READING AREA TRANSPORTATION STUDY

COMMUNITY DEMOGRAPHIC ASSESSMENT

DRAFT MARCH 2026

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READING AREA TRANSPORTATION STUDY
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EXECUTIVE SUMMARY

The preparation of a Community Demographic Assessment is based on Title VI of the Civil Rights Act of 1964, which requires recipients of federal aid to certify and ensure nondiscrimination in the use of those funds.

The basic principles to be addressed are:

- Avoid, minimize or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on all populations
- Ensure the full and fair participation by all potentially affected communities in the transportation decision-making process, and
- Prevent the denial of, reduction of, or significant delay in the receipt of benefits by all populations of all income levels.

In support of that, the ***FFY 2027-2030 Community Demographic Assessment*** was prepared. A statewide methodology was developed and followed in the creation of this document. Census block groups were classified into intervals based on the ratio of census block group to county population percentages for the demographic categories of Minority, White (non-Hispanic or Latino), Below Poverty Level, and Above Poverty Level populations across Berks County. The concentration of these populations is then viewed against criteria described below to address the basic principles above and aid in the determination of potential impacts of the FFY 2027-2030 TIP projects on the community.

The Crash and Injury Analysis identifies the number, percentage, and location of motorized Reportable Crashes, Persons Involved, Suspected Serious Injuries, and Fatalities across each of the population intervals. These are also identified for nonmotorized crashes. The analysis goes further to identify these same numbers for various nonmotorized transportation modes, including horse and buggy, bicycle, and pedestrian.

The Pavement and Bridge Analysis identifies the relationship between pavement and bridge conditions to all population and all income concentrations. The pavement condition analysis explores the condition of pavement categorized by the International Roughness Index (IRI) and Overall Performance Index (OPI) of pavement. The bridge condition analysis identifies bridge conditions by count and by amount of deck area in square feet.

The fixed route transit service of Berks Area Regional Transportation Authority (BARTA) in relation to concentrations of populations based on race and income level was also explored to view availability of a transit service to the residents of Berks County. These routes were also analyzed when laid over a map of low wage jobs to low wage workers to view accessibility to these jobs.

The Community Demographic Assessment wraps up by evaluating the Types of Projects and Distribution of the FFY 2027-2030 Transportation Improvement Program and Potential Impacts of the Transportation Projects on the Community.

The assessment found no disproportionately high or adverse effects on any population or income concentrations but did recommend careful consideration of these potential issues in future program updates. A copy of the ***FFY 2027-2030 Community Demographic Assessment*** can be found on the Berks County Planning Commission website at: www.berkspa.gov/planning.

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FY 2027-2029 TIP Statewide Community Demographic Analysis Methodology 69
FY 2027-2029 TIP Statewide Low Wage Workers to Low Wage Jobs Analysis Methodology 77

SECTION 1
Title VI

Background

Title VI of the Civil Rights Act of 1964 prohibits discrimination on the basis of race, color, and national origin. It states that no person can be excluded from participation in, denied benefits of, or discriminated against under programs and activities receiving federal financial assistance. The Reading Area Transportation Study (RATS) is the regional transportation planning organization for the Reading, Pennsylvania metropolitan area. The Reading Metropolitan Planning Organization (MPO) is co-terminus with the political boundary of Berks County. As an MPO, the Reading Area Transportation Study (RATS) is a subrecipient of federal funds and therefore certifies that it will comply with Title VI of the Civil Rights Act of 1964, as amended, which prohibits discrimination on the basis of race, color, or national origin in programs and activities receiving Federal financial assistance.

The roadway and transit projects identified and programmed in the proposed Reading Area Transportation Study FFY 2027-2030 Transportation Improvement Program (TIP) and FFY 2027-2050 Long Range Transportation Plan must be analyzed to ensure potential impacts of transportation projects on the community are compliant with Title VI requirements. RATS prepares this Community Demographic Assessment to respond to the federal and state requirements and facilitate the fair transportation planning process in Berks County.

RATS will assess the impacts of the transportation planning process, the Long Range Transportation Plan (LRTP) and the Transportation Improvement Program (TIP) on all populations, identify their transportation needs, and explore ways to satisfy these needs. Our assessment of the potential impacts of transportation projects on the community relies on relative measures, not specific thresholds or measures. This includes our professional judgment of the disproportionate impacts and judgment of efforts made during the planning process to inform people potentially impacted. This document supersedes the FFY 2025-2028 Environmental Justice Summary.

Public Participation

RATS supports and encourages active public participation throughout the transportation planning process. RATS adopted the most recent Public Participation Plan in 2023 to ensure that specific opportunities exist for the public to offer input and provide feedback as active participants in the decision-making process. Public participation takes many forms, and RATS uses a wide range of methods and media to enhance the public's participation in the process.

As part of the FFY 2027-2030 Transportation Improvement Program (TIP) and FFY 2027-2050 Long Range Transportation Plan, RATS took a number of steps to ensure consideration of the public's views, including using the public participation plan, developing and contacting a comprehensive listing of stakeholders, utilizing a variety of methods to involve the public, and considering public comments in developing the list of transportation projects.

As part of the FFY 2027-2030 TIP and FFY 2027-2050 Long Range Transportation Plan, RATS took/will take a number of steps to ensure consideration of the public's views, including using the public participation plan, developing and contacting a comprehensive listing of stakeholders, utilizing a variety of methods to involve the public, and considering public comments in developing the list of transportation projects. The overall goal of the TIP and LRTP is to develop plans and strategies that promote an efficient and effective transportation system for all persons of Berks County.

Definitions

Minority means a person who is: (1) Black (a person having origins in any of the black racial groups of Africa); (2) Hispanic (a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race); (3) Asian American (a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands); (4) American Indian and Alaskan Native (a person having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition); and (5) Native Hawaii or Other Pacific Islanders (a person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands). Additionally, any person who responded to the US Census as being some other race or two or more races qualifies as being in the minority population.

Limited English Proficiency includes people ages 5 and older who do not speak English as their primary language and who have reported to the Census Bureau an ability to read, write, speak, or understand English less than very well.

Persons with a Disability includes people with mobility limitation, self-care limitation, or people with both limitations. Those limitations can include a long-lasting physical, mental or emotional condition, and can make it difficult for a person to do activities such as walking, climbing stairs, dressing, bathing, learning or remembering. Limitations can also impede a person from being able to go outside the home alone or to work at a job or business.

Elderly population includes persons age 65 and older.

Poverty includes any individual with an income less than $15,650 annually or a family of four with income less than $32,150 annually. This is the poverty threshold as set by the U.S. Census Bureau.

Census Block Groups are statistical geographic subdivisions of a census tract and are the smallest geographic areas for which the Census Bureau provides sample data, primarily from the ACS 5 -year period estimates.

American Community Survey (ACS) is an ongoing demographics survey program conducted by the U.S. Census Bureau that provides information on a yearly basis about the nation and its people which aids in determining how federal and state funds are distributed each year.

SECTION 2
DEMOGRAPHICS

Berks County Demographics

Berks County is an urban county of the third class, comprised of one city of the third class, 27 boroughs, and 44 townships. It is located in southeastern Pennsylvania, surrounded by six other counties: Schuylkill County to the north, Lebanon County to the west, Lehigh and Montgomery Counties to the east and Chester and Lancaster Counties to the south. Reading, a city of the third class, serves as the county seat. The County's geographic location and transportation network promote accessibility and mobility for people and freight to several surrounding larger metropolitan areas including Allentown (39 miles), Philadelphia (56 miles), Baltimore (97 miles), and New York City (125 miles).

As of 2023, Berks County is home to 429,989 residents. In comparison to the six neighboring counties, it ranks fourth in overall population. From 2000-2010, population increased 10.2 percent, exceeding both the state and national figures, and placing 5th highest amongst the other counties. Population growth slowed substantially from 2010-2023, slightly above the state, but below national figures for the period. The county ranked sixth out of the seven adjacent counties for percentage of population growth from 2010-2023.

Table 1

COUNTY POPULATION BETWEEN 2000 AND 2023					
County	**2000**	**2010**	**2023 Est.**	**% Change 00-10**	**% Change 10-23**
Berks	**373,638**	**411,850**	**429,989**	**10.2%**	**4.4%**
Chester	433,501	499,797	540,896	15.3%	8.2%
Lancaster	470,658	520,156	555,151	10.5%	6.7%
Lebanon	120,327	133,688	143,592	11.1%	7.4%
Lehigh	312,090	350,106	375,408	12.2%	7.2%
Montgomery	750,097	801,052	861,225	6.8%	7.5%
Schuylkill	150,336	148,228	143,259	-1.4%	-3.4%
Pennsylvania	12,281,054	12,702,379	12,986,518	3.4%	2.2%
United States	281,421,906	308,745,538	332,387,540	9.7%	7.7%

Source: U.S. Census, Census 2000, and Annual Estimates of the Resident Population 2010, 2019-2023: ACS 5-Year Estimates Table: DP05

Demographic Methodology

For this document the FY 2027-2029 Transportation Improvement Program Statewide Community Demographic Analysis Methodology was used. A full copy of this document can be found as an Appendix to this document. This statewide methodology was created as a way to keep all 67 Pennsylvania Counties using a uniform scale across all counties in the state. It also provides a uniform, easily communicated and understood way of classifying the relative concentrations of low-income and minority populations across the state of Pennsylvania. In the past, minority and low-income population percentages were based on natural breaks of the percentages of those populations present within block groups for each county. This led to conducting 67 separate analyses when looking at this data on a statewide level or multiple different analyses for multicounty planning partners and across PennDOT Districts.

Through use of the United States Census Bureau American Community Survey 2019-2023 5-Year Estimates the county population percentages for minority, white (non-Hispanic or Latino), below poverty level, and above poverty level populations were calculated.

The current methodology classifies census block groups into intervals based on the ratio of census block group minority, white (non-Hispanic or Latino), below poverty level, or above poverty level population percentages to county overall minority, white (non-Hispanic or Latino), below poverty level, or above poverty level population percentages. For example, a ratio of 1 indicates the census block group has the same minority, white (non-Hispanic or Latino), below poverty level, or above poverty level population percentage as the county percentage. A noted side effect of this approach is that it resulted in some counties not having all intervals.

The Berks County overall minority population percentage was determined to be **32.2%**. The Berks County overall white alone (non-Hispanic or Latino) population percentage was determined to be **67.8%**. The Berks County overall below poverty level population percentage was determined to be **11.7%**. The Berks County overall above poverty level population percentage was determined to be **88.3%**.

Tables 2, 4, 6, and 8 show the definitions of the population concentration intervals that are used throughout this plan. The specific Berks County equivalents for these intervals can also be found on these tables.

The Berks County overall minority population percentage was determined to be **32.2%**.

Table 2

DEFINITION OF MINORITY POPULATION INTERVALS		
Minority Population Intervals	**Berks County Equivalent**	**Ratio of Minority Population Percentage in Census Block Group to County Minority Population Percentage**
1	<= 16.1%	Census Block Minority Population Percentage / County Minority Population Percentage <= 0.5 (Census block group minority population percentage less than or equal to half of countywide minority population percentage)
2	> 16.1% and <= 32.2%	Census Block Minority Population Percentage / County Minority Population Percentage > 0.5 and <= 1 (Census block group minority population percentage greater than half and less than or equal to the countywide minority population percentage)
3	> 32.2% and <= 64.4%	Census Block Minority Population Percentage / County Minority Population Percentage > 1 and <= 2 (Census block group minority population percentage greater than the countywide minority population percentage and less than or equal to twice the countywide minority population percentage)
4	> 64.4% and <= 128.8%	Census Block Minority Population Percentage / County Minority Population Percentage > 2 and <= 4 (Census block group minority population percentage greater than twice and less than or equal to four times the countywide minority population percentage)

Table 3 shows the Berks County populations and minority populations within each Minority Population Interval. The percent minority within each Minority Population Interval is also shown.

Table 3

Minority Population Intervals	1	2	3	4
Total Interval Population	183,985	92,204	70,333	83,467
Minority Population	15,081	21,055	32,138	70,337
Percent Minority	8.2%	22.8%	45.7%	84.3%

The Berks County overall white alone (non-Hispanic or Latino) population percentage was determined to be **67.8%**

Table 4

Definition of White (non-Hispanic or Latino) Population Intervals		
White (non-Hispanic or Latino) Population Intervals	**Berks County Equivalent**	**Ratio of White (non-Hispanic or Latino) Population Percentage in Census Block Group to County White (non-Hispanic or Latino) Population Percentage**
1	<= 33.9%	Census Block White (non-Hispanic or Latino) Population Percentage / County White (non-Hispanic or Latino) Population Percentage <= 0.5 (Census block group white (non-Hispanic or Latino) population percentage less than or equal to half of countywide white (non-Hispanic or Latino) population percentage)
2	> 33.9% and <= 67.8%	Census Block White (non-Hispanic or Latino) Population Percentage / County White (non-Hispanic or Latino) Population Percentage > 0.5 and <= 1 (Census block group white (non-Hispanic or Latino) population percentage greater than half and less than or equal to the countywide white (non-Hispanic or Latino) population percentage)
3	> 67.8% and <= 135.6%	Census Block White (non-Hispanic or Latino) Population Percentage / County White (non-Hispanic or Latino) Population Percentage > 1 and <= 2 (Census block group white (non-Hispanic or Latino) population percentage greater than the countywide white (non-Hispanic or Latino) population percentage and less than or equal to twice the countywide white (non-Hispanic or Latino) population percentage)

Table 5 shows the Berks County populations and white (non-Hispanic or Latino) populations within each White (non-Hispanic or Latino) Population Interval. The percent white (non-Hispanic or Latino) within each White (non-Hispanic or Latino) Population Interval is also shown.

Table 5

White (non-Hispanic or Latino) Population Intervals	1	2	3
Total Interval Population	82,225	71,575	276,189
White (non-Hispanic or Latino) Population	12,697	38,628	240,053
Percent White (non-Hispanic or Latino)	15.4%	54.0%	86.9%

The Berks County overall below poverty level population percentage was determined to be **11.7%**.

Table 6

Definition of Below Poverty Level Population Intervals		
Below Poverty Level Population Intervals	**Berks County Equivalent**	**Ratio of Below Poverty Level Population Percentage in Census Block Group to County Below Poverty Level Population Percentage**
1	<= 5.85%	Census Block Below Poverty Level Population Percentage / County Below Poverty Level Population Percentage <= 0.5 (Census block group below poverty level population percentage less than or equal to half of countywide below poverty level population percentage)
2	> 5.85% and <= 11.7%	Census Block Below Poverty Level Population Percentage / County Below Poverty Level Population Percentage > 0.5 and <= 1 (Census block group below poverty level population percentage greater than half and less than or equal to the countywide below poverty level population percentage)
3	> 11.7% and <= 23.4%	Census Block Below Poverty Level Population Percentage / County Below Poverty Level Population Percentage > 1 and <= 2 (Census block group below poverty level population percentage greater than the countywide below poverty level population percentage and less than or equal to twice the countywide below poverty level population percentage)
4	> 23.4% and <= 46.8%	Census Block Below Poverty Level Population Percentage / County Below Poverty Level Population Percentage > 2 and <= 4 (Census block group below poverty level population percentage greater than twice and less than or equal to four times the countywide below poverty level population percentage)
5	> 46.8%	Census Block Below Poverty Level Population Percentage / County Below Poverty Level Population Percentage > 4 (Census block group below poverty level population percentage greater than four times the countywide below poverty level population percentage)

Table 7 shows the Berks County populations and below poverty level populations within each Below Poverty Level Population Interval. The percent below poverty level within each Below Poverty Level Population Interval is also shown.

Table 7

Below Poverty Level Population Intervals	1	2	3	4	5
Total Interval Population	183,081	102,892	74,626	52,692	16,698
Low-Income Population	5,614	8,010	11,832	16,252	7,039
Percent Low-Income	3.1%	7.8%	15.9%	30.8%	42.2%

The Berks County overall above poverty level population percentage was determined to be **88.3%**.

Table 8

Definition of County Above Poverty Level Population Percentage		
Above Poverty Level Population Intervals	**Berks County Equivalent**	**Ratio of Above Poverty Level Population Percentage in Census Block Group to County Above Poverty Level Population Percentage**
1	<= 44.15%	Census Block Above Poverty Population Percentage / County Above Poverty Level Population Percentage <= 0.5 (Census block group above poverty level population percentage less than or equal to half of countywide above poverty level population percentage)
2	> 44.15% and <= 88.3%	Census Block Above Poverty Level Population Percentage / County Above Poverty Level Population Percentage > 0.5 and <= 1 (Census block group above poverty level population percentage greater than half and less than or equal to the countywide above poverty level population percentage)
3	> 88.3% and <= 176.6%	Census Block Above Poverty Level Population Percentage / County Above Poverty Level Population Percentage > 1 and <= 2 (Census block group above poverty level population percentage greater than the countywide above poverty level population percentage and less than or equal to twice the countywide above poverty level population percentage)

Table 9 shows the Berks County populations and above poverty level populations within each Above Poverty Level Population Interval. The percent of the population above poverty level within each Above Poverty Level Population Interval is also shown.

Table 9

Above Poverty Level Population Intervals	1	2	3
Total Interval Population	11,297	132,719	285,973
Population Above Poverty Level	2,828	99,231	266,212
Percent Above Poverty Level	25.0%	74.8%	93.1%

SECTION 3
DEMOGRAPHIC ANALYSIS OF THE FFY 2027–2030 TIP

RATS has identified the following groups to be included in this analysis. The United States Census Bureau American Community Survey 2019-2023 5-Year Estimates provides the data supporting the analysis. The method for this analysis considers all populations and income levels within Berks County.

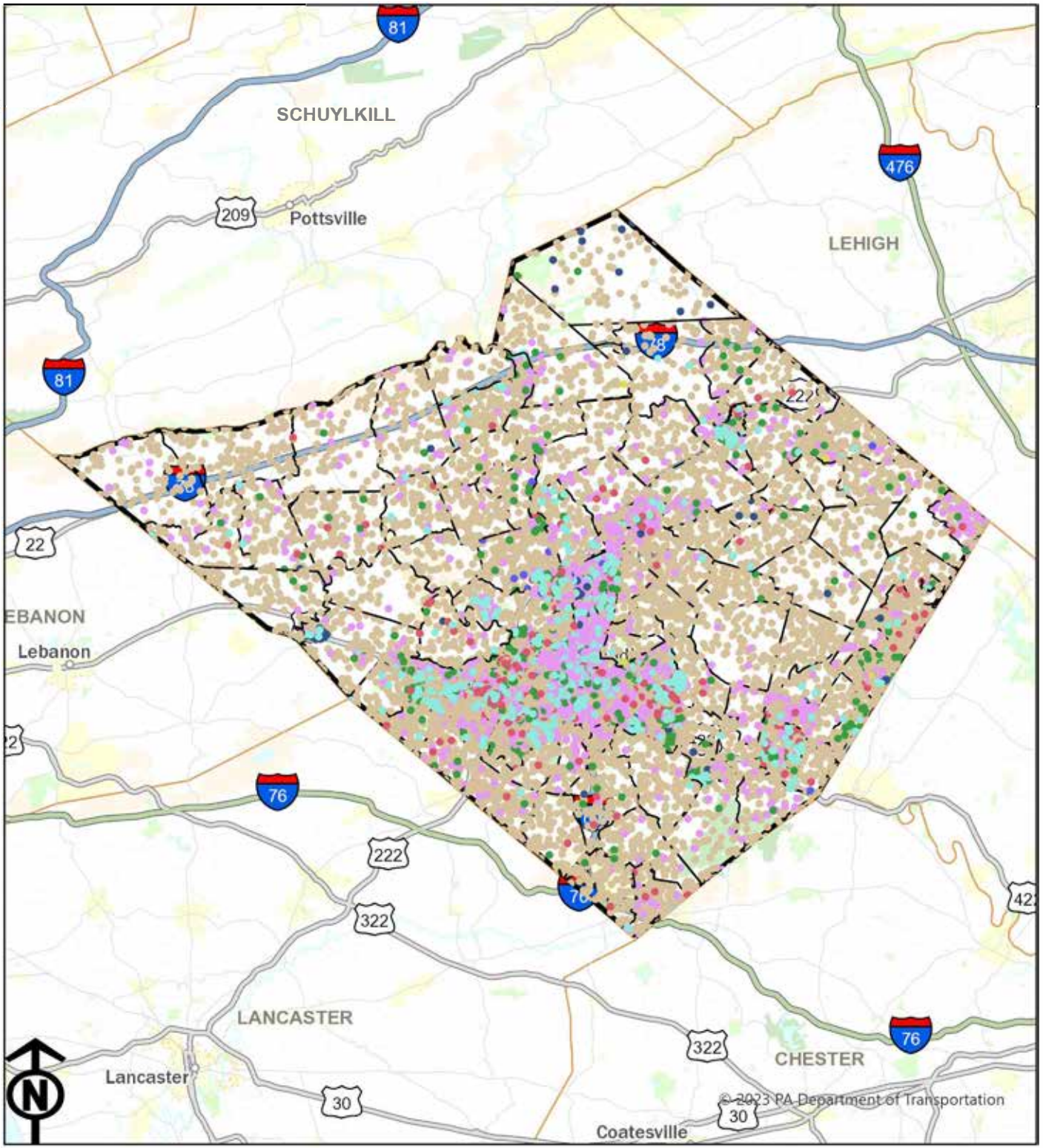
Table 10 shows the Berks County population by race. While the White, Non-Hispanic population makes up nearly three quarters of the population, the Hispanic population makes up more than 20% of Berks County population, with the next highest minority being Black or African American, Non-Hispanic at 4%.

Table 10

Demographic Indicator	Berks County, Pennsylvania	
	County Population	County Percentage
Total	**429,989**	**100%**
White, (non–Hispanic or Latino)	**291,378**	**67.8%**
Minority	**138,611**	**32.2%**
Black or African American, Non-Hispanic	16,986	4.0%
American Indian and Alaska Native, Non-Hispanic	284	0.1%
Asian alone, Non-Hispanic	5,531	1.3%
Native Hawaiian and Other Pacific Islander, Non-Hispanic	77	0.0%
Some other race alone	1,846	0.4%
Two or more races	10,810	2.5%
Hispanic or Latino	103,077	24.0%
Below Poverty Level Population	**48,747**	**11.7%**
Above Poverty Level Population	**368,271**	**88.3%**

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles Tables: B3002 & S1701

Map 01 displays the population density of Berks County by race and origin.



Map 01 - Berks County Population Density by Race and Origin

Statistics:

County Total Population: 429,989

County Minority Population: 138,611

County Overall Minority Population Percentage: 32.2% County

White Alone (Non-Hispanic/Latino) Population: 291,378

County Overall White Alone (Non-Hispanic/Latino) Population Percentage: 67.8%

Legend

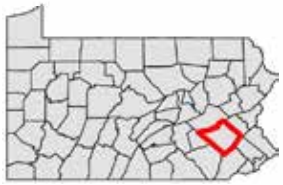
Pennsylvania Counties

Pennsylvania Municipalities

Pennsylvania Census Block Groups, 2023

1 Dot = 20 People

- Black or African-American, Not Hispanic or Latino
- American Indian or Alaskan Native, Not Hispanic or Latino
- Asian, Not Hispanic or Latino
- Native Hawaiian or Pacific Islander, Not Hispanic or Latino
- Other Race, Not Hispanic or Latino
- Two or more Races, Not Hispanic or Latino
- Hispanic or Latino
- White Alone, Not Hispanic or Latino



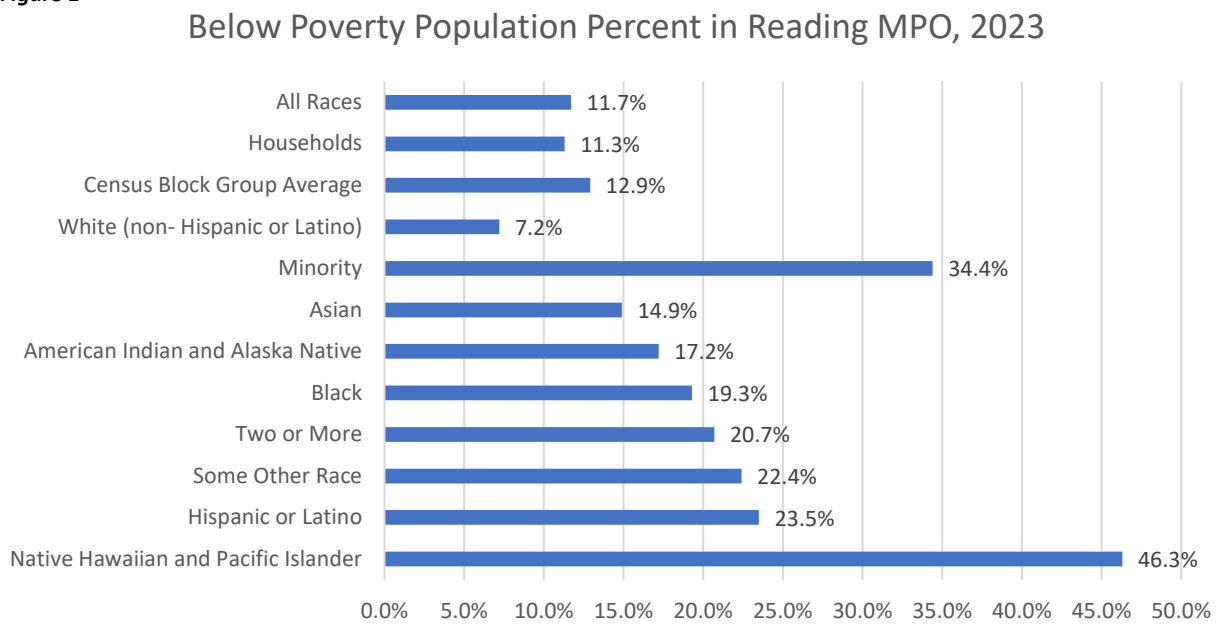
0 5 10 20 Miles

Source: US Census Bureau, 2019-2023 American Community Survey 5-Year Estimates

Map prepared by Scott R. Williams, Williamsport MPO and updated for 2025 by Navarro & Wright Consulting Engineers, Inc.

Figure 1 displays the poverty rate among the racial/ethnic groups throughout the Reading MPO area.

Figure 1



Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles Tables: B03002 & S1701

While the Native Hawaiian and Pacific Islander population has the highest percentage of population below poverty, they also however have the lowest total population. On the opposite side of the spectrum, the White (non-Hispanic or Latino) population has the highest population, but the lowest percentage of population below poverty, 7.2%, the lowest among the races, and lower than the county below poverty population percentage of 11.7%. In contrast, all minority populations are higher than the county below poverty population percentage, and all minorities as a whole have a below poverty population percentage of 34.4%.

Table 11 identifies Populations with Contextual Needs by number and percentage based off multiple Census Tables that use various sample sizes. These numbers show that of the Populations with Contextual Needs, Elderly and Persons with a Disability are the highest in this category making up 17.7% and 14.0% respectively. Inclusion of these populations is imperative to determine the broader transportation and social needs of these populations and ideas of transportation equity.

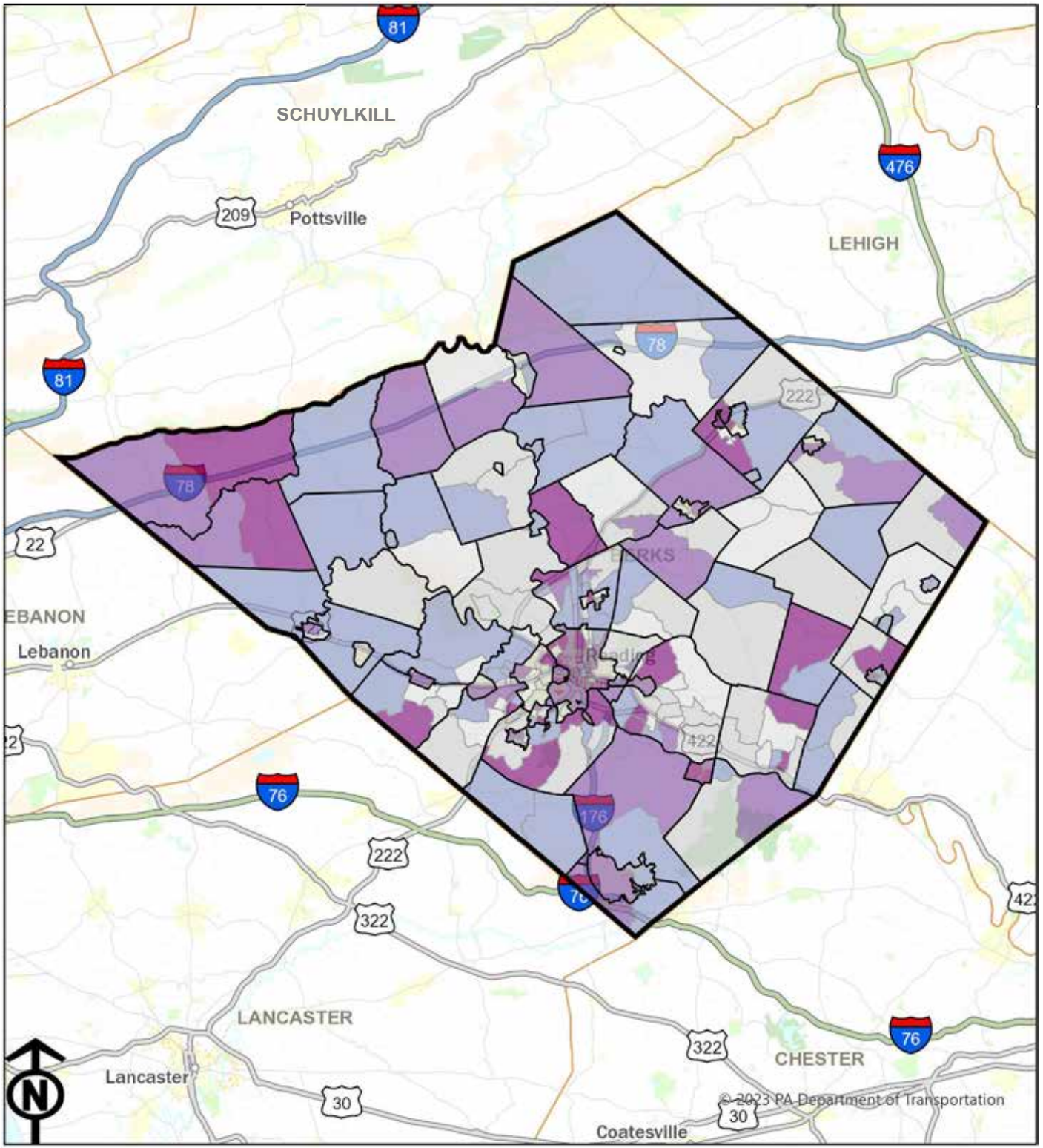
Table 11

Demographic Indicator	Berks County, Pennsylvania	
Populations with Contextual Needs	**County Population**	**Projected County Percentage**
Limited English Proficiency (LEP)	33,621	8.3%
Persons with a Disability	59,732	14.0%
Elderly (65 years or older)	76,181	17.7%
Housing Units with No Vehicle	14,000	8.7%
Below Poverty Level Households	18,212	11.3%
Housing Units with No Computer	12,342	7.6%
Housing Units with No Broadband Subscription	19,318	11.9%

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles Tables: B17017, DP02, DP04, & DP05

Maps 02 and 03 show the population counts by block group for below and above poverty level.

All populations and all income levels within Berks County and their concentrations by block group, which correspond to the Minority, White (non-Hispanic or Latino), Below Poverty Level, and Above Poverty Level Intervals used throughout this document can be found on ***Maps 04, 05, 06, and 07*** on the following pages.



Map 02 - Berks County Below Poverty Level Population Count by Block Group

Statistics:

County Total Population: 429,989

County Below Poverty Level Population: 48,747

County Overall Below Poverty Level Population Percentage: 11.7%

Legend

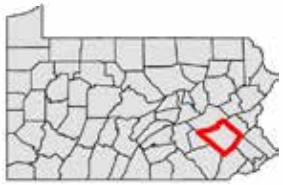
Pennsylvania Counties

Pennsylvania Municipalities

Pennsylvania Census Block Groups, 2023

Below Poverty Level Population (for the BG)

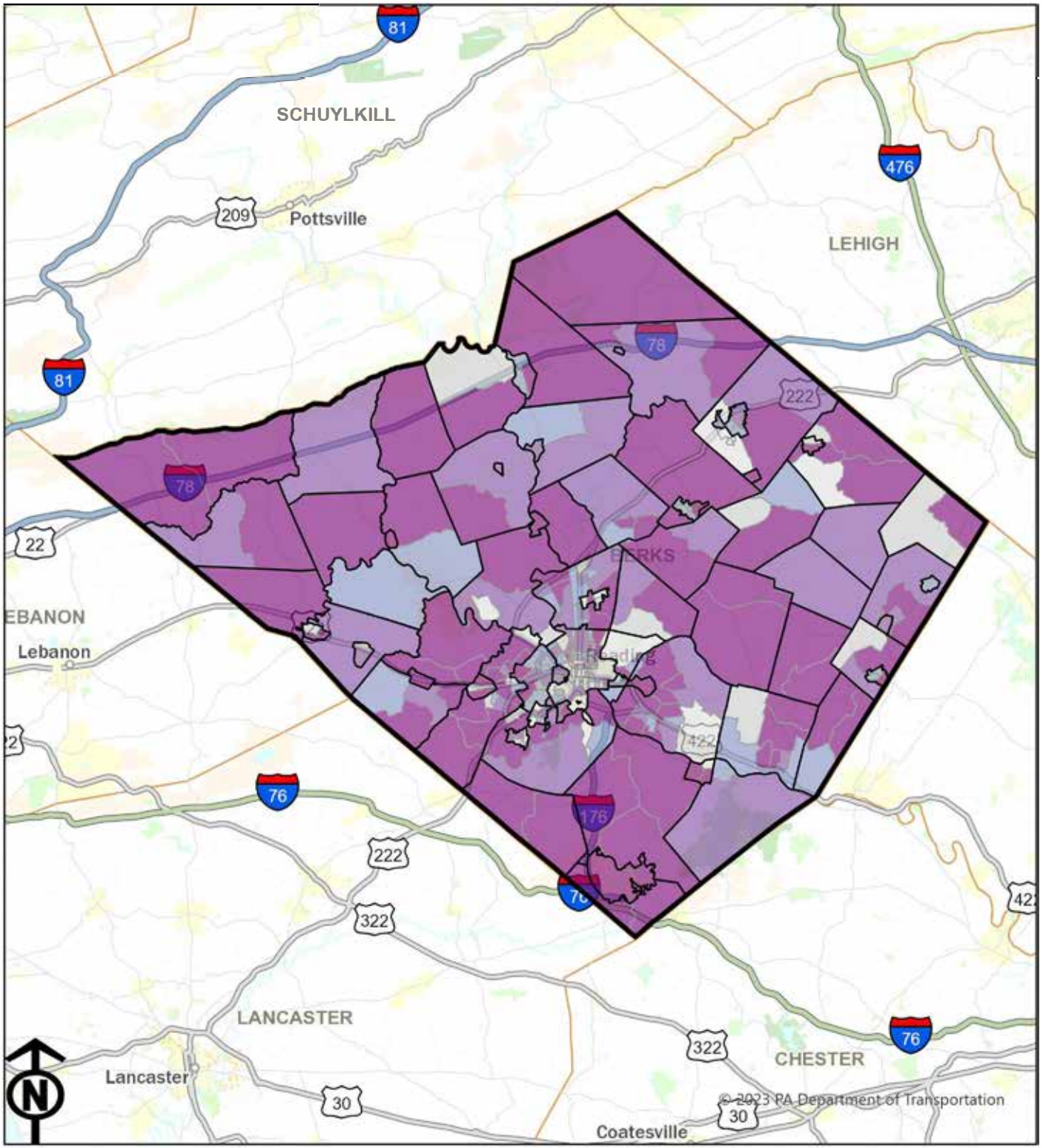
- 0 - 27
- 28 - 69
- 70 - 124
- 125 - 225
- 226 - 2016



0 5 10 20 Miles

Source: US Census Bureau, 2019-2023 American Community Survey 5-Year Estimates

Map prepared by Scott R. Williams, Williamsport MPO and updated for 2025 by Navarro & Wright Consulting Engineers, Inc.



