

Environmental Justice Analysis

Harrisburg Area Transportation Study
2021-2024 Transportation Improvement Program

In 2018, South Central Pennsylvania MPOs, PennDOT District 8-0, PennDOT Central Office, the Federal Highway Administration, and the Federal Transit Administration worked with the Alan M. Voorhees Transportation Center at Rutgers University to develop the Environmental Justice Unified Process and Methodology Guide, which builds on PennDOT's Every Voice Counts guidance and provides specific practices to facilitate a more meaningful environmental justice process. The Guide provided a set of Core Elements that would form the backbone of this process, which this analysis will examine regarding the projects proposed for the 2021-2024 Transportation Improvement Program.

Identifying Environmental Justice Populations

Title VI of the Civil Rights Act prohibits discrimination on the basis of race, color, or national origin. The Office of Management and Budget (OMB) issued Policy Directive 15, Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity, in 1997, establishing five minimum categories for data on race. Executive Order 12898 of 1994 and DOT Environmental Justice Order 5610.2(a) of 2012 address persons belonging to any of the following groups:

Minority, meaning a person is:

Black -- a person having origins in any of the black racial groups of Africa.

Hispanic or Latino -- a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.

Asian -- a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent.

American Indian and Alaskan Native -- a person having origins in any of the original people of North America, Central America, or South America, and who maintains cultural identification through tribal affiliation or community recognition.

Native Hawaiian or Other Pacific Islander -- a person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.

Low-Income -- a person whose household income (or in the case of a community or group, whose median household income) is at or below the U.S. Department of Health and Human Services poverty guidelines.

American Community Survey data (2013-2017 5-year estimates) was compiled, analyzed, and mapped to show the concentrations and distribution of environmental justice populations in the HATS Region. In past environmental justice analyses, census block groups with minority or low-income higher than the regional average were identified as "environmental justice communities". To provide a more nuanced and complete picture of the geographic location and needs of, as well as potential impacts on, the HATS region's environmental justice populations, this analysis will examine statistically grouped concentrations, rather than solely using a threshold distinction.

Tables 1 – 4 provide a demographic profile of the HATS region.

Table 1

Profile of Low-Income and Minority Populations, 2017

Demographic Indicator	HATS MPO		Cumberland County		Dauphin County		Perry County	
	Population	Percentage	Population	Percentage	Population	Percentage	Population	Percentage
White, Non-Hispanic	440,844	78.02%	213,538	86.87%	183,372	67.09%	43,934	95.76%
Minority	124,164	21.98%	32,263	13.13%	89,957	32.91%	1,944	4.24%
Black or African American, Non-Hispanic	57,312	10.14%	8,656	3.52%	48,258	17.66%	398	0.87%
American Indian and Alaska Native, Non-Hispanic	615	0.11%	210	0.09%	334	0.12%	71	0.15%
Asian alone, Non-Hispanic	20,534	3.63%	9,719	3.95%	10,649	3.90%	166	0.36%
Native Hawaiian and Other Pacific Islander, Non-Hispanic	78	0.01%	11	0.00%	67	0.02%	-	-
Some other race, Non-Hispanic	655	0.12%	155	0.06%	467	0.17%	33	0.07%
Two or more races, Non-Hispanic	12,148	2.15%	4,814	1.96%	6,867	2.51%	467	1.02%
Hispanic	32,822	5.81%	8,698	3.54%	23,315	8.53%	809	1.76%
Low-Income Households	21,715	10.37%	7,219	7.37%	13,065	11.72%	1,431	7.98%
Low-Income Population	57,419	10.52%	18,112	7.80%	35,516	13.22%	3,791	8.39%

Table 2

Distribution of Population by Minority Population Intervals

Population/Asset	Percent Minority Population Intervals					Total
	0% -10.08%	10.09% -21.97%	21.98% -42.78%	42.79% -67.46%	67.47% -98.09%	
Total Population	238,772	137,286	95,427	55,022	38,501	565,008
Total Population (in %)	42.3%	24.3%	16.9%	9.7%	6.8%	100%
Minority Population	10,641	20,866	29,977	29,367	33,313	124,164
Minority Population (in %)	8.6%	16.8%	24.1%	23.7%	26.8%	22%

Table 3

Distribution of Population by Poverty Population Intervals

Population/Asset	Percent Below Poverty Population Intervals					Total
	0% -6.67%	6.68% -10.51%	10.52% -30.33%	30.34% -52.55%	52.56% -85.92%	
Total Population	269,883	129,432	122,760	39,362	3,571	565,008
Total Population (in %)	47.8%	22.9%	21.7%	7.0%	0.6%	100%
Below Poverty Population	16,617	9,432	9,898	9,100	12,372	57,419
Below Poverty Population (in %)	28.9%	16.4%	17.2%	15.8%	21.5%	10%

Table 4

Poverty Rate among Racial/Ethnic Groups

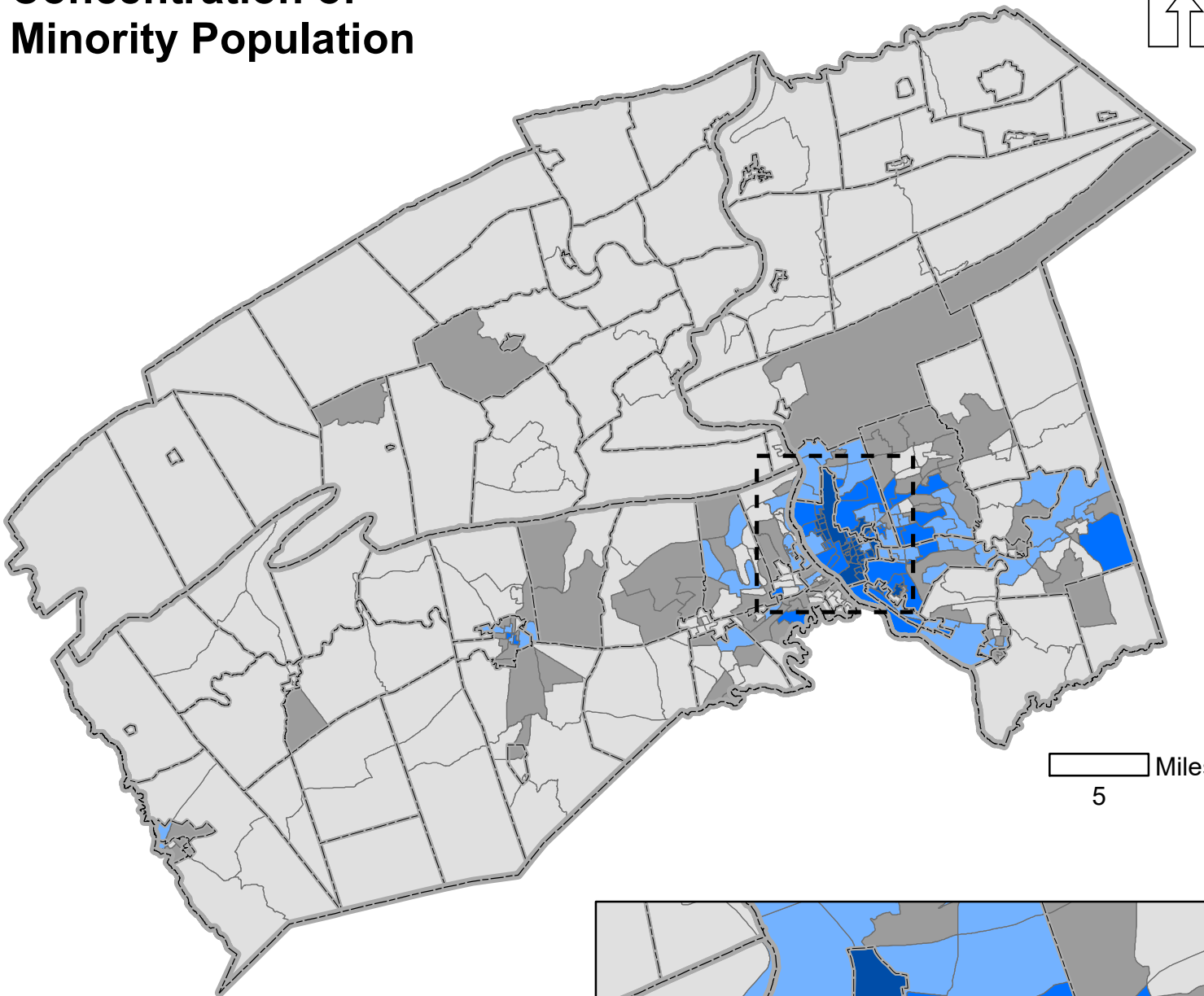
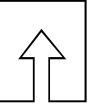
		HATS MPO	Cumberland County	Dauphin County	Perry County
White, Non-Hispanic	Total	428,218	203,983	180,799	43,436
	Low-Income	30,900	13,394	13,973	3,533
	Percentage	7.22%	6.57%	7.73%	8.13%
Black, Non-Hispanic	Total	56,861	6,798	49,780	283
	Low-Income	14,650	1,848	12,776	26
	Percentage	25.76%	27.18%	25.66%	9.19%
American Indian, Non-Hispanic	Total	831	205	540	86
	Low-Income	115	47	60	8
	Percentage	13.84%	22.93%	11.11%	9.30%
Asian, Non-Hispanic	Total	20,116	9,360	10,590	166
	Low-Income	1,939	480	1,454	5
	Percentage	9.64%	5.13%	13.73%	3.01%
Native Hawaiian, Non-Hispanic	Total	72	5	67	0
	Low-Income	0	0	0	0
	Percentage	0.00%	0.00%	0.00%	0.00%
Some Other Race, Non-Hispanic	Total	9,207	2,312	6,769	126
	Low-Income	3,151	745	2,386	20
	Percentage	34.22%	32.22%	35.25%	15.87%
Two or More, Non-Hispanic	Total	14,274	5,256	8,547	471
	Low-Income	2,663	1,008	1,590	65
	Percentage	18.66%	19.18%	18.60%	13.80%
Hispanic	Total	31,047	7,462	22,826	759
	Low-Income	8,974	1,627	7,203	144
	Percentage	28.90%	21.80%	31.56%	18.97%

Source: 2013-2017 American Community Survey 5-Year Estimates

Maps 1 and 3 also illustrate this data, by displaying percentage minority and low-income populations by census block groups. **Maps 2 and 4** add dot densities for the demographic data, which depicts minority and low-income populations within census block groups that have relatively low concentrations. It is important to note that these dot densities are a graphic device used to illustrate a population within the entire census block group and should not be interpreted to be portraying an exact location.

Approximately 33.4% of the region's total population and 74.6% of the region's minority population lives within a block group with higher than average minority population. Approximately 29.3% of the region's total population and 54.5% of the region's low-income population lives within a block group with higher than average low-income population. This indicates the region's minority population is more concentrated than the region's low-income population. This is also shown on the provided mapping. The cross-tabulation data shows minority populations are more likely to be low-income than non-minority populations, indicating a high degree of cross-over between minority and low-income populations in the region.

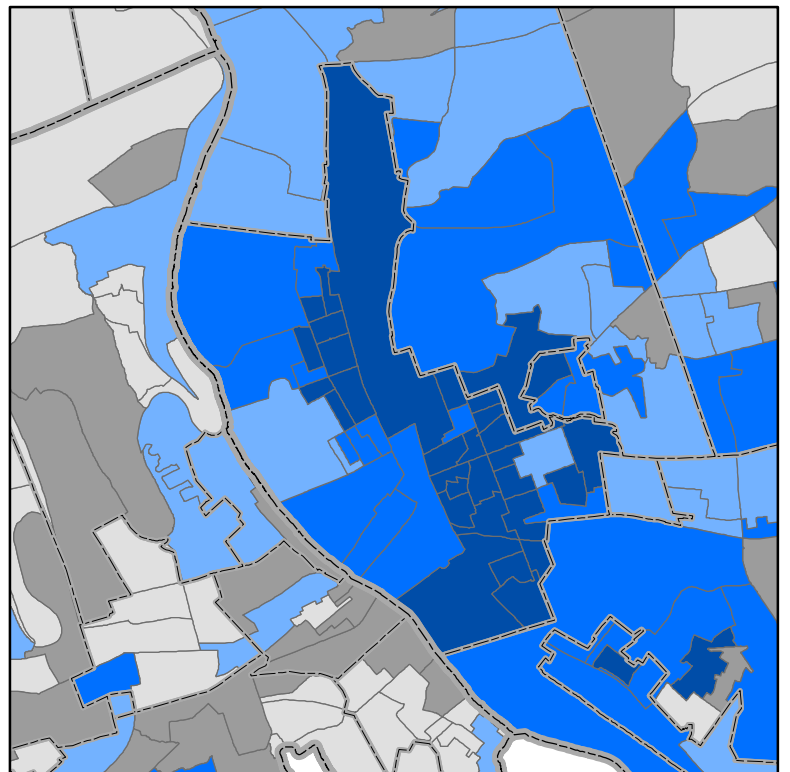
Map 1 Concentration of Minority Population



