

2023-2026 TRANSPORTATION IMPROVEMENT PROGRAM (TIP)

ENVIRONMENTAL JUSTICE
BENEFITS AND BURDENS SUMMARY



Northeastern Pennsylvania Metropolitan Planning Organization (MPO) Environmental Justice - Benefits and Burdens Summary for 2023-2026 TIP Update

INTRODUCTION

The Northeastern Pennsylvania Alliance (NEPA), in conjunction with the Northeastern Pennsylvania Metropolitan Planning Organization (NEPA MPO) Technical Planning Committee and Policy Board, has developed an Environmental Justice (EJ) policy as part of its Long Range Transportation Plan.

It is the NEPA MPO's objective to:

- Ensure that the level and quality of transportation planning and related activities are conducted without regard to race, color, disability, gender, age, low income, national origin, language or limited-English proficiency;
- Identify and address, as appropriate, disproportionately high and adverse human health and environmental effects, including social and economic effects of the MPO's programs and activities on minority populations and low-income populations;
- Promote the full and fair participation of all affected populations in transportation decision-making;
- Prevent the denial, reduction or delay in benefits related to programs and activities that benefit minority populations or low-income populations;
- Ensure meaningful access to programs and activities by persons with Limited-English Proficiency (LEP).

BACKGROUND

The Northeastern Pennsylvania Alliance (NEPA), as a Local Development District (LDD), encompasses all of Carbon, Lackawanna, Luzerne, Monroe, Pike, Schuylkill, and Wayne Counties. NEPA is also designated as a Metropolitan Planning Organization serving as the coordinating agency for transportation planning and programming in Carbon, Monroe, Pike, and Schuylkill counties. Since 1991, the Alliance has had an annual work program with PennDOT. This work program requires that NEPA convene a transportation planning committee on a regular basis. This committee has evolved over the years into Northeastern Pennsylvania Metropolitan Planning Organization Technical Planning Committee and Northeastern Pennsylvania Metropolitan Planning Organization Policy Board.

The NEPA MPO Technical Planning Committee is comprised of sixteen (16) voting members that



include two (2) representatives from each of the four MPO counties, three (3) transit representatives, a representative from the Urbanized Area, the planning and programming engineer from PennDOT Districts 4-0 and 5-0, a PennDOT Central Office representative, and a representative from NEPA. The NEPA MPO Policy Board is comprised of 5 voting members that include one representative from each of the four MPO counties, appointed by the NEPA Alliance Board of Directors and a transportation professional from PennDOT Central Office. The NEPA MPO Technical Planning Committee and NEPA MPO Policy Board are guided by Operational Procedures, which were adopted in October 2013.

The NEPA MPO Technical Planning Committee and NEPA MPO Policy Board review the area's TIP, which is the primary funding source for the counties' highway and bridge projects, and transit system improvements. Through the TIP, transportation projects are identified and advanced to provide for the restoration and development of a multimodal transportation infrastructure, which supports economic development by creating a safer and more efficient travel environment for the movement of people and goods.

ENVIRONMENTAL JUSTICE BENEFITS AND BURDENS ANALYSIS

In 2020, the NEPA MPO adopted its second Long Range Transportation Plan (LRTP). In development of the LRTP, the NEPA MPO conducted an Environmental Justice Benefits and Burdens analysis. A distributive geographic analysis was conducted to identify the locations and concentrations of minority, low income and other Traditionally Underserved Populations.

The identification of these populations is essential to establishing effective strategies for engaging them in the transportation planning process. When meaningful opportunities for interaction are established, the transportation planning process can effectively draw upon the perspectives of communities to identify existing transportation needs, localized deficiencies, and the demand for transportation services. Mapping of these populations not only provides a baseline for assessing impacts of the transportation investment program, but also aids in the development of an effective public involvement program. All of the mapping included in this analysis has also been developed through ArcGIS Online. To view the maps included in this report, visit https://arcg.is/0H1TPe.

Fundamentally, the principles of Environmental Justice are aimed at preventing the denial of, reduction in or significant delay in the receipt of benefits by minority and low income populations. The establishment of transportation funding as a performance measure is consistent with this principle by supporting the evaluation of funding priorities considered for the LRTP, including the 4-year TIP. Mapping and analyzing transportation funding can assist in making the prioritization process more open, transparent and accountable to the public. In developing this funding performance measure, the core issue is whether or not the number and types of projects and the total project investment are equitably distributed throughout the NEPA MPO Region.

IDENTIFYING MINORITY AND LOW-INCOME POPULATIONS

The environmental justice evaluation process begins with developing an understanding of the geographic concentrations of minority and low-income populations. Previously, the process classified low income and minority population percentages based on natural breaks of the percentages of those populations present in the NEPA MPO region. During the development of



the 2023-2026 TIP, a new statewide methodology was developed by the Williamsport MPO, in consultation with PennDOT Central Office. Census block groups were classified into intervals based on the *ratio* of census block group minority/low income percentage to county or region overall minority/low income percentage rather than the actual percentages, resulting in a uniform scale usable across all counties or regions in the state. The below table identifies the intervals of minority populations.

