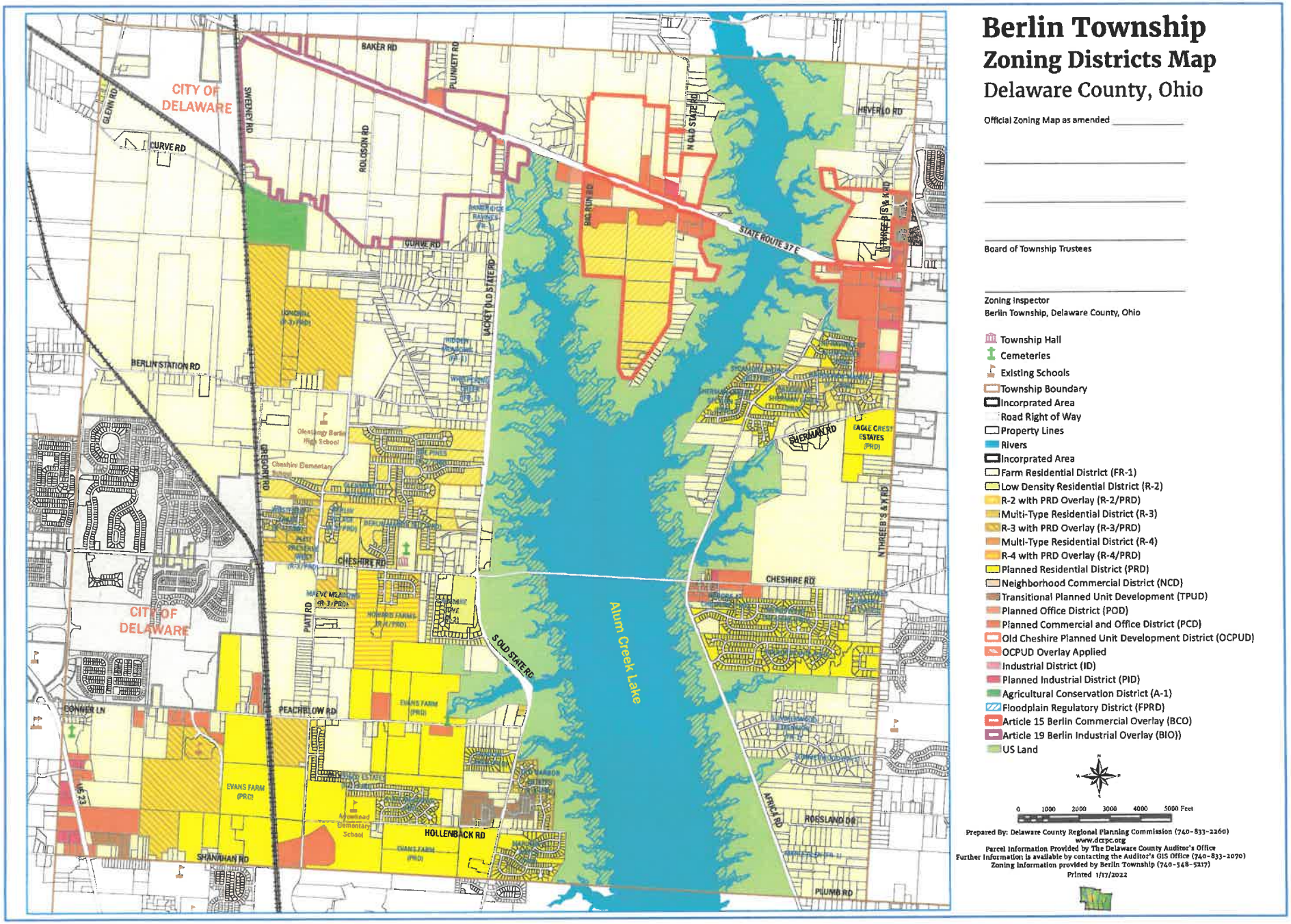
100 acres of new residential acreage have been developed since 2009, with another 1,822 acres designated as "residential", but not developed.

Parks and golf courses and single-family residential development had the largest increases with 3.18% and 2.14%, respectively.

Commercial acreage is 3.34%; 4% is typical of a mature community.

Land in rights-of-way increased from 2009 to 2021 by 127 acres to 5.28%. As roads are widened and built, this number may increase typically to 10-15% at build-out.

As reviewed in a previous chapter, annexed land increased by 218 acres since 2009.



Berlin Township

Zoning Districts Map

Delaware County, Ohio

Official Zoning Map as amended _____

_____

_____

_____

Board of Township Trustees

_____

Zoning Inspector
Berlin Township, Delaware County, Ohio

- Township Hall
- Cemeteries
- Existing Schools
- Township Boundary
- Incorprated Area
- Road Right of Way
- Property Lines
- Rivers
- Incorprated Area
- Farm Residential District (FR-1)
- Low Density Residential District (R-2)
- R-2 with PRD Overlay (R-2/PRD)
- Multi-Type Residential District (R-3)
- R-3 with PRD Overlay (R-3/PRD)
- Multi-Type Residential District (R-4)
- R-4 with PRD Overlay (R-4/PRD)
- Planned Residential District (PRD)
- Neighborhood Commercial District (NCD)
- Transitional Planned Unit Development (TPUD)
- Planned Office District (POD)
- Planned Commercial and Office District (PCD)
- Old Cheshire Planned Unit Development District (OCPUD)
- OCPUD Overlay Applied
- Industrial District (ID)
- Planned Industrial District (PID)
- Agricultural Conservation District (A-1)
- Floodplain Regulatory District (FPRD)
- Article 15 Berlin Commercial Overlay (BCO)
- Article 19 Berlin Industrial Overlay (BIO))
- US Land

0 1000 2000 3000 4000 5000 Feet

Prepared By: Delaware County Regional Planning Commission (740-833-2260)
www.dcrpc.org
Parcel Information Provided by The Delaware County Auditor's Office
Further Information is available by contacting the Auditor's GIS Office (740-833-2070)
Zoning Information provided by Berlin Township (740-548-5217)
Printed 1/17/2022

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Chapter 5A
Natural Resources
Delaware County

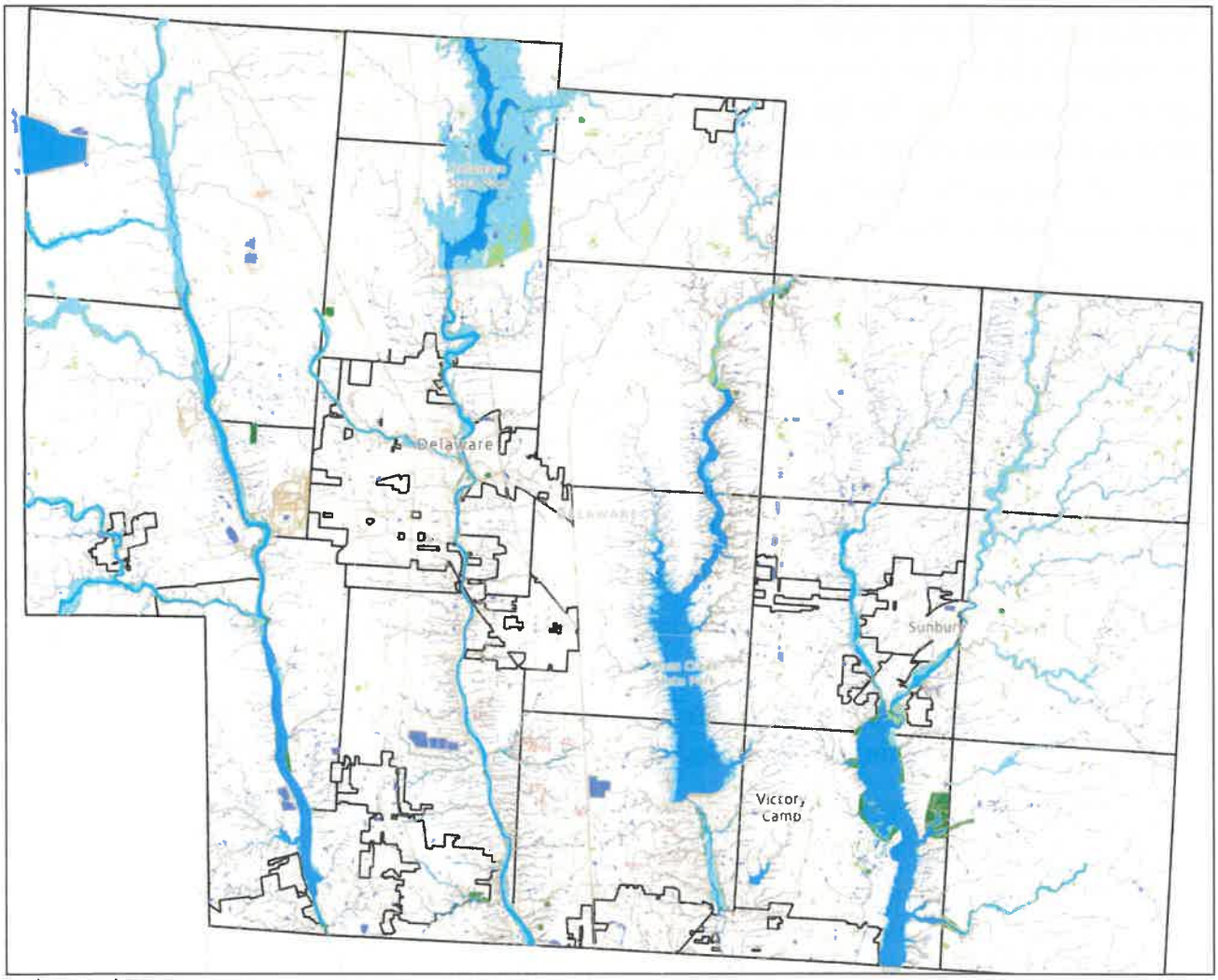
Introduction

Depending on the location, Delaware County has numerous natural resources and features. These include large reservoirs, their connecting creeks, floodplains, wetlands, fertile soils, woods, and abundant wildlife. Other features include steep slopes, wooded ravines, treelines, These resources are displayed on several maps and are generally described below. These resources should be conserved as much as possible while development continues.

Critical Resources

The combined Critical Resources map (below) displays generalized floodplains, water, wetlands, slopes, and historic and archeological sites, all of which are covered in this chapter.

Figure 50.1 County-wide Critical Resources Map



Watersheds

The term "watershed" typically refers to the 10th level of the hydrologic unit classification system (HUC). Sub-watersheds are the 12th level, while sub-basins are the 8th level. Each level feeds into the HUC above it. For example, an HUC level 10 is a subsection of an HUC 8.

From an environmental standpoint, storm water and subsequent pollutants in these sub-watersheds feed into the Rivers for which the watersheds are named. For example, pollutants released or picked up in the Olentangy Watershed will flow into the Olentangy River.

Topography (Elevation)

The topography map indicates the high point and low point of each community, as well as the various changes in elevation.

Slopes Greater than 20%

Generally, slopes greater than 20% follow the streams near reservoirs and other significant tributary streams. Such slopes should be preserved to the greatest extent practicable in an effort to maintain some of the more dynamic topographic profiles in the township for aesthetics and community character. Though expensive to do, houses can be permitted on slopes up to 20%, provided doing so doesn't negatively impact the environment, waterways, or floodplains.

Floodplains, bodies of water

The National Flood Insurance Program discourages development in the 100-year floodplain and prohibits development in the 100-year floodway. These areas are mapped by the Federal Emergency Management Agency (FEMA). The floodplain map gives a general location of the floodplains. For specific information see the FEMA maps at the Delaware County Building Safety Department, 50 Channing Street, Delaware Ohio.

According to *Protecting Floodplain Resources* (FEMA, 1996) undisturbed floodplains perform several critical functions:

- **Water Resources - Natural flood and erosion control:** flood storage and conveyance; reduce flood velocities; reduce peak flows; reduce sedimentation.
- **Water Quality Maintenance:** filter nutrients and impurities from runoff; process organic wastes; moderate temperature fluctuations.
- **Groundwater Recharge:** reduce frequency and duration of low surface flows.
- **Biological Resources:** rich, alluvial soils promote vegetative growth; maintain bio diversity, integrity of ecosystems.
- **Fish and Wildlife habitats:** provide breeding and feeding grounds; create and enhance waterfowl habitat; protect habitats for rare and endangered species.
- **Societal Resources:** harvest of wild and cultivated products; enhance agricultural lands; provide sites for aqua culture; restore and enhance forest lands.
- **Recreation:** provide areas for passive and active uses; provide open space; provide aesthetic pleasure.

- **Scientific Study/Outdoor Education:** contain cultural resources (historic and archeological sites); environmental studies.

The Delaware County FEMA floodplain maps were revised in 2009, with one hundred year floodplain elevations rising in some areas.

Wetlands

Some wetlands that appear on the map may be jurisdictional wetlands, which are regulated by the Clean Water Act of 1972. Wetlands are generally defined as soils that support a predominance of wetland vegetation, or are under water at least two weeks per year. A more specific wetland definition is provided by the U. S. Army Corps of Engineers Wetlands Delineation Manual Technical Report Y-87-1.

Wetlands provide many of the same functions as floodplains. They are natural stormwater detention systems that trap, filter, and break down surface runoff. In the Township some former wetlands are now agriculturally-drained (tiled) fields or low-lying areas by existing ponds and waterways.

The DCRPC's National Wetlands Inventory GIS data indicates general locations of potential jurisdictional wetlands. Wetlands often include other natural features such a woodland areas.

Prime Agricultural Soils

The Prime Agriculture Soils map shows the location of soils suited for high yields. Agriculture is still an important land use in the county, although the land value for future development may exceed the short-term value for continued agricultural use. Creative zoning and development techniques may be able to save some agricultural land as open space.

The Delaware Soil and Water Conservation District also recommend that farmers who want to help preserve the viability of farming utilize edge buffers on cropland. Some benefits of edge buffers include:

- Filtering surface water runoff to protect against harmful algae blooms;
- Planting in edge buffers can protect against erosion and loss of farmland;
- Buffers resist the accumulation of sediment and debris in water;
- Slows water runoff from storms, preventing excessive flooding, and protecting the topsoils;
- Planted buffers can provide a habitat for predatory insects, insect-eating birds, and pollinators;
- Can aid in the economic production of farms through hay, lumber, fruit trees, and bees for honey; and
- May decrease property tax liabilities for farmers by using a conservation buffer to combat soil erosion. (Check with the Delaware County Auditor's Office for details).

Soil Suitability for Septic Systems

Since sanitary sewer service is not available everywhere in Delaware County, it is useful to evaluate the soil capability for septic systems. Land with very poor suitability for septic systems should be served by centralized sanitary sewer or alternative sewage disposal systems.

Historical Sites

The Ohio Historic Preservation Office (OHPO) maintains the state's official record of historic properties listed in the National Register of Historic Places. These properties are recognized for their contribution to the culture of a community.

The OHPO lists the following benefits to listing in the National Register:

- The listing of a building, structure, site, object or district in the National Register of Historic Places accords it a certain prestige, which can raise the property owner's and community's awareness and pride, and
- Income-producing (depreciable) properties which are listed in the National Register individually or as part of a historic district may be aided by tax credits and other funding programs.

A listing on the National Register is sometimes a prerequisite for funding applications for restoration work through various private, nonprofit organizations, such as the National Trust for Historic Preservation.

The OHPO also maintains the Ohio Historic Inventory (OHI), which is a record of buildings and structures which may have architectural or historical significance. The Ohio Historic Inventory form is an important reference for organizing community preservation efforts and is used by state, federal, and local agencies when making land use, transportation, and development decisions.

Land Cover

The Land Cover map shows the land cover categories from the National Land Cover Database (NLCD), as delineated by the United States Geologic Survey (USGS). Using several dates of aerial imagery, the USGS categorizes land cover into one of several different coded classes. The National Land Cover Database data is updated every 5 years and can provide valuable information regarding general changes in land cover that may not be represented well in the Auditor's land use data. For example, a 10-acre parcel with a residence will be classified as residential according to Auditor data, but will not take into account the potential forested areas on the property.

Development or Harvesting of Natural Resources

Deposits of materials that can be mined commercially (i.e. minerals, stone, gravel, oil, and natural gas) are limited in the county both in location and the ability to extract them based on surrounding land uses. Other than current active quarries, prime agricultural soils are the main natural resource. It is conceivable that someday these soils could be extracted and moved for landscaping or other uses.

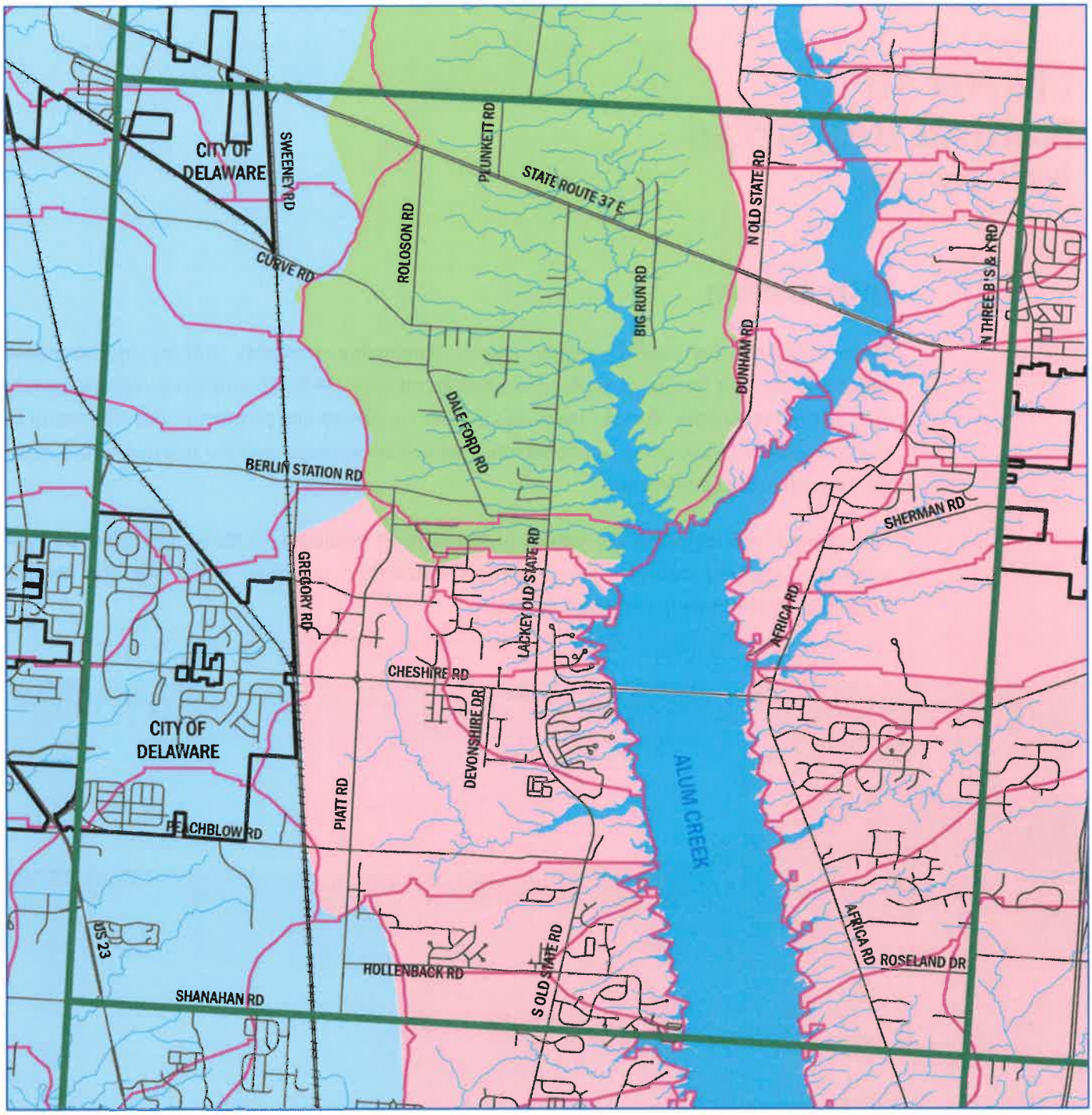
The following chapter will specifically describe features that are unique to the community and include maps.

Chapter 5B
Natural Resources
Berlin Township

Introduction

Berlin Township has rugged ravines, creeks, floodplains, wetlands, woods, and abundant wildlife. It also has farmlands with good agricultural soils. Berlin Township has natural beauty in its natural resources. If these resources are not conserved and protected, then the vision of the Township to preserve its rural character will not be achieved and the principal attribute of the Township will be destroyed.

This chapter will identifies the extent of the natural resources in Berlin Township through numerous mapping exhibits. For a general description of these maps, see the Natural Resources information in the county chapter.