Map 03 - Berks County Above Poverty Level Population Count by Block Group

Statistics:

County Total Population: 429,989

County Above Poverty Level Population: 368,271

County Overall Above Poverty Level Population Percentage: 88.3%

Legend

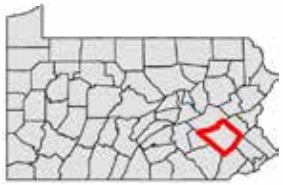
Pennsylvania Counties

Pennsylvania Municipalities

Pennsylvania Census Block Groups, 2023

Above Poverty Level Population (for the BG)

- 0 - 613
- 614 - 863
- 864 - 1132
- 1133 - 1524
- 1525 - 5572

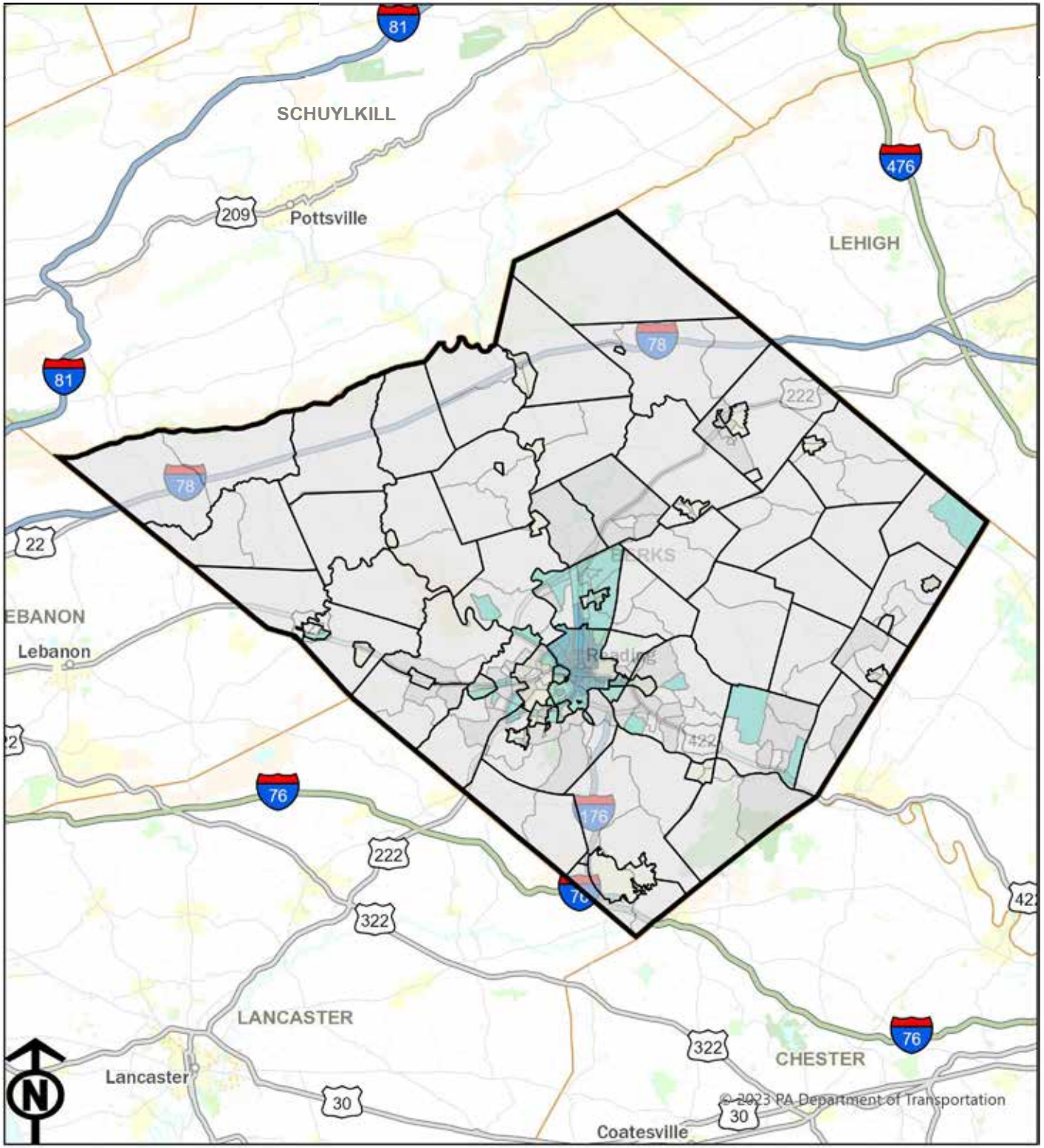


0 5 10 20 Miles

Source: US Census Bureau, 2019-2023 American Community Survey 5-Year Estimates

Map prepared by Scott R. Williams, Williamsport MPO and updated for 2025 by Navarro & Wright Consulting Engineers, Inc.

Map 04 - Berks County Concentrations of Minority Population by Block Group



Statistics:

County Total Population: 429,989

County Minority Population: 138,611

County Overall Minority Population Percentage: 32.2%

Legend

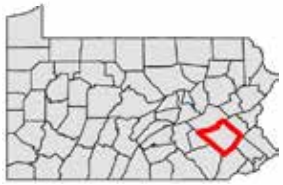
Pennsylvania Counties

Pennsylvania Municipalities

Pennsylvania Census Block Groups, 2023

County Minority Population Interval for Block Group

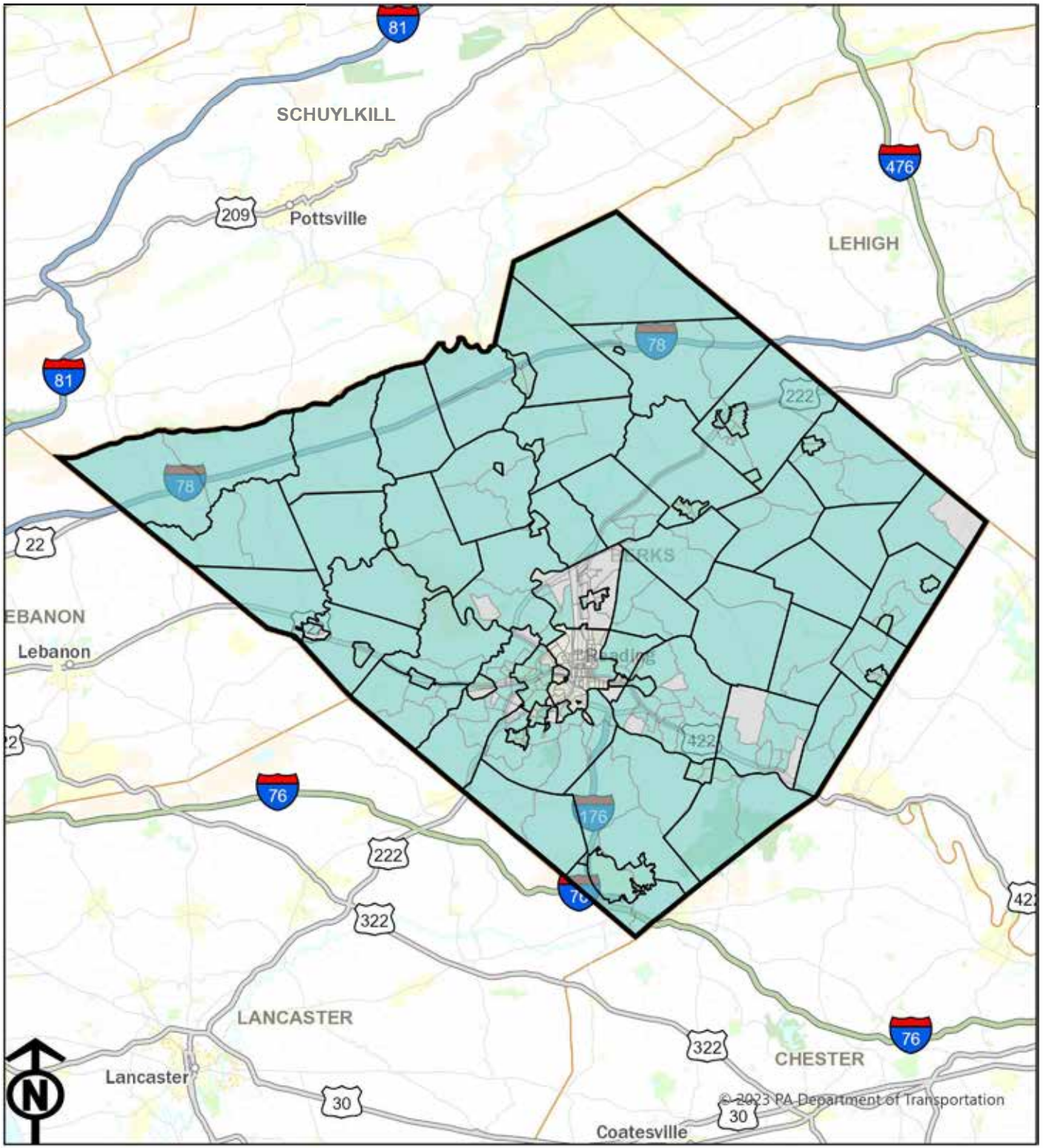
- Interval 1: Less than or equal to half the County Minority Population Percentage (<=16.1%)
- Interval 2: Greater than half and less than or equal to the County Minority Population Percentage (>16.1% and <=32.2%)
- Interval 3: Greater than and less than or equal to twice the County Minority Population Percentage (>32.2% and <=64.4%)
- Interval 4: Greater than twice and less than or equal to four times the County Minority Population Percentage (>64.4% and <=128.8%)



0 5 10 20 Miles

Source: US Census Bureau, 2019-2023 American Community Survey 5-Year Estimates

Map prepared by Scott R. Williams, Williamsport MPO and updated for 2025 by Navarro & Wright Consulting Engineers, Inc.



Map 05 - Berks County Concentrations of White (non-Hispanic or Latino) Population by Block Group

Statistics:

County Total Population: 429,989

County White Alone (Non-Hispanic/Latino) Population: 291,378

County Overall White Alone (Non-Hispanic/Latino) Population Percentage: 67.8%

Legend

Pennsylvania Counties

Pennsylvania Municipalities

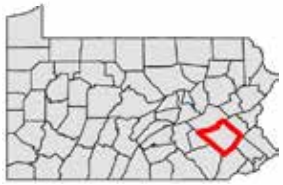
Pennsylvania Census Block Groups, 2023

County White (Non-Hispanic/Latino) Population Interval for Block Group

Interval 1: Less than or equal to half the County White (non-Hispanic or Latino) Population Percentage (<=33.9%)

Interval 2: Greater than half and less than or equal to the County White (non-Hispanic or Latino) Population Percentage (>33.9% and <=67.8%)

Interval 3: Greater than and less than or equal to twice the County White (non-Hispanic or Latino) Population Percentage (>67.8% and <=135.6%)

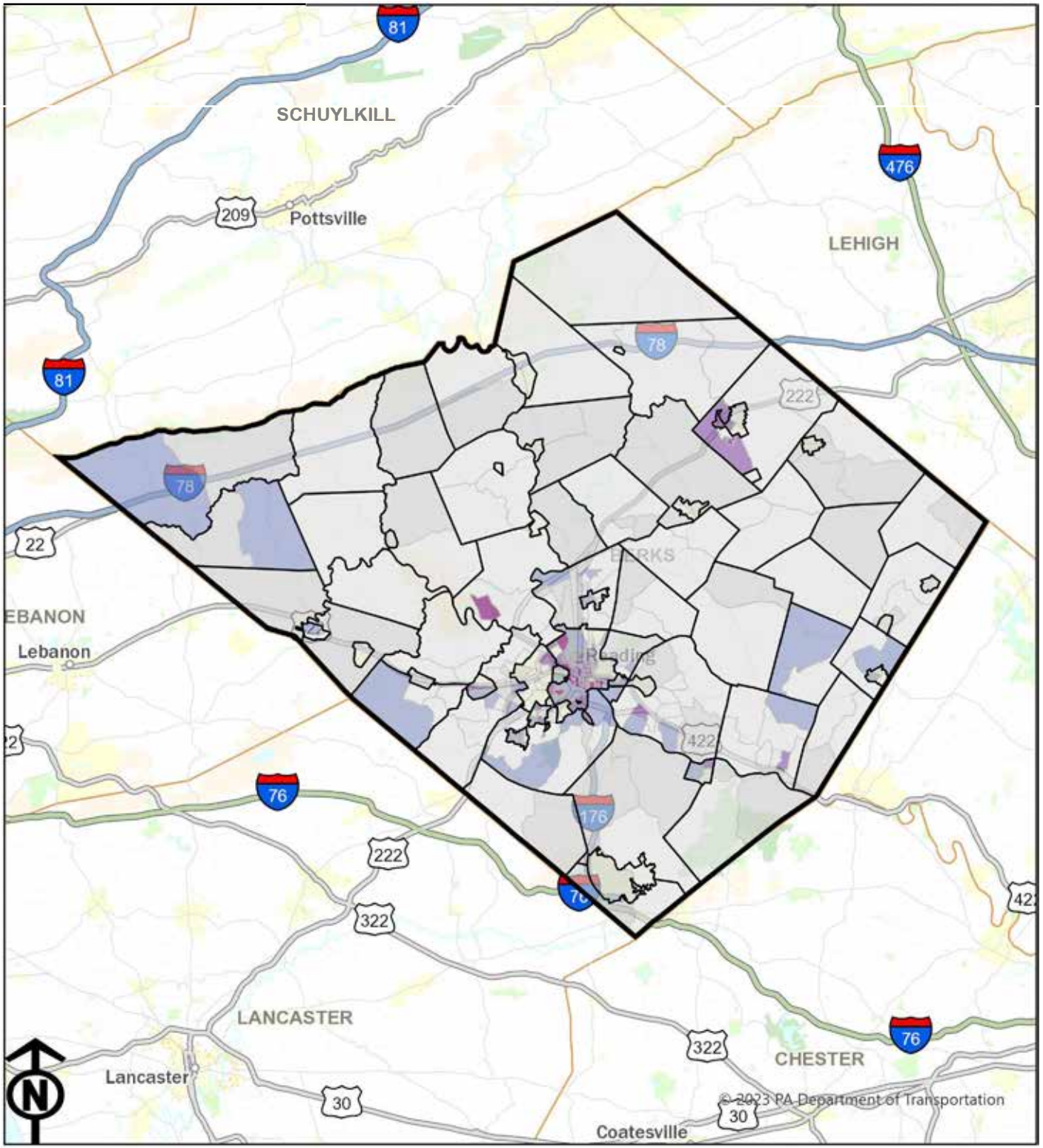


0 5 10 20 Miles

Source: US Census Bureau, 2019-2023 American Community Survey 5-Year Estimates

Map prepared by Scott R. Williams, Williamsport MPO and updated for 2025 by Navarro & Wright Consulting Engineers, Inc.

Map 06 - Berks County Concentrations of Below Poverty Level Population



Statistics:

County Total Population: 429,989

County Below Poverty Level Population: 48,747

County Overall Below Poverty Level Population Percentage: 11.7%

Legend

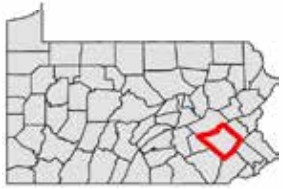
Pennsylvania Counties

Pennsylvania Municipalities

Pennsylvania Census Block Groups, 2023

County Below Poverty Level Population Interval for Block Group

- Interval 1: Less than or equal to half the County Below Poverty Level Population Percentage (<=5.85%)
- Interval 2: Greater than half and less than or equal to the County Below Poverty Level Population Percentage (>5.85% and <=11.7%)
- Interval 3: Greater than and less than or equal to twice the County Below Poverty Level Population Percentage (>11.7% and <=23.4%)
- Interval 4: Greater than twice and less than or equal to four times the County Below Poverty Level Population Percentage (>23.4% and <=46.8%)
- Interval 5: Greater than four times the County Below Poverty Level Population Percentage (>46.8%)

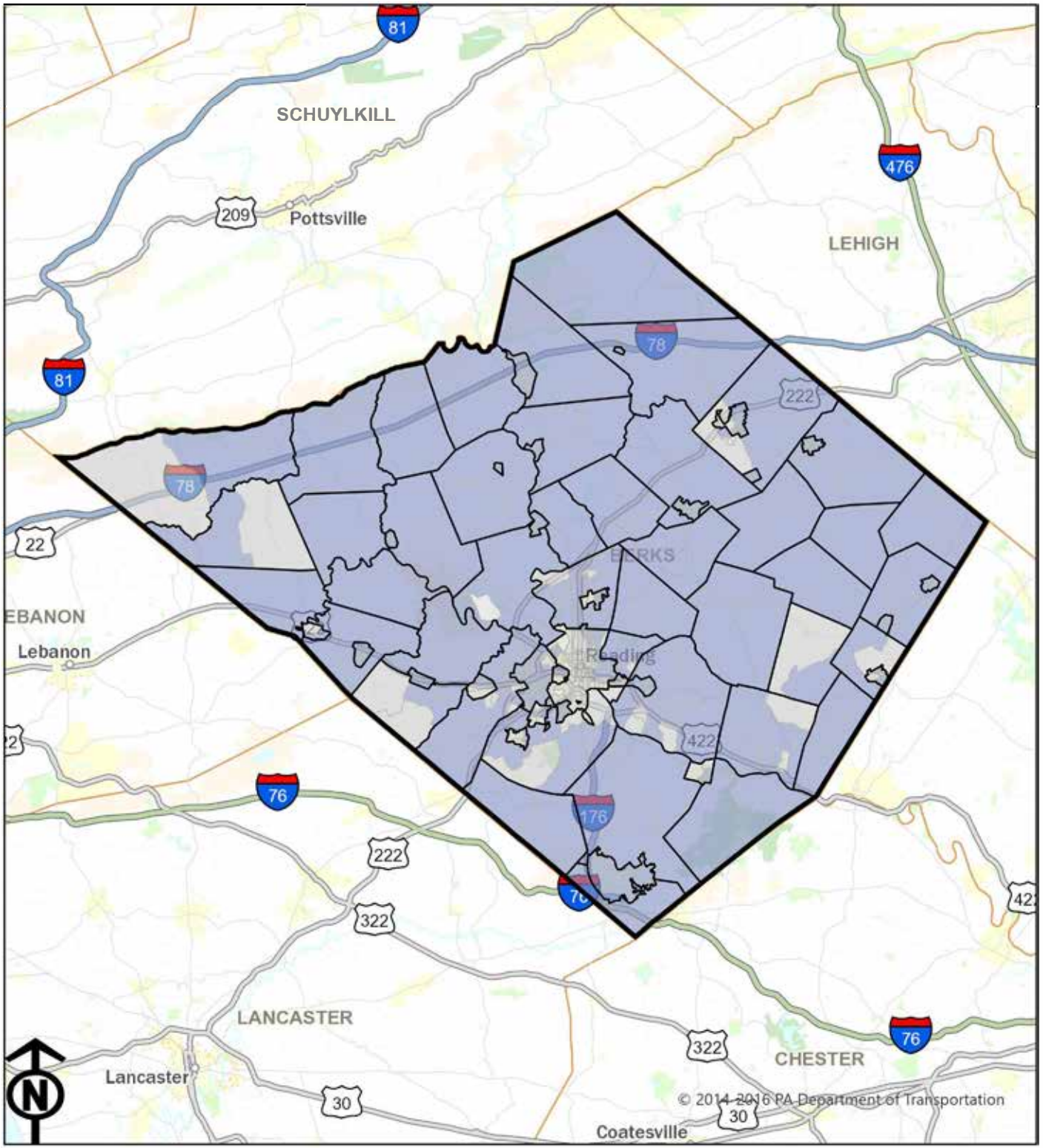


0 5 10 20 Miles

Source: US Census Bureau, 2019-2023 American Community Survey 5-Year Estimates

Map prepared by Scott R. Williams, Williamsport MPO and updated for 2025 by Navarro & Wright Consulting Engineers, Inc.

Map 07 - Berks County Concentrations of Above Poverty Level Population



Statistics:

County Total Population: 429,989

County Above Poverty Level Population: 368,271

County Overall Above Poverty Level Population Percentage: 88.3%

Legend

Pennsylvania Counties

Pennsylvania Municipalities

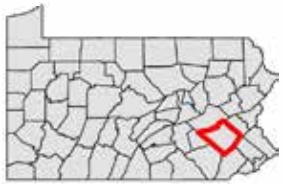
Pennsylvania Census Block Groups, 2023

County Above Poverty Level Population Interval for Block Group

Interval 1: Less than or equal to half the County Above Poverty Level Population Percentage (<=44.15%)

Interval 2: Greater than half and less than or equal to the County Above Poverty Level Population Percentage (>44.15% and <=88.3%)

Interval 3: Greater than the County Above Poverty Level Population Percentage and less than or equal to twice the County Above Poverty Level Population Percentage (>88.3% and <=176.6%)



0 5 10 20 Miles

Source: US Census Bureau, 2019-2023 American Community Survey 5-Year Estimates

Map prepared by Scott R. Williams, Williamsport MPO and updated for 2025 by Navarro & Wright Consulting Engineers, Inc.

SECTION 4
CRASH AND INJURY ANALYSIS OF THE FFY 2027–2030 TIP

The Reading Area Transportation Study Traffic Safety Report 2020-2024 was approved in November 2025. This report can be viewed for a thorough look at general and mode specific crash trends, the severity and distribution of crashes, as well as countermeasures and mitigation strategies. Through the examination of crash trends and identification of mitigation strategies, this report aims to assist in the reduction of overall traffic related crashes, suspected serious injuries, and fatalities on all road types for all road users on Berks County roadways. The data supporting the Community Demographic Assessment varies from the traffic safety report as it looks at 2019-2023 totals to match the years used to determine the demographic intervals as opposed to 2020-2024 trends.

The relationship of reportable crashes to all population and all income concentrations will be explored within this section. Throughout the crash and injury analysis, it is important to look at the total population of each interval. Although more crashes, suspected serious injuries, and/or fatalities occur in certain population intervals, it is important to look at the percent of these occurrences in each interval compared to the percent of total population of Berks County that interval represents. Other factors to consider that may skew the numbers one way or another would include the number of segment miles of roadway represented in each interval, the Average Annual Daily Traffic (AADT) and Daily Vehicle Miles Traveled (DVMT) for those roadways, as well as the speed limits posted in these geographies.

Motorized

Tables 12, 13, 14, and 15 display the number and percentage of Total Reportable Crashes, Persons Involved in Reportable Crashes, Crash Suspected Serious Injuries, and Crash Fatalities in Berks County from 2019-2023. When examining these intervals related to the crash and severity numbers, a majority occur within block groups with higher concentrations of white, above poverty level populations.

The percentage of total reportable crashes in each interval is within 3.5% of the interval population for all populations and income levels. The same is true regarding population intervals and persons involved in reportable crashes. Minority Population Interval 1 shows 8.5% higher crash suspected serious injuries than the population of that interval, however, when combined with Minority Population Interval 2, this is only a difference of less than 4.5%. The largest difference can be determined when analyzing crash fatalities. A disproportionate amount of fatal crashes occur in block groups with a higher population of White (non-Hispanic or Latino) and Above Poverty Level populations. Factors contributing to this distribution are explored in the paragraphs preceding ***Tables 12 through 15***.

The most predominant crash type over these five years was angle and hit fixed object. Hitting a fixed object on the side of the road happens when a vehicle collides with stationary object(s) along and adjacent to the roadway, (i.e. bridge piers, utility poles, embankments, guiderails, etc.). This type of crash occurs more often on winding, higher speed roadways when drivers lose control of their vehicles. These types of roadways are seen at a much higher rate in the census block groups with higher concentrations of white, above poverty level populations.

The lesser number of crashes and lessened severity within block groups of larger minority and below poverty level populations could also be attributed to the lower speed limits found where these populations are concentrated, as the City of Reading has speed limits posted below 35MPH on its roads. Lower speed limits, like those posted on the roads in the City of Reading, lessen the force of impact, which in turn lessens the chance of a crash being fatal or causing serious injury. Across the state of Pennsylvania fatality rates are higher on rural roads as compared to urban roads.

Table 12
Number and Percentage of Total Reportable Crashes, Persons Involved in Reportable Crashes, Crash Suspected Serious Injuries, and Crash Fatalities by Minority Population Intervals, Berks County, PA (2019-2023)

Minority Population Intervals	1	2	3	4	1–4 (Berks County Total)
Total Interval Population	183,985 (42.8%)	92,204 (21.4%)	70,333 (16.4%)	83,467 (19.4%)	429,989
Minority Population	15,081	21,055	32,138	70,337	138,611
Percent Minority	8.2%	22.8%	45.7%	84.3%	32.2%
# of Total Reportable Crashes	12,712 (45.7%)	5,482 (19.7%)	4,466 (16.0%)	5,180 (18.6%)	27,840 (100%)
# of Persons Involved in Reportable Crashes	26,387 (43.2%)	12,519 (20.5%)	10,343 (16.9%)	11,877 (19.4%)	61,126 (100%)
# of Crash Suspected Serious Injuries	595 (51.2%)	202 (17.4%)	151 (13.0%)	214 (18.4%)	1,162 (100%)
# of Crash Fatalities	151 (58.5%)	50 (19.4%)	33 (12.8%)	24 (9.3%)	258 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Table B03002, PennDOT PennShare 2027 TIP Information

Table 13

Number and Percentage of Total Reportable Crashes, Persons Involved in Reportable Crashes, Crash Suspected Serious Injuries, and Crash Fatalities by White (non-Hispanic or Latino) Population Intervals, Berks County, PA (2019-2023)

White (non–Hispanic or Latino) Population Intervals	1	2	3	1–3 (Berks County Total)
Total Interval Population	82,225 (19.1%)	71,575 (16.6%)	276,189 (64.2%)	429,989
White (non-Hispanic or Latino) Population	12,697	38,628	240,053	291,378
Percent White (non-Hispanic or Latino)	15.4%	54.0%	86.9%	67.8%
# of Total Reportable Crashes	5,164 (19.6%)	4,643 (17.7%)	16,489 (62.7%)	26,296 (100%)
# of Persons Involved in Reportable Crashes	11,848 (20.6%)	10,734 (18.7%)	34,937 (60.7%)	57,519 (100%)
# of Crash Suspected Serious Injuries	212 (19.2%)	160 (14.5%)	735 (66.4%)	1,107 (100%)
# of Crash Fatalities	24 (9.6%)	33 (13.3%)	192 (77.1%)	249 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Table B3002, PennDOT PennShare 2027 TIP Information

Table 14

Number and Percentage of Total Reportable Crashes, Persons Involved in Reportable Crashes, Crash Suspected Serious Injuries, and Crash Fatalities by Below Poverty Level Population Intervals, Berks County, PA (2019-2023)

Below Poverty Level Population Intervals	1	2	3	4	5	1–5 (Berks County Total)
Total Interval Population	183,081 (42.6%)	102,892 (23.9%)	74,626 (17.4%)	52,692 (12.3%)	16,698 (3.9%)	429,989
Below Poverty Level Population	5,614	8,010	11,832	16,252	7,039	48,747
Percent Below Poverty Level	3.1%	7.8%	15.9%	30.8%	42.2%	11.7%
# of Total Reportable Crashes	12,212 (40.4%)	7,726 (25.5%)	5,106 (16.9%)	3,971 (13.1%)	1,239 (4.1%)	30,254 (100%)
# of Persons Involved in Reportable Crashes	26,815 (40.4%)	16,650 (25.1%)	11,117 (16.8%)	8,873 (13.4%)	2,863 (4.3%)	66,318 (100%)
# of Crash Suspected Serious Injuries	518 (41.6%)	317 (25.5%)	208 (16.7%)	141 (11.3%)	61 (4.9%)	1,245 (100%)
# of Crash Fatalities	124 (44.0%)	94 (33.3%)	39 (13.8%)	20 (7.1%)	5 (1.8%)	282 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Tables B3002 and S1701, PennDOT PennShare 2027 TIP Information

Table 15
Number and Percentage of Total Reportable Crashes, Persons Involved in Reportable Crashes, Crash Suspected Serious Injuries, and Crash Fatalities by Above Poverty Level Population Intervals, Berks County, PA (2019-2023)

Above Poverty Level Population Intervals	1	2	3	1–3 (Berks County Total)
Total Interval Population	11,297 (2.6%)	132,719 (30.9%)	285,973 (66.5%)	429,989
Above Poverty Level Population	2,828	99,231	266,212	368,271
Percent Above Poverty Level	25.0%	74.8%	93.1%	88.3%
# of Total Reportable Crashes	519 (1.9%)	8,258 (30.7%)	18,135 (67.4%)	26,912 (100%)
# of Persons Involved in Reportable Crashes	1,116 (1.9%)	18,177 (31.0%)	39,312 (67.1%)	58,605 (100%)
# of Crash Suspected Serious Injuries	28 (2.5%)	331 (29.3%)	770 (68.2%)	1,129 (100%)
# of Crash Fatalities	4 (1.5%)	55 (21.1%)	201 (77.3%)	260 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Tables B3002 and S1701, PennDOT PennShare 2027 TIP Information

Nonmotorized

Nonmotorized transportation primarily consists of biking, walking, and horse-drawn vehicles but may also include other transportation devices. Many non-motorized travelers face challenges and safety concerns when utilizing the same roadway as motorized travelers, making the nonmotorized users especially vulnerable when a crash occurs. Recognizing and addressing nonmotorized challenges and safety is an important step in improving safety for all road users. The following tables in this section will look at the number of crashes, how many suspected serious injuries, and how many fatalities occurred for people using various nonmotorized modes of transportation.

Tables 16, 17, 18, and 19 display the number and percentage of crashes, suspected serious injuries, and fatalities associated with all modes of nonmotorized transportation. The number of persons using nonmotorized modes involved in reportable crashes and related suspected serious injuries tend to occur more in areas that have higher minority and below poverty level population concentrations. However, the percentage of nonmotorized fatalities occurred more often in areas of higher white (non-Hispanic or Latino) and above poverty level population concentrations.

Within Berks County, more nonmotorized users of the transportation system tend to live in urbanized areas and boroughs, consistent with the location of higher minority and below poverty level population concentrations, and as such the higher number of persons using nonmotorized modes involved in reportable crashes and related suspected serious injuries. However, there are also fewer fatalities in these areas that utilize more nonmotorized transportation. The risk of fatality to these vulnerable road users is closely tied to speed limits. The average chance of an adult pedestrian being seriously injured or killed when hit by a vehicle traveling 30MPH or less is only 10%. As the vehicle speed increases over 30MPH, the risk of serious injury and fatality increases sharply and significantly to the vulnerable road user. The speed limits in block groups with higher minority and below poverty level populations are generally posted at 35MPH or less.

Table 16

Number and Percentage of People Using Nonmotorized Modes Involved in Reportable Crashes, Suspected Serious Injuries, and Fatalities by Minority Population Intervals, Berks County, PA (2019-2023)

Minority Population Intervals	1	2	3	4	1–4 (Berks County Total)
Total Interval Population	183,985 (42.8%)	92,204 (21.4%)	70,333 (16.4%)	83,467 (19.4%)	429,989
Minority Population	15,081	21,055	32,138	70,337	138,611
Percent Minority	8.2%	22.8%	45.7%	84.3%	32.2%
# of Persons Using Nonmotorized Modes Involved in Reportable Crashes	176 (18.5%)	149 (15.7%)	175 (18.4%)	449 (47.3%)	949 (100%)
# of Crash Suspected Serious Injuries	37 (24.7%)	25 (16.7%)	32 (21.3%)	56 (37.3%)	150 (100%)
# of Crash Fatalities	10 (27.0%)	11 (29.7%)	8 (21.6%)	8 (21.6%)	37 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Table B03002, PennDOT PennShare 2027 TIP Information

Table 17

Number and Percentage of People Using Nonmotorized Modes Involved in Reportable Crashes, Suspected Serious Injuries, and Fatalities by White (non-Hispanic or Latino) Population Intervals, Berks County, PA (2019-2023)

White (non–Hispanic or Latino) Population Intervals	1	2	3	1–3 (Berks County Total)
Total Interval Population	82,225 (19.1%)	71,575 (16.6%)	276,189 (64.2%)	429,989
White (non-Hispanic or Latino) Population	12,697	38,628	240,053	291,378
Percent White (non-Hispanic or Latino)	15.4%	54.0%	86.9%	67.8%
# of Persons Using Nonmotorized Modes Involved in Reportable Crashes	447 (48.2%)	189 (20.4%)	291 (31.4%)	927 (100%)
# of Crash Suspected Serious Injuries	55 (37.9%)	35 (24.1%)	55 (37.9%)	145 (100%)
# of Crash Fatalities	8 (22.2%)	8 (22.2%)	20 (55.6%)	36 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Table B03002, PennDOT PennShare 2027 TIP Information

Table 18

Number and Percentage of People Using Nonmotorized Modes Involved in Reportable Crashes, Suspected Serious Injuries, and Fatalities by Below Poverty Level Population Intervals, Berks County, PA (2019-2023)

Below Poverty Level Population Intervals	1	2	3	4	5	1–5 (Berks County Total)
Total Interval Population	183,081 (42.6%)	102,892 (23.9%)	74,626 (17.4%)	52,692 (12.3%)	16,698 (3.9%)	429,989
Below Poverty Level Population	5,614	8,010	11,832	16,252	7,039	48,747
Percent Below Poverty Level	3.1%	7.8%	15.9%	30.8%	42.2%	11.7%
# of Persons Using Nonmotorized Modes Involved in Reportable Crashes	254 (21.5%)	207 (17.5%)	250 (21.1%)	344 (29.1%)	129 (10.9%)	1,184 (100%)
# of Crash Suspected Serious Injuries	43 (25.9%)	29 (17.5%)	36 (21.7%)	45 (27.1%)	13 (7.8%)	166 (100%)
# of Crash Fatalities	17 (37.0%)	13 (28.3%)	8 (17.4%)	6 (13.0%)	2 (4.3%)	46 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Tables B3002 and S1701, PennDOT PennShare 2027 TIP Information

Table 19

Number and Percentage of People Using Nonmotorized Modes Involved in Reportable Crashes, Suspected Serious Injuries, and Fatalities by Above Poverty Level Population Intervals, Berks County, PA (2019-2023)

Above Poverty Level Population Intervals	1	2	3	1–3 (Berks County Total)
Total Interval Population	11,297 (2.6%)	132,719 (30.9%)	285,973 (66.5%)	429,989
Above Poverty Level Population	2,828	99,231	266,212	368,271
Percent Above Poverty Level	25.0%	74.8%	93.1%	88.3%
# of Persons Using Nonmotorized Modes Involved in Reportable Crashes	49 (5.1%)	497 (52.0%)	409 (42.8%)	955 (100%)
# of Crash Suspected Serious Injuries	4 (2.9%)	71 (51.1%)	64 (46.0%)	139 (100%)
# of Crash Fatalities	1 (2.6%)	13 (33.3%)	25 (64.1%)	39 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Tables B3002 and S1701, PennDOT PennShare 2027 TIP Information

Nonmotorized transportation includes horse-drawn vehicles among other non-powered transportation devices. ***Tables 20, 21, 22, and 23*** show Horse and Buggy Crashes that occurred in Berks County from 2019-2023. There were 3 horse and buggy crashes between 2019 and 2023. These three crashes occurred within a mile of each other in a rural area identified as White (non-Hispanic or Latino) Population Interval 3 and Above Poverty Level Population Interval 3.

