05

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MOBILITY

Metropol

MTS





5.1 The Transportation System

The transportation system plays a major role in the quality of life of community residents, students, and employees. The system functions by moving people and goods from one point to their destination. Providing multiple options for people to reach their destination is key to a successful transportation system. It is important to provide safe, convenient, and comfortable travel options for people of all ages and abilities, whether they are travelling as drivers, pedestrians, bicyclists, or public transportation riders.

Complete Streets help create livable communities for everyone, including children, people with disabilities, adults, and the elderly. They are streets that are planned and designed to enable safe access for people of all ages and abilities and help to create a balanced transportation system for all modes of travel. When all modes of travel are accounted for in a transportation system, it creates a complete network with multiple options for people to travel to school, shops, work, and places to enjoy everyday activities and recreate.



This graphic from SANDAG's San Diego Forward: The Regional Plan showcases a multi-modal, flexible transportation system in which people have multiple options to travel. (photo credit: SANDAG)

5.2 Vehicular Needs

This section presents vehicular needs synthesized from the observations and analysis of the existing conditions report. The sections which follow summarize the needs of the other core transportation modes (transit, bicycling and walking) which are also part of a Complete Streets framework.

Streets and freeways comprise the framework of the transportation system and play a major role in shaping the urban form and quality of life within the community. When the street system is unsafe or congested, it impedes mobility options and has a negative impact on economic activity and community quality of life. The roadways affected by congestion during peak periods (measured by vehicular travel speeds observed at less than half of the posted speed limit) and intersections with the most traffic collisions between 2014 and 2018 are shown in Figure 5-1.

FREEWAYS

The College Area community is bounded to the north by Interstate 8, with access to the freeway at three interchanges (from west to east): Fairmount Avenue, College Avenue, and 70th Street. Interstate 8 has five lanes in each direction from the western extents of the community at Fairmount Avenue, and reduces to four lanes in each direction as it progresses to the east of the community at 70th Street. During the morning peak commute period, drivers experience congestion along Interstate 8 in the westbound direction; to a lesser extent, drivers experience congestion along Interstate 8 in the eastbound direction during the evening commute peak period.

TRAFFIC VOLUMES AND VEHICULAR SPEEDS

There are several major arterial corridors in the community: Fairmount Avenue / Montezuma Road, College Avenue, El Cajon Boulevard, and 70th Street. College Avenue between Interstate 8 and Montezuma Road experiences congestion during Midday and PM peak periods. This congestion is primarily caused by the heavy traffic volumes, closely spaced signalized intersections (450 feet between Canyon Crest Avenue and Interstate 8 westbound ramps), and unbalanced lane utilization attributed to the interchange configuration (i.e. both eastbound and westbound onramps are on the east side).

The heaviest volumes are carried by Fairmount Avenue, north of Montezuma Road (~87,000 daily trips). This section of roadway facilitates heavy demand for access to the Interstate 8 freeway from most of the College Area as well as neighboring Mid-City communities. Fairmount Avenue north of

Montezuma Road, and Montezuma Road west of SDSU, experience slow travel speeds during the morning peak period due to the heavy demand for access to Interstate 8 and the freeway's congested conditions spilling over onto those roadways.

70th Street carries between 22,000 and 30,000 daily trips between Interstate 8 and El Cajon Boulevard, and experiences congestion consistent with peak freeway directionality during the morning and evening commute periods. El Cajon Boulevard carries 18,000 to 25,000 daily trips along the southern boundary of College Area and experiences minimal congestion at key intersections, such as College Avenue.

SAFETY

The City of San Diego is implementing a Safe Systems approach to help achieve the Vision Zero initiative. Both Vision Zero and Safe Systems look to evaluate, plan, and design a transportation system which eliminates fatalities and severe injuries despite human mistakes. This approach applies to each of the core transportation modes.