Watersheds

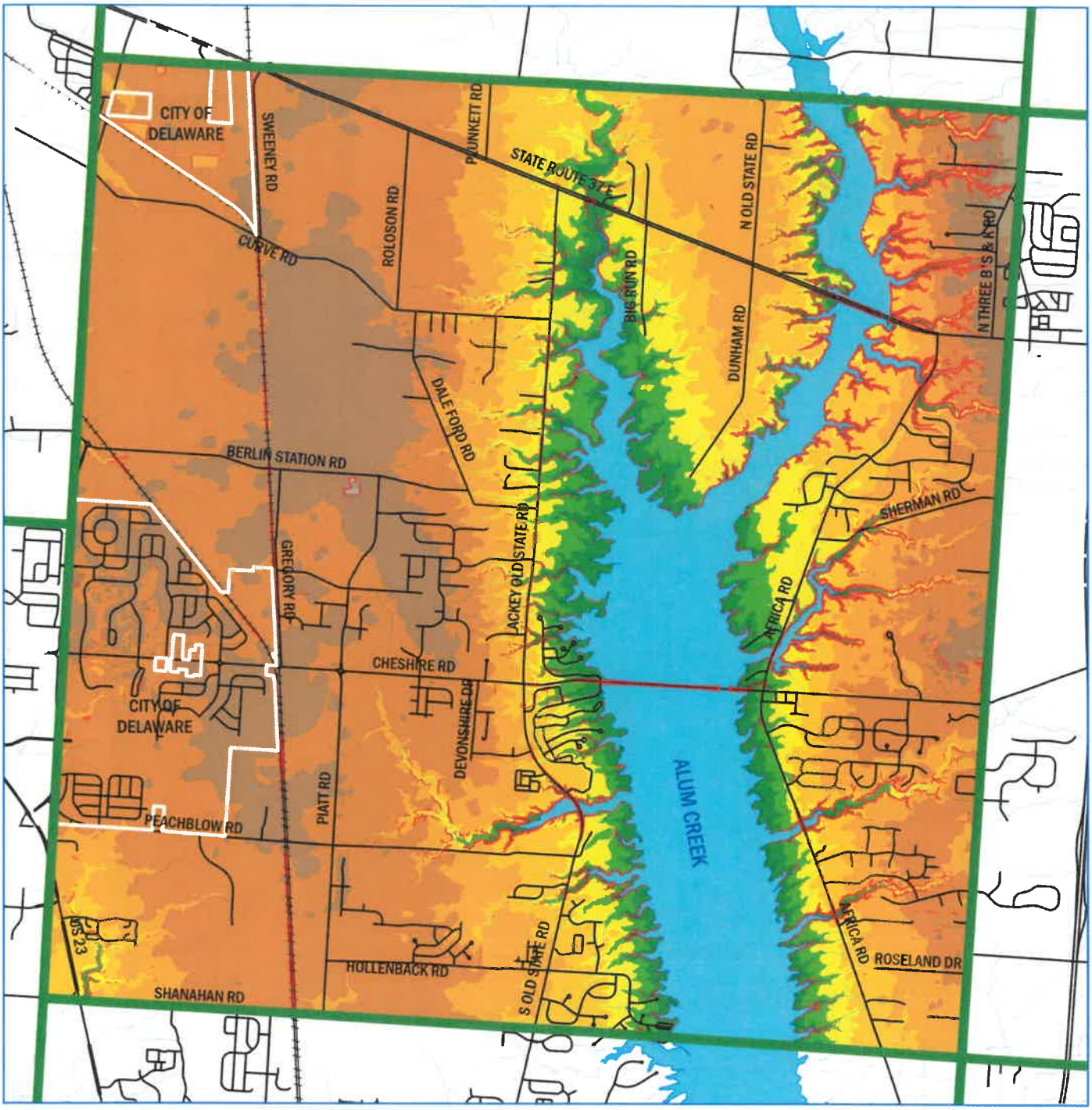
Berlin Township, Delaware County, Ohio

0 1000 2000 3000 4000 5000 Feet

N
W
E
S

Prepared By: Delaware County Regional Planning Commission (740-368-1980)
(5/7/2018)

- Township Boundaries
- Detailed Watershed Boundary
- Rivers/Ponds/Lakes
- Streams
- Incorporated Areas
- Alum Creek Watershed
- Big Run
- Olentangy Watershed



Elevation

Berlin Township, Delaware County, Ohio

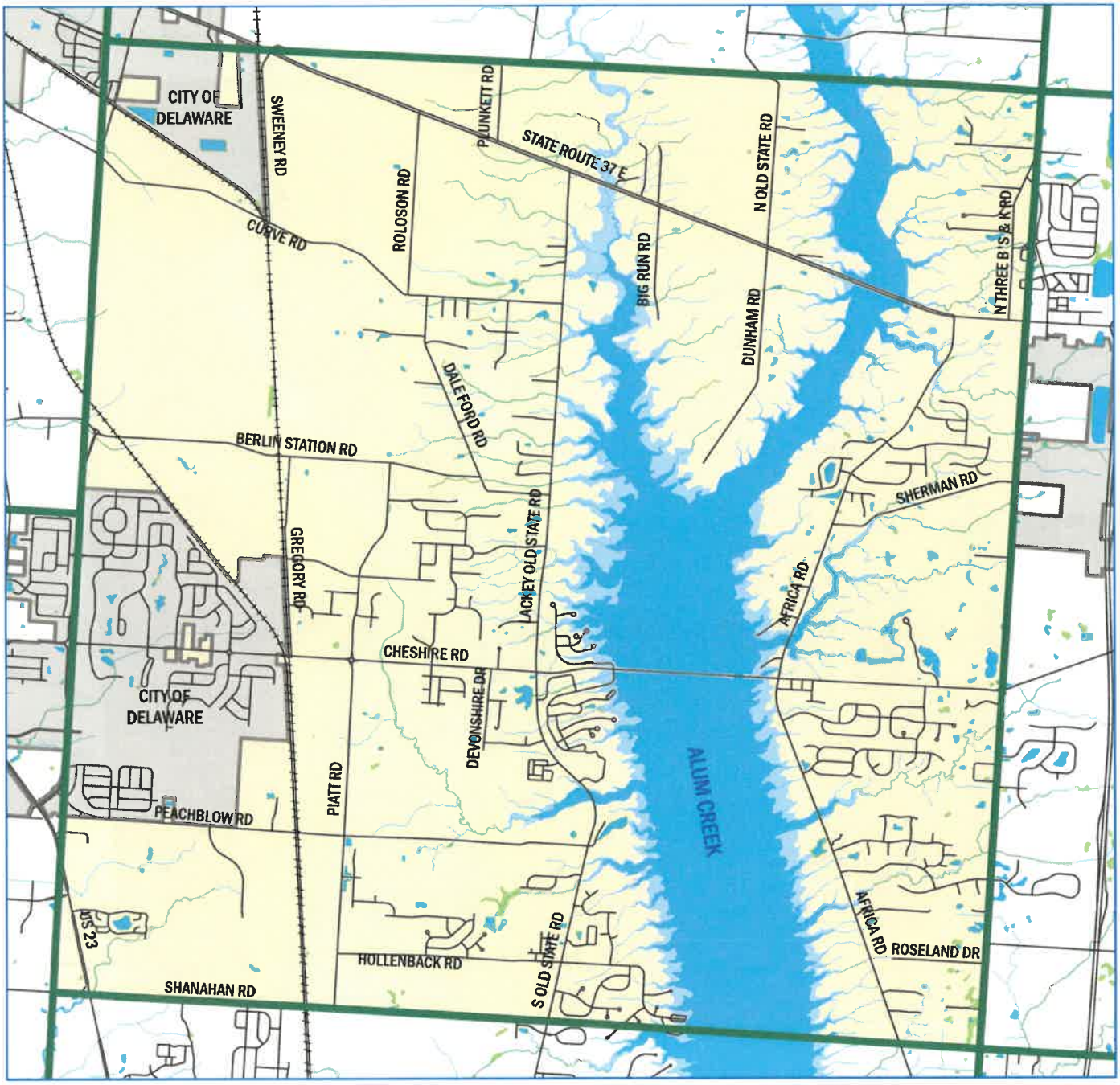
0 1000 2000 3000 4000 5000 Feet

Prepared By: Delaware County Regional Planning Commission (740-368-1960)
(5/7/2018)

Slope > 20%

Digital Elevation (by 10 ft)

- 880 ft - 890 ft
- 890 ft - 900 ft
- 900 ft - 910 ft
- 910 ft - 920 ft
- 920 ft - 930 ft
- 930 ft - 940 ft
- 940 ft - 950 ft
- 950 ft - 960 ft
- 960 ft - 970 ft
- 970 ft - 980 ft



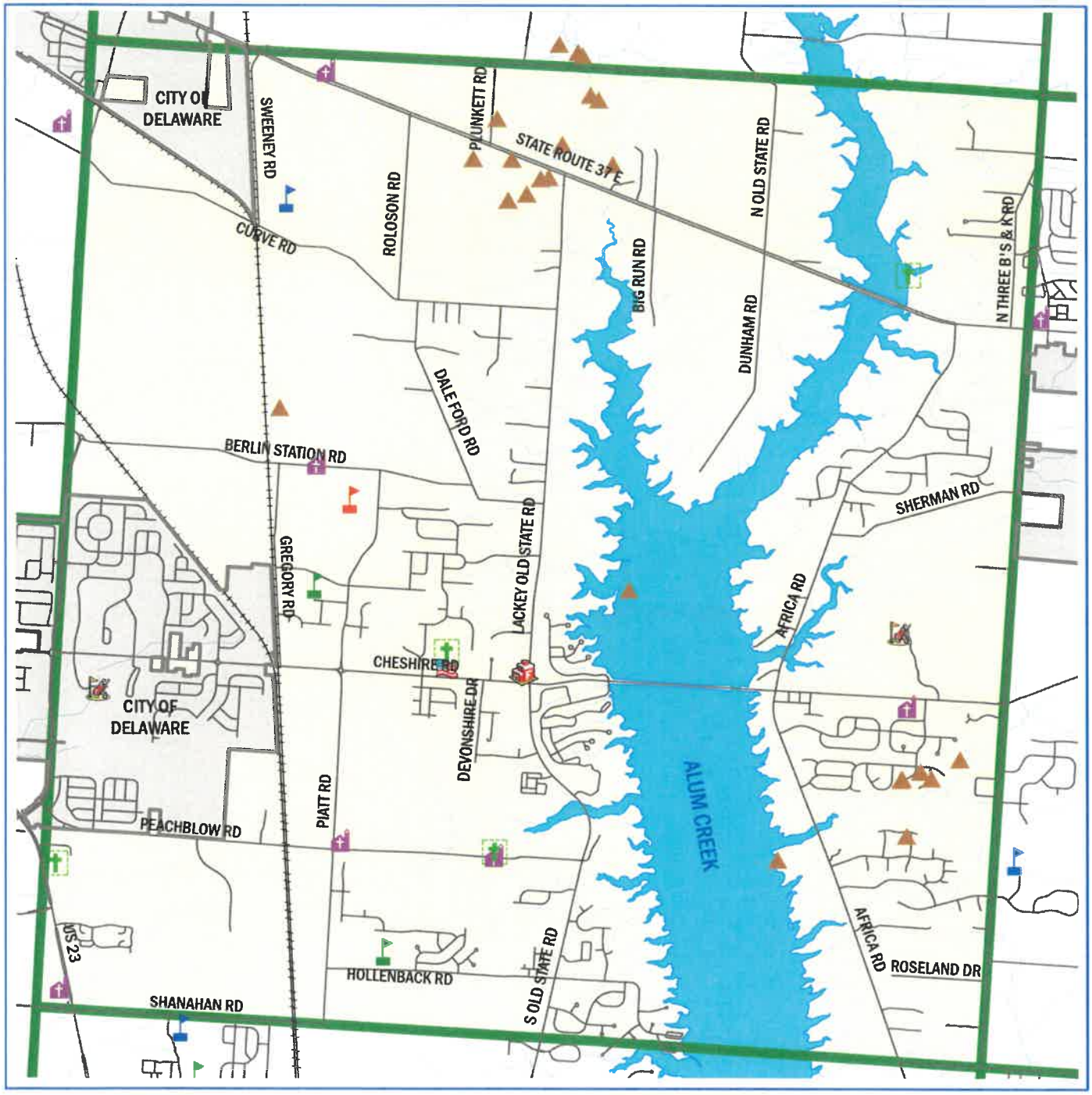
Wetlands

Berlin Township, Delaware County, Ohio

0 1000 2000 3000 4000 5000 Feet

Prepared By: Delaware County Regional Planning Commission (740-368-1960)
(5/7/2018)

- Township Boundaries
- Incorporated Areas
- Railroad
- Road Centerlines
- Rivers/Lakes/Streams/Ponds
- Wetland (National Wetland Inventory)
- 100 Year Flood Plains
- 500 Year Flood Plains
- Floodway



Community Facilities

Berlin Township, Delaware County, Ohio

0 1000 2000 3000 4000 5000 Feet

Prepared By: Delaware County Regional Planning Commission (740-368-1960)
(5/7/2018)

- Township Boundaries
- Incorporated Areas
- Rivers/Ponds/Lakes
- Streams
- Golf Courses
- Churches
- ELEMENTARY SCHOOL
- HIGH SCHOOL
- MIDDLE SCHOOL
- Township Hall
- Cemeteries
- Historical Sites
- Archeological Sites
- Post Office
- Library
- Fire Stations

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Chapter 6A
Housing
Delaware County

General

Housing has been the primary index of growth in the County. Planning for a range of housing in a developing community on a county-wide basis is a complex issue. Many factors are involved, such as the availability or lack of public water and centralized sanitary sewer, land values, market demand, proximity to major employment and shopping centers, transportation network, as well as how the community wants to feel. There are also legal considerations related to nondiscrimination in housing, and "fair share" provision of the regional housing needs, to the extent necessary services can be provided.

Most unincorporated areas were initially zoned with a minimum lot size of 1-5 acres allowing a single residential use in addition to any other agricultural uses.

Typically, landowners who gain access to centralized sanitary sewer may apply for Planned Residence District (PRD) zoning, which permits a variety of housing types, though it is primarily used for single-family development. PRDs range from a density-neutral 1 unit per acre to 1.25 units per net developable acre. Some include a provision for certain multi-family uses and some townships have specific zoning regulations for multi-family uses.

Existing housing stock

Most township plans started with a house-to-house windshield study, finding that anywhere from 85% to 95% of the housing stock was either new/well maintained or in need of normal repair. It is assumed that all structures since that point are in comparable shape.

Future Housing

Zoning battles over density sometimes occur along the edges of municipal areas. Where the possibility of annexation exists, townships cannot be certain of their future boundaries. For that reason, it is impossible to assess fair share allocations of housing to be provided by the township when a city or village with separate services may annex land and provide housing at a higher density. A more pragmatic approach to housing distribution is for the township to:

1. determine how the community wants to look when it is all built out (vision);
2. determine what services it can and should provide;
3. anticipate its fair share of the County's projected population;
4. permit a variety of housing that relates to the other items above.

Age-Based Housing

An emerging trend in the housing market is the recognition that communities need to respond to different generational needs based on the ages and lifestyles of its current and future

residents. Single-family suburban development typically appeals to families with children. As children age and leave home, many parents no longer want the maintenance and responsibility related to the single-family home and yard. The desire to downsize is met with the reality that there is no available product in their community, and they must look elsewhere. This group of empty-nesters is a demographic group that will continue to grow in the coming decades.

In response to this trend (and the recent challenges in the single-family market), developers have proposed several "age-restricted" or "age-targeted" residential developments. These projects seek densities that are not necessarily comparable to those reflected on the local Comprehensive Plan. Those densities are factored on impacts to traffic, schools, services, and utilities. For example, the average single-family home generates approximately 10 trip ends per day while "detached senior housing" generates approximately 3.71 trip ends per day (source: Institute of Transportation Engineers). For sewage use, an institutional residential unit can use a fourth of the average single-family residence (source: EPA). The County calculates one-bedroom facilities at 60% per unit versus that of a single-family home. However, non-institutional uses are calculated on the same sanitary use as a single-family home.

Workforce, or Affordable Housing

"Affordable housing" refers to housing that is constructed for those that cannot afford to live in the average residential unit, but it can also refer to housing types that fill a need for a diverse population that are older, are downsizing, or are in a service-oriented field with lower wages.

Affordable housing as a percentage is diminishing in the County. National trends are showing an increasing population, while the number of all new housing units being built is constantly decreasing. This trend is accompanied by a decreasing household size and an increase in the market price for those units that are being built. The U.S. Department of Housing and Urban Development seeks to offer assistance to those households that are paying more than 30% of their gross household income toward housing without a choice. The low-skilled job market is not raising salaries to meet the needs of those employees where the cost of living is increasing significantly.

A lack of affordable housing as population increases is unavoidable unless developers are encouraged and/or granted incentives to develop more reasonably priced units. The housing market is driven by developers' profits, which increase with housing market values.

Chapter 6B
Housing
Berlin Township

Existing Housing Stock

The Total Market Value of homes is an indicator of the quality of the Township's housing stock. The map on page 30 and table in Figure X represent the value as defined by the County Auditor.

The Township may someday wish to adopt a property maintenance code to assure the constant maintenance of its housing stock, so as to require a safe level of maintenance and retain property values and stable neighborhoods.

Figure 6B.1 Single-Family Home Market Value Summary

Market Value	Units	% of Total
$0 - $80,000	2	0.09%
$80,001 - $150,000	79	3.72%
$150,001 - $225,000	254	11.96%
$225,001 - $300,000	623	29.35%
$300,001 - $400,000	571	26.90%
$400,001 - $500,000	341	16.06%
$500,001 - $750,000	219	10.32%
$750,001 - $1,000,000	22	1.04%
$1,000,001 and up	12	0.57%
Total	2,123	100%

Housing Types

The map on the following page uses address points and building permit data. To summarize the map, the Township has 2,182 single-family units and 239 multi-family units. PRD subdivisions still outnumber all other single-family units, whether platted or unplatted.

Figure 6B.2 Housing Types (Existing Structures)

Housing Type	Units	% of Single-Family
FR-1 along traditional roads	403	18.5%
FR-1 Subdivisions	573	26.3%
R-2 Subdivisions	71	3.3%
R-3 Subdivisions	3	0.14%
PRD north of Cheshire	250	11.5%
PRD south of Cheshire	882	40.4%
Total Single-Family	**2,182**	
Total Multi-Family	**239**	

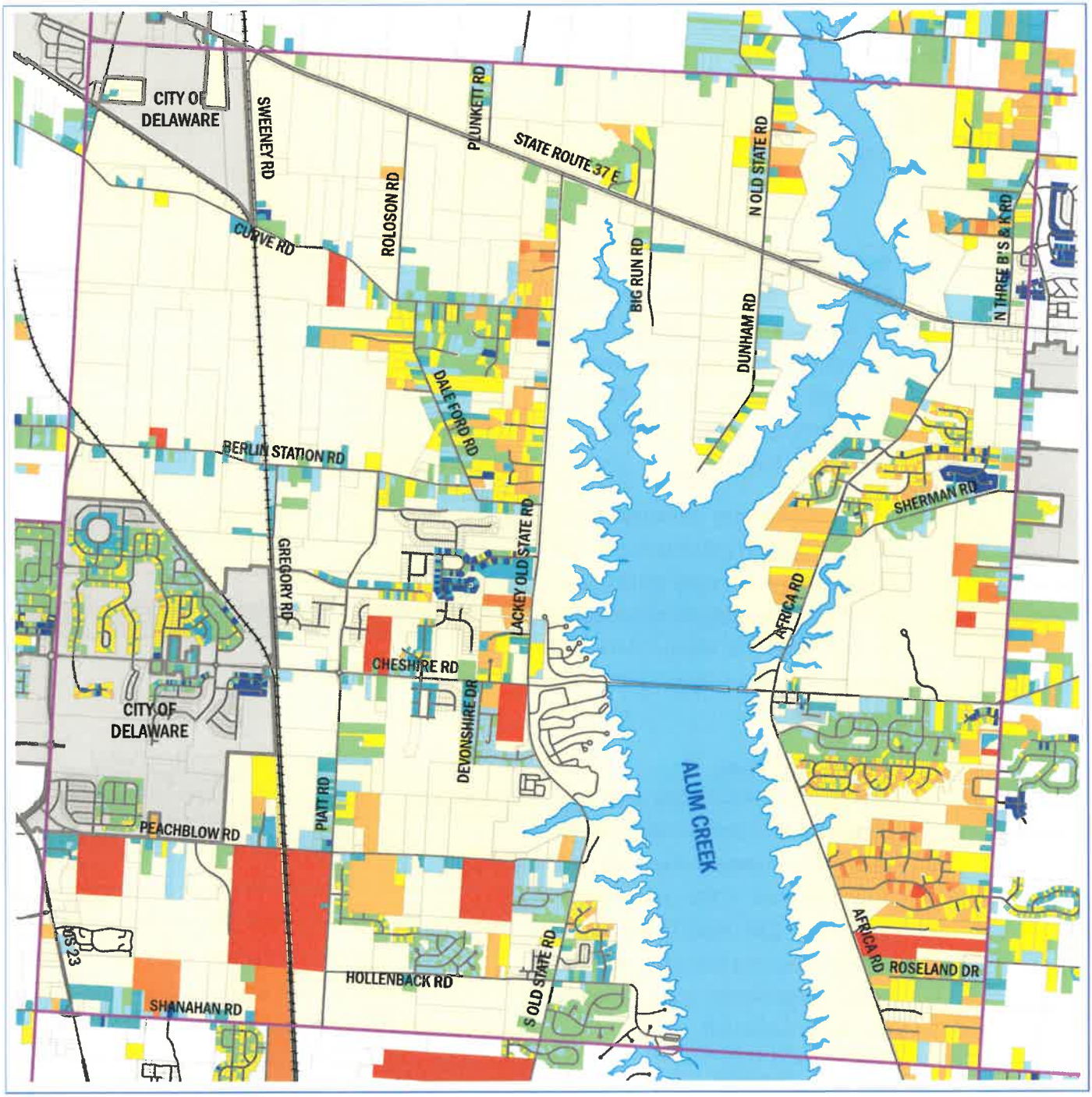
Housing Needs

Berlin Township has been the fifth-largest provider of new housing in Delaware County townships for the years 1998 to 2017, ranked by building permit issuance. The Township has provided 6.44% of the total new housing in unincorporated Delaware County in the last 20 years.

Future Housing

With sufficient authority and information, a community might anticipate what services it can provide, anticipate its share of the future population of the area, and allocate the proper distribution of housing types. Few communities attempt such an analysis, leaving the housing mix up to the market and the traditional power of zoning, which is seldom so analytical. In a

Figure 6B.3 Home Value Map



Home Value Map

Berlin Township, Delaware County, Ohio

0 1000 2000 3000 4000 5000 Feet

Prepared By: Delaware County Regional Planning Commission (740-368-1960)
(5/7/2018)

Home Value by Market Total Value

- 0 - 80000
- 80001 - 150000
- 150001 - 225000
- 225001 - 300000
- 300001 - 400000
- 400001 - 500000
- 500001 - 750000
- 750001 - 1000000
- 1000001 - 4000000
- Data Not Available

high-growth area such as Delaware County, it is impossible to anticipate what the County's share of the state's population should be and to distribute that amount among the townships, village and cities. Furthermore, this is not a centralized economy, but a free market economy.

A pragmatic approach to housing distribution in Delaware County is to:

Determine what the community wants to look like when it is all built out (vision);

What services it can reasonably provide;

What its reasonable and fair share of the mix of population would be;

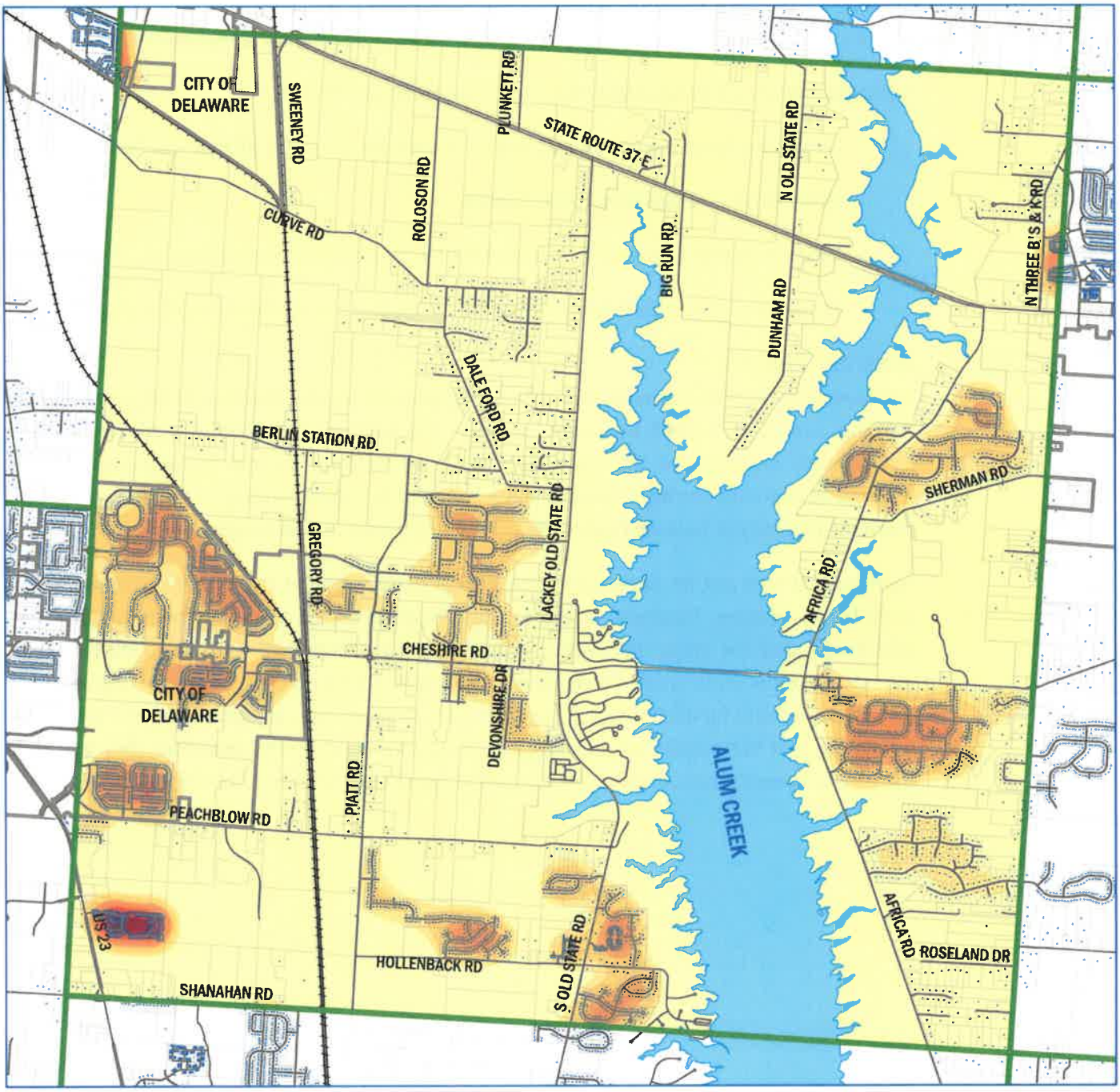
Determine how to zone for its fair share of housing in a legally defensible way.