Table 20

Number and Percentage of Horse and Buggy Crashes by Minority Population Intervals, Berks County, PA (2019-2023)

Minority Population Intervals	1	2	3	4	1–4 (Berks County Total)
Total Interval Population	183,985 (42.8%)	92,204 (21.4%)	70,333 (16.4%)	83,467 (19.4%)	429,989
Minority Population	15,081	21,055	32,138	70,337	138,611
Percent Minority	8.2%	22.8%	45.7%	84.3%	32.2%
# of Horse and Buggy Crashes	3 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Table B03002, PennDOT PennShare 2027 TIP Information

Table 21

Number and Percentage of Horse and Buggy Crashes by White (non-Hispanic or Latino) Population Intervals, Berks County, PA (2019-2023)

White (non–Hispanic or Latino) Population Intervals	1	2	3	1–3 (Berks County Total)
Total Interval Population	82,225 (19.1%)	71,575 (16.6%)	276,189 (64.2%)	429,989
White (non-Hispanic or Latino) Population	12,697	38,628	240,053	291,378
Percent White (non-Hispanic or Latino)	15.4%	54.0%	86.9%	67.8%
# of Horse and Buggy Crashes	0 (0.0%)	0 (0.0%)	3 (100.0%)	3 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Table B03002, PennDOT PennShare 2027 TIP Information

Table 22

Number and Percentage of Horse and Buggy Crashes by Below Poverty Level Population Intervals, Berks County, PA (2019-2023)

Below Poverty Level Population Intervals	1	2	3	4	5	1–5 (Berks County Total)
Total Interval Population	183,081 (42.6%)	102,892 (23.9%)	74,626 (17.4%)	52,692 (12.3%)	16,698 (3.9%)	429,989
Below Poverty Level Population	5,614	8,010	11,832	16,252	7,039	48,747
Percent Below Poverty Level	3.1%	7.8%	15.9%	30.8%	42.2%	11.7%
# of Horse and Buggy Crashes	3 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Tables B3002 and S1701, PennDOT PennShare 2027 TIP Information

Table 23

Number and Percentage of Horse and Buggy Crashes by Above Poverty Level Population Intervals, Berks County, PA (2019-2023)

Above Poverty Level Population Intervals	1	2	3	1–3 (Berks County Total)
Total Interval Population	11,297 (2.6%)	132,719 (30.9%)	285,973 (66.5%)	11,297 (2.6%)
Above Poverty Level Population	2,828	99,231	266,212	368,271
Percent Above Poverty Level	25.0%	74.8%	93.1%	88.3%
# of Horse and Buggy Crashes	0 (0.0%)	0 (0.0%)	3 (100.0%)	3 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Tables B3002 and S1701, PennDOT PennShare 2027 TIP Information

Tables 24, 25, 26, and 27 display the Number and Percentage of People on Bicycles Involved in Crashes, Suspected Serious Injuries, and Fatalities in Berks County from 2019-2023. The percentage for bicycle-related crashes and bicycle-related suspected serious injuries are nearly equal amongst all populations and income levels. The percentage for bicycle-related fatalities is higher amongst intervals with a higher concentration of white (non-Hispanic or Latino) and above poverty level populations. Similar to the discussion involving all nonmotorized users, the risk of fatality to bicyclists is closely tied to speed limits. This may contribute to a lesser number of fatalities in block groups with higher minority and below poverty level population concentrations, despite a similar number of bicycle-related crashes and suspected serious injuries.

Table 24

Number and Percentage of People on Bicycles Involved in Crashes, Suspected Serious Injuries, and Fatalities by Minority Population Intervals, Berks County, PA (2019-2023)

Minority Population Intervals	1	2	3	4	1–4 (Berks County Total)
Total Interval Population	183,985 (42.8%)	92,204 (21.4%)	70,333 (16.4%)	83,467 (19.4%)	429,989
Minority Population	15,081	21,055	32,138	70,337	138,611
Percent Minority	8.2%	22.8%	45.7%	84.3%	32.2%
# of People on Bicycles Involved in Reportable Crashes	53 (42.4%)	27 (21.6%)	16 (12.8%)	29 (23.2%)	125 (100%)
# of Crash Suspected Serious Injuries	5 (55.6%)	2 (22.2%)	2 (22.2%)	0 (0.0%)	9 (100%)
# of Crash Fatalities	3 (42.9%)	3 (42.9%)	0 (0.0%)	1 (14.3%)	7 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Table B03002, PennDOT PennShare 2027 TIP Information

Table 25

Number and Percentage of People on Bicycles Involved in Crashes, Suspected Serious Injuries, and Fatalities by White (non-Hispanic or Latino) Population Intervals, Berks County, PA (2019-2023)

White (non–Hispanic or Latino) Population Intervals	1	2	3	1–3 (Berks County Total)
Total Interval Population	82,225 (19.1%)	71,575 (16.6%)	276,189 (64.2%)	429,989
White (non-Hispanic or Latino) Population	12,697	38,628	240,053	291,378
Percent White (non-Hispanic or Latino)	15.4%	54.0%	86.9%	67.8%
# of People on Bicycles Involved in Reportable Crashes	29 (25.2%)	16 (13.9%)	70 (60.9%)	115 (100%)
# of Crash Suspected Serious Injuries	0 (0.0%)	2 (22.2%)	7 (77.8%)	9 (100%)
# of Crash Fatalities	1 (14.3%)	0 (0.0%)	6 (85.7%)	7 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Table B03002, PennDOT PennShare 2027 TIP Information

Table 26

Number and Percentage of People on Bicycles Involved in Crashes, Suspected Serious Injuries, and Fatalities by Below Poverty Level Population Intervals, Berks County, PA (2019-2023)

Below Poverty Level Population Intervals	1	2	3	4	5	1–5 (Berks County Total)
Total Interval Population	183,081 (42.6%)	102,892 (23.9%)	74,626 (17.4%)	52,692 (12.3%)	16,698 (3.9%)	429,989
Below Poverty Level Population	5,614	8,010	11,832	16,252	7,039	48,747
Percent Below Poverty Level	3.1%	7.8%	15.9%	30.8%	42.2%	11.7%
# of People on Bicycles Involved in Reportable Crashes	50 (35.2%)	24 (16.9%)	30 (21.1%)	28 (19.7%)	10 (7.0%)	142 (100%)
# of Crash Suspected Serious Injuries	4 (50.0%)	0 (0.0%)	4 (50.0%)	0 (0.0%)	0 (0.0%)	8 (100%)
# of Crash Fatalities	4 (40.0%)	2 (20.0%)	1 (10.0%)	2 (20.0%)	1 (10.0%)	10 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Tables B3002 and S1701, PennDOT PennShare 2027 TIP Information

Table 27
Number and Percentage of People on Bicycles Involved in Crashes, Suspected Serious Injuries, and Fatalities by Above Poverty Level Population Intervals, Berks County, PA (2019-2023)

Above Poverty Level Population Intervals	1	2	3	1–3 (Berks County Total)
Total Interval Population	11,297 (2.6%)	132,719 (30.9%)	285,973 (66.5%)	429,989
Above Poverty Level Population	2,828	99,231	266,212	368,271
Percent Above Poverty Level	25.0%	74.8%	93.1%	88.3%
# of People on Bicycles Involved in Reportable Crashes	4 (3.4%)	46 (39.0%)	68 (57.6%)	118 (100%)
# of Crash Suspected Serious Injuries	0 (0.0%)	4 (50.0%)	4 (50.0%)	8 (100%)
# of Crash Fatalities	1 (11.1%)	3 (33.3%)	5 (55.6%)	9 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Tables B3002 and S1701, PennDOT PennShare 2027 TIP Information

Tables 28, 29, 30, and 31 display the Number and Percentage of Pedestrians Involved in Crashes, Suspected Serious Injuries, and Fatalities in Berks County from 2019-2023. The locations of pedestrian crashes are primarily concentrated in areas with sidewalks such as the urbanized areas and boroughs within Berks County. These are also the areas that have higher minority and below poverty level populations.

Although there are generally more crashes involving pedestrians in areas with a higher concentration of minority and below poverty level populations than the county average, there are fewer pedestrian fatalities in these areas. As mentioned in the previous crash analysis of this section, this could be attributed to the lower speeds found in these areas significantly decreasing the risk of fatality.

Table 28
Number and Percentage of Pedestrians Involved in Crashes, Suspected Serious Injuries, and Fatalities by Minority Population Intervals, Berks County, PA (2019-2023)

Minority Population Intervals	1	2	3	4	1–4 (Berks County Total)
Total Interval Population	183,985 (42.8%)	92,204 (21.4%)	70,333 (16.4%)	83,467 (19.4%)	429,989
Minority Population	15,081	21,055	32,138	70,337	138,611
Percent Minority	8.2%	22.8%	45.7%	84.3%	32.2%
# of Pedestrians Involved in Reportable Crashes	117 (14.4%)	121 (14.9%)	158 (19.4%)	418 (51.4%)	814 (100%)
# of Crash Suspected Serious Injuries	31 (22.1%)	23 (16.4%)	30 (21.4%)	56 (40.0%)	140 (100%)
# of Crash Fatalities	8 (25.8%)	8 (25.8%)	8 (25.8%)	7 (22.6%)	31 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Table B03002, PennDOT PennShare 2027 TIP Information

Table 29

Number and Percentage of Pedestrians Involved in Crashes, Suspected Serious Injuries, and Fatalities by White (non-Hispanic or Latino) Population Intervals, Berks County, PA (2019-2023)

White (non–Hispanic or Latino) Population Intervals	1	2	3	1–3 (Berks County Total)
Total Interval Population	82,225 (19.1%)	71,575 (16.6%)	276,189 (64.2%)	429,989
White (non-Hispanic or Latino) Population	12,697	38,628	240,053	291,378
Percent White (non-Hispanic or Latino)	15.4%	54.0%	86.9%	67.8%
# of Pedestrians Involved in Reportable Crashes	416 (51.9%)	172 (21.4%)	214 (26.7%)	802 (100%)
# of Crash Suspected Serious Injuries	55 (40.7%)	33 (24.4%)	47 (34.8%)	135 (100%)
# of Crash Fatalities	7 (23.3%)	8 (26.7%)	15 (50.0%)	30 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Table B03002, PennDOT PennShare 2027 TIP Information

Table 30

Number and Percentage of Pedestrians Involved in Crashes, Suspected Serious Injuries, and Fatalities by Below Poverty Level Population Intervals, Berks County, PA (2019-2023)

Below Poverty Level Population Intervals	1	2	3	4	5	1–5 (Berks County Total)
Total Interval Population	183,081 (42.6%)	102,892 (23.9%)	74,626 (17.4%)	52,692 (12.3%)	16,698 (3.9%)	429,989
Below Poverty Level Population	5,614	8,010	11,832	16,252	7,039	48,747
Percent Below Poverty Level	3.1%	7.8%	15.9%	30.8%	42.2%	11.7%
# of Pedestrians Involved in Report-able Crashes	198 (19.2%)	182 (17.6%)	219 (21.2%)	314 (30.4%)	119 (11.5%)	1,032 (100%)
# of Crash Suspected Serious Injuries	38 (24.2%)	29 (18.5%)	32 (20.4%)	45 (28.7%)	13 (8.3%)	157 (100%)
# of Crash Fatalities	14 (37.8%)	11 (29.7%)	7 (18.9%)	4 (10.8%)	1 (2.7%)	37 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Tables B3002 and S1701, PennDOT PennShare 2027 TIP Information

Table 31

Number and Percentage of Pedestrians Involved in Crashes, Suspected Serious Injuries, and Fatalities by Above Poverty Level Population Intervals, Berks County, PA (2019-2023)

Above Poverty Level Population Intervals	1	2	3	1–3 (Berks County Total)
Total Interval Population	11,297 (2.6%)	132,719 (30.9%)	285,973 (66.5%)	429,989
Above Poverty Level Population	2,828	99,231	266,212	368,271
Percent Above Poverty Level	25.0%	74.8%	93.1%	88.3%
# of Pedestrians Involved in Reportable Crashes	45 (5.4%)	449 (54.2%)	334 (40.3%)	828 (100%)
# of Crash Suspected Serious Injuries	4 (3.1%)	67 (51.5%)	59 (45.4%)	130 (100%)
# of Crash Fatalities	0 (0.0%)	10 (32.3%)	21 (67.7%)	31 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Tables B3002 and *S1701, PennDOT PennShare 2027 TIP Information*

Throughout the development of the FFY 2027-2030 TIP and future TIPs, emphasis will be made to reduce the amount of non-motorized crashes, suspected serious injuries, and fatalities through identifying areas where safety improvements can be made across Berks County. The crash and injury analysis of all population intervals identifies that fewer total crashes, suspected serious injuries, and fatalities occur in areas of high minority and below poverty level populations, however, more non-motorized crashes tend to occur in these same areas. Focusing the appropriate type of safety improvements in the areas that will benefit the most from them will continue to occur to support a safe transportation system for all populations.

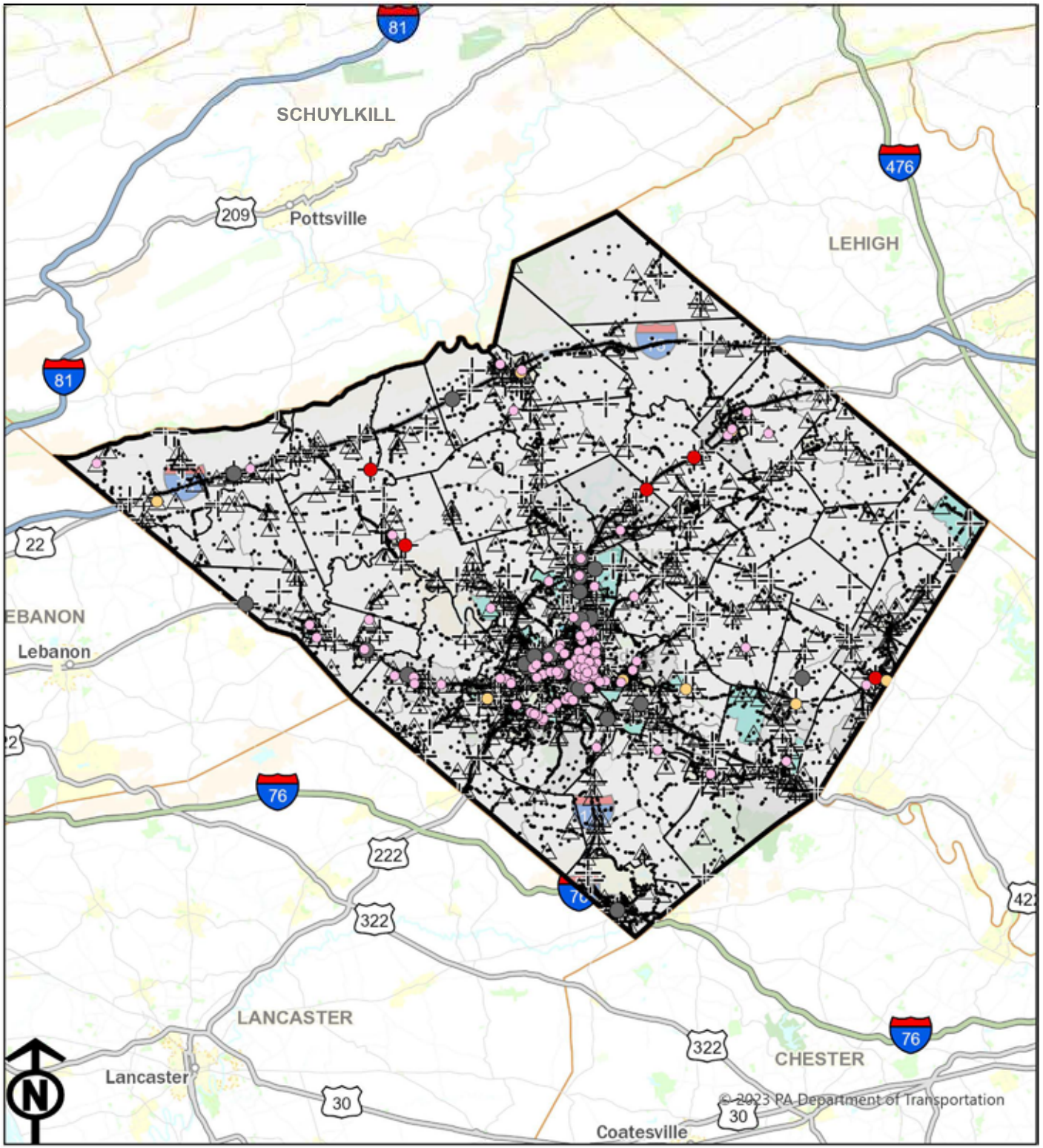
Within the FFY 2027-2030 TIP, there are a few locations where bicycle and pedestrian safety improvements are taken into consideration within higher concentrated areas of minority and below poverty level populations such as the realignment of intersections in Sinking Spring Borough (PennDOT Project Id: 87688) and in the design and ultimate construction of the US 422 West Shore Bypass Reconstruction project (PennDOT Project Id: 114439). The State Hill Road corridor improvements from Colony Drive to Penn Avenue occur in an area with a higher concentration of white (non-Hispanic or Latino) and above poverty level populations. Three projects addressing this section of State Hill Road include corridor safety improvements within the roadway as well as a sidewalk along the south/west side for the entire distance. Additionally, each highway and bridge project is reviewed for bicycle and pedestrian use and improvements, which are included in those projects as appropriate.

The Highway Safety Improvement Program (HSIP) is a federally-funded program that focuses on safety improvements that reduce crashes and significantly reduce fatalities and serious injuries on all roadways using a data-driven approach. PennDOT receives federal funds for its HSIP program, of which approximately 70% is distributed to its regions based on fatalities, serious injuries, and reportable crashes. There are six (6) projects that were developed in cooperation between PennDOT and the Reading MPO using $13.58 million in HSIP funding and associated matching funds on the FFY 2027-2030 TIP. There are also twelve (12) non-HSIP funded projects that support safety on the FFY 2027-2030 TIP. These eighteen (18) projects are dispersed across the county touching all populations of all income levels.

The Reading MPO/Berks County Planning Commission has multiple resources to assist in making these determinations, such as the Berks County Bicycle and Pedestrian Plan which was updated and adopted over the Summer of 2020. Another valuable resource in determining where and what type of safety improvements should be made is the Reading Area Transportation Study (RATS) Annual Traffic Safety Report, which is updated on a yearly basis.

Maps 08, 09, 10, and 11 show the locations of reportable crashes by type and severity from 2019-2023 in Berks County amongst concentrations of Minority, White (non-Hispanic or Latino), Below Poverty Level, and Above Poverty Level Populations.

Map 08 - Berks County Concentrations of Minority Population and Crashes



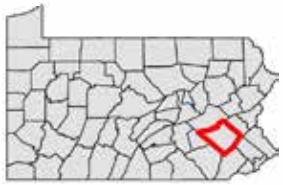
Legend

- Pennsylvania Counties
- Pennsylvania Municipalities
- Pedestrian Suspected Serious Injuries, 2019-2023
- Pedestrian Fatalities, 2019-2023
- Bicycle Suspected Serious Injuries, 2019-2023
- Bicycle Fatalities, 2019-2023
- All Suspected Serious Injuries, 2019-2023
- All Fatalities, 2019-2023
- All Reportable Crashes, 2019-2023

Pennsylvania Census Block Groups, 2023

County Minority Population Interval for Block Group

- Interval 1: Less than or equal to half the County Minority Population Percentage (<=16.1%)
- Interval 2: Greater than half and less than or equal to the County Minority Population Percentage (>16.1% and <=32.2%)
- Interval 3: Greater than the County Minority Population Percentage and less than or equal to twice the County Minority Population Percentage (>32.2% and <=64.4%)
- Interval 4: Greater than twice and less than or equal to four times the County Minority Population Percentage (>64.4% and <=132.2%)

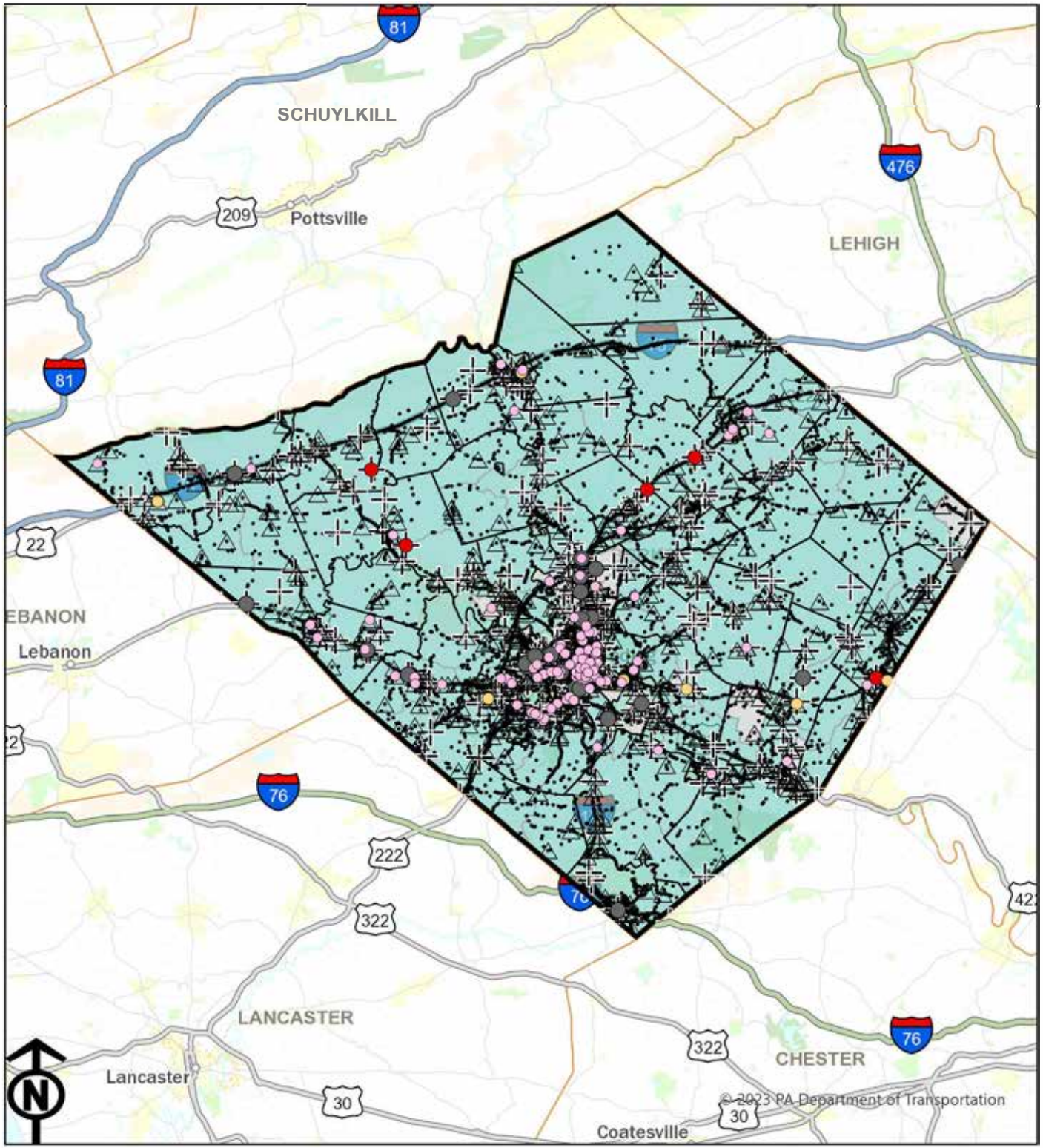


0 5 10 20 Miles

Source: US Census Bureau, 2019-2023 American Community Survey 5-Year Estimates

Map prepared by Scott R. Williams, Williamsport MPO and updated for 2025 by Navarro & Wright Consulting Engineers, Inc.

Map 09 - Berks County Concentrations of White (non-Hispanic or Latino) Population and Crashes



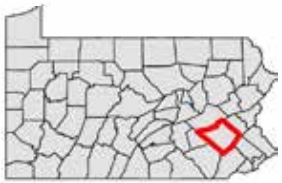
Legend

- Pennsylvania Counties
- Pennsylvania Municipalities
- Pedestrian Suspected Serious Injuries, 2019-2023
- Pedestrian Fatalities, 2019-2023
- Bicycle Suspected Serious Injuries, 2019-2023
- Bicycle Fatalities, 2019-2023
- All Suspected Serious Injuries, 2019-2023
- All Fatalities, 2019-2023
- All Reportable Crashes, 2019-2023

Pennsylvania Census Block Groups, 2023

County White (Non-Hispanic/Latino) Population Interval for Block Group

- Interval 1: Less than or equal to half the County White (non-Hispanic or Latino) Population Percentage (<=33.9%)
- Interval 2: Greater than half and less than or equal to the County White (non-Hispanic or Latino) Population Percentage (>33.9% and <=67.8%)
- Interval 3: Greater than and less than or equal to twice the County White (Non-Hispanic/Latino) Population Percentage (>67.8% and <=135.6%)

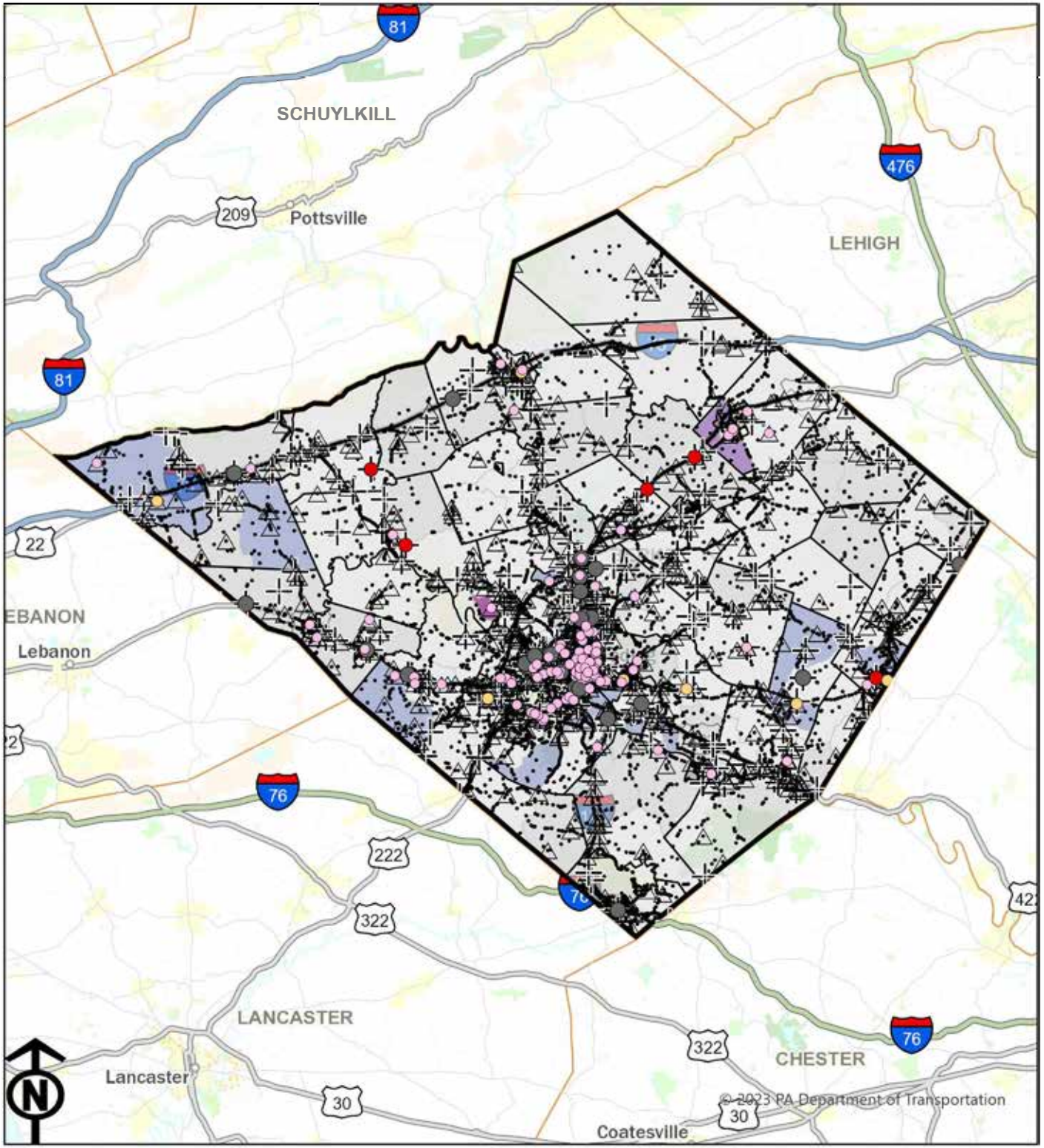


0 5 10 20 Miles

Source: US Census Bureau, 2019-2023 American Community Survey 5-Year Estimates

Map prepared by Scott R. Williams, Williamsport MPO and updated for 2025 by Navarro & Wright Consulting Engineers, Inc.

Map 10 - Berks County Concentrations of Below Poverty Level Population and Crashes



Legend

- Pedestrian Suspected Serious Injuries, 2019-2023
- Pedestrian Fatalities, 2019-2023
- Bicycle Suspected Serious Injuries, 2019-2023
- Bicycle Fatalities, 2019-2023
- All Suspected Serious Injuries, 2019-2023
- All Fatalities, 2019-2023
- All Reportable Crashes, 2019-2023
- Pennsylvania Counties
- Pennsylvania Municipalities
- Pennsylvania Counties
- Pennsylvania Municipalities

Pennsylvania Census Block Groups, 2023

County Below Poverty Level Population Interval for Block Group

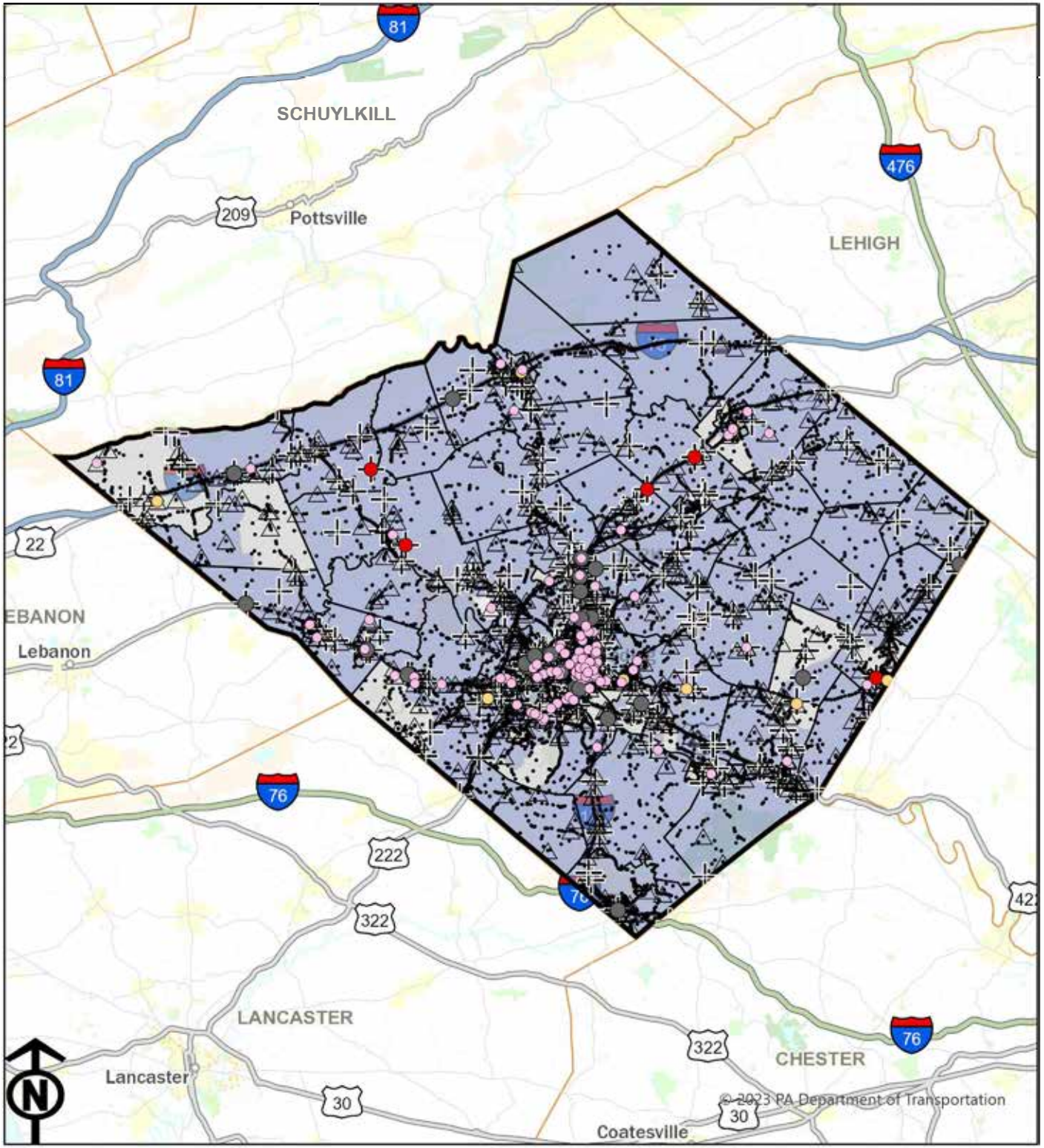
- Interval 1: Less than or equal to half the County Below Poverty Level Population Percentage (<=5.85%)
- Interval 2: Greater than half and less than or equal to the County Below Poverty Level Population Percentage (>5.85% and <=11.7%)
- Interval 3: Greater than and less than or equal to twice the County Below Poverty Level Population Percentage (>11.7% and <=23.4%)
- Interval 4: Greater than twice and less than or equal to four times the County Below Poverty Level Population Percentage (>23.4% and <=46..8%)
- Interval 5: Greater than four times the County Below Poverty Level Population Percentage (>46.8%)

0 5 10 20 Miles

Source: US Census Bureau, 2019-2023 American Community Survey 5-Year Estimates

Map prepared by Scott R. Williams, Williamsport MPO and updated for 2025 by Navarro & Wright Consulting Engineers, Inc.