Within the College Area, there were approximately 420 vehicular-only collisions resulting in injury occurring over a five-year period between 2014 and 2018. The intersections with the most vehicular collisions were concentrated along the Montezuma Road, College Avenue and El Cajon Boulevard corridors.

The following intersection locations experienced eight or more vehicular collision resulting in injury during the 5-year study period:

- Collwood Boulevard and Montezuma Road (12)
- 54th Street and El Cajon Boulevard (11)
- College Avenue and Montezuma Road (10)
- College Avenue and Campus Drive (10)
- Catoctin Drive and Montezuma Road (8)

With 87,000 daily trips, Fairmount Avenue, north of Montezuma Road, carries the heaviest traffic volume in the Plan College Area.

- 56th Street and El Cajon Boulevard (10)
- Dayton Street and El Cajon Boulevard (8)

Figure 5-1 Vehicular Needs





5.3 Transit Needs

The City of Villages growth strategy supports better utilization of the region's transit system by directing the development of urban villages, employment centers, and other higher intensity land uses in areas that can be well served by transit. This will allow more people to live and work within walking distance of transit.

The College Area community is served by the San Diego Trolley Green Line, Rapid and local bus routes. SDSU Transit Center is the main hub in the community, and all routes except for MTS route I connect to the transit center. Four of the eight bus routes serving the College Area operate at headways of fifteen minutes or less during peak periods. Although there are some low density areas just beyond a guarter mile from a bus stop, most of the community's population lives within a quarter mile of a bus stop. Destinations and places reached by the College Area-serving bus routes include Downtown, Fashion Valley, East San Diego, Southeastern San Diego / Encanto, La Mesa, National City, and Spring Valley.

MTS routes II, 936, and 955 currently operate through the community and terminate at the SDSU Transit Center. These routes are planned to be upgraded to a Rapid service in the future, which will facilitate faster, longer distance service by potentially incorporating transit priority treatments along portions of alignments, and other measures which may reduce dwell times. Slow traffic speeds along Montezuma Road (west of SDSU) during peak periods affects transit performance and reliability within the community. In addition, Pedestrian safety is a major issue which impacts transit users. Many of the pedestrian-injury collisions within the College Area occurred near the SDSU campus, where many transit routes converge. These transit needs are illustrated in Figure 5-2.

ON-TIME PERFORMANCE

College Avenue and Montezuma Road, near the approaches to SDSU Transit Center, experience the busiest transit activity in the community: there are seven bus routes utilizing a portion of those roadways as part of their alignment to and from the transit center. College Avenue between Paseo Lindo and Montezuma Road is congested during the midday and evening peak periods, and Montezuma Road experiences traffic congestion and slower travel speeds westbound during the morning peak period, which can negatively impact the reliability of bus services. With no priority treatments for buses within the community, buses are frequently stuck in the same congestion as private vehicles. Implementation of transit priority measures may be desired along some portions of roadway in the vicinity of SDSU.

SAFETY

Nearly all transit users access transit stops by walking, although some users also access transit by bicycling. Frequent occurrences of pedestrian and bicycle collisions near a transit stop may indicate potential safety risk for transit users. The most pedestrian and bicycling collisions near a transit stop occurred at 54th Street and El Cajon Boulevard, where 10 collisions occurred within 500 feet of the bus stops at that intersection over the five-year study period between 2014 and 2018. Bus stops near the intersection of College Avenue and El Cajon Boulevard also experience higher pedestrian and bicycle collisions when compared to collisions throughout the entire community.

With no dedicated transit priority freatments for buses anywhere in the community, buses are frequently stuck in the same congestion as private vehicles.

The RTP calls for upgrades to several existing College Areaserving local bus routes (Routes 11, 936 and 955) to Rapid-branded service by 2035.



Nearly all transit users access transit stops by walking or bicycling.

