

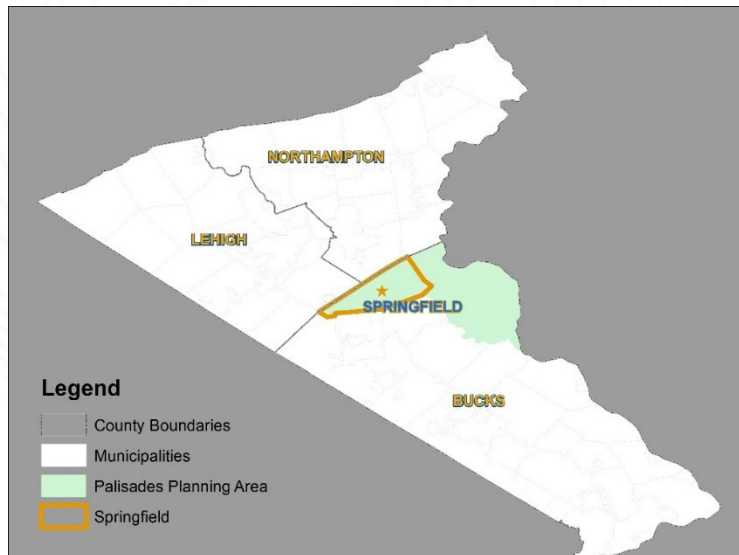


Community Profile

Overview

Springfield Township is located along the northern edge of Bucks County, bordering Lehigh and Northampton Counties. To the east of Springfield Township, in Bucks County, are Durham, Riegelsville, and Nockamixon. To the south are Haycock, Richland, Richlandtown and Quakertown. To the southwest are Milford and Trumbauersville. The Township is roughly five miles southeast of the Allentown/Bethlehem metropolitan area. Springfield Township is located about an hour-and-a-half drive north of Center City, Philadelphia, and a two-hour drive southwest of New York City.

Figure 1: Springfield Township in relationship to Bucks, Lehigh, and Northampton counties



Source: BCPC, 2022.

Arterial roads that pass-through Springfield Township include State Routes 212, 309, and 412. The rest of the Township is served by local and county roads.

Springfield's landscape is characterized by rolling farmlands, wooded areas, and streams. Prominent features include Cooks Creek conservation area, Upper Tohickon Creek conservation area, Cressman Hill, and the Lookout (BCPC, 2022a).

The Township, named for its abundance of hills and meadow springs, was incorporated in 1743. The agricultural economy has historically been strong in Springfield. As this industry developed, homes, schools, mills, churches, and general stores were built to serve the growing population (Springfield, 2022).

Springfield has kept much of its rural character throughout its development history. Higher density development has stayed close to village centers and commercial areas. Much of the Township's land is used for agriculture or rural residential housing, where there are single-family detached housing units on large parcels. Conservation areas and protected lands in the Township encompass a variety of wooded areas, rolling hills, and small stream valleys. Minimal land is dedicated to commercial uses.



Land Use

Land use is the purpose for which land or buildings are used. Land use categories can be used to understand activity within the community. Is there enough housing for the population? Are there commercial and employment locations? How are natural spaces being used? By analyzing land use and answering these questions, short- and long-term recommendations can be identified to strengthen economic, environmental, and infrastructural conditions.

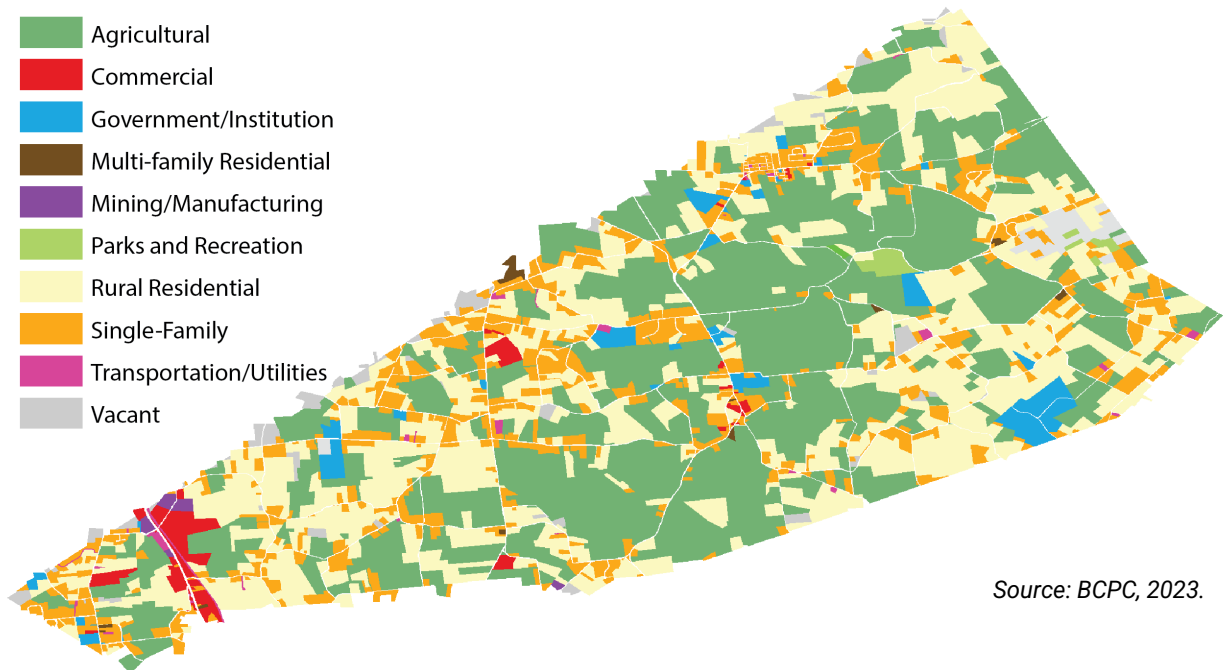
Springfield Township's land uses have remained relatively consistent over the past two decades, since the previous comprehensive plan was adopted in 2003. This analysis focuses on the land use changes over the last two decades since the last comprehensive plan; however, land use has remained consistent for longer than two decades in the Township. Agricultural and residential uses are dominant within the Township. The Existing Land Use Analysis categorizes the entirety of a parcel as one primary use regardless of secondary uses occurring on the property. The data was sourced from the Bucks County Board of Assessment in March 2023. The Board of Assessment assigns land use codes based on their best understanding of the property. It is a point in time categorization of the land and does not reflect the zoning districts or desired future land use. The Board of Assessments codes were grouped into ten land use categories based on the categories used in the 2003 Comprehensive Plan for comparison purposes. The Community Profile examines historical land use in Springfield Township by comparing data presented in the 2003 Comprehensive Plan to the 2023 Springfield Township land use data.

Table 1: Springfield Township Comparative Land Use Patterns						
Land Use	2001		2023		2001 vs 2023	
	Acreage	%	Acreage	%	Acreage change	% change
Single-Family Residential	2,271	11.5%	2,903	14.7%	632	27.8%
Multi-Family Residential	19	0.1%	30	0.2%	11	57.9%
Rural Residential	6,627	33.6%	6,694	34%	67	1%
Agricultural	6,057	30.7%	8,517	43.2%	2,460	40.6%
Mining/Manufacturing	51	0.3%	45	0.2%	-6	-11.8%
Government/Institution	148	0.8%	290	1.5%	142	95.9%
Parks and Recreation	22	0.1%	91	0.5%	69	313.6%
Commercial	252	1.3%	302	1.5%	50	19.8%
Transportation/Utilities	593	3%	129	0.7%	-464	-78.2%
Vacant	3,659	18.6%	698	3.5%	-2961	-80.9%

Source: Springfield, 2003, and BCPC, 2023.



Figure 2: Springfield Township Land Use (2023)



Springfield Township contains over 30.6 square miles of land. In 2003, the predominant land uses were Rural Residential, Single-Family, and Agricultural. The 2003 Comprehensive Plan defines Rural Residential land use as a single-family detached dwelling that is located on a lot of 5 acres or greater. Single-Family Residential is defined as single-family detached dwellings on lots less than 5 acres. The 2023 land use data show the continued dominance of these three categories of land use: Rural and Single-Family Residential total 48.7% of the Township's land uses and Agricultural characterizes 43.2% of the Township's land use.

Rural Residential comprises the majority of residential land use in Springfield Township. Residential land uses, inclusive of single-family, multi-family, and rural residential, have not seen substantial growth since the 2003 Comprehensive Plan, but Rural Residential continues to be the predominant residential land use. Agricultural land use increased by 12.5% from 2003 to 2023.

There was significant growth of the Parks and Recreation land use due to Bucks County Conservancy acquiring the Pursell Preserve land and combining it with the Fuller Preserve.

The other land use that experienced significant growth since the 2003 Comprehensive Plan is Mining/Manufacturing. The 2003 Plan indicated that future Mining/Manufacturing land use should be limited to the Route 309 corridor within the Planned Industrial zoning district. A portion of the increased in this land use can be attributed to the Planned Industrial Zoning District; however, there are also additional parcels categorized as Mining/Manufacturing along Quarry Road and along the northern boundary of Springfield Township. Land use classification is completed the by the County auditor.