Housing Policies

The Township should continually evaluate its housing mix as new developments are proposed. Housing density is limited by sewer capacity, the services the Township can legally and economically provide, and the Township's desire to maintain a sense of rural character. As developing communities begin sharing the leadership in county housing share, they must also share the diversity of housing types offered, and this means all townships.

Townships should not be expected to show large percentages of their future land use mix in multi-family housing. However, in areas where there is access to major road networks and centralized sanitary sewer and water, in transition to commercial uses, or as part of large planned developments, multi-family housing can occur in the townships. Berlin Township will likely receive multi-family housing requests as part of larger planned developments. Delaware, Columbus, and Westerville are building higher density multi-family; therefore they will have the economic and service clout to provide the larger share of the multi-family market.

Figure 6B.4 Population Density



Population Density

Berlin Township, Delaware County, Ohio

0 1000 2000 3000 4000 5000 Feet

N
W E
S

Prepared By: Delaware County Regional Planning Commission (740-368-1960)
(5/7/2018)

Residential Buildings	7
Population Density by Acre	8
1	9
2	10
3	11
4	12
5	13
6	14

Chapter 7A
Economic Conditions
Delaware County

Introduction

Delaware County has a broad-based economy. No one sector drives the economy, which protects the County from sharp up and down spikes. Delaware County's overall employment by sector very closely mirrors the state of Ohio's. Unlike some counties that are largely single-industry driven (auto manufacturing, agriculture, etc.), Delaware County has a healthy mix of many diverse employment sectors as shown in Figure 7A.1.

Commercial development at I-71 in Berkshire Township

Figure 7A.1. Establishments, Employment, and Wages by Sector, Delaware County (2016)

Industrial Sector	Number of Establishments	Average Annual Employment	Total Wages
Private Sector	**4,898**	**77,525**	**$4,067,147,734**
Goods-Producing	572	9,558	$572,083,879
Natural Resources	*30*	*312*	*$11,759,044*
Construction	*387*	*3,177*	*$177,672,782*
Manufacturing	*155*	*6,069*	*$382,652,053*
Service-Producing	4,326	67,967	$3,495,063,855
Trade, Transportation, and Utilities	*1,031*	*16,682*	*$589,820,187*
Information	*76*	*621*	*$46,651,137*
Financial Services	*525*	*6,540*	*$536,544,491*
Professional and Business Services	*1,175*	*19,779*	*$1,638,484,206*
Education and Health Services	*554*	*8,415*	*$350,940,093*
Leisure and Hospitality	*515*	*13,376*	*$255,248,481*
Other Services	*438*	*2,540*	*$76,991,571*
Unclassified	*12*	*14*	*$383,689*
Federal Government		**230**	**$13,404,169**
State Government		**357**	**$21,593,984**
Local Government		**7,056**	**$352,778,235**

Source: Ohio Development Department

The Ohio Department of Development showed that between 2011 and 2016, all sectors saw an increase both in the number of employees, except for Information, which saw -40.2% employment. The areas with the greatest increases were Construction (34.7% employment, -1.8% establishment), Other Services (33.5% employment, 23.7% establishment), and Education and Health Services (27.4% employment, 28.8% establishment). Generally, the Service sector saw a 13.5% employee growth, the Goods sector saw a 18.2% growth and the Local Government sector saw a 4.9% growth in employees.

Figure 7A.2. Top 13 Major Employers, Delaware County (2017)

Employer	Employment Sector	# of Employees
JP Morgan Chase	Finance	10,700
Kroger Company	Retail/Warehouse	2,249
Olentangy Local School District	School System	2,203
Delaware County	Government	1,159
Ohio Health (Grady Memorial Hospital)	Hospital/Medical Services	1,108
PCM/Sarcom, Inc.	IT Solutions	1,001
Meijer Limited Partnership	Retail	746
Exel, Inc.	Motor Freight Transportation	660
Delaware City School District	School System	632
American Showa, Inc.	Manufacturing	600
Central Ohio Primary Care Physicians, Inc.	Hospital/Medical Services	
Ohio Wesleyan University	Private Liberal Arts University	
WalMart Real Estate Business Trust	Retail	

Economic Development Tools

Economic Development, or the process of actively seeking businesses to locate to the County, is typically performed on the county and municipal levels. The following is a list of economic tools and development-related issues of which the Township should be aware.

Enterprise Zone

Enterprise Zones are defined areas within the County that allow for tax abatements on industrial projects conducted within the zone. Real property abatements can be made for improvements on the real property as a result of the project. Personal property abatements

Simon Tanger Mall in Berkshire Township

Commercial development along 36/37 in Berkshire Twp.

can be taken on machinery, equipment, furniture, fixtures, and inventory that is new or first-used in the State of Ohio. A three-member negotiation team reviews the project and negotiates a package specific to each project.

Delaware County currently has three active zones: the City of Delaware Enterprise Zone, the Orange Township Enterprise Zone, and the Sunbury Enterprise Zone. Tax levels can be abated up to an agreed-upon percentage for a certain number of years. This program also has a requirement of job creation associated with any abated project. If properly managed, this program has proven to be an engine of growth.

Delaware County Finance Authority (Port Authority)
Port Authorities are political subdivisions created by statute for the purpose of enhancing and promoting transportation, economic development, housing, recreation, research, and other issues within the jurisdiction of the Authority. Such organizations can acquire and sell property, issue bonds, loan monies for construction, operate property in connection with transportation, recreation, government operations, or cultural purposes, and engage in activities on behalf of other political subdivisions, among other functions. Where funding is concerned, it may issue revenue bonds, apply for grants and loans, and even levy a property tax not exceeding one mill for a maximum period of five years. In short, an Authority can accomplish more in the way of economic development in a competitive fashion than a government entity, which is limited by disclosure requirements.

New Community Authority
The "New Community Authority" (NCA) is a tool defined by ORC Chapter 349. It creates a process by which a district is created for the "conduct of industrial, commercial, residential, cultural, educational, and recreational activities, and designed in accordance with planning concepts for the placement of utility, open space, and other supportive facilities." The establishment of the NCA can identify sources of revenue, such as a community development charge, or "a dollar amount which shall be determined on the basis of the assessed valuation of real property."

The NCA is an area of land described by the developer in a petition as a new community and approved by the County Commissioners. The ORC allows the addition of land to the district by amendment of the Resolution establishing the authority and by request of landowners.

An NCA may do many things as defined in the ORC. In summary, it may:

- acquire and dispose of property;

- engage in educational, health, social, vocational, cultural, beautification, landscaping, and recreational activities and related services primarily for residents of the district;
- collect and receive service and user fees;
- adopt rules governing the use of community facilities;
- employ managers and employees;
- sue and be sued;
- enter into contracts, apply for and accept grants, and issue bonds;
- maintain funds or reserves for performance of its duties;
- enter agreements with boards of education for the acquisition of land or other services for educational purposes; and
- engage in planning efforts.

Several NCAs have been established in Delaware County. The Liberty/Powell CA was established to help fund improvements in and around Golf Village. The Concord/Scioto NCA was created to accompany the development of the Lower Scioto Wastewater Treatment Plant.

Community Reinvestment Area

Community Reinvestment Areas (CRA) are designated zones in which tax abatements are allowable on real property improvements made as a result of an expansion or relocation project. These agreements are available for expanding or relocating businesses. Job creation is an additional requirement for participation in the Community Reinvestment Area program.

Only one CRA exists in Delaware County, located in the City of Delaware with the same boundaries as the Delaware Enterprise Zone. The available abatement rate can extend up to 100% on the real property improvements for a term of up to 15 years. The abatement rate and

Figure 7A.3 Top 13 Major Employers, Delaware County (2017)

TIF Name	Terms	Value, Tax Year 2021	2nd Half 2021 net
Genoa	30 years/	$12,188,450	$63,359
Olentangy Crossing (Orange)	30 years/100% for roads and US 23	$11,493,800	$112,826
Slate Ridge (Orange)	20 years/75%	$6,488,320	$148,654
Columbus Outlets (Berkshire)	10 years/75% for public improvements around dev.	$27,547,040	$713,902
Creekside (Orange)	20 Years/75% for internal roads	$2,394,900	$79,582
Evans (SE Residential) (Berlin/Orange)	20 years/75% for road and sewer	$7,587,430	$0
Northwest Berkshire Twp I	10 years/75% for Four Winds Drive extension	$5,889,520	$216,481
Slate Ridge II (Orange)	20 years/75% for roads and sanitary	$8,442,680	$125,086
Evans Farm (Commercial) (Orange)	20 years/75% for roads and sewer	N/A	$0
Orange Road (Orange)	10 years/75% for railroad underpass and related	$252,570	$8,592
OSU Medical/Home Road (Liberty)	10 years/75% for roads and sanitary	$2,183,320	
Home High (Orange)	18 years/75% for roads and utility improvements	N/A	$0
Berlin Business Park	20 years/75% for roads including interchange and sewer	N/A	$0
Kilbourne (Brown)	10 years/75% for roads and utility improvements	N/A	$0

term is a unique negotiation for each project, considering such factors as job creation numbers and real and personal property investment levels.

Tax Increment Financing

Tax Increment Financing (TIF) is a program to finance public infrastructure by redirecting new real and personal property tax to a debt retirement fund. A portion of the real property tax on improvements to a site, up to 75% for 10 years, can be paid into a special fund used to retire the debt of an improvement tied to the project.

A county negotiating committee meets with a potential business and discusses if the TIF program can be utilized for the proposed project. The Delaware County Economic Development Office works with both the business and negotiating committee to facilitate the process. Generally, TIFs are used exclusively in commercial and industrial settings. However, in larger residential projects, where required infrastructure may go beyond what is needed to serve the proposed development, a "residential TIF" may be considered. Such TIFs would be applied only if a number of conditions were met. The TIF would have to be supported by the local jurisdiction, the applicable school district, local fire district, and county representatives.

Joint Economic Development Districts

Joint Economic Development Districts (JEDD) are contractual agreements formed between local jurisdictions (cities and townships) to create a new board/political subdivision that is authorized to improve the economic vitality of an area. A JEDD allows a municipality to extend its ability to implement an income tax to a township. JEDDs must "facilitate economic development to create or preserve jobs and employment opportunities, and to improve the economic welfare of the people in the state and in the area of the contracting parties." JEDDs help to alleviate the need for municipalities to annex land from townships.

JEDDs are formed with the consent of the property owners and agreement by the partnering local jurisdictions. The agreement contains the terms by which the JEDD will be governed, including income tax sharing arrangements and the authority of the JEDD's board. If the JEDD is authorized without the full consent of the township trustees, it must move forward to a vote. Land cannot include residential property or land zoned for residential use.

JEDDs should be supported by the County when funds are being provided to the County to undertake public infrastructure improvement projects. As the entity responsible for constructing sanitary sewers and roads (as well as other improvements), the County can receive reimbursement through the JEDD for certain services. The County can also help with the administrative responsibilities of the JEDD's board.

Designated Special Improvement District

There are multiple types of Special Improvement Districts (SID) that can be created to encourage new investments to occur within the County. Some of these SIDs that can be established are Transportation Improvement Districts (TID), Entertainment Districts, and

Historic Technology Districts. These Improvement Districts allow government entities to combine funds from local, state, and federal entities to address infrastructure demands and reallocate property taxes to develop and support activities that grow the economy. The Economic Development Department analyzes each request individually. The Department engages all affected parties before issuing its recommendation to the County Commissioners.

Ohio Job Creation Tax Credit

The Ohio Department of Development administers this program in conjunction with local incentive program participation. This program allows a business to receive a tax credit or even a refund against its corporate franchise tax based upon the number of new jobs created with the project.

The requirements of the program are that at least 25 new, full-time jobs must be created within three years of the beginning of the project, and that the new employees must be paid a minimum of 150% of the federal minimum wage.

The basis of the credit lies in the state income tax withholding per new employee. A percentage of the withheld tax will be credited against the business' corporate franchise tax each year for the term of the agreement. This rate can be up to 75% with a term of up to 10 years.

The Delaware County Economic Development Office works with businesses interested in this program and puts them in contact with the Ohio Department of Development's representative.

Impact Fees

With increased costs due to rapid growth, many communities would like to impose impact fees on new development. Models for estimating the fiscal impact of new development were developed by Robert Burchell, David Listokin, and William Dolphin in various publications through the decades.

Ohio planning and zoning legislation does not empower townships to charge impact fees that offset costs of service expansion (roads, schools, parks, etc.). It has been generally held, however, that if road improvements are needed immediately adjacent to the development, can be directly attributable to the project, and the benefit of contributing to the improvement outweighs the burden of such improvement for the development in question, then a "fair share" contribution to the improvement can be requested by the community and determined by the County Engineer.

Under the current legal system in Ohio, townships must be aware of the need to encourage a mix of commercial, industrial, and a variety of residential uses to curtail the growth of property taxes.

Chapter 7B
Economic Conditions
Berlin Township

Berlin Township Economy

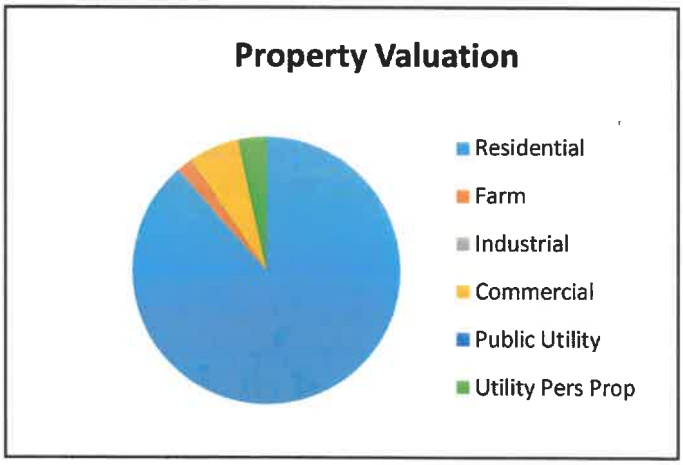
Berlin Township has the possibility for a balance of residential, commercial, and industrial tax and job base in its local economy. Although the Township is currently mostly residential, there are lands along U.S. 23 and U.S. 36 that represent future commercial and industrial development corridors.

Rates of Taxation and Revenues

Property Valuation

The County Auditor tracks real estate and personal property values in the County. Because the unincorporated areas in the County are funded with property taxes, it is important to note such valuation. As of Tax Year 2018, Berlin Township's residential property was valued at $263,374,360, fifth behind Orange ($1.07 billion), Genoa ($1.03 billion), Liberty ($906 million), and Concord ($504 million). The City of Delaware's residential value is $602 million. The Township has seen steady growth in its residential land value. Berlin's Farm value is $5,554,270.

Figure 7B.1 Township Property Valuation



Residential	$263,374,360	88.5%
Farm	$5,554,270	1.9%
Industrial	$388,370	0.1%
Commercial	$18,065,960	6.1%
Public Utility	$113,210	0.04%
Util Pers Prop	$10,025,570	3.4%
Total	$297,521,740	

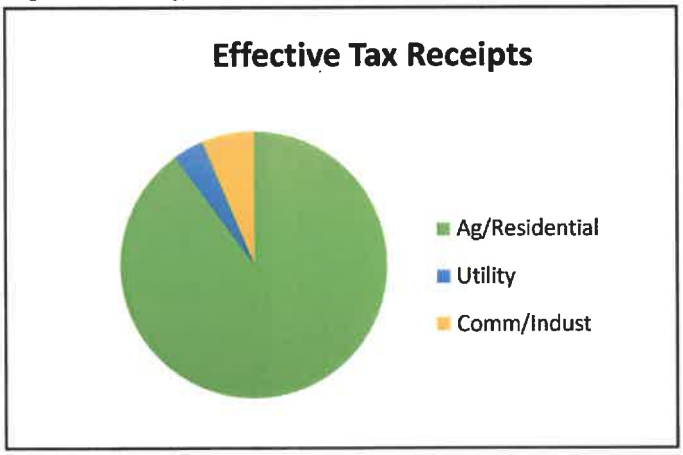
The Township's commercial, industrial, and utility uses (including personal property) are valued in seventh place among the County's townships at $28,593,110. For comparison, the value of the same land uses in Orange Township is $260,663,540. Trenton's is third at $80 million and Concord's is eighth at $20 million. Delaware City's non-residential land is valued at $216 million.

Adding farm uses, utilities, and personal tangible value, the total valuation for Berlin Township is $297,521,740. This represents 5.4% of the county/township total $5,473,466,170.

Effective Tax Receipts

The County Auditor estimates the effective tax receipts from each community, based on land use type. Unfortunately, there are only three broad categories listed: Agricultural/ Residential, Utilities, and All Others (which are displayed as "Commercial/Industrial").

Figure 7B.2 Effective Tax Receipts



Agricultural/ Residential	Commercial/ Industrial	Utility	Total
$2,113,601	$148,840	$88,861	$2,351,302
89.9%	6.3%	3.8%	

Millage Paid by Property Owners

The County Treasurer maintains a list of all mills levied on each dollar of property within the County. Individual taxes are based on the rate multiplied by the property valuation of each property. Ohio law limits the amount of taxation without a vote of the people to what is known as the "10 mill limit" ($10 per thousand of assessed valuation). Any additional real estate taxes for any purpose must be voted by residents.

Berlin Township is located entirely within Olentangy Local School District. The Township's **2021 effective** tax rates include the following, based on the Auditor's online property report function:

Figure 7B.3 Millage per Agency

	School	DACC	Health	Pres Parks	Library	Twp.	Corp.	County	Mental Health	911
Township, Olentangy	75.8	2.9	0.6	1.6	1	8.9	-	6.5	1.0	0.7
Delaware Olentangy	84.3	3.2	0.546	0.823	1	7.68	1.05	8.09	0.875	0.555

Difference between Residential and Commercial receipts

The left figures on the following page are taken from a sample properties within the unincorporated portion of Berlin Township in the Olentangy district.

Residential—The total market value of this example is $260,900 [4404 Marilyn Dr], which is higher than the overall County average but typical for a recently-built suburban neighborhood.

Commercial/Office—Townships receive a portion of the commercial and industrial taxes collected by the County. As noted previously, non-residential uses play a vital role in the fiscal health of any community. While they generate taxes for the community, they do not generate

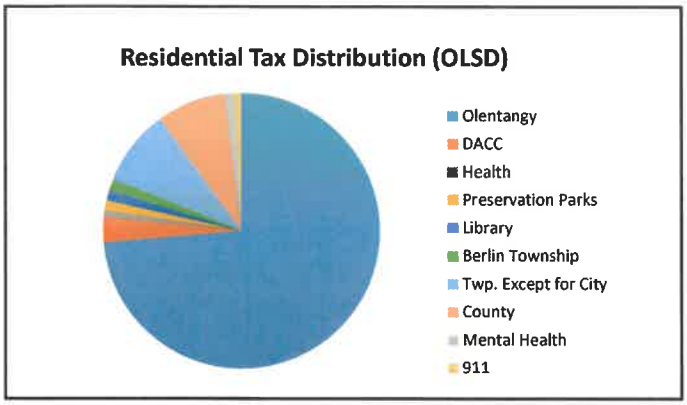
any costs to the school district. Tax rates within townships are different based on the school district boundaries, at rates slightly above the residential rate.

The figure at right is taken from a large single-use commercial property within the unincorporated portion of Berlin Township in the Olentangy district. The total market value is $2,143,400 [5450 Columbus Pike].

School District	Ag/Res Effective	Com/Ind Effective
Berlin Twp., Olentangy	72.1899	77.1413
City of Delaware	72.1899	77.1413

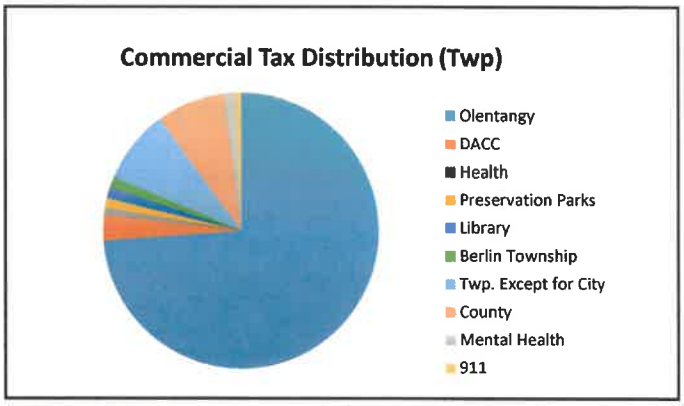
**No figures in any of the preceding tables take into consideration drainage maintenance fees or the effects of TIFs and impacts from other tools listed later.*

Figure 7B.4 Tax Distribution for a Sample Residence



Olentangy	$4,364.85
DACC	$180.50
Health	$43.60
Preservation Parks	$69.16
Library	$69.71
Berlin Township	$83.90
Twp. Except for City	$528.38
County	$475.22
Mental Health	$69.91
911	$46.24
TOTAL	$5,931.47

Figure 7B.5 Tax Distribution for a Sample Business



Olentangy	$43,150.91
DACC	$1,748.54
Health	$482.70
Preservation Parks	$657.48
Library	$721.94
Berlin Township	$787.70
Twp. Except for City	$5,037.46
County	$4,666.10
Mental Health	$722.97
911	$456.92
TOTAL	$58,432.72

Effect on Growth and the Community Vision

Delaware County's unemployment rate is comparatively low. Its poverty rate is low. It has a varied economy, which has been growing. Of all the economic factors reviewed, there is only one that may be of concern related to business recruitment, and that has been the low unemployment rate. When the local labor force is tapped out, business expansion goes elsewhere. When business bypasses a geographic area, this can be a precursor of a declining real estate (housing) demand.

1. When **too much housing** is created in advance of a softening demand curve and very low unemployment rate, a glut of housing product can build up and cause real estate price deflation. Such American "boom-bust" real estate cycles have occurred in many places, such as California, the Northwest (Seattle, Washington), and New England. Although the County has experienced a cycle in new housing activity, real estate price fluctuations have not been referred to as "boom-bust" in Central Ohio.

2. The **housing pipeline** numbers suggests that a glut of supply existed when the economy and credit issues became problematic. It is very difficult to interpret this trend, or to call the moment when oversupply occurs. As discussed in Chapter 3, looking at the five-year average lot absorption rate for the townships in Delaware County, the number of residential units in the development pipeline represent a twelve-year supply. In a more typical economy, a three-year supply is considered healthy.