5 Miles

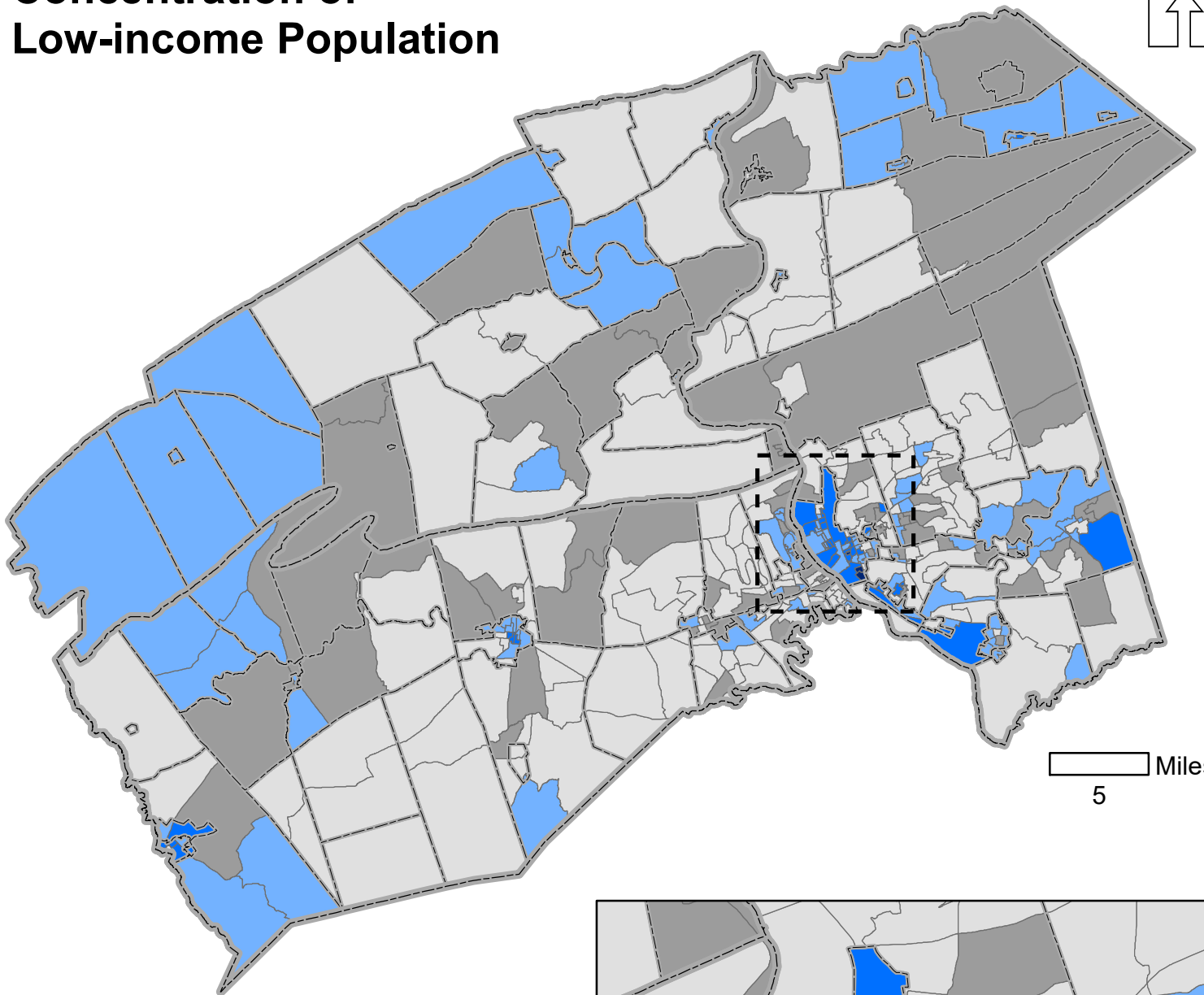
Minority by Block Group

- Less than 10.09%
- 10.09 - 21.97%
- 21.98 - 42.78%
- 42.79 - 67.46%
- Greater than 67.46%



Source:
2013-2017 American Community Survey 5-Year Estimates

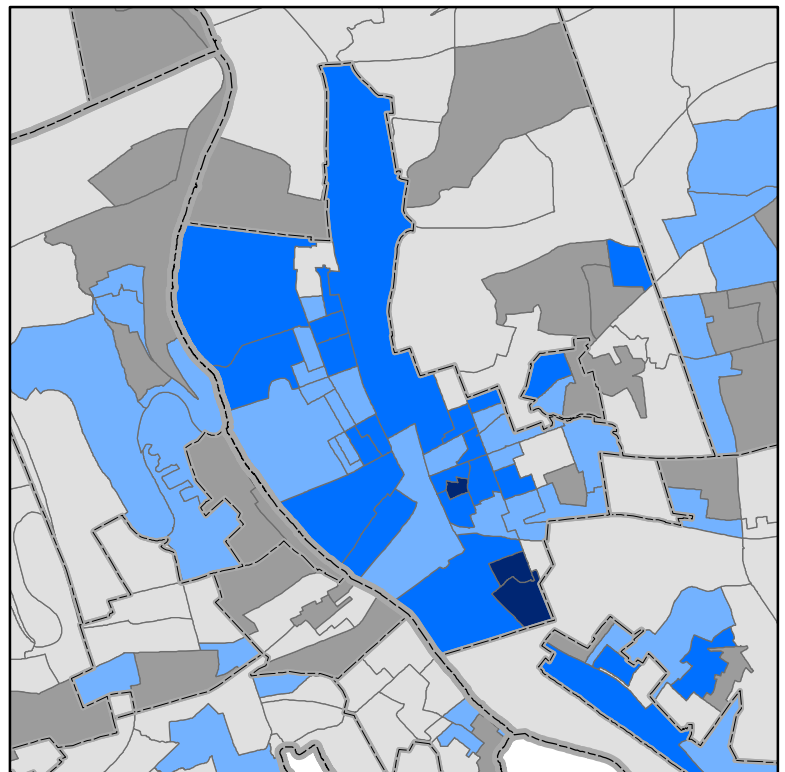
Map 2 Concentration of Low-income Population



5 Miles

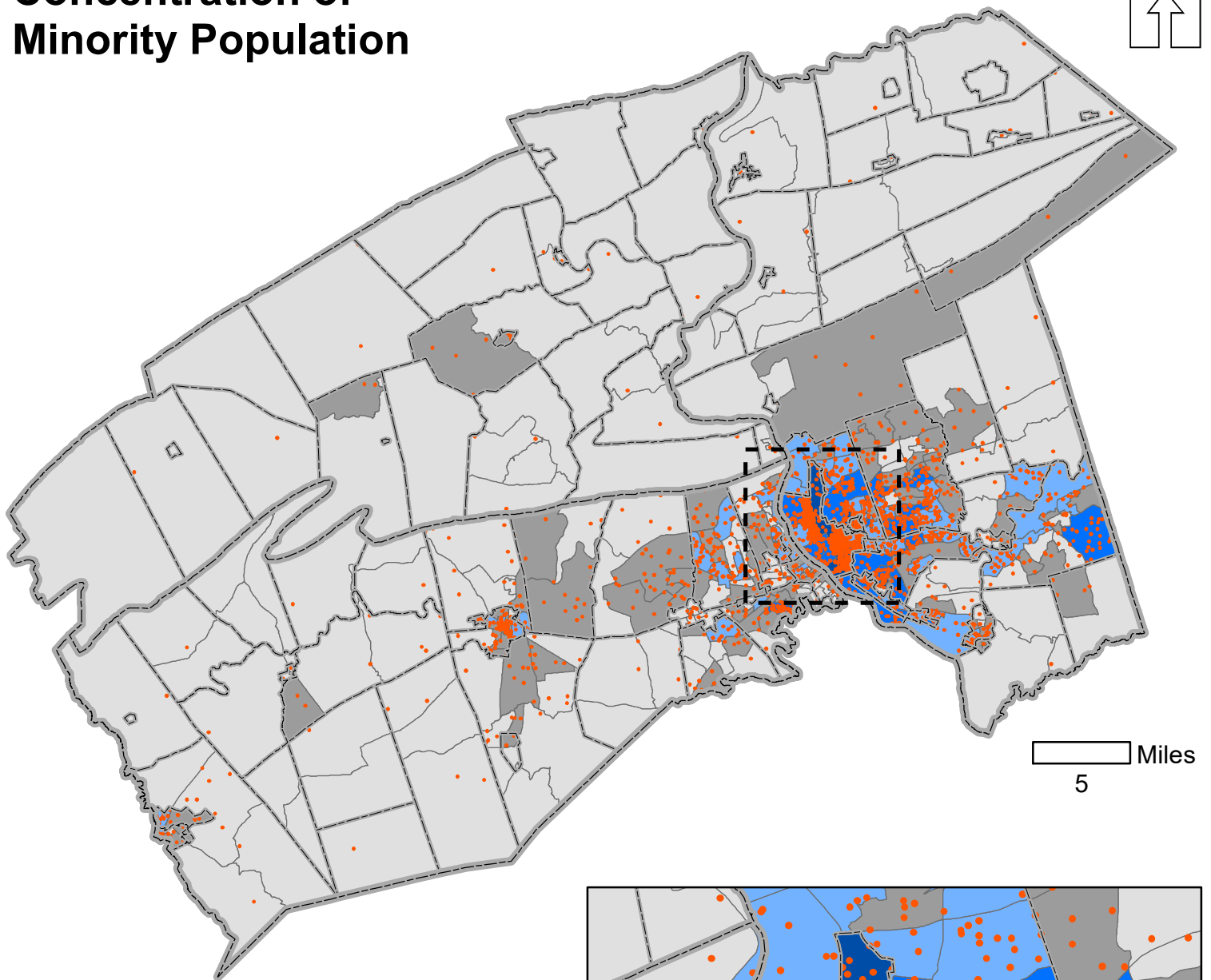
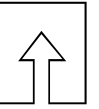
Low-income by Block Group

- Less than 6.67%
- 6.68 - 10.51%
- 10.52 - 30.33%
- 30.34 - 52.55%
- Greater than 52.56%










Source:
2013-2017 American Community Survey 5-Year Estimates

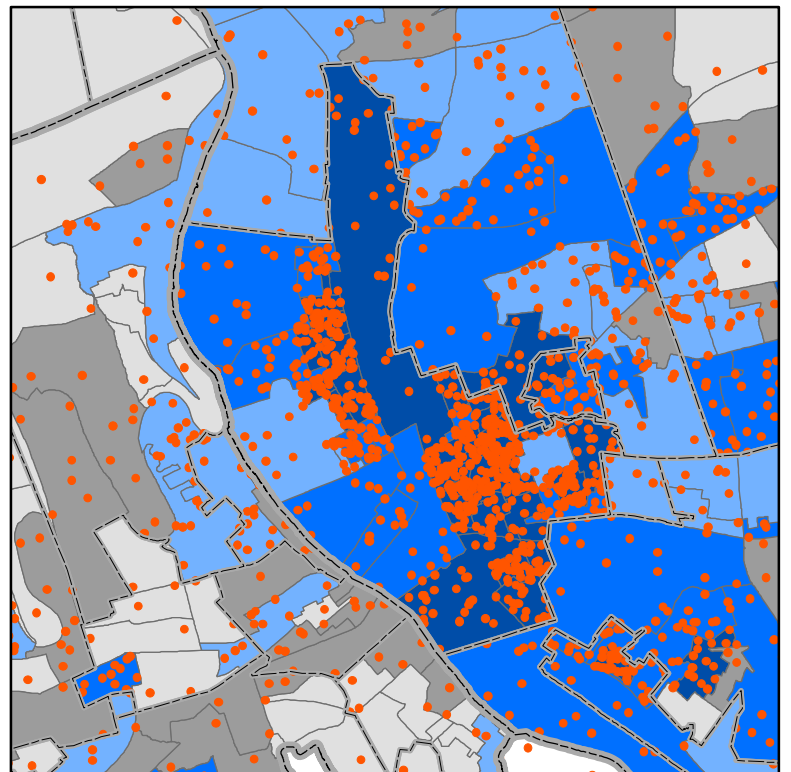
Map 3 Concentration of Minority Population



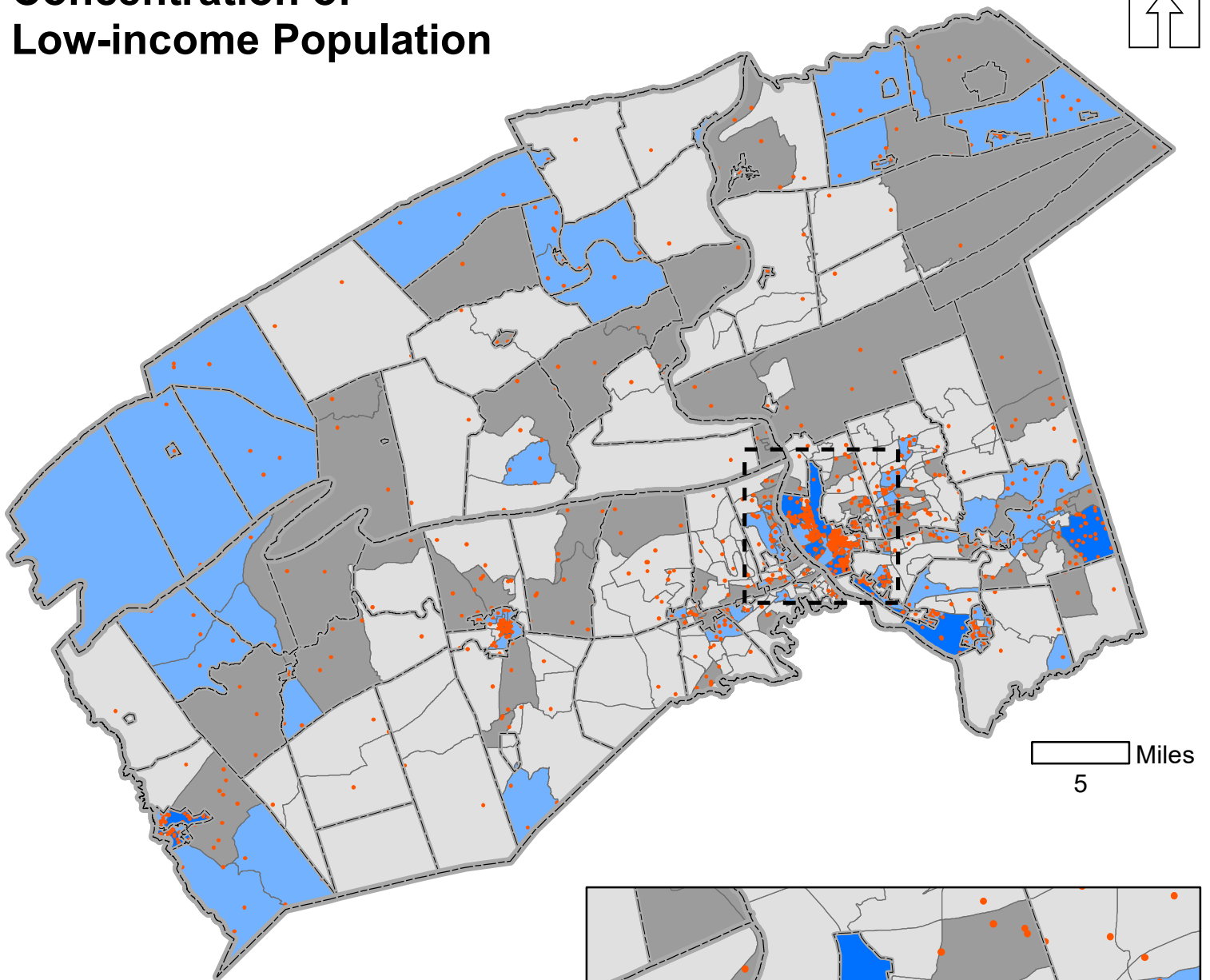
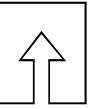
Minority by Block Group

-  Less than 10.09%
-  10.09 - 21.97%
-  21.98 - 42.78%
-  42.79 - 67.46%
-  Greater than 67.46%
-  1 Dot = 50
-  minority_c