There were decreases in both Transportation/Utilities and Vacant property. The decrease in Transportation/Utilities does not reflect a major change in use of land. Some of the Transportation/Utilities properties from the 2001 analysis were classified as Government/Institution properties by the Board of Assessment in the 2023 analysis, such as a property owned by the Municipal Authority of Coopersburg.

The decrease in vacant properties can also be contributed to the Board of Assessment categories. The Board breaks down vacant properties into subcategories of land use (agriculture, residential, commercial, etc.) based on what the property is designed for. Those subcategories were used for the 2023 land use analysis which gives us a clearer understanding of the character of land use in the Township.

Development Trends

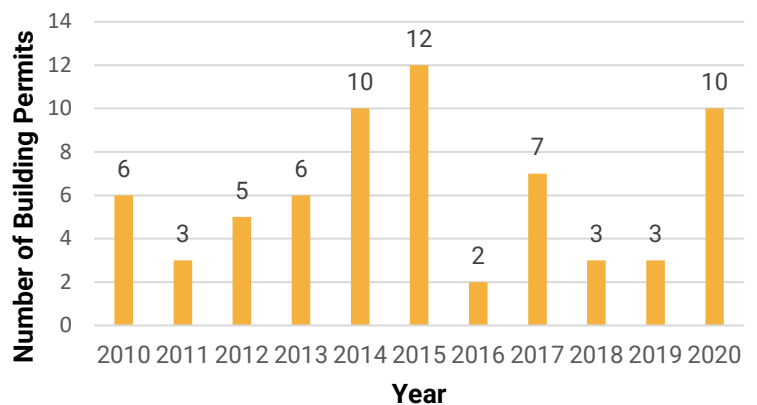
Between 2010 and 2020, 2015 saw the most building permit activity with 12 building permits issued. In all other years, there were ten or fewer building permits issued in Springfield (DVRPC, 2022). There has not been a change in recent development activity in recent years as indicated in the bar chart to the right.

Demographics

Population

The population of Springfield Township totaled 5,175 individuals in 2020, a 2.9% increase since the 2010 Census. Overall, population for the Township has remained steady over the past few decades, dipping down in 2000, but returning to 1990 levels by 2020.

Figure 3: Springfield Township Building Permits (2010-2020)



Source: DVRPC, 2022.

Table 2: Springfield Township Population

Year	Total Population	% Change
1990	5,151	n/a
2000	4,916	-4.6%
2010	5,027	2.3%
2020	5,175	2.9%

Source: US Census 1990, 2000b, 2010b, 2020



Age

The median age for Springfield Township is 52.8 years. The Township skews older in median age when compared to County and State populations.

Figure 4 displays the percentage of Township and State population per age bracket. Springfield has a higher proportion of its population aged 45 or older than the State.

Figure 4: Median Age in Springfield Twp., Bucks Co. and Pennsylvania

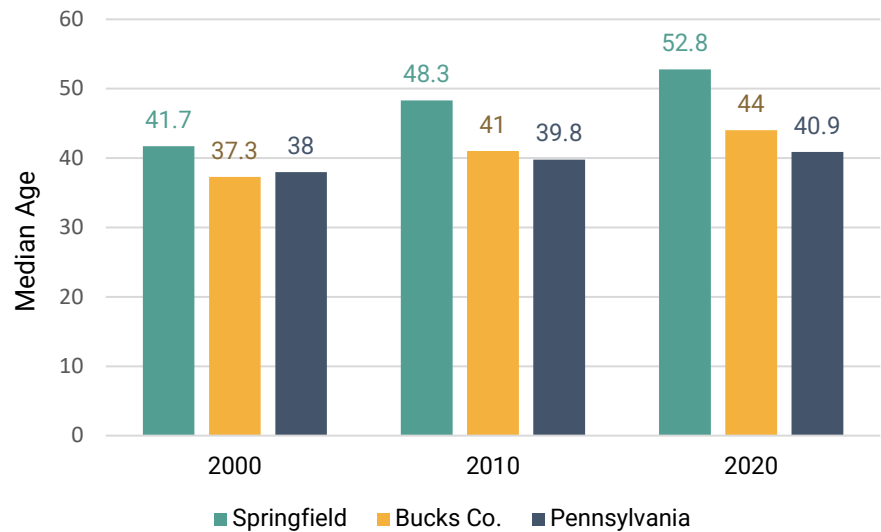
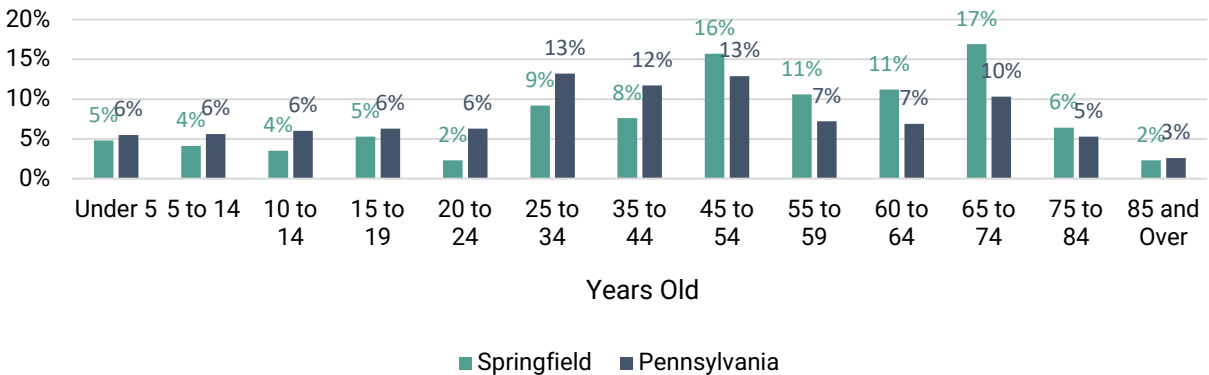


Figure 5: Percentage of Population in Springfield Twp. and Pennsylvania by Age Bracket (2020)



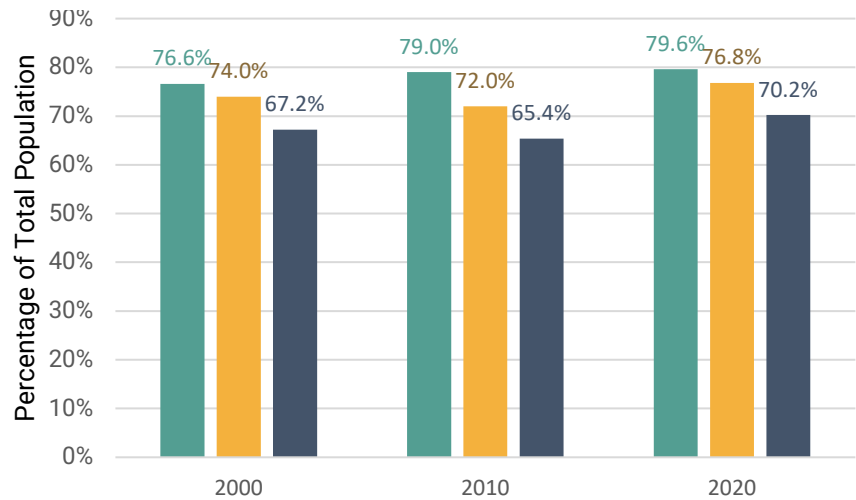
Source: US Census, 2020.



Households

In 2020 there were 2,128 households¹ in Springfield Township. This number has remained relatively steady over time. About 77% of households in the Township are family households.² Springfield Township and Bucks County have a higher proportion of family households than the State. The average household size for the Township is 2.4 persons.

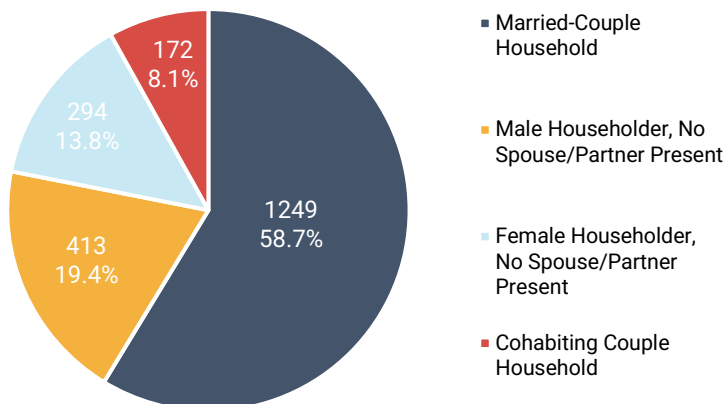
Figure 6: Percentage of Family Households in Springfield Twp., Bucks Co., and Pennsylvania



Source: US Census, 2000b, 2010b, 2020.

■ Springfield ■ Bucks Co. ■ Pennsylvania

Figure 7: Household Types by Relationship within the Township (2020)



Over 40% of the households can be defined as elderly³ compared to 21% of households with at least one child 18 years or under (US Census, 2020). Figure 7 shows household types by relationship within the Township. Most households (58.7%) in the Township consisted of married couples.

Source: US Census, 2020.

¹ A household is defined as related family members and all the unrelated people who share a housing unit.

² A family household is defined as a household maintained by a householder that is in a family (a group of two or more people related by birth, marriage, or adoption and residing together) and any unrelated people who may be residing there.

