

# Appendix N: Major Arterials Volume Analysis

To: San Diego Association of Governments and Caltrans District 11  
From: North County Comprehensive Multimodal Corridor Plan Project Team  
Date: October 2022  
Subject: North County Comprehensive Multimodal Corridor Plan – Major Arterials Volume Analysis

## Overview

The North County Comprehensive Multimodal Corridor Plan (CMCP) will identify integrated transportation solutions that enhance the way people travel throughout North County. To help the project team identify issues within the study area and develop a transportation solutions strategy, the project team performed an assessment of major arterials throughout the study area. The assessment identified insights and opportunities to improve North County’s arterials.

## Data and Methodology

The volumes for arterials in the North County CMCP study area were pulled from SANDAG’s Activity Based Model (ABM). SANDAG’s ABM provides a systematic analytical platform so that different alternatives and inputs can be evaluated in an iterative and controlled environment. The model forecasts future travel patterns based on the estimation of current travel behavior. The average weekday traffic volumes for various roadway classes in the study area were utilized for the traffic volume analysis.

Table 1: Volume Analysis Data

Scenario ID	Scenario Year	Scenario Version
582	2016	14.1.1

## Findings

Major arterials account for:

- Over 1300 miles of roadways
- 20% of the study area’s VMT – approximately the same as SR 78 (21%)
- Connect to Activity Centers/Communities
- Provide Alternative Paths to State Highway System
- Provide a Cohesive Mobility Network

Table 2: Volume Analysis – Overview (2016)

Corridor	Length (Miles)	Max of Total Flow	VMT	Percentage of VMT	VHT	Percentage of VHT
Centre City Parkway	12.2	36,161.5	155,587.6	1.42%	5,448.5	1.22%
College Boulevard	9.7	52,192.6	274,912.5	2.51%	13,978.1	3.14%
Del Dios Highway/Valley Parkway	14.3	36,709.0	277,774.4	2.54%	10,165.5	2.29%
El Camino Real	12.8	56,134.8	432,392.4	3.95%	18,201.9	4.09%
Highway 101 (Coast Hwy, Carlsbad Blvd)	12.0	16,678.9	110,333.5	1.01%	3,764.2	0.85%
Melrose Drive	12.0	53,586.1	361,619.5	3.30%	16,135.9	3.63%
Mission Avenue	6.0	28,748.1	79,795.5	0.73%	3,566.9	0.80%
Mission Road - Escondido	4.7	22,758.3	68,216.0	0.62%	3,307.2	0.74%
Mission Road - San Marcos	4.9	21,329.5	76,840.8	0.70%	3,534.9	0.79%
Oceanside Boulevard	7.5	29,226.1	142,279.1	1.30%	5,526.2	1.24%
Palomar Airport Road	6.4	59,632.8	238,542.3	2.18%	10,131.9	2.28%
Rancho Santa Fe	5.7	46,814.0	211,054.3	1.93%	10,182.5	2.29%
San Marcos Boulevard	4.1	44,485.6	133,693.9	1.22%	7,668.1	1.72%
Sycamore Avenue	2.7	56,118.6	86,439.0	0.79%	4,472.3	1.01%
Vista Way	9.6	34,962.1	160,604.6	1.47%	9,281.2	2.09%
SR 76	5.8	37,845.0	190,798.6	1.74%	5,812.4	1.31%
SR 78	35.2	94,139.3	2,308,078.6	21.08%	40,808.3	9.17%
Other Link in Study Area	1,143.7	70,983.0	5,638,056.6	51.50%	272,793.9	61.33%

Figure 1: Estimated Bi-Directional Volume (AM)