Source:
2013-2017 American Community Survey 5-Year Estimates



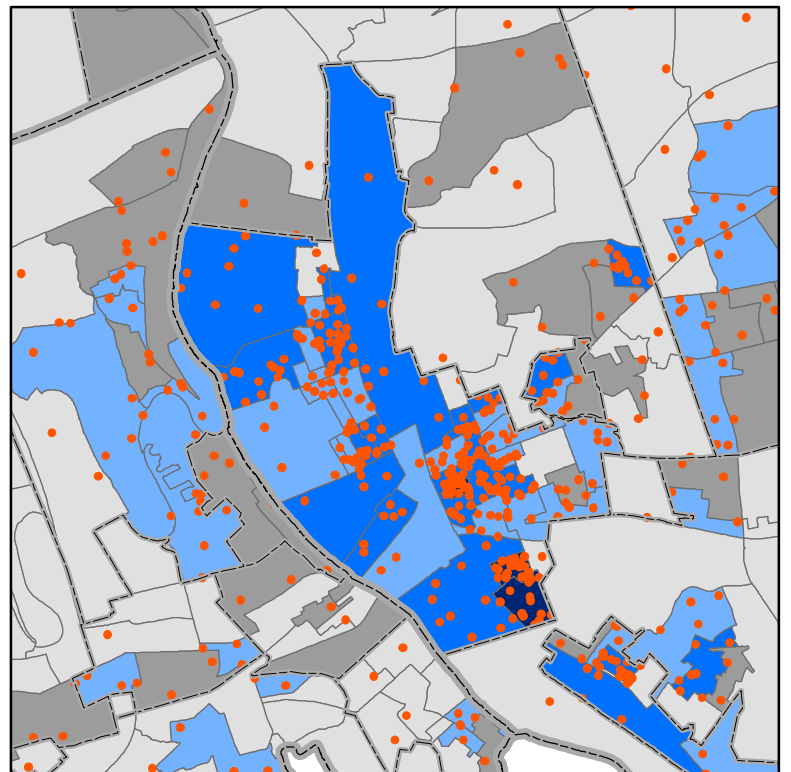
Map 4 Concentration of Low-income Population



Low-income by Block Group

-  Less than 6.67%
-  6.68 - 10.51%
-  10.52 - 30.33%
-  30.34 - 52.55%
-  Greater than 52.56%
-  1 Dot = 50
-  poverty_cn

Source:
2013-2017 American Community Survey 5-Year Estimates



Assess Conditions

An accurate picture of our transportation program’s impact on environmental justice communities requires not just an examination of the projects being proposed over the next four fiscal years, but an assessment of the current conditions of the transportation system. Working cooperatively with PennDOT, a variety of indicators were compared to the distribution and concentration of environmental justice communities and are presented below. These assessments, and the resulting statistics, will allow HATS to gauge the impacts of Transportation Improvement Programs going forward, while helping to identify additional areas of need and gaps in our system. In addition to the following tables, maps showing the geographic distribution of the indicators are provided at the end of this document.

As previously mentioned, the regional threshold will not be solely used to identify specific communities as “environmental justice communities”. However, the regional average will still be referenced in some of the following analyses.

Table 5

Distribution of Poor Condition Bridges by Minority Population Intervals

Population/Asset	Percent Minority Population Intervals					Total
	0% -10.08%	10.09% -21.97%	21.98% -42.78%	42.79% -67.46%	67.47% -98.09%	
Poor Condition Bridge Count	60	40	21	13	12	146
Percentage	41.1%	27.4%	14.4%	8.9%	8.2%	100%
Total Population	238,772	137,286	95,427	55,022	38,501	565,008
Total Population (in %)	42.3%	24.3%	16.9%	9.7%	6.8%	100%
Minority Population	10,641	20,866	29,977	29,367	33,313	124,164
Minority Population (in %)	8.6%	16.8%	24.1%	23.7%	26.8%	22%
Poor Condition Bridges Per 1000 Pop.	0.25	0.29	0.22	0.24	0.31	0.26

Table 6

Distribution of Poor Condition Bridges by Poverty Population Intervals

Population/Asset	Percent Below Poverty Population Intervals					Total
	0% -6.67%	6.68% -10.51%	10.52% -30.33%	30.34% -52.55%	52.56% -85.92%	
Poor Condition Bridge Count	36	43	32	32	3	146
Percentage	24.7%	29.5%	21.9%	21.9%	2.1%	100%
Total Population	269,883	129,432	122,760	39,362	3,571	565,008
Total Population (in %)	47.8%	22.9%	21.7%	7.0%	0.6%	100%
Below Poverty Population	16,617	9,432	9,898	9,100	12,372	57,419
Below Poverty Population (in %)	28.9%	16.4%	17.2%	15.8%	21.5%	10%
Poor Condition Bridges Per 1000 Pop.	0.13	0.33	0.26	0.81	0.84	0.26

As shown in Tables 5 and 6, there are 146 poor condition bridges in the HATS region, with 46 (31.5%) located within block groups with higher than average minority populations, and 67 (45.9%) located within block groups with higher than average low-income populations. Additionally, there are more poor condition bridges per 1,000 population in block groups with a percentage of low-income population over 30.33%.

Table 7
Distribution of Poor Pavement by Minority Population Intervals

Population/Asset	Percent Minority Population Intervals					Total
	0% -10.08%	10.09% -21.97%	21.98% -42.78%	42.79% -67.46%	67.47% -98.09%	
Poor Pavement Mileage	67.84	84.04	9.06	15.29	16.88	193.11
Percentage	35.1%	43.5%	4.7%	7.9%	8.7%	100%
Total Population	238,772	137,286	95,427	55,022	38,501	565,008
Total Population (in %)	42.3%	24.3%	16.9%	9.7%	6.8%	100%
Minority Population	10,641	20,866	29,977	29,367	33,313	124,164
Minority Population (in %)	8.6%	16.8%	24.1%	23.7%	26.8%	22%
Poor Pavement Per 1000 Pop.	0.28	0.61	0.09	0.28	0.44	0.34

Table 8
Distribution of Poor Pavement by Poverty Population Intervals

Population/Asset	Percent Below Poverty Population Intervals					Total
	0% -6.67%	6.68% -10.51%	10.52% -30.33%	30.34% -52.55%	52.56% -85.92%	
Poor Pavement Mileage	31.86	76.73	31.37	43.90	9.25	193.11
Percentage	16.5%	39.7%	16.2%	22.7%	4.8%	100%
Total Population	269,883	129,432	122,760	39,362	3,571	565,008
Total Population (in %)	47.8%	22.9%	21.7%	7.0%	0.6%	100%
Below Poverty Population	16,617	9,432	9,898	9,100	12,372	57,419
Below Poverty Population (in %)	28.9%	16.4%	17.2%	15.8%	21.5%	10%
Poor Pavement Per 1000 Pop.	0.12	0.59	0.26	1.12	2.59	0.34

As shown in Tables 7 and 8, the HATS region has 193.11 miles of roads with poor pavement condition, with approximately 41.23 miles (24.4%) located within block groups with higher than average minority populations, and 84.52 (43.8%) located within block groups with higher than average low-income populations. Additionally, there are more mileage of poor condition pavement per 1,000 population in block groups with a percentage of low-income population over 30.33%.

Table 9

Distribution of Excellent Pavement by Minority Population Intervals

Population/Asset	Percent Minority Population Intervals					Total
	0% -10.08%	10.09% -21.97%	21.98% -42.78%	42.79% -67.46%	67.47% -98.09%	
Excellent Pavement Mileage	262.48	199.79	41.01	21.25	12.98	537.51
Percentage	48.8%	37.2%	7.6%	4.0%	2.4%	100%
Total Population	238,772	137,286	95,427	55,022	38,501	565,008
Total Population (in %)	42.3%	24.3%	16.9%	9.7%	6.8%	100%
Minority Population	10,641	20,866	29,977	29,367	33,313	124,164
Minority Population (in %)	8.6%	16.8%	24.1%	23.7%	26.8%	22%
Excellent Pavement Per 1000 Pop.	1.10	1.46	0.43	0.39	0.34	0.95

Table 10

Distribution of Excellent Pavement by Poverty Population Intervals

Population/Asset	Percent Below Poverty Population Intervals					Total
	0% -6.67%	6.68% -10.51%	10.52% -30.33%	30.34% -52.55%	52.56% -85.92%	
Excellent Pavement Mileage	193.83	208.24	67.63	59.40	8.41	537.51
Percentage	36.1%	38.7%	12.6%	11.1%	1.6%	100%
Total Population	269,883	129,432	122,760	39,362	3,571	565,008
Total Population (in %)	47.8%	22.9%	21.7%	7.0%	0.6%	100%
Below Poverty Population	16,617	9,432	9,898	9,100	12,372	57,419
Below Poverty Population (in %)	28.9%	16.4%	17.2%	15.8%	21.5%	10%
Excellent Pavement Per 1000 Pop.	0.72	1.61	0.55	1.51	2.36	0.95

As shown in Tables 9 and 10, the HATS region has 537.51 miles of roads with excellent pavement condition, with approximately 75.24 miles (14.0%) located within block groups with higher than average minority population, and 135.44 (25.2%) located within block groups with higher than average low-income populations. Additionally, there are less mileage of excellent condition pavement per 1,000 population in block groups with higher than average minority population. And in comparison to Table 8, which showed there is more mileage of poor condition pavement per 1,000 population in block groups with a percentage of low-income population over 30.33%, Table 10 shows there is more mileage of excellent condition pavement per 1,000 population in those same block groups.

Table 11

Distribution of Bicycle & Pedestrian related crashes by Minority Population Intervals

Population/Asset	Percent Minority Population Intervals					Total
	0% -10.08%	10.09% -21.97%	21.98% -42.78%	42.79% -67.46%	67.47% -98.09%	
Bike-Pedestrian Crash Count	92	206	90	233	296	917
Percentage	10.0%	22.5%	9.8%	25.4%	32.3%	100%
Total Population	238,772	137,286	95,427	55,022	38,501	565,008
Total Population (in %)	42.3%	24.3%	16.9%	9.7%	6.8%	100%
Minority Population	10,641	20,866	29,977	29,367	33,313	124,164
Minority Population (in %)	8.6%	16.8%	24.1%	23.7%	26.8%	22%
Crashes Per 1000 Pop.	0.39	1.50	0.94	4.23	7.69	1.62

Table 12

Distribution of Bicycle & Pedestrian related crashes by Poverty Population Intervals

Population/Asset	Percent Below Poverty Population Intervals					Total
	0% -6.67%	6.68% -10.51%	10.52% -30.33%	30.34% -52.55%	52.56% -85.92%	
Bike-Pedestrian Crash Count	193	191	203	251	79	917
Percentage	21.0%	20.8%	22.1%	27.4%	8.6%	100%
Total Population	269,883	129,432	122,760	39,362	3,571	565,008
Total Population (in %)	47.8%	22.9%	21.7%	7.0%	0.6%	100%
Below Poverty Population	16,617	9,432	9,898	9,100	12,372	57,419
Below Poverty Population (in %)	28.9%	16.4%	17.2%	15.8%	21.5%	10%
Crashes Per 1000 Pop.	0.72	1.48	1.65	6.38	22.12	1.62

As shown in Tables 11 and 12, there were 917 crashes involving a bicycle or pedestrian within the HATS region, with 619 (67.5%) occurring within block groups with higher than average minority populations, and 533 (58.1%) occurring within block groups with higher than average low-income populations. The tables also show significantly higher crashes per 1000 population in block groups with minority population percentages higher than 42.78 and low-income population percentages higher than 30.33%.

Table 13

Distribution of Injury & Fatal related crashes by Minority Population Intervals

Population/Asset	Percent Minority Population Intervals					Total
	0% -10.08%	10.09% -21.97%	21.98% -42.78%	42.79% -67.46%	67.47% -98.09%	
Injury-Fatal Crash Count	4,090	6,232	2,181	3,240	2,385	18,128
Percentage	22.6%	34.4%	12.0%	17.9%	13.2%	100%
Total Population	238,772	137,286	95,427	55,022	38,501	565,008
Total Population (in %)	42.3%	24.3%	16.9%	9.7%	6.8%	100%
Minority Population	10,641	20,866	29,977	29,367	33,313	124,164
Minority Population (in %)	8.6%	16.8%	24.1%	23.7%	26.8%	22%
Crashes Per 1000 Pop.	17.13	45.39	22.86	58.89	61.95	32.08

Table 14

Distribution of Injury & Fatal related crashes by Poverty Population Intervals

Population/Asset	Percent Below Poverty Population Intervals					Total
	0% -6.67%	6.68% -10.51%	10.52% -30.33%	30.34% -52.55%	52.56% -85.92%	
Injury-Fatal Crash Count	6,779	4,684	4,014	2,219	432	18,128
Percentage	37.4%	25.8%	22.1%	12.2%	2.4%	100%
Total Population	269,883	129,432	122,760	39,362	3,571	565,008
Total Population (in %)	47.8%	22.9%	21.7%	7.0%	0.6%	100%
Below Poverty Population	16,617	9,432	9,898	9,100	12,372	57,419
Below Poverty Population (in %)	28.9%	16.4%	17.2%	15.8%	21.5%	10%
Crashes Per 1000 Pop.	25.12	36.19	32.70	56.37	120.97	32.08

As shown in Tables 13 and 14, there were 18,128 crashes resulting in a serious injury or fatality within the HATS region, with 7,806 (43.1%) occurring within block groups with higher than average minority populations, and 6,665 (36.8%) located within block groups with higher than average low-income populations. The tables also show significantly higher crashes per 1000 population in block groups with minority population percentages higher than 42.78 and low-income population percentages higher than 30.33%.