Minority Intervals	Ratio of Minority Population Percentage in Census Block Group to County or Planning Partner Minority Population Percentage
1	Census Block Minority Population Percentage / County or Planning Partner Minority Population Percentage <= 0.5 (Census block group minority population percentage less than or equal to half of countywide or regional minority population percentage)
2	Census Block Minority Population Percentage / County or Planning Partner Minority Population Percentage > 0.5 and <= 1 (Census block group minority population percentage greater than half and less than or equal to countywide or regional minority population percentage)
3	Census Block Minority Population Percentage / County or Planning Partner Minority Population Percentage > 1 and <= 2 (Census block group minority population percentage greater than County Minority Population Percentage and less than or equal to twice the countywide or regional minority population percentage)
4	Census Block Minority Population Percentage / County or Planning Partner 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 or regional minority population percentage)
5	Census Block Minority Population Percentage / County or Planning Partner Minority Population Percentage > 4 (Census block group minority population percentage greater than four times the countywide or regional minority population percentage)

In the NEPA MPO region, the percentage of minority population is 20.00%. In applying the methodology outlined above, the NEPA MPO region only has four intervals of minority population because no Census blocks have a minority population percentage greater than four times the regional minority population average. Table 1 and Figure 1 show the concentrations of minority populations by census block groups based on 2015-2019 American Community Survey data.

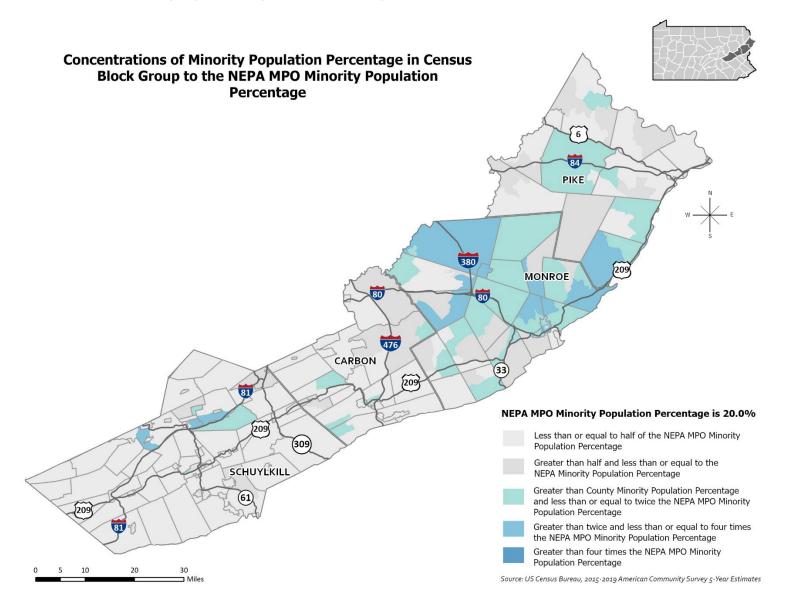
Table 1: Minority Population Intervals

Table 21 Williams () Operation intervals							
Population		Total					
Population	Interval 1	Interval 2	Interval 3	Interval 4	iotai		
Total Population	190,217	68,501	96,300	75,028	430,046		
Total Population (in %)	44.23%	15.93%	22.39%	17.45%	100%		
Minority Population	7,096	9,537	28,011	41,378	86,022		
Minority Population (in %)	3.73%	13.92%	29.09%	55.15%	20.00%		

Source: 2015-2019 ACS



Figure 1: Concentrations of Minority Populations by Census Block Groups





The below table identifies the intervals of low-income populations.

Low Income Intervals	Ratio of Low Income Population Percentage in Census Block Group to County or Planning Partner Low Income Population Percentage
1	Census Block Low Income Population Percentage / County Low Income Population Percentage <= 0.5 (Census block group Low Income population percentage less than or equal to half of countywide or regional Low Income population percentage)
2	Census Block Low Income Population Percentage / County Low Income Population Percentage > 0.5 and <= 1 (Census block group Low Income population percentage greater than half and less than or equal to countywide or regional Low Income population percentage)
3	Census Block Low Income Population Percentage / County Low Income Population Percentage > 1 and <= 2 (Census block group Low Income population percentage greater than County Low Income Population Percentage and less than or equal to twice the countywide or regional Low Income population percentage)
4	Census Block Low Income Population Percentage / County or Planning Partner Low Income Population Percentage > 2 and <= 4 (Census block group Low Income population percentage greater than twice and less than or equal to four times the countywide or regional Low Income population percentage)
5	Census Block Minority Population Percentage / County Minority Population Percentage > 4 (Census block group minority population percentage greater than four times the countywide or regional minority population percentage)

In the NEPA MPO region, the percentage of low income population is 11.46%. Table 2 and Figure 2 show the concentrations of households below the low income threshold by Census block groups, also based on 2015-2019 American Community Survey data.