Many pedestrian and bicycling collisions have also occurred along College Avenue and Montezuma Road near SDSU. Transit users accessing the SDSU Transit Center from other directions have options to avoid College Avenue and Montezuma Road, including by way of parallel streets Campanile Drive and Hardy Avenue (from the south and west), and the Aztec Walk (from the west and east), which includes a pedestrian and bicycle grade separated crossing over College Avenue near the transit center.

PLANNED TRANSIT IMPROVEMENTS

SANDAG's San Diego Forward: The Regional Plan and 2019 Federal Regional Transportation Plan Update (RTP) identifies upgrades to several existing transit services in and around the College Area community.

The current RTP plans for the following transit service improvements:

SANDAG is currently in the process of developing and identifying improvements for the 2050 Regional Transportation Plan, which will feature the agency's 5 Big Moves transportation strategy. The strategy aims to design the region's future transportation system around high-speed transit, multimodal corridors, mobility hubs, first and last mile mobility options, and transportation systems technology. Some of the transit improvements that had been previously identified in the 2019 RTP may not be carried forward in this latest update of the Regional Transportation Plan.

• Upgrade of bus routes 11,936 and 955 to rapid transit service by the year 2035. Rapid transit service may include faster, longer distance service, improved all-day frequencies, transit priority measures and other potential measures which may reduce dwell time.

• Conversion of the existing Rapid 215 alignment to light rail service (first phase to Mid-City planned opening in 2050.

Improved frequencies for the San Diego Trolley Green Line.







5.4 Bicycle Needs

Bicycle infrastructure should provide for the safety and comfort of its users, and the bicycle network should be very well connected across a community. Safety and comfort are paramount considerations, since by nature, active travelers are more exposed than those inside a vehicle. Unsafe or uncomfortable conditions discourage the decision to make a trip by bike. Network connectivity is also paramount, since safe, comfortable infrastructure will not be useful if destinations cannot be reached.

Bicycle needs are found throughout the College Area. Needs are identified by locations with a high number of bicycle collisions, the amount of stress likely to be experienced by a bicyclist, lack of existing bicycle facilities, and high cycling demand.

EXISTING BICYCLE FACILITIES

Figure 5-3 shows existing and planned facilities (based on the City's Bike Master Plan) in the College Area. There are three general classifications of bicycle facilities within the community totaling 10.7 miles, including:

Class I - Bike Path (also termed shared-use or multi-use paths): Bike paths are paved right-of-way for exclusive use by bicyclists, pedestrians, and those using non-motorized modes of travel. They are physically separated from vehicular traffic and can be constructed in roadway right-of-way or exclusive right-of-way.

There are 10.7 miles of bicycle facilities in the Plan College Area.

There are two Class I bike paths totaling 0.8 miles within the College Area, both paths are located within the SDSU campus: one path (Aztec Walk) runs west to east and features a bridge overpass of College Avenue; the other path runs north-south extending from Campanile Drive north of Hardy Avenue. The paths are exclusive to bicyclists and other micromobility users; however, they are comprised within a section of a wider campus pedestrian promenade right of way, and pedestrians have exclusive use of the rest of the promenade width. These are the only two sections of the SDSU campus's promenade system where wheeled mobility is allowed to operate.

There are two Class I bike paths within the College Area totaling 0.8 miles, both paths are adjacent to walkways within the internal circulation system of the SDSU campus.

At the periphery of the western community boundary is a paved bike path providing northbound cyclists along Fairmount Avenue a grade separated facility over Interstate 8 freeway ramps, terminating at the intersection of Camino Del Rio North and Fairmount Avenue. The bike path physically separates bicyclists from vehicular traffic, eliminating conflicts between the two user groups.

Class II - Bike Lane: Bike lanes are defined by pavement striping and signage used to allocate a portion of a roadway for exclusive or preferential bicycle travel. Bike lanes are one-way facilities on either side of a roadway.

