

Attachment 1 to Errata: Amendment Social Equity Analysis

Table of Contents

1. Introduction.....	3
2. Findings.....	3
3. Methodology.....	3
4. Example Social Equity Calculation	5
5. Title VI: Social Equity Performance Measures	5
6. AB 805: Transportation Strategies to Reduce Pollution Exposure	19

Amendment Social Equity Analysis

1. Introduction

The Board of Directors adopted the 2021 Regional Plan on December 10, 2021. The Regional Plan provides a 30-year outlook for how the San Diego region will grow and travel. Appendix H, Social Equity: Engagement and Analysis, of the Regional Plan was prepared to understand the impacts of transportation investments on San Diego's most vulnerable communities, including low-income communities and communities of color.

In September 2022, the Board directed staff to prepare an amendment to the Regional Plan to remove the regional road usage charge (RUC), a direct user fee where drivers pay to use the roadway network, whether the vehicle is powered by gas or electricity or hydrogen, based on distance traveled or other factors.

This analysis presents a comparison of the social equity performance measures between the Regional Plan and the amendment for the horizon years 2025, 2035, and 2050.

2. Findings

- The amendment would not result in either a disparate impact or disproportionate effect on disadvantaged communities in the San Diego region.
- The amendment would not result in revisions to the list of identified transportation strategies to reduce pollution exposure in disadvantaged communities.

3. Methodology

Analysis Years

The Regional Plan established the following analysis years: Baseline year 2016 and target years 2025, 2035, and 2050. The baseline year represents the existing population, jobs, and housing units as of year 2016. The year 2050 represents the horizon year for the plan and the amendment.

Data Sources

This social equity analysis for the amendment relies upon sources used in the plan, including the following:

- U.S. Census Bureau American Communities Survey, 2015-2019, 5-Year Estimates
- California Department of Finance Population Projections, series published January 2020
- SANDAG 2016 Population and Housing Estimates (2019 Vintage)
- SANDAG 2050 Regional Growth Forecast- Series 14 Regional Growth Forecast, Sustainable Communities land use pattern
- Second-Generation SANDAG Activity-Based Model (ABM2+) Release v14.2.2 (newer release)
- California Office of Environmental Health Hazard Assessment (OEHHA) CalEnviroScreen 3.0

Identifying the San Diego Region's Disadvantaged Communities

Appendix H of the Regional Plan identified the San Diego Region's disadvantaged communities for analyses required by Title VI and California Assembly Bill 805 (AB 805).

Pursuant to Title VI, Executive Order 12898 and the 1999 Department of Transportation Memorandum "Implementing Title VI Requirements in Metropolitan and State Planning," SANDAG provided information on the effects of the Regional Plan on low-income and minority populations. The percent change in social equity performance measures is calculated between each disadvantaged and non-disadvantaged population for each phase of the plan (2025, 2035, and 2050). SANDAG also analyzed the effects on the senior population in the region across the same measures and phase years. For this analysis, each disadvantaged population and its respective non-disadvantaged population were evaluated against the same performance measures as those in Appendix H of the Regional Plan.

For each performance measure, the social equity calculation was conducted as follows:

Step 1: Percentage differences between the amendment (Build) and the 2021 Regional Plan (No-Build) were calculated for each horizon year (2025, 2035, and 2050), respective disadvantaged and non-disadvantaged population, and measure.

Step 2: Figures for the disadvantaged populations were compared to the respective non-disadvantaged populations to determine the percentage point difference between the groups. When the social equity calculation returns a positive number, such as 1.0, it indicates that the disadvantaged population is projected to receive a larger benefit relative to the non-disadvantaged population over the phase years of the amendment, with the exception of the change in percentage of income spent on out-of-pocket transportation costs and exposure to PM_{2.5}. Since these are burden measures, increase in value is an increased burden. For the rest, when the social equity calculation is a negative number, it indicates that the disadvantaged population is projected to receive less of a benefit than the non-disadvantaged population over the phase years of the amendment. A social equity calculation of 0.0 would be parity; in other words, it would indicate that conditions for the two populations were improving at the same rate.

Step 3: Percentage differences of more than 20 points in the Step 2 social equity calculation would be considered a potential disparate impact or disproportionate effect. If a potential disparate impact or disproportionate effect had been found, SANDAG would have considered alternatives and mitigation that would reduce the impact/effect.

4. Example Social Equity Calculation

Figure SE3-1: Example Social Equity Calculation

Regionwide Transit Access to Higher Education Percentage of Population within 45 Minutes via Transit		
Demographics	2050 No-Build (NB)	2050 Amendment (AM) Build
Minority	82.78%	82.77%
Non-Minority	75.43%	75.38%

Step 1: Percentage Difference

Minority = 2050AM-2050NB = 82.77%-82.78% = -0.01%

Non-Minority = 2050AM-2050NB = 75.38%-75.43% = -0.05%

Step 2: Percentage Point Difference between Pop/Non-Pop

(Minority Percentage Difference-Non-Minority Percentage Difference) × 100

(-0.01% - [-0.05%]) = 0.0004

0.0004 × 100 = 0.04

Pursuant to AB 805, SANDAG must also identify disadvantaged communities as designated under Health and Safety Code Section 39711 and include transportation strategies in the Regional Plan to reduce pollution exposure in these communities. To carry out the mandate under Section 39711, OEHHA has developed a screening/mapping tool called the California Communities Environmental Health Screening Tool (CalEnviroScreen) to identify disproportionately impacted communities. This statewide tool evaluates multiple pollutants and stressors at the Census Tract level. SANDAG used the data to identify the projects, strategies, and programs included in the plan and amendment that reduce pollution exposure for those affected communities.