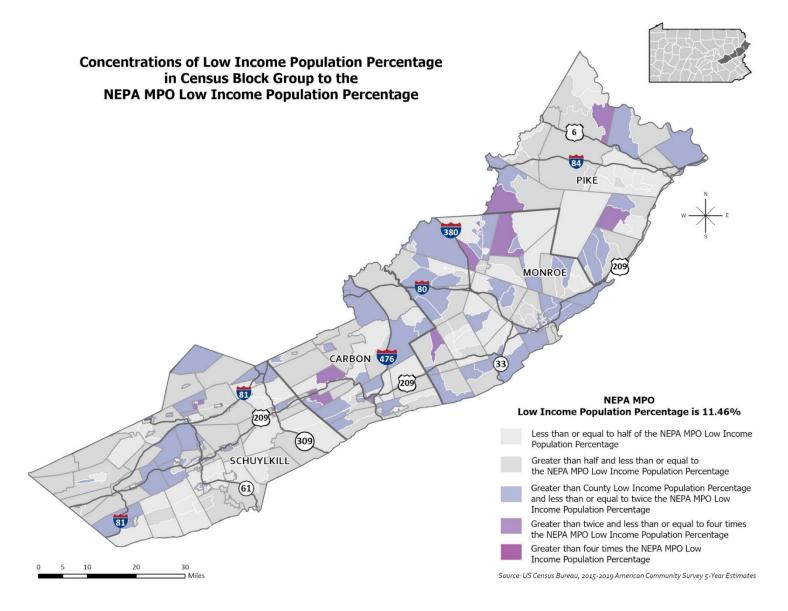
Table 2: Low Income Population Intervals

Domulation	Percent Low Income Population Intervals					
Population	Interval 1	Interval 2	Interval 3	Interval 4	Interval 5	Total
Total Population	100,068	146,919	134,900	34,375	2,070	418,332
Total Population (in %)	23.92%	35.12%	32.25%	8.22%	0.49%	100%
Low Income Population	2,676	11,906	21,607	10,746	1,007	86,022
Low Income Population (in %)	2.67%	8.10%	16.02%	31.26%	48.65%	11.46%

Source: 2015-2019 ACS



Figure 2: Concentrations of by Low Income by Census Block Group





CONDITION ASSESSMENT

An assessment of conditions analysis was conducted for components of the transportation system for which statewide datasets are available (namely pavement conditions of the Federal Aid System, bridges, and reportable crashes). All of these data are available from the PennDOT Open Data Portal (https://data-pennshare.opendata.arcgis.com/). To perform the assessment of conditions analysis, two important steps were conducted:

- 1. A map layer was created from dissolving together block groups of the same interval classification within each county and region for low income and minority concentration. These "interval areas" describe the contiguous areas within a county that fall within the same classification.
- 2. Transportation assets and crash locations were considered in the analysis of an interval area if located within 50 meters of the boundary of the dissolved interval area. In other words, the dissolved interval areas were buffered 50 meters for the analysis. This would allow the capture of features on the border of block groups or providing access to them.

The following aspects of the transportation system were summarized by low income and minority concentration interval:

- Federal aid segment miles with "excellent," "good," "fair," "poor," or "other" pavement condition
- Number and bridge deck area of poor/not poor bridges
- Reportable crashes occurring 2015-2019. The 5-year totals are provided in the data extract and can be divided by 5 to get the average annual amounts. Crashes of the following types were analyzed:
 - o Total Crashes
 - Total Persons Involved in Crashes
 - All Bicycle Crashes
 - o Bicycle Crash Fatalities
 - Bicycle Crash Suspected Serious Injuries
 - All Pedestrian Crashes
 - Pedestrian Crash Fatalities
 - Pedestrian Crash Suspected Serious Injuries
 - All Nonmotorized Crashes
 - Nonmotorized Fatalities
 - Nonmotorized Suspected Serious Injuries
 - Total Crash Fatalities
 - Total Crash Suspected Serious Injuries

There may be a slight disparity in the total number of assets and crashes due to their location on the border of Census block groups. In order to analyze benefits and adverse effects, the MPO examined the existing conditions of transportation assets throughout the region, as well as determining their locations in reference to the minority and low income populations. The use of these maps and tables going forward will allow the MPO to track number of crashes, poor condition bridges, and poor pavement mileage in the region and identify safety gaps and



distribution disparities between minority and low income populations and populations that are not minority or low income.

For the purposes of evaluating the distribution of negative asset condition and crashes in among minority, high minority areas will include intervals 3 and 4 because the minority population is greater than the regional average. For the purposes of evaluating the distribution of negative asset condition and crashes in among low income population, high low income areas will include intervals 3, 4 and 5 because the low income population is greater than the regional average.