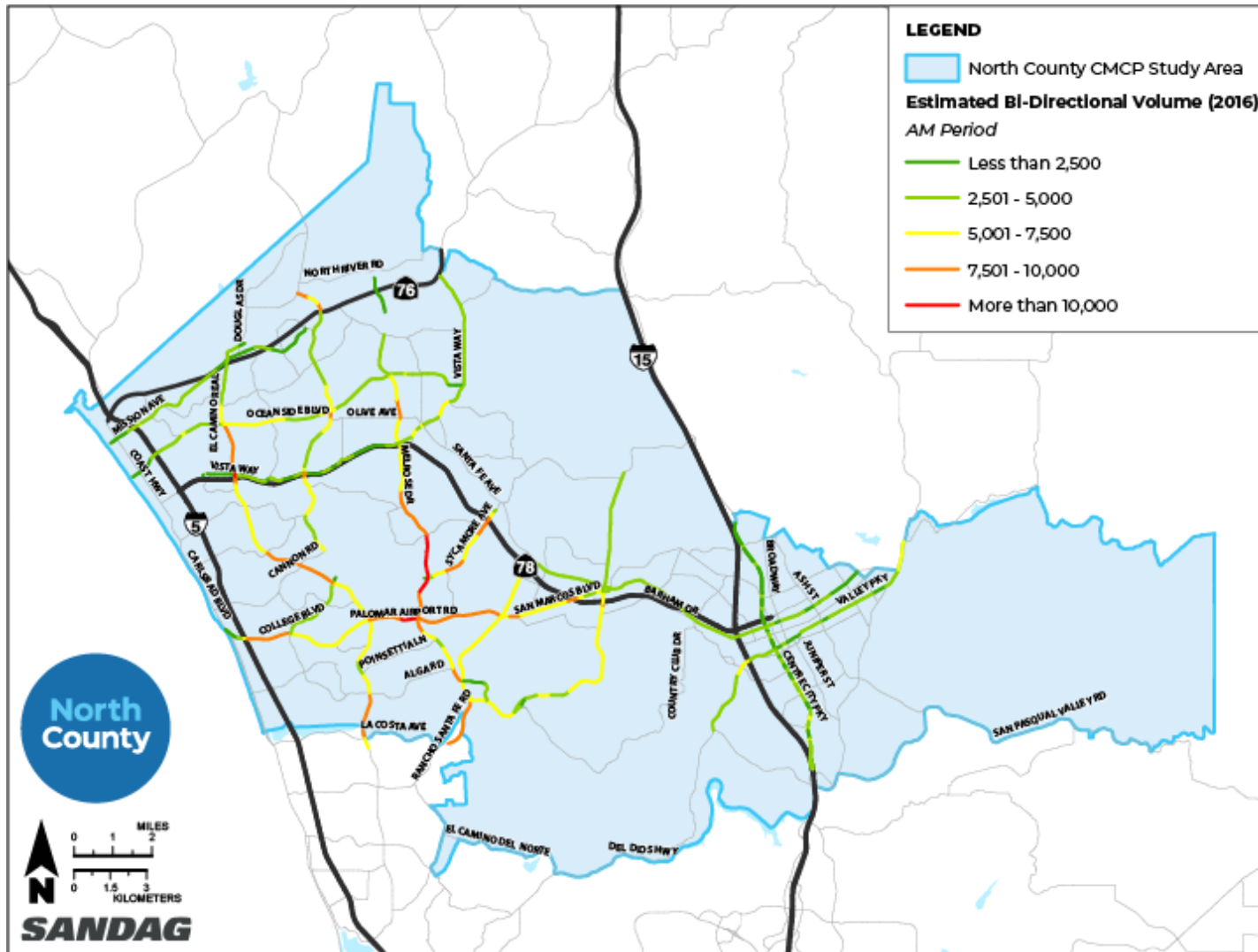


Figure 2: Estimated Bi-Directional Volume (PM)