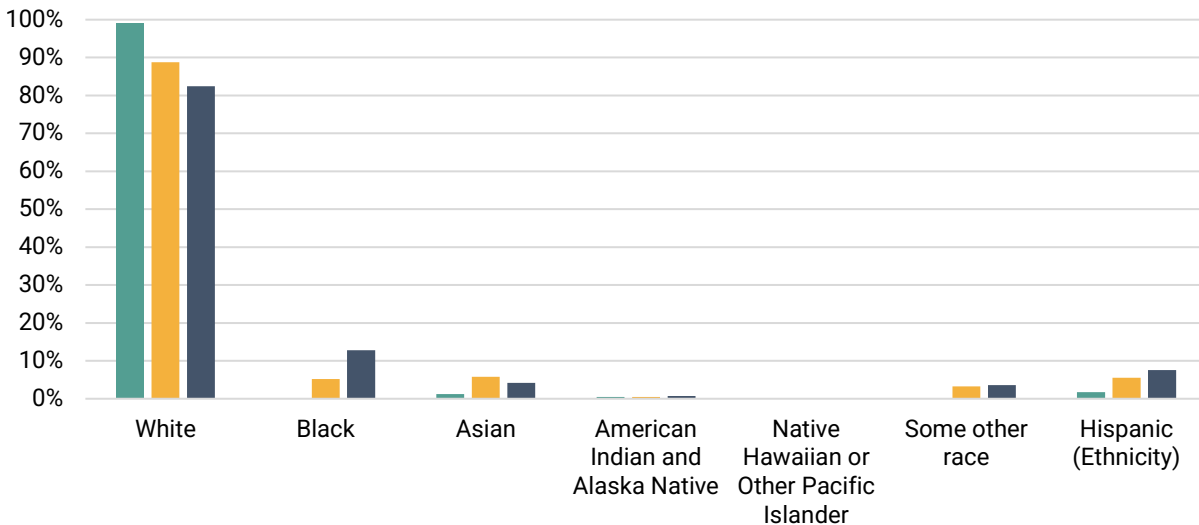
³ The United States Census Bureau defines elderly households as those with at least one individual that is 65-years or older.



Race and Ethnicity

The majority of Springfield Township's population identifies as White (99%). 1.7% of the Township identifies as Hispanic or Latino. When compared with race and ethnicity across Bucks County and the Commonwealth, Springfield Township is less diverse.

Figure 8: Race and Ethnicity in Springfield Twp., Bucks Co., and Pennsylvania (2020)



Source: US Census, 2020.

Springfield Bucks Pennsylvania

Housing Characteristics

Occupancy

There are 2,176 total housing units within Springfield Township, 2,128 (97.8%) of which are occupied. The majority of units (85.3%) are owner-occupied compared to 272 renter-occupied units (12.5%).

Table 3: Springfield Twp. Housing Unit by Type

Year	Owner-Occupied	Renter-Occupied	Vacant	Total
2000	1,668	232	72	1,972
2010	1,769	123	158	2,050
2020	1,856	272	48	2,176
% Change (2000-2020)	11.3%	17.2%	-33.3%	10.3%

Source: US Census, 2000a, 2010a, 2020.

Table 3 includes percentage change between 2000 and 2020 of housing units by occupant type for the Township, County, and State. Springfield is seeing growth in total units at a rate (10.3%) which is higher than the State average, but just below the County average. The growth of rental-occupied units in the Township since the year 2000 (17.2%) is ahead of the County (6.6%) and State (15.6%) average, but it should be noted that because the Township has relatively few rental units when compared to larger geographies, the addition of even a few rental units can result in a higher percent change. Additionally, the Township reduced its vacant units while the County and State saw an increase.



Housing Age and Type

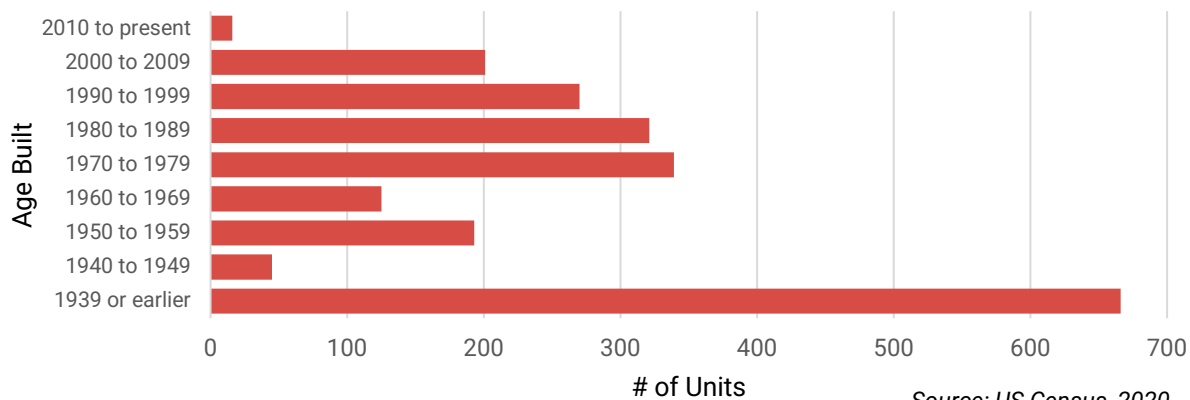
Like many communities in eastern Pennsylvania, Springfield Township has an aging housing stock. According to the 2020 American Community Survey, over one-third of the units (666) were built in 1939 or earlier. Presently, less than one percent of units (16) were built since 2010 as shown in Figure 9. In the 1980s and 1990s, a significant amount of development applications were presented to the Township as a result of the construction of I-78; however, only a limited number of plans ultimately materialized. Springfield Township has had only minor residential development in the last four years, as shown in Table 4. All of this development was single-family detached housing units.

Table 4: Springfield Twp. Residential Development	
Year	Units Developed
2018	1
2019	0
2020	1
2021	3

Source: BCPC, 2018, 2019, 2020, 2021a.

Structures built before 1960 may be more vulnerable to collapse during natural hazard events as they were constructed before more modern building codes were adopted and enforced by the Pennsylvania Uniform Construction Code in 2004 (PEMA, 2019).

Figure 9: Age of Springfield Twp. Housing Stock



93.8% of housing units (2,040) are single-family detached homes. Springfield Township also has a small number of single-unit attached homes, two-four-unit homes, and mobile homes.

Figure 10: Percentage of Housing by Number of Units in

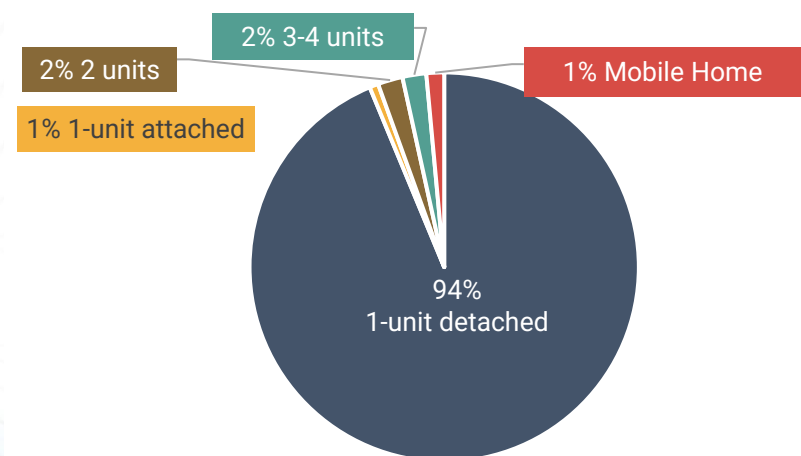




Figure 11: Median Home Values (2000-2020)

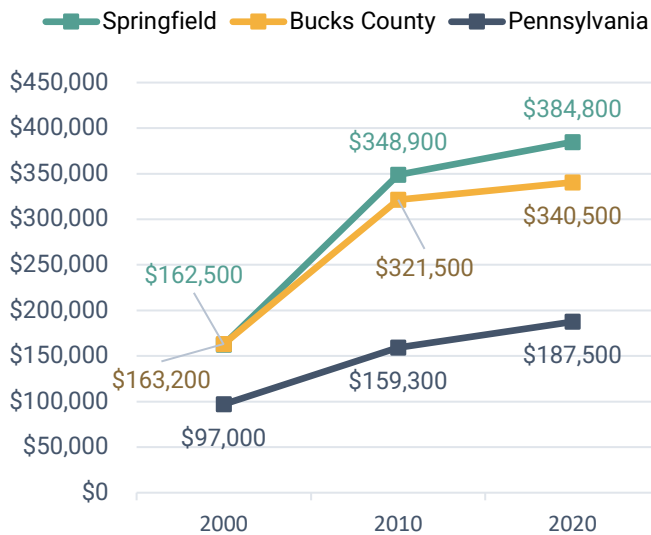


Figure 12: Median Mortgage Payment Values (2000-2020)