5. Title VI: Social Equity Performance Measures

The following section describes the results for the amendment for each social equity performance measure identified in Appendix H. As discussed below, no performance measures resulted in a 20% difference between non-disadvantaged and disadvantaged populations. Additionally, the amendment would result in a less than 2% change in all performance measures.

Access to Basic Needs

This performance measure looks at the percentage of population whose transit travel time is within 30 minutes midday to medical facilities and 15 minutes midday to parks and retail. For access to medical facilities, the travel time is increased because medical facilities are more dispersed throughout the region.

Population Within 15 Minutes of Retail. Retail includes regional shopping centers, neighborhood shopping centers, specialty commercial, arterial commercial, automobile dealerships, other retail, and strip commercial. In the Regional Plan, access by walking and biking is relatively high, while access by transit is relatively low. Under the amendment access to retail by mode of transportation would be similar to access under the plan. These are shown in Table SE4-1.

Table SE4-1: Percentage of Population Regionwide Within 15 Minutes of Retail

Percentage of Population Regionwide within 15 Minutes of Retail: Access by Walk, Bike, or Transit								
Demographics	Transit Mode	2016	Approved Plan (No-Build)			Amendment (Build)		
			2025	2035	2050	2025	2035	2050
Low Income	Walk	76.6%	78.8%	80.5%	81.1%	78.8%	80.5%	81.1%
	Bike	96.0%	96.2%	96.7%	97.0%	96.2%	96.7%	97.0%
	Transit	70.4%	72.8%	75.5%	76.1%	72.8%	75.5%	76.1%
Non-Low Income	Walk	65.3%	68.6%	71.4%	72.5%	68.6%	71.4%	72.5%
	Bike	95.4%	96.4%	97.3%	97.7%	96.4%	97.3%	97.7%
	Transit	55.6%	59.0%	63.1%	64.3%	59.0%	63.1%	64.3%
Minorities	Walk	73.2%	75.0%	76.4%	76.7%	75.0%	76.4%	76.7%
	Bike	97.0%	97.5%	97.9%	98.2%	97.5%	97.9%	98.2%
	Transit	66.0%	67.5%	69.6%	69.7%	67.5%	69.6%	69.7%
Non-Minorities	Walk	64.0%	67.0%	69.9%	70.5%	67.0%	69.9%	70.5%
	Bike	93.9%	94.8%	95.8%	96.2%	94.8%	95.8%	96.2%
	Transit	53.7%	57.0%	61.4%	62.3%	57.0%	61.4%	62.3%
Senior	Walk	66.8%	68.9%	71.9%	73.8%	68.9%	71.9%	73.8%
	Bike	95.0%	95.8%	97.0%	97.6%	95.8%	97.0%	97.6%
	Transit	57.7%	59.3%	63.6%	66.0%	59.3%	63.6%	65.9%
Non-Senior	Walk	69.0%	71.8%	74.1%	74.9%	71.8%	74.1%	74.9%
	Bike	95.6%	96.4%	97.1%	97.5%	96.4%	97.1%	97.5%
	Transit	60.5%	63.3%	66.8%	67.6%	63.3%	66.8%	67.6%

Source: SANDAG, 2023

Overall, there would be a 0.01% or less change between the disadvantaged populations and their respective non-disadvantaged populations for all modes of travel and each horizon year between the Regional Plan and amendment as shown in Table SE4-2, therefore the amendment would not result in either a disparate impact or disproportionate effect on disadvantaged communities for this measure.

Table SE4-2: Social Equity Calculation: Percentage of Population Within 15 Minutes of Retail

Social Equity Calculation: Percentage of Population Regionwide within 15 Minutes of Retail Percentage Point Difference Build vs. No-Build				
Demographics	Mode	2025	2035	2050
Low Income vs. Non-Low Income	Walk	0.00	0.00	0.00
	Bike	0.00	0.00	0.00
	Transit	0.00	0.00	0.00
Minority vs. Non-Minority	Walk	0.00	0.00	0.00
	Bike	0.00	0.00	0.00
	Transit	0.00	0.01	0.00
Senior vs. Non-Senior	Walk	0.00	0.00	0.00
	Bike	0.00	0.00	0.00
	Transit	0.00	0.00	0.00

Source: SANDAG, 2023

Population Within 15 Minutes of Active Parks. Active Parks include recreation areas and centers containing one or more of the following activities: tennis or basketball courts, baseball diamonds, soccer fields, or swings. Smaller neighborhood parks with a high level of use are also included as active parks. In the Regional Plan, disadvantaged populations’ access to parks via bike is comparable to access via driving alone in the base year of 2016, and access by transit is substantially lower across all populations. Under both the plan and amendment, access via transit would improve for all populations.