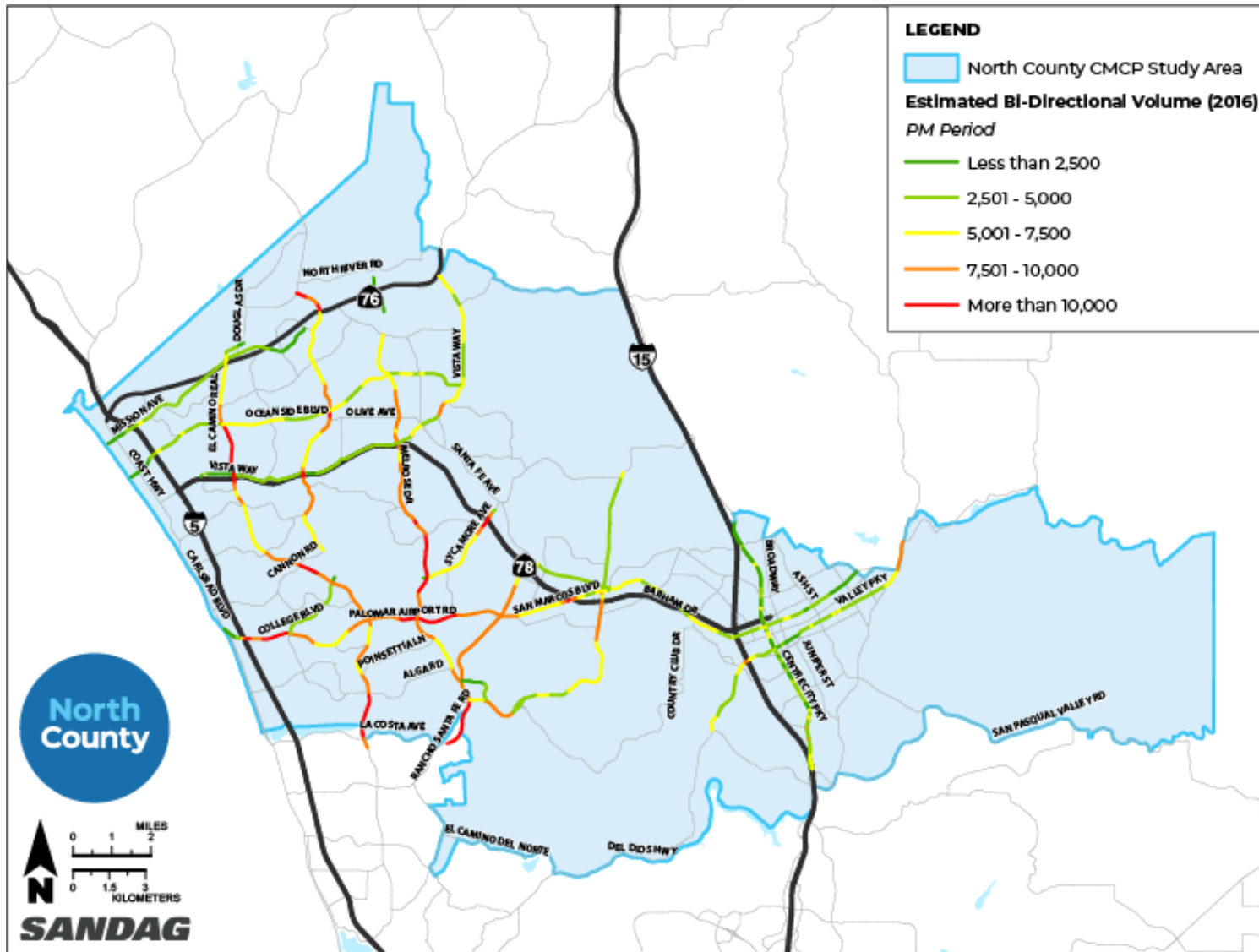


Table 3: Max Flow for Each Corridor Throughout the Day (2016)