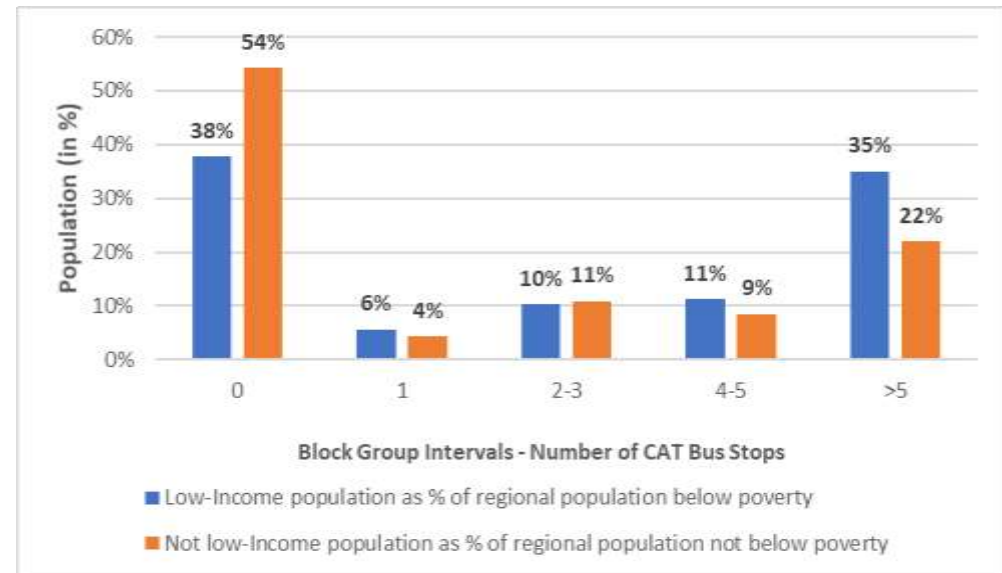
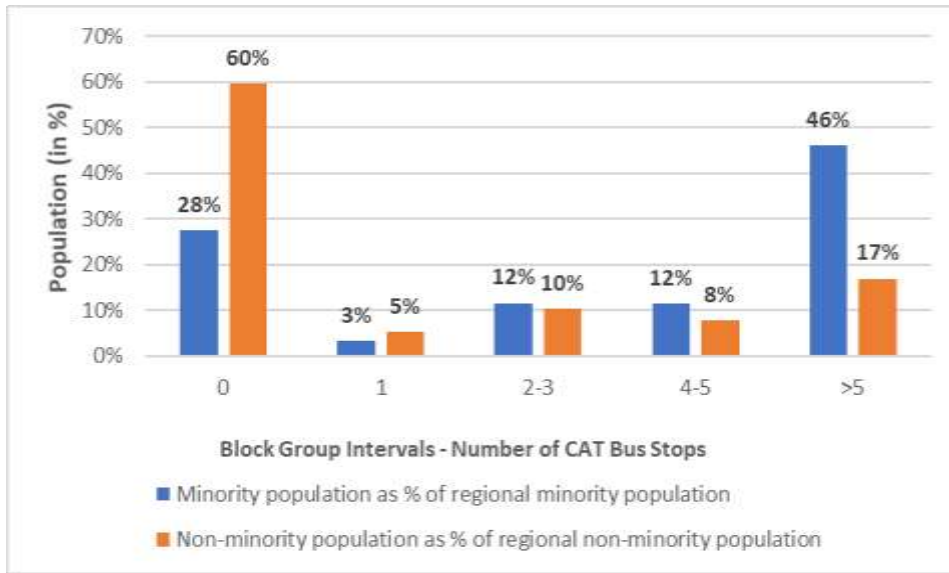


Figure 1. Access to Transit by Minority Population

Figure 2. Access to Transit by Low-income Population

As shown in Figure 1, approximately 60% of the non-minority population and 28% of the minority population lives within a block group with no designated CAT bus stops, while approximately 46% of the minority population and 17% of the non-minority population lives within a block group with more than 5 designated CAT bus stops. As shown in Figure 2, approximately 54% of the non-low-income population and 38% of the low-income population lives within a block group with no designated CAT bus stops, while approximately 35% of the low-income population and 27% of the non-low-income population lives within a block group with more than 5 designated CAT bus stops.

The analysis shown in the preceding tables shows poor condition bridges and pavement, as well as bike/ped and serious injury/fatal crashes, are more prevalent in areas with higher concentrations of minority and/or low-income populations. Some of those issues are addressed in the proposed 2021-2024 Transportation Improvement Program, and some are going to require further monitoring and analysis to accurately understand what is causing those differences and how best to mitigate. This analysis is one step in the ongoing process to ensure environmental justice is achieved through our transportation program, whether through subsequent Transportation Improvement Programs, further updates to our Regional Transportation Plan, or supplemental studies.

Benefits and burdens

The benefits that the transportation improvement program can provide include improved access, mobility, safety and environmental quality. The burdens 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 the benefits and burdens. For example, a project that decreases congestion along one corridor can improve access, mobility, and safety for those who use that corridor, while decreasing the environmental quality for those that live or work along that corridor. Increased safety may require a trade off in access or mobility, and increased access may bring mobility concerns. These impacts can vary both community to community, and among populations or individuals within a single community. Benefits and burdens analysis in respect to environmental justice is done to ensure that the benefits of transportation investment are being shared equally and that the burdens created by new projects are not being borne by one part of the public over another.

Types of projects and distribution

While there is no singular, all-encompassing analysis that shows the environmental justice impacts a transportation improvement program will have, one method is to examine how the distribution of projects and allocation of funding compares to the location of our region’s environmental justice populations. [Maps 5 and 6](#) show this distribution, while the analysis that follows discusses how funding was allocated among project categories in census block groups below and above the regional average for minority and low-income population.

The draft 2021-2024 Highway & Bridge and Interstate TIPs total \$808,467,591 (excluding line-items) and include identified roadway and bridge projects, Bike/Ped projects, intermodal projects, line items, and interstate projects. The draft 2021-204 Transit TIP includes projects totaling \$65,473,466 which are dedicated to maintaining the existing transit and paratransit service for the Harrisburg Region. HATS also traditionally flexes a portion of the federal CMAQ funds allocation to CAT to assist in providing quality transit service. Any increases in transit funding will allow for additional bus routing and stops, thus expanding the availability of alternative transportation and increasing mobility to access employment opportunities and health services.

Table 13

Distribution of Programmed Dollars, by Project Category

Project Category	Minority Only		Poverty Only		Both		Neither		Total
	Amount	%	Amount	%	Amount	%	Amount	%	
Bike/Ped	\$0	0.0%	\$0	0.0%	\$3,232,272	84.0%	\$617,436	16.0%	\$3,849,708
Bridge	\$0	0.0%	\$26,086,923	21.4%	\$38,680,274	31.7%	\$57,082,009	46.8%	\$121,849,206
Intermodal	\$0	0.0%	\$985,000	100.0%	\$0	0.0%	\$0	0.0%	\$985,000
Roadway	\$18,615,921	20.2%	\$38,221,002	41.6%	\$16,343,250	17.8%	\$18,778,356	20.4%	\$91,958,529
Subtotal	\$18,615,921	8.5%	\$65,292,925	29.9%	\$58,255,796	26.6%	\$76,477,801	35.0%	\$218,642,443
Interstate	\$147,123,454	24.9%	\$0	0.0%	\$442,701,694	75.1%	\$0	0.0%	\$589,825,148
All Projects	\$165,739,375	20.5%	\$65,292,925	8.1%	\$500,957,490	62.0%	\$76,477,801	9.5%	\$808,467,591

As shown in Table 13, approximately 65.0% of 2021-2024 Highway & Bridge TIP funding is allocated to projects located within a census block group with minority and/or low-income populations that exceed the regional average. Bridges represent the majority of funding allocated within block groups that have minority and low-income populations below the regional average. The need to maintain current facilities and continue making

progress regarding PM2 requires investments in poor condition bridges, which are predominantly located within block groups with minority or low-income populations below the regional average, as is shown in Table 5.

Because of the location and associated funding amounts of the Interstate Program, it has been considered and presented separately for this analysis. Significant investment (more than twice the amount of the Highway & Bridge TIP) is being made, which skews any examination of funding allocation, as shown in Table 13. The Interstate Program will be discussed in more detail later in the analysis.

There are 41 bridge projects programmed for preservation, rehabilitation, or replacement work totaling \$121,849,206. The distribution of bridge projects is such that 21.4% of the funding is within census block groups with higher than average low-income populations and 31.7% of funding is within census block groups with higher than average minority and low-income populations.

There are 21 roadway/highway improvement projects programmed for the TIP totaling \$91,958,529. The distribution of these projects is such that 79.6% of the funding is within a block group with a minority and/or low-income population above the regional population.

There is one intermodal project programmed totaling \$985,000, which is located within a block group with a low-income population higher than the regional average. In addition to these, several line items or projects with locations yet-to-be-determined are included on the draft 2021-2024 TIP, including BRT Signal Preemption, Rolling Stock Replacement, and CAT Employment Access. All three of these items will increase the access to and efficiency of our region's public transportation system.

There are three bike/ped projects programmed totaling \$3,849,708. Two of these projects are located within census block groups that have higher than average minority and low-income populations. The third project (the Lemoyne Bottleneck Improvements) is located adjacent to a census block with higher than average minority and low-income populations and will substantially improve bicycle and pedestrian access and safety between the City of Harrisburg and the Borough of Lemoyne. In addition to these, several line items or projects with locations yet-to-be-determined are included on the draft 2021-2024 TIP, including the RTP Implementation Program and HATS Bike Share. These bike/ped projects, and the intermodal projects discussed above, are particularly relevant because they offer residents a transportation option that does not require a car, thus improving the accessibility and mobility of the local population.

The interstate program includes five projects totaling \$589,825,148. Of the five, four projects are located within block group with higher than average minority and low-income populations, and one is located within a block group with higher than average minority population. These projects provide capacity improvements, reduce congestion and delays, and improve safety to the system, and reduce the environmental impact of traffic on the interstate.

Significant Interstate Projects

For the HATS 2021-2024 TIP the vast majority of projects will not require significant right-of-way acquisition, require the displacement of people, or cause burdens on the mobility, access, or environmental health of any community or population group. This is because the vast majority of the HATS Highway & Bridge TIP is proposed to be programmed to maintain or enhance the existing transportation system.

The major exceptions to this are the projects associated with I-83 on the Interstate TIP (MPMS 92931, 97828, 113357, 113378, 113380) which will improve and significantly reconfigure the Eisenhower Interchange and expand I-83 to the South Bridge, which is an identified freight route and high congestion corridor. While all of these projects are in different stages of development, none have progressed past preliminary phases in which right-of-way impacts and potential takings have been finalized but will be addressed throughout the project development process when identified.

While this projects will require displacement, they is also propose to improve the operations of the multiple interchanges and over-/under-passes, while also adding bicycle and pedestrian improvements, which would improve the mobility of both the impacted block group and other nearby populations. It should be noted that these projects pass through block groups with a total population of 18,112, a minority population of 11,180, and low-income population of 2,218. Overall these project will have widespread benefits for both the region and the state.

Moving Forward

Our condition assessment identified bridge and pavement condition disparities in per 1000 population rates within areas with higher than average concentrations of low-income populations. While this doesn't necessarily indicate adverse or disparate impact, it is important to monitor moving forward. In our proposed program, 53.2% of the bridge funding and 59.4% of the roadway funding is located within those block groups. The impact of those projects will be better gauged in the Environmental Justice Analysis done for future TIP and Regional Transportation Plan updates.

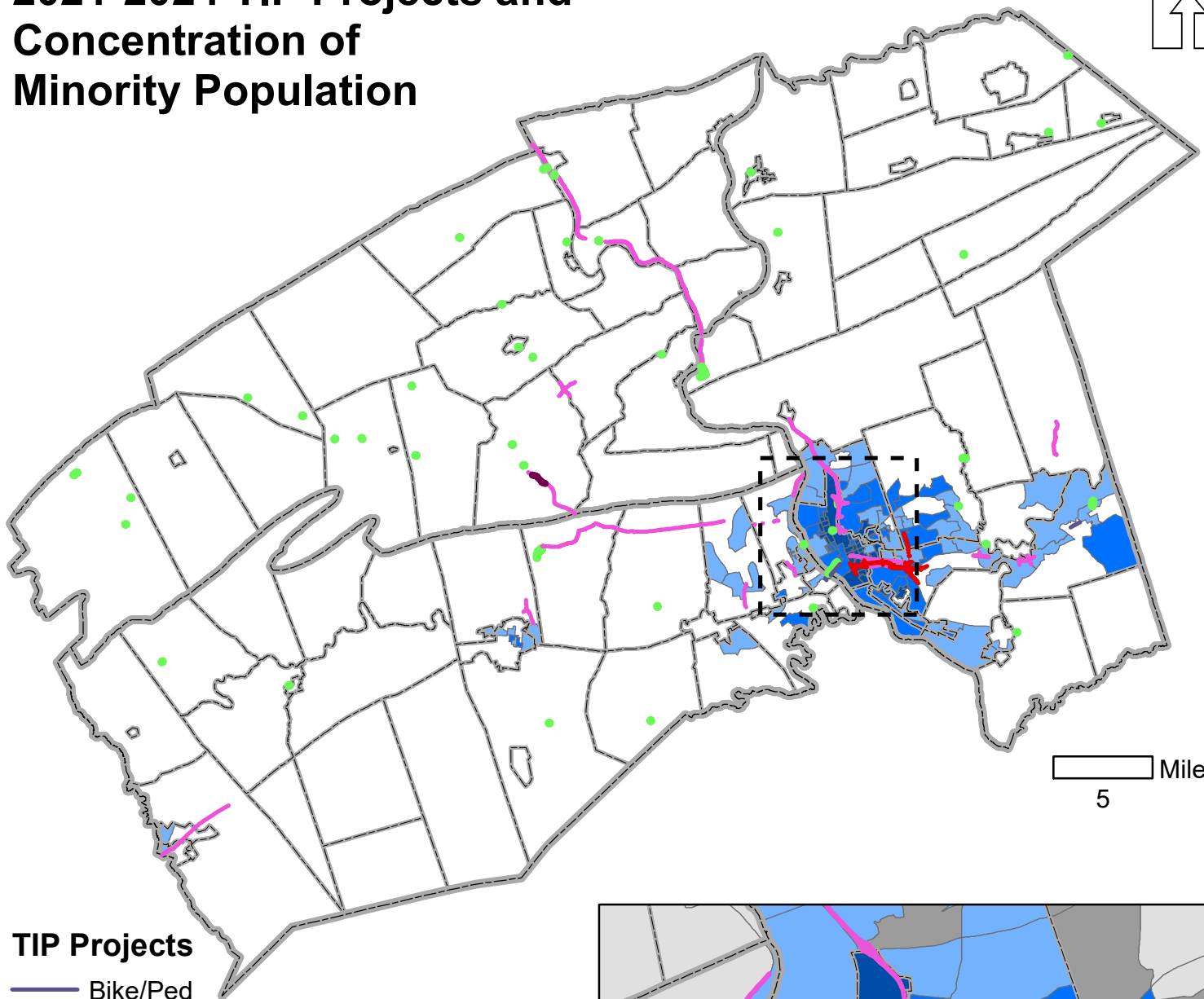
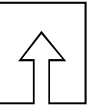
Disparities in crash rates were also apparent in the analysis. The overall program distribution indicates significant amounts of project will be located in areas with higher than average concentrations of minority and low-income populations. Virtually every project has some aspect of safety built in, whether it is labeled as a roadway improvement or bike/ped project. As such, our Transportation Improvement Program will address safety within those block groups. Like the bridge and roadway projects referenced above, the impacts of the proposed projects on these indicators will be better understood with more analysis.

This analysis is a snapshot of the current conditions and how this proposed program will address them. Environmental Justice is incorporated into the evaluation criteria of our RTP Project Pipeline, which prioritizes locally identified transportation needs, and our RTP Project List. No statistical analysis provides a complete picture. Our understanding of how the condition of our transportation system and our transportation programs impact and achieve environmental justice will continue to evolve over time. As that understanding of the causes improves, so does our ability mitigate or address them.