Map 11 - Berks County Concentrations of Above Poverty Level Population and Crashes



Legend

- Pedestrian Suspected Serious Injuries, 2019-2023
- Pedestrian Fatalities, 2019-2023
- Bicycle Suspected Serious Injuries, 2019-2023
- Bicycle Fatalities, 2019-2023
- All Suspected Serious Injuries, 2019-2023
- All Fatalities, 2019-2023
- All Reportable Crashes, 2019-2023
- Pennsylvania Counties
- Pennsylvania Municipalities

Pennsylvania Census Block Groups, 2023

County Above Poverty Level Population Interval for Block Group

- Interval 1: Less than or equal to half the County Above Poverty Level Population Percentage (<=44.15%)
- Interval 2: Greater than half and less than or equal to the County Above Poverty Level Population Percentage (>44.15% and <=88.3%)
- Interval 3: Greater than the County Above Poverty Level Population Percentage and less than or equal to twice the County Above Poverty Level Population Percentage (>88.3% and <=176.6%)

0 5 10 20 Miles

Source: US Census Bureau, 2019-2023 American Community Survey 5-Year Estimates

Map prepared by Scott R. Williams, Williamsport MPO and updated for 2025 by Navarro & Wright Consulting Engineers, Inc.

SECTION 5
PAVEMENT AND BRIDGE ANALYSIS OF THE FFY 2027–2030 TIP

The Reading Area Transportation Study Annual Pavement and Bridge Condition Report 2020-2024 was approved in November 2025. This report can be viewed for a thorough look at the condition of the pavement and bridges that make up the transportation system in Berks County. This report helps guide investment decisions through the examination of the condition of these assets based on location, owner, and level of service.

The relationship between pavement and bridge conditions to all population and all income concentrations will be explored within this section. Throughout the pavement and bridge analysis, it is important to look at the total population of each interval. Although higher numbers of certain conditions may occur in certain population intervals, it is important to look at the percent of these occurrences in each interval compared to the percent of total population of Berks County that interval represents. Other factors to consider that may skew the numbers one way or another would include the number of segment miles and the Annual Average Daily Traffic using the assets represented in each interval.

PAVEMENTS

The Federal Aid System (with the exception of rural minor collectors and local roads) is a collection of roads in the county that are eligible for federal funds. In 2024, the federal aid system represented 733.5 linear miles, or 22.28% of all roadways in Berks County. The tables below show variations in total mileage numbers of the Federal Aid System. This is due to the buffer used to create the Population Intervals, as well as the fact that the reference table is based on Linear Miles, while the data tables use Segment Miles.

Table 32

Federal Aid System in Berks County 2024	
Agency	**Linear Miles**
Local	140.0
PennDOT	593.5
Total	**733.5**

Source: PennDOT, Pennsylvania Highway Statistics, 2024 Highway Data

To fully analyze the information provided in ***Tables 34, 35, 36, and 37***, as well as ***Maps 12, 13, 14, and 15***, one must understand the Federal Aid System and the usage of International Roughness Index (IRI) as a unit of measure for pavement conditions.

The IRI is a statistic used to measure how smooth or rough a pavement surface. The IRI is separated into four categories, which are Excellent, Good, Fair, and Poor where Excellent IRI is in the best condition and Poor IRI is in the worst condition. IRI ranking categories can be seen in the table below.

Table 33

IRI Categories	Interstate	NHS Non-Interstate	Non-NHS ≥ 2,000 ADT	Non-NHS < 2,000 ADT
≤ 70	Excellent	Excellent	Excellent	Excellent
71-75	Good			
76-100		Good		
101-120	Fair		Good	
121-150		Fair		Good
151-170	Poor		Fair	
171-195		Poor		Fair
196-220			Poor	
>220				Poor

Source: PennDOT Roadway Management and Testing

Tables 34 and 35 show the distribution of Federal Aid Segment Miles and associated IRI amongst Minority and White (non-Hispanic or Latino) Population Intervals. The percentage of Federal Aid Segment Miles representing the IRI category is calculated by population intervals for a clearer picture since the distribution of Federal Aid Segment Miles across the intervals is not even. The percentages of poor condition IRI Federal Aid segment miles to total segment miles within each interval, show a higher percentage of poor condition federal aid segment miles in concentrations of minority populations as opposed to concentrations of white (non-Hispanic or Latino) populations by an approximate range of 7.1% to 7.9%. Minority Population Interval 4 contains 30.7% of poor condition federal aid segment miles compared to other conditions. However, the sample size is very low compared to other intervals based on the number of federal aid segment miles that exist in this interval. This is why the combination of higher concentration minority population intervals and the combination of higher concentration white (non-Hispanic or Latino) population intervals is done to see the broader distribution.

Table 34

Number and Percentage of Federal Aid Segment Mile IRI by Minority Population Intervals, Berks County, PA (2019-2023)

Minority Population Intervals	1	2	3	4	1–4 (Berks County Total)
Total Interval Population	183,985 (42.8%)	92,204 (21.4%)	70,333 (16.4%)	83,467 (19.4%)	429,989
Minority Population	15,081	21,055	32,138	70,337	138,611
Percent Minority	8.2%	22.8%	45.7%	84.3%	32.2%
Excellent IRI Federal Aid Segment Miles	80.7 (25.6%)	6.9 (6.8%)	6.1 (9.1%)	2.8 (12.0%)	96.5 (19.1%)
Good IRI Federal Aid Segment Miles	144.8 (45.9%)	52.7 (52.4%)	32.2 (48.0%)	7.6 (32.9%)	237.3 (46.9%)
Fair IRI Federal Aid Segment Miles	57.0 (18.1%)	25.1 (25.0%)	19.9 (29.7%)	5.4 (23.5%)	107.5 (21.2%)
Poor IRI Federal Aid Segment Miles	28.0 (8.9%)	15.9 (15.8%)	8.8 (13.1%)	7.0 (30.7%)	59.7 (11.8%)
Other IRI Federal Aid Segment Miles	5.3 (1.7%)	0.0 (0.0%)	0.0 (0.0%)	0.2 (0.9%)	5.5 (1.1%)
Total Federal Aid Segment Miles	315.8 (100%)	100.6 (100%)	67.0 (100%)	23.0 (100%)	506.5 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Table B03002, PennDOT PennShare 2027 TIP Information

Table 35

Number and Percentage of Federal Aid Segment Mile IRI by White (non-Hispanic or Latino) Population Intervals, Berks County, PA (2019-2023)

White (non–Hispanic or Latino) Population Intervals	1	2	3	1–3 (Berks County Total)
Total Interval Population	82,225 (19.1%)	71,575 (16.6%)	276,189 (64.2%)	429,989
White (non-Hispanic or Latino) Population	12,697	38,628	240,053	291,378
Percent White (non-Hispanic or Latino)	15.4%	54.0%	86.9%	67.8%
Excellent IRI Federal Aid Segment Miles	2.8 (12.0%)	6.1 (9.1%)	84.8 (23.1%)	93.7 (20.5%)
Good IRI Federal Aid Segment Miles	7.6 (32.9%)	32.2 (48.0%)	171.9 (46.9%)	211.6 (46.3%)
Fair IRI Federal Aid Segment Miles	5.4 (23.5%)	19.9 (29.7%)	69.4 (18.9%)	94.7 (20.7%)
Poor IRI Federal Aid Segment Miles	7.0 (30.7%)	8.8 (13.1%)	35.5 (9.7%)	51.3 (11.2%)
Other IRI Federal Aid Segment Miles	0.2 (0.9%)	0.0 (0.0%)	5.3 (1.4%)	5.5 (1.2%)
Total Federal Aid Segment Miles	23.0 (100%)	67.0 (100%)	366.8 (100%)	456.8 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Table B03002, PennDOT PennShare 2027 TIP Information

Tables 36 and 37 show the distribution of Federal Aid Segment Miles and associated IRI amongst Below and Above Poverty Level Population Intervals. The percentage of Federal Aid Segment Miles under each IRI category is calculated by population intervals for a clearer picture since the distribution of Federal Aid Segment Miles across the intervals is not even. The percentages of poor condition IRI Federal Aid segment miles to total segment miles within each interval, show a higher percentage of poor condition federal aid segment miles in concentrations of below poverty level population as compared to above poverty level population concentrations by a range of approximately 7.2% to 9.5%.

Table 36

Number and Percentage of Federal Aid Segment Mile IRI by Below Poverty Level Population Intervals, Berks County, PA (2019-2023)

Below Poverty Level Population Intervals	1	2	3	4	5	1–5 (Berks County Total)
Total Interval Population	183,081 (42.6%)	102,892 (23.9%)	74,626 (17.4%)	52,692 (12.3%)	16,698 (3.9%)	429,989
Below Poverty Level Population	5,614	8,010	11,832	16,252	7,039	48,747
Percent Below Poverty Level	3.1%	7.8%	15.9%	30.8%	42.2%	11.7%
Excellent IRI Federal Aid Segment Miles	52.4 (22.1%)	37.3 (20.7%)	10.7 (14.9%)	3.4 (8.8%)	1.6 (13.7%)	105.4 (19.5%)
Good IRI Federal Aid Segment Miles	114.3 (48.1%)	79.1 (43.8%)	36.2 (50.7%)	12.5 (32.8%)	3.7 (31.8%)	245.9 (45.6%)
Fair IRI Federal Aid Segment Miles	46.4 (19.5%)	37.1 (20.5%)	16.2 (22.7%)	9.9 (25.8%)	2.0 (17.4%)	111.6 (20.7%)
Poor IRI Federal Aid Segment Miles	22.5 (9.5%)	23.0 (12.7%)	8.4 (11.7%)	12.3 (32.2%)	4.1 (35.3%)	70.3 (13.0%)
Other IRI Federal Aid Segment Miles	2.0 (0.8%)	4.1 (2.3%)	0.0 (0.0%)	0.2 (0.5%)	0.2 (1.7%)	6.5 (1.2%)
Total Federal Aid Segment Miles	237.6 (100%)	180.7 (100%)	71.5 (100%)	38.3 (100%)	11.6 (100%)	539.6 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Tables B3002 and S1701, PennDOT PennShare 2027 TIP Information

Table 37

Number and Percentage of Federal Aid Segment Mile IRI by Above Poverty Level Population Intervals, Berks County, PA (2019-2023)

Above Poverty Level Population Intervals	1	2	3	1–3 (Berks County Total)
Total Interval Population	11,297 (2.6%)	132,719 (30.9%)	285,973 (66.5%)	429,989
Above Poverty Level Population	2,828	99,231	266,212	368,271
Percent Above Poverty Level	25.0%	74.8%	93.1%	88.3%
Excellent IRI Federal Aid Segment Miles	1.6 (19.5%)	12.9 (12.6%)	80.3 (22.3%)	94.8 (20.1%)
Good IRI Federal Aid Segment Miles	3.7 (45.3%)	46.3 (45.3%)	166.5 (46.2%)	216.5 (46.0%)
Fair IRI Federal Aid Segment Miles	1.0 (12.0%)	25.0 (24.5%)	70.3 (19.5%)	96.3 (20.5%)
Poor IRI Federal Aid Segment Miles	1.7 (20.7%)	17.8 (17.4%)	37.9 (10.5%)	57.4 (12.2%)
Other IRI Federal Aid Segment Miles	0.2 (2.5%)	0.2 (0.2%)	5.3 (1.5%)	5.7 (1.2%)
Total Federal Aid Segment Miles	8.1 (100%)	102.2 (100%)	360.4 (100%)	470.7 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Tables B3002 and S1701, PennDOT PennShare 2027 TIP Information

The Overall Pavement Index (OPI) is explored in ***Tables 38, 39, 40, and 41*** in relation to all Population Intervals. The OPI is a Pennsylvania specific pavement index that looks at pavement roughness and distress. OPI includes both IRI as well as other pavement distresses collected through the Systematic Technique to Analyze and Manage Pennsylvania Pavements (STAMPP) Program, resulting in a more comprehensive index for comparison than IRI alone. The OPI is combined with Out of Cycle (OOC) pavement data to help determine when pavement should be repaved. The OOC is based on the age and type of last pavement surface. Therefore, by combining the OPI and OOC; rider acceptance, pavement conditions, age and type of last surface are all considered to aid in making better decisions on when to repave a road.

Tables 38 and 39 show the distribution of Federal Aid Segment Miles and associated OPI amongst Minority and White (non-Hispanic or Latino) Populations. The percentage of Federal Aid Segment Miles under each OPI category is calculated by population intervals for a clearer picture since the distribution of Federal Aid Segment Miles across the intervals is not even. When looking at the percentages of poor condition OPI Federal Aid segment miles to total segment miles within each interval, it can be observed that there is a slightly disproportionate percent of excellent and poor condition federal aid segment miles within block groups with higher minority concentrations. Minority Population Intervals 3 and 4 combined show 6.1% Excellent and 22.0% Poor condition Federal Aid Segment Miles, however, Intervals 1 and 2 combined show 14.5% Excellent and 16.8% Poor condition Federal Aid Segment Miles.

Table 38

Number and Percentage of Federal Aid Segment Mile OPI by Minority Population Intervals, Berks County, PA (2019-2023)

Minority Population Intervals	1	2	3	4	1–4 (Berks County Total)
Total Interval Population	183,985 (42.8%)	92,204 (21.4%)	70,333 (16.4%)	83,467 (19.4%)	429,989
Minority Population	15,081	21,055	32,138	70,337	138,611
Percent Minority	8.2%	22.8%	45.7%	84.3%	32.2%
Excellent OPI Federal Aid Segment Miles	30.3 (9.6%)	5.0 (4.9%)	2.8 (4.1%)	0.5 (2.0%)	38.5 (7.6%)
Good OPI Federal Aid Segment Miles	143.6 (45.5%)	48.8 (48.6%)	38.4 (57.3%)	10.2 (44.4%)	241.0 (47.6%)
Fair OPI Federal Aid Segment Miles	111.1 (35.2%)	38.1 (37.9%)	21.6 (32.2%)	8.5 (37.1%)	179.3 (35.4%)
Poor OPI Federal Aid Segment Miles	25.8 (8.2%)	8.7 (8.6%)	4.3 (6.4%)	3.6 (15.6%)	42.4 (8.4%)
Other OPI Federal Aid Segment Miles	5.0 (1.6%)	0.0 (0.0%)	0.0 (0.0%)	0.2 (0.9%)	5.2 (1.0%)
Total Federal Aid Segment Miles	315.8 (100%)	100.6 (100%)	67.0 (100%)	23.0 (100%)	506.4 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Table B03002, PennDOT PennShare 2027 TIP Information

Table 39
Number and Percentage of Federal Aid Segment Mile OPI by White (non-Hispanic or Latino) Population Intervals, Berks County, PA (2019-2023)

White (non–Hispanic or Latino) Population Intervals	1	2	3	1–3 (Berks County Total)
Total Interval Population	82,225 (19.1%)	71,575 (16.6%)	276,189 (64.2%)	429,989
White (non-Hispanic or Latino) Population	12,697	38,628	240,053	291,378
Percent White (non-Hispanic or Latino)	15.4%	54.0%	86.9%	67.8%
Excellent OPI Federal Aid Segment Miles	0.5 (2.0%)	2.8 (4.1%)	33.1 (9.0%)	36.3 (7.9%)
Good OPI Federal Aid Segment Miles	10.2 (44.4%)	38.4 (57.3%)	171.0 (46.6%)	219.5 (48.1%)
Fair OPI Federal Aid Segment Miles	8.5 (37.1%)	21.6 (32.2%)	127.9 (34.9%)	158.0 (34.6%)
Poor OPI Federal Aid Segment Miles	3.6 (15.6%)	4.3 (6.4%)	29.9 (8.2%)	37.8 (8.3%)
Other OPI Federal Aid Segment Miles	0.2 (0.9%)	0.0 (0.0%)	5.0 (1.4%)	5.2 (1.1%)
Total Federal Aid Segment Miles	23.0 (100%)	67.0 (100%)	366.8 (100%)	456.8 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Table B03002, PennDOT PennShare 2027 TIP Information

Tables 40 and 41 show the distribution of Federal Aid Segment Miles and associated OPI amongst Below and Above Poverty Level Population Intervals. Analyzing the poor condition Federal Aid Segment Miles by Poverty Level Population Intervals, it can be seen that the largest percentage of poor condition Federal Aid Segment Miles is found in the intervals with a larger concentration of below poverty level population. Excellent OPI Condition Federal Aid Segment Miles are found at a higher percentage in block groups with a higher concentration of above poverty level population.

Table 40

Number and Percentage of Federal Aid Segment Mile IRI by Below Poverty Level Population Intervals, Berks County, PA (2019-2023)

Below Poverty Level Population Intervals	1	2	3	4	5	1–5 (Berks County Total)
Total Interval Population	183,081 (42.6%)	102,892 (23.9%)	74,626 (17.4%)	52,692 (12.3%)	16,698 (3.9%)	429,989
Below Poverty Level Population	5,614	8,010	11,832	16,252	7,039	48,747
Percent Below Poverty Level	3.1%	7.8%	15.9%	30.8%	42.2%	11.7%
Excellent OPI Federal Aid Segment Miles	22.8 (9.6%)	13.5 (7.5%)	3.0 (4.2%)	0.5 (1.2%)	0.5 (3.9%)	40.3 (7.5%)
Good OPI Federal Aid Segment Miles	107.8 (45.4%)	90.9 (50.3%)	31.4 (44.0%)	15.4 (40.1%)	4.9 (42.4%)	250.3 (46.4%)
Fair OPI Federal Aid Segment Miles	84.7 (35.6%)	60.9 (33.7%)	29.5 (41.1%)	16.7 (43.5%)	5.5 (47.4%)	197.2 (36.5%)
Poor OPI Federal Aid Segment Miles	20.6 (8.7%)	11.4 (6.3%)	7.6 (10.6%)	5.6 (14.7%)	0.5 (4.5%)	45.7 (8.5%)
Other OPI Federal Aid Segment Miles	1.7 (0.7%)	4.0 (2.2%)	0.0 (0.0%)	0.2 (0.5%)	0.2 (1.7%)	6.1 (1.1%)
Total Federal Aid Segment Miles	237.6 (100%)	180.7 (100%)	71.5 (100%)	38.3 (100%)	11.6 (100%)	539.6 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Tables B3002 and S1701, PennDOT PennShare 2027 TIP Information

Table 41

Number and Percentage of Federal Aid Segment Mile IRI by Above Poverty Level Population Intervals, Berks County, PA (2019-2023)

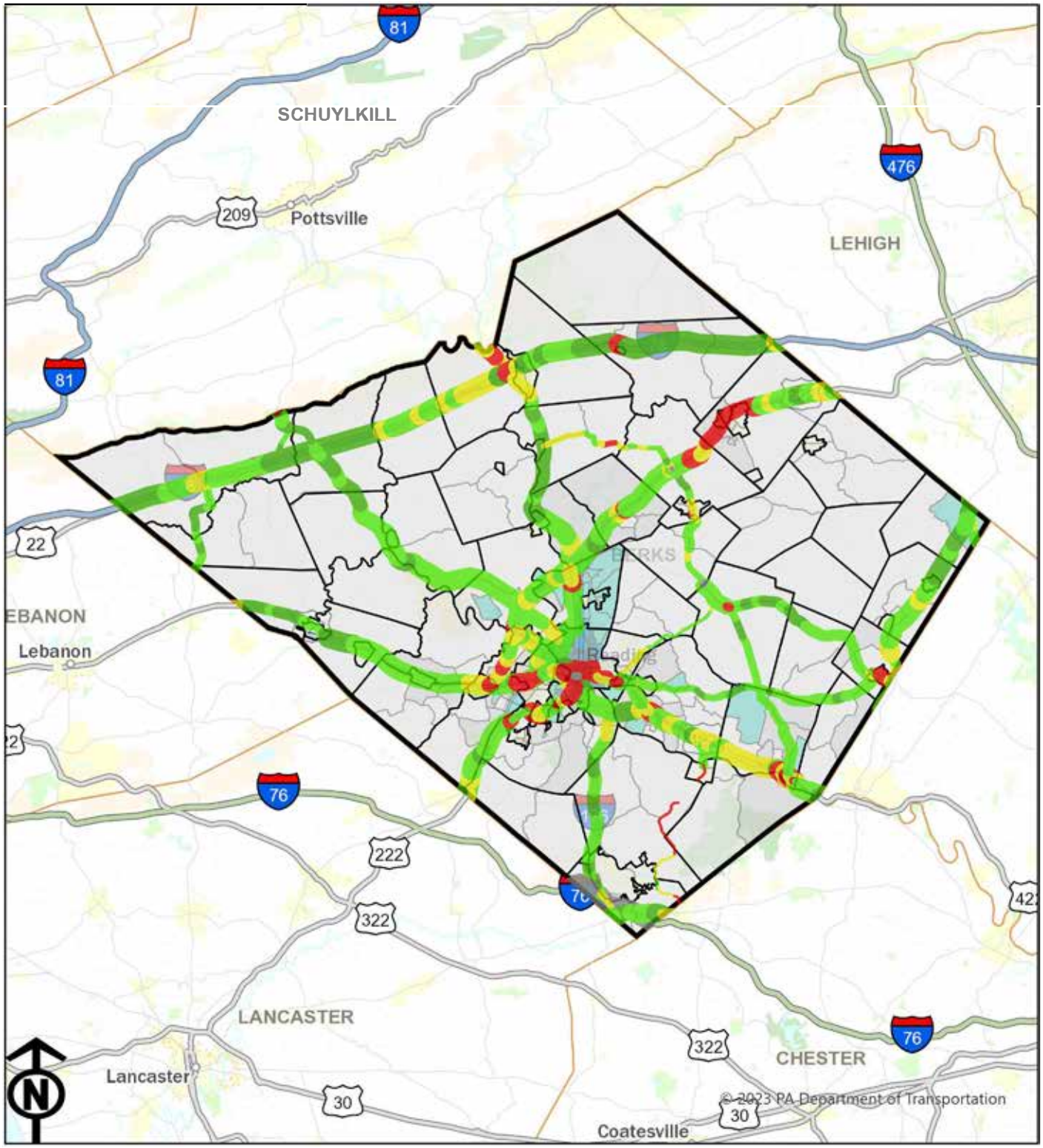
Above Poverty Level Population Intervals	1	2	3	1–3 (Berks County Total)
Total Interval Population	11,297 (2.6%)	132,719 (30.9%)	285,973 (66.5%)	429,989
Above Poverty Level Population	2,828	99,231	266,212	368,271
Percent Above Poverty Level	25.0%	74.8%	93.1%	88.3%
Excellent OPI Federal Aid Segment Miles	0.5 (5.5%)	3.4 (3.4%)	32.0 (8.9%)	35.9 (7.6%)
Good OPI Federal Aid Segment Miles	4.3 (53.4%)	43.7 (42.7%)	171.5 (47.6%)	219.5 (46.6%)
Fair OPI Federal Aid Segment Miles	3.1 (38.6%)	42.3 (41.4%)	124.5 (34.5%)	169.9 (36.1%)
Poor OPI Federal Aid Segment Miles	0.0 (0.0%)	12.6 (12.3%)	27.4 (7.6%)	40.0 (8.5%)
Other OPI Federal Aid Segment Miles	0.2 (2.5%)	0.2 (0.2%)	5.0 (1.4%)	5.4 (1.1%)
Total Federal Aid Segment Miles	8.1 (100%)	102.2 (100%)	360.4 (100%)	470.7 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Tables B3002 and S1701, PennDOT PennShare 2027 TIP Information

Pavement conditions whether based on IRI or OPI relay the same information. There is a higher percentage of poor condition pavement existing amongst concentrations of minority and below poverty level populations as opposed to concentrations of white (non-Hispanic or Latino) and above poverty level populations. Through analysis of the tables above, it was determined that difference is by less than 10% between these opposites. To have a more equal distribution of IRI and OPI Conditions for the Federal Aid Segment Miles across concentrations of these populations, the consideration of resurfacing/repaving projects to Poor IRI and OPI Federal Aid Segment Miles should be focused in small amounts in the areas with a higher than county average of Minority and Below Poverty Level Populations. Smaller projects of resurfacing/repaving could add to a more equal distribution within each of these areas as they contain less total Federal Aid Segment Miles. This will be considered when adding repaving/resurfacing projects to the TIP.

Maps 12, 13, 14, and 15 display the location of Federal Aid Road Segments and their IRI conditions in relation to concentrations of Minority, White (non-Hispanic or Latino), Below Poverty Level, and Above Poverty Level Populations.

Map 12 - Berks County Concentrations of Minority Population and Federal Aid Road Segments



Legend

Pennsylvania Counties

Pennsylvania Municipalities

Federal Aid Road Segments (PennDOT RMS)

Pavement Condition (IRI rating)

- EXCELLENT
- GOOD
- FAIR
- POOR
- OTHER

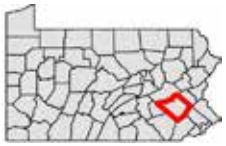
Traffic Volume (Current AADT)

- 318
- 5,212
- 10,106
- 15,000

Pennsylvania Census Block Groups, 2023

County Minority Population Interval for Block Group

- Interval 1: Less than or equal to half the County Minority Population Percentage (<=16.1%)
- Interval 2: Greater than half and less than or equal to the County Minority Population Percentage (>16.1% and <=32.2%)
- Interval 3: Greater than and less than or equal to twice the County Minority Population Percentage (>32.2% and <=64.4%)
- Interval 4: Greater than twice and less than or equal to four times the County Minority Population Percentage (>64.4% and <=128.8%)

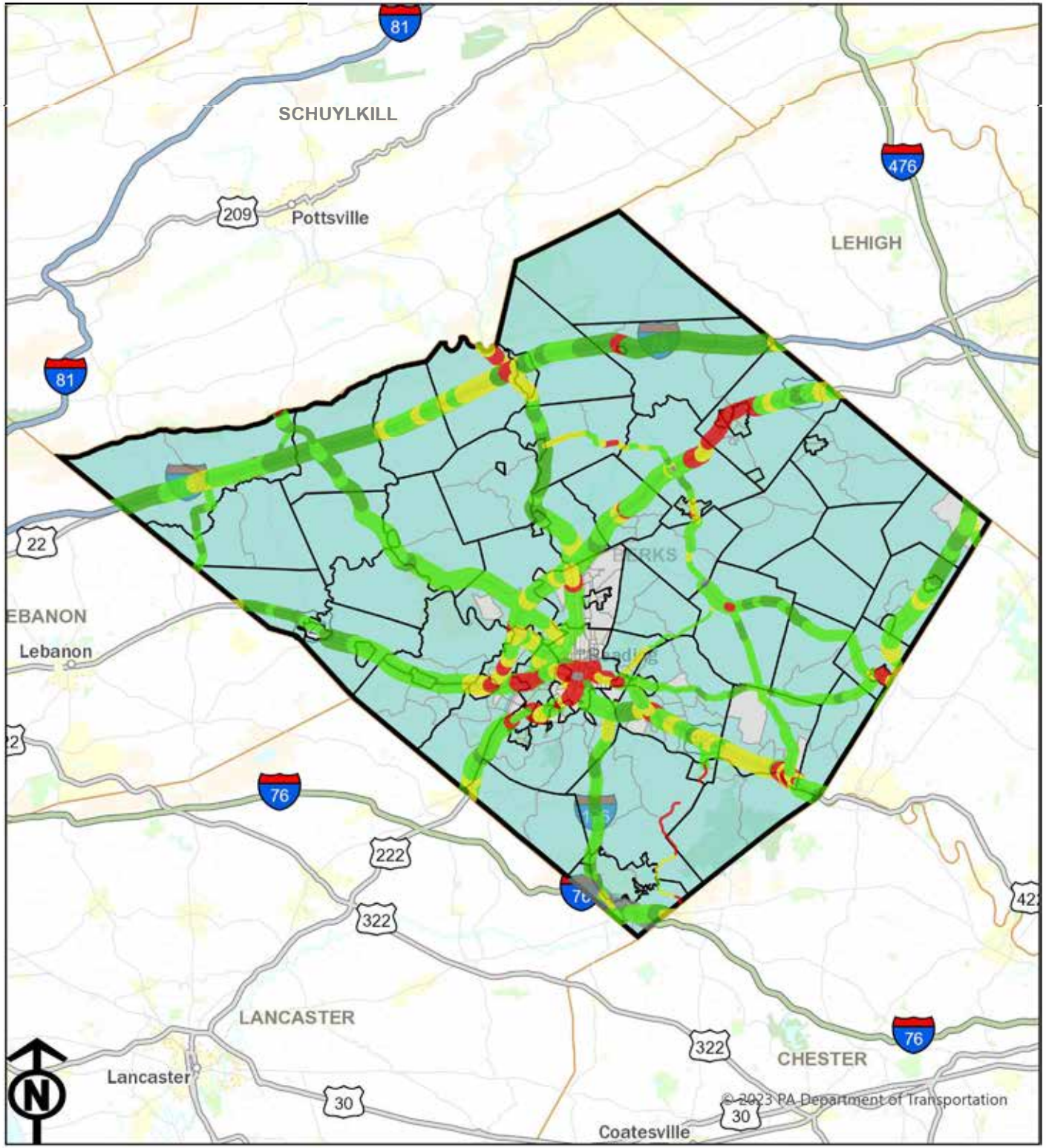


0 5 10 20 Miles

Source: US Census Bureau, 2019-2023 American Community Survey 5 Year Estimates

Map prepared by Scott R. Williams, Williamsport MPO and updated for 2025 by Navarro & Wright Consulting Engineers, Inc.

Map 13 - Berks County Concentrations of White (Non-Hispanic or Latino) Population and Federal Aid Road Segments



Legend

Pennsylvania Counties

Pennsylvania Municipalities

Pennsylvania Census Block Groups, 2023

County White (Non-Hispanic/Latino) Population Interval for Block Group

- Interval 1: Less than or equal to half the County White (non-Hispanic or Latino) Population Percentage (<=33.9%)
- Interval 2: Greater than half and less than or equal to the County White (non-Hispanic or Latino) Population Percentage (>33.9% and <=67.8%)
- Interval 3: Greater than and less than or equal to twice the County White (non-Hispanic or Latino) Population Percentage (>67.8% and <=135.6%)

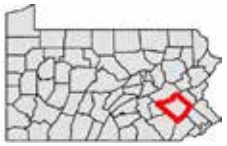
Federal Aid Road Segments (PennDOT RMS)

Pavement Condition (IRI rating)

- EXCELLENT
- GOOD
- FAIR
- POOR
- OTHER

Traffic Volume (Current AADT)

- 318
- 5,212
- 10,106
- 15,000

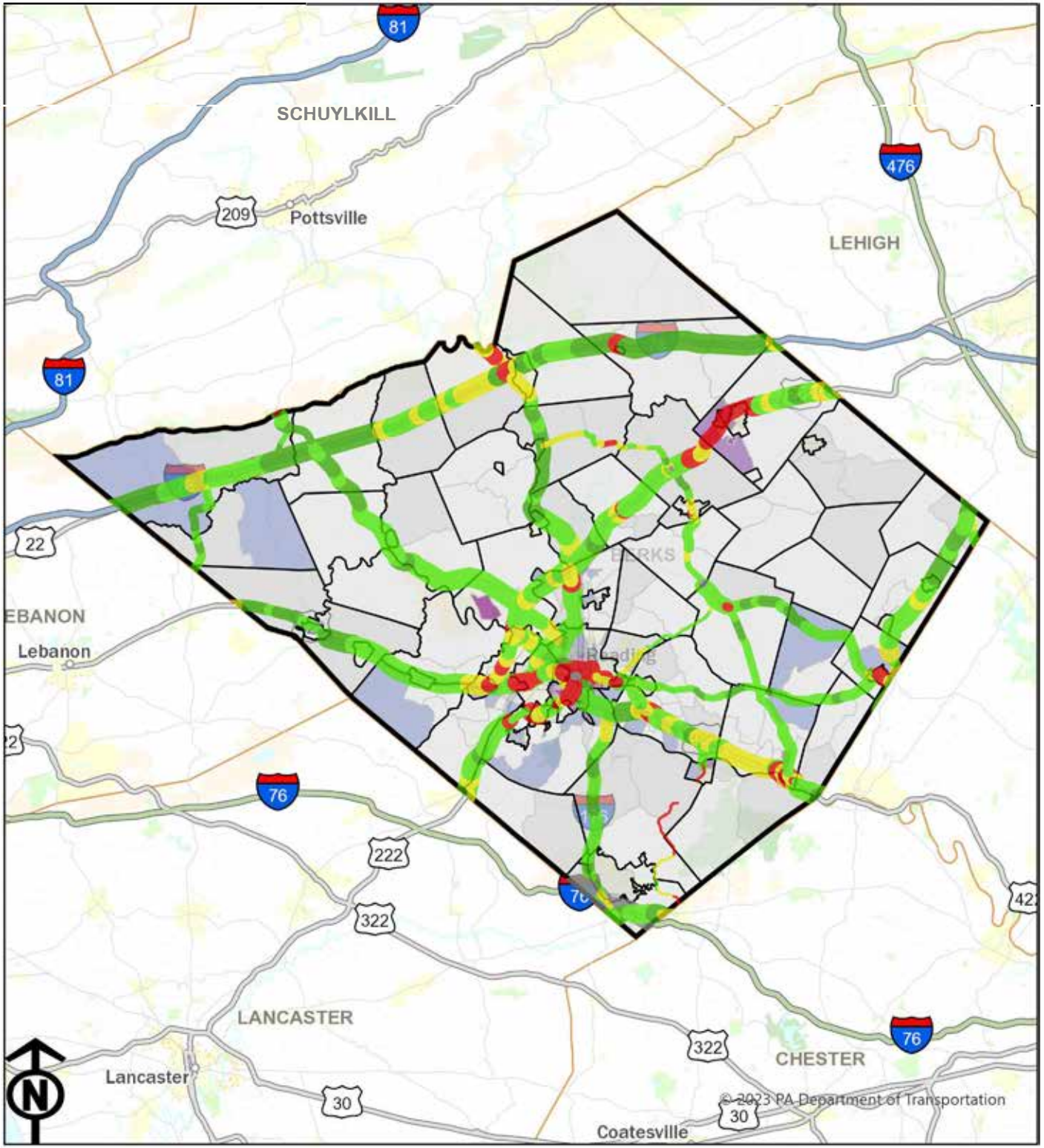


0 5 10 20 Miles

Source: US Census Bureau, 2019-2023 American Community Survey 5-Year Estimates

Map prepared by Scott R. Williams, Williamsport MPO and updated for 2025 by Navarro & Wright Consulting Engineers, Inc.