Bridge Conditions

Overall, there is not a disparity between the condition of bridges and the concentration of minority population. The percentage of bridges in poor condition or worse located in areas with a concentration of minority population (intervals 3 and 4) is lower than the regional average of 13.42%. When considering bridge deck area, the percentage of bridge deck area in poor condition or worse is slightly higher than average in areas with a concentration of minority population.

The same is true for areas with a concentration of low income population. There is not a significant disparity in the percentage of bridges or bridge deck area in poor or worse condition located in areas with a concentration of low income population. Interval 3 has the highest percentage of bridges in poor condition or worse at 16.96%, which is higher than the regional average of 13.72%. In addition, interval 3 has the highest percentage of bridge deck area in poor condition or worse at 11.35%, which is only slightly higher than the regional average of 10.72%

Table 3: Distribution of Poor Condition Bridges by Minority Population Intervals

Population/Asset	Perce	Total			
	Interval 1	Interval 2	Interval 3	Interval 4	
Bridges in Poor Condition or Worse	186	65	67	30	348
Percent Bridges in Poor Condition or Worse	13.55%	14.29%	12.57%	12.93%	13.42%
Bridges in Fair Condition or Better	1,187	390	466	202	2,245
Percent Bridges in Fair Condition or Better	86.45%	85.71%	87.43%	87.07%	86.58%
Bridge Deck Area in Poor Condition or Worse (Sq. Feet)	308,028	150,900	146,112	66,733	671,773
Percent Bridge Deck in Poor Condition or Worse	10.07%	11.42%	12.49%	13.69%	11.13%
Bridge Deck Area in Fair Condition or Better (Sq. Feet)	2,751,966	1,170,500	1,023,309	420,612	5,366,387
Percent Bridge Deck Area in Fair Condition or Better	89.93%	88.58%	87.51%	86.31%	88.87%



Figure 3: Bridge Conditions and Concentrations of Minority Population Percentages

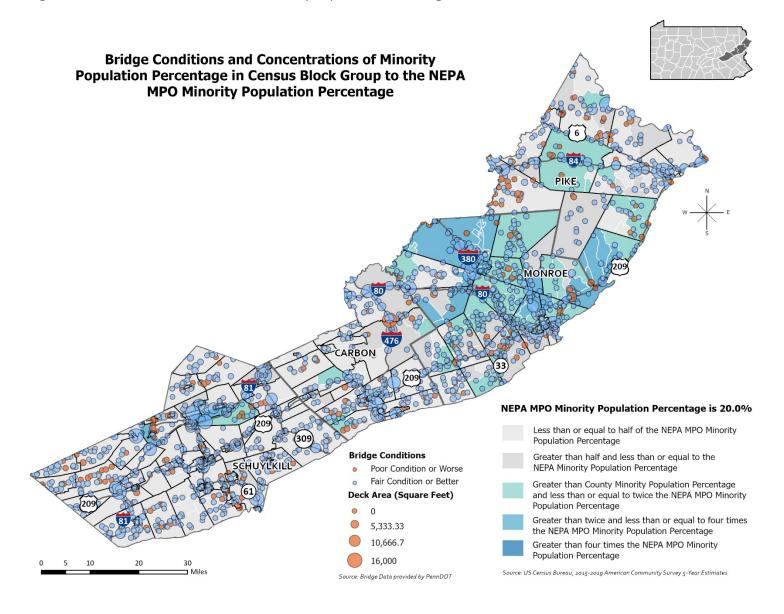


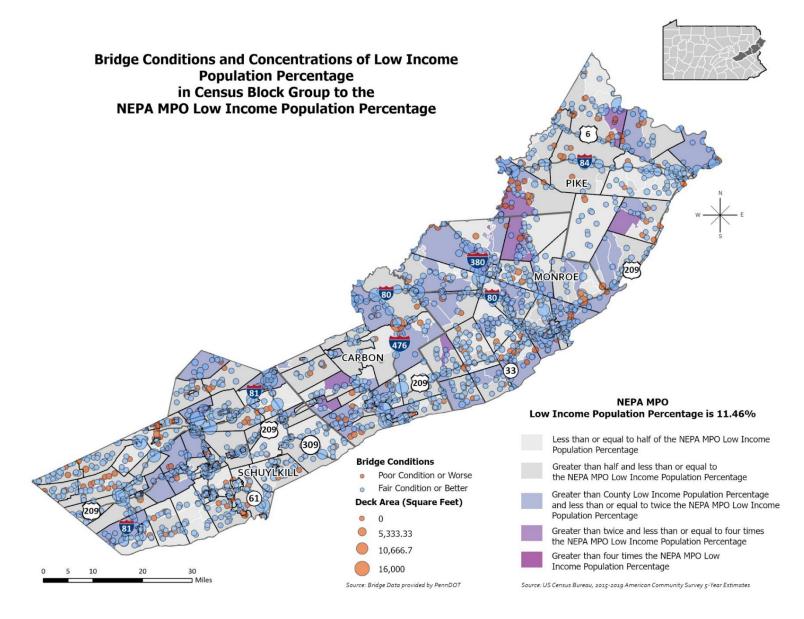


Table 4: Distribution of Poor Condition Bridges by Low Income Population Intervals