Table SE4-3: Percentage of Population Within 15 Minutes of Parks

Percentage of Population Regionwide within 15 Minutes of Parks: Access by Walk, Bike, or Transit								
Demographics	Transit Mode	2016	2021 Regional Plan (No-Build)			Amendment (Build)		
			2025	2035	2050	2025	2035	2050
Low Income	Walk	52.6%	54.2%	54.8%	55.0%	54.2%	54.8%	55.0%
	Bike	94.0%	95.0%	95.2%	95.6%	95.0%	95.2%	95.6%
	Transit	46.1%	49.3%	52.2%	53.5%	49.3%	52.2%	53.5%
Non-Low Income	Walk	50.3%	52.1%	52.8%	52.9%	52.1%	52.8%	52.9%
	Bike	93.2%	94.5%	95.1%	95.7%	94.5%	95.1%	95.7%
	Transit	35.8%	38.6%	41.5%	42.5%	38.6%	41.5%	42.5%
Minorities	Walk	55.2%	56.2%	55.7%	55.2%	56.2%	55.7%	55.2%
	Bike	95.8%	96.2%	96.1%	96.4%	96.2%	96.1%	96.4%
	Transit	44.7%	46.4%	47.4%	47.4%	46.4%	47.4%	47.4%
Non-Minorities	Walk	46.2%	48.0%	49.6%	49.8%	48.0%	49.6%	49.8%
	Bike	90.9%	92.6%	93.7%	94.2%	92.6%	93.7%	94.2%
	Transit	32.5%	35.5%	39.8%	41.0%	35.5%	39.8%	41.1%

Percentage of Population Regionwide within 15 Minutes of Parks: Access by Walk, Bike, or Transit								
Demographics	Transit Mode	2016	2021 Regional Plan (No-Build)			Amendment (Build)		
			2025	2035	2050	2025	2035	2050
Senior	Walk	48.2%	50.6%	52.7%	53.8%	50.6%	52.7%	53.8%
	Bike	92.5%	93.7%	95.1%	95.9%	93.7%	95.1%	95.9%
	Transit	36.6%	38.5%	42.2%	44.3%	38.5%	42.2%	44.3%
Non-Senior	Walk	51.2%	52.9%	53.4%	53.4%	52.9%	53.4%	53.4%
	Bike	93.5%	94.7%	95.2%	95.7%	94.7%	95.2%	95.7%
	Transit	39.2%	42.0%	44.7%	45.5%	42.0%	44.7%	45.5%

Source: SANDAG, 2023

Overall, there would be a 0.01% or less change between the disadvantaged populations and their respective non-disadvantaged populations for all modes of travel and each horizon year between the Regional Plan and amendment as shown in Table SE4-4, therefore the amendment would not result in either a disparate impact or disproportionate effect on disadvantaged communities for this measure.

Table SE4-4: Social Equity Calculation: Percentage of Population Within 15 Minutes of Parks

Social Equity Calculation: Percentage of Population Regionwide within 15 Minutes of Parks Percentage Point Difference Build vs. No-Build				
Demographics	Transit Mode	2025	2035	2050
Low Income vs. Non-Low Income	Walk	0.00	0.00	0.00
	Bike	0.00	0.00	0.00
	Transit	0.00	-0.01	-0.01
Minority vs. Non-Minority	Walk	0.00	0.00	0.00
	Bike	0.00	0.00	0.00
	Transit	0.00	0.00	-0.01
Senior vs. Non-Senior	Walk	0.00	0.00	0.00
	Bike	0.00	0.00	0.00
	Transit	0.00	0.00	0.01

Source: SANDAG, 2023

Population Within 30 Minutes of Medical Facilities/Healthcare. Medical Facilities/Healthcare includes hospitals, community clinics, and medical offices (dentist or ophthalmologist). This definition does not consider emergency response times, but measures access to basic health services including hospitals, community clinics, and medical offices. Under both the Regional Plan and amendment, access via transit for all disadvantaged populations and their respective non-disadvantaged populations would improve for each horizon year. These are shown in Table SE4-5.

Table SE4-5: Percentage of Population Within 30 Minutes of Medical Facilities via Transit or Drive Alone

Percentage of Population Regionwide within 30 Minutes of Medical Facilities via Transit or Drive Alone								
Demographics	Mode	2016	2021 Regional Plan (No-Build)			Amendment (Build)		
			2025	2035	2050	2025	2035	2050
Low Income	Transit	87.1%	88.3%	89.4%	89.8%	88.3%	89.4%	89.8%
	Driving Alone	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Non-Low-Income	Transit	78.1%	79.7%	82.5%	83.9%	79.7%	82.5%	83.9%
	Driving Alone	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Minority	Transit	85.3%	85.5%	86.8%	87.3%	85.5%	86.8%	87.3%
	Driving Alone	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Non-Minority	Transit	76.0%	77.9%	80.6%	81.4%	77.9%	80.6%	81.4%
	Driving Alone	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Seniors	Transit	79.5%	79.6%	82.5%	84.5%	79.6%	82.5%	84.5%
	Driving Alone	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Non-Seniors	Transit	81.1%	82.4%	84.6%	85.5%	82.4%	84.6%	85.5%
	Driving Alone	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Note: For access to medical facilities, the travel time is increased to account for medical facilities being more dispersed throughout the region. Transit accessed by walking or flexible fleet (like shuttles) and driving alone are the two modes included in this measure.