The following sections of bike lanes traverse the study area (with their origin or destination area noted, if it is outside the College Area). They include:

- Alvarado Road from College Avenue to Reservoir Drive

- (Kensington-Talmadge)
- Collwood Way from Montezuma Road to El Cajon Boulevard
- 70th Street from Alvarado Road to University Avenue (La Mesa)

Class III - Bike Route: Bike routes provide shared use with motor vehicle traffic within the same travel lane and are frequently marked with a sharedlane marking. Designated by signs, bike routes provide continuity to other bike facilities or designate preferred routes through corridors with high demand.



The Class I Aztec Walk path is exclusive to bicyclists and micro-mobility users.



The addition of parked cars, safe-hit posts, transit islands or other physical barriers would upgrade this Class II bike lane to a Class IV, or separated bike lane.



This Class III bike lane is denoted by a share-lane sign.

- Yerba Santa Drive from Palo Verde Trail to Mesquite Road
- Remington Rd/55th Street from Hewlett Drive to Montezuma Road
- Montezuma Road from Camino Del Rio South to 55th Street
- Montezuma Road from Campanile Drive to Reservoir Drive
- Fairmount Avenue from Montezuma Road to Burnham Place
- College Avenue from Zura Way to Montezuma Road

Figure 5-3 Existing and Planned Bicycle Facilities





There are a few sections of bike routes within the College Area, which include:

- Scripps Trail from 300ft South of Hilltop Way to Avenue of Arts
- Avenue of Arts from Scripps Trail to Aztec Circle Drive
- Aztec Circle Drive from Avenue of Arts to College Avenue
- Aztec Walk from 55th Street to Aztec Bowl
- Montezuma Road from Reservoir Drive to El Cajon Boulevard
- El Cajon Boulevard from Collwood Boulevard to 73rd Street

BICYCLE SAFETY

Within the College Area there were an estimated 50 bicycle-involved collisions resulting in injury occurring over a five-year period between 2014 and 2018. There were two intersection locations with two or more bicycling collision resulting in injury:

- 54th Street and El Cajon Boulevard (4)
- College Avenue and Montezuma Road (2)

All of the major corridors within the College Area are LTS 3 or LTS 4 in their entirety through the community, including Montezuma Road, College Avenue, Collwood Boulevard, and El Cajon Boulevard.

Between 2014 and 2018, there were 50 bicycling-involved collisions in the College Area, with the most occurring at 54th Street and El Caion Boulevard.

BICYCLE LEVEL OF TRAFFIC STRESS

Bicycle Level of Traffic Stress (LTS) classifies the street network according to the estimated level of stress it causes cyclists. The measure takes into consideration a cyclist's physical separation from vehicular traffic, posted speed limits and number of travel lanes along a roadway, in addition to factors which may be present at intersection approaches such as right-turn only lanes and uncontrolled crossings. LTS scores range from 1 (lowest stress) to 4 (highest stress) and correspond to roadway conditions that different cycling demographics would find suitable for riding based on stress tolerance. LTS 2 or lower is considered suitable for most user groups.

All of the major corridors within the College Area are LTS 3 or LTS 4 in their entirety through the community, including Montezuma Road, College Avenue, Collwood Boulevard, and El Cajon Boulevard. The majority of the low stress roadways within the community are discontinuous residential streets. Therefore, there are currently no low-stress routes that span the community in either direction (North/South or East/West).

BICYCLE DEMAND/PRIORITY

Bicycle Priority Areas are determined using the City of San Diego's Bicycle Priority Model. The model considers demand-based factors: intercommunity demand, explained by the presence or proximity and centrality to major activity centers such as smart growth areas and employment centers; and intra-community demand, based on concentrations of land uses and varieties of population. The model also accounts for bicycle detractors based on collision history, traffic volumes, posted speeds, travel lanes, and slope, which are combined with demand to determine priority.

Based on the Bicycle Priority Model, El Cajon Boulevard, Montezuma Road and College Avenue have higher bicycle demand and priority characteristics within the community.