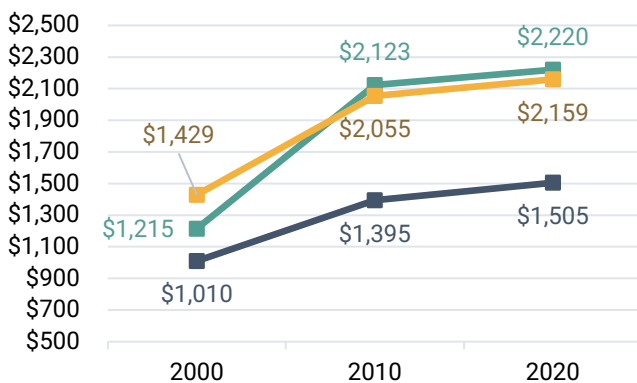
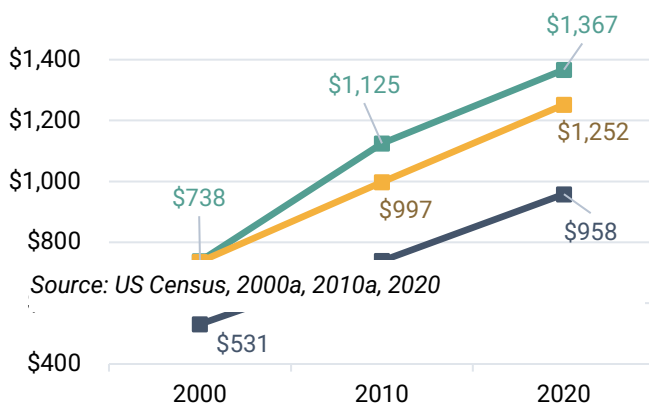


Figure 13: Median Contract Rent Values (2000-2020)



Source: US Census, 2000a, 2010a, 2020

Housing Cost

Home values, median mortgage payments, and median contract rent values have all increased since 2000. The median home value for Springfield Township was \$384,800 in 2020, up 136.8% from \$162,500 in 2000 (Figure 11). The median monthly mortgage payment was \$2,220 in 2020, up 4.6% from \$2,123 in 2010 (Figure 12). The median contract rent in 2020 was \$1,367 per month compared to \$1,225 in 2010, an 11.6% increase (Figure 13). In all three categories, the Township sees higher costs than both the County and State.

Housing cost burden, as defined by the U.S. Census Bureau, encompasses any occupied household spending 30% or more of its household income on housing costs. As shown in Table 5, Springfield Township has a smaller percentage of households faced with housing cost burden than both the County and State. Overall, housing cost burden spiked in 2010 after the 2008 recession and has decreased slightly since.

Table 5: Percentage of Cost Burdened Households

	2000	2010	2020
Springfield	14%	30.5%	24.3%
Bucks Co.	24.6%	36%	29.1%
Pennsylvania	22.6%	32%	27.2%

Source: US Census, 2000a, 2010a, 2020.

Household Type

According to the 2020 American Community Survey (ACS) most households (58.7%) in the Township consisted of married couples. Over 40% of the households can be defined



as elderly⁴ compared to 21% of households with at least one child 18 years or under (US Census, 2020). The majority (55.2%) of residents in Springfield Township moved into their home before 2000. Of those households, 31.3% of them moved into their home in 1989 or earlier.

Economic Characteristics

Measures related to economic characteristics include income, poverty rates, employment rates, industry and occupation sectors of Township residents and jobs located in the Township (where people live versus where they work), and educational attainment.

Income

According to the 2020 decennial census, the median household income in Springfield Township is roughly \$100,234. Half of the population (50.1%) makes \$100,000 or more per year (Figure 15). Median household income in the Township (\$100,234) is higher and, since 2010, increasing quicker than median income in the County (\$93,181) and State (\$63,627), as shown in Figure 16. Additionally, in 2020, 2.2% of the Township population lived below the federal poverty line (defined as an annual income of \$13,590 for an individual⁵), which is a slight decrease from

Figure 14: Springfield Twp. Year of Household Residency

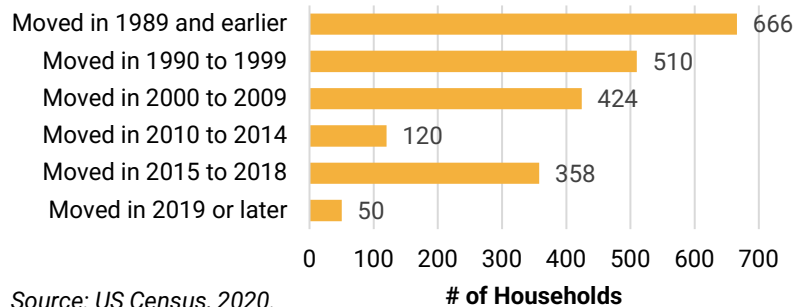
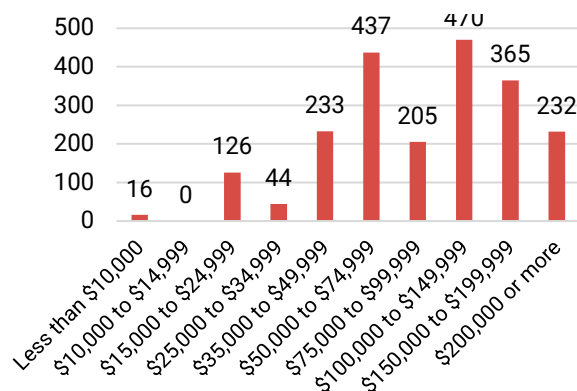
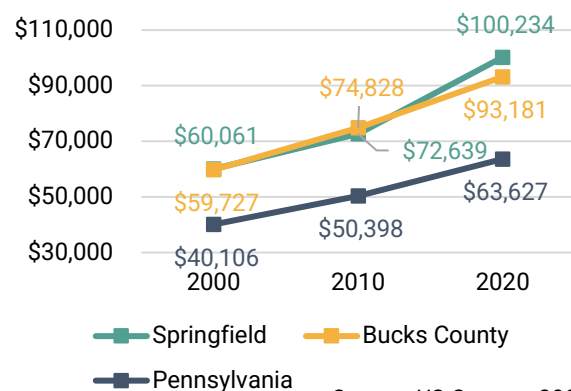


Figure 15: Springfield Twp. Income Distribution (2020)



3.0% in 2010.

Figure 16: Springfield Twp. Median Household Income (2020)



⁴ The United States Census Bureau defines elderly households as those with at least one individual that is 65-years or older.

⁵ \$18,310 for a household of 2 people; \$23,030 for a household of 3 people; \$27,750 for a household of 4 people



Employment

There are 4,482 individuals in Springfield Township in the working age population⁶; about 60.6% (2,714 people) are actively part of the civilian labor force. Of this labor force, just 17 people are unemployed (US Census, 2020).

Resident Employment

The largest industry sector in 2020 (Table 6) is educational services, health care and social assistance (24.3%), followed by manufacturing (19.7%), and retail trade (14.4%). Other industries in which residents are employed include professional, construction, and arts and entertainment. In 2000, the largest industry sector was manufacturing. While this sector remained steady in terms of proportion of jobs, the educational services and health care industry sector increased from 17.2% to 24.3%. Most other industry sectors remained steady between 2000 and 2020, with minor changes in the number of workers in each sector.

Table 6: Springfield Township 2000 and 2020 Resident's Industry Sector

Industry Sector	2000		2020	
	#	%	#	%
Agriculture, forestry, fishing and hunting, and mining	32	1.2%	16	0.6%
Construction	296	11.1%	187	6.9%
Manufacturing	529	19.8%	531	19.7%
Wholesale trade	113	4.2%	64	2.4%
Retail trade	266	10%	389	14.4%
Transportation and warehousing, and utilities	139	5.2%	54	2%
Information	96	3.6%	50	1.9%
Finance and insurance, and real estate and rental and leasing	158	5.9%	126	4.7%
Professional, scientific, and management; and administrative and waste management services	259	9.7%	238	8.8%
Educational services, and health care and social assistance	459	17.2%	654	24.3%
Arts, entertainment, and recreation, and accommodation and food services	170	6.4%	163	6%
Other services, except public administration	126	4.7%	178	6.6%
Public administration	29	1.1%	47	1.7%
TOTAL	2,643	100%	2,697	100%

Source: US Census, 2000b, 2020.

⁶ The United States Census Bureau defines the working age population as those aged 16 years or older.



Employer and Employee Locational Relationships

The Longitudinal Employer-Household Dynamics (LEHD) program is part of the Center for Economic Studies at the U.S. Census Bureau. State and local authorities increasingly need detailed local information about their economies to make informed decisions. The LEHD program works to fill critical data gaps and provide indicators needed by state and local authorities. LEHD data for Springfield Township shows that in 2019 there were a total of 788 jobs located within the Township. Figure 17 is a heatmap of job locations within the Township. Areas with the darkest color purple have the greatest number of jobs, and include parts of the Township near Zion Hill, Pleasant Valley, and Springtown, and along the three major highways that transect the Township: PA-212, PA-309, and PA-412.

The LEHD analyzes workers and jobs in an by industry sectors. In 2019, the largest job sectors in the Township are healthcare and social assistance (166 jobs), wholesale trade (148), and construction (96). There are also some jobs in manufacturing, retail trade, transportation and warehousing, professional services, administrative services, and public administration. 53.2% of these jobs earn workers more than \$3,333 per month (US Census, 2019).