Source: SANDAG, 2023

Overall, there would be no percent change between the disadvantaged populations and their respective non-disadvantaged populations for all modes of travel and each horizon year between the Regional Plan and the amendment as shown in Table SE4-6, therefore the amendment would not result in either a disparate impact or disproportionate effect on disadvantaged communities for this measure.

Table SE4-6: Social Equity Calculation Percentage of Population Within 30 Minutes of Medical Facilities & Healthcare

Social Equity Calculation: Percentage of Population Regionwide within 30 Minutes of Medical Facilities Percentage Point Difference Build vs. No-Build				
Demographics	Travel Times	2025	2035	2050
Low Income vs. Non-Low Income	Transit	0.00	0.00	0.00
	Driving Alone	0.00	0.00	0.00
Minority vs. Non-Minority	Transit	0.00	0.00	0.00
	Driving Alone	0.00	0.00	0.00
Senior vs. Non-Senior	Transit	0.00	0.00	0.00
	Driving Alone	0.00	0.00	0.00

Source: SANDAG, 2023

Access to Employment Centers

This performance measure looks at the percentage of the working-age population (18 years of age or older) who can access employment centers via transit. This measure is calculated for 30- and 45-minute a.m. peak-period travel times. Impacts to seniors are not analyzed for this performance measure as the majority of this group no longer work.

Access to Tier 1 Employment Centers (within a 30- or 45-minute travel time via transit).

Tier 1 employment centers are areas with concentrations of more than 75,000 employees. In the Regional Plan, transit access by 2050 to Tier 1 employment centers for disadvantaged populations is greater when compared to the respective non-disadvantaged population. Results are similar under the amendment. These are shown in Table SE4-7.

Table SE4-7: Regionwide Transit Access to Tier 1 Employment Centers

Regionwide Transit Access to Tier 1 Employment Centers Percentage of Population within 30 and 45 Minutes via Transit								
Demographics	Travel Time	2016	Approved Plan (No-Build)			Amendment (Build)		
			2025	2035	2050	2025	2035	2050
Low Income	30 min	24.5%	29.1%	35.0%	42.1%	29.1%	35.0%	42.1%
	45 min	43.7%	50.1%	57.6%	64.0%	50.1%	57.6%	64.0%
Non-Low-Income	30 min	19.5%	23.2%	29.7%	33.8%	23.2%	29.7%	33.8%
	45 min	34.4%	40.7%	49.7%	56.5%	40.7%	49.7%	56.4%
Minority	30 min	21.3%	25.2%	30.7%	36.6%	25.2%	30.6%	36.6%
	45 min	41.1%	47.3%	53.4%	60.0%	47.3%	53.4%	59.9%
Non-Minority	30 min	20.7%	24.4%	31.7%	34.3%	24.4%	31.7%	34.4%
	45 min	33.3%	38.2%	49.2%	54.9%	38.2%	49.1%	54.9%

Note: Impact of access to employment centers for the senior population, age 75 and older, was not analyzed as the majority of this group no longer work.

Source: SANDAG, 2023

Overall, there would be a 0.08% or less change between the disadvantaged populations and their respective non-disadvantaged populations for all travel distances and each horizon year between the Regional Plan and the amendment as shown in Table SE4-8, therefore the amendment would not result in either a disparate impact or disproportionate effect on disadvantaged communities for this measure.

Table SE4-8: Regionwide Transit Access to Tier 1 Employment Centers

Social Equity Calculation: Regionwide Transit Access to Tier 1 Employment Centers Percentage Point Difference Build vs. No-Build				
Demographics	Travel Times	2025	2035	2050
Low Income vs. Non-Low-Income	30 minutes	0.0	0.01	-0.01
	45 minutes	0.0	-0.01	0.07
Minority vs. Non-Minority	30 minutes	0.0	0.00	-0.05
	45 minutes	0.0	0.08	-0.04

Source: SANDAG, 2023

Access to Tier 2 Employment Centers (within a 30- or 45-minute travel time via transit).

Tier 2 employment centers are areas with concentration of 25,000 to 75,000 employees. In the Regional Plan, transit access to Tier 2 employment centers significantly improves over the phase years for low-income and minority populations. Under the amendment, access to Tier 2 employment centers would slightly decrease for all groups under both 35-minute and 45-minute travel times in year 2035. In addition, low-income and minority populations would experience less access compared to their respective non-disadvantaged populations. These are shown in Table SE4-9.