Population/Asset	P	i	Total			
	Interval 1	Interval 2	Interval 3	Interval 4	Interval 5	
Bridges in Poor Condition or Worse	106	147	97	29	0	379
Percent Bridges in Poor Condition or Worse	14.44%	13.62%	12.63%	16.96%	0.00%	13.72%
Bridges in Fair Condition or Better	628	932	671	142	10	2,383
Percent Bridges in Fair Condition or Better	85.56%	86.38%	87.37%	83.04%	100.00%	86.28%
Bridge Deck Area in Poor Condition or Worse (Sq. Feet)	200,985	240,759	209,008	36,666	0	687,418
Percent Bridge Deck in Poor Condition or Worse	11.81%	10.69%	11.35%	5.96%	0.00%	10.72%
Bridge Deck Area in Fair Condition or Better (Sq. Feet)	1,500,462	2,010,896	1,632,458	578,906	2,086	5,724,808
Percent Bridge Deck Area in Fair Condition or Better	88.19%	89.31%	88.65%	94.04%	100.00%	89.28%



Figure 4: Distribution of Poor Condition Bridges by Low Income Population Intervals





Pavement Conditions

Overall, there is not a significant disparity in the pavement condition of federal aid segment miles in areas with a concentration of minority population. In considering federal aid segment miles in poor condition, interval 4 has the highest percentage of miles with poor IRI at 12.68%, which is only slightly higher than the regional average of 12%. In addition, the percentage of federal aid segment miles with excellent IRI in intervals 3 and 4 is slightly lower than the regional average of 26.28%.

For areas with a high concentration of low income population, the percentage of federal aid segment miles with poor IRI is higher than the regional average. In addition, these areas have a lower than average percentage of federal aid segment miles with excellent IRI.

Table 5: Distribution of Pavement Condition by Minority Population Intervals

Population/Asset	Perce	Total			
	Interval 1	Interval 2	Interval 3	Interval 4	
Federal Aid Segment Miles with Poor IRI	63.45	27.03	25.4	14.1	129.97
Percent Federal Aid Segment Miles with Poor IRI	12.54%	12.47%	10.19%	12.68%	12.00%
Federal Aid Segment Miles with Fair IRI	93.75	39.21	53.16	30.3	216.42
Percent Federal Aid Segment Miles with Fair IRI	18.53%	18.09%	21.32%	27.26%	19.98%
Federal Aid Segment Miles with Good IRI	177.08	60.16	90.98	32.83	361.05
Percent Federal Aid Segment Miles with Good IRI	34.99%	27.75%	36.49%	29.54%	33.33%
Federal Aid Segment Miles with Excellent IRI	138.58	63.18	61.02	26.82	289.6
Percent Federal Aid Segment Miles with Excellent IRI	27.39%	29.14%	24.47%	24.13%	26.28%
Federal Aid Segment Miles with Other IRI	33.16	27.23	18.78	7.1	86.27
Percent Federal Aid Segment Miles with Other IRI	6.55%	12.56%	7.53%	6.39%	7.96%



