

ENVIRONMENTAL JUSTICE (EJ) ANALYSIS

Executive Order 12898 of February 11, 1994, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, states “Each Federal agency shall make environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations.”

Environmental justice (EJ) builds on the foundation of Title VI of the Civil Rights Act of 1964, which prohibits discrimination on the basis of race, color, or national origin. In 1997, the Department of Transportation (DOT) issued its *Order to Address Environmental Justice in Minority Populations and Low-Income Populations* to summarize and expand upon the requirements of Executive Order 12898 on EJ.

EJ contains three main objectives:

1. To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low income populations;
2. To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process;
3. To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

EJ improves the transportation decision-making process. Its principles, when properly implemented, improve all levels of transportation decision making by:

- Making better transportation decisions that meet the needs of the people;
- Designing transportation facilities that fit more harmoniously into communities;

- Enhancing the public involvement process, strengthening community-based partnerships, and providing minority and low-income populations with opportunities to learn about and improve the quality and usefulness of transportation in their lives;
- Improving data collection, monitoring, and analysis tools that assess the needs of, and analyze the potential impacts on, minority and low-income populations;
- Partnering with other public and private programs to leverage transportation agency resources to achieve a common vision for communities.
- Avoiding disproportionately high and adverse impacts on minority and low-income populations, and
- Minimizing and/or mitigating unavoidable impacts by identifying concerns early in the planning phase and providing offsetting initiatives and enhancement measures to benefit affected communities and neighborhoods.

The analysis described in this chapter relates to the first of the three EJ objectives listed above. Specifically, it looks at whether the projects in LVPC’s 2017 TIP have a disproportionate adverse effect on minority and low-income populations.

The accessibility tool for the LVPC regional travel demand model was used for this analysis. For each of 6 analysis years (2017, 2018, 2020, 2025, 2030, and 2040), 8 accessibility measures were developed at the Traffic Analysis Zone (TAZ) level for both a Base Scenario (Existing Network), and the TIP/LRTP Scenario (including TIP/LRTP projects to be open by the respective analysis year). The eight measures are:

1. Peak Highway Accessibility to Jobs – the number of jobs within the LVPC region that can be reached from a TAZ by car within 20 minutes of peak period driving time,
2. Peak Transit Accessibility to Jobs – the number of jobs within the LVPC region that can be reached from a TAZ by peak period transit service within 40 minutes,
3. Off-peak Highway Accessibility to Jobs – the number of jobs within the LVPC region that can be reached from a

TAZ by car within 20 minutes of off-peak period driving time,

4. Off-peak Highway Accessibility to Shopping – the number of retail jobs within the LVPC region that can be reached from a TAZ by car within 20 minutes of off-peak period driving time,
5. Off-peak Highway Accessibility to Universities – the number of university students (at school location) within the LVPC region that can be reached from a TAZ by car within 30 minutes of off-peak period driving time,
6. Off-peak Transit Accessibility to Jobs – the number of jobs within the LVPC region that can be reached from a TAZ by off-peak period transit service within 40 minutes,
7. Off-peak Transit Accessibility to Shopping – the number of retail jobs within the LVPC region that can be reached from a TAZ by off-peak period transit service within 40 minutes,
8. Off-peak Transit Accessibility to Universities – the number of university students (at school location) within the LVPC region that can be reached from a TAZ by off-peak period transit service within 60 minutes,

The 473 TAZs in the LVPC region were classified into three groups, based on the number of “degrees of disadvantage” that apply, as follows:

- Zero degree of disadvantage – 296 TAZs fall into this category (see map below).
- One degree of disadvantage – Either the percentage of TAZ population that are members of disadvantaged minority groups is greater than the regional average percentage OR the percentage of TAZ households that are below the poverty line is greater than the regional average. 107 TAZs fall into this category (see map below).
- Two degrees of disadvantage – The percentage of TAZ population that are members of disadvantaged minority groups is greater than the regional average percentage AND the percentage of TAZ households that are below the

poverty line is greater than the regional average. 70 TAZs fall into this category (see map below).

For each group of TAZs, average values of the accessibility measures (weight-averaged based on TAZ population in households) were computed for each of 6 years (2017, 2018, 2020, 2025, 2030, and 2040) for each scenario (Base and TIP/LRTP).