Map 14 - Berks County Concentrations of Below Poverty Level Population and Federal Aid Road Segments



Legend

Federal Aid Road Segments (PennDOT RMS)

Pavement Condition (IRI rating)

- EXCELLENT
- GOOD
- FAIR
- POOR
- OTHER

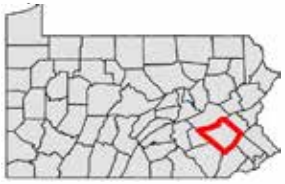
Traffic Volume (Current AADT)

- 318
- 5,212
- 10,106
- 15,000
- Pennsylvania Counties
- Pennsylvania Municipalities

Pennsylvania Census Block Groups, 2023

County Below Poverty Level Population Interval for Block Group

- Interval 1: Less than or equal to half the County Below Poverty Level Population Percentage (<=5.85%)
- Interval 2: Greater than half and less than or equal to the County Below Poverty Level Population Percentage (>5.85% and <=11.7%)
- Interval 3: Greater than and less than or equal to twice the County Below Poverty Level Population Percentage (>11.7% and <=23.4%)
- Interval 4: Greater than twice and less than or equal to four times the County Below Poverty Level Population Percentage (>23.4% and <=46.8%)
- Interval 5: Greater than four times the County Below Poverty Level Population Percentage (>46.8%)

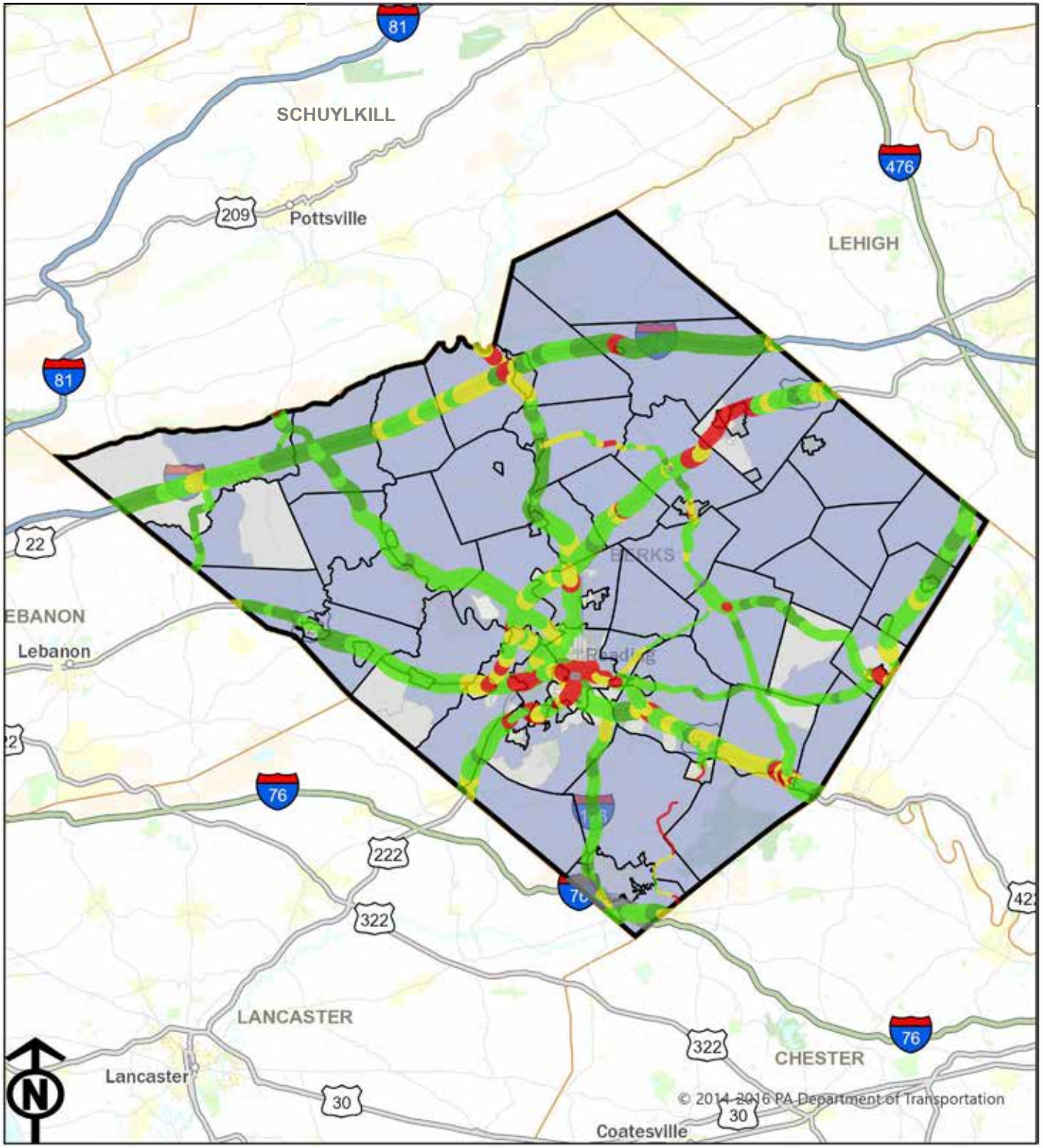


0 5 10 20 Miles

Source: US Census Bureau, 2019-2023 American Community Survey 5 Year Estimates

Map prepared by Scott R. Williams, Williamsport MPO and updated for 2025 by Navarro & Wright Consulting Engineers, Inc.

Map 15 - Berks County Concentrations of Above Poverty Level Population and Federal Aid Road Segments



Legend

Federal Aid Road Segments (PennDOT RMS)

Pavement Condition (IRI rating)

- EXCELLENT
- GOOD
- FAIR
- POOR
- OTHER

Traffic Volume (Current AADT)

- 318
- 5,212
- 10,106
- 15,000
- Pennsylvania Counties
- Pennsylvania Municipalities

Pennsylvania Census Block Groups, 2023

County Above Poverty Level Population Interval for Block Group

- Interval 1: Less than or equal to half the County Above Poverty Level Population Percentage (<=44.15%)
- Interval 2: Greater than half and less than or equal to the County Above Poverty Level Population Percentage (>44.15% and <=88.3%)
- Interval 3: Greater than the County Above Poverty Level Population Percentage and less than or equal to twice the County Above Poverty Level Population Percentage (>88.3% and <=176.6%)

0 5 10 20 Miles

Source: US Census Bureau, 2019-2023 American Community Survey 5-Year Estimates

Map prepared by Scott R. Williams, Williamsport MPO and updated for 2025 by Navarro & Wright Consulting Engineers, Inc.

BRIDGES

The Schuylkill River, two lakes and countless streams provide ample recreational and commercial activities but create a transportation challenge to safely and efficiently move people and freight over them in Berks County. In 2024, there are 880 bridges in Berks County, with the majority owned by PennDOT. These bridges are those that require inspections – state bridges longer than 8 feet and local bridges longer than 20 feet. The charts below show more bridges than identified within Berks County due to the buffer used around each census block.

Bridges are characterized by the condition of their major components. State-owned bridges 8 feet in length or more and local-owned bridges over 20 feet in length are inspected regularly every 2 years. These inspections result in condition ratings for the deck, substructure, and superstructure. If the bridge is a culvert, then the one structural piece is given a condition rating. If any one of these structural parts has a condition rating of 4 or less, that bridge is categorized as Poor. Bridges and culverts with a condition rating of 5 for any of the structural parts are considered Fair. Bridges and culverts with a condition rating of 6 or higher are considered Good.

A Poor designation does not imply that a bridge is unsafe. However, such bridges typically require significant maintenance and repair to remain in service and would eventually require major rehabilitation or replacement to address the underlying deficiency. Some examples of underlying deficiencies can include inadequate under-clearances, insufficient load-carrying capacity, poor alignment with the roadway, or can no longer adequately service today's traffic.

Throughout Berks County, bridges included in the TIP and LRTP are primarily selected based on the recommended treatments needed at this time based on a lowest life cycle cost approach to project programming.

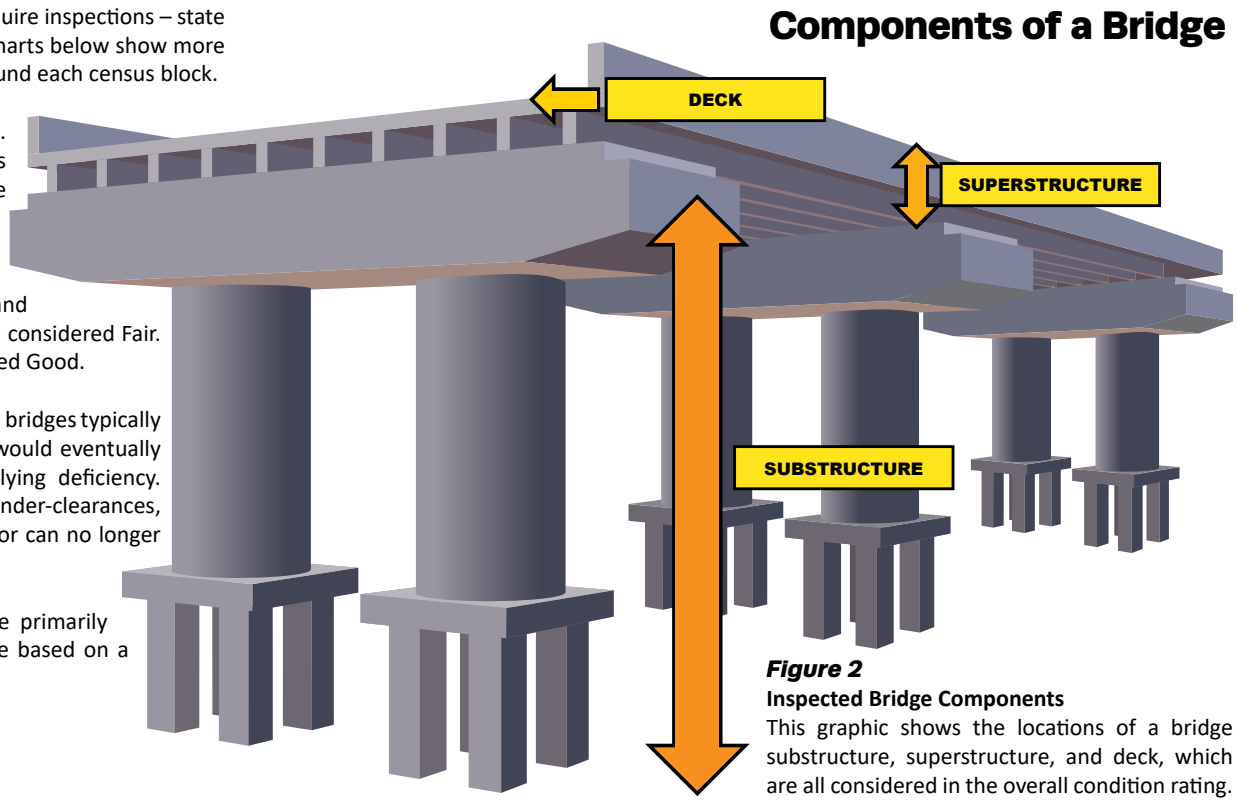


Figure 2
Inspected Bridge Components
This graphic shows the locations of a bridge substructure, superstructure, and deck, which are all considered in the overall condition rating.

The relationship of bridge conditions to all population and all income concentrations will be explored within this section. Throughout the bridge condition analysis, it is important to look at the total percentage of bridges categorized in each condition and compare that to the percentage of bridges in that condition for each interval. During analysis, Intervals 1 and 2 were often combined to come up with a percentage range representing the percentage of that condition of bridges below the county population percentage for that demographic or income level. The combination of intervals in this way helps complete the picture as you are combining all under the county percentage and all above the county percentage. This also increases sample sizes that would otherwise represent as little as 1% of Berks County bridges.

Tables 42 and 43 identify the number and percentage of bridges and their conditions amongst concentrations of minority and white (non-Hispanic or Latino) populations within Berks County. These tables display that there is not a disproportionate amount of Poor condition bridges in any area based on the racial concentration of that area. These tables show the percentage of poor condition bridges in Berks County between 14.1% and 14.2%. Minority Population Intervals 1 and 2 combined show 14.0% poor condition bridges. Minority Population Intervals 3 and 4 show 14.4% poor condition bridges. Similar distribution is shown when analyzing based on White (non-Hispanic or Latino) Population Intervals. Minority Population Interval 4 shows a larger number than average of poor condition bridges across Berks County, however this occurs due to the small sample size, which is why Intervals 3 and 4 were combined for analysis.

Table 42

Number and Percentage of Bridge Conditions by Minority Population Intervals, Berks County, PA (2019-2023)

Minority Population Intervals	1	2	3	4	1–4 (Berks County Total)
Total Interval Population	183,985 (42.8%)	92,204 (21.4%)	70,333 (16.4%)	83,467 (19.4%)	429,989
Minority Population	15,081	21,055	32,138	70,337	138,611
Percent Minority	8.2%	22.8%	45.7%	84.3%	32.2%
Good Condition Bridges	181 (23.5%)	39 (21.7%)	23 (20.7%)	2 (5.7%)	245 (22.4%)
Fair Condition Bridges	481 (62.5%)	116 (64.4%)	74 (66.7%)	26 (74.3%)	697 (63.6%)
Poor Condition Bridges	108 (14.0%)	25 (13.9%)	14 (12.6%)	7 (20.0%)	154 (14.1%)
Total Bridge Count	770 (100%)	180 (100%)	111 (100%)	35 (100%)	1,096 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Table B03002, PennDOT PennShare 2027 TIP Information

Table 43

Number and Percentage of Bridge Conditions by White (non-Hispanic or Latino) Population Intervals, Berks County, PA (2019-2023)

White (non-Hispanic or Latino) Population Intervals	1	2	3	1–3 (Berks County Total)
Total Interval Population	82,225 (19.1%)	71,575 (16.6%)	276,189 (64.2%)	429,989
White (non-Hispanic or Latino) Population	12,697	38,628	240,053	291,378
Percent White (non-Hispanic or Latino)	15.4%	54.0%	86.9%	67.8%
Good Condition Bridges	2 (5.7%)	23 (20.7%)	204 (23.4%)	229 (22.5%)
Fair Condition Bridges	26 (74.3%)	74 (66.7%)	544 (62.5%)	644 (63.3%)
Poor Condition Bridges	7 (20.0%)	14 (12.6%)	123 (14.1%)	144 (14.2%)
Total Bridge Count	35 (100%)	111 (100%)	871 (100%)	1,017 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Table B03002, PennDOT PennShare 2027 TIP Information

Tables 44 and 45 identify the number and percentage of bridges and their conditions amongst concentrations of below and above poverty level populations within Berks County. These tables display that there is not a disproportionate amount of Poor condition bridges in areas based on concentrations of Below or Above Poverty Level Populations. These tables show the percentage of poor condition bridges in Berks County between 13.5% and 13.9%. Analyzing the distribution of bridges based on their condition on the Below Poverty Level Population Interval table, poor bridges represent 13.5% of bridges in Berks County. The combination of intervals 1 and 2 represent population concentrations above poverty level and 13.5% of poor condition bridges. The combination of intervals, 3, 4, and 5 represent population concentrations below poverty level and 13.5% of poor condition bridges. This table displays an equal distribution of poor condition bridges regardless of population concentration determined by income. When analyzing the same groups by Above Poverty Level Population Intervals, the distribution differs by less than 1%.

Table 44

Number and Percentage of Bridge Conditions by Below Poverty Level Population Intervals, Berks County, PA (2019-2023)

Below Poverty Level Population Intervals	1	2	3	4	5	1–5 (Berks County Total)
Total Interval Population	183,081 (42.6%)	102,892 (23.9%)	74,626 (17.4%)	52,692 (12.3%)	16,698 (3.9%)	429,989
Below Poverty Level Population	5,614	8,010	11,832	16,252	7,039	48,747
Percent Below Poverty Level	3.1%	7.8%	15.9%	30.8%	42.2%	11.7%
Good Condition Bridges	138 (23.1%)	77 (21.9%)	28 (19.0%)	8 (18.6%)	0 (0.0%)	251 (21.8%)
Fair Condition Bridges	383 (64.2%)	223 (63.4%)	98 (66.7%)	31 (72.1%)	9 (81.8%)	744 (64.7%)
Poor Condition Bridges	76 (12.7%)	52 (14.8%)	21 (14.3%)	4 (9.3%)	2 (18.2%)	155 (13.5%)
Total Bridge Count	597 (100%)	352 (100%)	147 (100%)	43 (100%)	11 (100%)	1,150 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Tables B3002 and S1701, PennDOT PennShare 2027 TIP Information

Table 45

Number and Percentage of Bridge Conditions by Above Poverty Level Population Intervals, Berks County, PA (2019-2023)

Above Poverty Level Population Intervals	1	2	3	1–3 (Berks County Total)
Total Interval Population	11,297 (2.6%)	132,719 (30.9%)	285,973 (66.5%)	429,989
Above Poverty Level Population	2,828	99,231	266,212	368,271
Percent Above Poverty Level	25.0%	74.8%	93.1%	88.3%
Good Condition Bridges	0 (0.0%)	35 (18.9%)	200 (23.4%)	235 (22.4%)
Fair Condition Bridges	9 (81.8%)	125 (67.6%)	536 (62.7%)	670 (63.7%)
Poor Condition Bridges	2 (18.2%)	25 (13.5%)	119 (13.9%)	146 (13.9%)
Total Bridge Count	11 (100%)	185 (100%)	855 (100%)	1,051 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Tables B3002 and S1701, PennDOT PennShare 2027 TIP Information

The deck of a bridge is the top surface that carries traffic and is a major component of bridge inspection. The condition of bridges based on deck area is analyzed against concentrations of all populations in addition to the number of bridges by condition as some bridges are made up of many more square feet of deck area than others.

Tables 46 and 47 display bridge deck area by square foot and the associated conditions by concentrations of minority and white (non-Hispanic or Latino) populations within Berks County. Poor condition bridge deck area in Berks County is showing between 8.4% and 8.9% based on these tables. Unlike the results seen by analyzing the number of bridges rated by condition across populations, the bridge deck conditions are showing a larger percentage of poor bridge deck area in census block groups with larger concentrations of minorities as opposed to white (non-Hispanic or Latino) populations. Intervals 1 and 2 in ***Table 46*** and 3 in ***Table 47*** represent concentrations of white (non-Hispanic or Latino) populations. Those populations see 7.5% to 8.1% poor condition bridge deck area as opposed to concentration of minority populations having 10.8% poor condition bridge deck area.

Table 46

Number and Percentage of Bridge Deck Area (sq ft) Conditions by Minority Population Intervals, Berks County, PA (2019-2023)

Minority Population Intervals	1	2	3	4	1–4 (Berks County Total)
Total Interval Population	183,985 (42.8%)	92,204 (21.4%)	70,333 (16.4%)	83,467 (19.4%)	429,989
Minority Population	15,081	21,055	32,138	70,337	138,611
Percent Minority	8.2%	22.8%	45.7%	84.3%	32.2%
Deck Area in Good Condition (sf)	693,493.5 (32.1%)	172,104.5 (17.3%)	82,794.4 (12.8%)	1,747.5 (0.3%)	950,139.9 (21.5%)
Deck Area in Fair Condition (sf)	1,335,918.6 (61.8%)	719,179.5 (72.2%)	491,889.6 (76.1%)	545,833.4 (89.3%)	3,092,821.1 (70.0%)
Deck Area in Poor Condition (sf)	131,456.1 (6.1%)	105,328.1 (10.6%)	71,751.5 (11.1%)	63,816.8 (10.4%)	372,352.5 (8.4%)
Total Deck Area (sf)	2,160,868.2 (100%)	996,612.1 (100%)	646,435.5 (100%)	611,397.7 (100%)	4,415,313.5 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Table B03002, PennDOT PennShare 2027 TIP Information

Table 47

Number and Percentage of Bridge Deck Area (sq ft) Conditions by White (non-Hispanic or Latino) Population Intervals, Berks County, PA (2019-2023)

White (non–Hispanic or Latino) Population Intervals	1	2	3	1–3 (Berks County Total)
Total Interval Population	82,225 (19.1%)	71,575 (16.6%)	276,189 (64.2%)	429,989
White (non-Hispanic or Latino) Population	12,697	38,628	240,053	291,378
Percent White (non-Hispanic or Latino)	15.4%	54.0%	86.9%	67.8%
Deck Area in Good Condition (sf)	1,747.5 (0.3%)	82,794.4 (12.8%)	813,395.3 (29.1%)	897,937.2 (22.2%)
Deck Area in F air Condition (sf)	545,833.4 (89.3%)	491,889.6 (76.1%)	1,753,146.8 (62.8%)	2,790,869.8 (68.9%)
Deck Area in Poor Condition (sf)	63,816.8 (10.4%)	71,751.5 (11.1%)	226,596.0 (8.1%)	362,164.3 (8.9%)
Total Deck Area (sf)	611,397.7 (100%)	646,435.5 (100%)	2,793,138.1 (100%)	4,050,971.3 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Table B03002, PennDOT PennShare 2027 TIP Information

Tables 48 and 49 display bridge deck area by square foot and the associated conditions by concentrations of below and above poverty level populations within Berks County. Poor condition bridge deck area in Berks County is showing between 8.8% and 9.4% based on these tables. Unlike the results seen by analyzing the number of bridges rated by condition across populations, the bridge deck conditions are showing a larger percentage of poor bridge deck area in census block groups with larger concentrations of populations below poverty level as compared to concentrations of above poverty level populations. Intervals 1 and 2 in ***Table 48*** and 3 in ***Table 49*** represent concentrations of populations above poverty level. Those populations see 6.8% to 7.1% poor condition bridge deck area as opposed to concentration of populations below poverty level having 13.0% to 13.9% poor condition bridge deck area.

Table 48

Number and Percentage of Bridge Deck Area (sq ft) Conditions by Below Poverty Level Population Intervals, Berks County, PA (2019-2023)

Below Poverty Level Population Intervals	1	2	3	4	5	1–5 (Berks County Total)
Total Interval Population	183,081 (42.6%)	102,892 (23.9%)	74,626 (17.4%)	52,692 (12.3%)	16,698 (3.9%)	429,989
Below Poverty Level Population	5,614	8,010	11,832	16,252	7,039	48,747
Percent Below Poverty Level	3.1%	7.8%	15.9%	30.8%	42.2%	11.7%
Deck Area in Good Condition (sf)	564,759.8 (29.0%)	280,185.4 (20.6%)	139,518.3 (18.0%)	55,127.1 (14.9%)	0.0 (0.0%)	1,039,590.6 (21.4%)
Deck Area in Fair Condition (sf)	1,281,571.8 (65.9%)	952,787.2 (70.1%)	499,883.4 (64.3%)	305,787.0 (82.5%)	346,273.0 (86.6%)	3,386,302.4 (69.8%)
Deck Area in Poor Condition (sf)	98,592.5 (5.1%)	125,704.3 (9.3%)	137,842.6 (17.7%)	9,831.8 (2.7%)	53,455.5 (13.4%)	425,426.7 (8.8%)
Total Deck Area (sf)	1,944,924.1 (100%)	1,358,676.9 (100%)	777,244.3 (100%)	370,745.9 (100%)	399,728.5 (100%)	4,851,319.7 (100%)

Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Tables B3002 and S1701, PennDOT PennShare 2027 TIP Information

Table 49

Number and Percentage of Bridge Deck Area (sq ft) Conditions by Above Poverty Level Population Intervals, Berks County, PA (2019-2023)

Above Poverty Level Population Intervals	1	2	3	1–3 (Berks County Total)
Total Interval Population	11,297 (2.6%)	132,719 (30.9%)	285,973 (66.5%)	429,989
Above Poverty Level Population	2,828	99,231	266,212	368,271
Percent Above Poverty Level	25.0%	74.8%	93.1%	88.3%
Deck Area in Good Condition (sf)	0.0 (0.0%)	164,304.9 (15.7%)	773,185.1 (26.4%)	937,490.0 (21.4%)
Deck Area in Fair Condition (sf)	346,273.0 (86.6%)	735,518.4 (70.2%)	1,944,288.3 (66.4%)	3,026,079.7 (69.2%)
Deck Area in Poor Condition (sf)	53,455.5 (13.4%)	147,674.4 (14.1%)	208,906.7 (7.1%)	410,036.6 (9.4%)
Total Deck Area (sf)	399,728.5 (100%)	1,047,497.7 (100%)	2,926,380.1 (100%)	4,373,606.3 (100%)

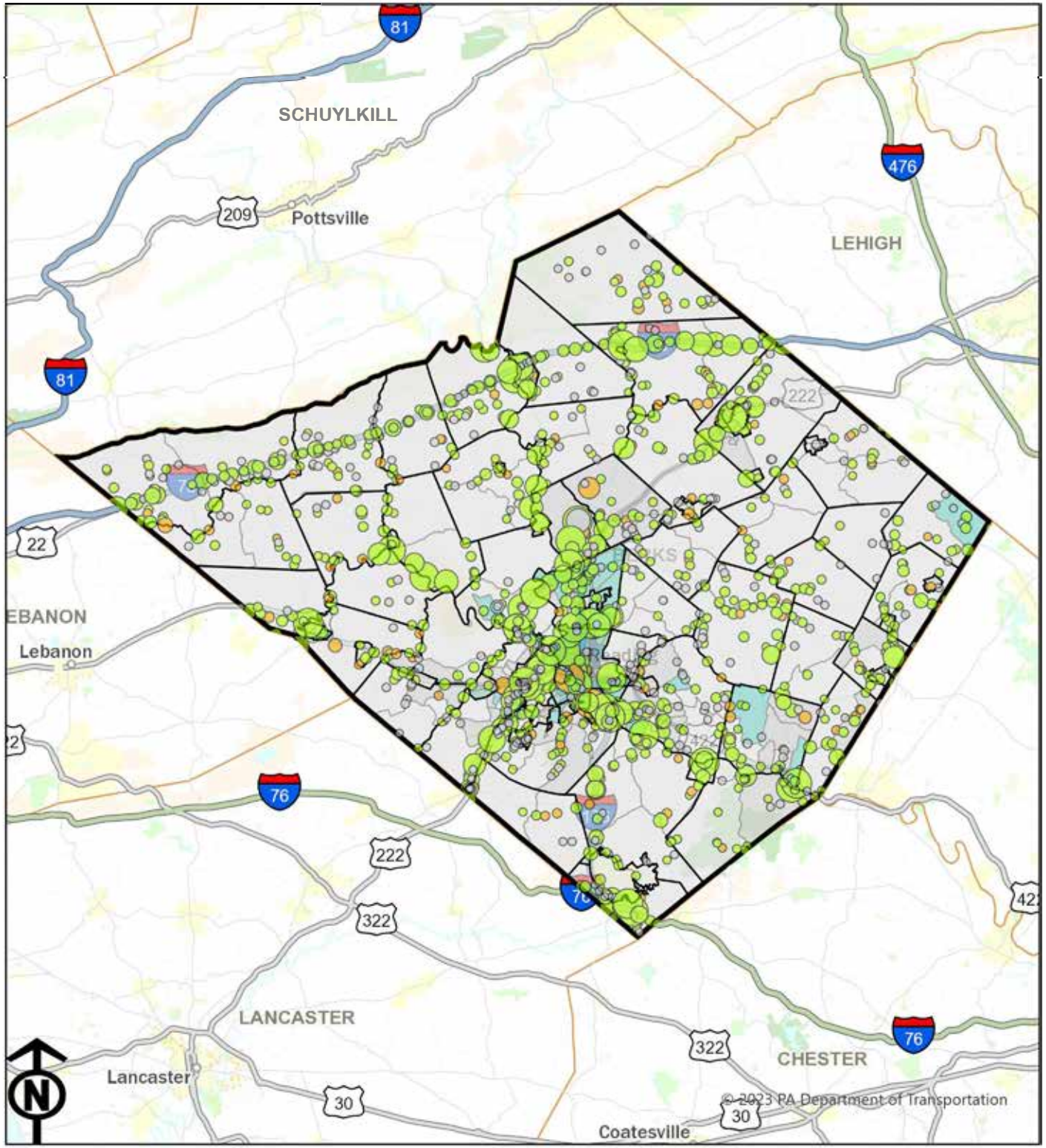
Source: American Community Survey 2023: ACS 5-Year Estimates Data Profiles, Tables B3002 and S1701, PennDOT PennShare 2027 TIP Information

Tables 42 through 45 display the number and percentage of bridges categorized under each condition. Through analysis of these tables, there is a difference of 0.4% when comparing the percentage of poor condition bridges by concentrations of minority to white (non-Hispanic or Latino) populations. There is also a difference of less than 1% when comparing the percentage of poor condition bridges by concentrations of below and above poverty level populations. ***Tables 46 through 49*** display the condition of bridges by number of square feet associated with each bridge, which is then calculated to show percentage. A higher percentage of poor condition bridges are found in concentrations of minority and below poverty level populations. This is shown as an approximate 7% difference. The FFY 27-30 TIP and the Twelve-Year Plan contain projects that will raise the condition of poor bridges along US 422 including Preventative Maintenance, West Shore Bypass Reconstruction Phase 1, and West Shore Bypass Reconstruction Phase 2. These projects include significant bridge upgrades that will lift three large bridges representing approximately 139,000 square feet of bridge deck area out of poor condition in block groups with high concentrations of minority and below poverty level populations creating a more equal distribution of poor condition bridge deck area amongst all populations.

Throughout this section, the condition of bridges and bridge deck area has been analyzed based on its distribution amongst all populations. The analysis based on the distribution of good, fair, and poor condition bridges shows a very close, nearly equal distribution of bridge conditions across concentrations of all populations. Doing the same analysis, but based on the distribution of good, fair, and poor condition bridge deck area, it is shown that there is a higher concentration of poor condition bridge deck area in block groups with higher concentrations of minority and below poverty level populations. However, this is not by a large percentage as seen in the tables and analysis above and will be addressed by the previously mentioned projects. In conclusion, the bridge condition analysis has determined the difference in bridge and bridge deck condition is nearly equal amongst all populations and income levels.

Maps 16, 17, 18, and 19 display the locations of bridges and their conditions in relation to concentrations of Minority, White (non-Hispanic or Latino), Below Poverty Level, and Above Poverty Level Populations.

Map 16 - Berks County Concentrations of Minority Population and Bridges



Legend

Pennsylvania Counties

Pennsylvania Municipalities

State and Local Bridge Condition

- Fair Condition or Better
- Poor Condition
- No Data

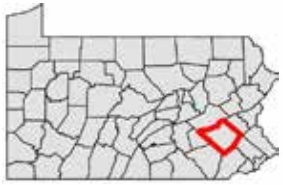
Deck Area (Square Feet)

- 0
- 5,333.33
- 10,666.7
- 16,000

Pennsylvania Census Block Groups, 2023

County Minority Population Interval for Block Group

- Interval 1: Less than or equal to half the County Minority Population Percentage (<=16.1%)
- Interval 2: Greater than half and less than or equal to the County Minority Population Percentage (>16.1% and <=32.2%)
- Interval 3: Greater than and less than or equal to twice the County Minority Population Percentage (>32.2% and <=64.4%)
- Interval 4: Greater than twice and less than or equal to four times the County Minority Population Percentage (>64.4% and <=128.8%)

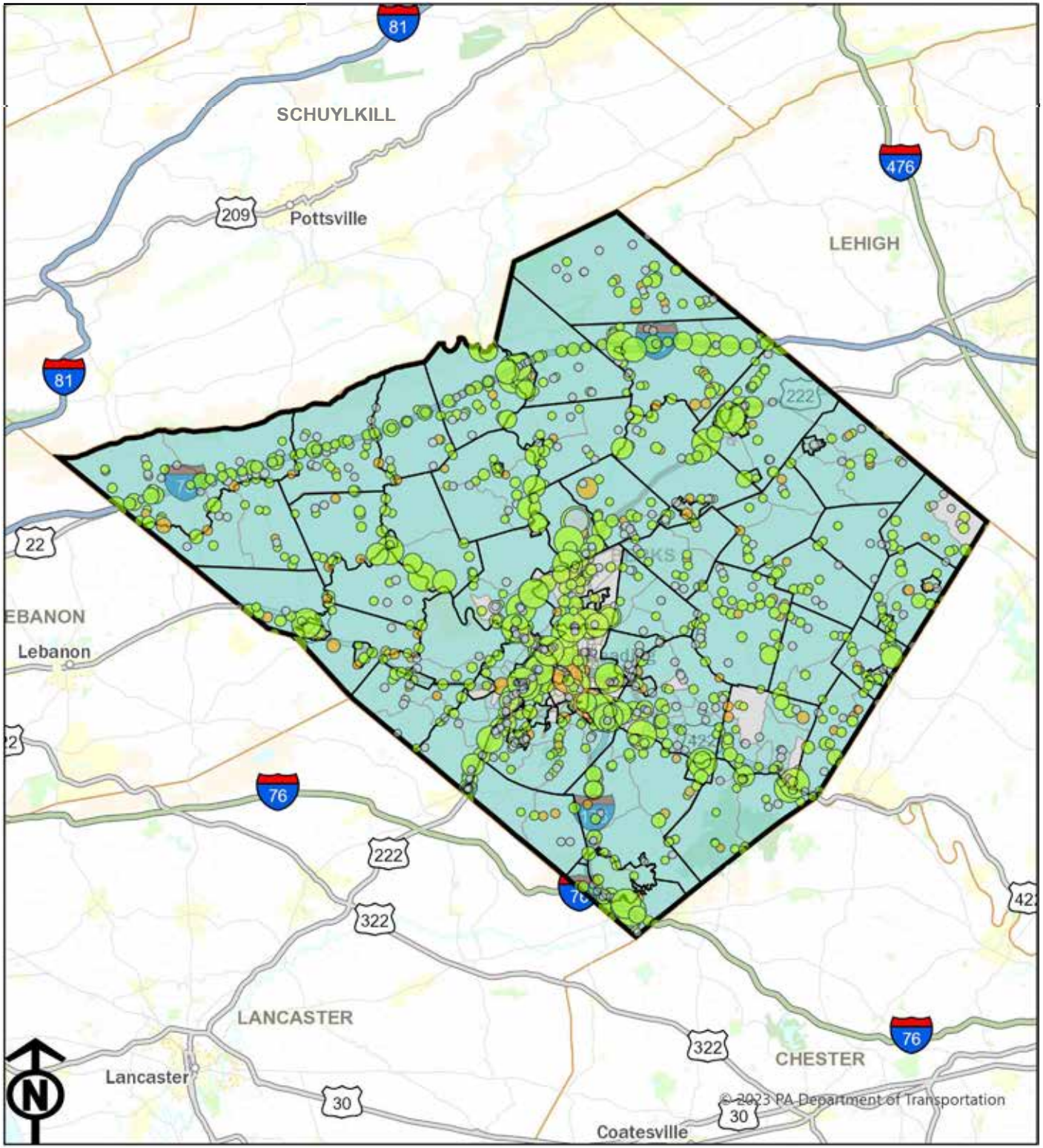


0 5 10 20 Miles

Source: US Census Bureau, 2019-2023 American Community Survey 5-Year Estimates

Map prepared by Scott R. Williams, Williamsport MPO and updated for 2025 by Navarro & Wright Consulting Engineers, Inc.