3. The Delaware County **housing market** remains stronger than the central Ohio housing market. To understand this phenomenon, we looked at recently released census figures, which show that the United States, Ohio, and Central Ohio continue to grow slightly, while Delaware County has grown significantly.

Chapter 8A
Roads and Transportation
Delaware County

General

Many of Delaware County's main roads were laid out in the 19th Century. As areas develop, the function of these original roads change. As traffic counts increase, roadway improvements and new roads will be needed.

Every unincorporated community's transportation system is a composite of roadways maintained by different entities. Federal and state roads are maintained by Ohio Department of Transportation (ODOT), District 6; The Delaware County Engineer maintains county roads; individual townships maintain township roads; homeowner associations maintain private subdivision roads; and CADs are private roads serving two to five lots, maintained by the lot owners.

Functional classification of roads

Roads are functionally classified by design and/or usage. Delaware County created a Functional Classification Map as part of the 2001 Delaware County Thoroughfare Plan. This plan incorporates these classifications by reference, unless exceptions are noted.

Some roads may fall into multiple classifications. Some roads may exceed the ADT related to their classification.

Arterial roads have the primary purpose of carrying through traffic to and from residential, commercial, and industrial areas, and the secondary purpose of providing access to abutting property. They are usually a continuous route carrying heavy loads and Average Daily Traffic (ADT) in excess of 3,500 vehicles. Arterials generally require a right-of-way of 80 to 100 feet for a two-lane section and 100 feet for a four-lane section.

Collector roads have the primary purpose of intercepting traffic from intersecting local streets and handling this movement to the nearest major collector or arterial street. ADT typically ranges from 1,500 to 3,500 vehicles, with AM peak hour traffic about 7-8% and PM peak hour of 10%.

Local Streets represent the lowest category. Their primary function is to serve abutting land use. Typical ADT's range from 100 to 1,500 vehicles. Local streets are further classified as Loop, Through, and Cul-de-sac.

Traffic Counts

Traffic counts indicate the ADT in both directions on a road. These counts can be used to determine if the LOS is acceptable or unacceptable. LOS A is considered ideal, LOS F is failure. The LOS depends on traffic counts, number of lanes of road in each direction, and width of lanes, including shoulders. Traffic counts are also used to determine functional classification.

The Mid-Ohio Regional Planning Commission (MORPC) is the Metropolitan Planning Organization (MPO) for Central Ohio. It acts on behalf of Delaware County in certain transportation planning functions and is a funnel for federal funds. MORPC maintains a database of traffic counts for the Central Ohio region.

Access Management

Access management is the practice of limiting curb cuts to major roads to prevent conflicting turning movements and maintain safe traffic flow. In July 2010 ODOT completed an Access Management Study that will impact future access to the 36/37 corridor. The resultant Access Management Plan (AMP) is used as development occurs, and particularly as properties that have direct access to 36/37 go through the zoning process. Access can be granted, denied, or converted from a full access to a limited one, or temporarily granted until such time as other adequate access, such as a "backage" road, is provided.

According to ODOT, AMPs find the following to be true:

- Poor access management can reduce highway capacity to 20% of its design;
- Delay is as much as 74% greater on highways without access management;
- 60% of urban and 40% of rural crashes are driveway- and intersection-related;
- 15,000 access-related crashes occur each day at an estimated annual cost of $90 billion.

ODOT Access Management Principles:

- Avoid disconnected street systems.
- Regulate the location, spacing, and design of drives - space access points so they do not interact with each other.
- Provide adequate sight distance for driveways.
- Use appropriate curve radius, lane widths, and driveway angle.
- Provide turn lanes to separate conflict points for acceleration, deceleration, and storage lanes.
- Prohibit some turns in critical areas; relocate that activity to a less conflicted point.
- Use feeder roads to relocate critical movements and to handle short trips parallel to the main road.
- Locate driveways away from intersections to reduce conflicts (corner clearance).
- Use right-in/right-out drives to prevent unwanted left turns across traffic.

- Ensure that Development Plans presented and approved at the zoning stage reflect appropriate access management design principles.
- Encourage internal access to out-parcels - connect parking lots; share driveways.
- Use frontage roads to connect commercial traffic and keep it parallel to the main road - connect frontage roads to collector streets at properly spaced intersections.
- Use backage roads as rear access roads connecting commercial uses.
- Use the 30-curb cuts/mile standard, or maximum of one access each 350 feet.
- Minimize the number of traffic signals. Two per mile is ideal (half-mile spaced).
- Use medians to separate traffic flows.
- Coordinate access permit review between ODOT, local zoning, and building departments.

For example, the following recommended policies were part of the 36/37 Access Management Study.

- Closure of all access drives (non-signalized) as the current use changes and new drive permits are required
- Closure of median crossings as the drives they serve are closed
- Dedication of right-of-way for future expansion along 36/37 as opportunities present themselves
- Construction of access road(s) as necessary to provide access to 36/37 at a minimum setback of 650' from highway
- Conversion of one intersection to right-in/right-out access by closure of median opening and construction of right turn deceleration lanes on 36/37

Future Roads - The Thoroughfare Plan

A plan for the major streets or highways, or Thoroughfare Plan, is a tool for counties and local jurisdictions. A county-wide Thoroughfare Plan is enabled and defined by ORC Section 711.10. See township chapter for projects in the area.

Delaware County Engineer Projects

The Delaware County Engineer maintains and improves a number of county roads, and also works closely with townships to assist in their efforts toward proper road maintenance and improvement. Some projects also involve other entities, such as ODOT and local municipalities, when projects impact multiple jurisdictions.

Metropolitan Transportation Plan

The Mid-Ohio Regional Planning Commission (MORPC) is the Metropolitan Planning Organization for the Columbus region. As such, MORPC maintains a Metropolitan Transportation Plan (MTP) for Franklin, Delaware, and parts of Union and Fairfield Counties. This plan lists projects that are eligible for potential state and/or federal funding in the future.

Bikeways


Multi-use path near the Tanger Outlets

As roads become more congested there is a need to separate pedestrian and bicycle traffic from automobile and truck traffic for safety purposes, as well as for recreation and alternate transportation. There are no sidewalks or bike paths along "traditional" township collector and arterial roads. Bike paths should be placed along at least one side of collector and both sides of arterial roads. Most communities require standard sidewalks in subdivisions that go through the rezoning process. For many years, the Delaware County Regional Planning Commission has also sought sidewalks in subdivisions, adding a requirement in 2007 to the Subdivision Regulations to capture those neighborhoods that do not go through the rezoning process, such as under the FR-1 zoning designation.

In 2016, the County Commissioners established the Delaware County Trail Committee (DCTC), which produced the Delaware County Trail System Master Plan, adopted by the Commissioners in November 2017. Improvements would be coordinated with Central Ohio Greenways' (COG) efforts to create major routes from existing trails in other counties. This group includes representatives from DCRPC, the County Engineer, Preservation Parks, the Delaware General Health District, Economic Development, MORPC, and the public.

Clean Ohio Fund

Although there are several grant sources, the Clean Ohio Fund is a state-wide funding program often cited for trails and parks. In 2015, 19 projects were funded, with 16 funded in 2014.

Bike/Pedestrian Policy

As the subdivision authority, the Regional Planning Commission seeks connections between subdivisions by often requiring new subdivision streets to connect to vacant adjacent parcels of land. The main benefits to connectivity are shorter trips, greater travel choice, and savings in infrastructure. Township zoning may also provide a policy of neighborhood-to-neighborhood street connections, provided safety and quality of life impacts from the connection are mitigated. As part of a rezoning review, subdivisions that are platted along existing collector streets may also stipulate that bike paths or sidewalks be constructed as part of a regional system.

Other Road-Related Issues

Increase in population yields increased traffic flow on local roads. The following considerations should be made when reviewing rezoning requests:

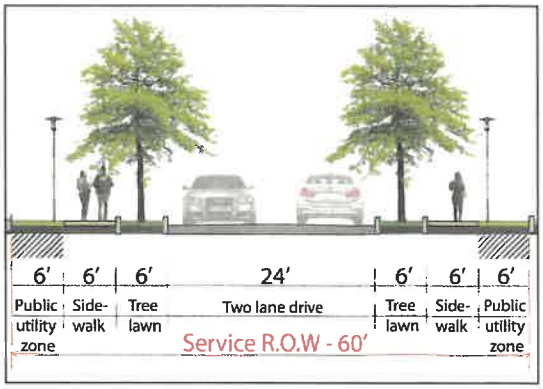
Patterns of Development

Traffic can be reduced by the design of development and the mix of land uses. Low density (1-acre lots or larger) development generates significant traffic per unit, but the number of units is modest overall. In large developments with densities greater than 1 unit per acre, a mix of local convenience commercial uses and a network of sidewalks, trails, and bike paths can reduce

auto trips. Neo-traditional development patterns may be encouraged near existing village centers or as greenfield development. A combination of a grid street core, with curvilinear edges can allow for the preservation of open space. A typical home in an exclusively residential area generates 10 or more trips per day while condominiums generate approximately seven per day. A home located in a neighborhood that is designed to be convenient for walking and biking with mixed commercial and service uses can reduce auto trips to as little as 4 trips per home per day.

Streetscapes

Streets are a significant part of the look of a community. Every community needs a streetscape standard. For local streets with lot widths less than 100 feet, no through traffic, and less than 1,500 vehicle trips per day, the current standard 20-foot wide street with drainage ditches within a 60-foot right-of-way is acceptable. In an open ditch road, the sidewalk is typically located near the outside edge of the ditch, which can be problematic if not designed properly. For collector and arterial roads, pedestrian and bike traffic should be separated from vehicular traffic. The following is a recommended streetscape for collector or arterial streets. A 5-foot wide asphalt bike path may be preferable to a sidewalk to maintain the rural character of the road. A bike path may be placed on one side of the street for minor-collector streets. Major collectors and arterials should have a bike path on at least one side of the street plus a sidewalk on the other side.



Streetscape example with trees in the treelawn.

Complete Streets

Complete Streets accommodate the need for an integrated, connected street network that serves all of its users, including motorists, bicyclists, pedestrians and transit riders of all ages and abilities. As the subdivision authority, the DCRPC seeks connections between subdivisions by often requiring new subdivision streets to connect to vacant adjacent parcels of land. The main benefits to connectivity are shorter trips, greater travel choice, and savings on infrastructure. Township zoning may also provide a policy of neighborhood-to-neighborhood street connections, provided safety and quality of life impacts from the connection are mitigated.

In addition to having a sidewalk requirement for all new streets, townships should create a policy for existing roads as they change from local to collector status. Minor collector streets within platted subdivisions should also be considered for traffic calming devices. Major collectors should consider the construction of bike paths on both sides of the street when traffic warrants it. Subdivisions that are platted along existing collector streets may stipulate that bike paths or sidewalks be constructed as part of a township or regional system.

Alternative Street Designs - The Roundabout

Low Speed Roundabouts have begun to be used as an alternative to the traditional signalized intersection throughout Delaware County. Roundabouts have been proven to reduce crashes, flow more traffic than traffic signals, cost less, and require less pavement than signalized intersections. Not all intersections are candidates, but the roundabout is a viable traffic management tool.

Modern, low-speed roundabout; South Section Line Road and Riverside Drive, Concord Township. Pedestrian crosswalks are behind the pause line for traffic. Safe design speed is 11 miles per hour.

Paying for Road Improvements

Ohio planning and zoning legislation does not currently empower townships to charge Impact Fees to offset costs of service expansion (roads, schools, parks, etc.). Generally, road improvements immediately adjacent to the development can be attributable to the project as part of the subdivision and zoning process. Projects that contribute to regional traffic can be required to contribute to those future improvements.

Transit

The Delaware County Transit offers an on-call non-scheduled bus service from point to point in the County. As the County grows, new transportation will continue to be studied by transportation-related agencies.

DATA offers an on-call non-scheduled bus service from point to point in the County. By calling 740-363-3355 at least by noon of the business day prior, a pickup and destination can be scheduled if a vehicle is available. DATA requires a window of 15 minutes prior to the scheduled pickup time and 15 minutes after the schedule pickup time. Demand response service is limited. Policies may change—current information can be found at www.ridedata.com.

Chapter 8B
Roads and Transportation
Berlin Township

General

The Township is crisscrossed with county and township roads, which were laid out for farm-to-market usage. These roads are changing function as the area develops to a suburbanizing community. There will be needed roadway improvements. For the moment, the roads are not overtaxed and traffic flow is good within the Township.

As noted in Figure X, Berlin Township roads are maintained by various authorities: federal and state roads are maintained by Ohio Department of Transportation (ODOT), District 6; The Delaware County Engineer maintains county roads; Berlin Township maintains township roads; Homeowner associations maintain private subdivision roads; CADs are private roads serving 2-5 lots, maintained by the lot owners.

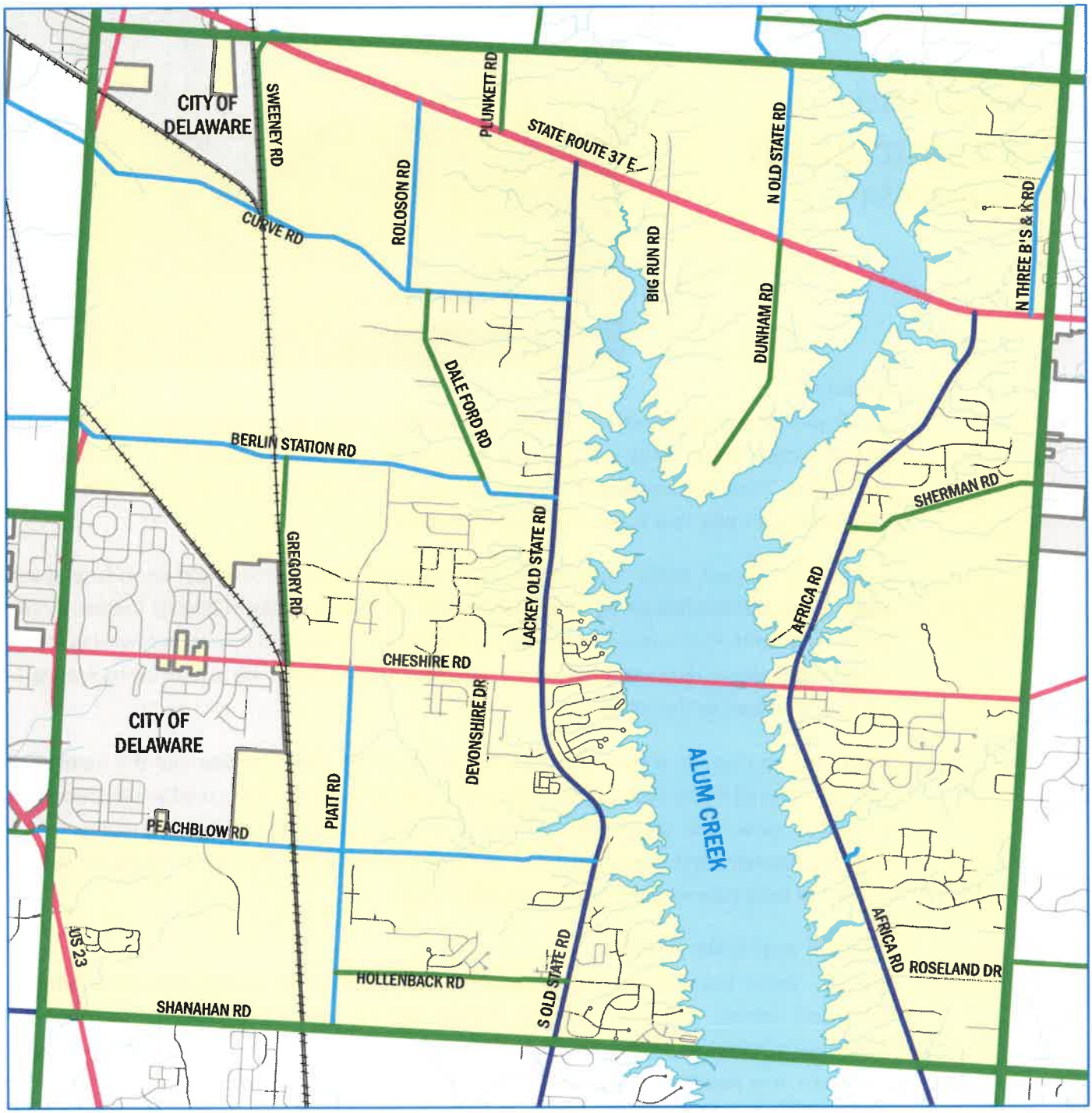
Road carrying capacity is determined by the width of the paved surface and the number of lanes. The speed of the road is generally determined by such factors as road width, pavement conditions, curve radii, topography, number of driveways, and cross traffic movements. Future land development will lower the Level of Service (LOS) of county roads. Upgrades will be needed to keep pace with the increased traffic counts.

Federal and State Roads

U.S. 23 – Berlin Township has approximately 4,000 feet of U.S. 23 passing through its extreme southwest corner. This is a four-lane divided highway with limited access. Most of the driveways established at the time of access rights purchase were single-family homes or farmlands. It is possible to upgrade to commercial use, but commercial access rights must be purchased from ODOT based upon the commercial market value of the property.

U.S. 23 is the major north-south federal and state highway from Detroit/Toledo to Columbus and Portsmouth, Ohio. This road is heavily traveled with trucks carrying interstate commerce and passenger vehicles. Commercial development along U.S. 23 is beginning to adversely affect its ability to carry interstate traffic.

Figure 8B.1 Road Classifications Map



Road Classifications

Berlin Township, Delaware County, Ohio

0 1000 2000 3000 4000 5000 Feet

N W E S

Prepared By: Delaware County Regional Planning Commission (740-368-1960)
(5/7/2018)

- Township Boundaries
- Road Centerlines
- Railroad
- Rivers/Ponds/Lakes

Road Classifications

- Major Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Freeway

The U.S. 23 corridor offers an important commercial tax base to Berlin Township. Any transition of frontage lots to commercial or industrial use should be subservient to maintenance of through traffic. If commercial development is desirable, it must be a part of a planned network of limited access points, signals placed no more frequently than ½ mile spacing, and with parallel access roads.

When The Park at Greif was zoned in 1998, along with the current Byers Kia site, both entities had to reserve easements for a future parallel access road across their lands for linkage of commercial properties on the west side of U.S. 23. A Memorandum of Understanding was created on the east side of U.S. 23 to establish these corridors and access points. Access management practices should continue to be used along all of U.S. 23.

U.S. 36/S.R. 37 – Berlin Township contains 4.3 miles of 36/37, from Delaware on the west to the interchange area of I-71. This is a four-lane divided highway, with mostly agricultural land use. Commercial uses exist near the I-71 interchange. This road is well traveled by northbound interstate trucks connecting from U.S. 23 to I-71. U.S. 36 is also the northern gateway to Alum Creek State Park. Traffic flow is currently smooth, with a LOS that is probably A or B. Pavement condition is very good; with left turn storage lanes for cross turning movements.

Strip commercial development with multiple unlimited access points would inhibit this highway's ability to function. Proper access management practices should be used to preserve the function of this road as a main federal highway.

Interstate 71 – Although I-71 does not enter Berlin Township, its location ½ mile east of the Township boundary along 36/37 has an impact on traffic within the Township and future traffic generation and land use. The I-71 interchange area extends into Berlin Township. Future commercial development will occur in the Township to service the interchange.

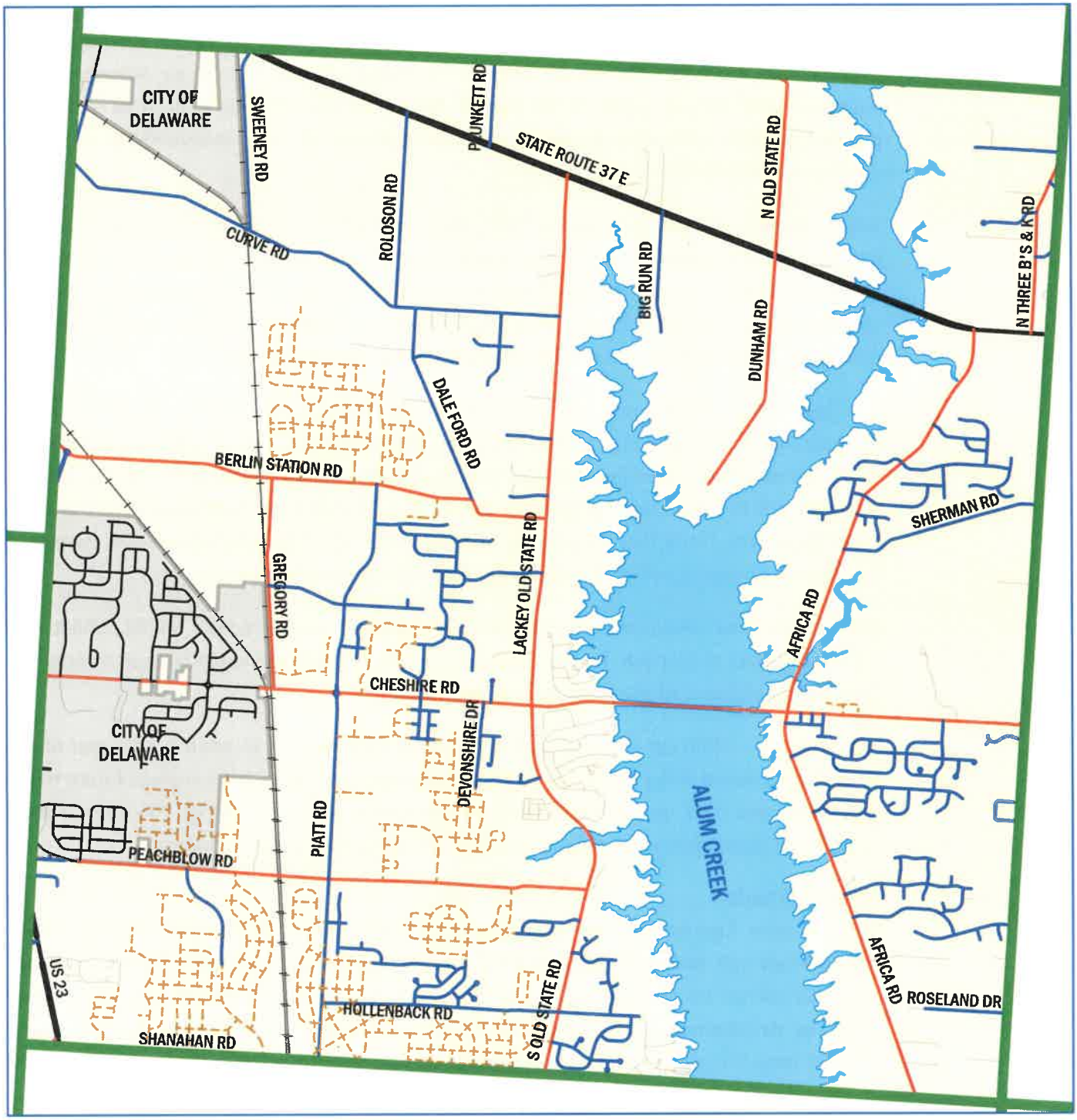
County Roads

The Delaware County Engineer maintains nine county roads in Berlin Township. Future development will lower the LOS of local farm-to-market roads. Under current Ohio law, upgrades cannot be required of a land developer for roads that do not abut his or her particular development. The community, county, or state is responsible for off-site impact costs. If large-impact development proposals do not offer to mitigate their adjacent traffic impacts, the Township may consider the rezoning premature.