Figure 5: Distribution of Pavement Condition by Minority Population Intervals

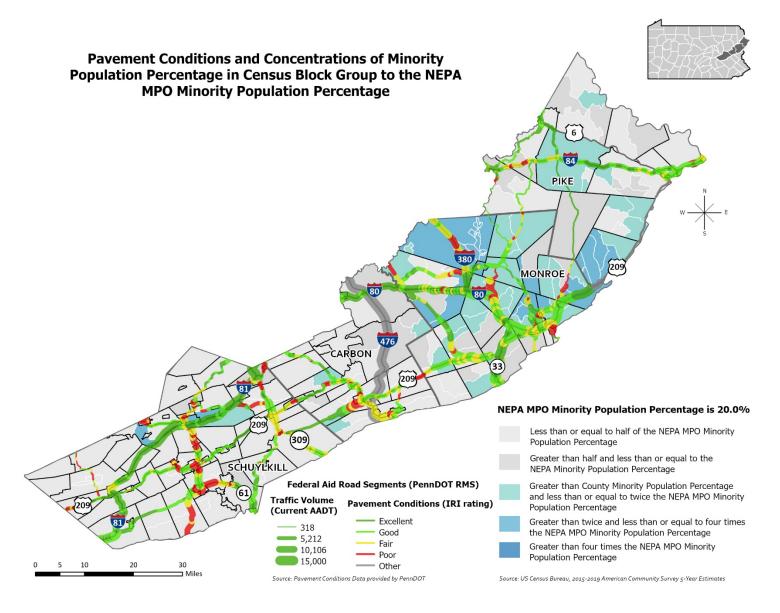


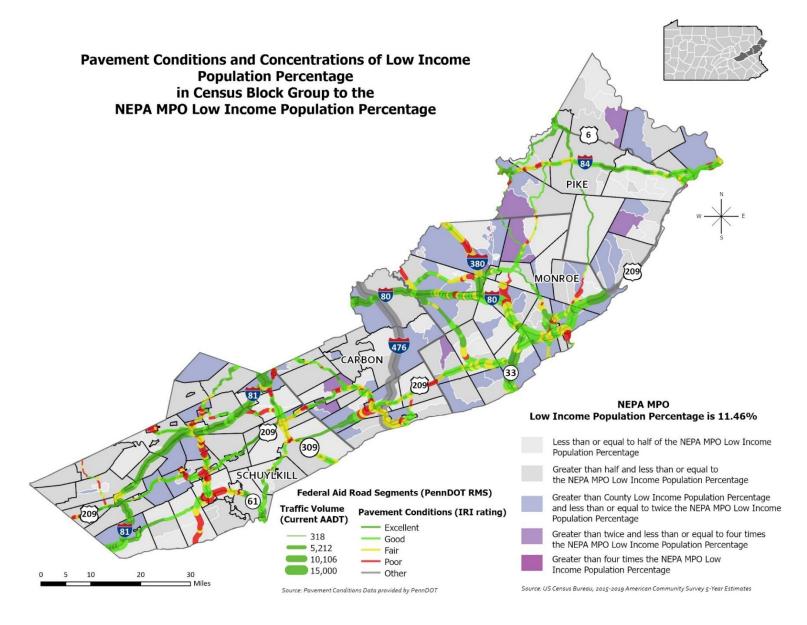


Table 6: Distribution of Pavement Condition by Low Income Population Intervals

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Population/Asset	Intervals					
,	Interval 1	Interval 2	Interval 3	Interval 4	Interval 5	Total
Federal Aid Segment Miles with Poor IRI	39	48	46	20	1	153
Percent Federal Aid Segment Miles with Poor IRI	13.07%	9.82%	13.88%	26.24%	23.74%	17.35%
Federal Aid Segment Miles with Fair IRI	62	91	81	21	0	255
Percent Federal Aid Segment Miles with Fair IRI	20.76%	18.78%	24.46%	27.66%	7.89%	21.39%
Federal Aid Segment Miles with Good IRI	96	164	97	30	2	388
Percent Federal Aid Segment Miles with Good IRI	32.32%	33.68%	29.31%	38.72%	68.37%	32.53%
Federal Aid Segment Miles with Excellent IRI	80	143	76	3	0	302
Percent Federal Aid Segment Miles with Excellent IRI	26.89%	29.41%	23.10%	3.50%	0.00%	25.31%
Federal Aid Segment Miles with Other IRI	21	40	31	3	0	95
Percent Federal Aid Segment Miles with Other IRI	6.96%	8.31%	9.25%	3.88%	0.00%	7.93%



Figure 6: Distribution of Pavement Condition by Low Income Population Intervals





Crash Data

Overall, there is not a higher incidence of reportable crashes and fatalities and high minority and low income areas. There are fewer reportable crashes in areas with a higher concentration of minority population, with 12,701 out of 30,396 reportable crashes in intervals 3 and 4. In addition, there are fewer fatalities in these areas, with 124 fatalities, out of 364 across the region. Similarly, there were 12,305 out of 32,607 crashes in areas with a concentration of low income population. In addition, low income intervals 3, 4 and 5 had 155 out of 411 fatalities across the region.

Table 7: Distribution of Crashes by Minority Population Intervals

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Population/Asset	Interval 1	Interval 2	Interval 3	Interval 4	Total
Total Reportable Crashes	11,940	5,755	8,263	4,438	30,396
Persons Involved in Crashes	24,280	11,550	17,479	9,800	63,109
Crash Fatalities	175	65	81	43	364
Crash Suspected Serious Injuries	551	219	287	153	1,210
People on Bicycles Involved in Crashes	33	22	19	11	85
People on Bicycles Involved in Crashes, Fatalities	0	2	2	1	5
People on Bicycles Involved in Crashes, Suspected Serious Injuries	8	5	2	1	16
Pedestrians Involved in Crashes	157	101	102	59	419
Pedestrians Involved in Crashes, Fatalities	13	5	6	8	32
Pedestrians Involved in Crashes, Suspected Serious Injuries	39	16	21	11	87
Total Persons Using Nonmotorized Modes Involved in Crashes	245	159	162	91	657
Total Persons Using Nonmotorized Modes Involved in Crashes, Fatalities	13	7	8	9	37
Total Persons Using Nonmotorized Modes Involved in Crashes, Suspected Serious Injuries					
iiijuiies	47	21	23	12	103