Map - 17 Berks County Concentrations of White (non-Hispanic or Latino) Population and Bridges



Legend

Pennsylvania Counties

Pennsylvania Municipalities

Pennsylvania Census Block Groups, 2023
County White (non-Hispanic or Latino) Population Interval

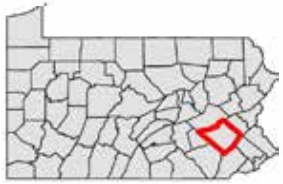
- Interval 1: Less than or equal to half the County White (non-Hispanic or Latino) Population Percentage (<=33.9%)
- Interval 2: Greater than half and less than or equal to the County White (non-Hispanic or Latino) Population Percentage (>33.9% and <=67.8%)
- Interval 3: Greater than and less than or equal to twice the County White (non-Hispanic or Latino) Population Percentage (>67.8% and <=135.6%)

State and Local Bridge Condition

- Fair Condition or Better
- Poor Condition
- No Data

Deck Area (Square Feet)

- 0
- 5,333.33
- 10,666.7
- 16,000

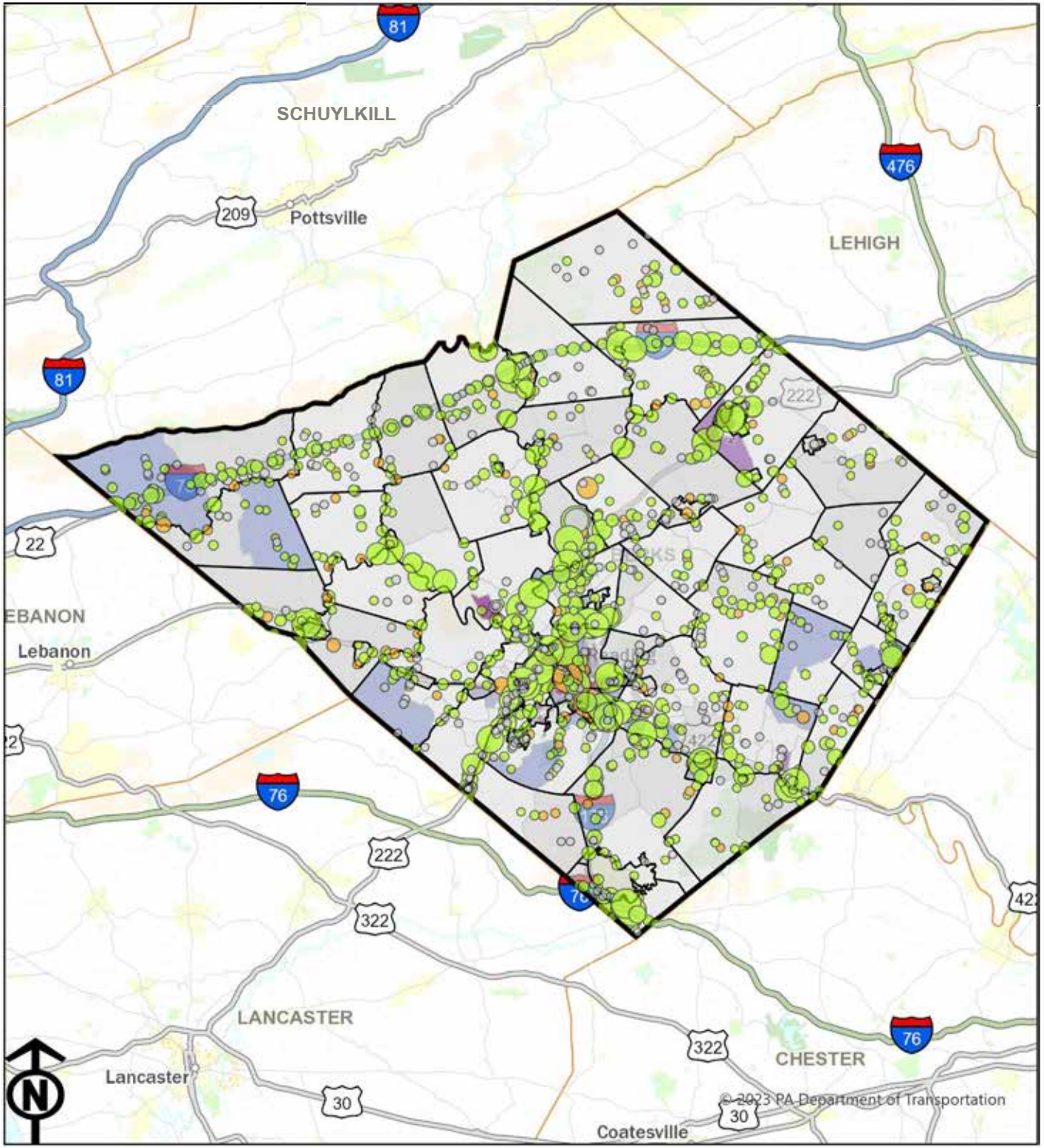


0 5 10 20 Miles

Source: US Census Bureau, 2019-2023 American Community Survey 5-Year Estimates

Map prepared by Scott R. Williams, Williamsport MPO and updated for 2025 by Navarro & Wright Consulting Engineers, Inc.

Map 18 - Berks County Concentrations of Below Poverty Level Population and Bridges



Legend

Pennsylvania Counties

Pennsylvania Municipalities

State and Local Bridge Condition

- Fair Condition or Better
- Poor Condition
- No Data

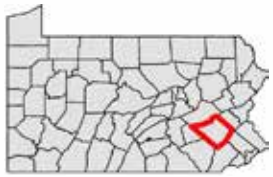
Deck Area (Square Feet)

- 0
- 5,333.33
- 10,666.7
- 16,000

Pennsylvania Census Block Groups, 2023

County Below Poverty Level Population Interval for Block Group

- Interval 1: Less than or equal to half the County Below Poverty Level Population Percentage (<=5.85%)
- Interval 2: Greater than half and less than or equal to the County Below Poverty Level Population Percentage (>5.85% and <=11.7%)
- Interval 3: Greater than and less than or equal to twice the County Below Poverty Level Population Percentage (>11.7% and <=23.4%)
- Interval 4: Greater than twice and less than or equal to four times the County Below Poverty Level Population Percentage (>23.4% and <=46.8%)
- Interval 5: Greater than four times the County Below Poverty Level Population Percentage (>46.8%)

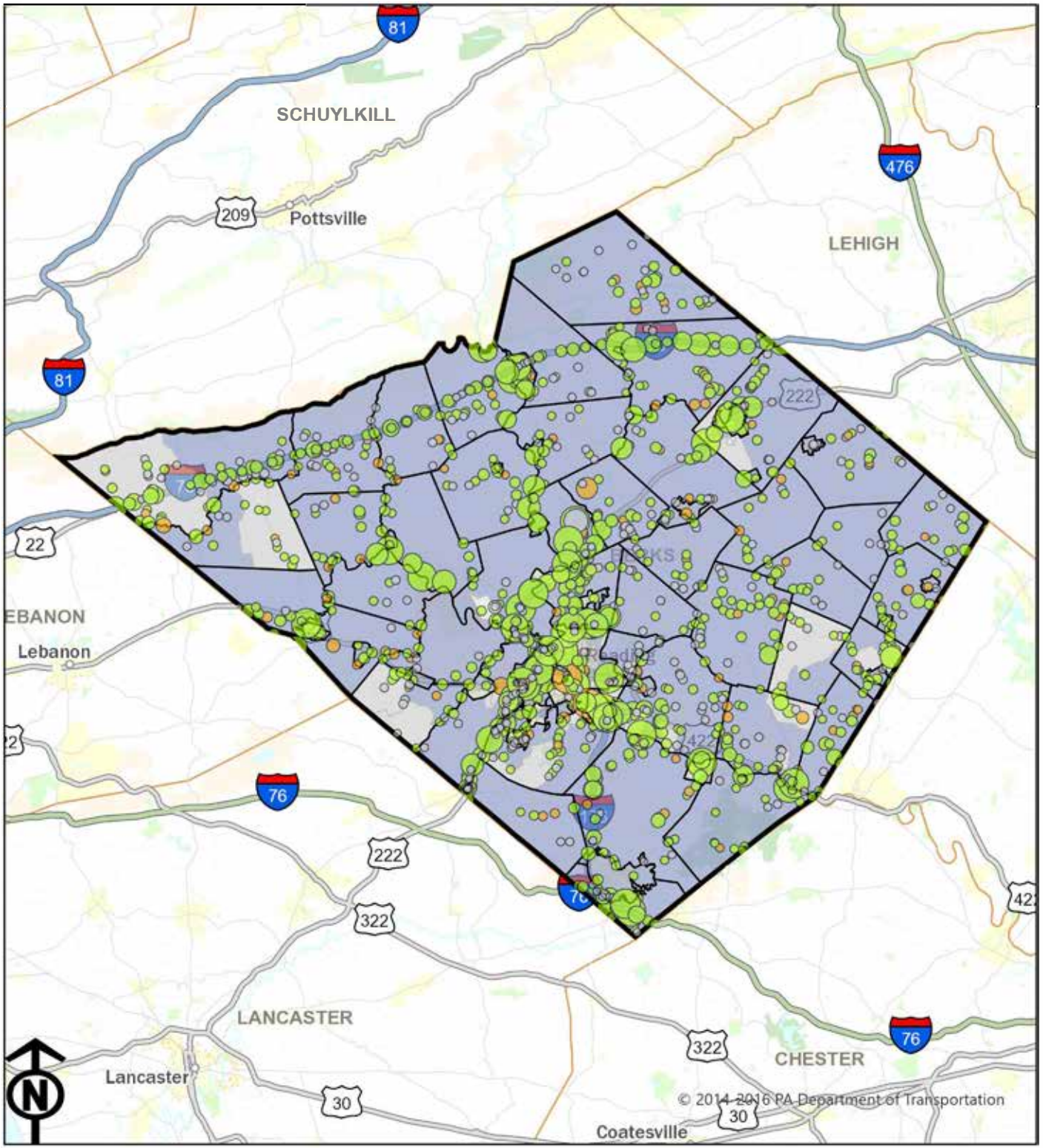


0 5 10 20 Miles

Source: US Census Bureau, 2019-2023 American Community Survey 5-Year Estimates

Map prepared by Scott R. Williams, Williamsport MPO and updated for 2025 by Navarro & Wright Consulting Engineers, Inc.

Map 19 - Berks County Concentrations of Above Poverty Level Population and Bridges



Legend

Pennsylvania Counties

Pennsylvania Municipalities

State and Local Bridge Condition

- Fair Condition or Better
- Poor Condition
- No Data

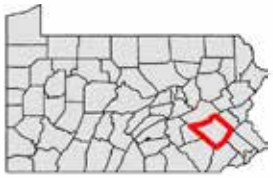
Deck Area (Square Feet)

- 0
- 5,333.33
- 10,666.7
- 16,000

Pennsylvania Census Block Groups, 2023

County Above Poverty Level Population Interval for Block Group

- Interval 1: Less than or equal to half the County Above Poverty Level Population Percentage (<=44.15%)
- Interval 2: Greater than half and less than or equal to the County Above Poverty Level Population Percentage (>44.15% and <=88.3%)
- Interval 3: Greater than the County Above Poverty Level Population Percentage and less than or equal to twice the County Above Poverty Level Population Percentage (>88.3% and <=176.6%)



0 5 10 20 Miles

Source: US Census Bureau, 2019-2023 American Community Survey 5-Year Estimates

Map prepared by Scott R. Williams, Williamsport MPO and updated for 2025 by Navarro & Wright Consulting Engineers, Inc.

SECTION 6
TRANSIT AND COMMUNITY DEMOGRAPHICS

While the FFY 2027-2030 TIP looks to equitably manage where and how funds are spent relative to the population, one factor to consider is the impact of the access to public transportation within a geographic area. The transit system is primarily provided by the South Central Transit Authority (SCTA), which oversees the Berks Area Regional Transportation Authority (BARTA), that serves Berks County.

Transit projects are generated by the operating agency - the South Central Transit Authority (SCTA) and include both fixed route for all populations and Special Services to provide transportation services to individuals with disabilities, older adults, and low incomes. The Americans with Disabilities Act (ADA) mandates that federally funded public transportation operators must accommodate passengers who live within ¾ mile of a fixed bus route but are physically unable to access the service. To provide this accommodation, most public transportation providers use a paratransit service to provide eligible passengers service from their origin to their destination. The Special Services program is used to address that mandate. SCTA also looks at populations by block group through their Title VI Service Equity Analysis when proposing route and schedule changes to ensure populations are not disproportionately affected by the proposed changes.

The County has looked at potential pedestrian and bicyclist transportation needs in the Berks County Bicycle and Transportation Plan 2020 to grow and maintain access to BARTA's Fixed Route System. When considering potential pedestrian transportation needs to access this transit system a buffer of ½ mile is used since the average transit user travels 10 minutes or less to and from their bus stop. When considering potential bicyclist transportation needs to access this transit system the buffer is raised to 2 miles, representing the distance a beginner or average cyclist can travel in 10 minutes. Through spatial analysis of the following maps, these buffers were taken into consideration to determine whether a block group has access to the BARTA Fixed Route System or not.

Maps 20, 21, 22, and 23 display the locations of BARTA fixed routes in relation to concentrations of Minority, White (non-Hispanic or Latino), Below Poverty Level, and Above Poverty Level Populations.

Maps 20 and 21 show that most of the block groups with minority populations above the county average are along BARTA routes. The majority of the minority population of Berks County is located at the center of Berks County, this is also the location of the BARTA Transportation Center. All fixed routes start and end from this central location and follow many major transportation corridors throughout the county. Due to the largely broad distribution of white (non-Hispanic or Latino) population less of this population has access to the BARTA Fixed Route System.

Maps 22 and 23 show that the block groups with a larger concentration of below poverty level population centrally located around the City of Reading are serviced by BARTA routes, however, a few of the outlying block groups of with a concentration of below poverty level population are not along or within ½ mile of the BARTA Fixed Route System. These are primarily located around the Borough of Boyertown to the southeast and near Bethel and Frystown to the northwest. These outlying communities border other counties and are further from the centrally located transportation center.

Reading Area Transportation Study
Community Demographic Assessment FFY 2027-2030
Map 20

Berks County Concentrations of Minority Population and BARTA Bus Routes

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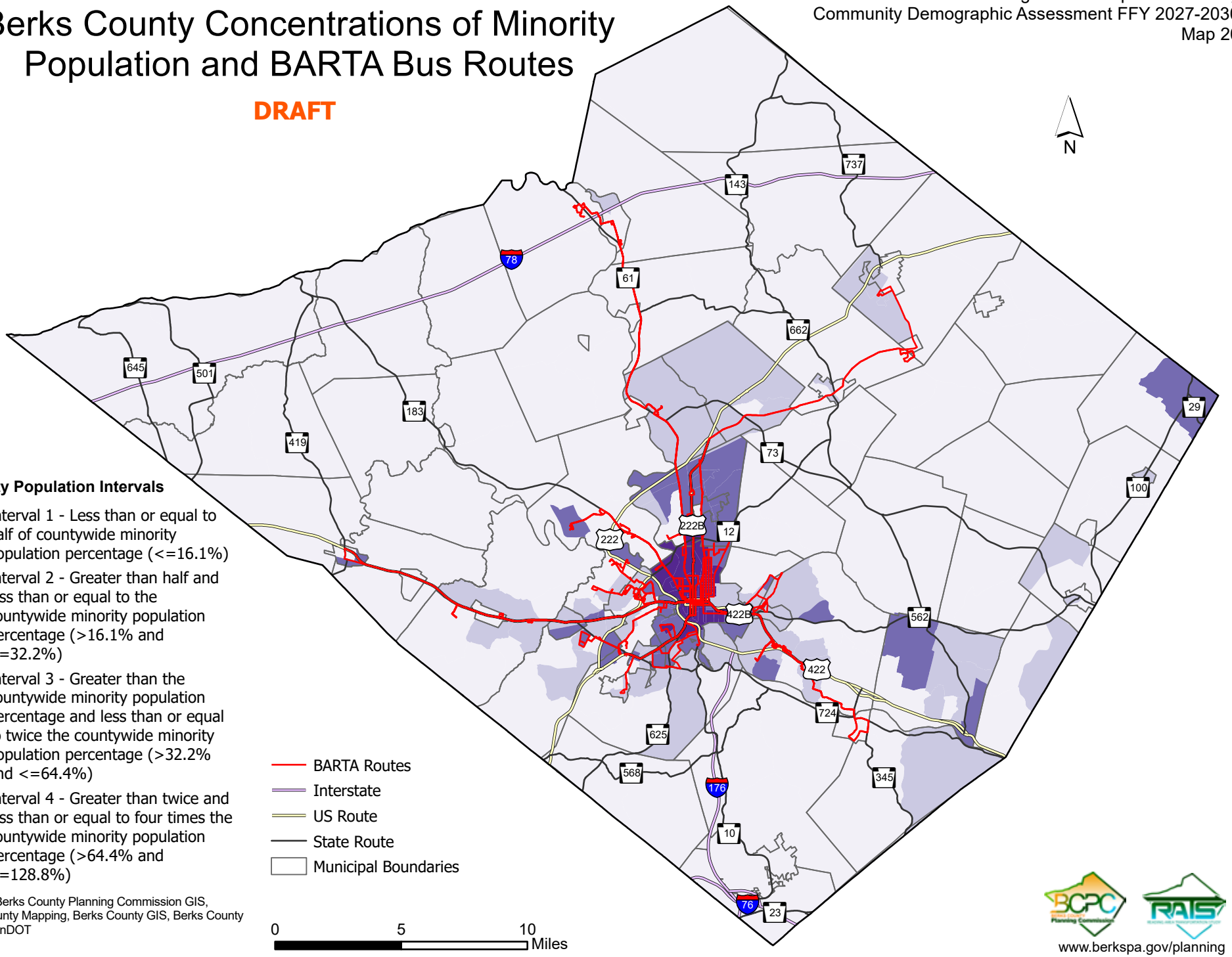

Minority Population Intervals

- Interval 1 - Less than or equal to half of countywide minority population percentage (<=16.1%)
- Interval 2 - Greater than half and less than or equal to the countywide minority population percentage (>16.1% and <=32.2%)
- Interval 3 - Greater than the countywide minority population percentage and less than or equal to twice the countywide minority population percentage (>32.2% and <=64.4%)
- Interval 4 - Greater than twice and less than or equal to four times the countywide minority population percentage (>64.4% and <=128.8%)

Source: Berks County Planning Commission GIS, Berks County Mapping, Berks County GIS, Berks County DES, PennDOT

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Reading Area Transportation Study
Community Demographic Assessment FFY 2027-2030
Map 21

Berks County Concentrations of White (non-Hispanic or Latino) Population and BARTA Bus Routes

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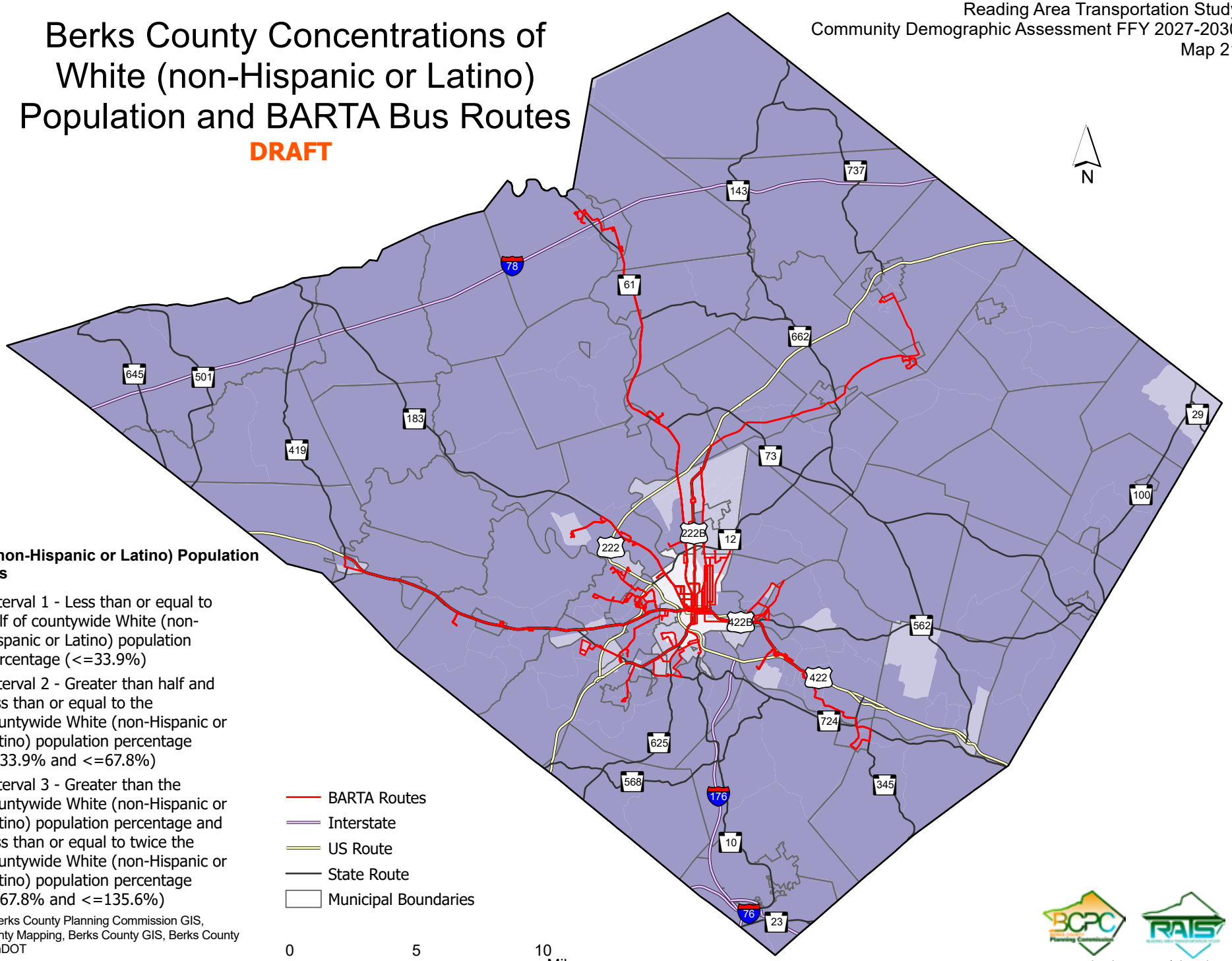

White (non-Hispanic or Latino) Population Intervals

- Interval 1 - Less than or equal to half of countywide White (non-Hispanic or Latino) population percentage (<=33.9%)
- Interval 2 - Greater than half and less than or equal to the countywide White (non-Hispanic or Latino) population percentage (>33.9% and <=67.8%)
- Interval 3 - Greater than the countywide White (non-Hispanic or Latino) population percentage and less than or equal to twice the countywide White (non-Hispanic or Latino) population percentage (>67.8% and <=135.6%)

Source: Berks County Planning Commission GIS, Berks County Mapping, Berks County GIS, Berks County DES, PennDOT

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Reading Area Transportation Study
Community Demographic Assessment FFY 2027-2030
Map 22

Berks County Concentrations of Below Poverty Level Population and BARTA Bus Routes

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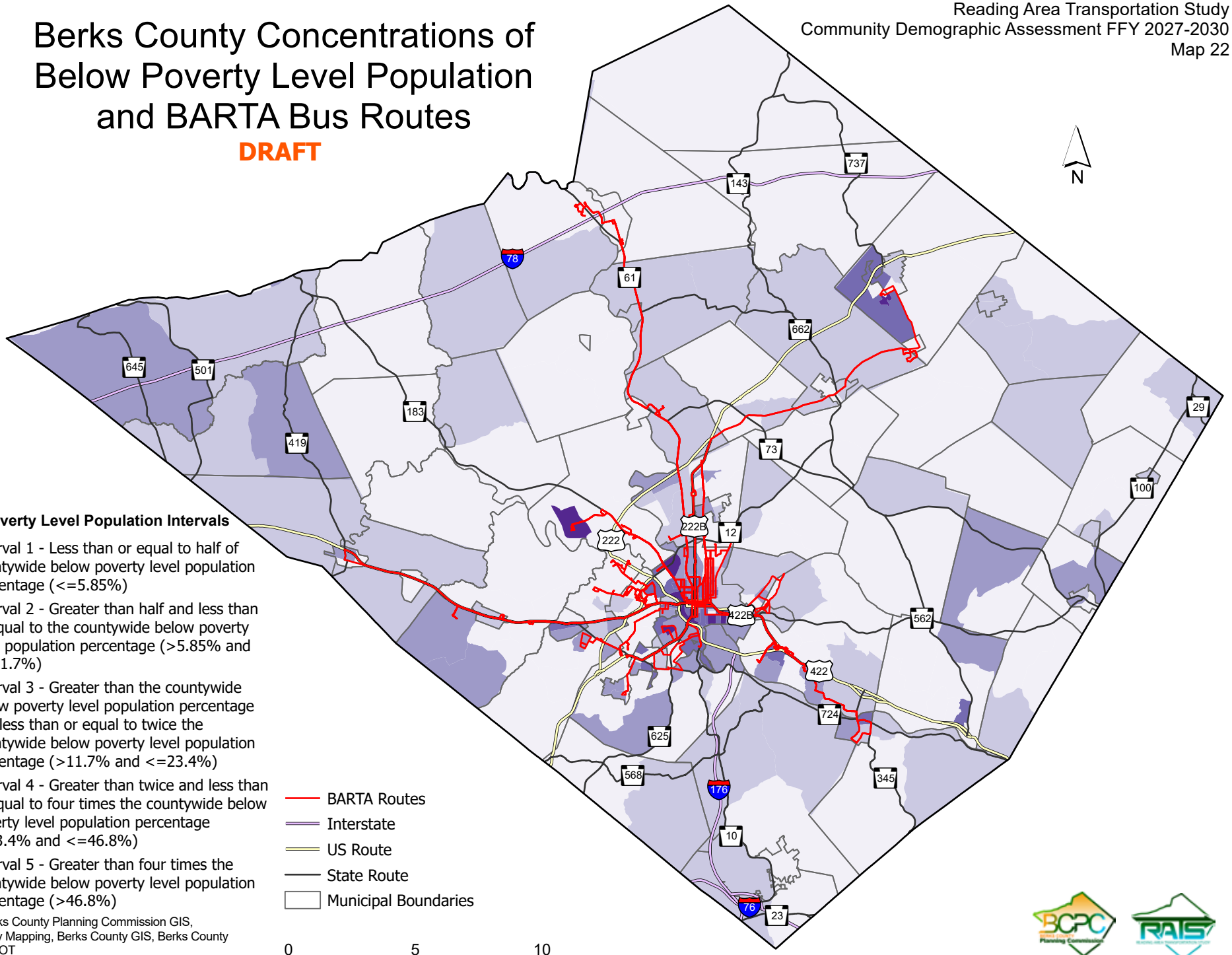

Below Poverty Level Population Intervals

- Interval 1 - Less than or equal to half of countywide below poverty level population percentage (<=5.85%)
- Interval 2 - Greater than half and less than or equal to the countywide below poverty level population percentage (>5.85% and <=11.7%)
- Interval 3 - Greater than the countywide below poverty level population percentage and less than or equal to twice the countywide below poverty level population percentage (>11.7% and <=23.4%)
- Interval 4 - Greater than twice and less than or equal to four times the countywide below poverty level population percentage (>23.4% and <=46.8%)
- Interval 5 - Greater than four times the countywide below poverty level population percentage (>46.8%)

- BARTA Routes
- Interstate
- US Route
- State Route
- Municipal Boundaries

Source: Berks County Planning Commission GIS, Berks County Mapping, Berks County GIS, Berks County DES, PennDOT

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Community Demographic Assessment FFY 2027-2030
Map 23

Berks County Concentrations of Above Poverty Level Population and BARTA Bus Routes

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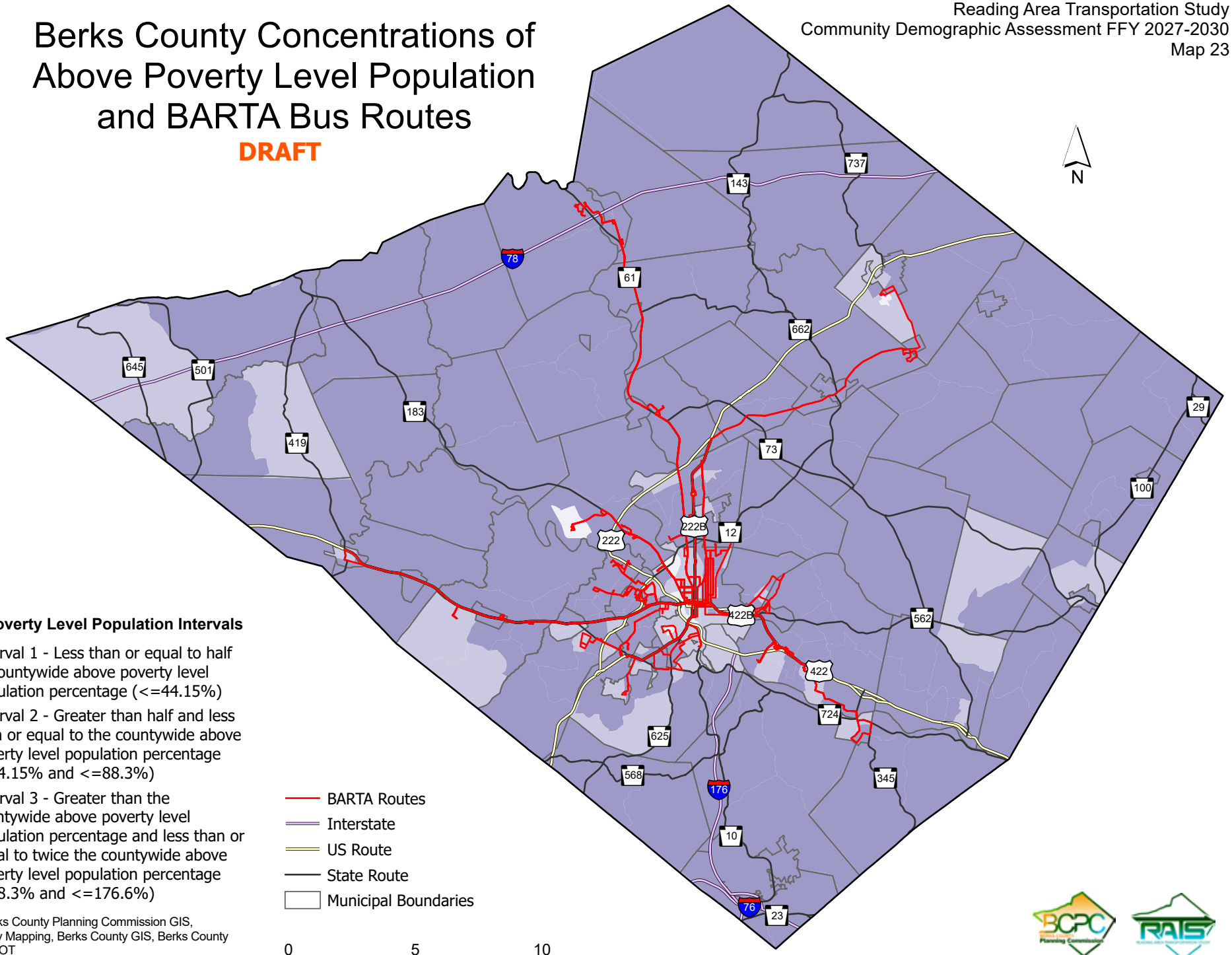

Above Poverty Level Population Intervals

- Interval 1 - Less than or equal to half of countywide above poverty level population percentage (<=44.15%)
- Interval 2 - Greater than half and less than or equal to the countywide above poverty level population percentage (>44.15% and <=88.3%)
- Interval 3 - Greater than the countywide above poverty level population percentage and less than or equal to twice the countywide above poverty level population percentage (>88.3% and <=176.6%)

Source: Berks County Planning Commission GIS, Berks County Mapping, Berks County GIS, Berks County DES, PennDOT

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Map 24 displays the ratio of low-wage jobs to low-wage workers in Berks County with the county broken down by block group. Block groups on this map displayed in shades of pink and purple have a higher number of low-wage jobs compared to low-wage workers. From a planning perspective, these block groups may be places where zoning and la nd use policies should encourage affordable, diverse housing stock to increase the balance of low-wage workers available within a close proximity to the low-wage jobs that are offered in these areas.

Map 25 adds BARTA bus routes overtop of this geographic representation of low-wage jobs to low-wage workers. This map has been compiled to show if areas with an excess of low-wage jobs are able to be accessed using transit, as these places could be key destinations for low-wage workers for which public transportation services or other transportation policies should be considered. In order to aid in ensuring access to jobs, the Berks County Planning Commission encourages municipalities to enact policies that new development engages early with BARTA to ensure adequate access, especially when located near transit lines, and examine bus stops and sidewalk connections to bus stops to then prioritize missing connections and/or areas needing repair.

Special Services Operations are also available through BARTA such as Shared Ride, ADA, and Medical Assistance Transportation Program (MATP) programs, and are specialized, demand-responsive paratransit service and provide public transportation to persons whose disabling condition prevents the use of fixed route transit, which is the route shown on ***Map 25***. Taxi service and ride sharing is another service that individuals may use when unable to take advantage of BARTA's services. As of 2025 there are seven taxicab operators active in Berks County as listed by the Public Utility Commission. Ride sharing is another popular mode of transportation when personal transportation does not exist to an individual. Berks County has been serviced by Uber since operations began in 2015, shortly followed by Lyft.

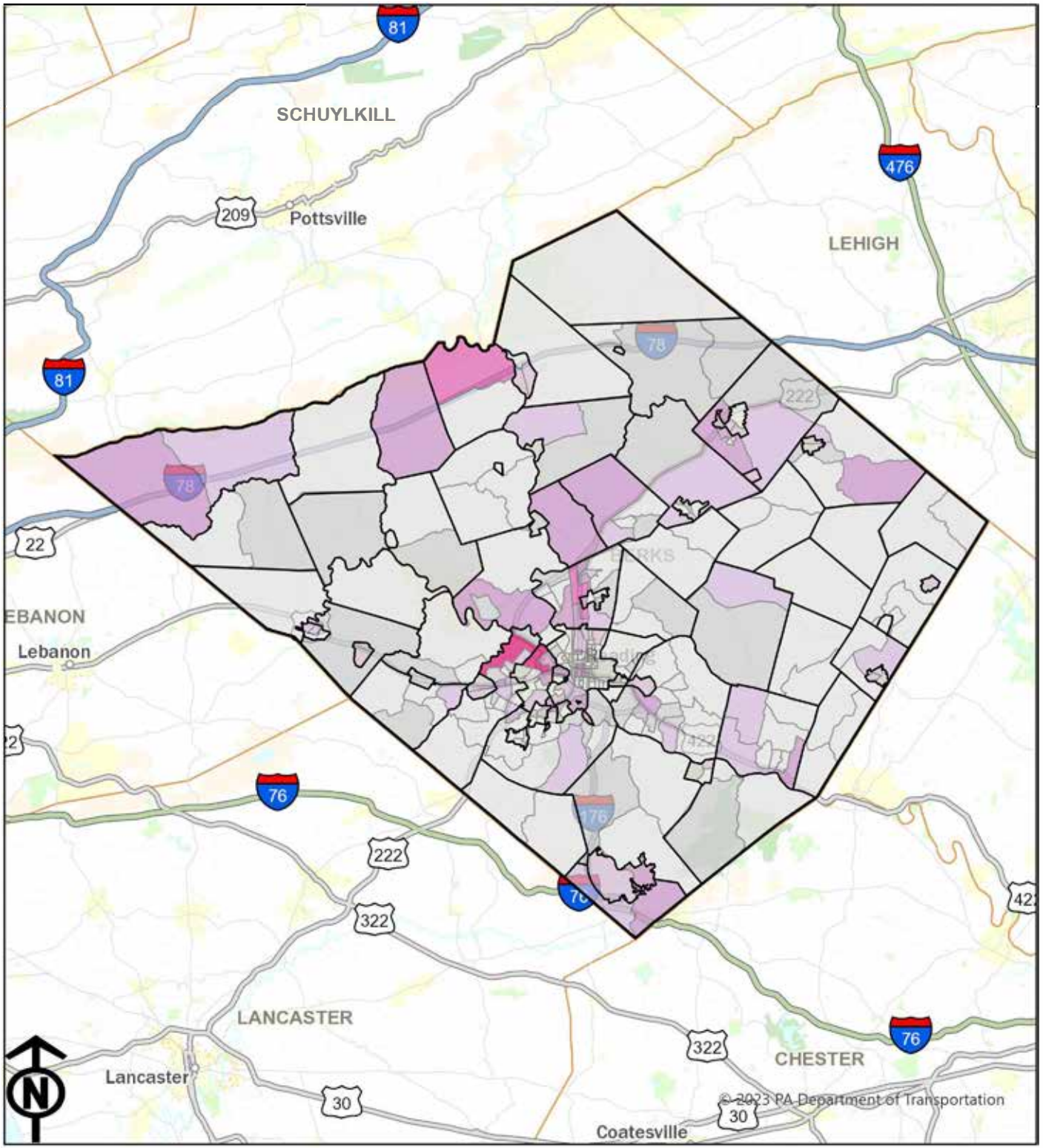
Low-wage workers without personal transportation or access to the transit system may not be able to afford a daily commute to low-wage jobs through services such as taxi or other ride sharing. To aid in providing another source of transportation to jobs, Berks County joined Commute PA (formerly Commuter Services of Pennsylvania) in 2009. This program is locally supported by RATS, BARTA, and the Greater Reading Chamber of Commerce and Industry. Commute PA offers free transportation demand management strategies and assistance to employers and individuals for finding options other than driving alone to work. The goal of Commute PA is to reduce the number of vehicle miles traveled and to increase the efficiency of the highway system by reducing congestion and improving air quality. Participation in the program has been successful – increasing involvement and reducing VMT since 2009. The program is funded with federal Congestion Mitigation & Air Quality (CMAQ) funds through participating MPO's.