Table SE4-9: Regionwide Transit Access to Tier 2 Employment Centers

Regionwide Transit Access to Tier 2 Employment Centers Percentage of Population within 30 and 45 Minutes via Transit								
Demographics	Travel Time	2016	Approved Plan (No-Build)			Amendment (Build)		
			2025	2035	2050	2025	2035	2050
Low Income	30 min	55.0%	59.7%	64.7%	67.3%	59.7%	64.6%	67.2%
	45 min	74.4%	78.8%	83.8%	85.1%	78.8%	83.7%	85.1%
Non-Low-Income	30 min	43.1%	48.5%	54.5%	57.0%	48.5%	54.4%	56.9%
	45 min	64.0%	69.6%	75.1%	77.8%	69.6%	75.1%	77.8%
Minority	30 min	50.4%	54.4%	59.1%	61.7%	54.4%	59.1%	61.6%
	45 min	71.8%	75.1%	79.3%	81.4%	75.1%	79.3%	81.4%
Non-Minority	30 min	43.1%	48.1%	54.1%	55.0%	48.1%	54.0%	55.0%
	45 min	62.4%	68.4%	74.3%	75.9%	68.4%	74.2%	75.9%

Note: Impact of access to employment centers for the senior population, age 75 and older, was not analyzed as the majority of this group no longer work.

Source: SANDAG, 2023

Overall, there would be a 0.02% or less change between the disadvantaged populations and their respective non-disadvantaged populations for all travel distances and each horizon year between the approved Plan and the Amendment as shown in Table SE4-10, therefore the Amendment would not result in either a disparate impact or disproportionate effect on disadvantaged communities for this measure.

Table SE4-10: Social Equity Calculation: Regionwide Transit Access to Tier 2 Employment Centers

Social Equity Calculation: Regionwide Transit Access to Tier 2 Employment Centers Percentage Point Difference Build vs. No-Build				
Demographics	Travel Times	2025	2035	2050
Low Income vs. Non-Low Income	30 minutes	0.00	-0.01	0.00
	45 minutes	0.00	-0.02	0.00
Minority vs. Non-Minority	30 minutes	0.00	-0.01	0.00
	45 minutes	0.00	0.01	-0.01

Source: SANDAG, 2023

Access to Any Employment Centers (within a 30- or 45-minute travel time via transit).

In the Regional Plan, overall access to any employment center for disadvantaged populations is high for the Base year 2016 and increases with each horizon year. Under the amendment, access to any employment centers for all disadvantaged populations and their respective non-disadvantaged populations would equally improve for both 30- and 45-minute travel times, and for all horizon years. These are shown in Table SE4-11.

Table SE4-11: Regionwide Transit Access to Any Tier Employment Center

Regionwide Transit Access to Any Tier Employment Center Percentage of Population within 30 and 45 Minutes via Transit (a.m. Peak)								
Demographics	Travel Time	2016	Approved Plan (No-Build)			Amendment (Build)		
			2025	2035	2050	2025	2035	2050
Low Income	30 min	86.9%	88.1%	89.4%	89.8%	88.1%	89.4%	89.8%
	45 min	89.0%	90.2%	91.4%	91.7%	90.2%	91.4%	91.7%
Non-Low-Income	30 min	77.8%	80.1%	83.0%	84.2%	80.1%	83.0%	84.2%
	45 min	79.0%	80.9%	83.7%	85.0%	80.9%	83.7%	85.0%
Minority	30 min	84.9%	85.5%	87.0%	87.4%	85.5%	87.0%	87.4%
	45 min	86.1%	86.3%	87.8%	88.2%	86.3%	87.8%	88.2%
Non-Minority	30 min	76.2%	78.2%	81.0%	81.8%	78.2%	81.0%	81.8%
	45 min	78.0%	79.8%	82.5%	83.5%	79.8%	82.5%	83.5%

Note: Impact of access to employment centers for the senior population, age 75 and older, was not analyzed as the majority of this group no longer work.

Source: SANDAG, 2023

Overall, there would be no percent change between the disadvantaged populations and their respective non-disadvantaged populations for all travel distances and each horizon year between the Regional Plan and the amendment as shown in Table SE4-12, therefore the Amendment would not result in either a disparate impact or disproportionate effect on disadvantaged communities for this measure.

Table SE4-12: Social Equity Calculation: Regionwide Transit Access to Any Tier Employment Center

Social Equity Calculation: Regionwide Transit Access to Any Tier Employment Center Percentage Point Difference Build vs. No-Build				
Demographics	Travel Times	2025	2035	2050
Low Income vs. Non-Low Income	30 minutes	0.00	0.00	0.00
	45 minutes	0.00	0.00	0.00
Minority vs. Non-Minority	30 minutes	0.00	0.00	0.00
	45 minutes	0.00	0.00	0.00

Source: SANDAG, 2023

Access to Higher Education Centers

This performance measure looks at the percentage of population who can access higher education centers, including public and private colleges, universities, community colleges, and vocational training programs. This measure is calculated for 30- and 45-minute a.m. peak-period travel times. Impacts to seniors are not analyzed for this performance measure as the majority of this group no longer pursue higher education.

In the Regional Plan, low-income and minority populations achieve significantly higher access rates via transit to higher education centers through the phase years than their respective non-disadvantaged populations. Under the amendment, access to higher education centers for all demographics for year 2035 and 2050 would remain the same or decrease. The minority and low-income populations would experience greater access to higher education centers in year 2050 compared to their respective non-disadvantaged populations. These are shown in Table SE4-13.