Conclusion

The majority (35%) of project funding proposed for the 2021-2024 Transportation Improvement Program is located within block groups with higher than average minority and/or low-income populations. The majority of project funding located outside these block groups is due to bridge projects meant to address asset management concerns and continue progress on Performance Measure 2. While some statistical disparities were made apparent during the condition assessment conducted as part of this analysis, the 2021-2024 Transportation Improvement Program will not exacerbate them and will provide an equitable distribution of benefits and burdens.

Map 5 2021-2024 TIP Projects and Concentration of Minority Population



5 Miles

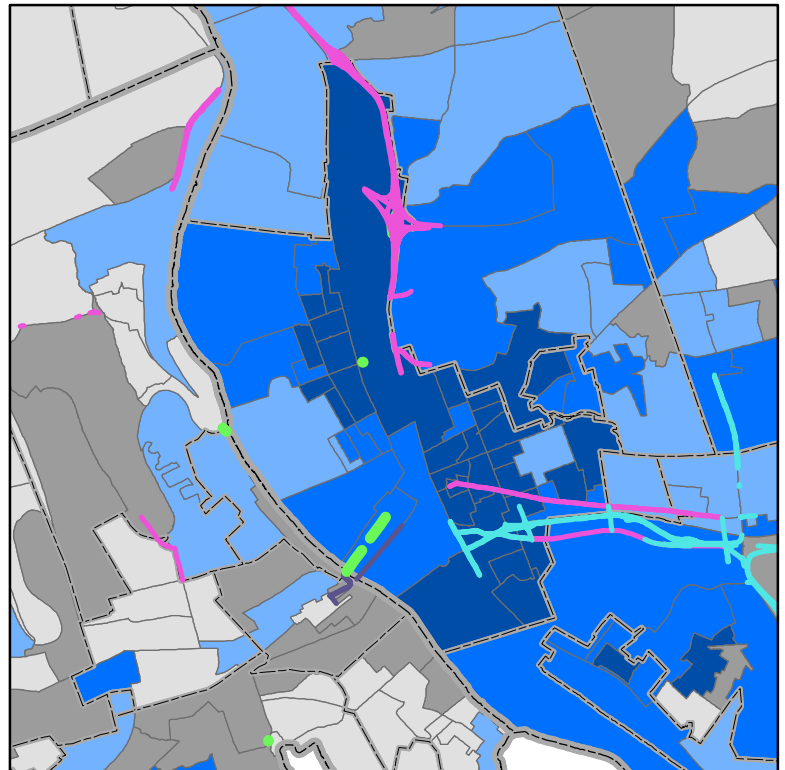
TIP Projects

- Bike/Ped
- Bridge
- Intermodal
- Interstate
- Roadway

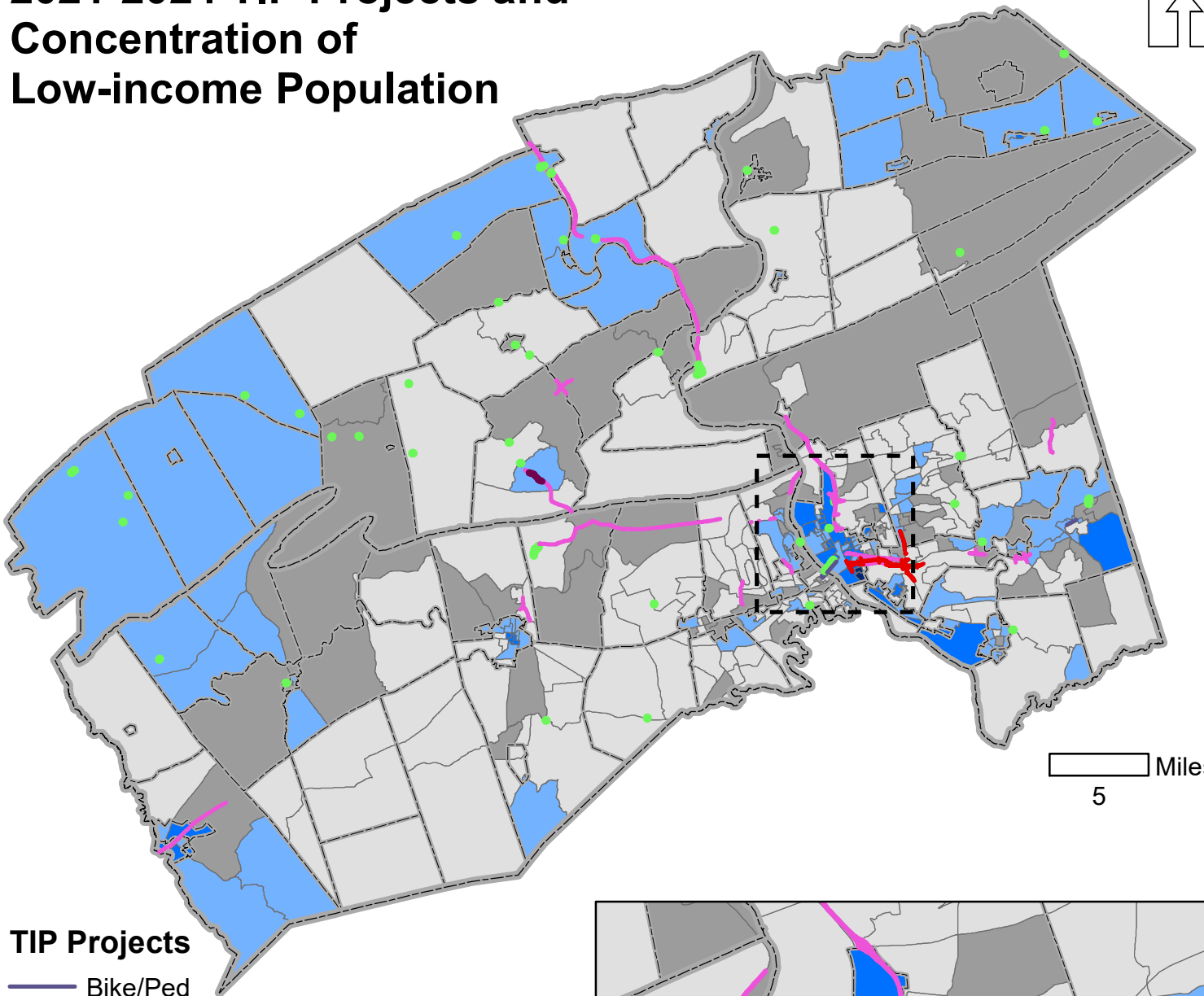
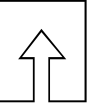
Minority by Block Group

- Less than 10.09%
- 10.09 - 21.97%
- 21.98 - 42.78%
- 42.79 - 67.46%
- Greater than 67.46%

Source:
2013-2017 American Community Survey 5-Year Estimates



Map 6 2021-2024 TIP Projects and Concentration of Low-income Population



5 Miles

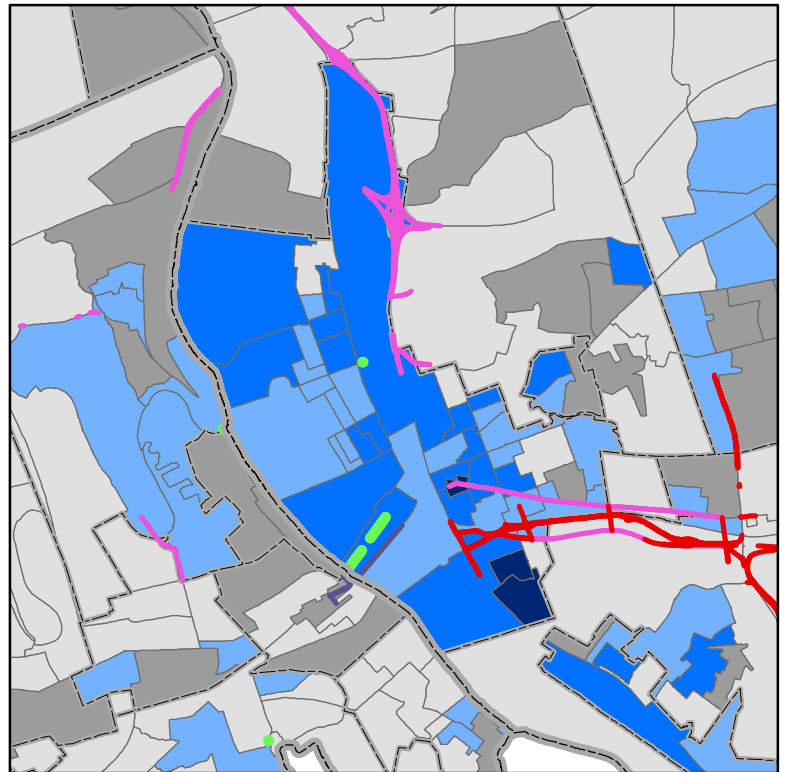
TIP Projects

- Bike/Ped
- Bridge
- Intermodal
- Interstate
- Roadway

Low-income by Block Group

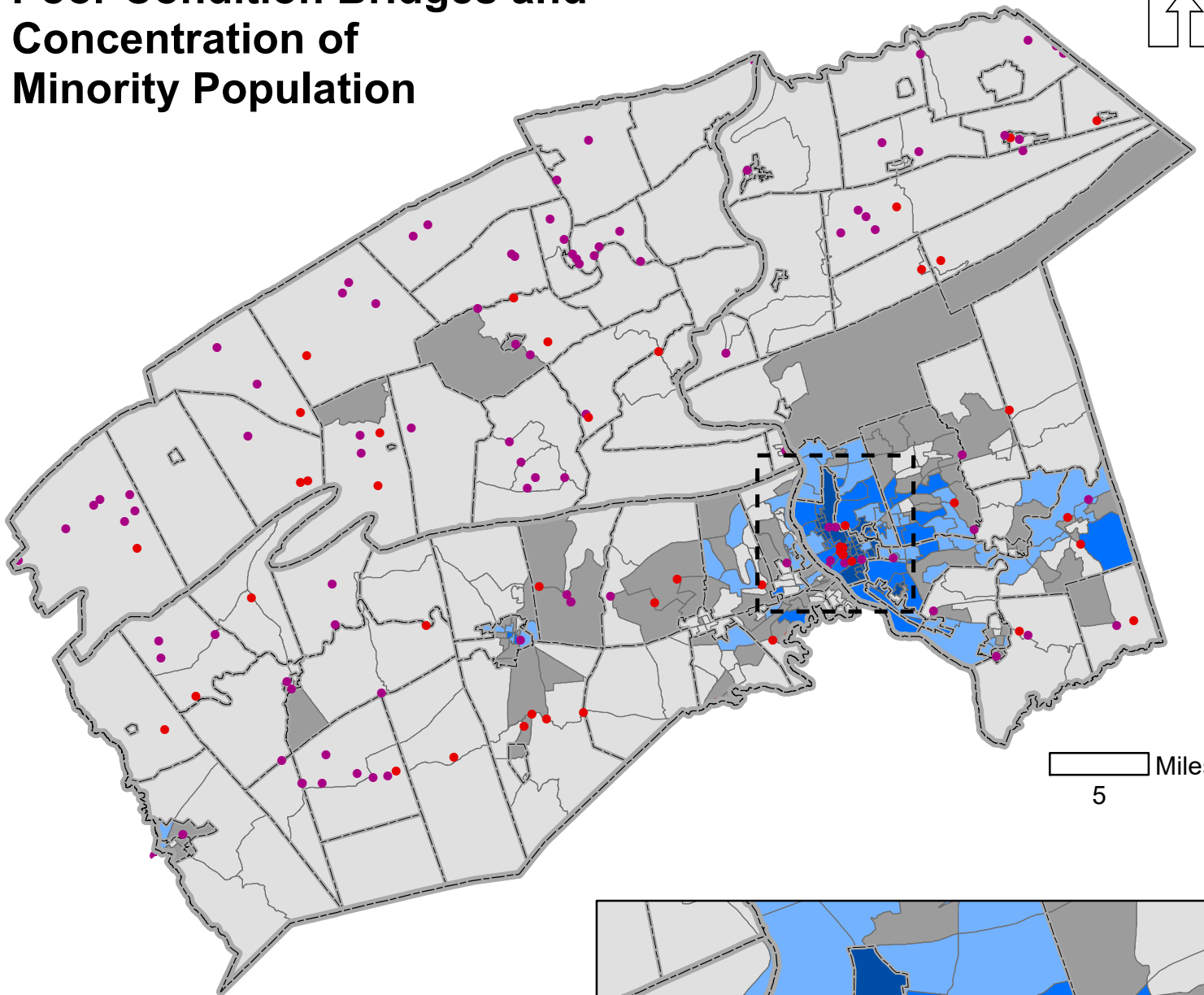
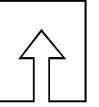
- Less than 6.67%
- 6.68 - 10.51%
- 10.52 - 30.33%
- 30.34 - 52.55%
- Greater than 52.56%

Source:
2013-2017 American Community Survey 5-Year Estimates
Pennsylvania Crash Information Tool (2013 - 2017)



Map A

Poor Condition Bridges and Concentration of Minority Population



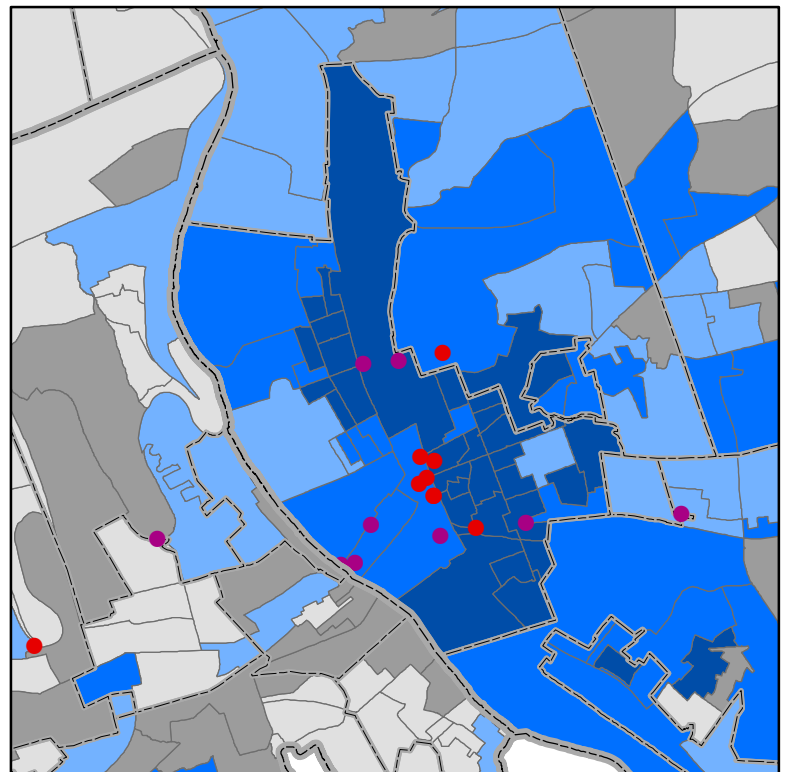
Minority by Block Group

- Less than 10.09%
- 10.09 - 21.97%
- 21.98 - 42.78%
- 42.79 - 67.46%
- Greater than 67.46%