Figure 7: Distribution of Crashes by Minority Population Intervals

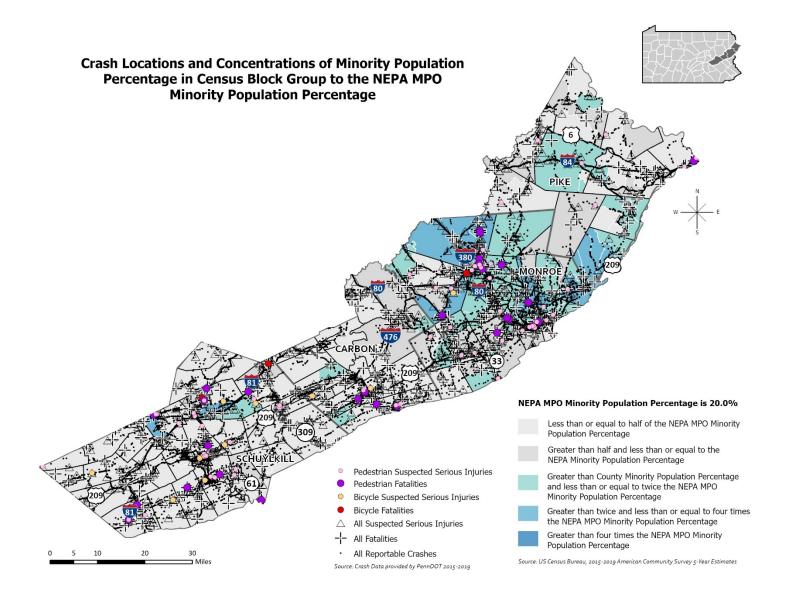


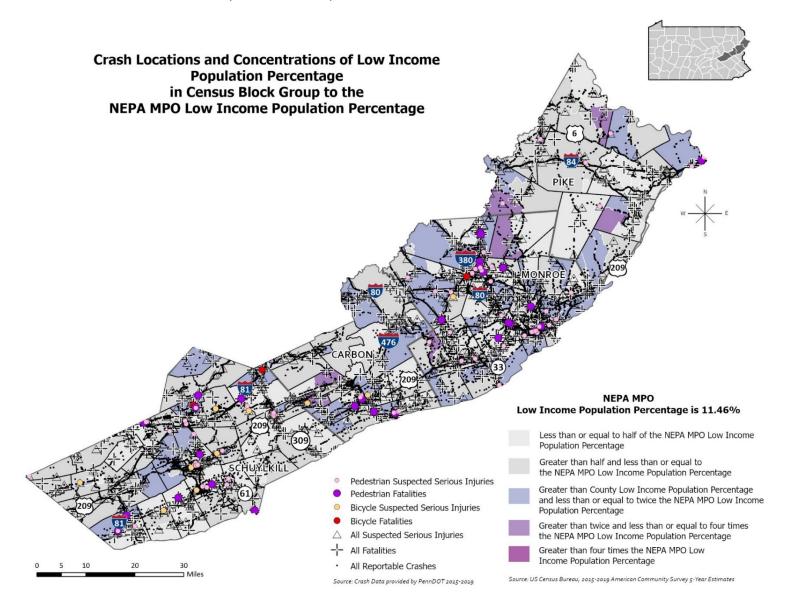


Table 8: Distribution of Pavement Condition by Low Income Population Intervals

Table 8: Distribution of Pave	F					
Population/Asset	Interval 1	Interval 2	Interval 3	Interval 4	Interval 5	Total
Total Reportable Crashes	8,116	12,186	10,085	2,187	33	32,607
Persons Involved in Crashes	16,455	25,592	21,599	4,824	78	68,548
Crash Fatalities	109	147	121	33	1	411
Crash Suspected Serious Injuries	348	482	357	89	0	1,276
People on Bicycles Involved in Crashes	16	27	24	23	1	91
People on Bicycles Involved in Crashes, Fatalities	1	1	1	2	1	6
People on Bicycles Involved in Crashes, Suspected Serious Injuries	3	8	3	3	0	17
Pedestrians Involved in Crashes	80	133	125	114	3	455
Pedestrians Involved in Crashes, Fatalities	9	12	9	7	0	37
Pedestrians Involved in Crashes, Suspected Serious Injuries	16	22	28	22	0	88
Total Persons Using Nonmotorized Modes	10	22	28	22	U	08
Involved in Crashes Total Persons Using	140	215	194	161	4	714
Nonmotorized Modes Involved in Crashes, Fatalities	10	13	10	9	1	43
Total Persons Using Nonmotorized Modes Involved in Crashes, Suspected Serious						
Injuries	19	30	31	25	0	105



Figure 8: Distribution of Pavement Condition by Low Income Population Intervals





2023-2026 TRANSPORTATION IMPROVEMENT PROGRAM

As part of the development of the 2023-2026 Transportation Improvement Program, the NEPA MPO reviewed transportation projects to determine their locations in high minority and low income Census block groups. For minority populations, high minority areas will include intervals 3 and 4 because the minority population is greater than the regional average of 20.00%. For the purposes of evaluating the distribution of negative asset condition and crashes in among low income population, high low income areas will include intervals 3, 4 and 5 because the low income population is greater than the regional average of 11.46%.