The bicycle needs described previously are shown in Figure 5-4.

Bicycle Level of Traffic Stress (LTS) classifies the street network according to the estimated level of stress it causes cyclists. This measure is calculated based on factors such as speed limits, distance between the cyclist and vehicles, and intersection design. There are four levels of traffic stress, classified below:

- cross.

- may not readily yield.

Bicycle Level of Traffic Stress (LTS)

• LTS I: Comfortable for all ages and abilities. Bicyclists are either physically separated from traffic, or interact with only occasional, slowmoving motor vehicles. Bicyclists are not in danger of having car doors opened onto them, and intersections are easy to approach and

• LTS 2: Comfortable for most adults. Bicyclists are in a dedicated bike lane either physically separated from traffic or next to a well-defined stream with ample distance between the bike and motor lanes. Crossings are unambiguous and comfortable for most adults.

• LTS 3: Comfortable for confident bicyclists. Bicyclists have either an exclusive lane next to moderate speed traffic, or share the road with lower speed traffic. Crossings are longer or higher speed than LTS 2, but are still considered safe by most adult pedestrians.

• LTS 4: Comfortable only for experienced bicyclists. Roadways that have no defined bicycle lanes and moderate to high speed traffic, or a dedicated lane next to high speed traffic. Crossings are challenging and involve multiple lanes of traffic at higher speeds and volumes where gaps may be infrequent and motorists









Figure 5-4 Bicycle Needs





5.5 Pedestrian Needs

The pedestrian environment affects an entire community, whether walking to transit, a store, school, or simply walking from a parked car to a building. Most people prefer walking in places where there are sidewalks shaded with trees, lighting, interesting buildings or scenery to look at, other people outside, quality neighborhood destinations, and a feeling of safety. Pedestrian improvements in areas with land uses that promote pedestrian activities can help to increase walking as a means of transportation and recreation. Land use and street design recommendations that benefit pedestrians also contribute to the overall quality, vitality, and sense of community of neighborhoods.

Pedestrian needs identified in the study area include locations with high pedestrian injury collisions, sidewalk connectivity issues, high existing pedestrian activity, and high pedestrian priority, as reported by the updated City of San Diego's Pedestrian Priority Model. These needs are depicted in **Figure 5-5**.



Street trees that provide shade create a pleasant and healthy pedestrian experience.

PEDESTRIAN SAFETY

Within the College Area there were approximately 60 pedestrian-involved collisions resulting in injury occurring over the five-year study period (between 2014 and 2018). There were five intersection locations with three or more vehicular collisions resulting in injury:

- College Avenue and El Cajon Boulevard (6)
- College Avenue and Montezuma Road (4)
- 55th Street and Montezuma Road (3)
- Reservoir Drive and Montezuma Road (3)
- 70th Street and El Cajon Boulevard (3)

Between 2014 and 2018, there were 59 pedestrian-involved collisions in the College Area, with the most occurring at College Avenue and El Cajon Boulevard.



Unambiguous crossings and stoplights are important for pedestrian safety, especially on streets with high traffic volumes.

SIDEWALK CONNECTIVITY

Connectivity is an important feature to consider for increasing walking activity levels across a community. A disconnected pedestrian network discourages active trip-making. Furthermore, a discontinuous network with low-quality or unsafe segments may cause a potential pedestrian traveler to choose driving instead of walking. Understanding barriers to connectivity, such as low-quality or missing sidewalk, is important for guiding long range planning recommendations.

Sidewalk gaps occur along connections to adjacent communities, such as along College Avenue between Interstate 8 and Aztec Circle Drive (near the Navajo community) and along Montezuma Road between Fairmount Avenue and 54th Street (near the Kensington-Talmadge community). In addition to the lack of sidewalks, there are topographical and freeway barriers which make these corridors impractical pedestrian inter-community connections.