Table SE4-13: Regionwide Access to Higher Education

Regionwide Transit Access to Higher Education Percentage of Population within 30 and 45 Minutes via Transit								
Demographics	Travel Time	2016	Approved Plan (No-Build)			Amendment (Build)		
			2025	2035	2050	2025	2035	2050
Low Income	30 min	51.1%	56.6%	61.1%	62.8%	56.6%	60.9%	62.7%
	45 min	74.9%	80.0%	84.4%	85.8%	80.0%	84.4%	85.8%
Non-Low-Income	30 min	40.7%	46.1%	51.6%	53.4%	46.1%	51.5%	53.4%
	45 min	65.5%	71.1%	76.4%	78.7%	71.1%	76.4%	78.6%
Minority	30 min	48.4%	53.1%	56.7%	58.1%	53.1%	56.6%	58.1%
	45 min	74.5%	78.3%	81.2%	82.8%	78.3%	81.2%	82.8%
Non-Minority	30 min	39.4%	43.8%	50.0%	50.8%	43.8%	49.8%	50.8%
	45 min	62.3%	67.7%	74.2%	75.4%	67.7%	74.2%	75.4%

Note: Impact of access to higher education centers for the senior population, age 75 and older, was not analyzed as the majority of this group no longer attend higher education centers.

Source: SANDAG, 2023

Overall, there would be a 0.14% or less change between the disadvantaged populations and their respective non-disadvantaged populations for all travel distances and each horizon year between the Regional Plan and the amendment as shown in Table SE4-14, therefore the amendment would not result in either a disparate impact or disproportionate effect on disadvantaged communities for this measure.

Table SE4-14: Social Equity Calculation: Access to Opportunities Via Transit to Higher Education Centers

Social Equity Calculation: Regionwide Transit Access to Higher Education (30 and 45 Minutes) Percentage Point Difference Build vs. No-Build				
Demographics	Travel Times	2025	2035	2050
Low Income vs. Non-Low Income	30 min	0.00	-0.14	0.00
	45 min	0.00	0.02	0.03
Minority vs. Non-Minority	30 min	0.00	-0.03	0.01
	45 min	0.00	0.01	0.04

Source: SANDAG, 2023

Access to Transit Stops

This performance measure looks at the percentage of the population residing within 0.5 miles of commuter rail (Tier 1), light rail (Tier 2), Next Gen Rapid (Tier 3), or any Tier of transit.

In the Regional Plan, access to all tiers of transit would improve for all disadvantaged populations and increases under each horizon year. Under the amendment, access to transit stops for all disadvantaged populations and their respective non-disadvantaged populations would equally improve for all horizon years. These are shown in Table SE4-15.

Table SE4-15: Percentage of People Within 0.5 Miles of a Commuter Rail, Light Rail, or NextGen Rapid Transit

Regionwide Access to Rail and Rapid Transit Percentage of Population within 0.5 Miles of Commuter Rail, Light Rail, or Next Gen Rapid							
Demographics	2016	Approved Plan (No-Build)			Amendment (Build)		
		2025	2035	2050	2025	2035	2050
Access to Any Tier (1-3)							
Low Income	11.8%	21.1%	38.9%	41.0%	21.1%	38.9%	41.0%
Non-Low Income	7.9%	16.1%	30.5%	32.8%	16.1%	30.5%	32.8%
Minorities	10.4%	19.0%	34.1%	36.2%	19.0%	34.1%	36.2%
Non-Minorities	7.6%	15.7%	30.9%	32.2%	15.7%	30.9%	32.2%
Senior	8.0%	16.1%	31.7%	34.7%	16.1%	31.7%	34.7%
Non-Senior	9.2%	17.7%	33.0%	35.0%	17.7%	33.0%	35.0%
Commuter Rail (Tier 1)							
Low Income	0.3%	0.7%	3.6%	8.6%	0.7%	3.6%	8.6%
Non-Low Income	0.5%	0.9%	3.2%	6.6%	0.9%	3.2%	6.6%
Minorities	0.3%	0.7%	3.2%	7.1%	0.7%	3.2%	7.1%
Non-Minorities	0.7%	1.1%	3.6%	7.0%	1.1%	3.6%	7.0%
Senior	0.5%	1.1%	3.4%	7.3%	1.1%	3.4%	7.3%
Non-Senior	0.5%	0.8%	3.3%	7.1%	0.8%	3.3%	7.1%