Patterns of transportation investment spending in the 2023-2026 TIP were analyzed to consider the disproportionate adverse impacts for minority and low-income populations. The *locatable* projects from the 2023-2026 TIP for the NEPA MPO Region have a total value of \$220,607,925.

This TIP is weighted heavily by the Statewide Investment Plan toward spending on bridge improvements and construction, consistent with the current statewide priority to address poor condition bridges. Bridges located in minority and low income population areas targeted for improvement will likely be a benefit or burden dependent upon the use of the bridge, access to major roadways, bicycle and pedestrian access, possible temporary detour routes and other important factors of consideration. Project priorities in future TIP cycles may change once the problems with poor condition bridges are addressed.

Table 9 summarizes the dollar value of the locatable projects according to the project type and the geographic proximity to high minority and low income populations. There was a total investment of approximately \$98.2 million (44.54% percent of the TIP) in high minority areas and \$133.5 million (60.53% percent of the TIP) in high low-income areas. The total for projects with no location information is \$29,827,638.

Nearly all of safety funding is directed to areas with a higher concentration of minority population and two-thirds of safety funding is in areas with a higher concentration of low income population. In addition, when reviewing pavement condition data, there was a higher percentage of federal aid segment miles with poor IRI in areas with higher concentrations of low-income population. This is addressed through TIP funding with 95% of highway spending in low-income areas.

Figure 10 shows the location of TIP projects and concentrations of Minority Population Intervals. Figure 11 shows the location of TIP projects and concentrations of Low Income Population Intervals.



Table 9: Dollar Value of the Locatable 2023-2026 TIP Projects by Project Type in High Minority (Intervals 3 and 4) and Low Income (Intervals 3, 4 and 5)

Project Category	Minority Intervals	Low Income Intervals	NEPA MPO Regional Total
Dridge	\$46,458,948	\$23,012,015	\$91,128,585
Bridge	50.98%	25.25%	
Highway/Canaral	\$7,107,000	\$77,897,907	\$81,627,857
Highway/General	8.70%	95.43%	
C-f-h.	\$44,673,213	\$30,876,855	\$46,089,213
Safety	96.92%	66.99%	
Congestion	\$0	\$1,762,270	\$1,762,270
Congestion	0%	100.00%	
Total Projects with Locatable	\$98,239,161	\$133,549,047	\$220,607,925
Information	44.53%	60.53%	

Source: NEPA MPO 2023-2026 Transportation Improvement Program- Bridge and Highway Public Narrative

Figure 9: 2023-2026 TIP Projects and Concentrations of Minority Population Intervals

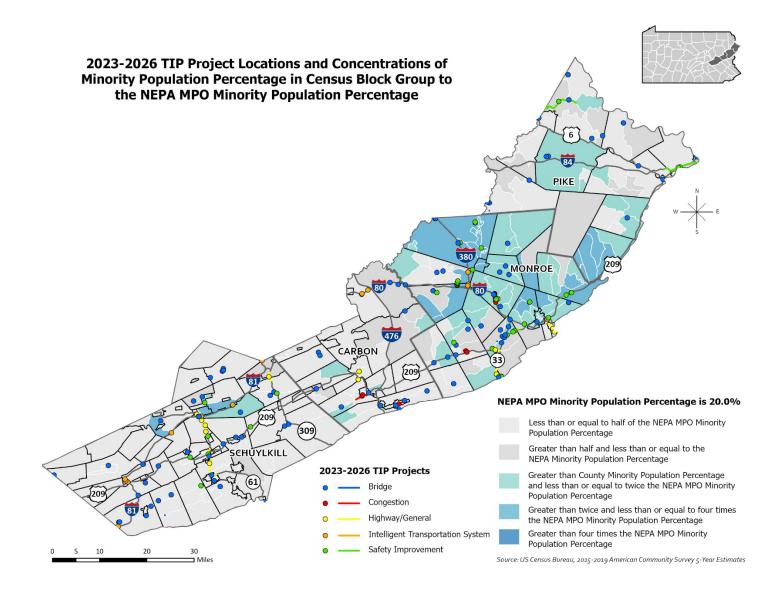


Figure 10: 2023-2026 TIP Projects and Concentrations of Low Income Population Intervals