Portions of sidewalk are missing along both sides of Alvarado Road west of the Alvarado Trolley Station. A larger stretch of sidewalk is missing on the north side of Alvarado Road, where no fronting uses exist except for the trolley station. Access to the trolley station is maintained with an 850' segment of sidewalk on the north side of Alvarado Road between crossing locations at Alvarado Medical Center Driveway and Reservoir Drive.

PEDESTRIAN PRIORITY MODEL

Pedestrian Priority Areas are determined using the City of San Diego's Pedestrian Priority Model. The model considers pedestrian-attracting land uses, population and demographic concentrations, and roadway environment characteristics. The model uses these factors to determine the areas where pedestrian demand is likely to be high and improvements may be most beneficial. Portions of the College Area near the SDSU campus and along the El Cajon Boulevard corridor are among the highest pedestrian priority areas of the City. Residential parts of the community to the west of campus rank in lower pedestrian priority.

There are gaps in sidewalk connectivity at College Avenue between I-8 and Aztec Circle Drive; Alvarado Road; and Montezuma Road between Fairmount Avenue and 54th Street.

Figure 5-5 **Pedestrian Needs**





5.6 Transportation to Work

Based on the US Census 2018 American Community Survey five-year estimates, nearly 73% of the workers living in the College Area commute to work by vehicle, while 6.2% took public transportation, 9.3% percent walked and 1.2% bicycled. The College Area's high walking mode share, which is three-times the rate of the City's, is a product of SDSU's presence. Many residents of the community are students, who are also employed on the campus. As shown in **Figure 5-6**, annual household transportation spending in College Area varies between \$6,000 and \$12,000 by census tract but is generally lower than the \$10,495 citywide average household transportation annual spending. Lower than average transportation spending is consistent with the community's profile of having higher than citywide average pedestrian, bicycle, and transit mode shares.

The average commute length in minutes for a worker residing in College Area is about 25.7 minutes. Approximately 8.5% of College Area residents have a commute of 10 minutes or less. The average vehicles per household within College Area is 1.87, comparable to the citywide 1.80 average vehicles per household. The average household size in College Area is 1.86 persons, almost one person per household fewer than the City (2.77 persons). 8.9% of households in College Area do not own a vehicle, which is higher than the citywide percentage of households with no vehicles (6.5%).

8.9% of households in the Plan College Area do not own a vehicle, which is higher than the citywide percentage (6.5%) of households with no vehicles.

Chart 5-1: Commute Mode Share Comparison



Commute Mode Share	College Area	City of San Diego	San Diego County
Pedestrian	9.3%	3.0%	2.9%
Bicycle	1.2%	0.9%	0.7%
Public Transportation	6.2%	3.8%	2.9%
Vehicular	72.8%	83.5%	84.9%

Source: US Census, 2018 American Community Survey 5-Year Estimates

walking, bicycling or transit.

Table 5-1: Commute Mode Share Comparison

One in six working College Area residents either commute by

Figure 5-6 Average Household Transportation Spending (2018)





5.7 Mobility Summary

The following are key findings in regards to the existing transportation network that serves the College Area presented in this chapter.

- During the AM peak period Montezuma Road westbound and Fairmount Avenue northbound toward Interstate 8 are the most congested roadways in the College Area; Fairmount Avenue north of Montezuma Road carries **87,000** daily vehicle trips.
- Vehicular traffic collisions were concentrated along Montezuma Road, El Cajon Boulevard and College Ave.
- All of the College Area's major roadways and inter-community connections, including College Avenue, Montezuma Road, Collwood Boulevard, and El Cajon Boulevard are **high stress for bicycling** (LTS 3 or 4); high stress roadways are not conducive to growing bicycling as a form of mobility among all populations.
- **One in six** College Area commuters walks, bicycles, or takes public transportation to work; the community has a pedestrian mode that is three times higher than the citywide pedestrian mode share.