Regionwide Access to Rail and Rapid Transit Percentage of Population within 0.5 Miles of Commuter Rail, Light Rail, or Next Gen Rapid							
Demographics	2016	Approved Plan (No-Build)			Amendment (Build)		
		2025	2035	2050	2025	2035	2050
Light Rail (Tier2)							
Low Income	6.1%	9.3%	11.6%	14.8%	9.3%	11.6%	14.8%
Non-Low Income	3.5%	5.7%	8.0%	11.7%	5.7%	8.0%	11.7%
Minorities	4.9%	7.2%	9.1%	12.3%	7.2%	9.1%	12.3%
Non-Minorities	3.7%	6.2%	8.9%	13.0%	6.2%	8.9%	13.0%
Senior	3.8%	6.1%	8.7%	12.9%	6.1%	8.7%	12.9%
Non-Senior	4.4%	6.8%	9.1%	12.5%	6.8%	9.1%	12.5%
Next Gen Rapid (Tier 3)							
Low Income	6.8%	16.0%	35.5%	37.4%	16.0%	35.5%	37.4%
Non-Low Income	5.2%	13.4%	28.6%	30.7%	13.4%	28.6%	30.7%
Minorities	6.3%	15.1%	31.5%	33.6%	15.1%	31.5%	33.6%
Non-Minorities	5.1%	13.0%	28.8%	29.9%	13.0%	28.8%	29.9%
Senior	5.2%	13.3%	29.7%	32.3%	13.3%	29.7%	32.3%
Non-Senior	5.8%	14.3%	30.6%	32.4%	14.3%	30.6%	32.4%

Source: SANDAG, 2023

Overall, there would be no percent change between the disadvantaged populations and their respective non-disadvantaged populations for all modes of travel and each horizon year between the Regional Plan and amendment as shown in Table SE4-16, therefore the amendment would not result in either a disparate impact or disproportionate effect on disadvantaged communities for this measure.

Table SE4-16: Social Equity Calculation Percentage of People Within 0.5 Miles of a Commuter Rail, Light Rail, or NextGen Rapid Transit

Social Equity Calculation: Regionwide Access to Commuter Rail, Light Rail, and Next Gen Rapid Transit Percentage Point Difference Build vs. No-Build			
Demographics	2025	2035	2050
Access to Any Tier (1-3)			
Low Income vs. Non-Low Income	0.00	0.00	0.00
Minorities vs. Non-Minorities	0.00	0.00	0.00
Senior vs. Non-Senior	0.00	0.00	0.00
Commuter Rail (Tier 1)			
Low Income vs. Non-Low Income	0.00	0.00	0.00
Minorities v. non-Minorities	0.00	0.00	0.00
Senior vs. Non-Senior	0.00	0.00	0.00

Social Equity Calculation: Regionwide Access to Commuter Rail, Light Rail, and Next Gen Rapid Transit Percentage Point Difference Build vs. No-Build			
Demographics	2025	2035	2050
Light Rail (Tier 2)			
Low Income vs. Non-Low Income	0.00	0.00	0.00
Minorities vs. Non-Minorities	0.00	0.00	0.00
Senior vs. Non-Senior	0.00	0.00	0.00
Next Gen Rapid (Tier 3)			
Low Income vs. Non-Low Income	0.00	0.00	0.00
Minorities vs. Non-Minorities	0.00	0.00	0.00
Senior vs. Non-Senior	0.00	0.00	0.00

Source: SANDAG, 2023

Access to Bicycle Facilities

This performance measure looks at the percentage of the population residing within 0.25 miles of a bike facility. Bike facilities include Class I, Class II, Cycletrack, or Bike Boulevard.

In the Regional Plan, disadvantaged populations have greater access to bike facilities than their respective non-disadvantaged populations. Under the amendment, access to bike facilities for all disadvantaged populations and their respective non-disadvantaged populations would equally improve for all horizon years. These are shown in Table SE4-17.

Table SE4-17: Regionwide Access to Bike Facilities (Class I and II, Cycletrack, or Bike Boulevard)

Regionwide Access to Bike Facilities (Class I and II, Cycletrack, or Bike Boulevard) Percentage of Population within 0.25 Miles							
Demographics	2016	Approved Plan (No-Build)			Amendment (Build)		
		2025	2035	2050	2025	2035	2050
Low Income	62.0%	73.1%	77.0%	82.4%	73.1%	77.0%	82.4%
Non-Low-Income	66.3%	73.5%	76.8%	81.2%	73.5%	76.8%	81.2%
Minority	64.8%	74.8%	78.4%	83.0%	74.8%	78.4%	83.0%
Non-Minority	65.1%	71.5%	74.5%	78.4%	71.5%	74.5%	78.4%
Seniors	63.9%	72.3%	76.3%	81.6%	72.3%	76.3%	81.6%
Non-Seniors	65.0%	73.4%	76.9%	81.5%	73.4%	76.9%	81.5%

Source: SANDAG, 2023

Overall, there would be no percent change between the disadvantaged populations and their respective non-disadvantaged populations for each horizon year between the Regional Plan and amendment as shown in Table SE 4-18, therefore the amendment would not result in either a disparate impact or disproportionate effect on disadvantaged communities for this measure.

Table SE4-18: Social Equity Calculation: Regionwide Access to Bike Facilities (Class I and II, Cycletrack, or Bike Boulevard)

Social Equity Calculation: Regionwide Access to Bike Facilities (Class I and II, Cycletrack, or Bike Boulevard) Percentage Point Difference Build vs. No-Build			
Demographics	2025	2035	2050
Low Income vs. Non-Low Income	0.00	0.00	0.00
Minority vs. Non-Minority	0.00	0.00	0.00
Senior vs. Non-Senior	0.00	0.00	0.00

Source: SANDAG, 2023

Particulate Matter Exposure

This performance measure looks at the average particulate matter (PM_{2.5}) exposure from on-road transportation sources per person, per day.