Of the 2,697 workers living in Springfield Township, 96% are employed outside the Township and 4% are employed in the Township. Of the 788 workers employed within Springfield Township, 14% live and work in Springfield and 86% work in Springfield but live elsewhere. It is notable that there are significantly fewer jobs in Springfield

Figure 17: Distribution of Job Locations in Springfield Twp. (2019)

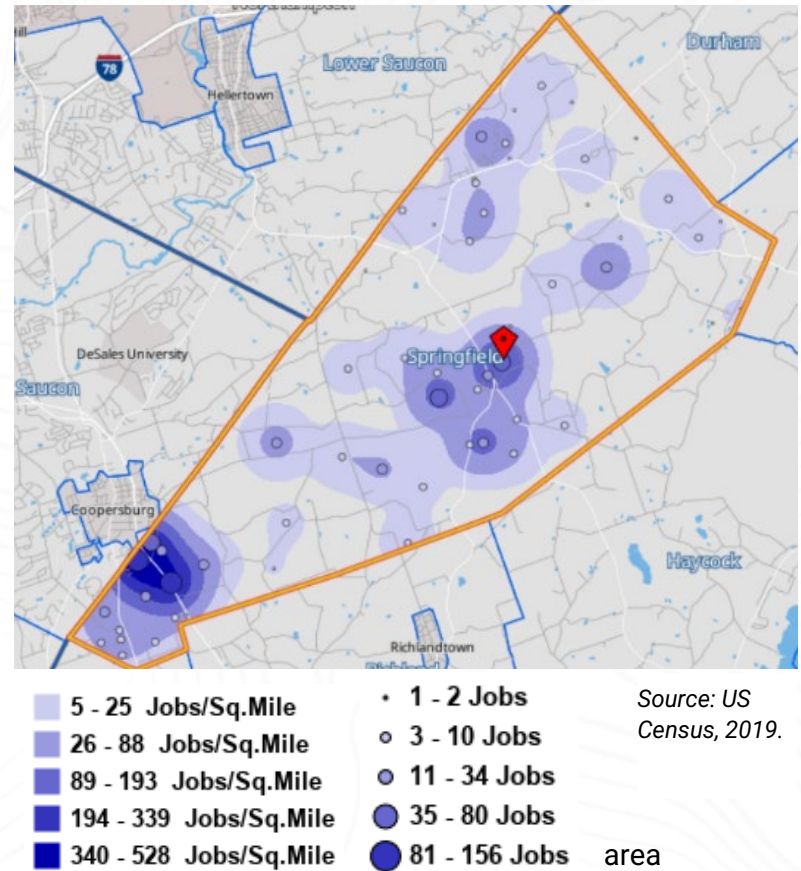
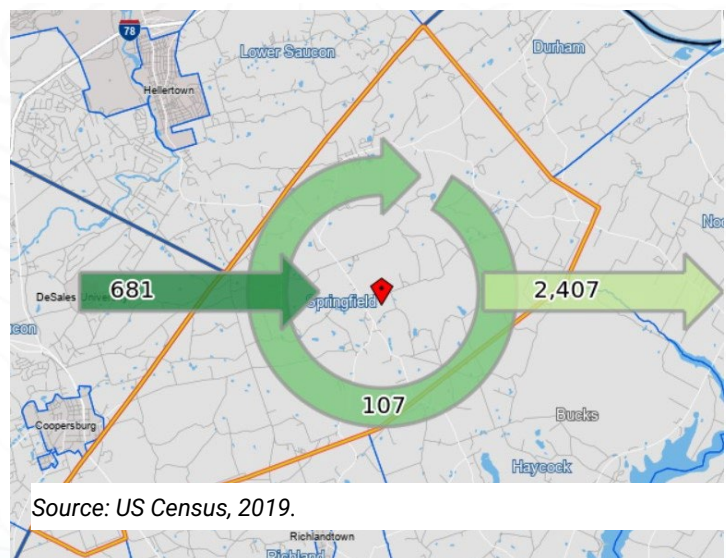


Figure 18: Springfield Twp. Worker Inflow/Outflow





Township than residents and of the jobs in the Township. The majority of them are held by non-residents. This indicates that there could be a mismatch of job skills or the lack of job diversity in the Township.

Educational Enrollment and Attainment

Enrollment

The public school district in Springfield Township is Palisades School District (PSD). The district contains three elementary schools, one middle school, and one high school. According to the PSD Student Accounting Report for the Pennsylvania Department of Education as of October 1, 2023, the school enrollment is as follows:

Table 7: School Enrollment	
	2023-24 Enrollment in PSD
Springfield Elementary	208
Tinicum Elementary	122
Durham Elementary	267
Middle School	296
High School	469
Total	1,366*

** 4 students are listed as "alternative school" those that need additional support.

Table 8: K-Grade 5 Enrollment at Springfield Elementary	
Grade	2023-24 Enrollment
Kindergarten	85
1 st	106
2 nd	101
3 rd	124
4 th	103
5 th	112

District-wide the number of students attending non-public school is as follows, apart from home schooled students, these children are bussed by PSD:

Table 9: Students Attending Non-Public School	
Type of School	Number of Students
Charter Schools	70
Home School	100
Private Schools	30

As shown from data below taken from current enrollment in the lower grades and projections from the PSD Comprehensive Plan in 2018, overall school enrollment is declining:

Table 10: Projected Enrollment		
School	2025-26 Projected Enrollment	Capacity of Buildings
Springfield Elementary	207	375
Middle School	325	650
High School	456	775



A potentially important development for the future is that PSD is offering tuition free pre-K for lower income families at Durham Elementary school this year and would like to expand that to other schools. There is building capacity at Springfield Elementary.

29.53% of students in the District are on free and reduced meals which is an increase since COVID-19. During COVID-19, the District conducted an internet survey and found that only 24 hot spots were needed to allow students to connect. All other families with school age children indicated that they had access to the internet.

Attainment

Educational attainment in Springfield Township is comparable to Bucks County and Pennsylvania as a whole. There is a slightly lower high school degree attainment rate in Springfield Township; however, a larger rate of residents holding a bachelor's degree or high compared with the County and Pennsylvania. About half the population of the Township has an associate degree or higher.

Table 11: Springfield Twp. Educational Attainment (2020)						
	Springfield		Bucks County		Pennsylvania	
Population 25 Years and Over Attainment	#	%	#	%	#	%
Less than 9th grade	80	1.9%	8,151	1.8%	275,881	3.1%
9th to 12th grade, no diploma	343	8.2%	17,500	3.9%	534,086	5.9%
High school graduate (includes equivalency)	1,107	26.6%	125,978	28.0%	3,072,381	34.2%
Some college, no degree	511	12.3%	72,601	16.1%	1,425,593	15.9%
Associate degree	276	6.6%	35,706	7.9%	775,540	8.6%
Bachelor's degree	1,097	26.3%	113,022	25.1%	1,754,311	19.5%
Graduate or professional degree	752	18.1%	77,020	17.1%	1,152,206	12.8%
Summary						
High school graduate or higher	3,743	89.9%	424,327	94.3%	8,180,031	91.0%
Bachelor's degree or higher	1,849	44.4%	190,042	42.2%	2,906,517	32.3%

Source: US Census, 2020.



Community Infrastructure

Transportation Network

Springfield Township's roadway network consists of 168 County and Township roadway segments, and State-owned routes, including Route 212, Route 309, and Route 412.

Additionally, the Township contains five locally owned bridges, and 18 State-owned bridges. According to the Pennsylvania Department of Transportation (PennDOT), three of the State-owned bridges (Slifer Valley Road near Walnut Lane, Stony Garden Road, and Quakertown Road) are in poor condition as of 2022 (PennDOT, 2022).

There are currently no regularly scheduled public transportation or public transit stops in Springfield Township. The closest regional bus service stops at the Giant (supermarket) complex in Hellertown, approximately 5.5 miles north. Hellertown also offers daily bus service to Philadelphia and New York City. Springfield residents have access to shared-ride services offered by Bucks County Transport Inc. (BCT). BCT provides shared-ride services through PennDOT funding programs as featured in Table 8. Trips under these programs must be requested through BCT where staff will help riders reserve rides (BCT, 2022). The Township does not have a connected pedestrian network nor a bicycle network for mobility across and within the Township; however, there are recreational trails both within the Township and regionally. The Upper Bucks Public Transportation Feasibility Study (2022) examined the feasibility of microtransit and fixed route transit along Route 309. Microtransit which operates like a shared-ride system is the preferred alternative. The study proposes initial next steps and funding options, but there is not a timeline for implementing microtransit (BCPC, 2022d).

Table 9 displays daily traffic volume counts from PennDOT. Route 309 is the Township's most heavily traveled roadway.

Figure 19: Rt. 212 through Springfield Twp.



Source: Realtor, 2022.

Table 12: BTC Shared Ride Programs and Eligibility

Program	Eligibility
Senior Citizen Shared Ride Program	Over the age of 65 and do not qualify for other transportation programs
Medical Assistance Transportation Program (MATP)	Use for medical purposes only
Persons with Disabilities Transportation Program	Must have an Americans with Disabilities (ADA) documented disability

Source: PennDOT, 2022.

Table 13: Roadway Daily Traffic Counts (2019)

Road	Total Vehicles	% Vehicles that are Trucks
Rt. 309	39,550	13.4%
Rt. 212	2,475	7.4%
Rt. 412	4,816	13.1%
Richland Pike	4,339	8.4%

Source: PennDOT, 2019.