Corridor	Max of Early Flow	Max of AM Flow	Max of Midday Flow	Max of PM Flow	Max of Evening Flow
Centre City Parkway	1,929.5	6,467.7	13,815.9	9,430.7	4,881.0
College Boulevard	2,606.1	9,712.4	19,991.1	11,758.8	8,124.2
Del Dios Highway/Valley Parkway	1,791.7	6,845.4	15,125.2	9,447.3	4,943.6
El Camino Real	2,295.1	10,276.1	22,688.2	13,568.0	7,307.3
Highway 101	538.0	3,858.0	6,512.8	5,552.2	1,990.2
Melrose Drive	2,552.8	10,885.8	21,374.3	12,166.7	6,672.6
Mission Avenue	1,065.5	5,472.9	11,850.6	6,604.9	3,754.3
Mission Road - Escondido	770.8	4,535.2	9,356.5	5,665.8	2,725.9
Mission Road - San Marcos	610.3	4,740.3	8,716.8	5,823.7	2,246.8
Oceanside Boulevard	699.0	5,673.2	12,695.2	7,019.3	3,201.0
Other Link in Study Area	4,612.5	14,732.8	26,538.4	17,455.2	9,736.3
Palomar Airport Road	3,038.6	11,536.2	23,558.0	13,024.6	8,475.4
Rancho Santa Fe	2,199.7	9,591.2	17,206.7	11,616.9	6,274.7
San Marcos Boulevard	2,237.3	8,717.7	17,747.2	10,642.0	6,397.0
SR 76	2,439.8	7,576.7	14,892.8	9,041.9	4,369.9
SR 78	6,441.2	18,840.8	35,698.2	22,218.8	11,531.6
Sycamore Avenue	2,360.5	10,510.2	24,453.8	12,208.7	6,585.5
Vista Way	1,833.1	6,774.7	15,681.7	8,563.8	5,249.1

Table 4: Modal Split by Corridor (2016)

Corridor Name	SOV Split	HOV (2) Split	HOV (3) Split	Truck (Freight) Split	Bus (Transit) Split
Centre City Parkway	74.0%	14.8%	7.3%	3.9%	0.0%
College Boulevard	72.0%	14.5%	8.7%	4.6%	0.2%
El Camino Real	73.6%	12.8%	7.1%	6.4%	0.2%
Highway 101	73.2%	13.5%	7.6%	4.7%	1.1%
Melrose Drive	70.1%	13.6%	8.2%	8.0%	0.1%
Oceanside Boulevard	68.9%	14.2%	8.6%	8.0%	0.3%
Other Link in Study Area	70.3%	15.3%	8.9%	5.4%	0.2%
Palomar Airport Road	73.9%	10.5%	6.3%	9.3%	0.0%
San Marcos Boulevard	72.8%	13.9%	8.2%	5.1%	0.0%
SR 76	68.4%	17.2%	9.0%	5.3%	0.0%
SR 78	72.4%	14.0%	6.5%	7.2%	0.0%
Sycamore Avenue	70.4%	10.5%	5.6%	13.4%	0.2%
Vista Way	71.3%	15.3%	8.7%	4.0%	0.7%
Rancho Santa Fe	70.8%	14.5%	7.9%	6.6%	0.2%
Del Dios Highway/Valley Parkway	70.5%	16.9%	7.9%	4.1%	0.5%
Mission Avenue	69.5%	15.2%	9.6%	4.6%	1.0%
Mission Road - Escondido	69.8%	15.8%	9.3%	4.7%	0.3%
Mission Road - San Marcos	68.9%	14.0%	8.6%	7.9%	0.6%
Rancho Santa Fe (outside)	Filtered Out	Filtered Out	Filtered Out	Filtered Out	Filtered Out

Corridor Name	SOV Split	HOV (2) Split	HOV (3) Split	Truck (Freight) Split	Bus (Transit) Split
<b>Other Link Outside of Study Area</b>	Filtered Out	Filtered Out	Filtered Out	Filtered Out	Filtered Out
<b>SR 78 Eastbound</b>	72.4%	13.8%	6.4%	7.3%	0.0%
<b>SR 78 Westbound</b>	72.4%	14.1%	6.5%	7.0%	0.0%
<b>I-15 Northbound</b>	Filtered Out	Filtered Out	Filtered Out	Filtered Out	Filtered Out
<b>I-15 Southbound</b>	Filtered Out	Filtered Out	Filtered Out	Filtered Out	Filtered Out
<b>I-5 Northbound</b>	Filtered Out	Filtered Out	Filtered Out	Filtered Out	Filtered Out
<b>I-5 Southbound</b>	Filtered Out	Filtered Out	Filtered Out	Filtered Out	Filtered Out