Regarding particulate matter exposure in the Regional Plan, the non-disadvantaged populations would fare better compared to their respective disadvantaged populations with the exception of seniors. The amendment would result in an approximately 1% increase in PM_{2.5} exposure per capita for years 2035 and 2050. Under the amendment, the low-income population would experience a greater rate of exposure to PM_{2.5} compared to the non-low-income population for years 2035 and 2050; however, particulate matter exposure would increase for all populations. These are shown in Table SE4-19.

Table SE4-19: Average Exposure to Particulate Matter (PM_{2.5})

Average Exposure to Particulate Matter (PM _{2.5}): Grams per Capita per Day							
Demographics	2016	Approved Plan (No-Build)			Amendment (Build)		
		2025	2035	2050	2025	2035	2050
Low Income	5.46	5.50	5.63	5.75	5.50	5.70	5.81
Non-Low-Income	4.95	4.94	5.17	5.34	4.94	5.23	5.39
Minority	5.48	5.41	5.50	5.66	5.41	5.57	5.72
Non-Minority	4.68	4.69	4.96	4.98	4.69	5.02	5.03
Seniors	4.87	4.90	5.18	5.43	4.90	5.24	5.48
Non-Seniors	5.13	5.12	5.31	5.45	5.12	5.37	5.50

Source: SANDAG, 2023

Overall, there would be a 0.06% or less change between the disadvantaged populations and their respective non-disadvantaged populations for each horizon year between the Regional Plan and the amendment as shown in Table SE4-20, therefore the amendment would not result in either a disparate impact or disproportionate effect on disadvantaged communities for this measure.

Table SE4-20: Social Equity Calculation: Average Particulate Matter (PM_{2.5})

Social Equity Calculation: Average Particulate Matter (PM _{2.5}) Percentage Point Difference Build vs. No-Build			
Demographics	2025	2035	2050
Low Income vs. Non-Low Income	0.00	-0.04	-0.06
Minority vs. Non-Minority	0.00	0.00	-0.01
Senior vs. Non-Senior	0.00	0.01	0.01

Source: SANDAG, 2023

Income Consumed by Out-of-Pocket Transportation Costs

This performance measure looks at the changes in percentage of income consumed by out-of-pocket transportation costs, which include auto operating costs, cost of tolls, parking costs, taxi and transportation network company fares, and transit fares.

The Regional Plan determined that there is no disparity in the percentage point differences for any of the disadvantaged groups over all horizon years. Under the amendment, the change in out-of-pocket transportation costs out to 2050 for all groups is lower. This is shown in Table SE4-21.

Table SE4-21: Change in Percent of Income Consumed by Out-of-Pocket Transportation Costs

Change in Percent of Income Consumed by Out-of-Pocket Transportation Costs						
Demographics	Approved Plan (No-Build)			Amendment (Build)		
	2025	2035	2050	2025	2035	2050
Low Income	4.8%	4.4%	4.2%	4.8%	3.5%	3.5%
Non-Low-Income	1.6%	2.2%	3.0%	1.6%	1.8%	2.7%
Minority	2.3%	2.1%	2.3%	2.3%	1.6%	1.9%
Non-Minority	2.2%	2.3%	2.5%	2.2%	1.8%	2.2%
Seniors	1.7%	1.8%	2.4%	1.7%	1.3%	2.0%
Non-Seniors	2.5%	2.6%	2.9%	2.5%	2.1%	2.5%

Source: SANDAG, 2023

Overall, there would be a less than 0.6% change in income consumed by out-of-pocket transportation costs between the disadvantaged populations and their respective non-disadvantaged populations for each horizon year between the Regional Plan and the amendment as shown in Table SE4-22, therefore the amendment would not result in either a disparate impact or disproportionate effect on disadvantaged communities for this measure.

Table SE4-22: Social Equity Calculation: Change in Percent of Income Consumed by Out-of-Pocket Transportation Costs

Social Equity Calculation: Change in Percent of Income Consumed by Out-of-Pocket Transportation Costs Percentage Point Difference Build vs. No-Build			
Demographics	2025	2035	2050
Low Income vs. Non-Low Income	0.00	-0.55	-0.42
Minority vs. Non-Minority	0.00	-0.08	-0.06
Senior vs. Non-Senior	0.00	0.04	0.05

Source: SANDAG, 2023

6. AB 805: Transportation Strategies to Reduce Pollution Exposure

The Regional Plan, Appendix A, Attachment 2: California Assembly Bill 805 Strategies to Reduce Pollution Exposure in Disadvantaged Communities, includes a detailed list of the transportation strategies, including projects, policies, and programs, that would reduce pollution exposure in communities comprising the highest 25% and 50% of environmental and socioeconomic vulnerability as determined by CalEnviroScreen 3.0. The removal of the regional RUC from the plan would not result in any revisions to that list.