Township Roads

The Township maintains collector roads and public subdivision streets. Collector roads include Curve, Sweeney, Roloson, Piatt, and Dale Ford, and can vary in width from 16 feet to 26 feet. More modern subdivision streets, such as West Bay Circle, Park Point, and Parkshore are 32 feet in width.

Figure 8B.2 Roads Map



Roads

Berlin Township, Delaware County, Ohio

0 1000 2000 3000 4000 5000 Feet

N W E S

Prepared By: Delaware County Regional Planning Commission (740-368-1960)
(5/7/2018)

- Township Boundary
- Proposed Subdivision Roads
- Rivers / Lakes
- Incorporated Area

Road Classification

- US Highway
- State Highways
- County Roads
- Township Roads
- City Roads
- Other Roads

Veterans Parkway (City Network Alternative 16)

This is a major project that would extend an arterial road from U.S. 23 from its intersection with U.S. 42 to the east through Delaware Township to Glenn Road at the edge of Berlin Township. The city is currently studying alignments.

The Thoroughfare Plan also recommended several "build-out" modification recommendations:

Cheshire Road: upgrade to 3-lane, U.S. 23 to Piatt Road;

Cheshire Road: upgrade to 4-lane, Piatt to Africa;

S. Old State Road: upgrade to 3-lane, Lewis Center to Cheshire;

Africa Road: upgrade to 3-lane, Lewis Center to Cheshire

Delaware County Engineer Projects

Construction (2022-2023):

Piatt-Roloson Road Extension (north of Berlin Station)

Bikeways

Sidewalks exist in limited locations in several subdivisions, and multi-use paths exist along Glenn Parkway, part of Cheshire Road, and part of Africa Road.

Recommended Bikeways

The regional bikeway plan recommends a number of off-road and on-road bikeways along traditional roads in Berlin Township to create a network that will connect Delaware, Sunbury, and Orange Township. The proposed routes are indicated in blue on the Sidewalks and Paths map.

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Chapter 9A
Utilities
Delaware County

General

Water, sanitary sewer, telephone, electric, natural gas, cable television, and high speed internet are desirable utilities in the Delaware County real estate market. As a county with multiple jurisdictions, utilities are managed by separate entities. Delaware County provides sanitary sewer to much of the southern half of the county. Municipalities can also provide sewer to unincorporated areas, but typically only as with contractual conditions. Del-Co water provides water service throughout most of the unincorporated areas, as well as in some villages. Stormwater management is required by Delaware County.

Water

The Del-Co Water Company, a cooperatively owned private water company established in 1973, serves most of Brown Township with potable water. As the County has grown, Del-Co has expanded its service to provide larger diameter water lines for residential and commercial service, as well as fire protection.

Supply

There is generally good water pressure for domestic use and fire protection throughout the County. Del-Co Water utilizes water from the Olentangy River, Alum Creek Reservoir, and from the Scioto River utilizing a raw water line in Liberty Township. Wells along the Kokosing River in Knox County provide additional supply. The water is pumped to upground reservoirs in Orange Township (800 million-gallon capacity) and Liberty Township (1.6 billion-gallon capacity). Raw water is purified at the Alum Creek, Old State Road, and State Route 315 treatment plants, and then pumped to a network of elevated storage tanks with 12.5 million gallons capacity.

Del-Co Water Headquarters on S.R. 315, Liberty Township

With these facilities, as well as others in Morrow County, a total of 38 million gallons per day is the long-term pumping and treatment capacity of Del-Co. Although planning for future growth, such as a new upground reservoir in Thompson Township, Del-Co does not have unlimited supply options. Potable centralized water is not currently a constraining factor to growth of the

Township. There is adequate water capacity for human consumption and population growth in the Township. The demands for lawn sprinkling systems, however, can quickly tax capacity in dry spells. As a result, Del-Co has a year-round, three days per week restriction on lawn watering.

Water Lines

The Utilities map shows the location and diameters of water lines Delaware County. In general, those streets that have water lines of less than 6 inches in diameter will not offer fire hydrants. Fire hydrants are normally a requirement of new development.

Sanitary Sewer

Until lands have access to public sanitary sewer, they must use septic systems and leach fields for sewage disposal. In 2016/2017, the County Commissioners updated the 2004 Facilities Master Plan for the County. The service areas shown in Figure 23 were updated based on recent development pressure and service area amendments.

Policy Implications for Land Use - County Sewer

1. The County Commissioners' sewer user policy is "first come, first served." The County Sanitary Engineer does not police the densities of land uses using the sewer.

2. It is up to the township to determine the density of population by zoning. If the township zones land in sewer service areas for higher densities than the average density based upon residual sewer capacity, there may be "holes" in the sewer service area without sewer capacity.

Stormwater Management

Stormwater management is regulated by the Delaware County Engineer's Office for new subdivisions and road construction. The Delaware Soil & Water District maintains ditches on public maintenance and reviews stormwater plans by agreement with the County Engineer.

Chapter 9B
Utilities
Berlin Township

Sanitary Sewer Service

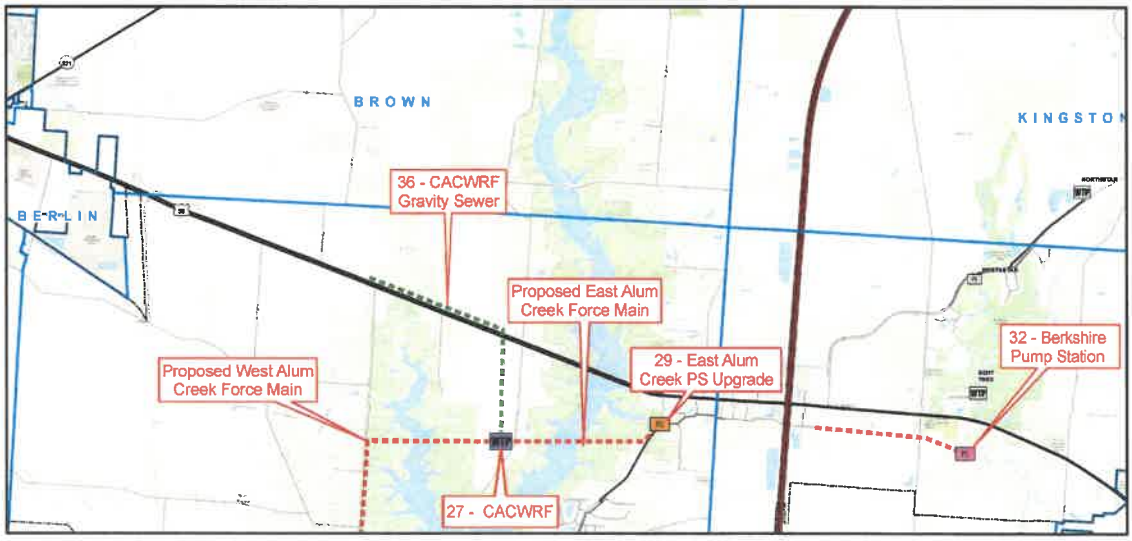
The improvements listed in Figure 24 and shown in Figure 25 are being considered as part of possible future improvements that will impact Berlin Township. The County acknowledges the need for well-designed development along the 36/37 Corridor and the positive impact on the tax base such development could have. After many years of discussion and planning, the Commissioners are moving forward with plans to build a new treatment plant south of 36/37 between Big Run and Dunham Roads. In the short term, a pump station near Lackey Old State Road and 36/37 is being designed.

When built, the plant will relieve capacity concerns at the Alum Creek facility by taking in effluent from the interchange area in Berkshire and Berlin Townships as well as approved developments north of Cheshire Road in Berlin Township. It will also allow development of the 36/37 corridor east of the City of Delaware's service area. The new county service area could extend northward beyond Bowtown Road, from the railroad at the intersection of Baker and 36/37 to a line not quite as far east as N. Old State Road.

Figure 9B.1 Project Table

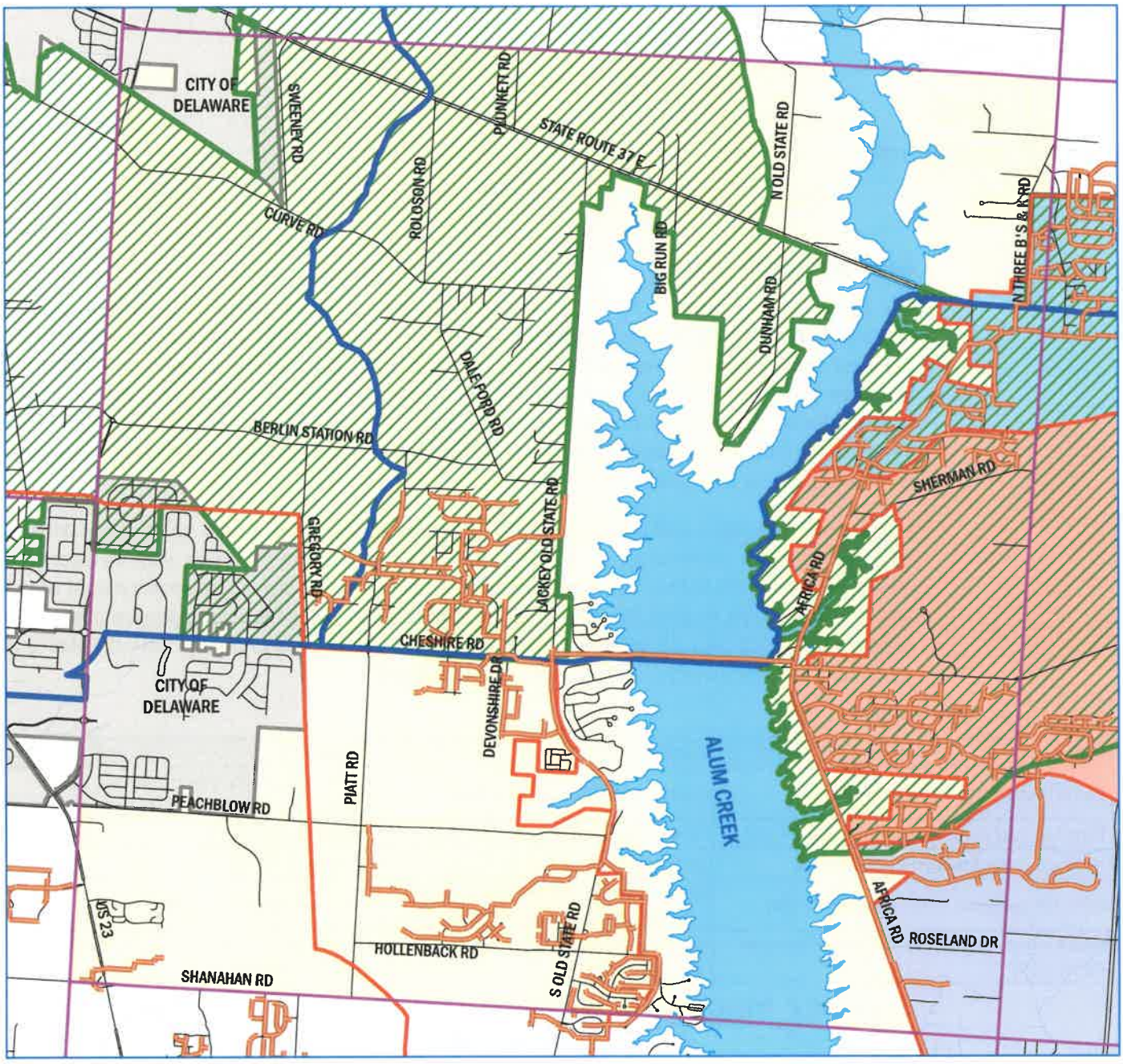
Project	Location	Purpose
Pump Station and Force Main (32)	South of 36/37, near Bent Tree	Receive gravity flow from west, pump back to existing service near Interstate
Upgrade East Alum Creek Pump Station (29)	Africa Road near 36/37	Additional capacity
Upgrade Cheshire Road Pump Station	Africa Road and Cheshire Road	Additional capacity
New gravity sewer main along 36/37 (36)	Berlin Township between Lackey Old State Road and Dunham Road	Serve the 36/37 corridor
New Central Alum Creek Water Reclamation Facility (27)	South of 36/37 between Big Run Road and Dunham Road	Serve general area, take pressure off the Alum Creek plant

Figure 9B.2 Project Map



Source: Sanitary Sewer Master Plan (2017)

Figure 9B.3 Sewer Service Map



Sewer Service

Berlin Township, Delaware County, Ohio

0 1000 2000 3000 4000 5000 Feet

Prepared By: Delaware County Regional Planning Commission (740-368-1960)
(5/7/2018)

- Sewer Lines
- Drainage Areas (2020 Sewer Master Plan)
- Potential Columbus/Delaware Co. Sewer Service Area @ 4 persons/acre
- Current County Sewer Service Areas

Future Sewer Service Areas (2020 Sewer Service Master Plan)

- Central Alum Creek Service Are
- Big Walnut Service Area

Current County Sewer Service Areas

- ZONE A - EAST ALUM CREEK
- ZONE B - CHESHIRE
- ZONE D - ALUM CREEK

Natural Gas

Berlin Township is served by Columbia Gas and Ohio River Product.

Telecommunications/Internet Service

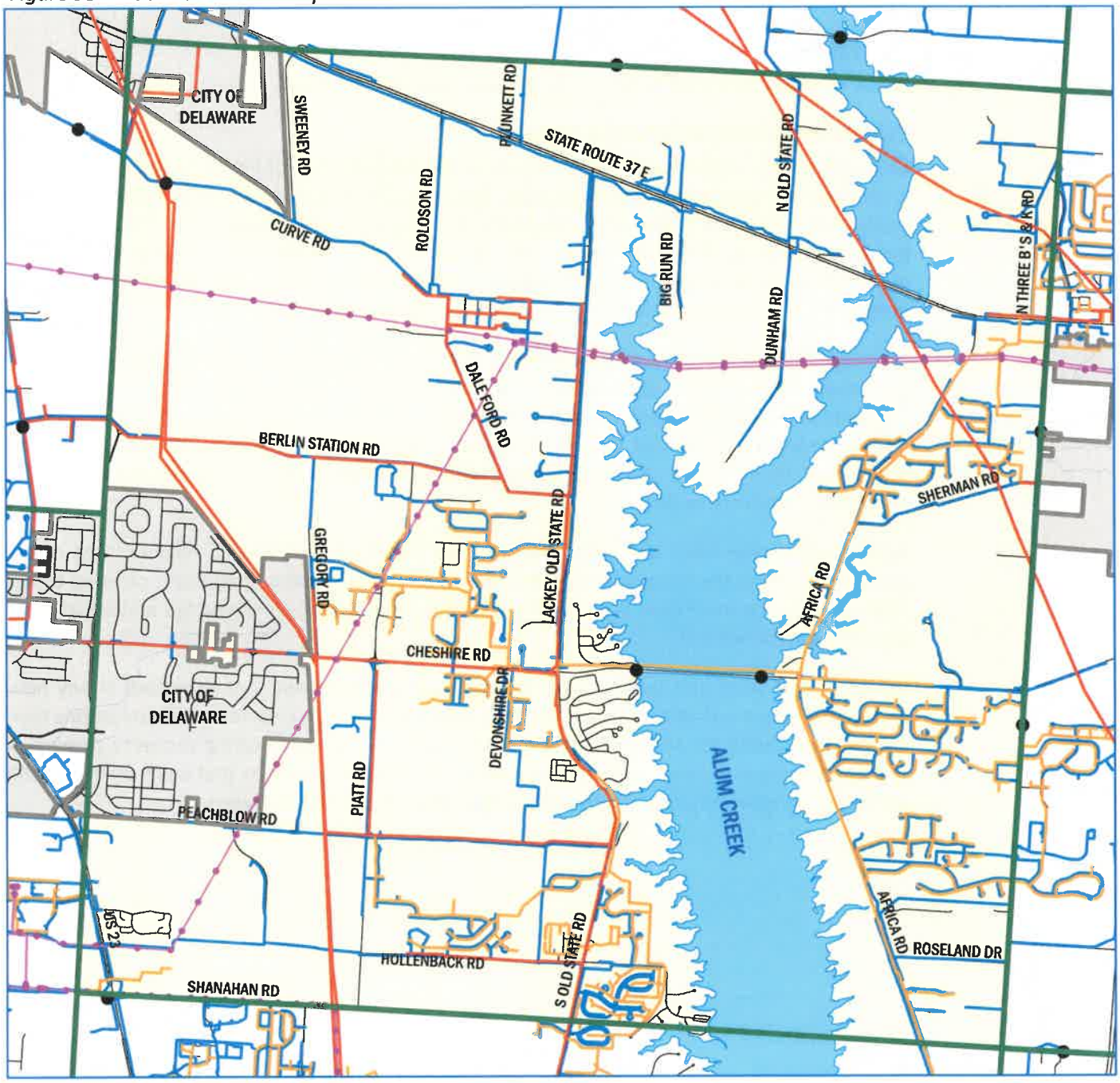
Based on private sector marketing information, the southern half of Berlin Township is generally serviced by high-speed Cable broadband. Similarly, the southern half of the Township is generally serviced by DSL broadband, along with the area surrounding Kilbourne. The Township is entirely serviced by Fixed Wireless broadband, almost all of which is served by NexGenAccess. In all, the whole Township, by one broadband technology or another, has access to at least 10 megabytes per second download, 1 megabyte per second upload.

Delaware County has a robust fiber network from the county offices to Worthington, including a number of lateral builds off that main line. This network, intended solely for government use, connects several public agencies with capacity to expand connectivity to other public agencies not yet connected, provided they pay the cost of adding lateral fiber to the main lines. This public limitation is based on the statutory authority of the County and the desire to not compete with the private sector.

Additionally, Enlite Fiber Networks (part of Consolidated Electric) owns fiber in most of the same locations as the County as well as many more miles of additional fiber, catering to the private sector. Connect Ohio is an effort led by the State of Ohio to encourage additional infrastructure where needed.

Under current state and federal laws, telecommunications towers are permitted in any non-residentially zoned districts. Under Ohio law, townships can regulate telecommunications towers in areas zoned for residential use if objections are filed by abutting property owners or Township Trustee. Brown Township has a set of cell tower regulations that were drafted to implement the federal and state laws regulating telecommunications towers.

Figure 9B.4 Utilities Service Map



Utilities Service

Berlin Township, Delaware County, Ohio

0 1000 2000 3000 4000 5000 Feet

Prepared By: Delaware County Regional Planning Commission (740-368-1960)
(5/7/2018)

- Township Boundary
- Incorporated Areas
- Bridge locations
- Power Poles
- Power Lines
- Gas Lines
- Sewer Lines
- DELCO Waterlines
- Road Centerlines
- Rivers / Lakes
- Streams / Drainage Courses

Chapter 10A
Community Facilities
Delaware County

General

Community Facilities can include a number of items that create quality of life in a community. These facilities are usually public, but may represent other features that bring value to the community, such as historic sites. Based upon the complexity of local government, ownership and responsibility of these facilities can include township, county, municipal, and other organizations. This chapter is by no means exhaustive.

Schools (post K-12)

Delaware Area Career Center (DACC)

Delaware City and County boards of education established the Joint Vocational School in 1974 as a career/technical school to offer specific career training to Delaware County residents. The center, now called the Delaware Area Career Center, provides career training and academic instruction to over 650 area High School juniors and seniors who desire skilled employment immediately upon high school graduation. The North campus is located at 1610 S.R. 521, Delaware. The DACC is combining programs into one campus at 4565 Columbus Pike, Delaware, Ohio 43015 (740) 548-0708.

Columbus State

In 2008, Columbus State built a Delaware County campus at 5100 Cornerstone Drive in the Park at Greif and U.S. 23. The 80,000 square foot building opened in the autumn of 2010 and offers four Associate Degree programs.

Effect of Land Use Planning on School Planning

(This section applies to local public schools) When schools become overcrowded due to rapid growth, there may be a call for growth controls, or limitations on residential building permits (moratoriums). A series of 1970s cases regarding growth rate limitations, the most famous of which is *Golden v. Ramapo* (1972), suggested that communities could control growth to allow new infrastructure to be built at a reasonable, attainable rate. Where upheld, moratoriums

have been temporary, based on a critical shortage of a basic community service. Cities and villages in Ohio have home rule authority which "provides the flexibility to experiment with different types of planning programs to respond to the issues of rapid growth" (Meck and Pearlman).

Since townships do not have the authority in Ohio to control their growth by moratoriums, and they do not have the authority to impose impact fees, their only recourse to overly rapid growth is to monitor critical facilities in making zoning decisions. While a decision cannot be based on any one facility, a township can consider a totality of factors when making a decision to rezone property.

Libraries

County residents can obtain a library card at any of the following libraries.

The Delaware County District Library has its downtown library at 84 E. Winter Street, Delaware, and branch libraries in the City of Powell at 460 S. Liberty Street, the Village of Ostrander at 75 N. 4th Street, and Orange Township at 7171 Gooding Boulevard. The District Library employs 98 people, or 68.75 full-time equivalents. Its annual budget is approximately $6.7 million, which is used for staff salaries and materials, maintenance, and operating expenses. 66% of the budget comes from a local property tax, 30% is generated from state income tax through the Public Library Fund, and the remaining 4% comes from grants, donations, investment earnings, and fees.

There are 126,000 residents in the Delaware District Library service area and 71,000 registered borrowers (borrowers can be outside of the district). The Library's service district comprises all of Delaware City, Olentangy Local, and Buckeye Valley Local School Districts (except the portion in Oxford Township), and portions of Centerburg, Elgin Local, Dublin, and Johnstown-Monroe Local School District that are in Delaware County. Currently, the District has 327,000 print volumes. The Library also offers millions of additional materials through digital resources and resource sharing programs like the Central Library Consortium and SearchOhio.

Ohio Wesleyan University, Beeghley Library is located at 43 University Avenue, Delaware and extends borrowing privileges to all residents of Delaware County.

Ashley Wornstaff Library is located at 302 E. High Street, Ashley.

Hospitals

Grady Memorial Hospital is located on Central Avenue in the City of Delaware. Some services have relocated to the future site of the Grady campus at the northeast corner of U.S. 23 and OhioHealth Boulevard. Grady competes with northern Franklin County Hospitals, such as Riverside Methodist Hospital, Olentangy River Road in Columbus, and St. Ann's in Westerville. Medical uses would be well suited for areas near the I-71 Interchange, along 36/37, and along Sawmill Parkway.

Chapter 10B
Community Facilities
Berlin Township

General

As noted in the county version of this chapter, Community Facilities can include a number of items that create quality of life in a community. These facilities are usually public, but may represent other features that bring value to the community, such as historic sites. Based upon the complexity of local government, ownership and responsibility of these facilities can include township, county, municipal, and other organizations. This chapter is by no means exhaustive.

Historic Sites

The data in Figure 11.3 indicates that there are no Berlin Township sites on the National Register of Historic Places. However, that does not indicate that there are no historic places in the township. The map indicates a number of structures which, based on the Auditor's data, were built in 1910 or earlier.

The unincorporated village of Cheshire was platted in 1858. It has a collection of older structures, some of which may be appropriate for preservation and restoration. Changes could also be made to the existing Old Cheshire PUD overlay to ensure that any redevelopment meets a number of architectural goals and standards.

There are several other scattered sites throughout the township where individual structures are of an age and quality that might qualify for historical designation, if not on a state level, perhaps at a local level.