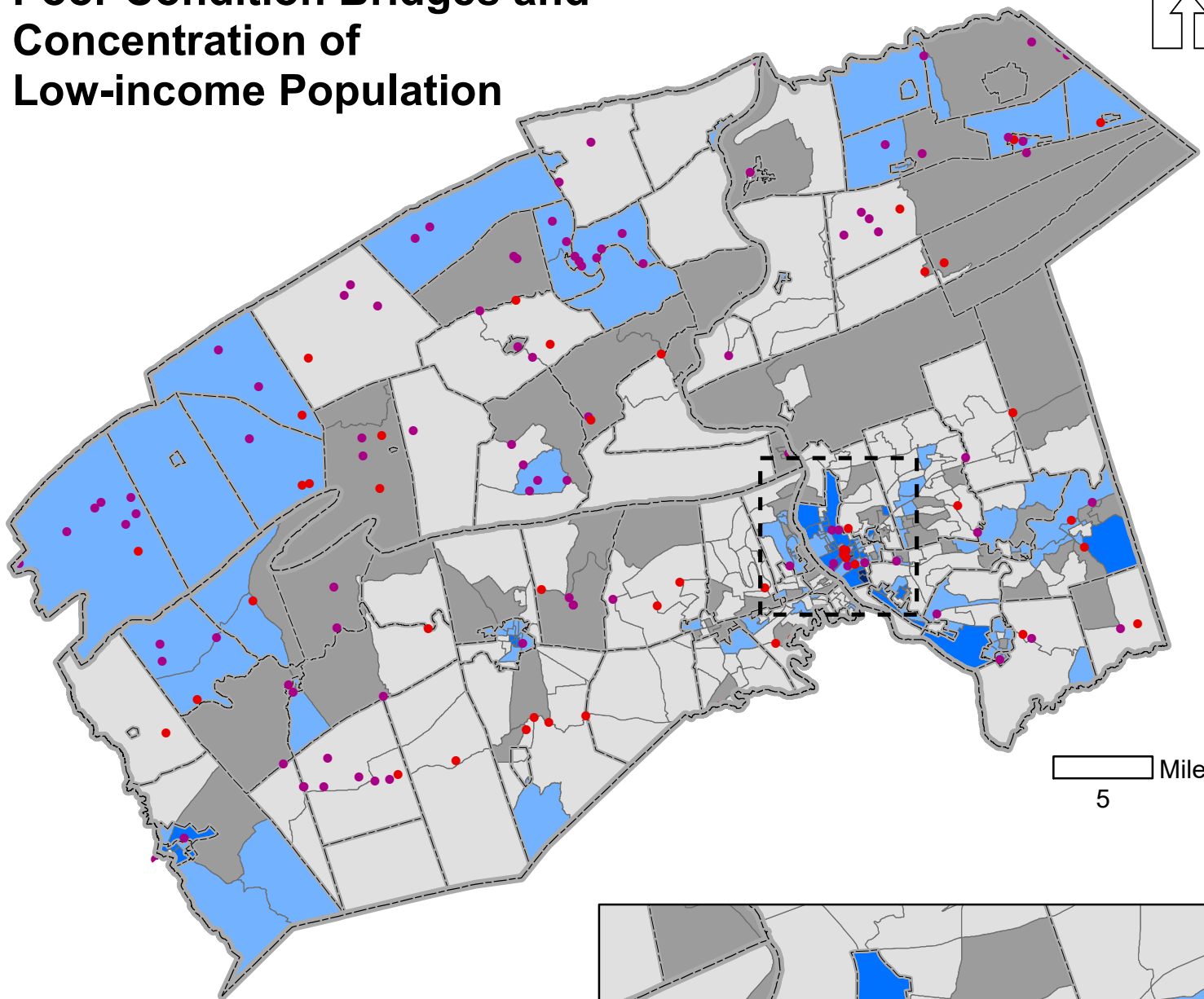
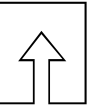
Poor Condition Bridges

- Locally Owned
- State Owned

Source:
2013-2017 American Community Survey 5-Year Estimates
Pennsylvania Crash Information Tool (2013 - 2017)



Map B Poor Condition Bridges and Concentration of Low-income Population



5 Miles

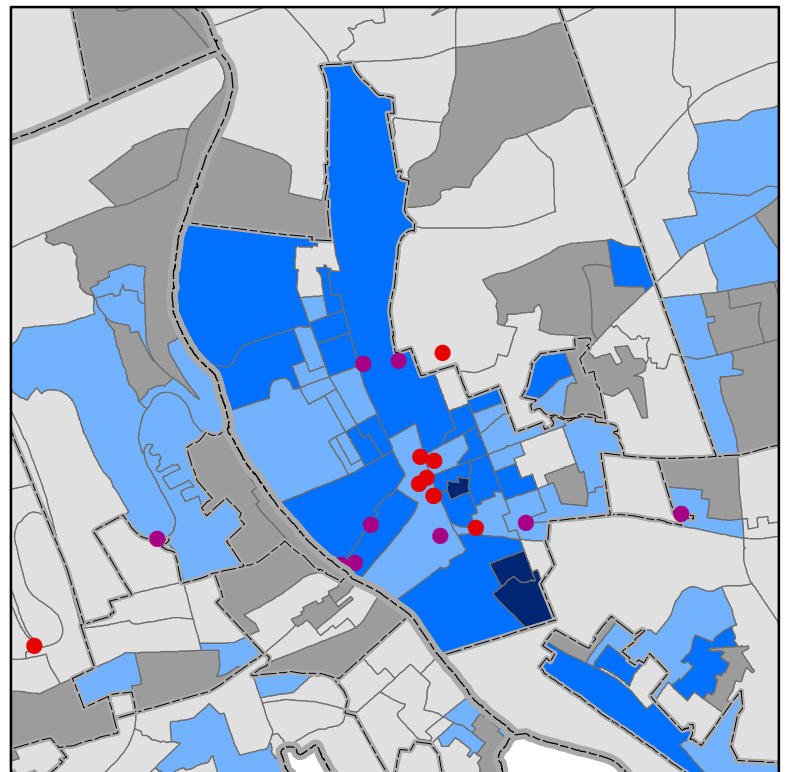
Low-income by Block Group

- Less than 6.67%
- 6.68 - 10.51%
- 10.52 - 30.33%
- 30.34 - 52.55%
- Greater than 52.56%

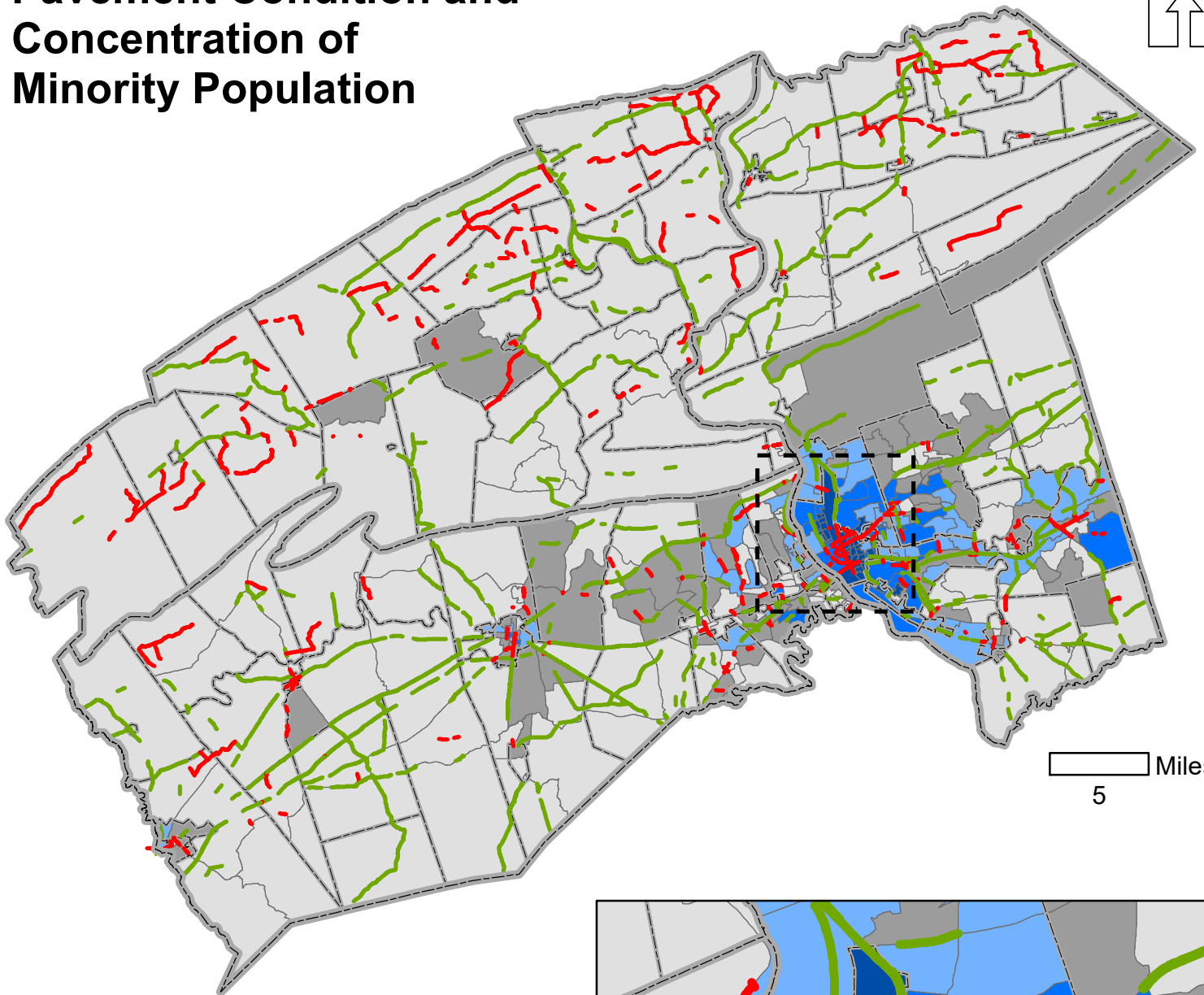
Poor Condition Bridges

- Locally Owned
- State Owned

Source:
2013-2017 American Community Survey 5-Year Estimates
Pennsylvania Crash Information Tool (2013 - 2017)



Map C Pavement Condition and Concentration of Minority Population



5 Miles

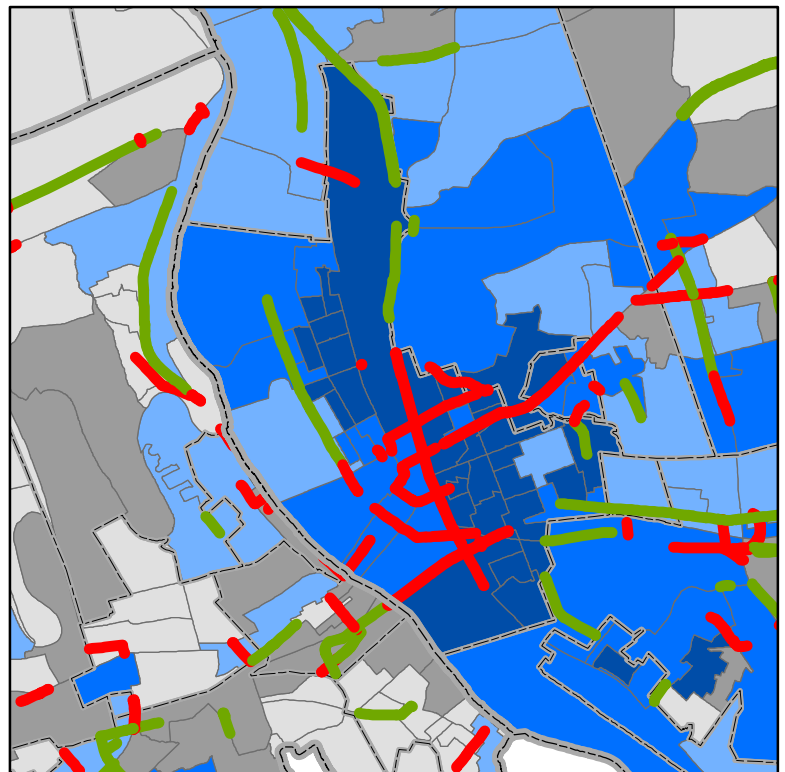
Minority by Block Group

- Less than 10.09%
- 10.09 - 21.97%
- 21.98 - 42.78%
- 42.79 - 67.46%
- Greater than 67.46%