Table 5: Estimated Corridor Travel Time throughout the Day (2016)

Corridor Name	Link Length (Miles)	Early Travel Time	AM Travel Time	Mid-Day Travel Time	PM Travel Time	Evening Travel Time
Centre City Parkway	12.2	18.4	21.7	21.2	22.3	18.7
College Boulevard	9.7	19.5	29.1	27.7	29.1	19.5
Del Dios Highway/Valley Parkway	14.3	25.8	33.6	30.9	33.9	25.9
El Camino Real	12.8	25.0	35.2	32.2	33.6	24.9
Highway 101	12.0	22.1	24.2	23.1	24.3	22.0
Melrose Drive	12.0	24.9	35.1	32.0	32.6	24.3
Mission Avenue	6.0	13.5	16.1	15.5	16.0	13.7
Mission Road - Escondido	4.7	11.5	14.1	13.5	13.8	11.4
Mission Road - San Marcos	4.9	10.8	13.6	12.6	13.3	10.7
Oceanside Boulevard	7.5	14.6	18.1	17.5	17.4	14.7
Palomar Airport Road	6.4	11.9	16.5	16.0	16.1	11.9
Rancho Santa Fe	5.7	12.3	18.7	17.1	17.8	12.4
San Marcos Boulevard	4.1	10.9	15.3	14.8	15.2	11.0
SR 76	5.8	8.9	11.6	10.8	11.3	8.7
SR 78	35.2	32.5	38.8	37.1	37.2	32.5
Sycamore Avenue	2.7	6.6	9.8	9.4	8.8	6.4
Vista Way	9.6	25.1	33.4	32.4	32.9	25.2



Table 6: Estimated Corridor Travel Time From A to B (Westbound/Southbound) Throughout the Day (2016)

Corridor Name	Early Travel Time	AM Travel Time	Mid-Day Travel		
			Time	PM Travel Time	Evening Travel Time
Centre City Parkway	18.6	22.1	21.3	21.3	18.5
College Boulevard	20.1	32.0	28.8	27.6	19.5
Del Dios Highway/Valley Parkway	25.9	35.2	30.3	30.3	25.7
El Camino Real	25.1	37.5	32.6	31.2	24.6
Highway 101	21.8	24.3	22.8	22.9	21.8
Melrose Drive	24.8	36.5	32.1	30.5	24.3
Mission Avenue	13.6	16.8	15.5	14.9	13.6
Mission Road - Escondido	11.7	13.5	13.6	14.6	11.8
Mission Road - San Marcos	10.4	13.5	12.3	12.6	10.5
Oceanside Boulevard	14.6	18.4	17.4	16.7	14.6
Palomar Airport Road	11.8	16.0	16.3	16.8	12.0
Rancho Santa Fe	12.5	19.0	17.9	18.8	12.6
San Marcos Boulevard	10.9	15.0	14.6	15.5	11.0
SR 76	9.0	12.6	10.7	10.3	8.6
SR 78	32.5	38.8	37.1	37.2	32.5
Sycamore Avenue	6.6	10.6	9.7	8.7	6.4
Vista Way	26.0	33.4	32.6	32.6	26.0

Table 7: Estimated Corridor Travel Time From B to A (Eastbound/Northbound) Throughout the Day (2016)