Several "ghost towns" have been "located" in the township, based on research by Larry Durica. Alum Creek was a town which is mostly underwater. A former church can be seen on the east side of the reservoir at 36/37. Berlin Station was a railroad town at the Conrail tracks with a

grocery store, sawmill, wagon-maker's shop, church and a schoolhouse. The grocery was in business until 1940. Berlin was a "paper" town that was never developed on 36/37 near Baker Road and Sweeney Road. Gregory was a railroad town at Cheshire and the tracks. Jacktown was located at Africa Road south of Cheshire but is probably now under the reservoir. Other crossroads communities include Jones, Rust Corners, Saunder's Corners and Stewards Corners.

Cemeteries

A small number of cemeteries exists in the township. The size, ownership and type vary:

Figure 10B.1 Cemeteries

Site	Location	Detail
Fairview Memorial Park	U.S. 23, south of Peachblow Road	
Berlin Township Cemetery	3271 Cheshire Road	Owned by Township Trustees
Peachblow Church Cemetery	3247 Peachblow Road	Township Trustees (Historic)
Myers Cemetery	West of 225 N. 3 Bs and K Road	Historic

Source: Ohio Historical Society GIS data

Fire Protection

The Berlin Township Fire Department operates from a new facility located at 2708 Lackey Old State Road at the intersection of Cheshire Road. The Fire Department includes one full-time chief, one full-time firefighter, one part-time assistant chief, one part-time fire prevention officer and 21 part-time firefighters. Firefighters are trained in a variety of areas including Fire, EMS, Hazmat, Fire Inspection and Fire Investigation.

The Fire Station – corner of Lackey Old State and Cheshire Roads.

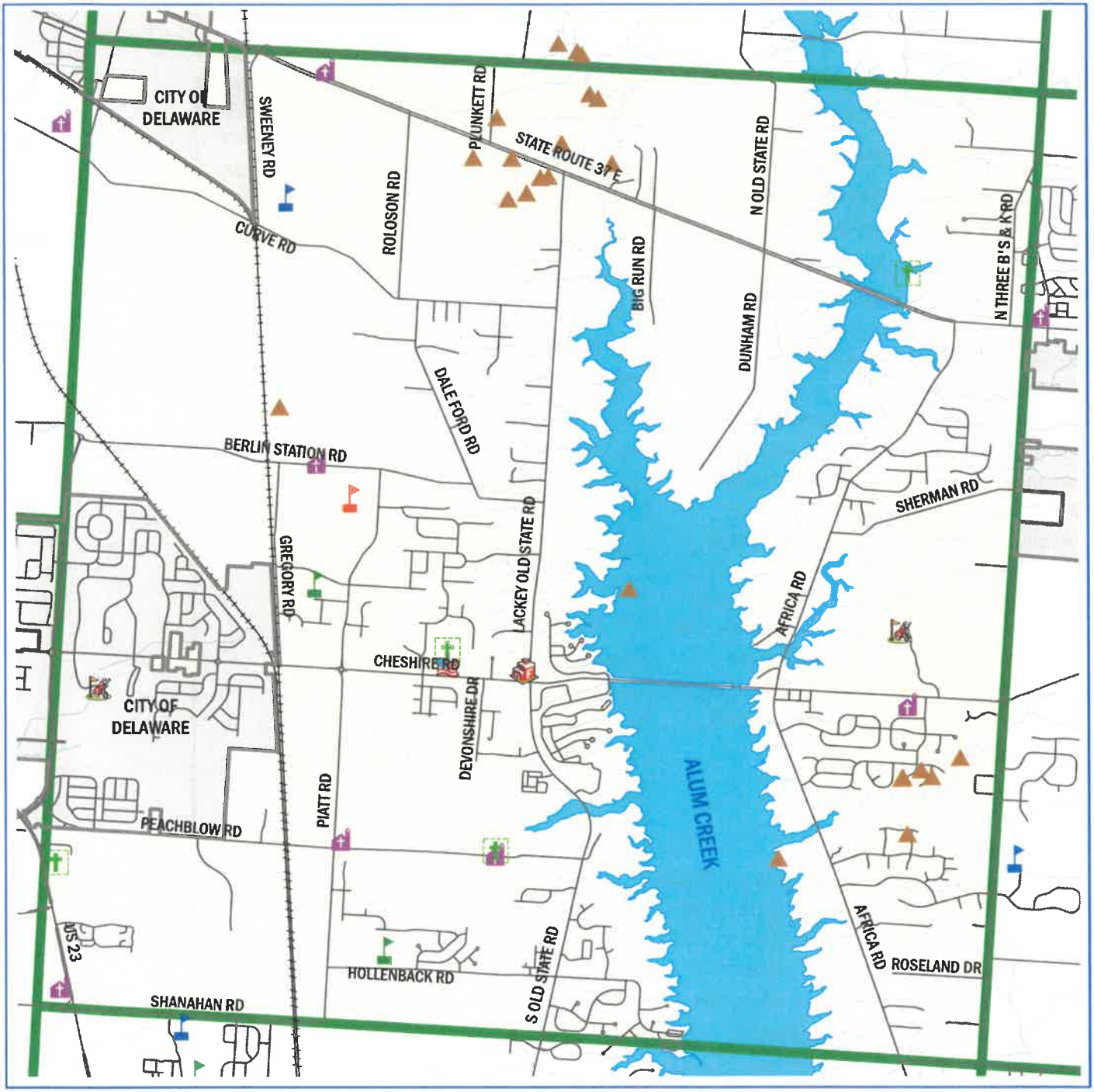
Delaware County EMS Medic 10 is housed in the Berlin Township Fire Station 390 and began 24-hour EMS coverage in 2006.

The Department's apparatus includes one Tanker/Pumper, one Engine/Rescue, one Grass/Utility Truck and a Rescue Boat. More specifically, the Fire Department has the following equipment for emergency responses:

- *Command Vehicle – 2011 Ford Excursion with 9-1-1 complaint communication equipment*
- *Engine 391 – 2005 E-One Fire Engine*
- *Engine/Tanker 392 – 1995 E-One*
- *Grassfighter 391 – 2003 F-350 4x4 250 gpm. 150-gallon water tank*

Boat 392, a 2008 Carolina Skiff

Figure 10B.2 Community Facilities



Community Facilities

Berlin Township, Delaware County, Ohio

0 1000 2000 3000 4000 5000 Feet

Prepared By: Delaware County Regional Planning Commission (740-368-1960)
(5/7/2018)

- Township Boundaries
- Incorporated Areas
- Rivers/Ponds/Lakes
- Streams
- Golf Courses
- Churches
- ELEMENTARY SCHOOL
- HIGH SCHOOL
- MIDDLE SCHOOL
- Township Hall
- Cemeteries
- Historical Sites
- Archeological Sites
- Post Office
- Library
- Fire Stations

- *Boat 391 – Zodiac*
- *Boat 392 – 2008 Carolina Skiff*
- *Utility 391 – 2003 Dodge Durango*
- *Delaware County EMS Medic 10 – 1999 F-350 Horton Ambulance*

The Department has a number of goals pertaining to future development. Many goals have to do with improvements in water pressure and delivery, such as installation of new water mains, increasing fire hydrants, looping existing lines, additional water towers and pumping stations and encouraging dry hydrants in areas where there is not an adequate supply of water. Other goals include requiring sprinklers in multi-family buildings and encouraging sprinklers in single-family dwellings. Staff goals include increasing the staffing level to provide on-duty firefighters 24 hours a day, seven days a week. Finally, the chief would like to see the Zoning Code include regulations that are not in the Ohio Fire Code but are allowed to be instituted by the authority having jurisdiction.

Police

Berlin Township is policed by the Delaware County Sheriff's Office, (DCSO) with headquarters in the City of Delaware on North Sandusky Street, with enforcement services headquartered on State Route 42. The Patrol Division provides law enforcement to all jurisdictions within Delaware County. Patrols offer investigation of criminal offenses, crime prevention, and traffic enforcement. DCSO also has a division for detective services, support services, youth education and specialty units.

Figure 10B.3 Sheriff's Complaints for Berlin Township

	2017	2018	2019
Traffic Stop	147	355	276
Domestic	35	36	28
Theft/Larceny & In Progress	12	16	25
Harassment/Threats	9	10	17
Theft Of Identity	16	14	11
Suicide Attempt	13	18	18
Juvenile-Unruly/Runaway	10	16	15
Breaking & Entering	10	18	13
Vandalism	6	9	6
Mental Health Crisis	5	4	11
Burglary & In Progress	5	1	6
Theft Of Credit Card/Number	5	7	1
Vandalism To Vehicle	2	1	2
Theft From Vehicle	5	5	7
Sex Offense	5	3	5
Suspicious Person/Vehicle	11	10	13
Stolen Vehicle	3	2	1
Drug / Narcotic	2	3	2
Animal Call	4	8	1
Rape	1	0	0
Fight	1	0	1
Drunk	1	2	0
D.O.A	2	2	7
Suspicious Activity	3	4	2
Suicide	0	2	1
Missing Person	2	2	2
Loud Disturbance	3	0	0
Forgery/Bad Check	2	2	4
Assault	3	5	0
TOTAL	**323**	**555**	**475**

Township crime has been flat overall, at least between 2018 and 2019. The Table at right shows the breakdown of incidents by year, according to the 2018 Delaware County Sheriff's Office Annual Report.

Each jurisdiction's rate of incidents is relatively consistent, with no patterns between population sizes and rates of incidents. For example, the most populated Township, Orange Township, has a rate of 13.79 persons per incident. Marlboro Township, on the other hand, is one of the least populated Townships and has a rate of 7.9 persons per incident. This metric is one to keep track of as the Township grows, or as growth occurs in the area.

Township Facilities

The Township Hall is located at 3271 Cheshire Road and, until recently, shared the building with the Township Fire Department. The building includes several offices and a sufficient public meeting area. With the growth of the township the facilities will eventually need to be expanded. See Figure 11.5 for a map that combines Township Facilities along with the Fire Station and Schools.

Berlin Township Hall

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Chapter 10C
Olentangy Local School District
Community Facilities

The Olentangy Local School District is located entirely within Delaware County, situated primarily in the southern and central parts of Delaware County which have developed rapidly. The district's boundaries includes all of Berlin, Orange, and Liberty Townships, and some of Genoa, Berkshire, Concord, and Delaware Townships. The district also includes the City of Powell and parts of the Cities of Columbus and Delaware.

Enrollment

Unlike some of the other school districts in Delaware County, enrollment over the last 10 years has generally increased every year. Increases in student enrollment has mostly been between 3 and 4%, year-over-year. However, in the 2018/19 school year, enrollment increases slowed to between 2 and 3%, and actually declined in the most recent year of data (2020/21 school year). Despite the recent minor decline, enrollment is anticipated to increase due to the significant residential development pressures in the Olentangy School District boundaries.

Current enrollment indicates that the Olentangy City School District has a distribution of students that is heavily weighted among the elementary schools with almost half of the District's student body enrolled in grades K through 5. The enrollment skew towards elementary aged school kids may indicate a growing number of younger families within the school district in general.

The student base is also predominately white, non-Hispanic (though less than other school districts in Delaware County) at nearly 70% of the total enrollment. Funding educational

Table 10C.OLEN Historic Enrollment

Grade	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Pre-K through Grade 5	8,963	9,037	9,151	9,344	9,316	9,441	9,646	9,963	10,187	9,871
Grades 6 through 8	3,898	4,165	4,413	4,589	4,832	5,021	5,141	5,083	5,099	5,082
Grades 9 through 12	4,202	4,511	4,753	5,111	5,511	5,857	6,184	6,512	6,794	6,956
Ungraded	*0*	*0*	*12*	*0*	*0*	*12*	*25*	*11*	*0*	*0*
Total Enrollment	**17,063**	**17,713**	**18,329**	**19,044**	**19,659**	**20,331**	**20,996**	**21,569**	**22,080**	**21,909**
% Change from Previous Year		3.8%	3.5%	3.9%	3.2%	3.4%	3.3%	2.7%	2.4%	-0.8%

Table 10C.OLEN.2 Current Enrollment and Demographics

Enrollment		Percentage
Demographics		
Total Students	21,963	
Native American	-	-
Asian or Pacific Islander	*3,503*	*15.9%*
Black, Non-Hispanic	*963*	*4.4%*
Hispanic	*912*	*4.2%*
Multi-Racial	*1,352*	*6.2%*
White, Non-Hispanic	*15,233*	*69.4%*
Students with Disabilities	2,878	13.1%
Economically Disadvantaged	1,297	5.9%
Limited English Proficiency	768	3.5%
Building Enrollment		
Total Students	21,909	-
Olentangy Elementary Schools	9,871	45.1%
Alum Creek	*540*	*2.5%*
Arrowhead	*706*	*3.2%*
Cheshire	*739*	*3.4%*
Freedom Trail	*598*	*2.7%*
Glen Oak	*675*	*3.1%*
Heritage	*696*	*3.2%*
Indian Springs	*577*	*2.6%*
Johnnycake Corners	*719*	*3.3%*
Liberty Tree	*586*	*2.7%*
Oak Creek	*676*	*3.1%*
Olentangy Meadows	*712*	*3.2%*
Scioto Ridge	*590*	*2.7%*
Tyler Run	*655*	*3.0%*
Walnut Creek	*666*	*3.0%*
Wyandot Run	*736*	*3.4%*
Olentangy Middle Schools	5,082	23.2%
Berkshire	*1,139*	*5.2%*
Hyatts	*889*	*4.1%*
Olentangy Liberty	*988*	*4.5%*
Olentangy Orange	*1,067*	*4.9%*
Olentangy Shanahan	*999*	*4.6%*
Olentangy High Schools	6,956	31.7%
Olentangy Berlin	*1,451*	*6.6%*
Olentangy	*1,516*	*6.9%*
Olentangy Liberty	*1,979*	*9.0%*
Orange	*2,010*	*9.2%*

Table 10C.OLEN.3 Performance Grades

Component	Grade
Achievement	B
Graduation Rate	A
Progress	A
Gap Closing	A
Improving At-Risk K-3 Readers	C
Prepared for Success	B

Table 10C.OLEN.4 Educator Information

Informational Metric	Value
Attendance Rate	95.8%
Salary (Average)	$78,584
Years of Experience (Average)	12
w/ a Bachelors' Degree	100.0%
w/ a Masters' Degree	78.3%

opportunities for the disabled and providing resources for economically disadvantaged students is far less of an issue than other districts in Delaware County, with 13% of the student body having a disability, and only 6% being disadvantaged economically. To protect student identities, some of the reported data may not add up to or equal 100%, or reflect exact comparisons with other metrics.

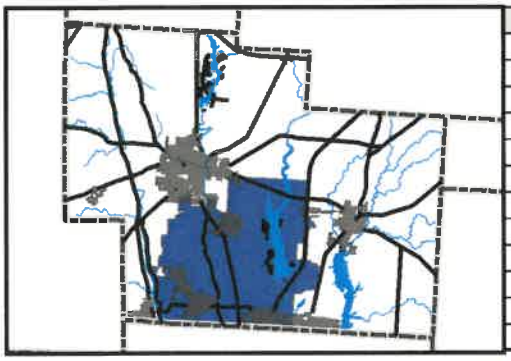
Student and Teacher Performance Metrics

The Ohio Department of Education performs an annual evaluation of local school districts based on a Performance Index and a number of Indicators. Due to the COVID-19 pandemic, the full indicators for each grade 2019-2020 were unavailable. The following figures illustrate the Olentangy Local School District's academic rankings by component. The Olentangy Local School District's grades were high, with three areas receiving "A" ranks: "Graduation Rate",

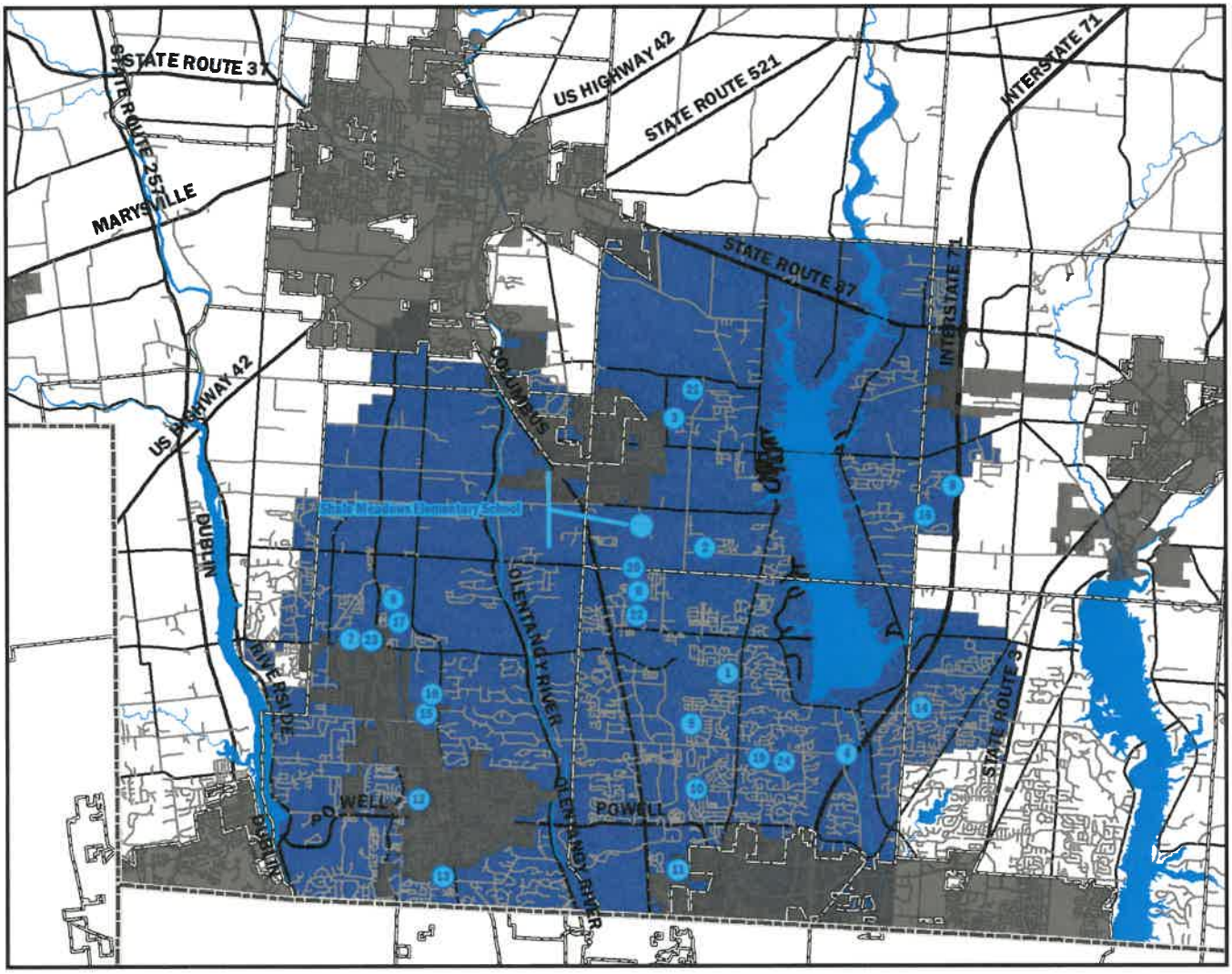
Table 10C.OLEN.5 Funds and Spending

Source of Funding	Amount
Local	$199,267,760
State	$34,338,924
Federal	$12,358,249
Other	$39,601,900
Total	$285,566,833
Source of Funding Per Pupil	**Amount**
State and Local Funds	$10,242
Federal Funds	$279
Other Funds	$0
Total	$10,521
Spending Per Pupil	**Amount**
Classroom Instruction	$7,929
Non-Classroom Costs	$2,592
Total Cost per Pupil	$10,521

Map 10C.OLEN.1 Olentangy School District



Label	School	Label	School
1	Alum Creek Elementary School	13	Tyler Run Elementary School
2	Arrowhead Elementary School	14	Walnut Creek Elementary School
3	Cheshire Elementary School	15	Wyandot Run Elementary School
4	Freedom Trail Elementary School	16	Berkshire Middle School
5	Glen Oak Elementary School	17	Olentangy Hyatts Middle School
6	Heritage Elementary School	18	Olentangy Liberty Middle School
7	Indian Springs Elementary School	19	Olentangy Orange Middle School
8	Johnnycake Corners Elementary School	20	Olentangy Shanahan Middle School
9	Liberty Tree Elementary School	21	Olentangy Berlin High School
10	Oak Creek Elementary School	22	Olentangy High School
11	Olentangy Meadows Elementary School	23	Olentangy Liberty High School
12	Scioto Ridge Elementary School	24	Olentangy Orange High School



Olentangy School District

Delaware County

0 0.75 1.5 3 Miles

- Schools
- Olentangy School District
- Rivers/Lakes/Streams
- Incorporated Area
- Township Boundaries
- County Boundaries

Prepared by: Delaware County Regional Planning Commission (740-833-2260)
www.dcrpc.org (3/5/2021)

"Progress", and "Gap Closing." There was only one weakest component that received a "C" rank: "Improving At-Risk K-3 Readers."

In addition to the Student Performance Grades, the Ohio Department of Education does a profile on the educators for the district. The educators for the Olentangy Local School District's have—on average—12 years of experience, and are highly educated. All Olentangy School District educators have received a Bachelor's Degree, and over 75% have received a Master's Degree. The combination of experience and educational attainment lend to the higher average salary when compared to other districts, at $78,584.

Current Facilities

The district maintains 25 academic facilities:

- **Alum Creek Elementary School:** 2515 Parklawn Drive, Lewis Center;
- **Arrowhead Elementary School:** 2385 Hollenback Road, Lewis Center;
- **Cheshire Elementary School:** 2681 Gregory Road, Delaware;
- **Freedom Trail Elementary School:** 6743 Bale Kenyon Road, Lewis Center;
- **Glen Oak Elementary School:** 7300 Blue Holly Drive, Lewis Center;
- **Heritage Elementary School:** 679 Lewis Center Road, Lewis Center;
- **Indian Springs Elementary School:** 3828 Home Road, Powell;
- **Johnnycake Corners Elementary School:** 6783 Falling Meadows Drive, Galena;
- **Liberty Tree Elementary School:** 6877 Sawmill Parkway, Powell;
- **Oak Creek Elementary School:** 1256 Westwood Drive, Lewis Center;
- **Olentangy Meadows Elementary School:** 8950 Emerald Hill Drive, Lewis Center;
- **Scioto Ridge Elementary School:** 8715 Big Bear Avenue; Powell;
- **Tyler Run Elementary School:** 580 Salisbury Drive, Powell;
- **Walnut Creek Elementary School:** 5600 Grand Oak Boulevard, Galena;
- **Wyandot Run Elementary School:** 2800 Carriage Road, Powell;
- **Berkshire Middle School:** 2869 South Three B's & K Road, Galena;
- **Olentangy Hyatts Middle School:** 6885 Sawmill Parkway, Powell;
- **Olentangy Liberty Middle School:** 7940 Liberty Road, Powell;
- **Olentangy Orange Middle School:** 2680 East Orange Road, Lewis Center;
- **Olentangy Shanahan Middle School:** 814 Shanahan Road, Lewis Center;
- **Olentangy Berlin High School:** 3140 Berlin Station Road, Delaware;
- **Olentangy High School:** 675 Lewis Center Road, Lewis Center;
- **Olentangy Liberty High School:** 3584 Home Road, Powell; and
- **Olentangy Orange High School:** 2480 East Orange Road, Lewis Center

The Olentangy School District also opened a new elementary school in the 2021/22 school year. Shale Meadows Elementary School is located at 4458 North Road. Data regarding the

Olentangy School District did not include any information from Shale Meadows Elementary School, as the school is too new to have been included in any of the tabulated information.