The tables below show the computed percent changes from the Base to the TIP/LRTP Scenarios in the weighted averages in each accessibility measure from the TAZs with a particular number of Degrees of Disadvantage for each analysis. The first two columns in each table are follows:

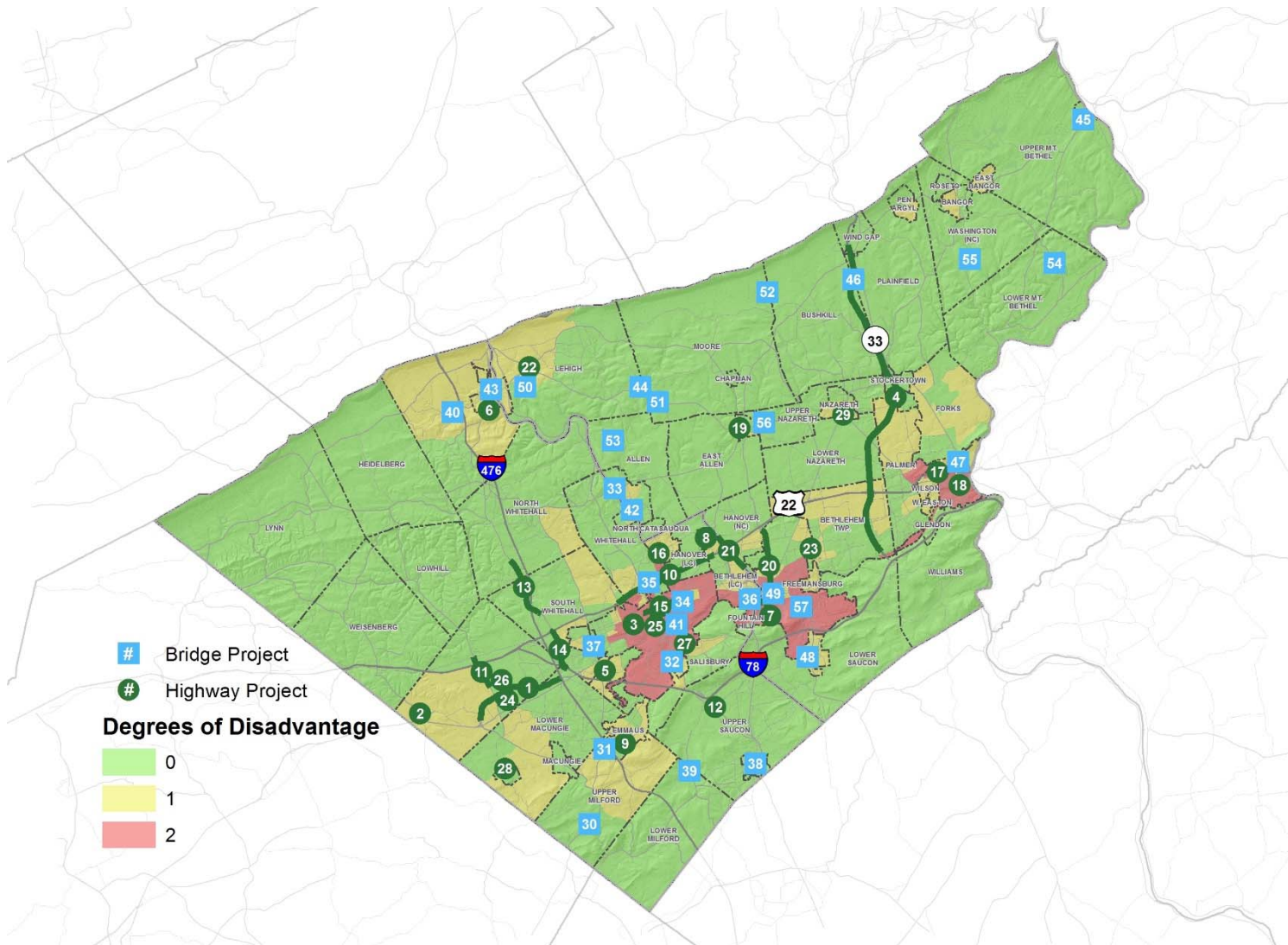
DD_EJ: Number of Degrees of Disadvantage.

ZONES: Number of zones with the corresponding number of Degrees of Disadvantage.

Looking at each accessibility measure individually:

1. Peak Highway Accessibility to Jobs – Beginning with 2018, the disadvantaged population benefits MORE on average from the TIP/LRTP projects than the non-disadvantaged population.
2. Peak Transit Accessibility to Jobs – Through 2025, there is not much difference on average in the effect of the TIP/LRTP projects on disadvantaged and non-disadvantaged populations. In 2030 and 2040, all populations have decreased accessibility on average, but much less so for the disadvantaged populations.
3. Off-peak Highway Accessibility to Jobs – In almost every analysis year, the disadvantaged population benefits slightly more on average from the TIP/LRTP projects as compared with the non-disadvantaged population.
4. Off-peak Highway Accessibility to Shopping – Through 2025, the disadvantaged population benefits slightly more on average from the TIP/LRTP projects as compared with the non-disadvantaged population.