Transportation Investment

The Township regularly works with PennDOT, the Bucks County Planning Commission, and the Delaware Valley Regional Planning Commission as planning partners for transportation development and management. For PennDOT's 2022-2025 Statewide Transportation Improvement Plan (TIP) there are two identified projects within Springfield Township:

1. A bridge repair on Richlandtown Pike. This is currently under construction and slated to be complete at the end of 2023.
2. A road surface improvement along Quakertown Road and Route 212 near California Road. This is identified as a future development project.

Utilities

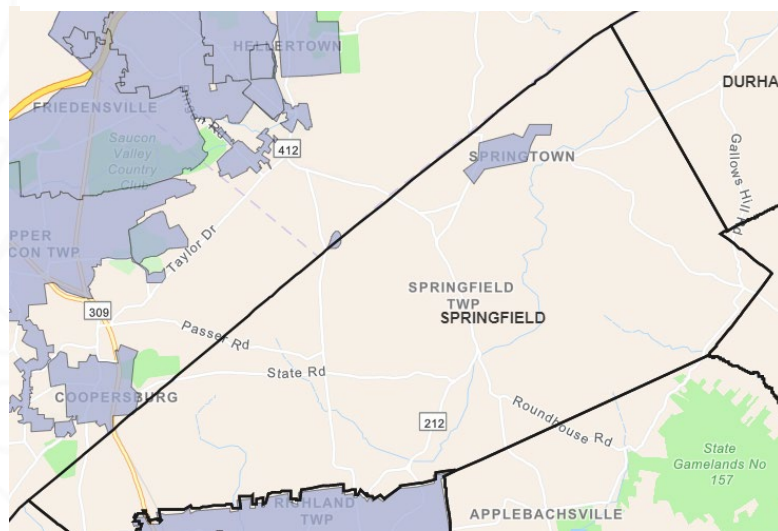
Springtown Water Authority provides public water to 236 meters in the village of Springtown. The Springtown Source Water Protection Plan (SSM, 2006) reported that Springtown Village Well provided a flow rate of 100 and 150 gallons/minute and the spring system provided an average of 20 to 25 gallons/minute. The Springtown Water Authority's water supply comes from two sources: the primary source is springs on a 2-acre tract of land owned by Springfield Township in Lower Saucon Township and the second source is from a well located near the Springtown Fire House. The second source is only used when the reservoirs are low.

According to the 2009 Act 537 Plan for Springfield Township, an extension of public sewer from the Milford Trumbauersville Area Sewer Authority into Zion Hill was implemented in 1999. This extension provided 65 existing connections with a potential for 5 additional connections in the future. The Milford Trumbauersville Area Sewer Authority owns and operates the sewer system. The Plan states that, "It is understood that the capacity of the MTASA will not accommodate any future flows from Springfield, specifically Zion Hill. There are to be no additional

connections to the MTASA system."

The rest of the Township is served by private wells and septic systems approved by the Bucks County Department of Health.

Figure 20: Public Water Supply Service Areas (in Purple)



Source: BCPC, 2022.

In 2014, the Bucks County Planning Commission released the Springfield Township Route 309 Corridor Sewage Capacity Analysis in order to project capacity for residential and nonresidential development within the Township along and in direct proximity to this corridor based on the potential to construct land application wastewater systems (i.e. on-lot sewage disposal, spray irrigation, etc.). The study was

comprised of five zoning districts in

the southwest portion of the Township: the Development District; Highway Commercial District;



Planned Industrial District; Village Commercial (Zion Hill); and Village Residential (Zion Hill). These districts were chosen due to the potential for more intense development and redevelopment permitted by zoning. It should be noted that the Development District, Highway Commercial District, and Planned Industrial District are intended for the most intense development. The Zion Hill's zoning districts, Village Commercial and Village Residential, were selected due to their proximity to the Development District and the intensity of existing development at the time of the study.

258 parcels across the five zoning districts were analyzed and assessed on their suitability to be developed. Key considerations for identifying a parcel as developable were having a reserved sewer connection or soil suitability to accommodate an on-site system or spray irrigation and sufficient developable area (applied to undeveloped and developed parcels). The study identified the following number of 'developable' parcels in each district (BCPC, 2014):

- Development District: 28 of 78 parcels considered developable, representing 36% of the District
- Highway Commercial District: 15 of the 46 parcels considered developable, representing 33% of the District
- Planned Industrial District: 9 of 29 parcels considered developable, representing 31% of the District
- Village Commercial District: 1 of 19 parcels considered developable, representing 5% of the District
- Village Residential District: 18 out of 86 parcels considered developable, representing 21% of the District

This information suggests that the Township should focus on infill development in these areas rather than dispersed development. These parcels can be found on pg.16 of the Township's 2024 Comprehensive Plan.

Resource Protection

Resource protection is an integral part of the Comprehensive Plan. This section provides an inventory of the existing natural, agricultural, and historic resources in the Township, which should be prioritized in planning and development considerations. These resources include natural resources, parks, greenways, waterways, agricultural land and soils, and historic buildings and districts.

Natural Resources

Natural resources, as stated in the Pennsylvania Municipalities Planning Code (MPC), include wetlands and aquifer recharge zones, woodlands, steep slopes, prime agricultural land, flood plains, and unique natural areas. The Township's current zoning ordinance recognizes the importance of these resources through the designated Watershed District, Agriculture District, and Resource Protection District. These districts are aligned with the Bucks County Natural Resources Plan and the Cocks Creek Watershed Conservation Plan.

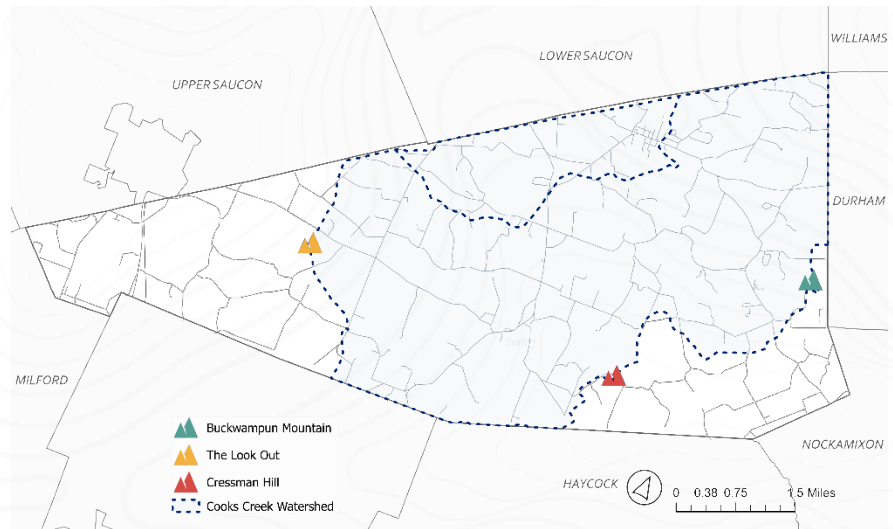


Springfield Township has a number of sites identified by the Pennsylvania Natural Diversity Index (PNDI) with Elements Occurrence Records (EOR). The Bucks County Natural Areas Program is intended to protect significant natural habitat areas identified by the Natural Areas Inventory of Bucks County. This document ranks sites throughout the county by assigning sites one of four priority levels.

- Priority 1 sites-areas that have statewide or countywide significance based on uniqueness or exceptionally high quality of natural features.
- Priority 2 sites-areas that have countywide or statewide significance based on the overall quality and the diversity and importance of the resources.
- Priority 3 sites-areas that have local or countywide significance that may contain small or degraded resources.
- Priority 4 sites-areas that have biological or ecological resources that are important at the local level.

Springfield Township contains several of these identified areas. These areas consist of land in the entire Cooks Creek Watershed (identified as a priority 1 site), Cressman Hill (a priority 1 site), the Lookout (a priority 2 site), and Buckwampum Mountain (a priority 3 site) (Source: Natural Areas Inventory, Bucks County). The Natural Areas Program is a competitive grant program. Sites with higher priority levels are given greater consideration when competing for grant funding. As of March 2009, this program has protected 173 acres in Springfield Township. The Natural Areas Program has been discontinued.

Figure 21: Pennsylvania Natural Diversity Index Sites in Springfield



Water Quality

The majority (24 square miles) of the 30-square mile Cooks Creek Watershed is located in Springfield Township. The Cooks Creek Watershed has been designated as an Exceptional Value Cold Water Fishery under the PA Chapter 93 Water Quality Standards and is the only wild brown trout and native brook trout fishery in Bucks County. The underlying geology is mostly limestone and contains a high-quality drinking water aquifer that is the sole source of drinking water for the majority of residents (Cooks Creek Watershed Association, 2022).