Financial Information

The Olentangy Local School District reported a 2021 total revenue of approximately $285.5 million, including approximately $199.3 million in local funds and approximately $34.3 million in state funds. For the District Spending Per Pupil, the total was approximately $10.5 thousand.

Chapter 11A
Open Space
Delaware County

Introduction

The Ohio Revised Code acknowledges the importance of open space and recreation in both the zoning and subdivision enabling legislation. ORC 519.02 states that the trustees may regulate by [zoning] resolution "sizes of yards, courts, and other open spaces ... the uses of land for ... recreation." ORC 711 states that "a county or regional planning commission shall adopt general rules [subdivision regulations] ... to secure and provide for ... adequate and convenient open spaces for ... recreation, light, air, and for the avoidance of congestion of population."

The importance of open space and recreation has long been recognized. In the 1850s the City Beautiful Movement advocated public parks as retreats from the congestion and overcrowding of city life. New York's Central Park (1856, Frederick Law Olmstead, Sr.) is the best known American example. Many desirable communities in America have a significant park and recreation system as one of their building blocks.

The Subdivision and Site Design Handbook (David Listokin and Carole Walker, 1989, Rutgers, State University of New Jersey, Center for Urban Policy Research) is considered a planner's bible for many accepted standards in subdivision review. The chapter on open space and recreation relates the following critical functions of open space:

- Preserving ecologically important natural environments
- Providing attractive views and visual relief from developed areas
- Providing sunlight and air
- Buffering other land uses
- Separating areas and controls densities
- Functioning as a drainage detention area
- Serving as a wildlife preserve
- Providing opportunities for recreational activities
- Increasing project amenity
- Helping create quality developments with lasting value

The economic benefits of open space cannot be overstated. Undeveloped land demands fewer community services and requires less infrastructure than suburban-style development. There is an old adage that says "cows do not send their children to school," which emphasizes the fact that farms and other types of open lands generate more in property taxes than the services they demand. And given the evidence that single-family housing rarely "pays its own way" through additional property tax revenues, open space becomes an important part of a local government's economic outlook. *(Source: The Economic Benefits of Parks and Open Space, TPL, 1999)*

Open Space Defined

Listokin and Walker define open space as: "Essentially unimproved land or water, or land that is relatively free of buildings or other physical structures, except for outdoor recreational facilities. In practice, this means that open space does not have streets, drives, parking lots, or pipeline or power easements on it, nor do walkways, schools, clubhouses, and indoor recreational facilities count as open space. Private spaces such as rear yards or patios not available for general use are not included in the definition either."

"Open space is usually classified as either developed or undeveloped. Developed open space is designed for recreational uses, both active and passive, whereas undeveloped open space preserves a site's natural amenities."

Land Area Guidelines

The National Recreation and Park Association (NRPA) has standards for local open space. Although these standards have been promoted as goals, they are not universally applicable. Recreational needs vary from community to community, and desires for recreation vary also.

Listokin and Walker note that: "Ideally, the [NRPA] national standards should stand the test in communities of all sizes. However, the reality often makes it difficult or inadvisable to apply national standards without question in specific locales."

Location of Open Space Parcels

The authors note what has been the subject of many debates in the developing parts of the County, namely that: "Open space parcels should be easily accessible by development residents. In smaller developments, one large, centrally located parcel may suffice; but a large development may require several parcels, equitably distributed. Linking open space parcels is a good strategy, because it enlarges the area available for recreation. Parcels containing noise generators, such as basketball courts or playgrounds, should be sited to minimize disturbance to residents. The authors suggest that "No general standard can specify the amount of open space that should remain undeveloped: a determination will depend on the particular development site."

Recommendations at Build–Out

- Overall active recreational area required - NRPA recommends 6.25-10.5 acres /1,000 population. Use the lower ratio because of the existence of Alum Creek State Park, Hoover Reservoir, and Big Walnut Creek.
- Establish mini parks of 1 acre or less within neighborhoods, serving the population within a ¼ mile radius (these should be developer dedications as part of the PRD zoning).
- Establish neighborhood parks of 15 acres, with field games, play ground apparatus, serving the population within a ¼ to ½ mile radius.
- Establish a community park of 25-50 acres (when built out) with an athletic complex, large swimming pool, and recreational fields.

Preservation Parks receives a 0.4 mills levy, which is expected to generate about $900,000 per year for parks. Some of that money is set aside for townships and municipalities to develop parks. Townships can apply for this funding.

Greenways

An inexpensive way to provide undeveloped open space is to assure the linkage of neighborhoods by greenways, or corridors of natural or man-made landscaped paths, and trails. These can be placed along drainage ways, creeks, sewer easements, and portions of the land that cannot be otherwise developed. These paths can maintain undisturbed wildlife habitat or create new habitat through plantings and creative use of stormwater retention and detention facilities. Instead of afterthoughts in the design and planning process, they should be viewed as opportunities to improve the value of the development and link developments.

NRPA Recreational Standards

Excerpted from *The Subdivision and Site Plan Handbook*, David Listokin and Carole Walker, copyright 1989, Rutgers, State University of New Jersey, Center for Urban Policy Research, New Brunswick, New Jersey. This classification system is intended to serve as a *guide* to planning – not as a blueprint.

Figure 35. NRPA Recommended Standards for Local Developed Open Space

Component	*Use*	*Service Area*	*Desirable Size*	*Acres / 1,000 Population*	*Desirable Site Characteristics*
LOCAL / CLOSE-TO-HOME SPACE					
Mini-Park	Specialized facilities that serve a concentrated or limited population or specific group, such as tots or senior citizens.	Less than ¼ mile radius	1 acre or less	0.25 to 0.5 acres	Within neighborhoods and in close proximity to apartment complexes, townhouse developments, or housing for the elderly.
Neighborhood Park / Playground	Area for intense recreational activities, such as field games, craft, playground apparatus area, skating, picnicking, wading pools, etc.	¼ to ½ mile radius to serve a population up to 5,000 (a neighborhood)	15+ acres	1.0 to 2.0 acres	Suited for intense development. Easily accessible to neighborhood population – geographically centered with safe walking and bike access. May be developed as a school-park facility
Community Park	Area of diverse environmental quality. May include areas suited for intense recreational 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.	Several neighborhoods 1 to 2 mile radius	25 + acres	5.0 to 8.0 acres	May include natural features, such as water bodies, and areas suited for intense development. Easily accessible to neighborhood served.
TOTAL CLOSE-TO-HOME SPACE = 6.25-10.5 acres / 1,000 population					

Source: National Recreation and Park Association, *Recreation, Park and Open Space Standards and Guidelines*

Chapter 11B
Open Space
Berlin Township

Introduction

Berlin Township is blessed with a large park that provides passive (undeveloped) open space and active (developed) open space through the center of the township. It does not, however, provide recreational fields for organized sports.

Alum Creek State Park

Alum Creek State Park comprises 8,874 acres principally within Orange, Berlin, and Brown Townships. A smaller portion of the park is located in Genoa Township. Access to the park is from Africa Road, S. Old State Road, and from U.S. 36.

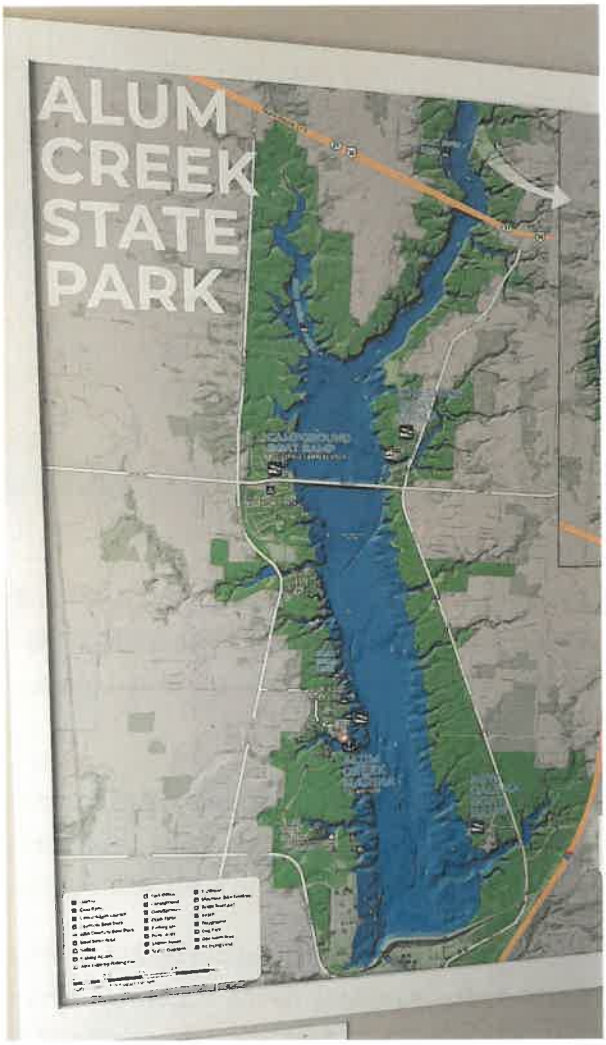
The lake was created by impoundment of Alum Creek behind an earthen levy and concrete flood control dam built by the U.S. Army Corps of Engineers from 1970 to 1973. The dam is 93 feet high and 10,500 feet long between the levies. The lake has a depth range of 65-78 feet.

Today, Alum Creek Lake serves five purposes:

- Flood control
- Water supply (40 million gallons per day)
- Fish and wildlife enhancement
- Water Quality
- Recreation

Recreational opportunities at Alum Creek are shown on the *Ohio Department of Natural Resources' Map* and may be itemized as follows:

- **Land (entire park):** 5,213 acres, Hiking Trails – 7.1 miles, one multi-use trail – 7 miles, Bridle Trails – 38 miles, Mountain Bike Trails – 14 miles
- **Campground:** 286 sites, including 24 RV sites, 5 camper cabins
- **Lake:** 3,387 acres, Boat Launching Ramps – 5, Unlimited horsepower for boats, Swimming Beach – 3,000 feet (largest inland beach in Ohio's state park system), Easement – 239 acres, Drainage Basin – 123.4 square miles
- **Disc Golf:** 18-hole "players course" is located at the New Galena Launch Ramp area.
- **Dog Park:** 4-acre site along the lake near the marina includes a fenced area with water access and two additional fenced areas for small and large dogs.



Wall Map at the Alum Creek Marina

- **Picnicking:** 8 scenic picnic areas with tables, grills, restrooms, and drinking water, three of which area shelterhouses maintained by the Army Corps.

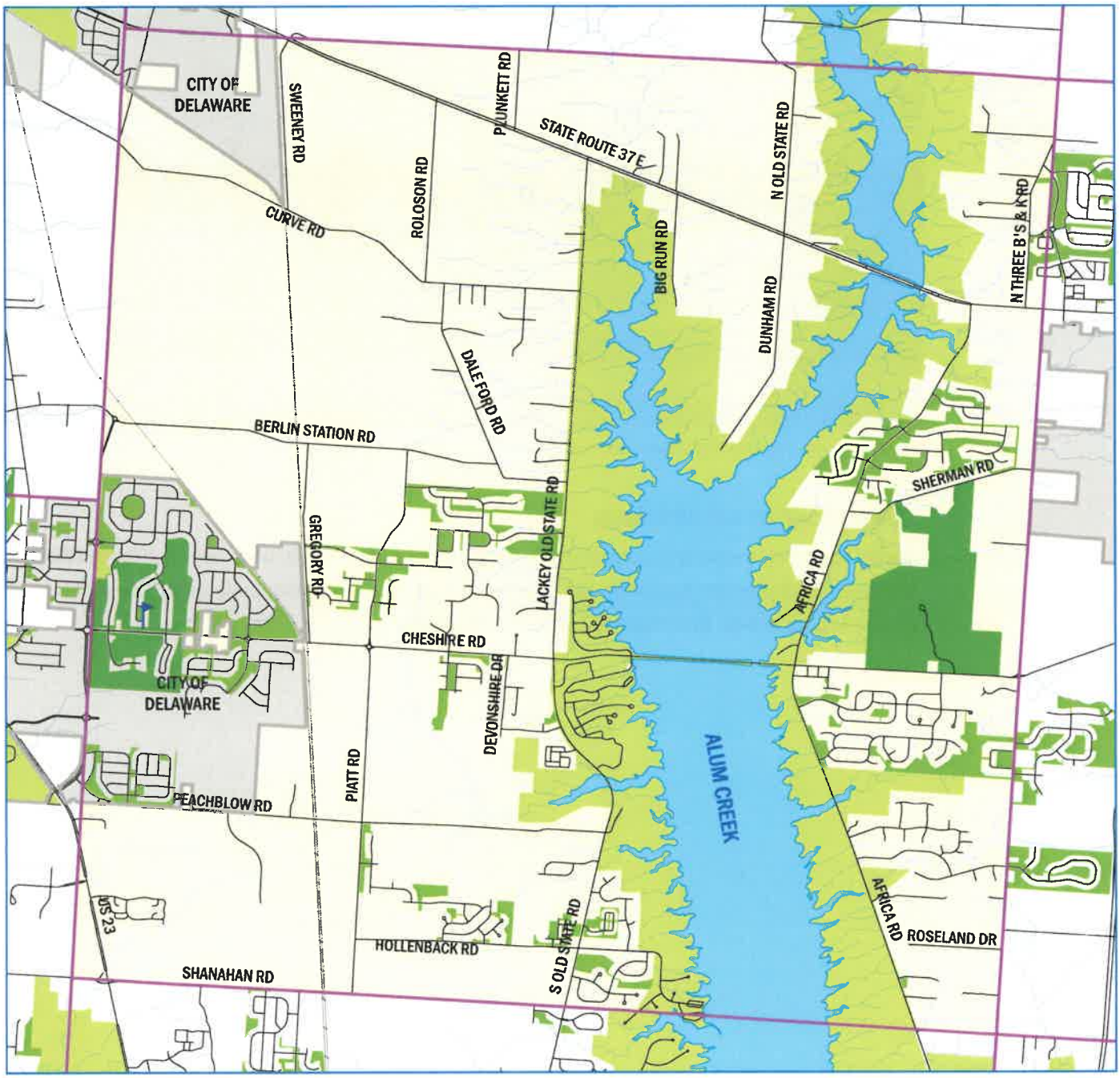
Park personnel estimate that over 4,000,000 annual visitors use the park. While the park serves a regional function, it is also serving as a de facto township park.

Central Open Space in The Pines subdivision

Open space in subdivisions

Berlin Township's zoning code requires a dedication of open space of between 20% and 40% of the overall subdivision, based on the specific district and article language being used. This type of open space will be discussed elsewhere in this plan.

Figure 11B.1 Parks and Green Space Map



Parks and Green Space

Berlin Township, Delaware County, Ohio

0 1000 2000 3000 4000 5000 Feet

Prepared By: Delaware County Regional Planning Commission (740-368-1960)
(5/7/2018)

- Township Boundary
- Incorporated Area
- Development / Golf Course
- Public Golf Course
- Roads
- Railroad
- Rivers / Lakes
- Streams / Drainage Courses
- Parks
- Platted Open Space
- Golf Courses

Chapter 12A
Development Patterns
Delaware County

Rural Large-Lot Development

Residential development began along existing township and county roads. Many of these splits result in lots that are larger than 5 acres and simply recorded with the County with no review process. When land is split resulting in parcels that are smaller than 5 acres, a process called a "No Plat" or "minor" subdivision is required. These NPA subdivisions may be used to create no more than four lots from an original parcel (five including the residue, if smaller than 5 acres), and where there is no creation of new streets or easements of access. The ORC now allows review of lots up to 20 acres in size.

Large-lot development can occur on CAD subdivisions, which are three to five lots on a 12-foot wide gravel drive approved by the Regional Planning Commission. CAD subdivisions follow the same procedure as any other "major" subdivision, including the Sketch Plan, Preliminary Plan, and Final Plat steps. CAD standards are defined by the DCRPC and include a maximum grade of 10%, passing areas every 350 feet, tree and shrub removal specifications, and an easement width of 60 feet along the CAD. A private maintenance agreement must be recorded with the County as well.

(left) "No Plat" Lot splits in Berkshire where all lots have frontage on an existing road. (right) Hickory Woods in Genoa Township, a conventional subdivision with large lots.

Larger subdivisions that include paved private or public streets built to county standards can be developed as long as the lots conform to local zoning. Such larger scale subdivisions follow the same process as CAD developments. The developer or consulting engineer takes each project through an approval process with the Delaware County Regional Planning Commission staff as well as an engineering process with the oversight of the County Engineering staff.

Large acreage development, surrounded by woods and farm fields, has been generally accepted as helping retain rural character. However, township residents may find that if *all* rural lands were developed for 2- or 5-acre house lots, there would be no interconnecting open space, and the rural character would be destroyed. Development of large lots *everywhere* on township roads can lead to "rural sprawl."

Alternative Development Patterns

PRD Subdivisions

For years, cluster subdivisions, or "Planned Residential Developments," have been touted as an improved alternative to the conventional subdivision. Township PRDs can take the form of a rezoning or use an overlay system that defines allowable density based on the underlying zoning. The open space requirement is usually around 20-40%, depending on specific factors within the township.

In PRDs, greater design flexibility is obtained by reducing lot size and width. However, the absence of comprehensive standards for quantity, quality, and configuration of open space has permitted uninspired designs, which are reduced-scale conventional subdivisions.

The typical Delaware County PRD has often resulted in developments that do not fulfill community expectations for:

Killdeer subdivision west of I-71 in Berkshire Township

Open Space - PRD regulations usually include an open space requirement. Environmentally sensitive areas or unbuildable areas (wetlands, steep slopes, floodplains, stormwater detention basins, and utility easements) do not have to be delineated.

Useable Open Space - PRD subdivisions with small (7,200-10,000 square feet) lots have been created without any *useable* common open space. Scioto Reserve has little common or public open space. The golf course is private open space, for members only.

Density - The typical PRD ordinance defines a maximum density based on gross acreage. In townships throughout the County, this can be anywhere from 1 unit per gross acre to 2.2 units per gross acre or more. When undevelopable land such as powerline easements and road right-of-way are included in the allowable density, it has the effect of creating a much higher "net" density and smaller lot sizes.

Design - Large (300 units or more) Planned Unit Developments need a local pedestrian-oriented design with a possible local commercial and service core, active recreation area, and sidewalks/bike paths.

Harbor Pointe, Berlin Township. Note the preserved tree lines and open space at the entrance and distributed throughout the site.

Architectural Standards - To make higher density cluster subdivisions work, considerable thought needs to be given to the architecture, materials, façades, detailing, colors, and landscape features that will bind the neighborhood into a cohesive unit. Although such criteria are generally required, seldom does a land developer, who intends to sell the subdivision to a builder, bother to provide significant criteria. The result is either a jarring hodge-podge of different builders' standard production houses with no continuity of material or architectural syntax, or a blandness that results from a single builder using a limited number of home design options. Without specific standard criteria, the zoning commission must negotiate these details on an individual (and therefore, inconsistent) basis. Cluster housing demands greater advance planning and significant landscape architecture and architectural design elements.

Harbor Pointe is a Berlin Township planned residential development on 154 acres designed to modern standards of open space and environmental protection. With an overall density of 1.25 units per acre, Harbor Pointe saves sensitive areas, preserves useable open space, and connects neighborhoods with trails. Overall open space is 46 acres.

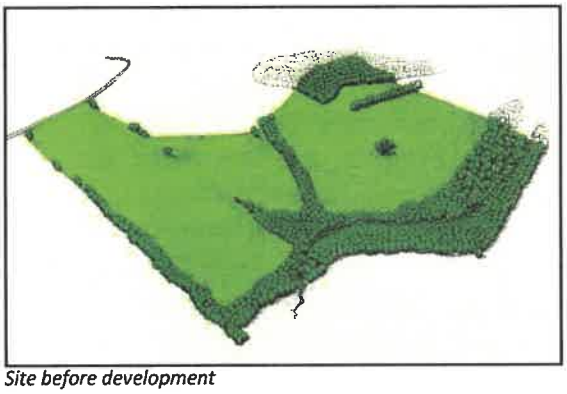
Conservation Subdivisions

Conservation Subdivisions are a form of rural cluster subdivisions where natural features and environmentally sensitive areas are excluded from development and preserved. Homes are clustered in the remaining areas. The term "Conservation Subdivision," as coined by author Randall Arendt (*Conservation Design for Subdivisions*, 1996, Island Press) requires the following elements:

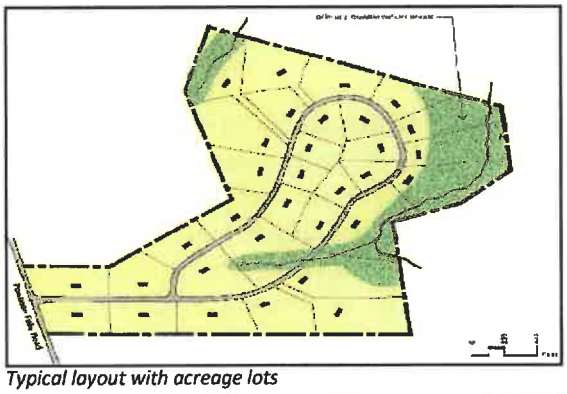
- 50% or more of the buildable land area is designated as undivided permanent open space.
- The overall number of dwellings allowed is the same as would be permitted in a conventional subdivision layout based on an alternative "yield plan."
- Primary Conservation Areas are protected as open space and may be deducted from the total parcel acreage to determine the number of units allowed by zoning on the remaining parts of the site. Primary Conservation Areas are highly sensitive resources that are normally unusable, such as wetlands, steep slopes, and floodplains.
- Secondary Conservation Areas are preserved to the greatest extent possible. Secondary Conservation Areas are natural resources of lesser value, such as woodlands, prime farmland, significant wildlife habitats, historic, archeological, or cultural features, and views into or out from the site.
- Compact house lots are grouped adjacent to the open space.
- Streets are interconnected to avoid dead ends wherever possible.
- Open space is interconnected and accessible by trails or walkways.

The Conservation Subdivision concept can be best described by looking at the following images.