When new businesses move into Berks County, participating with Commute PA is encouraged. Commute PA can provide free assistance in tailoring programs to meet employer's needs. Options tailored to employers can include carpooling/vanpooling, transit promotion, Emergency Ride Home program, preferential parking, active transportation options, teleworking, staggered shifts, compressed work weeks, payroll tax savings, and promotional/educational activities.

Communities can partner with Commute PA as well. Community Partners work with the Commute PA program to provide free commute option assistance to their member organizations, residents, and other interested parties within their communities.

In order to best facilitate the needs of all residents to access the public transportation system, regardless of type of bus including fixed route service, paratransit service, or express route service, coordination continues to occur between Reading MPO and SCTA to make sure all avenues are being explored to improve accessibility.

Map 24 - Berks County Low Wage Jobs to Low Wage Workers Ratios



Legend

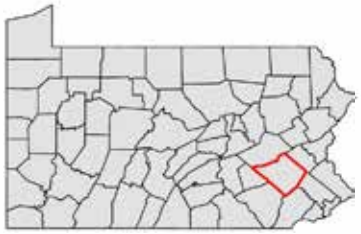
- Counties
- Municipalities

Pennsylvania Census Block Groups

Low Wage Jobs to Low Wage Workers Ratio

- 0.00 - 0.49 (n=156)
- 0.50 - 0.99 (n=47)
- 1.00 - 1.99 (n=51)
- 2.00 - 4.99 (n=25)
- 5.00 - 9.99 (n=5)
- 10.00 - 99.99 (n=2)
- 100.00- 1262.00 (n=0)

0 5 10 20 Miles



Source: United States Census Bureau, Longitudinal Employer-Household Dynamics (LEHD), LEHD Origin-Destination Employment Statistics (LODES) 8

Map prepared for 2025 by Navarro & Wright Consulting Engineers, Inc.

Reading Area Transportation Study
Community Demographic Assessment FFY 2027-2030
Map 25

Berks County Low Wage Jobs to Low Wage Workers Ratios and BARTA Bus Routes

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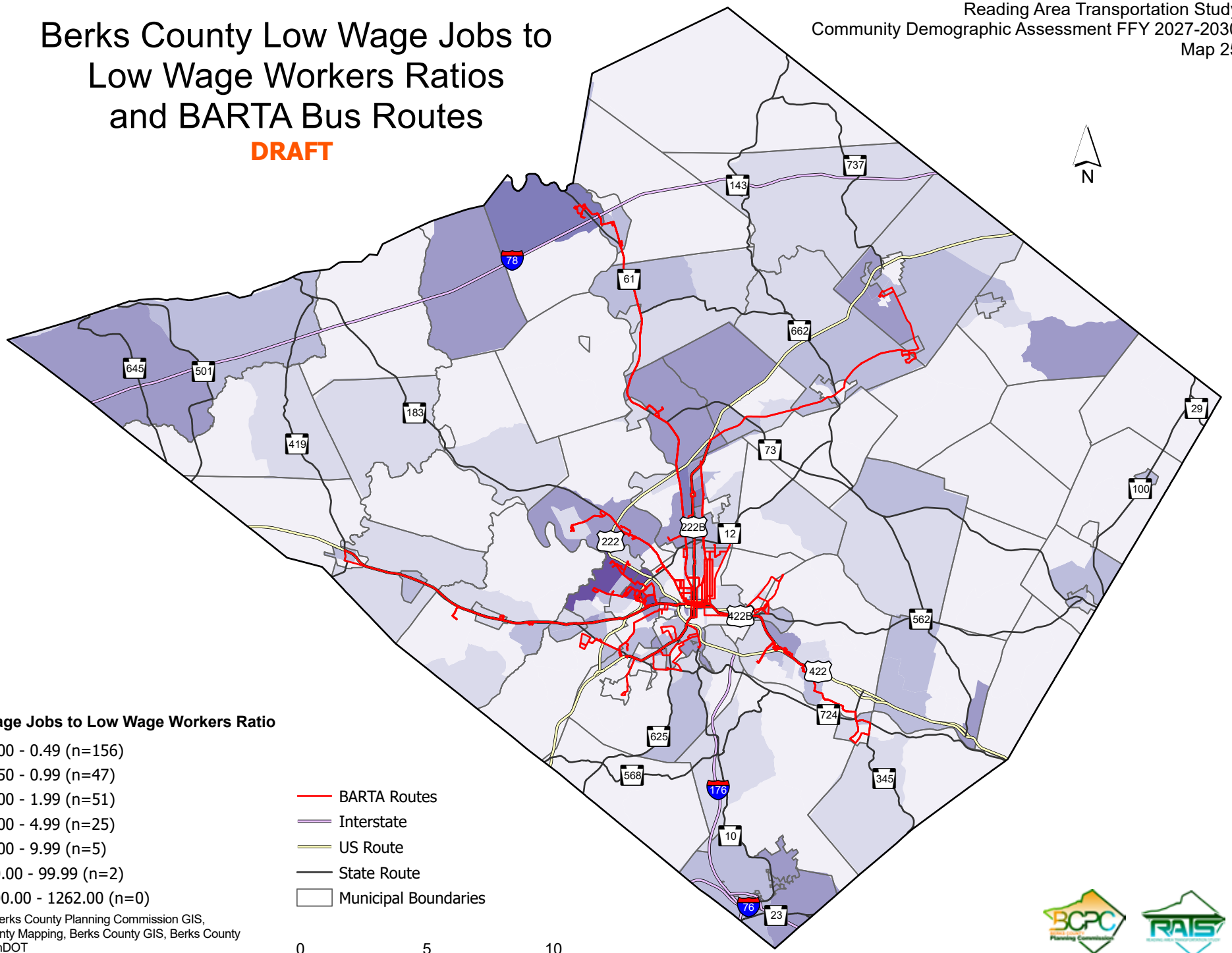

Low Wage Jobs to Low Wage Workers Ratio

- 0.00 - 0.49 (n=156)
- 0.50 - 0.99 (n=47)
- 1.00 - 1.99 (n=51)
- 2.00 - 4.99 (n=25)
- 5.00 - 9.99 (n=5)
- 10.00 - 99.99 (n=2)
- 100.00 - 1262.00 (n=0)

- BARTA Routes
- Interstate
- US Route
- State Route
- Municipal Boundaries

Source: Berks County Planning Commission GIS, Berks County Mapping, Berks County GIS, Berks County DES, PennDOT

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SECTION 7
TYPES OF PROJECTS AND DISTRIBUTION OF THE FFY 2027–2030 TIP

The FFY 2027-2030 Highway and Bridge TIP totals $384,435,930, while the Interstate TIP totals $740,313 adding up to $385,176,243. The projects include roadway and bridge, studies, bike and pedestrian, intermodal, as well as Interstate. Transit projects totaling $78,897,382 are also proposed and are dedicated to maintaining the current operating system, as well as improving the local BARTA bus fleet through the SCTA Transit Asset Management Program and Capital Budget. ***Table 50*** gives a breakdown of the total cost of each project mode, the percent of the total cost, and the total per capita cost.

Table 50

Project Mode	All Projects		
	Total Cost	Percent of Total Cost	Total Per Capita Cost
Bike/Ped	$2,424,000	0.5%	$5.64
Bridge	$81,447,266	17.6%	$189.42
Intermodal/ CMAQ/Transit	$81,467,532	17.6%	$189.46
Interstate	$740,313	0.2%	$1.72
Roadway	$279,624,126	60.3%	$650.31
Miscellaneous	$18,370,388	4.0%	$42.72
Total	$464,073,625	100%	$1,079.27

Per ***Table 50***, each project, including line items, has been grouped into a project mode: Bike/Ped, Bridge, Intermodal/CMAQ/Transit, Interstate, Roadway, and Miscellaneous based on project type and source of funding. Within the Intermodal category, projects such as transit improvements and CMAQ funded items have been grouped to give us a projected total of $81,467,532. Furthermore, the Interstate maintenance program funding totals only come from the Interstate TIP, not the Highway & Bridge TIP and involves one (1) project associated with reconstruction of the I-176 corridor from the bridge over SR 568 north to the SR 422 interchange. Additionally, the total cost of the Interstate maintenance program accounts for only 0.2% of the total FFY 2027-2030 TIP allocation. Roadway projects include not only restoration and reconstruction projects, but also intersection improvements, safety improvements, and shoulder upgrades. The Miscellaneous category contains $18,370,388 in programmed funds for Delivery and Consulting and line items, but no actual projects are associated with this project mode. Line item funds that are not associated with delivery and consulting projects remain programmed on the TIP for use towards a new project or an existing project that may require additional funding due to increased costs.

SECTION 8

POTENTIAL IMPACTS OF TRANSPORTATION PROJECTS ON THE COMMUNITY ANALYSIS OF THE FFY 2027–2030 TIP

As part of the Transportation Improvement Program (TIP) adoption process, the Reading Area Transportation Study (RATS) is required to analyze the potential impact that TIP projects have on the surrounding environments. One aspect of this analysis is evaluating the positive and negative impacts a project may have on the socio-economic population surrounding a project area. The positive impacts that the regional transportation program can bring are access, mobility, safety, and environmental quality. The negative impacts of the program can be a reduction in any of those areas to a community. Many transportation projects require a trade-off between those aspects of the transportation system and the distribution of positive and negative impacts. For example, a project that will decrease congestion in one community may result in a decrease in the environmental quality of another as additional vehicles begin utilizing the improved route. Increased safety may require a trade off in access or mobility, and increased access may bring mobility concerns. The analysis in respect to all populations is done to ensure that the positive impacts of transportation investment are being shared equally and that the negative impacts created by new projects are not being focused toward one part of the public over another.

Projects on the FFY 2027-2030 TIP are broken down into several categories including Maintenance, Bridges, Capacity, Safety, Bicycle and Pedestrian, and Intermodal. Each type of project has a unique set of impacts and will affect individual populations differently. For example, maintenance projects tend to cause the least impact on the population since they typically involve highway resurfacing or repaving work on existing roadways. Although these projects can cause delayed travel time and transit service, traffic detours, and work zone noise and debris, the projects are typically shorter in duration and result in improvements to the functionality of the roadway network by providing smoother driving surfaces and new roadway markings. While most bridge projects are identified as either a rehabilitation or replacement, both types of projects can lend itself to significant traffic detours, traffic delay, and noise. However, the benefits of these types of improvements result in safer bridge structures, improved roadway conditions, and updated signage.

Capacity projects can involve the addition of new lanes to existing roadways, new roadways to the existing network, or at times the realignment of intersections or interchanges, in an effort to provide for more traffic mobility. Special attention is given when planning capacity projects, as they can result in right-of-way acquisitions to account for the additional capacity, construction impacts are normally more severe due to longer construction periods, travel patterns shift, and delayed travel times can occur. The consequences of the completion of capacity projects can involve the loss of property, increased traffic volumes, and decreased air quality, while positive impacts can include improved transit service time, decreased travel delay, and safer roadway conditions which result in improved quality of life for all residents and users of the roadway system.

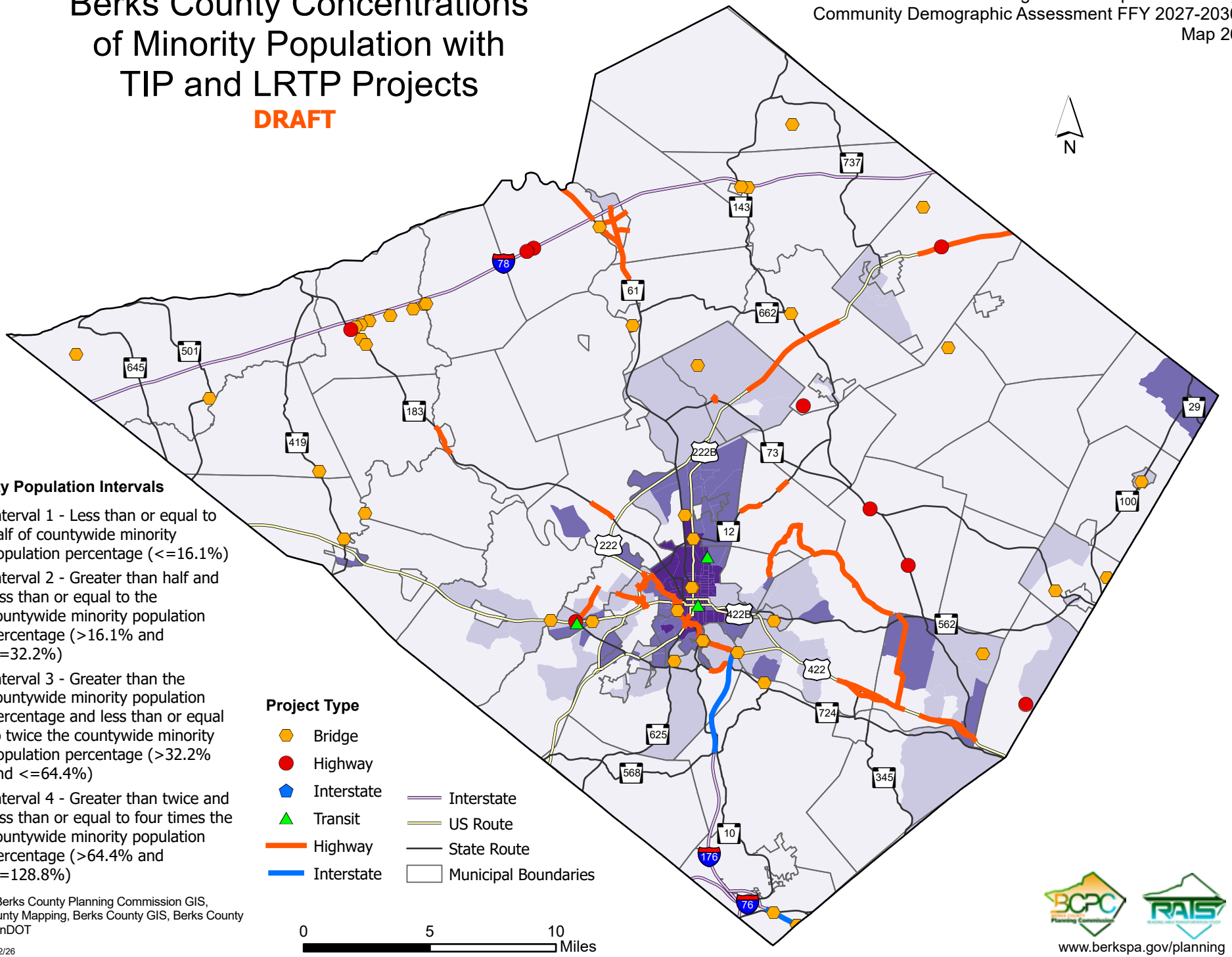
For the RATS FFY 2027-2030 TIP, the majority of projects will not require right of way acquisition, displace residents or cause burdens on the mobility, access, or environmental health of any community. This is due to the majority of candidate projects found within the RATS Highway TIP are programmed to maintain or enhance the existing transportation system.

Maps 26 through 29 display the FFY 2027-2030 TIP Projects and FFY 2027-2050 Long Range Transportation Plan Candidates by concentrations of Minority, White (non-Hispanic or Latino), Below Poverty, and Above Poverty populations. The yellow hexagons denote locations of bridge candidate projects, while the orange lines and red circles identify highway reconstruction or resurfacing candidate projects. Any candidate projects shown in blue address the Interstate and green triangles denote Transit.

Berks County Concentrations of Minority Population with TIP and LRTP Projects

DRAFT

Reading Area Transportation Study
Community Demographic Assessment FFY 2027-2030
Map 26



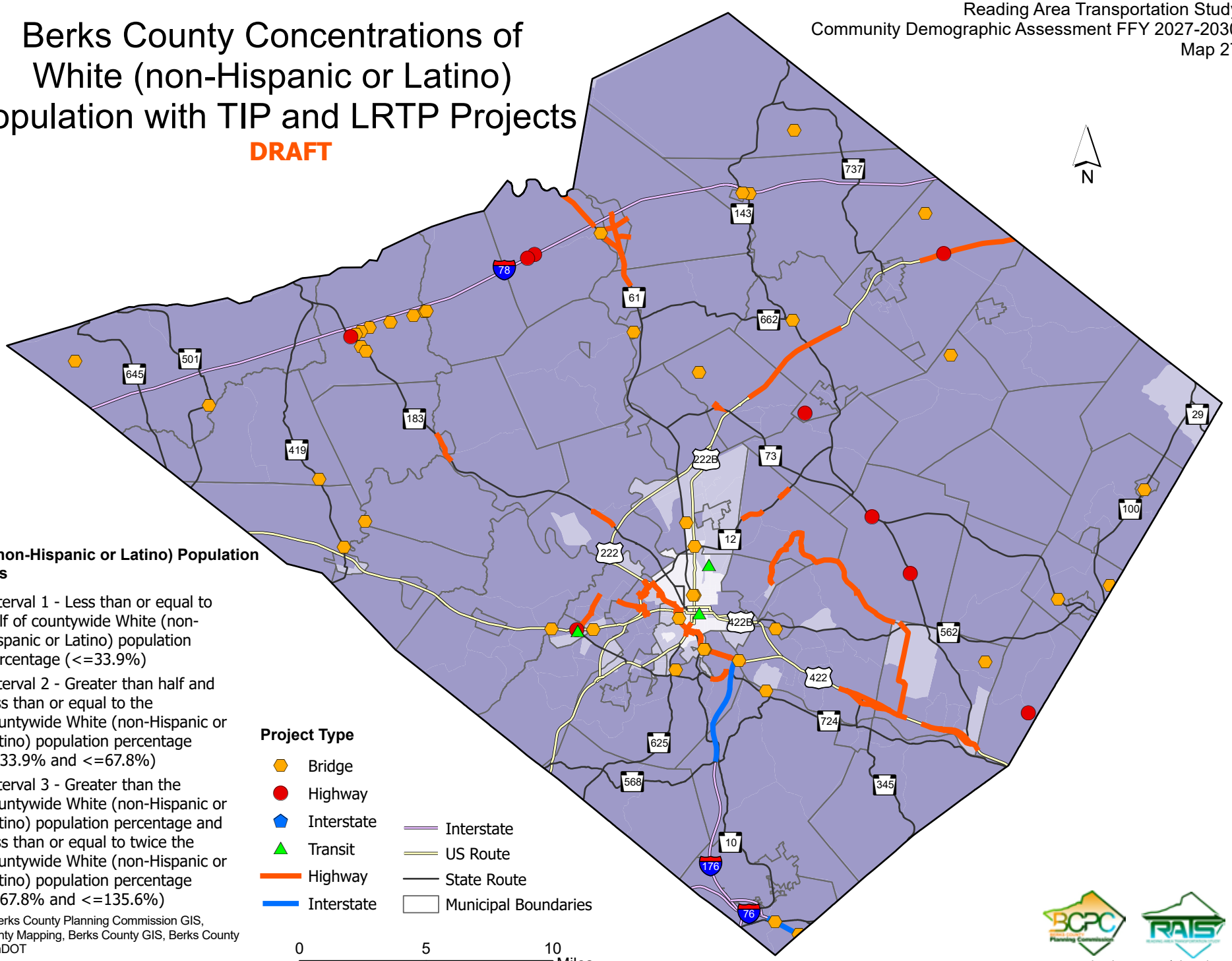
Source: Berks County Planning Commission GIS, Berks County Mapping, Berks County GIS, Berks County DES, PennDOT

TRCA, BAB 2/26

www.berkspa.gov/planning

Berks County Concentrations of White (non-Hispanic or Latino) Population with TIP and LRTP Projects

DRAFT



White (non-Hispanic or Latino) Population Intervals

- Interval 1 - Less than or equal to half of countywide White (non-Hispanic or Latino) population percentage (<=33.9%)
- Interval 2 - Greater than half and less than or equal to the countywide White (non-Hispanic or Latino) population percentage (>33.9% and <=67.8%)
- Interval 3 - Greater than the countywide White (non-Hispanic or Latino) population percentage and less than or equal to twice the countywide White (non-Hispanic or Latino) population percentage (>67.8% and <=135.6%)

Project Type

- Bridge
- Highway
- Interstate
- Transit
- Highway
- Interstate

- Interstate
- US Route
- State Route
- Municipal Boundaries

Source: Berks County Planning Commission GIS, Berks County Mapping, Berks County GIS, Berks County DES, PennDOT

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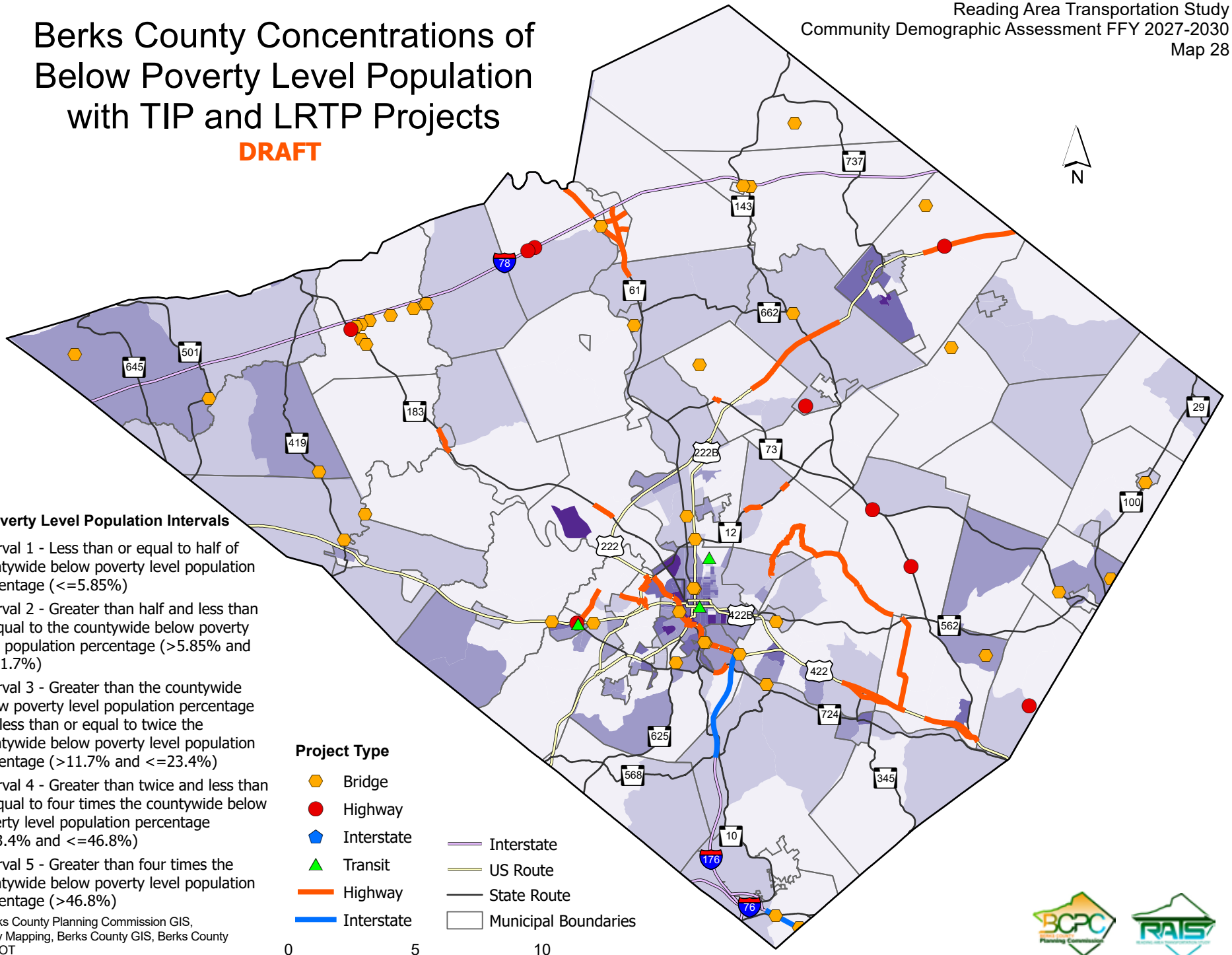
Reading Area Transportation Study
Community Demographic Assessment FFY 2027-2030
Map 28

Berks County Concentrations of Below Poverty Level Population with TIP and LRTP Projects

DRAFT



Below Poverty Level Population Intervals

- Interval 1 - Less than or equal to half of countywide below poverty level population percentage (<=5.85%)
- Interval 2 - Greater than half and less than or equal to the countywide below poverty level population percentage (>5.85% and <=11.7%)
- Interval 3 - Greater than the countywide below poverty level population percentage and less than or equal to twice the countywide below poverty level population percentage (>11.7% and <=23.4%)
- Interval 4 - Greater than twice and less than or equal to four times the countywide below poverty level population percentage (>23.4% and <=46.8%)
- Interval 5 - Greater than four times the countywide below poverty level population percentage (>46.8%)

Project Type

- Bridge
- Highway
- Interstate
- Transit
- Highway
- Interstate

- Interstate
- US Route
- State Route
- Municipal Boundaries

0 5 10 Miles

Source: Berks County Planning Commission GIS, Berks County Mapping, Berks County GIS, Berks County DES, PennDOT

TRCA, BAB 2/26

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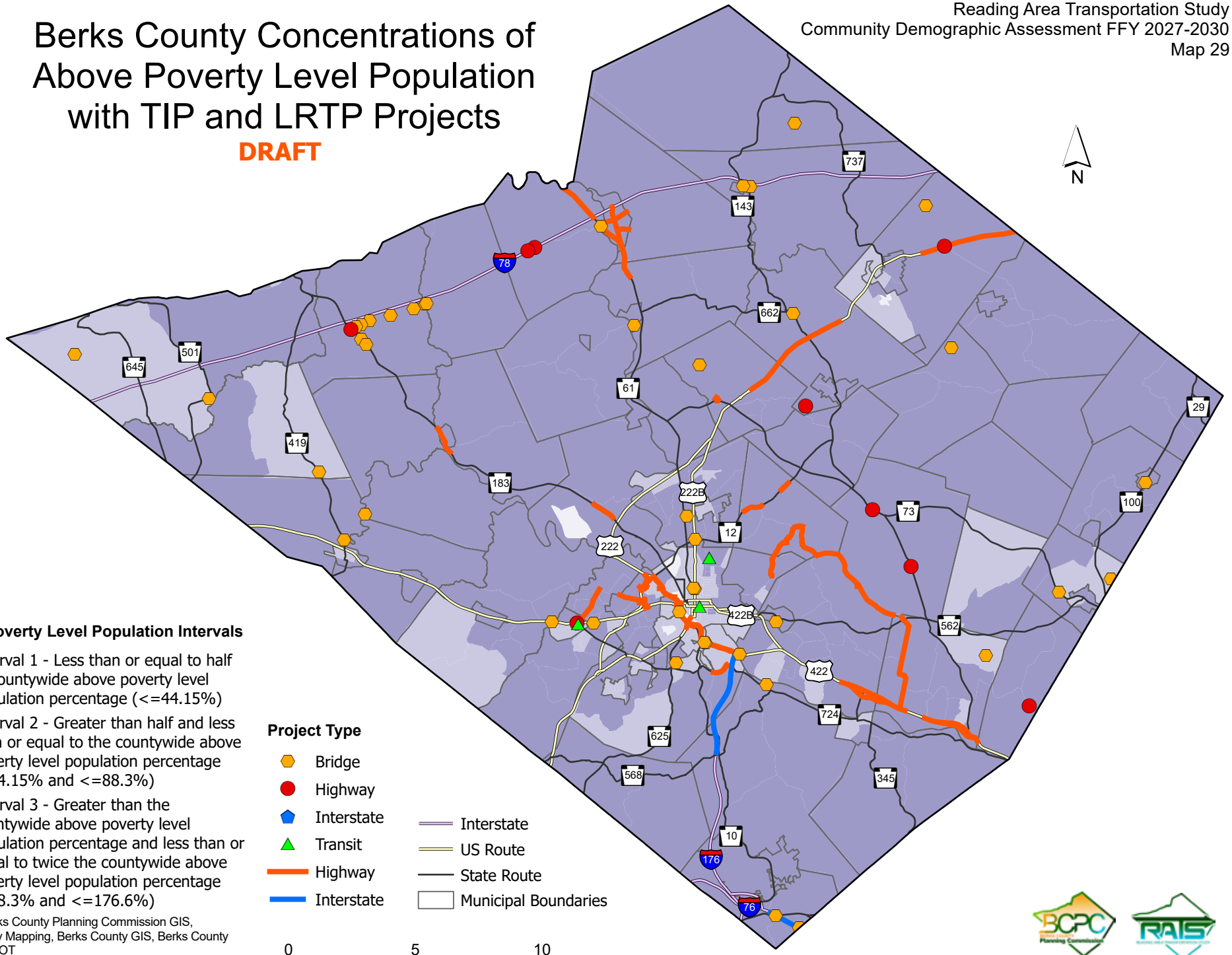
Reading Area Transportation Study
Community Demographic Assessment FFY 2027-2030
Map 29

Berks County Concentrations of Above Poverty Level Population with TIP and LRTP Projects

DRAFT



Above Poverty Level Population Intervals

- Interval 1 - Less than or equal to half of countywide above poverty level population percentage (<=44.15%)
- Interval 2 - Greater than half and less than or equal to the countywide above poverty level population percentage (>44.15% and <=88.3%)
- Interval 3 - Greater than the countywide above poverty level population percentage and less than or equal to twice the countywide above poverty level population percentage (>88.3% and <=176.6%)

Project Type

- Bridge
- Highway
- Interstate
- Transit
- Highway
- Interstate

- Interstate
- US Route
- State Route
- Municipal Boundaries

0 5 10 Miles

Source: Berks County Planning Commission GIS, Berks County Mapping, Berks County GIS, Berks County DES, PennDOT

TRCA, BAB 2/26

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APPENDIX

FY 2027–2029 TIP Statewide Community Demographic Analysis

Introduction

For the FY 2027-2029 TIP Statewide Community Demographic Analysis, the consultant team built upon the substantial work and documentation previously developed by R. Scott Williams at the Williamsburg Area Transportation Study Metropolitan Planning Organization (WATS MPO) (Williams 2023) for the FY 2023-2026 TIP analyses and the 2025-2028 TIP Community Demographic Analysis.

This document outlines the data and methods utilized by the consultant team to perform this update. This detailed, step-by-step process is presented in this document to allow for subsequent updates to be performed with increased ease and uniformity between study years.

Purpose

The purpose of the work performed was to provide the following deliverables:

1. Updated county profile tables detailing demographic data consistent with the previous studies.
2. Updated ArcGIS Pro project file with maps, layouts, models, and geodatabase that can serve as a template for subsequent updates.
3. Updated county, PennDOT Planning Partner, and PennDOT Engineering District income and population interval tables.
4. Updated PDF maps detailing income and population interval conditions at the county, PennDOT Planning Partner, and PennDOT Engineering District levels.
5. A document detailing the steps taken to produce the deliverables listed above to serve as a basis for subsequent updates.

Methods

The following sections describe the steps required to update the community demographic input datasets, perform the interval analysis, and prepare table and map deliverables. Much of the basis for the methods used were derived from the South-Central Pennsylvania methodology document (Alan M. Voorhees Transportation Center, 2019) with a key change developed by Williams to allow the analysis of data at a statewide scale (Williams 2023). This change involved the classification of income and population percentages based on their ratio to percentages at the county and PennDOT Planning Partner levels as a whole. This resulted in the creation of a uniform scale to allow for comparisons of data across the state.
The methods used are broken down into the following major steps:

1. Acquire Data
2. Create New Tables
3. Populate New Tables
4. Add Geodatabase Feature Classes
5. 5. Join Data
6. 6. Run Interval Analysis Models and Exporting Tables
7. Update Map Deliverables

Acquire Data

To begin, assemble updated data used for the study. Twenty-one sources are required for the analysis. The required data utilized in the study includes PennDOT tables on crashes, PennDOT shapefiles for districts and planning partners, PennDOT Shapefiles for bridges and roadways, American Community Survey 5-Year Estimate tables, US Census County and Block group shapefiles, etc.

A comprehensive list of required data and their sources is listed below. However, if a listed URL is broken, the required data can be found by using the main website's search bar, or an internet search engine. For subsequent updates, the most current available datasets should be utilized.

Data Sources

1. US Census County Boundaries
    a. US Census Bureau, 2024 Pennsylvania County Shapefile
2. US Census Block Group Boundaries
    a. US Census Bureau, 2024 Pennsylvania Block Group Shapefile
3. Municipal Boundaries
    a. https://www.pasda.psu.edu/uci/DataSummary.aspx?dataset=41
4. PennDOT Print Basemap
    a. https://gis.penndot.gov/arcgis/rest/services/basemaps/printbasemap/MapServer
5. PennDOT Bridges
    a. https://data-pennshare.opendata.arcgis.com/datasets/PennShare::pennsylvania-bridges/about
6. PennDOT RMS
    a. https://data-pennshare.opendata.arcgis.com/datasets/PennShare::rmsseg-state-roads/explore?location=41.034526%2C-77.667992%2C8.91
7. Planning Partner Boundaries
    a. https://data-pennshare.opendata.arcgis.com/datasets/PennShare::penndot-planning-partner-boundary-1/explore?location=40.556070%2C-75.387053%2C7.44
8. PennDOT District Boundaries
    a. https://data-pennshare.opendata.arcgis.com/datasets/PennShare::penndot-engineering-districts-1/explore?location=40.985868%2C-77.629000%2C8.87
9. PennDOT Crash Data Statewide Spreadsheets (5 previous years)
    a. https://pennshare.maps.arcgis.com/apps/webappviewer/index.html?id=8fdbf046e36e41649bbfd9d7dd7c7e7e
10. County Level Census Data
    a. B03002 HISPANIC OR LATINO ORIGIN BY RACE
        i. https://data.census.gov/table?q=B03002:+HISPANIC+OR+LATINO+ORIGIN+BY+RACE&g=040XX00US42$1500000&tid=ACSDT5Y2023.B03002,%20Calculated%20values
    b. B17017 POVERTY STATUS IN THE PAST 12 MONTHS BY HOUSEHOLD TYPE BY AGE OF HOUSEHOLDER
        i. https://data.census.gov/table?q=B17017:+POVERTY+STATUS+IN+THE+PAST+12+MONTHS+BY+HOUSEHOLD+TYPE+BY+AGE+OF+HOUSEHOLDER&tid=ACSDT1Y2023.B17017
    c. S1701 POVERTY STATUS IN THE PAST 12 MONTHS
        i. https://data.census.gov/table/ACSST1Y2023.S1701?q=S1701:+POVERTY+STATUS+IN+THE+PAST+12+MONTHS
    d. DP02 SELECTED SOCIAL CHARACTERISTICS IN THE UNITED STATES
        i. https://data.census.gov/table?q=DP02
    e. DP05 ACS DEMOGRAPHIC AND HOUSING ESTIMATES
        i. https://data.census.gov/table?q=DP05
    f. DP04 SELECTED HOUSING CHARACTERISTICS
        i. https://data.census.gov/table?q=DP04
11. Block Group Level Census Data
    a. B03002 HISPANIC OR LATINO ORIGIN BY RACE
        i. https://data.census.gov/table?q=B03002:+HISPANIC+OR+LATINO+ORIGIN+BY+RACE&g=040XX00US42$1500000&tid=ACSDT5Y2023.B03002,%20Calculated%20values
    b. C17002 RATIO OF INCOME TO POVERTY LEVEL IN THE PAST 12 MONTHS
        i. https://data.census.gov/table/ACSDT5Y2023.C17002?q=C17002&g=040XX00US30$0500000,30
    c. S1701 POVERTY STATUS IN THE PAST 12 MONTHS
        i. https://data.census.gov/table/ACSST1Y2021.S1701?q=S1701:+POVERTY+STATUS+IN+THE+PAST+12+MONTHS
    d. DP02 SELECTED SOCIAL CHARACTERISTICS IN THE UNITED STATES
        i. https://data.census.gov/table?q=DP02
    e. DP05 ACS DEMOGRAPHIC AND HOUSING ESTIMATES
        i. https://data.census.gov/table?q=DP05
    f. DP04 SELECTED HOUSING CHARACTERISTICS
        i. https://data.census.gov/table?q=DP04

Maintain copies of the downloaded data in a separate folder with permissions set to "Read Only" to avoid accidental modification of the source data when working on subsequent steps.