Agricultural Resources

Springfield Township contains 4394 acres in agricultural and conservation preservation, according to the Parks and Land Preservation Board. (PLPB,2021) Currently, there are 44 farms that are preserved using easements funded by the Bucks County Agricultural Land Preservation Program. The Bucks County Agricultural Land Preservation Program was established in 1989 and is regulated by the Pennsylvania (PA) Department of Agriculture, Bureau of Farmland Preservation, and governed by PA Act 43 as well as county program guidelines. The programs utilize funds from state, county, and local governments to purchase conservation easements on productive farmland. Farms considered for the preservation program are prioritized according to soil quality, location, conservation practices, and threat of development. As of 2022, there are 238 total farms preserved across Bucks County. Springfield's 44 farms represent 18% of the total preserved farms, the second most of any municipality in the County (BCPC, 2022).

Figure 22: Jacob Funk Barn



Source: Heritage Conservancy, 2022.

Historical Resources

Springfield Township is home to five features on the National Register of Historic Places: Jacob Funk House and Park, John Eakin Farm, Knect's Mill Covered Bridge, Springhouse Farm, and Springtown Historic District. In addition to national recognition, Springfield Township has a Historic Resources Overlay District which consists of properties on the Township's Historic Resources List. The Historic Resources Overlay District aims to retain community character through historic preservation and provide a review process for any changes to historic resources. Reviews are conducted by the Township's Zoning Officer and Historic Commission.



Preserved Land

Springfield Township contains 4354.9 acres of preserved open space, outlined by category in Table 10. Additionally, there are 4717.5 acres of agricultural security areas a tool to protect farms and farmlands from non-agricultural uses; however, it should be noted that agricultural security areas do not qualify as preserved land (PA Department of Agriculture, 2022). The preserved open space data are provided by the Bucks County Planning Commission records.

Figure 22: Springfield Twp. Preserved Land (2022)

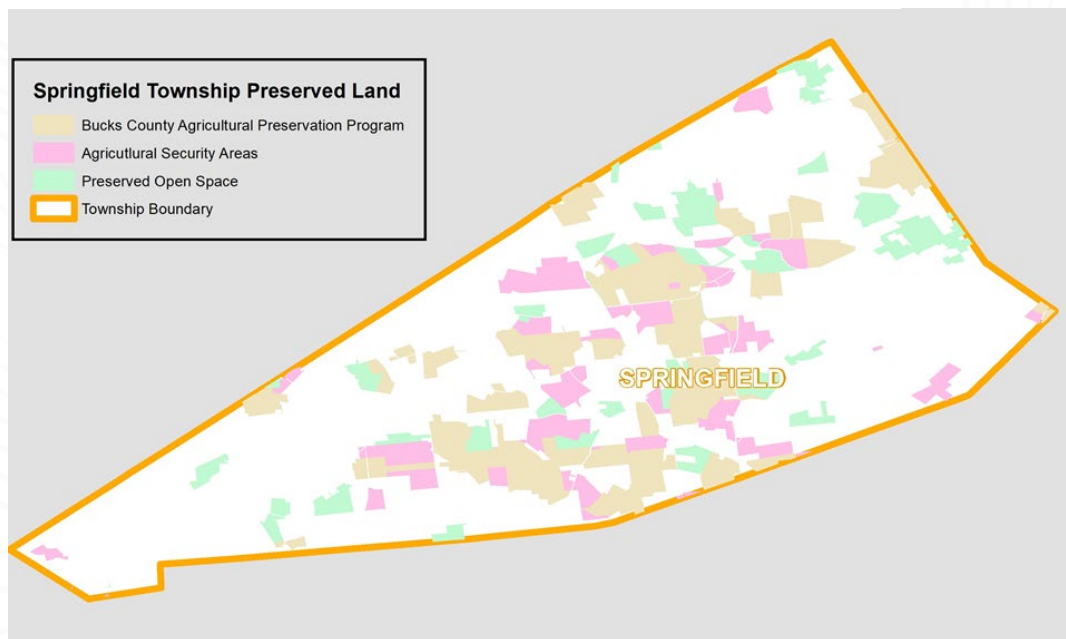


Table 14: Springfield Twp. Preserved Open Space (as of June 2022)	
Type of Preserved Land	Acres
State Parks	-
State Gamelands	-
State Forest Preserves – State Historic Sites – Fish and Boat Commission	-
Municipal Parks and Open Space	44.2
County Parks and Open Space	192.3
Bucks County Agricultural Land Preservation Program	2380.5
Municipal Preserved Farmland	969.1
Land Trust Owned Parcels	62.2
Other Preserved Properties/Conservation Easements	698
Homeowner Association Open Space	8.7
Total	4354.9

Source: BCPC, 2022b

Source: BCPC, 2022b.



Invasive Species Threat

Invasive species have proven to be a challenge to preserving natural resources and farmland. The Pennsylvania Governor's Invasive Species Council has identified 300 invasive plants, insects, pathogens, and animals as having the greatest concern or potential negative impacts for the state. The following are a list of the most common invasive species in the state (PA Department of Agriculture, 2019):

1. **Japanese beetle:** This insect feeds on the leaves, flowers, and fruits of over 300 plant species, including fruit trees, ornamental shrubs, and garden vegetables. It can cause significant damage to crops and ornamental plants.
2. **Spotted lanternfly:** This insect feeds on the sap of trees and plants, causing wilting, leaf curling, and tree death. It poses a significant threat to Pennsylvania's grape, fruit tree, and hardwood industries. The Pennsylvania Department of Agriculture estimates that the Spotted Lanternfly could cost the state \$234 million annually and more than 2,800 jobs.
3. **Mile-a-minute weed:** This plant grows rapidly and can smother native vegetation, reducing biodiversity and altering ecosystems. It can also cause damage to infrastructure and impede recreational activities.
4. **Emerald ash borer:** This insect feeds on ash trees, causing significant damage and death. It poses a significant threat to Pennsylvania's forests and urban trees.
5. **Multiflora rose:** This plant can form dense thickets that displace native vegetation and alter ecosystems. It can also impede recreational activities and cause damage to infrastructure.

Another invasive species of concern is Japanese stiltgrass. Japanese stiltgrass is an aggressive invader of forest lands throughout the eastern United States. Infestations can impact the diversity of native species, reduce wildlife habitat, and disrupt important ecosystem functions. Japanese stiltgrass can raise the pH of the soil where it grows, affecting the flora and fauna of invaded forest floors. It is capable of establishing dense canopies that can displace native species by excluding light, disrupting the regeneration and natural succession phenomena in timbered forests. Stiltgrass is considered one of the most damaging invasive plant species in the United States (US Department of Agriculture, 2023).

Community Resilience

The United States Global Change Research Program (USGCRP) cites that being resilient means communities are better able to anticipate, prepare for, and recover from multi-hazard threats with minimum damage to social well-being, the economy, and the environment. Changing weather patterns, such as drought and flooding, are increasing the risk of natural hazards. Communities can prepare for this increased risk by participating in hazard mitigation planning, or the effort to reduce loss of life and property by lessening the impact of disasters. A hazard mitigation plan is when local governments identify risks and vulnerabilities associated with natural disasters and develop long-term strategies for protecting people and property from future hazard events. Springfield Township is part of the 2021 Bucks County Hazard Mitigation Plan (HMP) which identified mitigation strategies and actions specific to the Township.



Climate Data Profile

Impacts of climate change can result in the loss of life, property damage, road closures, and business interruption. The Bucks County region is prone to flooding due to its terrain and its location within floodplains along streams and in valleys. Geography includes many low rolling hills, where rainfall or snowmelt can accumulate. As excess water drains into streams and rivers, it can overflow onto stream banks and adjacent floodplains. Increased rainfall from climate change is escalating the risk of localized flooding, as seen in 2019 when Route 309 was closed due to flash flooding. Hurricanes and extreme winter storms are accompanied by strong winds which can cause property damage, dangerous road conditions, and utility interruption.

Temperature

Changes in temperature is one indicator of the impacts of climate change for Springfield Township, which is summarized in Tables 11 – 15. The four analyses of temperature include the following:

- Monthly Mean Average Temperatures
- Monthly Total Heating Degree Days (HDD)
- Monthly Total Cooling Degree Days (CDD)
- Monthly Total Growing Degree Days (GDD)

In addition to the Springfield Township specific data below, The PA Climate Change Report from 2021 shows that Bucks County anticipates an average temperature increase of 8.8 degrees from 2000 to 2070-2099 (Climate Change Report, 2021).

Monthly Mean Average Temperatures

The mean average monthly temperature was gathered for each month between 1979 – 2022 by adding up the daily mean temperatures for each day of a month and then dividing that sum by the number of days in the month. Based on those values, a mean (average), maximum (highest temperature) and minimum temperature (lowest temperature) was calculated by the National Weather Service.

Table 15: Monthly Mean Average Temperatures (1979 – 2022)												
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean Temp. (°F)	28.5	30.9	39.1	49.9	59.9	68.6	73.7	71.7	64.5	53.1	42.5	33.7
Max. Temp. (°F)	36.1	37.4	45.8	54.7	67.1	71.8	77.4	76.1	68.0	60.0	47.3	45.0
Year	1998	2017	2012	2017	2004	2005	2020	1980	1980	2021	2006	2015
Min Temp. (°F)	20.6	19.9	32.5	46.2	53.6	64.8	69.0	66.8	59.2	48.8	35.2	26.3
Year	1982	1979	1996	2018	2008	1985	2000	2013	2013	1992	1996	2010

Source: National Weather Service, Station: Bucksville, PA



The key takeaways for the Monthly Mean Average Temperatures are as follows:

- The hottest months are July and August.
- The coolest months are January and February.
- 50% of the monthly maximum average temperature have occurred within the last ten years (since 2012).
- 33% of the monthly minimum average temperature have occurred within the last ten years (since 2012).