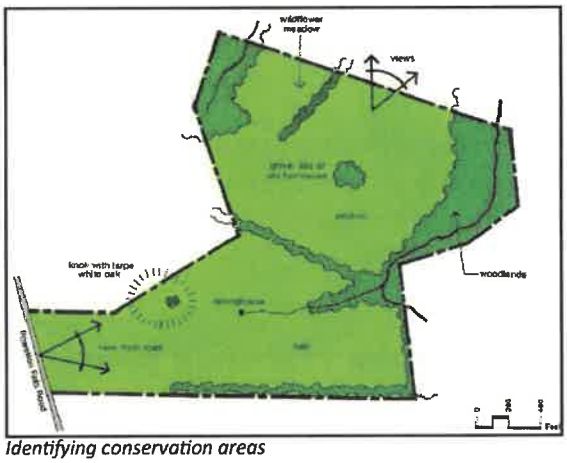
Some townships have taken the additional step by including the Conservation Subdivision standard in its zoning code, sometimes adopted pursuant to ORC Section 519.021(C), the "floating cloud" provision. This process overlays the Planned Residential Conservation Subdivision standards across all land zoned FR-1. It is a permitted use with the submission and



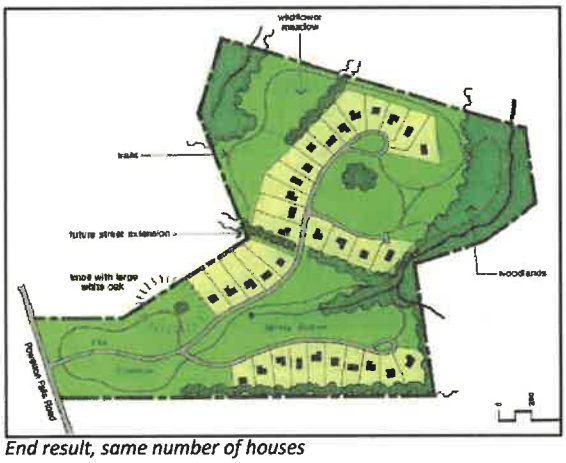
Site before development



Typical layout with acreage lots



Identifying conservation areas



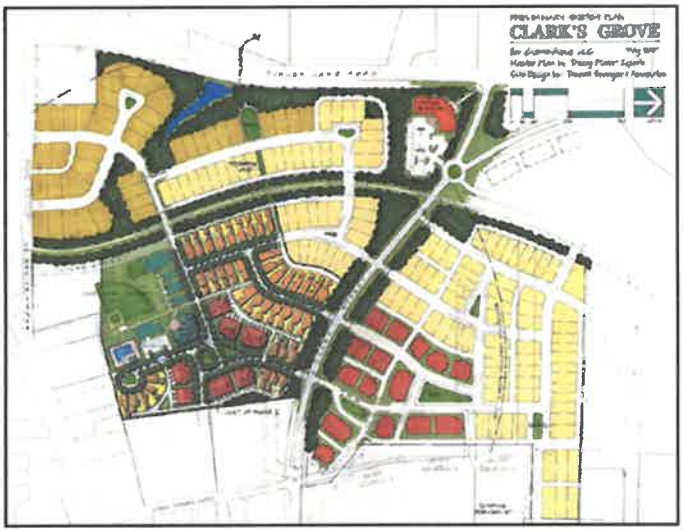
End result, same number of houses

approval of a Development Plan that meets a number of standards. The basics of these include:

- 10-acre project minimum size;
- Open space requirement of 50%, 15% of which shall be suitable for active recreation purposes;
- Density of 0.75 units per gross acre if sewer is available;
- Additional density to 0.85 units per acre if natural features make up less than 10% of the site and the developer has to create such features. Also, open space may be reduced to 40% in such cases.

New Urbanism - Traditional Neighborhood Development

Traditional Neighborhood Development (TND) is a reaction to conventional suburban development. A school of architects and planners, led by the firm Duany, Plater-Zyberk, and Calthorpe advocates a return to traditional design. A growing group of supporters make up "The New Urbanism," a movement based on principles of planning and architecture that work together to



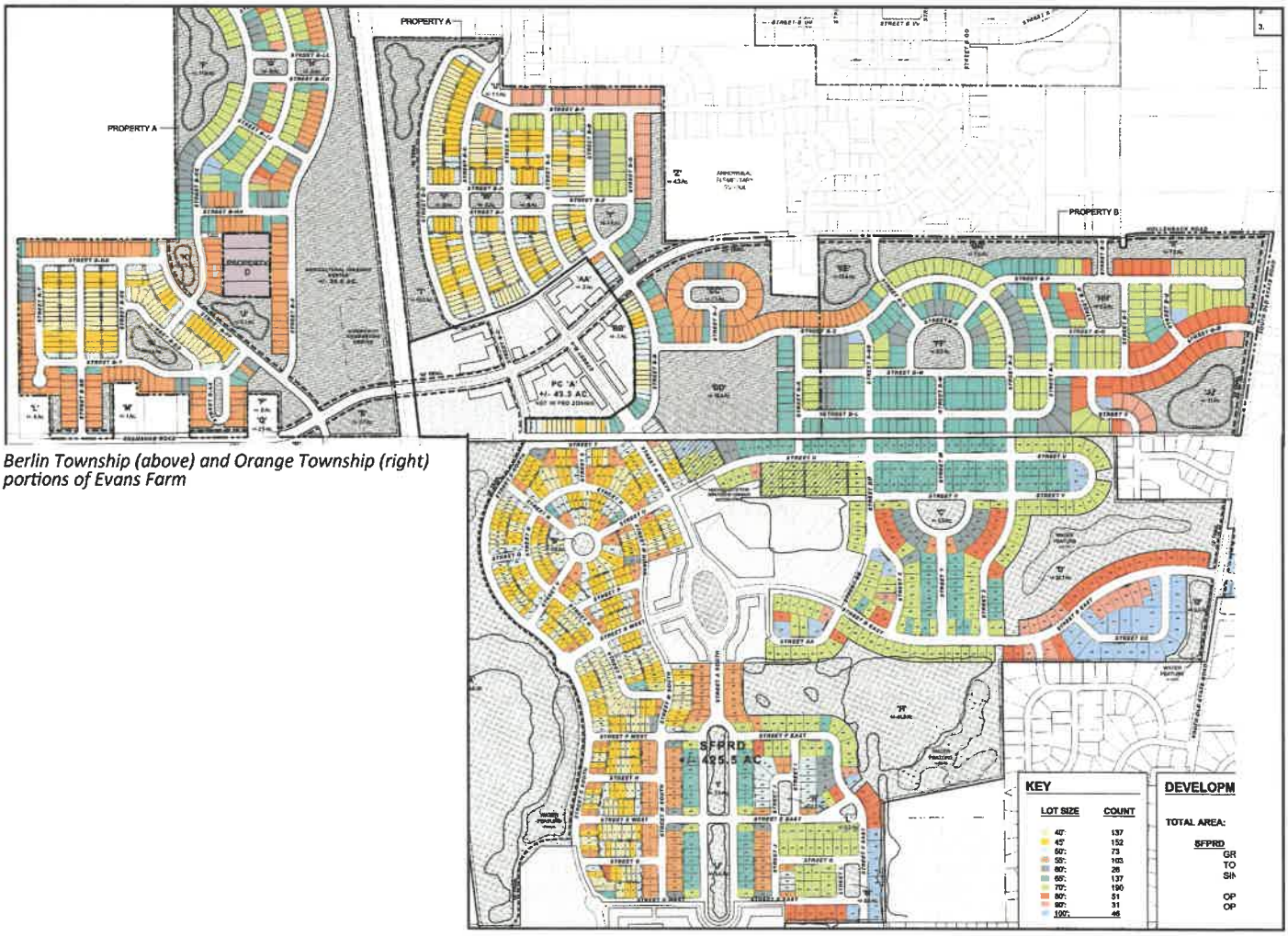
Clark's Grove, a development with a mixture of lot sizes in Covington, Georgia, is a small-scale TND surrounding a school and park site.

create human-scale, walkable communities similar to neighborhoods that were typical in the United States before World War II, such as Delaware's north end historic district and old Sunbury. Benefits of this type of development include reduced auto trips, more compact infrastructure, more efficient land-consumption, and potentially positive fiscal impact as values per acre tend to be much higher.

Clark's Grove features small shops with wide sidewalks surrounding a public square.

The heart of the New Urbanism can be defined by certain elements, according to the founders of the Congress for the New Urbanism. An authentic neighborhood contains most of these elements:

- The neighborhood has a discernible center. This is often a square or a green, and sometimes a busy or memorable corner. A transit stop would be located at this center.
- Most dwellings are within a five-minute walk of the center, an average of roughly 2,000 feet.



Berlin Township (above) and Orange Township (right) portions of Evans Farm

- There is a variety of dwelling types — houses, townhouses, and apartments — so that younger and older people, singles and families, the poor and the wealthy may find places to live.
- At the edge of the neighborhood, there are shops and offices of sufficiently varied types to supply the weekly needs of a household.
- A school is close enough so that most students can walk from their home.
- There are small playgrounds accessible to every dwelling — not more than a tenth of a mile away.

Streetscape at Easton

- Streets form a connected network, which disperses traffic by providing a variety of pedestrian and vehicular routes to any destination.
- The streets are relatively narrow and shaded by rows of trees. This slows traffic, creating an environment suitable for pedestrians and bicyclists.
- Buildings in the neighborhood center are placed close to the street, creating a well-defined outdoor room.
- Parking lots and garage doors rarely front the street. Parking is to the rear of buildings, accessed by alleys.
- Certain prominent sites at the termination of street vistas or in the neighborhood center are reserved for civic buildings. These provide sites for community meetings, education, and religious or cultural activities.

These elements combine to form the ideal form of TND as promoted by the New Urbanists.

Starting in 2016, the TND Evans Farm began to be reviewed and developed in Orange and Berlin Townships. The overall plan covers more than 1,100 acres and proposes over 2,000 single-family parcels of varying sizes, more than 500 other types of housing units, two commercial areas, a school site, parks, trails, and recreational features.

Best Management Practices

Best Management Practices are visual examples that demonstrate the positive design principles in the public realm. Visuals are used because defining design elements in a text-only format can be limiting, restrictive, and can result in a bland sameness. The following general principles enhance the quality and reflect development goals within commercial and other non -residential areas.

"Conventional" Residential Subdivisions

Conventional developments would require densities at a maximum of 2 units per acre, unless some multi-family is mixed in the overall development. Front setbacks of 30-35', no "snout houses" (fully projecting front load garages). Narrow residential streets with limited on-street parking. Separate residential uses from all other uses but include pedestrian access. At least 10% open space in the neighborhood, with small "pocket" parks.

Traditional Neighborhood Design Village Developments

Densities at 4-6 units per acre for moderate density villages and town centers with 2-3 story structures. Higher densities for town centers, with minimum front setbacks (0-15'). Houses

Setbacks	- "Core" Downtown: 0' setback - "Center" Residential Blocks 1-3: 15' setback - "Center" Blocks" 4-6: 20' setback - "General" beyond block 7: 30' setback
General Residential standards	Use of privacy walls on side lot lines. Brick, masonry best materials for party walls. Decorative iron fencing, or open picket wood fencing (no stockade, split rail, chain link fencing) in front court yards.
When smaller lots call for alleys	Garages access exclusively off alleys Setback off alley - 15' Alley width 14-20'
Road Design	Vertical curbs, enclosed drainage. Grid streets with an interconnecting pattern. Street widths wide enough for on-street parking, at least on one side. R.O.W. typically 60'. Traffic calming features (center islands with landscaping, eyebrow islands with landscaping), parks at block ends to divert traffic flow.
Housing Styles	Variety of styles and architecture. Highly detailed exteriors. Limited use of vinyl, or requirement for a higher-gauge vinyl siding.
Lot Design	Narrow, deep lots, that lend themselves to "shotgun" style houses with rear loading garages.
Uses	Mixture of residential and commercial as part of a town center, strict architectural controls and elements. At least 10% open space in the neighborhood, with many small "pocket" parks. Open space should be within direct view of at least 50% of all residential lots.

with 0-foot setback should require masonry construction. Maximum front setback - 15 feet. Lots on streets closest to the "Core" could have the shallowest setbacks, then increase setbacks as you move outward. For example:

The following images represent how some of these principles can be applied in both a formal town center development, and any setting where a quality "sense of place" is desired.

Site Furnishings

Given the suburban environment's preference to the automobile, developments rarely feature the site furniture that helps create a vibrant commercial destination. They can also be integrated into elements that serve to screen parking lots and adjacent uses. A consistency in furnishings can enhance the visual unity of the corridor. Such furnishings include lighting fixtures, trash receptacles, benches, and other usable structures. Furniture should be permanently installed, be vandal-resistant, have replaceable components, and be easily maintained. It should be of high quality design and "timeless" in style (image to the right). Seating should be located at logical resting points and situated so they do not block the internal walkway system.

Example of site furnishings

Buildings Form the Space of the Street

Buildings have the potential to create a shared public "room." The character and scale of these walls determine the character of the room. Continuous building frontage with active uses on a street creates a welcome space that supports pedestrian and economic activity. In typical suburban commercial developments where the building fronts on a vast expanse of paved parking, no such room is created.

Parking is incorporated into the site and street furnishings are pedestrian-oriented.

Building indentations, penetrations, and façade treatments can be used to complement adjacent structures. These features also reduce the monotonous blank walls often seen on "big-box" developments. A series of doors, windows, porches, and other projections in new construction can add value and character to a commercial development. Continuous 'strip' buildings should be discouraged.

Blank walls (left) should include architectural detail (right), although windows and doors are preferred.

Building Height/Appearance

Streets have a more cohesive, pedestrian feel when contiguous buildings are of similar height. The maximum building height is generally 35 feet, or as otherwise limited by the available emergency equipment. Though this would allow building of two stories, most commercial development has been built with only a single story. Creating a pedestrian-oriented development would likely require a mix of uses, where retail would be located on the ground floor with offices or even specific types of residential above.

Façade treatment (left) is preferred over repetitive elements (right).

Roof Forms and Building Materials

Roofs on new structures should generally be pitched or hipped. Building materials may be wood frame, brick, or stone. Roof material should have a shingle look, either as asphalt shingles, slate, tile, or metal.

Environmental Sustainability

Mixing uses can result in lower impact to the environment. "Green" buildings can cost less, improve worker productivity, enhance marketing efforts, and help to create a district identity. Structures and parking should respond to the specific building site, be efficient in water and energy use, be constructed of sustainable materials, and create a healthy environment for the occupants. The Leadership in Energy and Environmental Design (LEED) *Reference Guide for New Construction and Major Renovation, Version 2.2*, is a valuable resource for guidance on green building techniques, practices, and standards.

Example of cohesive contiguous building heights

"In-line" stores, or strip centers, built with high-quality materials and architectural details

Parking and Access

Where there is limited access to a major road, circulation streets should be created rather than individual entrance drives to parking lots. Secondary streets should also limit access and a coherent network of backage streets is created. Parking and access to parking should be located at limited locations along these secondary streets.

Parking lots should be screened and separated from the public right-of-way. Large expanses of surface parking should be broken up into smaller areas. These may be located beside or between buildings. Parking located directly in front of buildings should be minimized where possible. All lots should be landscaped and shading maximized.

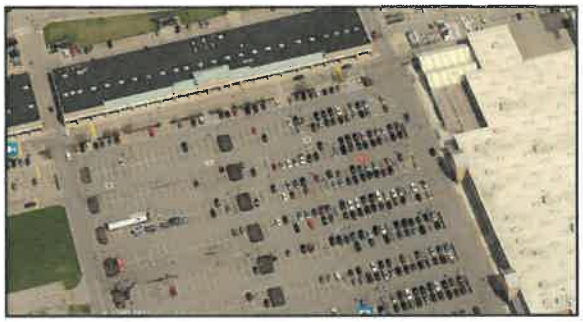
Example of circulation streets

Townships will often regulate aspects of commercial parking that have a direct impact on the appearance and quality of its commercial development. The code may include specifications on dimensions, paving, driveways, setbacks, and landscaping. Commercial zoning text can also limit the percentage of the parcel that can be covered with impervious surfaces.

When parking is located in a variety of places, buildings can be oriented toward the street and can be a more pedestrian-oriented streetscape.

Commercial zoning can require a certain number of parking spaces per square footage of commercial space. In commercial developments with multiple tenants, this can result in an excessive amount of pavement leading to a "sea of asphalt." Retail parking requirements should be somewhere between 4 and 5 spaces per 1,000 feet of gross leasable

space. This amount can be reduced in multiple-tenant developments, where different uses demand different peak parking times, and in retail buildings above a certain size threshold (i.e. "big box" stores).



Example of typical big-box stores

Pedestrian Orientation

Even large, commercial-only areas can be tailored to the pedestrian and create a walkable environment. The first image shows the typical big-box store with inline stores and outlots. Although stores are fronted with a sidewalk, the walkway has no character and merely serves as a covered area between the building and the access driveway. Painted crosswalks are provided, but they serve a utilitarian function.

Example of retail with connected pedestrian elements

The second image adds pedestrian elements, providing connections to an existing bikeway along the existing road. That walkway also provides a focal point, ending in a communal feature between the buildings. This area also allows for outdoor dining, a feature which is becoming increasingly popular. This dining area is separated from direct contact with the parking area. Walkways are provided between various buildings on the site as well.

Example of protected and connected retail with open space

The third image shows an arrangement of buildings around a square, providing green space and a public area. Parking is provided along the storefronts, protecting the walkway from traffic. Sidewalks are wide, providing areas for outdoor dining in front of the buildings. Larger parking areas are provided throughout the site, hidden from the public street while allowing for walkways between buildings.

Example of screened dumpster

Service

Service and delivery should be accommodated on side streets or from the rear of buildings. Dumpsters may be grouped for multiple users. All refuse collection areas should be screened from public rights-of-way (below).

Lighting

Building and site lighting is recognized as a necessity for security and visibility, and should be designed to eliminate light trespass and minimize light pollution. The best lighting schemes will maximize uniformity and eliminate glare. Lighting for pedestrians is an important consideration and should be designed to maximize visibility and comfort. These considerations can decrease initial costs, have marked value in life-cycle costs, and create a more attractive and comfortable nighttime environment.

Creating a hierarchy of lighting standards is another way to unify image and identity. Lighting used to illuminate parking areas, the street, or signage should be indirect and shielded, avoiding off-site spillage of light into other properties. The amount of light that is cast upon adjacent development is often regulated by township zoning codes. Sign codes can also stipulate that signs be internally lit, or that external lighting point down from above the sign and not on adjacent property.

Example of natural-colored materials for monument signs

Example of variation in signage themes based on sign types

Signage

Each community must address sign control appropriate to that community. Although there are legal limitations to the extent of regulations (i.e. political signs and content), townships in Ohio can regulate the number of signs allowed, their location, height, size, and materials used in construction. Some signs are allowed with no permit required. These typically include "For Sale" signs, political signs, certain temporary signs, signs approved as part of planned districts, and farm signs. Though no permit is required, the size, number, and placement of these signs may be regulated.

The second category, signs requiring a permit, includes billboards or off-premise signs and on-site commercial, industrial, and office display signs.

Prohibited signs often include portable signs, sandwich boards, revolving or animated signs, and wall-painted signs.


A parking lot (left) is screened from the sidewalk, and landscaping blends with the streetscape.

Finally, a sign code will define provisions for signs that already exist but do not conform to the standards when a code is adopted. These "non-conforming" regulations define which signs must be removed and which can continue. Typically, such signs cannot be improved or changed and, if a particular percentage of the sign is ever destroyed, the sign must be replaced to conforms to the standards. If changes other than routine maintenance are made to a sign, it should be brought into compliance with current regulations.

Signs on awnings, in windows, and projecting from the face of the building can help create an interesting pedestrian environment. Traffic signage should have a consistent look and placement, where possible.

Natural-colored materials should be used for the base of monument signs (above). Variation of signage themes based on sign type or location should be encouraged (below). Signs should be of high quality and 'timeless' in style to avoid becoming outdated. Signs should be limited to one per lot or one per multiple lots if devoted to one specific use or user. Graphics should be

simple to encourage readability and increase identification. No sign should interfere with the safe movement of pedestrians and vehicles.

Accessibility

Standard concrete walks should be 6 feet wide, where sufficient right-of-way exists. Along secondary streets, the walk should be located 4 feet from the back of curb. Handicap-accessible curb ramps should be used at all access drives, public streets, and private streets and shared easements that function as public streets.

Landscaping and Buffering

Zoning codes often include provisions for landscaping standards and buffering between incompatible uses, or may require establishment of tree cover or other foliage as may be necessary to achieve the purpose of the open space standards. Such buffering usually includes a setback distance, but will often go farther by requiring mounding, opaque fencing, or a defined spacing of trees. Many zoning codes in the County require the following common language in non-residential uses:

> *"All yards, front, side and rear, shall be landscaped, and all organized open spaces or non-residential areas shall be landscaped and shall meet the landscaping requirements of this resolution, unless a variation from these standards is specifically approved as part of the final Development Plan. A landscape plan showing the caliper, height, numbers, name and placement of all material, prepared by a licensed landscape architect shall be approved as a part of the final Development Plan."*

The following concepts may or may not be codified, but are always worth considering when reviewing a development plan:

- Large shade trees should avoid conflicts with structures and reinforce the streetscape (assuming they do not conflict with emergency access and utility placement).
- Small ornamental trees should be used as accent plants and frame views to special architectural features. Avoid placing ornamental trees in locations that would block the view from the street to the structure and impair visibility for drivers.
- Plant materials should be native to the area when possible.
- Screen parking lots with a minimum 4-foot high continuous evergreen or deciduous hedge, low earth mounding, or stone wall. Hedge size at installation should be at least 30" in height. A creative combination of these elements is encouraged to avoid visual monotony.
- Planting, mounding, and fencing should be incorporated at the rear of commercial areas that are adjacent to residential areas. Screened planting should be 75% opacity at installation during full foliage.
- Guidance for minimum standard plant sizes at installation:

  Shade Trees – 3" Caliper, 12'-14' height
  Ornamental Trees - 8'-10' height
  Evergreen and Deciduous Shrubs – 24" height

Examples of "snout houses"; two-story houses on 75-foot frontage (top) and single-story houses on 50-foot frontage (bottom)

- If landscaping is used as screening for trash receptacles, it should have a minimum opaqueness of 80% during full foliage. The height of a screen wall should be at least 6 feet.

Residential Garage Placement

One issue that often arises in Planned Residential reviews is streetscape. Sidewalks, street trees, and structure setbacks all contribute to the perception of a neighborhood's value. One factor that can impact the streetscape of a subdivision is the placement of the garage. On large lots with at least 90 feet of frontage, most garages are side-load or do not make up a large percentage of a house's front elevation. As lots become smaller and frontage decreases, such as in TNDs and some condominium developments, garages take up more and more of the frontage. In extreme cases, the garage projects fully in front of the house. Such residential structures have been termed "snout houses" (image on following page). The result is a streetscape that is not "friendly" to the pedestrian or driver, tending to devalue the neighborhood as a whole. Planned District regulations can require that garage protrusions be limited, or that garages be flush with the front wall of the house or set back behind the front wall of the house. In TNDs and village centers, where lots may be 70 feet wide or smaller, garages can be accessed from a rear alley.

Conclusion – Best Management Practices

Some of these Development Plan issues are zoning-related and may go beyond the overall recommendations of land use and density usually emphasized in a Comprehensive Land Use Plan. However, recommendations related to these issues may be included in this Plan for review by the Zoning Commission in future changes in the Zoning Resolution.

Smart Growth

Since 1997, Smart Growth has been a topic for planners nationwide. The American Planning Association (APA) defines Smart Growth as "a collection of planning, regulatory, and development practices that use land resources more efficiently through compact building forms, in-fill development and moderation in street and parking standards." For APA, one of the purposes of Smart Growth "is to reduce the outward spread of urbanization, protect sensitive lands and in the process create true neighborhoods with a sense of community."

This differs from Delaware County's stated definition of smart growth: "commercial development that helps to diversify the tax base, create jobs for residents and respect the heritage of the community." This fits more appropriately as the definition of "good planning."

The **broader** definition of Smart Growth from a Planner's standpoint is encouraging the location of stores, offices, residences, schools, and related public facilities within walking distance of each other in compact neighborhoods. The popularity of smart growth has captured the interest of the press as well, though some criticism has come from developers who see it as government controlling the market. Smart growth incorporates some of the concepts of conservation subdivisions in rural areas and TNDs in urban areas.