Pavement Condition

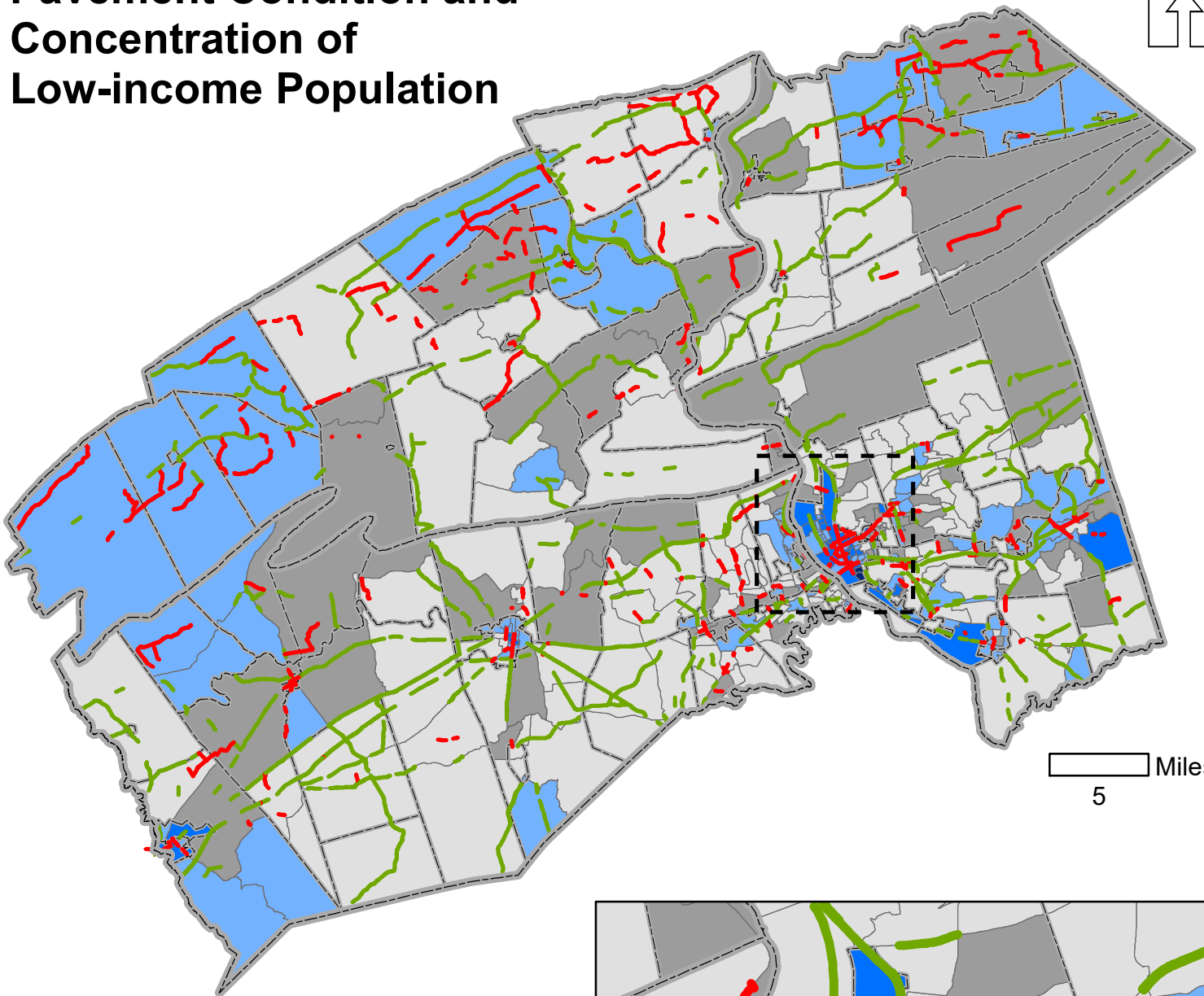
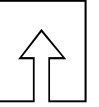
- Excellent
- Poor

Source:
2013-2017 American Community Survey 5-Year Estimates
Pennsylvania Crash Information Tool (2013 - 2017)



Map D

Pavement Condition and Concentration of Low-income Population



5 Miles

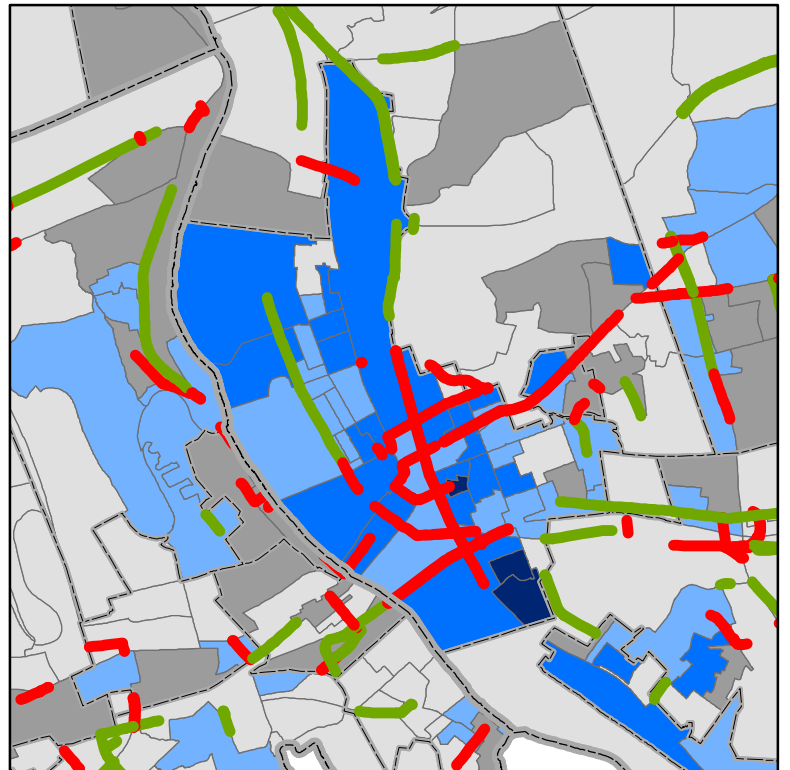
Low-income by Block Group

- Less than 6.67%
- 6.68 - 10.51%
- 10.52 - 30.33%
- 30.34 - 52.55%
- Greater than 52.56%

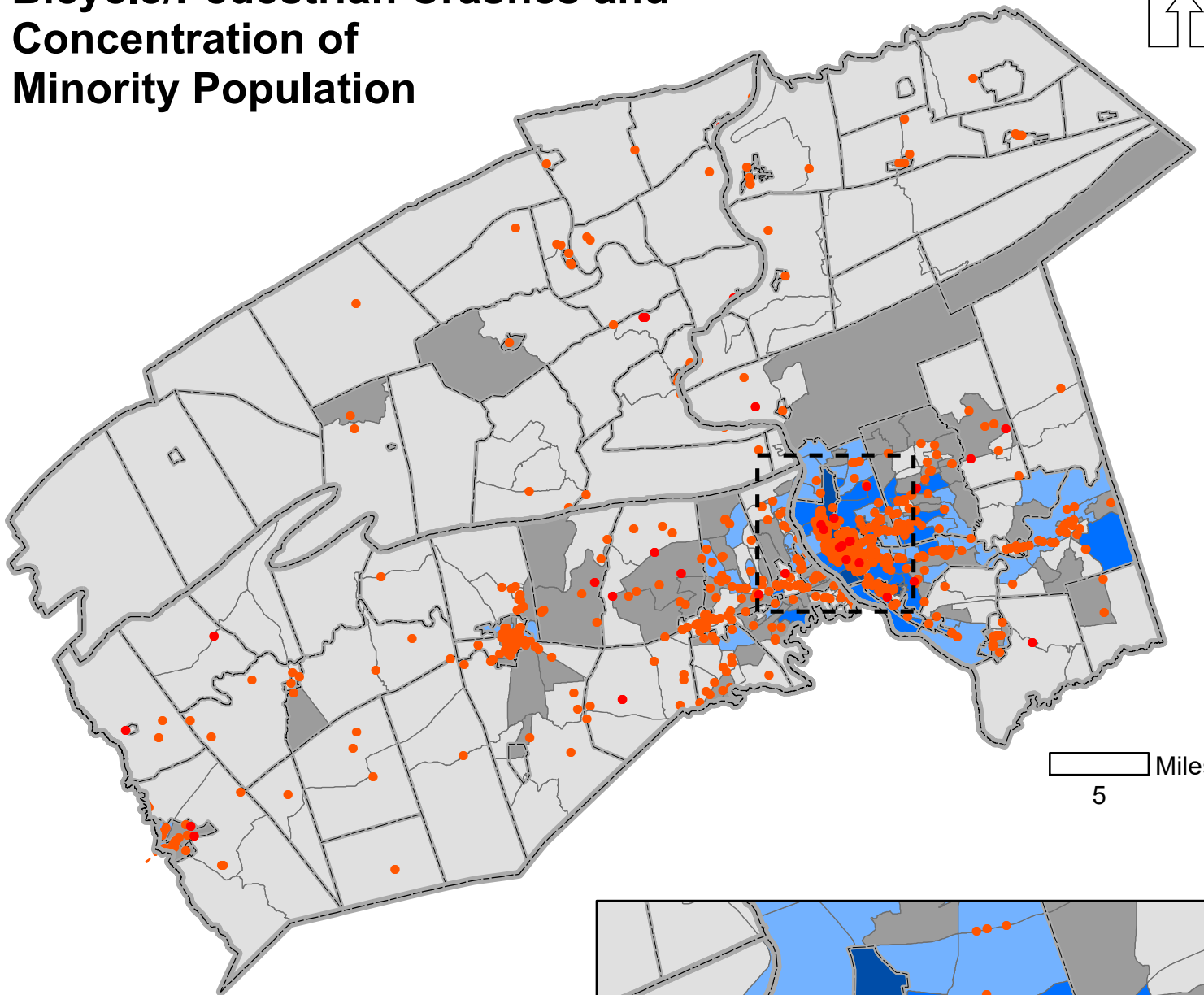
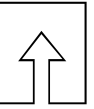
Pavement Condition

- Excellent
- Poor

Source:
2013-2017 American Community Survey 5-Year Estimates
Pennsylvania Crash Information Tool (2013 - 2017)



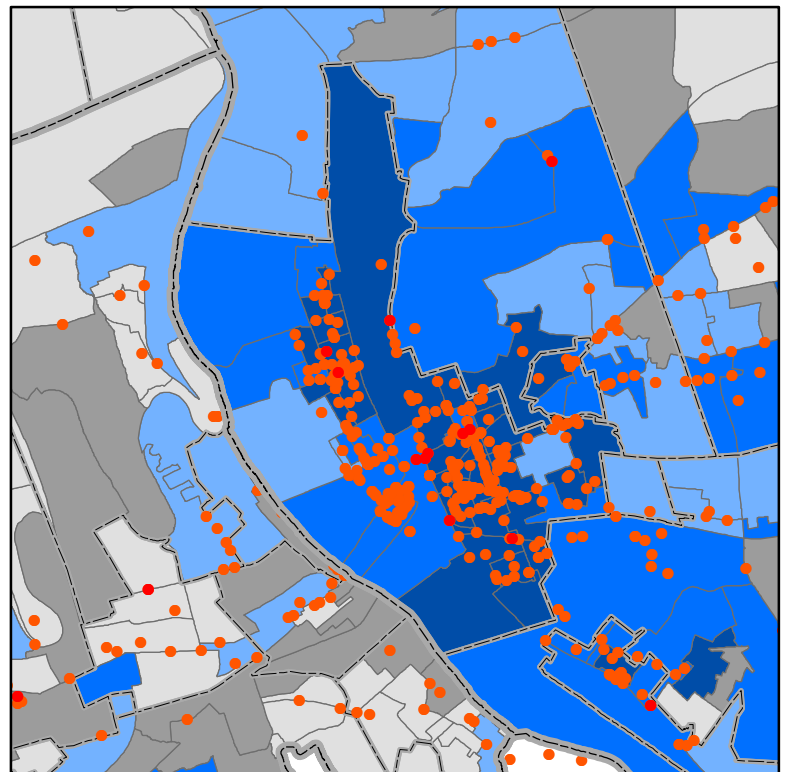
Map E Bicycle/Pedestrian Crashes and Concentration of Minority Population



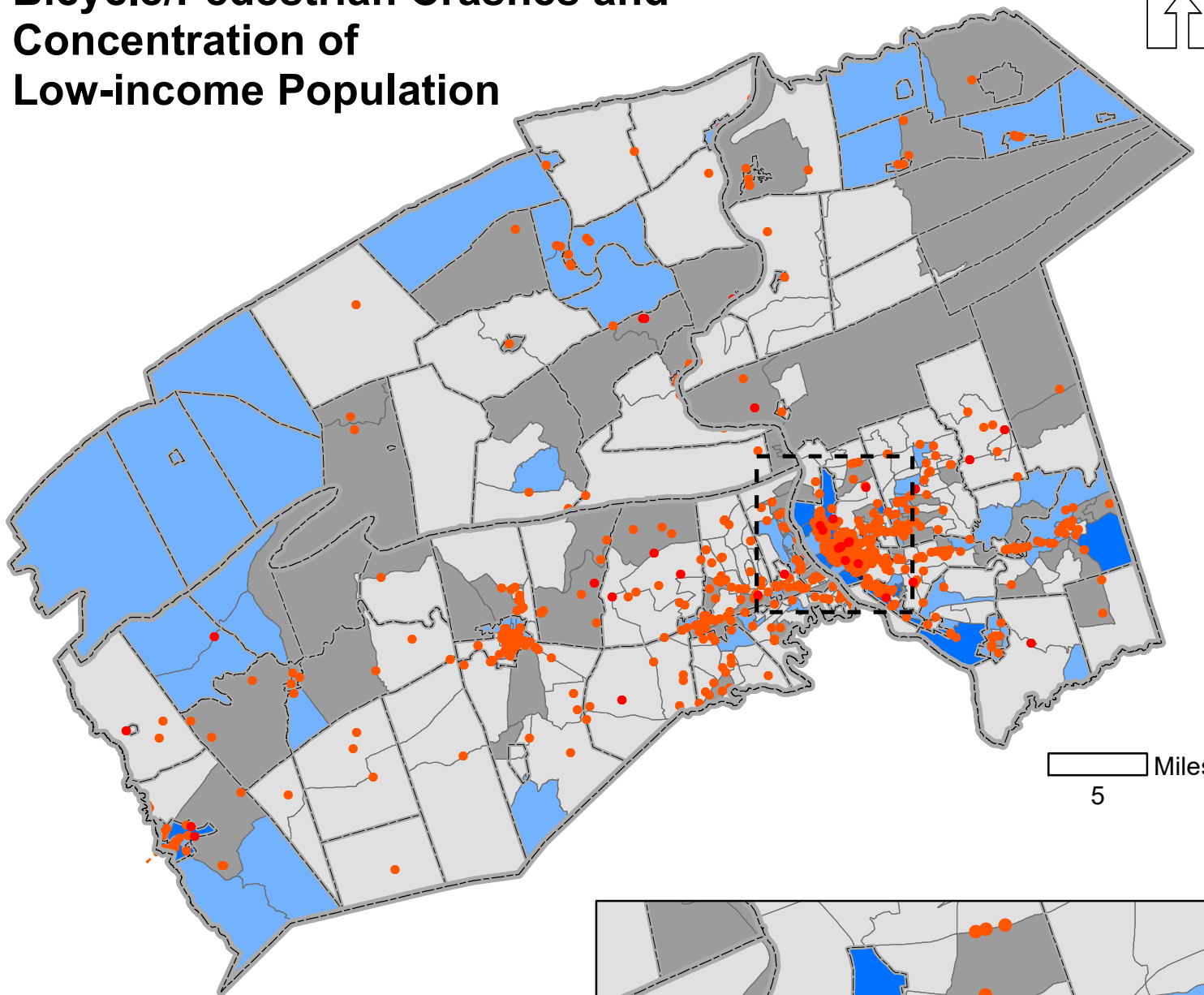
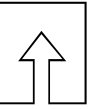
Minority by Block Group

- Less than 10.09%
- 10.09 - 21.97%
- 21.98 - 42.78%
- 42.79 - 67.46%
- Greater than 67.46%
- Fatal Bicycle/Pedestrian Crash
- Bicycle/Pedestrian Crash

Source:
2013-2017 American Community Survey 5-Year Estimates
Pennsylvania Crash Information Tool (2013 - 2017)