Corridor Name	Early Travel Time	AM Travel Time	Mid-Day Travel Time	PM Travel Time	Evening Travel Time
Centre City Parkway	7.1	9.7	9.4	11.0	7.3
College Boulevard	18.6	25.4	26.7	30.0	19.4
Del Dios Highway/Valley Parkway	22.0	26.4	26.6	31.6	22.2
El Camino Real	24.3	30.8	31.5	35.5	24.8
Highway 101	16.9	17.6	17.9	19.5	16.9
Melrose Drive	23.6	31.5	31.0	33.6	24.1
Mission Avenue	13.0	14.4	15.0	16.0	13.1
Mission Road - Escondido	11.4	14.4	13.5	13.0	11.3
Mission Road - San Marcos	10.7	13.5	12.9	14.0	10.8
Oceanside Boulevard	14.8	17.4	17.7	18.0	14.9
Palomar Airport Road	11.8	16.7	15.6	14.9	11.7
Rancho Santa Fe	12.0	18.1	16.4	16.9	12.0
San Marcos Boulevard	11.0	15.8	14.8	14.5	10.9
SR 76	8.5	9.9	10.6	11.7	8.5
Sycamore Avenue	6.6	8.5	8.9	8.8	6.7
Vista Way	25.1	31.5	31.5	32.5	25.4

Table 8: Max V/C Ratio From A to B (Westbound/Southbound) Throughout the Day (2016)

Corridor Name	Max of Early V/C (A to B)	Max of AM V/C (A to B)	Max of Mid-Day V/C (A to B)	Max of PM V/C (A to B)	Max of Evening V/C (A to B)
Centre City Parkway	0.2	0.6	0.5	0.8	0.2
College Boulevard	0.2	0.6	0.6	0.5	0.2
Del Dios Highway/Valley Parkway	0.3	1.0	0.8	0.8	0.2
El Camino Real	0.2	0.6	0.5	0.5	0.1
Highway 101	0.1	0.8	0.5	0.4	0.1
Melrose Drive	0.2	0.7	0.5	0.5	0.1
Mission Avenue	0.1	0.5	0.4	0.4	0.1
Mission Road - Escondido	0.1	0.3	0.4	0.5	0.2
Mission Road - San Marcos	0.1	0.3	0.3	0.3	0.0
Oceanside Boulevard	0.0	0.4	0.3	0.3	0.1
Other Link in Study Area	0.5	1.2	1.1	1.2	0.3
Palomar Airport Road	0.1	0.4	0.4	0.5	0.1
Rancho Santa Fe	0.1	0.4	0.4	0.5	0.1
San Marcos Boulevard	0.1	0.3	0.3	0.3	0.1
SR 76	0.2	0.6	0.5	0.5	0.1
SR 78	0.4	1.2	1.2	1.2	0.3
Sycamore Avenue	0.1	0.5	0.4	0.3	0.1
Vista Way	0.2	0.5	0.6	0.6	0.1

Table 9: Max V/C Ratio from B to A (Eastbound/Northbound) Throughout the Day (2016)

Corridor Name	Max of Early V/C (B to A)	Max of AM V/C (B to A)	Max of Mid-Day V/C (B to A)	Max of PM V/C (B to A)	Max of Evening V/C (B to A)
Centre City Parkway	0.1	0.3	0.4	0.6	0.1
College Boulevard	0.1	0.5	0.5	0.6	0.2
Del Dios Highway/Valley Parkway	0.2	0.8	0.7	1.0	0.3
El Camino Real	0.1	0.5	0.4	0.5	0.1
Highway 101	0.0	0.3	0.4	0.9	0.1
Melrose Drive	0.1	0.4	0.5	0.6	0.1
Mission Avenue	0.0	0.3	0.3	0.4	0.1
Mission Road - Escondido	0.1	0.6	0.5	0.5	0.1
Mission Road - San Marcos	0.0	0.3	0.3	0.3	0.1
Oceanside Boulevard	0.0	0.3	0.3	0.3	0.1
Other Link in Study Area	0.3	1.0	0.9	1.1	0.4
Palomar Airport Road	0.2	0.5	0.4	0.3	0.1
Rancho Santa Fe	0.1	0.4	0.5	0.5	0.1
San Marcos Boulevard	0.1	0.5	0.4	0.4	0.1
SR 76	0.1	0.3	0.4	0.5	0.1
SR 78	0.0	0.0	0.0	0.0	0.0
Sycamore Avenue	0.1	0.4	0.5	0.4	0.1
Vista Way	0.1	0.5	0.5	0.5	0.2