MAP OF TRAFFIC ANALYSIS ZONES IN LVPC REGION WITH 0 (GREEN), 1 (YELLOW), AND 2 (RED) DEGREES OF DISADVANTAGE



Note: Project information can be found in the TIP Summary in Section 1 of this document

PERCENT CHANGES IN PEAK HIGHWAY ACCESS TO JOBS FOR EACH ANALYSIS YEAR

DD_EJ	ZONES	ANALYSIS YEAR					
		2017	2018	2020	2025	2030	2040
0	296	0.2%	0.1%	1.1%	0.5%	11.0%	10.5%
1	107	0.4%	0.1%	1.4%	1.2%	12.5%	12.9%
2	70	0.2%	0.2%	1.7%	3.4%	16.6%	19.9%

PERCENT CHANGES IN PEAK TRANSIT ACCESS TO JOBS FOR EACH ANALYSIS YEAR

DD_EJ	ZONES	ANALYSIS YEAR					
		2017	2018	2020	2025	2030	2040
0	296	4.7%	4.7%	6.2%	1.2%	-49.0%	-45.8%
1	107	-0.5%	-0.5%	0.8%	3.0%	-12.0%	-7.4%
2	70	-0.6%	-0.6%	0.3%	2.6%	-12.4%	-8.3%

PERCENT CHANGES IN OFF-PEAK HIGHWAY ACCESS TO JOBS FOR EACH ANALYSIS YEAR

DD_EJ	ZONES	ANALYSIS YEAR					
		2017	2018	2020	2025	2030	2040
0	296	0.3%	0.2%	2.5%	2.5%	21.9%	31.1%
1	107	0.5%	0.4%	2.4%	3.3%	22.3%	31.7%
2	70	0.4%	0.4%	2.6%	4.4%	22.5%	32.7%

PERCENT CHANGES IN OFF-PEAK HIGHWAY ACCESS TO SHOPPING FOR EACH ANALYSIS YEAR

DD_EJ	ZONES	ANALYSIS YEAR					
		2017	2018	2020	2025	2030	2040
0	296	0.2%	0.1%	0.1%	3.1%	20.8%	30.1%
1	107	0.4%	0.3%	0.3%	3.6%	20.1%	28.8%
2	70	0.4%	0.4%	0.4%	4.7%	20.5%	30.1%

PERCENT CHANGES IN OFF-PEAK HIGHWAY ACCESS TO UNIVERSITIES FOR EACH ANALYSIS YEAR

DD_EJ	ZONES	ANALYSIS YEAR					
		2017	2018	2020	2025	2030	2040
0	296	0.1%	0.1%	-0.1%	-1.8%	-0.8%	-2.6%
1	107	0.1%	0.1%	0.1%	-1.4%	-0.7%	-1.4%
2	70	0.1%	0.1%	0.1%	0.0%	0.1%	0.1%

PERCENT CHANGES IN OFF-PEAK TRANSIT ACCESS TO JOBS FOR EACH ANALYSIS YEAR

DD_EJ	ZONES	ANALYSIS YEAR					
		2017	2018	2020	2025	2030	2040
0	296	5.1%	5.1%	6.3%	-1.6%	-46.7%	-44.3%
1	107	0.0%	0.0%	1.1%	2.6%	7.2%	11.9%
2	70	0.0%	0.0%	1.1%	1.7%	27.1%	32.5%

PERCENT CHANGES IN OFF-PEAK TRANSIT ACCESS TO SHOPPING FOR EACH ANALYSIS YEAR

DD_EJ	ZONES	ANALYSIS YEAR					
		2017	2018	2020	2025	2030	2040
0	296	8.0%	7.9%	9.0%	-4.2%	-48.8%	-47.6%
1	107	0.0%	0.0%	0.8%	2.3%	-3.1%	-1.0%
2	70	-0.1%	-0.1%	0.9%	1.8%	34.8%	39.5%

PERCENT CHANGES IN OFF-PEAK TRANSIT ACCESS TO UNIVERSITIES FOR EACH ANALYSIS YEAR

DD_EJ	ZONES	ANALYSIS YEAR					
		2017	2018	2020	2025	2030	2040
0	296	0.0%	0.0%	0.0%	0.0%	17.7%	19.5%
1	107	6.2%	6.2%	6.3%	0.0%	-24.7%	-24.9%
2	70	-5.9%	-5.8%	-5.8%	0.0%	-5.8%	-6.2%

5. Off-peak Highway Accessibility to Universities – In every analysis year, the disadvantaged population benefits the same or slightly more on average from the TIP/LRTP projects as compared with the non-disadvantaged population.
6. Off-peak Transit Accessibility to Jobs – Through 2020, there is some difference on average in the effect of the TIP/LRTP projects on disadvantaged and non-disadvantaged populations. Starting with 2025, the disadvantaged population benefits more on average from the TIP/LRTP projects as compared with the non-disadvantaged population.
7. Off-peak Transit Accessibility to Shopping – Same as #6.

8. Off-peak Transit Accessibility to Universities – This is the only accessibility measure for which the disadvantage population benefits less on average from the TIP/LRTP projects as compared with the non-disadvantaged population.

In summary, for 7 of the 8 accessibility measures, the disadvantaged population fares as well or better than the non-disadvantaged population from the TIP/LRTP projects. It is, therefore, evident that overall there is no disproportionate adverse effect of the TIP/LRTP projects on minority and/or low-income populations.