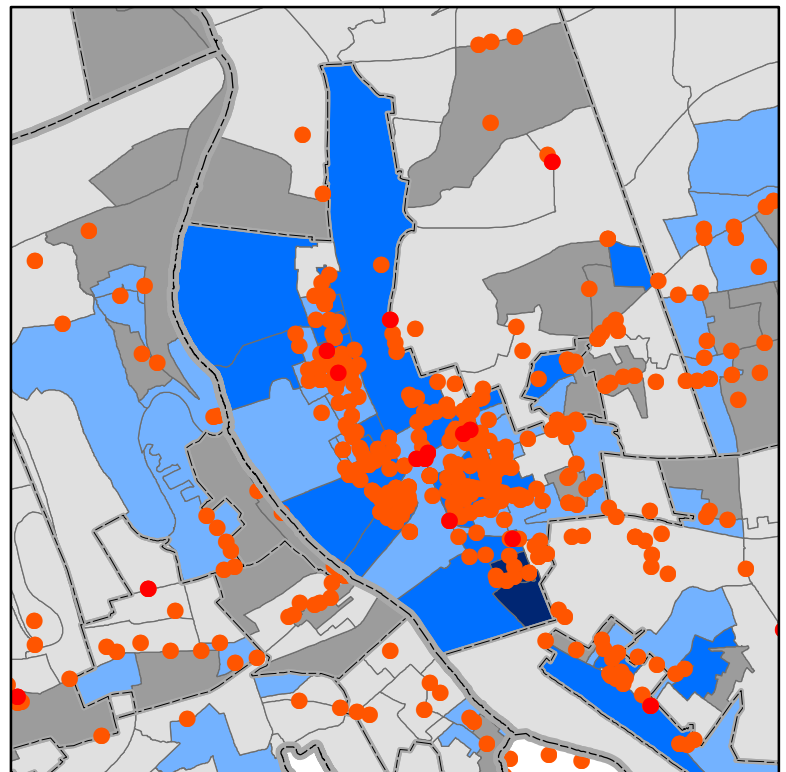
Map F Bicycle/Pedestrian Crashes and Concentration of Low-income Population



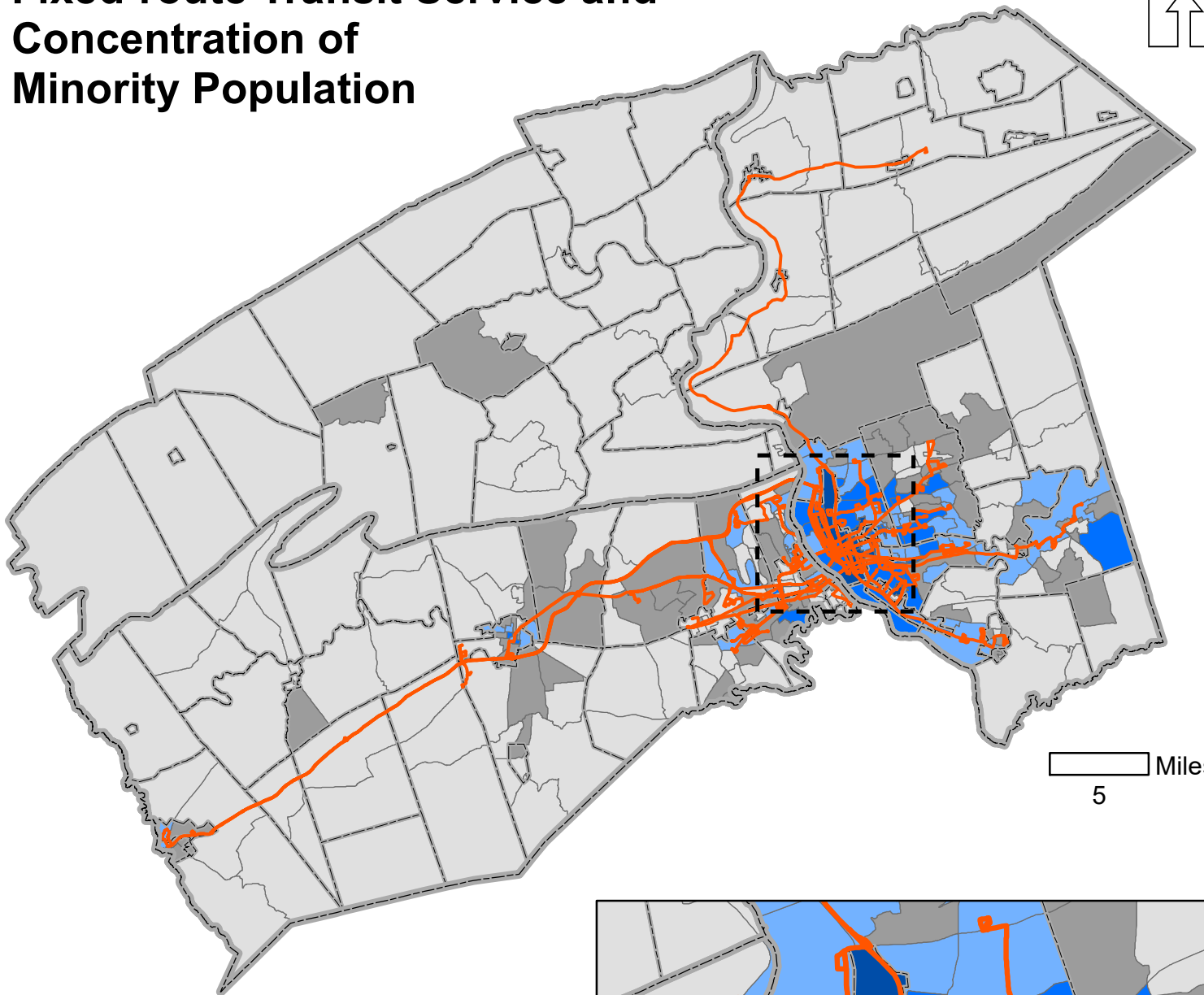
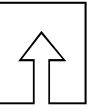
Low-income by Block Group

- Less than 6.67%
- 6.68 - 10.51%
- 10.52 - 30.33%
- 30.34 - 52.55%
- Greater than 52.56%
- Fatal Bicycle/Pedestrian Crash
- Bicycle/Pedestrian Crash

Source:
2013-2017 American Community Survey 5-Year Estimates
Pennsylvania Crash Information Tool (2013 - 2017)



Map G Fixed-route Transit Service and Concentration of Minority Population



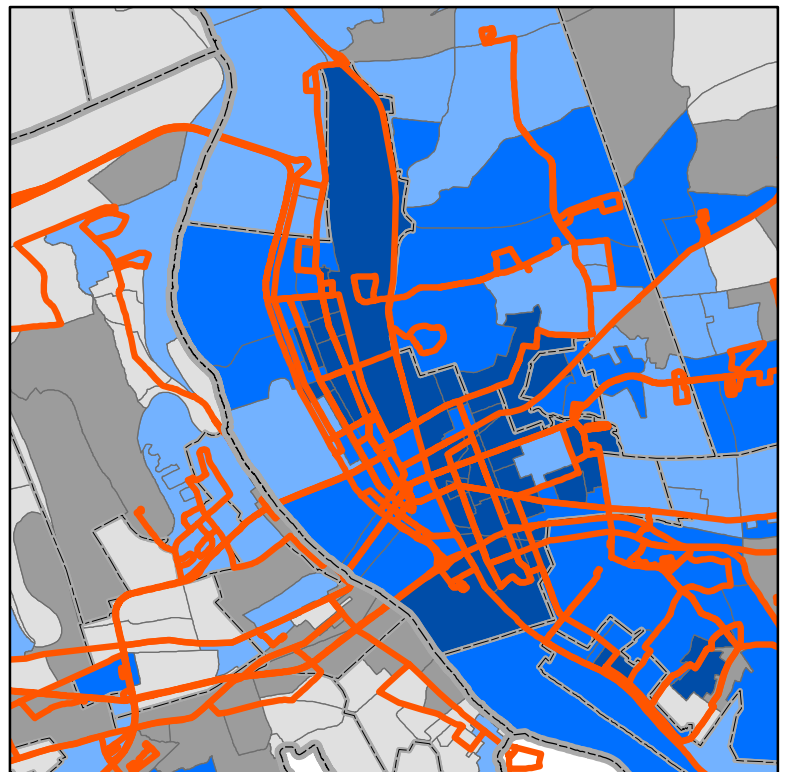
5 Miles

Minority by Block Group

- Less than 10.09%
- 10.09 - 21.97%
- 21.98 - 42.78%
- 42.79 - 67.46%
- Greater than 67.46%

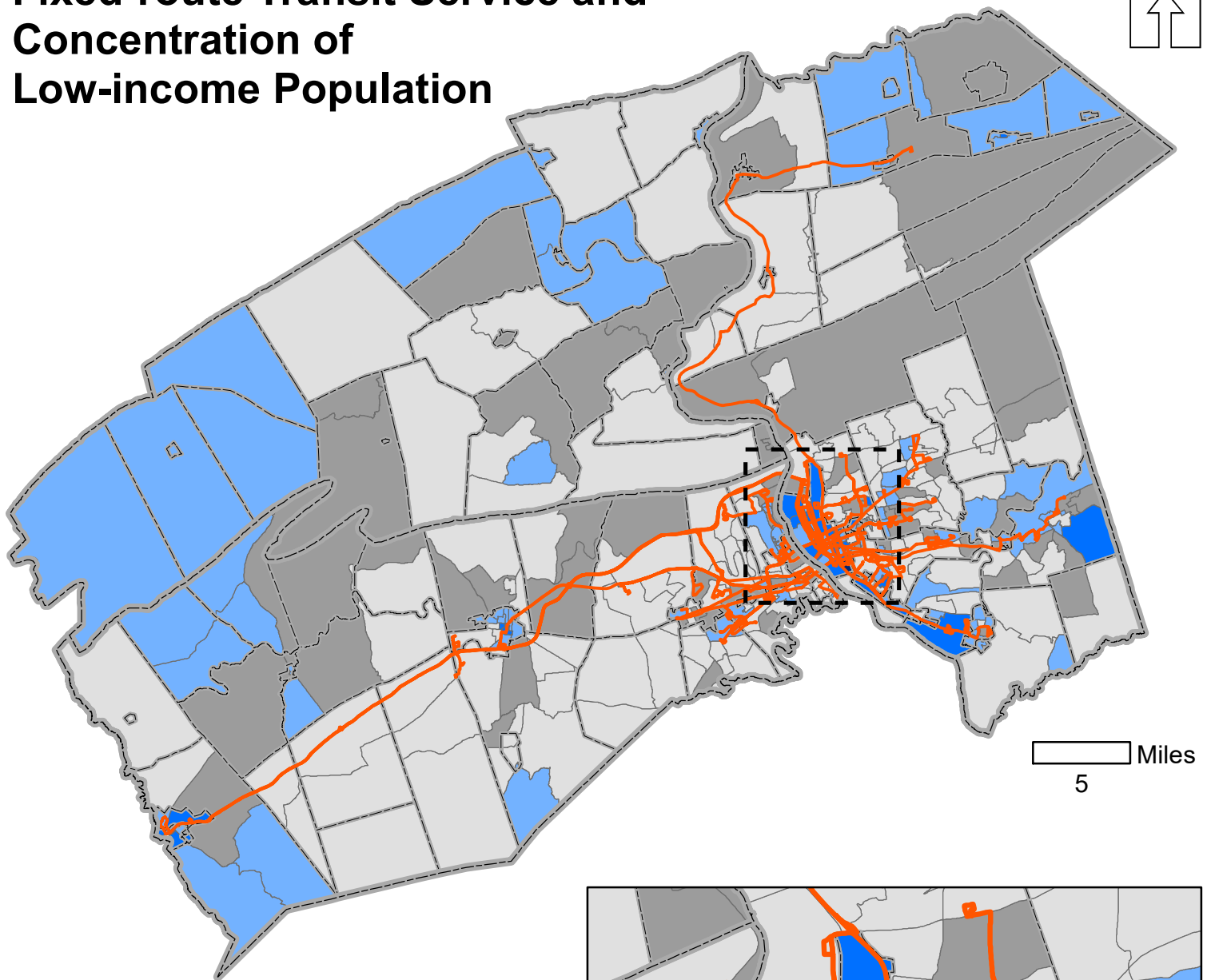
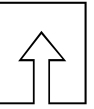
Transit Service

- CAT Routes



Source:
2013-2017 American Community Survey 5-Year Estimates

Map H Fixed-route Transit Service and Concentration of Low-income Population

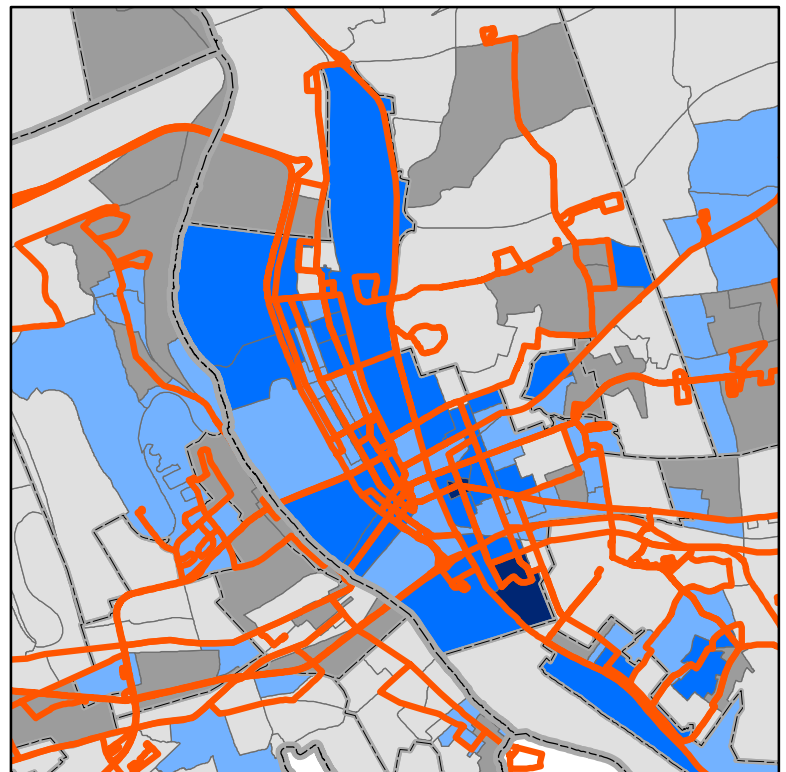


Low-income by Block Group

- Less than 6.67%
- 6.68 - 10.51%
- 10.52 - 30.33%
- 30.34 - 52.55%
- Greater than 52.56%

Transit Service

- CAT Routes



Source:
2013-2017 American Community Survey 5-Year Estimates