Create New Tables

The downloaded data will be compiled into Excel tables for final presentation, and/or to facilitate the additional analysis in GIS. The first step of this process is to create the needed Excel tables for the data to be input. The five new tables created for this study are listed in the section below along with the required column names.

New Excel Tables and Their Required Columns

1. "County Membership" (used to determine which counties are associated with what planning partner or district, so block groups can be assigned to them in the "Block Group Assignments" Excel file)
    a. County
    b. Planning Partner
    c. PennDOT District

2. "Block Group Associations" (to associate block groups with their county, district, and planning partners)
    a. Block Group GEOID
    b. County
    c. PennDOT district
    d. PennDOT Planning Partner

3. "Census County 5 Year Estimates"
    a. County
    b. Planning Partner
    c. PennDOT District
    d. FIPS ID
    e. ANSI Code
    f. County Total Population
    g. County Minority Population
    h. County Population, Minority Percent
    i. County White (Non-Hispanic/Latino) Population
    j. County Population, White (Non-Hispanic/Latino) Percent
    k. County Income Below Poverty Level Population
    l. County Population, Income Below Poverty Level Percent
    m. County Income Above Poverty Level Population
    n. County Population, Income Above Poverty Level Percent
    o. County Population, Speak English Less Than "very well"
    p. County Population Speak English Less Than "very well" Percent
    q. Number of Census Block Groups
    r. Average Census Block Group Minority Population (Percent)
    s. Average Census Block Group White (Non-Hispanic/Latino) Population (Percent)
    t. Average Census Block Group Below Poverty Level Population (Percent)
    u. Average Census Block Group Above Poverty Level Population (Percent)
    v. Below Poverty Level Households
    w. Percent Households Below Poverty Level
    x. Above Poverty Level Households
    y. Percent Households Above Poverty Level
    z. White Alone Total Population
    aa. White Alone Below Poverty Level Population
    bb. White Alone Below Poverty Level Population Percent
    cc. White Alone Above Poverty Level Population
    dd. White Alone Above Poverty Level Population Percent
    ee. Black or African American Alone Total Population
    ff. Black or African American Alone Below Poverty Level Population
    gg. Black or African American Alone Below Poverty Level Population Percent
    hh. Black or African American Alone Above Poverty Level Population
    ii. Black or African American Alone above Poverty Level Population Percent
    jj. American Indian and Alaska Native Alone Total Population
    kk. American Indian and Alaska Native Alone Below Poverty Level Population
    ll. American Indian and Alaska Native Alone Below Poverty Level Population Percent
    mm. American Indian and Alaska Native Alone Above Poverty Level Population
    nn. American Indian and Alaska Native Alone Above Poverty Level Population Percent
    oo. Asian Alone Total Population
    pp. Asian Alone Below Poverty Level Population
    qq. Asian Alone Below Poverty Level Population Percent
    rr. Asian Alone Above Poverty Level Population
    ss. Asian Alone Above Poverty Level Population Percent
    tt. Native Hawaiian and Other Pacific Islander Alone Total Population
    uu. Native Hawaiian and Other Pacific Islander Alone Below Poverty Level Population
    vv. Native Hawaiian and Other Pacific Islander Alone Below Poverty Level Population Percent
    ww. Native Hawaiian and Other Pacific Islander Alone above Poverty Level Population
    xx. Native Hawaiian and Other Pacific Islander Alone Above Poverty Level Population Percent
    yy. Some Other Race Alone Total Population
    zz. Some Other Race Alone Below Poverty Level Population
    aaa. Some Other Race Alone Below Poverty Level Population Percent
    bbb. Some Other Race Alone Above Poverty Level Population
    ccc. Some Other Race Alone Above Poverty Level Population Percent
    ddd. Two or More Races Total Population
    eee. Two or More Races Below Poverty Level Population
    fff. Two or More Races Below Poverty Level Population Percent
    ggg. Two or More Races Above Poverty Level Population
    hhh. Two or More Races Above Poverty Level Population Percent iii. Hispanic or Latino Origin (of any race) Total Population
    jjj. Hispanic or Latino Origin (of any race) Below Poverty Level Population
    kkk. Hispanic or Latino Origin (of any race) Below Poverty Level Population Percent
    lll. Hispanic or Latino Origin (of any race) Above Poverty Level Population
    mmm. Hispanic or Latino Origin (of any race) Above Poverty Level Population Percent
    nnn. White Alone, Not Hispanic or Latino Total Population
    ooo. White alone, Not Hispanic or Latino Below Poverty Level Population
    ppp. White Alone, Not Hispanic or Latino Below Poverty Level Population Percent
    qqq. White alone, Not Hispanic or Latino Above Poverty Level Population
    rrr. White Alone, Not Hispanic or Latino Above Poverty Level Population Percent
    sss. Population Elderly (65 Years and Older)
    ttt. Population Elderly (65 Years and Older) Percent
    uuu. Housing Units with No Vehicle

vvv. Housing Units with No Vehicle, Percent
www. Housing Units with No Computer
xxx. Housing Units with No Computer, Percent
yyy. Housing Units with No Broadband Subscription
zzz. Housing Units with No Broadband Subscription, Percent
aaaa. Persons With a Disability
bbbb. Persons With a Disability, Percent

4. "Block Group Data" (used to hold copied and calculated values for block groups, which will be joined to the block group shapefile for analysis in GIS)
   a. GEOID_Text
   b. GEOID
   c. Block Group Population
   d. White Alone, Not Hispanic or Latino
   e. Black or African-American, Not Hispanic or Latino
   f. American Indian or Alaskan Native, Not Hispanic or Latino
   g. Asian, Not Hispanic or Latino
   h. Native Hawaiian or Pacific Islander, Not Hispanic or Latino
   i. Other Race, Not Hispanic or Latino
   j. Two or more Races, Not Hispanic or Latino
   k. Hispanic or Latino
   l. Minority Population (for the BG)
   m. Below Poverty Level Population (for the BG)
   n. Above Poverty Level Population (for the BG)
   o. Below Poverty Level Population Percent (for the BG)
   p. Above Poverty Level Population Percent (for the BG)
   q. Minority Population Percent (for the BG)
   r. White (Non-Hispanic/Latino) Population Percent (for the BG)
   s. County
   t. Ratio of Block Group Below Poverty Level percent to county Below Poverty Level percent
   u. County Below Poverty Level Population Interval for Block Group
   v. County Below Poverty Level Interval ID
   w. Ratio of Block Group Above Poverty Level percent to county Above Poverty Level percent
   x. County Above Poverty Level Population Interval for Block Group
   y. County Above Poverty Level Interval ID
   z. Ratio of Block Group Minority percent to county minority percent
   aa. County Minority Population Interval for Block Group
   bb. County Minority Interval ID
   cc. Ratio of Block Group White (Non-Hispanic/Latino) percent to county White (Non-Hispanic/Latino) percent
   dd. County White (Non-Hispanic/Latino) Population Interval for Block Group
   ee. County White (Non-Hispanic/Latino) Interval ID
   ff. PennDOT District
   gg. PennDOT District Minority Percent
   hh. PennDOT District White (Non-Hispanic/Latino) Percent
   ii. PennDOT District Below Poverty Percent
   jj. PennDOT District Above Poverty Percent
   kk. Ratio of Block Group Below Poverty Level Percent to PennDOT District Average
   ll. PennDOT District Below Poverty Level Interval
   mm. PennDOT District Below Poverty Level Interval ID
   nn. Ratio of Block Group Above Poverty Level Percent to PennDOT District Average
   oo. PennDOT District Above Poverty Level Interval
   pp. PennDOT District Above Poverty Level Interval ID
   qq. Ratio of Block Group Minority Percent to PennDOT District Average
   rr. PennDOT District Minority Interval
   ss. PennDOT District Minority Interval ID
   tt. Ratio of Block Group White (Non-Hispanic/Latino) Percent to PennDOT District Average
   uu. PennDOT District White (Non-Hispanic/Latino) Interval
   vv. PennDOT District White (Non-Hispanic/Latino) Interval ID
   ww. PennDOT Planning Partner
   xx. Planning Partner Minority Percent
   yy. Planning Partner White (Non-Hispanic/Latino) Percent
   zz. Planning Partner Below Poverty Level Percent
   aaa. Planning Partner Above Poverty Level Percent
   bbb. Ratio of Block Group Below Poverty Level Percent to Planning Partner Average
   ccc. Planning Partner Below Poverty Level Low Income Interval
   ddd. Planning Partner Below Poverty Level Interval ID
   eee. Ratio of Block Group Above Poverty Level Percent to Planning Partner Average
   fff. Planning Partner Above Poverty Level Low Income Interval
   ggg. Planning Partner Above Poverty Level Interval ID
   hhh. Ratio of Block Group Minority Percent to Planning Partner Average
   iii. Planning Partner Minority Interval
   jjj. Planning Partner Minority Interval ID
   kkk. Ratio of Block Group White (Non-Hispanic/Latino) Percent to Planning Partner Average
   lll. Planning Partner White (Non-Hispanic/Latino) Interval
   mmm. Planning Partner White (Non-Hispanic/Latino) Interval ID

5. "Crashes"
   a. No new fields, combine the previous five years of PennDOT Crash data into a single spreadsheet.

Populate the Created Tables

After creating the new Excel files detailed above, the next step is to populate those tables with the previously downloaded tabular data.

The list below details data sources for each of the columns in the tables. The table levels below represent the following:

1. Table Name
    a. Table column name
        i. Source of the cell data
            1. Explanation of any variables utilized in the cell value calculation.

Table Data Sources and Calculations

1. "County Membership" (used to determine which counties are associated with what planning partner or district, so block groups can be assigned to them in the "Block Group Assignments" Excel file)
    a. County
    b. Planning Partner
        i. PennDOT Planning Partner Shapefile
    c. PennDOT District
        i. PennDOT District Shapefile
2. "Block Group Associations" (to associate block groups with their county, district, and planning partners)
    a. Block Group GEOID
        i. Copied from Census Block Group Shapefile
    b. County
        i. Copied from Census Block Group Shapefile
    c. PennDOT District
        i. Assigned based on county using XLOOKUP to "County Membership" Excel file.
    d. PennDOT Planning Partner
        i. Assigned based on county using XLOOKUP to "County Membership" Excel file.
3. "Census County 5 Year Estimates"
    a. County
        i. US Census Bureau, 2021 Pennsylvania County Shapefile
    b. Planning Partner
        i. PennDOT Planning Partner Shapefile
    c. PennDOT District
        i. PennDOT District Boundaries Shapefile
    d. FIPS ID
        i. US Census Bureau, 2025 Pennsylvania County Shapefile
    e. ANSI Code
        i. US Census Bureau, 2025 Pennsylvania County Shapefile
    f. County Total Population
        i. Assigned based on County using XLOOKUP from "B03002" County Data.
    g. County Minority Population
        i. Assigned based on County using XLOOKUP from "B03002" County Data.
    h. County Population, Minority Percent
        i. Assigned based on County using XLOOKUP from "B03002" County Data.
    i. County White (Non-Hispanic/Latino) Population
        i. Assigned based on County using XLOOKUP from "B03002" County Data.
    j. County Population, White (Non-Hispanic/Latino) Percent
        i. Assigned based on County using XLOOKUP from "B03002" County Data.
    k. County Income Below Poverty Level Population
        i. Assigned based on County using XLOOKUP from "S1701" County Data.
    l. Average Census Block Group White (Non-Hispanic/Latino) Population (Percent)
        i. Assigned based on County using XLOOKUP from "B03002" County Data.
    m. Average Census Block Group Below Poverty Level Population (Percent)
        i. Assigned based on County using XLOOKUP from "C17002" County Data.
    n. Average Census Block Group Above Poverty Level Population (Percent)
        i. Assigned based on County using XLOOKUP from "C17002" County Data.
    o. Below Poverty Level Households
        i. Assigned based on County using XLOOKUP from "B17017" County Data.
    p. Percent Households Below Poverty Level
        i. Assigned based on County using XLOOKUP from "B17017" County Data.
    q. Above Poverty Level Households
        i. Assigned based on County using XLOOKUP from "B17017" County Data.
    r. Percent Households Above Poverty Level
        i. Assigned based on County using XLOOKUP from "B17017" County Data.
    s. White Alone Total Population
        i. Assigned based on County using XLOOKUP from "S1701" County Data.
    t. White Alone Below Poverty Level Population
        i. Assigned based on County using XLOOKUP from "S1701" County Data.
    u. White Alone Below Poverty Level Population Percent
        i. Assigned based on County using XLOOKUP from "S1701" County Data.
    v. White Alone Above Poverty Level Population
        i. Assigned based on County using XLOOKUP from "S1701" County Data.
    w. White Alone Above Poverty Level Population Percent
        i. Assigned based on County using XLOOKUP from "S1701" County Data.
    x. Black or African American Alone Total Population
        i. Assigned based on County using XLOOKUP from "S1701" County Data.
    y. Black or African American Alone Below Poverty Level Population
        i. Assigned based on County using XLOOKUP from "S1701" County Data.
    z. Black or African American Alone Below Poverty Level Population Percent
        i. Assigned based on County using XLOOKUP from "S1701" County Data.
    aa. Black or African American Alone Above Poverty Level Population
        i. Assigned based on County using XLOOKUP from "S1701" County Data.
    bb. Black or African American Alone above Poverty Level Population Percent
        i. Assigned based on County using XLOOKUP from "S1701" County Data.
    cc. American Indian and Alaska Native Alone Total Population
        i. Assigned based on County using XLOOKUP from "S1701" County Data.
    dd. American Indian and Alaska Native Alone Below Poverty Level Population
        i. Assigned based on County using XLOOKUP from "S1701" County Data.
    ee. American Indian and Alaska Native Alone Below Poverty Level Population Percent
        i. Assigned based on County using XLOOKUP from "S1701" County Data.
    ff. American Indian and Alaska Native Alone Above Poverty Level Population
        i. Assigned based on County using XLOOKUP from "S1701" County Data.
    gg. American Indian and Alaska Native Alone Above Poverty Level Population Percent
        i. Assigned based on County using XLOOKUP from "S1701" County Data.
    hh. Asian Alone Total Population
        i. Assigned based on County using XLOOKUP from "S1701" County Data.
    ii. Asian Alone Below Poverty Level Population
        i. Assigned based on County using XLOOKUP from "S1701" County Data.

jj. Asian Alone Below Poverty Level Population Percent
i. Assigned based on County using XLOOKUP from "S1701" County Data.
kk. Asian Alone Above Poverty Level Population
i. Assigned based on County using XLOOKUP from "S1701" County Data.
ll. Asian Alone Above Poverty Level Population Percent
i. Assigned based on County using XLOOKUP from "S1701" County Data.
mm. Native Hawaiian and Other Pacific Islander Alone Total Population
i. Assigned based on County using XLOOKUP from "S1701" County Data.
nn. Native Hawaiian and Other Pacific Islander Alone Below Poverty Level Population
i. Assigned based on County using XLOOKUP from "S1701" County Data.
oo. Native Hawaiian and Other Pacific Islander Alone Below Poverty Level Population Percent
i. Assigned based on County using XLOOKUP from "S1701" County Data.
pp. Native Hawaiian and Other Pacific Islander Alone above Poverty Level Population
i. Assigned based on County using XLOOKUP from "S1701" County Data.
qq. Native Hawaiian and Other Pacific Islander Alone Above Poverty Level Population Percent
i. Assigned based on County using XLOOKUP from "S1701" County Data.
rr. Some Other Race Alone Total Population
i. Assigned based on County using XLOOKUP from "S1701" County Data.
ss. Some Other Race Alone Below Poverty Level Population
i. Assigned based on County using XLOOKUP from "S1701" County Data.
tt. Some Other Race Alone Below Poverty Level Population Percent
i. Assigned based on County using XLOOKUP from "S1701" County Data.
uu. Some Other Race Alone Above Poverty Level Population
i. Assigned based on County using XLOOKUP from "S1701" County Data.
vv. Some Other Race Alone Above Poverty Level Population Percent
i. Assigned based on County using XLOOKUP from "S1701" County Data.
ww. Two or More Races Total Population
i. Assigned based on County using XLOOKUP from "S1701" County Data.
xx. Two or More Races Below Poverty Level Population
i. Assigned based on County using XLOOKUP from "S1701" County Data.
yy. Two or More Races Below Poverty Level Population Percent
i. Assigned based on County using XLOOKUP from "S1701" County Data.
zz. Two or More Races Above Poverty Level Population
i. Assigned based on County using XLOOKUP from "S1701" County Data.
aaa. Two or More Races Above Poverty Level Population Percent
i. Assigned based on County using XLOOKUP from "S1701" County Data.
bbb. Hispanic or Latino Origin (of any race) Total Population
i. Assigned based on County using XLOOKUP from "S1701" County Data.
ccc. Hispanic or Latino Origin (of any race) Below Poverty Level Population
i. Assigned based on County using XLOOKUP from "S1701" County Data.
ddd. Hispanic or Latino Origin (of any race) Below Poverty Level Population Percent
i. Assigned based on County using XLOOKUP from "S1701" County Data.
eee. Hispanic or Latino Origin (of any race) Above Poverty Level Population
i. Assigned based on County using XLOOKUP from "S1701" County Data.
fff. Hispanic or Latino Origin (of any race) Above Poverty Level Population Percent
i. Assigned based on County using XLOOKUP from "S1701" County Data.
ggg. White Alone, Not Hispanic or Latino Total Population
i. Assigned based on County using XLOOKUP from "S1701" County Data.
hhh. White alone, Not Hispanic or Latino Below Poverty Level Population
i. Assigned based on County using XLOOKUP from "S1701" County Data.
iii. White Alone, Not Hispanic or Latino Below Poverty Level Population Percent
i. Assigned based on County using XLOOKUP from "S1701" County Data.
jjj. White alone, Not Hispanic or Latino Above Poverty Level Population
i. Assigned based on County using XLOOKUP from "S1701" County Data.
kkk. White Alone, Not Hispanic or Latino Above Poverty Level Population Percent
i. Assigned based on County using XLOOKUP from "S1701" County Data.
lll. Population Elderly (65 Years and Older)
i. Assigned based on County using XLOOKUP from "DP05" County Data.
mmm. Population Elderly (65 Years and Older) Percent
i. Assigned based on County using XLOOKUP from "DP05" County Data.
nnn. Housing Units with No Vehicle
i. Assigned based on County using XLOOKUP from "DP04" County Data.
ooo. Housing Units with No Vehicle, Percent
i. Assigned based on County using XLOOKUP from "DP04" County Data.
ppp. Housing Units with No Computer
i. Assigned based on County using XLOOKUP from "DP02" County Data.
qqq. Housing Units with No Computer, Percent
i. Assigned based on County using XLOOKUP from "DP02" County Data.
rrr. Housing Units with No Broadband Subscription
i. Assigned based on County using XLOOKUP from "DP02" County Data.
sss. Housing Units with No Broadband Subscription, Percent
i. Assigned based on County using XLOOKUP from "DP02" County Data.
ttt. Persons With a Disability
i. Assigned based on County using XLOOKUP from "DP02" County Data.
uuu. Persons With a Disability, Percent
i. Assigned based on County using XLOOKUP from "DP02" County Data.

4. "Block Group Data" (used to hold copied and calculated values for block groups, which will be joined to the block group shapefile for analysis in GIS)
a. GEOID_Text (Formatted as Text)
b. GEOID (for Block Group)
c. Block Group Population
i. Assigned based on GEOID using XLOOKUP from "B03002" Block Group Data
d. White Alone, Not Hispanic or Latino
i. Assigned based on GEOID using XLOOKUP from "B03002" Block Group Data
e. Black or African-American, Not Hispanic or Latino
i. Assigned based on GEOID using XLOOKUP from "B03002" Block Group Data
f. American Indian or Alaskan Native, Not Hispanic or Latino
i. Assigned based on GEOID using XLOOKUP from "B03002" Block Group Data
g. Asian, Not Hispanic or Latino
i. Assigned based on GEOID using XLOOKUP from "B03002" Block Group Data
h. Native Hawaiian or Pacific Islander, Not Hispanic or Latino
i. Assigned based on GEOID using XLOOKUP from "B03002" Block Group Data
i. Other Race, Not Hispanic or Latino
i. Assigned based on GEOID using XLOOKUP from "B03002" Block Group Data
j. Two or more Races, Not Hispanic or Latino
i. Assigned based on GEOID using XLOOKUP from "B03002" Block Group Data
k. Hispanic or Latino
i. Assigned based on GEOID using XLOOKUP from "B03002" Block Group Data
l. Minority Population (for the BG)
i. Assigned based on GEOID using XLOOKUP from "B03002" Block Group Data

m. Below Poverty Level Population (for the BG)
    i. Assigned based on GEOID using XLOOKUP from “C17002” Block Group Data
n. Above Poverty Level Population (for the BG)
    i. Assigned based on GEOID using XLOOKUP from “C17002” Block Group Data
o. Below Poverty Level Population Percent (for the BG)
    i. Assigned based on GEOID using XLOOKUP from “C17002” Block Group Data
p. Above Poverty Level Population Percent (for the BG)
    i. Calculated value
q. Minority Population Percent (for the BG)
    i. Calculated value
r. White (Non-Hispanic/Latino) Population Percent (for the BG)
    i. Calculated value
s. County
    i. Assigned based on GEOID using XLOOKUP from “Block Group Associations” table.
t. Ratio of Block Group Below Poverty Level percent to county Below Poverty Level percent
    i. Assigned based on GEOID using XLOOKUP from “_2025CDA_Census 2023 ACS 5YR_ Estimates - Counties.xlsx” table.
u. County Below Poverty Level Population Interval for Block Group
    i. Calculated value
v. County Below Poverty Level Interval ID
    i. Calculated value
w. Ratio of Block Group Above Poverty Level percent to county Above Poverty Level percent
    i. Assigned based on GEOID using XLOOKUP from “_2025CDA_Census 2023 ACS 5YR_ Estimates - Counties.xlsx” table.
x. County Above Poverty Level Population Interval for Block Group
    i. Calculated value
y. County Above Poverty Level Interval ID
    i. Calculated value
z. Ratio of Block Group Minority percent to county minority percent
    i. Assigned based on GEOID using XLOOKUP from “_2025CDA_Census 2023 ACS 5YR_ Estimates - Counties.xlsx” table.
aa. County Minority Population Interval for Block Group
    i. Calculated value
bb. County Minority Interval ID
    i. Calculated value
cc. Ratio of Block Group White (Non-Hispanic/Latino) percent to county White (Non-Hispanic/Latino) percent
    i. Assigned based on GEOID using XLOOKUP from “_2025CDA_Census 2023 ACS 5YR_ Estimates - Counties.xlsx” table.
dd. County White (Non-Hispanic/Latino) Population Interval for Block Group
    i. Calculated value
ee. County White (Non-Hispanic/Latino) Interval ID
    i. Calculated value
ff. PennDOT District
    i. Assigned based on GEOID using XLOOKUP from “Block Group Associations” table.
gg. PennDOT District Minority Percent
    i. Assigned based on GEOID using XLOOKUP from “County Membership” table.
hh. PennDOT District White (Non-Hispanic/Latino) Percent
    i. Assigned based on GEOID using XLOOKUP from “County Membership” table.
ii. PennDOT District Below Poverty Percent
    i. Assigned based on GEOID using XLOOKUP from “County Membership” table.
jj. PennDOT District Above Poverty Percent
    i. Assigned based on GEOID using XLOOKUP from “County Membership” table.
kk. Ratio of Block Group Below Poverty Level Percent to PennDOT District Average
    i. Calculated value
ll. PennDOT District Below Poverty Level Interval
    i. Calculated value
mm. PennDOT District Below Poverty Level Interval ID
    i. Calculated value
nn. Ratio of Block Group Above Poverty Level Percent to PennDOT District Average
    i. Calculated value
oo. PennDOT District Above Poverty Level Interval
    i. Calculated value
pp. PennDOT District Above Poverty Level Interval ID
    i. Calculated value
qq. Ratio of Block Group Minority Percent to PennDOT District Average
    i. Calculated value
rr. PennDOT District Minority Interval
    i. Calculated value
ss. PennDOT District Minority Interval ID
    i. Calculated value
tt. Ratio of Block Group White (Non-Hispanic/Latino) Percent to PennDOT District Average
    i. Calculated value
uu. PennDOT District White (Non-Hispanic/Latino) Interval
    i. Calculated value
vv. PennDOT District White (Non-Hispanic/Latino) Interval ID
    i. Calculated value
ww. PennDOT Planning Partner
    i. Assigned based on GEOID using XLOOKUP from “Block Group Associations” table.
xx. Planning Partner Minority Percent
    i. Assigned based on GEOID using XLOOKUP from “County Membership” table.
yy. Planning Partner White (Non-Hispanic/Latino) Percent
    i. Assigned based on GEOID using XLOOKUP from “County Membership” table.
zz. Planning Partner Below Poverty Level Percent
    i. Assigned based on GEOID using XLOOKUP from “County Membership” table.
aaa. Planning Partner Above Poverty Level Percent
    i. Assigned based on GEOID using XLOOKUP from “County Membership” table.
bbb. Ratio of Block Group Below Poverty Level Percent to Planning Partner Average
    i. Calculated value
ccc. Planning Partner Below Poverty Level Low Income Interval
    i. Calculated value
ddd. Planning Partner Below Poverty Level Interval ID
    i. Calculated value
eee. Ratio of Block Group Above Poverty Level Percent to Planning Partner Average
    i. Calculated value
fff. Planning Partner Above Poverty Level Low Income Interval
    i. Calculated value
ggg. Planning Partner Above Poverty Level Interval ID
    i. Calculated value

hhh. Ratio of Block Group Minority Percent to Planning Partner Average
    i. Calculated value
iii. Planning Partner Minority Interval
    i. Calculated value
jjj. Planning Partner Minority Interval ID
    i. Calculated value
kkk. Ratio of Block Group White (Non-Hispanic/Latino) Percent to Planning Partner Average
    i. Calculated value
lll. Planning Partner White (Non-Hispanic/Latino) Interval
    i. Calculated value
mmm. Planning Partner White (Non-Hispanic/Latino) Interval ID
    i. Calculated value

Add Geodatabase Feature Classes

After the tables are populated, you will add the tables and files listed below to the ArcGIS Pro project file following the steps below.

1. Make a copy of the Last Revision's ArcGIS Pro packaged project file with an updated name.
2. Create a new File Geodatabase
3. Import the following shapefiles/feature classes and tables into the new geodatabase.
    a. Planning Partners
    b. PennDOT Districts
    c. Counties
    d. Municipalities
    e. Block Groups
    f. Roads

Join Data

Next, join the imported data tables to their associated feature classes to facilitate the analysis of the data and map production.

Join Block Group data table to the block group feature class using GEOID as the join field. Verify all records are matched.

Run Interval Analysis Models and Export Interval Tables

After the required data is assembled in ArcGIS Pro, the next step is to run the four interval analysis models saved in the default toolbox ("CDA_2025_Update.atbx"). They are the:

- "County – Poverty Classification"
- "County – Race Origin Classification"
- "Planning Partner – Poverty Classification"
- "Planning Partner – Race Origin Classification"

To run the models:

1. Right click on the model and select "Edit."
2. Select "Run" on the toolbar.

After the model is completed, the resulting feature class is saved to the "scratch" geodatabase. Copy the feature class from the scratch geodatabase to the default geodatabase.

Export the interval tables to Excel files using the "Table" to Excel" tool. Compile the excel files into sheets based on the level of analysis (i.e. county or planning partner). Format and rename columns as required for legibility of the final product.

Update Map Deliverables

Update Maps

Existing maps in the project file are then updated. Update the data sources of the layers of each map by right clicking on the layer and selecting "Properties". Under the "Source" heading, click the "Set Data Source" button, and navigate the location of the updated data, and select it. The map will be updated to reflect the new data. As maps are updated, update the year at the end of the map name to reflect the current revision year.

Update Layouts

After the maps are updated, confirm that the maps referenced in the layouts are correct and reflect the updated maps. Update the elements of the layouts as needed. For example, update previous years to current year, sources, etc.

Export Maps

After the map layouts are updated, export each layout map series as a separate PDFs with 300 DPI resolution.

FY 2027–2029 TIP Statewide Community Demographic Analysis Low Wage Workers to Low Wage Jobs Analysis Methodology

Introduction

For the FY 2027-2029 TIP Statewide Environmental Justice Analysis, the consultant team provided a set of maps, a data processing model, and ArcGIS Pro files detailing Low Wage Job to Low Wage Worker Ratios calculated at the block group level for the Commonwealth of Pennsylvania.

A few important notes:

- Files for the low wage job analyses are only provided in the "County Level Products" folders.
- These associated data maps are not currently part of the Core Elements and are optional for inclusion in the TIP CDA analyses.
- More information on these assessments is provided in the South Central PA CDA Unified Process documentation

This document outlines the data and methods utilized by the consultant team to perform this analysis. This detailed, step-by-step process is presented in this document to allow for subsequent updates to be performed with increased ease and uniformity between study years.

Methods

The following sections describe the steps required to locate and download the input datasets, run the model, and prepare the map deliverables.

The methods used are broken down into the following major steps:

1. Acquire Data
2. Run Interval Analysis Models and Exporting Tables
3. Update Map Deliverables

Acquire Data

To begin, assemble updated data used for the study. Five sources are required for the analysis. The required data utilized in the study includes U.S. Census County and Block group shapefiles, PennDOT's municipal boundaries shapefile, and U.S. Census data.

A comprehensive list of required data and their sources is listed below. However, if a listed URL is broken, the required data can be found by using the main website's search bar, or an internet search engine. For subsequent updates, the most current available datasets should be utilized.

Data Sources

1. U.S. Census County Boundaries
    a. US Census Bureau, 2024 Pennsylvania County Shapefile
2. U.S. Census Block Group Boundaries
    a. US Census Bureau, 2024 Pennsylvania Block Group Shapefile
3. Municipal Boundaries
    a. https://www.pasda.psu.edu/uci/DataSummary.aspx?dataset=41
4. PennDOT Print Basemap
    a. https://gis.penndot.gov/arcgis/rest/services/basemaps/printbasemap/MapServer
5. U.S. Census Longitudinal Employer-Household Dynamics Residence Area Characteristics (pa_rac_S000_JT00_2023.csv.gz) and Workplace Area Characteristics (pa_wac_S000_JT00_2023.csv.gz) Tables
    a. https://lehd.ces.census.gov/data/

Maintain copies of the downloaded data in a separate folder with permissions set to "Read Only" to avoid accidental modification of the source data when working on subsequent steps.

Run Interval Analysis Models and Export Interval Tables

Import the downloaded data into the ArcGIS Pro project file geodatabase. After the required data is imported, the next step is to run the Low Wage Job to Low Wage Worker model located in the default toolbox. The Python code is presented in Appendix 1.

To run the model:

1. Double-click on the model in the default toolbox.
2. Select the imported files from the previous step that correspond to the model parameters.
3. Select "Run".

After the model is completed, the feature class is updated in the default geodatabase.

Update Map Deliverables

Update Maps

Existing maps in the project file are then updated. Update the data sources of the layers of each map by right clicking on the layer and selecting "Properties". Under the "Source" heading, click the "Set Data Source" button, and navigate to the location of the updated data, and select it. The map will then be updated to reflect the new data.

Update Layout

After the maps are updated, confirm that the maps referenced in the layouts are correct and reflect the updated maps. Update the elements of the layout as needed. For example, update previous years to current year, sources, etc.

Export Maps

After the map layouts are updated, export the layout map series as a single PDF with 300 DPI resolution.

READING AREA TRANSPORTATION STUDY

January, 2026

COORDINATING COMMITTEE

PennDOT District 5-0	**Mr. Chris Kufro, District Executive (Chairman)** **Ms. Jennifer Ruth, Planning & Program Manager***
PennDOT Central Office	**Mr. Ray Green, Division Chief, Center for Program Development and Management.** **Mr. Nick Raio, Trans. Planning Specialist Supervisor ***
Berks County Commissioners	**Mr. Michael Rivera, Commissioner**
Berks County Planning Commission	**Mr. Thomas McKeon, Board Member (Vice Chairman)** **Mr. Alan Piper, Transportation Planner III (MPO Secretary)***
City of Reading	**Ms. Donna Reed, Council Member** **Mr. O. Chris Miller, Council Member***
Berks County Boroughs	**Mr. Brian Hoffa, Borough Council Member (Sinking Spring Borough)**
Berks County 1st Class Townships	**Ms. Lisha Rowe, Township Commissioner (Cumru Township)**
Berks County 2nd Class Townships	**Mr. Arthur "Ray" Lambert, Township Supervisor (Upper Bern Township)**
South Central Transit Authority / **Berks Area Regional Transportation Authority**	**Mr. Greg Downing, Executive Director** **Mr. Keith Boatman, Assoc. Director of Capital Projects/Planning**
Reading Regional Airport Authority	**Mr. Dante Santoni, Jr., Board Member**

TECHNICAL COMMITTEE

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Berks County Planning Commission	**Mr. Michael Golembiewski, Transportation Modeler** **Ms. Amanda Timochenko, Transportation Planner II***
City of Reading	**Mr. Donald Edwards, Reading City Engineer**
City of Reading	**Mr. Kyle Zeiber, Department of Public Works**
South Central Transit Authority / **Berks Area Regional Transportation Authority**	**Mr. Keith Boatman, Assoc. Director of Capital Projects/Planning** **Ms. Lauri Ahlskog, Manager of Transit Planning & Compliance***
Reading Regional Airport Authority	**Mr. Zackary Tempesco, Airport Manager**

** denotes alternate*

READING AREA TRANSPORTATION STUDY

COMMUNITY DEMOGRAPHIC ASSESSMENT

DRAFT MARCH 2026