Monthly Total Heating Degree Days (HDD) and Cooling Degree Days (CDD) – Base 65°F

Degree days are based on the assumption that when the outside temperature is 65°F, people do not need heating or cooling to be comfortable. HDD and CDD are calculated as follows:

Average Daily Temperature = (High temperature + low temperature)/2

HDD = 65°F - Average Daily Temperature

CDD = Average Daily Temperature – 65°F

The monthly total number of HDD between 1979 - 2022 is shown below. HDD are a measure of how cold the temperature was on a given day. Based on those values, a maximum and minimum number of HDD was calculated and the year the maximums and minimums were recorded.

Table 16: Monthly Total HDD – Base 65 (1979 – 2022)												
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Total # of Days	1131	940	777	456	188	34	3	10	84	346	649	932
Max # of Days	1367	1255	990	558	278	75	19	36	158	470	844	1124
Year	1982	1979	1984	2018	1997	1997	2007	1986	1984	1987	2012	1980
Min # of Days	918	764	588	318	103	13	0	0	22	164	527	612
Year	1993	2017	2012	2019	2018	1987	2021	2018	2005	2021	2003	2015

Source: National Weather Service, Station: Bucksville, PA

The key takeaways for Monthly Total HDD are as follows:

- January has the most Monthly Total HDD.
- January 1982 had the maximum number of HDD over the 43-year time period.
- 17% of the monthly maximum HDD have occurred within the last ten years (since 2012).
- This data reflects that HDD, or cold temperature days, have consistently declined since 1979 as the climate has warmed.

The monthly total number of CDD between 1979 – 2022 is shown below. CDD measures how hot the temperature was on a given day or during a period of days. Based on those values, a



maximum and minimum number of CDD was calculated and the year the maximums and minimums were recorded.

Table 17: Monthly Total CDD – Base 65 (1979 – 2022)												
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Total # of Days	0	0	1	5	43	151	280	225	87	12	0	0
Max # of Days	0	0	11	42	99	224	393	350	154	56	2	0
Year	2021	2022	1998	2002	1986	2005	2020	1980	1980	2007	1982	2021
Min # of Days	0	0	0	0	7	62	139	92	14	0	0	0
Year	2021	2022	2022	2020	1997	1985	2009	2013	2009	2022	2021	2021

Source: National Weather Service, Station: Bucksville, PA

The key takeaways for Monthly Total CDD are as follows:

- July has the most Monthly Total CDD.
- July 2020 had the maximum number of CDD over the 43-year time period, meaning the hottest temperature days since 1979 occurred in July 2020.
- 33% of the monthly maximum CDD have occurred within the last ten years (since 2012).
- This data suggests that the CDD, or hot temperature days, have not consistently increased within the last ten years but the months of January, February, July, and December are experiencing the number of warmest days since 1979.

Monthly Total Growing Degree Days (GDD) - Base 50°F

GDD are used to estimate the growth and development of plants and insects during the growing season and are an important metric for agricultural management. The basic concept is that development will only occur if the temperature exceeds a base temperature, which varies by organism. For example, corn, soybeans, sorghum, and tomatoes all have a base temperature of 50 °F. For these crops, a day with an average temperature of 60 °F would equal 10 growing degree days, or GDD. The formula for Monthly Total GDD is as follows:

$$\text{GDD} = \text{Average Daily Temperature} - 50^{\circ}\text{F}$$

The monthly total number of GDD between 1979 - 2022 is shown below. Based on those values, a maximum and minimum number of GDD was calculated and the year the maximums and minimums were recorded.

**Table 18: Monthly Total GDD - Base 50 (1979 - 2022)**

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Total # of Days	1	3	21	100	322	562	738	674	450	174	29	8
Max # of Days	11	25	75	193	434	656	858	815	548	323	81	47
Year	2007	1985	1998	2017	1986	2005	2020	1980	1980	2021	1982	2015
Min # of Days	0	0	0	51	190	452	584	528	324	60	3	0
Year	2021	2021	2005	2020	1997	1985	2009	2013	2009	1987	2012	2020

Source: National Weather Service, Station: Bucksville, PA

The key takeaways for Monthly Total GDDs are as follows:

- July has the most Monthly Total GDD, or the most days above 50°F.
- This data suggests that the GDD, or temperature days above 50°F, have not consistently increased within the last ten years but the months of July and October experienced the highest GDD in 2020 and 2021 since 1979.
- It's important to note that GDD analysis does not include a maximum temperature threshold, and therefore does not account for the impacts of extreme heat on plant growth, which can include heat stress and reduced productivity and yield.

Precipitation

Precipitation is another indicator of the impacts of climate change for Springfield Township. The sum of the monthly total precipitation is summarized in Table 15.

Table 19: Monthly Total Precipitation (1979 - 2022)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean Amount of Precip. (in.)	3.71	3.33	4.02	4.19	4.34	4.24	5.41	4.20	4.31	4.37	3.43	4.25
Max. Amount of Precip. (in.)	11.54	6.74	8.17	9.60	9.79	11.53	10.96	9.64	10.82	14.85	7.08	9.57
Year	1979	2008	1980	1983	1984	2006	2004	2009	2004	1995	1985	1996
Min Amount of Precip. (in.)	0.89	0.67	0.96	0.68	0.93	1.13	0.60	0.76	0.49	0.41	0.99	0.66
Year	1981	2009	2006	1985	2005	1995	1999	1980	2005	2001	2012	1980

Source: National Weather Service, Station: Bucksville, PA

The key takeaways for Monthly Total Precipitation are as follows:

- July is the wettest month, and February is the driest month.
- 0% of the monthly maximum amount of precipitation has occurred within the last ten years (since 2012); 2009 is the most recent year that experienced a monthly maximum amount of precipitation.



- 8% if the monthly minimum amount of precipitation has occurred within the last ten years (since 2012).

Hazard Mitigation

As mentioned above, hazard mitigation is the effort to reduce loss of life and property by lessening the impact of human-based and natural hazards. In the 2021 Bucks County HMP, Springfield Township identified several hazards that have increased in frequency and magnitude. The Hazard Mitigation Plan identified the following hazards as “high risk” (BCPC, 2021b):

- Flood, Flash Flood, Ice Jam
- Winter Storm
- Hurricane, Tropical Storm, Nor’easter
- Gas and Liquid Pipelines
- Pandemic and Infectious Disease
- Subsidence, Sinkhole

As part of the risk assessment in the 2021 Bucks County HMP, the following risks were identified for Springfield Township:

- 2% of structures within the Township are within Federal Emergency Management Agency’s (FEMA) Special Flood Hazard Area (SFHA), an area inundated by 100-year flooding.
- 11% of critical facilities within the Township are within the SFHA. Bucks County considers 14 types of facilities critical including, airports, correctional facilities, day camps, EOCs, fire departments, hospitals, municipal buildings, nursing/retirement homes, police departments, railroad stations, rescue squads, schools, senior centers, and wastewater plants.
- Springfield Township leads Bucks County with the most critical facilities within 0.25 miles of a liquid or gas pipeline and the highest percentage of total critical facilities within 0.25 miles of a liquid or gas pipeline (78% of total critical facilities). There is a liquid pipeline and two gas pipelines that cross through Springfield Township
- 1,247 structure vulnerable to wildfire.
- High vulnerability to subsidence, which will be exacerbated by the construction of planned pipelines.

In order to reduce the risk of natural and human-based hazards, the Hazard Mitigation identified a variety of mitigation actions for Springfield Township to reduce their risk to natural and human-caused hazards. They are project suggestions and do not represent projects that the Township has specifically committed to. Specific projects identified in these actions include:

- Install storm sewer along a section of Peppermint Road to address an ongoing flooding issue that impacts neighboring downstream properties.
- Evaluate and consider implementing activities to secure “Firewise” designation.



- Engage the community on the vulnerability of the historic properties to hazards in the community and identify community members interested in becoming core planning team members to continue the historic property hazard mitigation planning process
- Inventory the historic properties vulnerable to the identified hazards, assess vulnerability of these assets, and establish preservation priorities by determining which assets are most valuable to the community.
- Evaluate adequacy of township/borough building code implementation.
- Consider extra permitting requirements for mines and pipelines in areas with carbonate rock.
- Obtain information for all remaining structures in the 1% annual chance floodplain to determine the best property protection methods to promote with individual property owners. Techniques for gathering information over time should include developing and implementing a program for integrated information “capture” at key points in normal township administrative procedures, including applications for building permits at township/borough offices.
- Evaluate, implement, and perform mitigation projects identified in this and other planning mechanisms, including acquisition, elevation, mitigation reconstruction, foundation and building stabilization, securing access to generator power and other mitigation methods.
- Proceed with grant applications to suitably protect repetitive-loss properties 1% annual chance floodplain (for owners interested in FEMA mitigation funding).

Sustainability

Sustainability can be defined as “meeting the needs of the present without compromising the ability of future generations to meet their own needs” (United Nations Brundtland Commission). Sustainability is different than resilience, however, can work to increase community resilience by continuing to perform during and after a hazard event.



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