City of Santa Clara

De La Cruz Boulevard, Lick Mill Boulevard, and Scott Boulevard Bikeway Improvement Study

Draft

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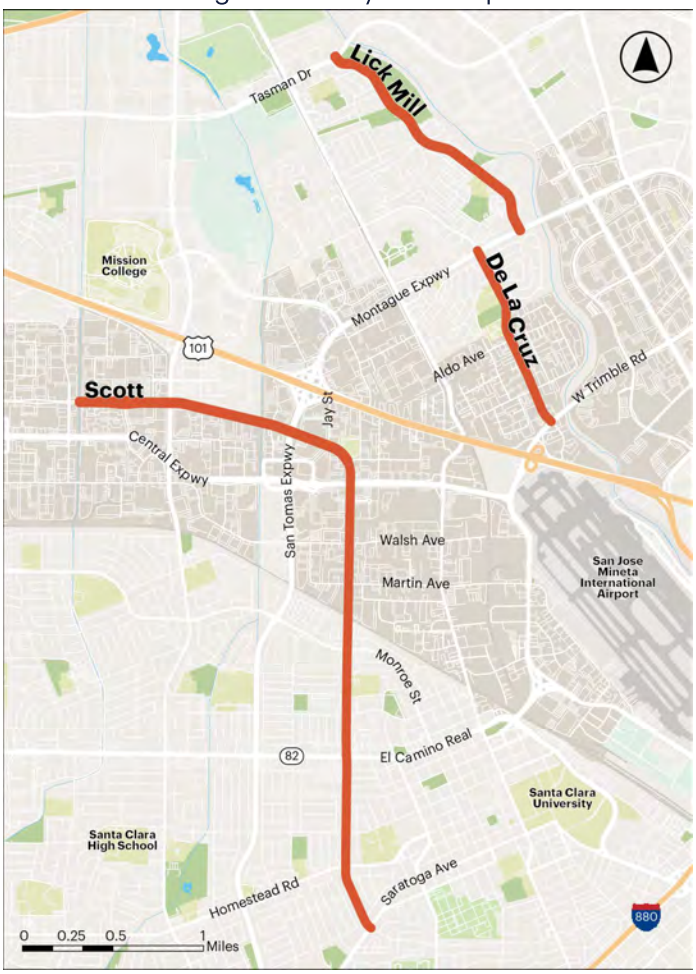
Executive Summary

On October 10, 2023, Council accepted Federal Community Project Funding in the amount of $2.725 million and established a new project for the De La Cruz Boulevard, Lick Mill Boulevard, and Scott Boulevard Bikeway Improvements Project ("Project"). The Project scope of work includes traffic analyses and design concept analysis, public outreach, design, and construction of bicycle facilities on (See **Figure 1**):

1) De La Cruz Boulevard from Montague Expressway to Trimble Road
2) Lick Mill Boulevard from Tasman Drive to Montague Expressway
3) Scott Boulevard from the Calabazas Creek Trail to Saratoga Avenue

Figure 1: Study Area Map



The goal is to enhance safety, improve mobility, and reduce vehicle emissions by implementing high priority bicycle projects identified in the Santa Clara Bicycle

Plan while connecting local residential communities, schools, libraries, and major employers within Santa Clara. The project includes reviewing potential project options such as lane narrowing, parking removal, or travel lane removal on the corridors.

The first phase of the Project, the De La Cruz Boulevard, Lick Mill Boulevard, and Scott Boulevard Bikeway Improvements Study ("Study") developed concept alternatives, prepared traffic and parking analysis, conducted two rounds of public engagement (**Figure 2**), and met with the City's Bicycle and Pedestrian Advisory Committee (BPAC) on four occasions. The proposed concepts were developed based on an analysis of the corridors, recommendations in the Santa Clara Bicycle Plan Update 2018, engagement with the City's BPAC, and two rounds of public outreach efforts.

Figure 2: Tree Lighting Ceremony Project Booth

1. Introduction and Background

1.1. Origins of the Project

In 2019, the City of Santa Clara ("City") approved and adopted the Bicycle Master Plan Update 2018 ("Bike Plan"), which identified and prioritized corridors needing bikeway facilities that could generate the greatest benefits to the community at low costs. The Plan identified the following three corridors ("Corridors") as high priorities for bikeway improvements:

- De La Cruz Boulevard between Montague Expressway and W. Trimble Road
- Lick Mill Boulevard between Tasman Drive and Montague Expressway
- Scott Boulevard between Arques Ave (city border) and Saratoga Ave

On October 10, 2023, Santa Clara City Council accepted a federal earmark grant in the amount of $2.725 million and established a new project for the De La Cruz Boulevard, Lick Mill Boulevard, and Scott Boulevard Bikeway Improvements Project ("Project"). The goal of the Project is to study, design, and install bikeway facilities along the Corridors per the Bike Plan's recommendations in order to improve safety as well as close gaps in and expand the City's bike network.

1.2. Project Objectives

Phase 1 of the Project, which kicked off in September 2024, proposed and analyzed the impacts of different design alternatives based on the Bike Plan's recommendations. This memo documents existing conditions, community input, and analysis results.

1.3. Project Methodology and Study Area

Figure 3 shows the three Project corridors.

Figure 3: Project Study Area

A multitude of data sources including parking data, traffic data, collision records, and in-person site visits were used to understand the existing conditions of the Corridors and estimate the changes associated with each design alternative. Additionally, the Project gathered extensive input from the Santa Clara community through a multitude of engagement activities as well as multiple meetings with the Bicycle and Pedestrian Advisory Committee (BPAC).

Results from the analysis and community outreach are summarized in this memo with additional information included as Appendices. The City Council will consider the design alternatives and decide the best path forward for each corridor based on the analysis results and community feedback.

1.4. Timeline

The project was initially presented to the BPAC in the Summer of 2024. The Project then conducted data collection to gain an understanding of the existing conditions within the Corridor and develop preliminary project alternatives. After the data collection and alternatives development phase, the project team conducted a technical evaluation of the alternatives. During the evaluation period the Project conducted community engagement to better understand community perspectives on project trade-offs. The community feedback and technical analysis were used to evaluate the preliminary concepts and progress toward a preferred design alternative. This Study will be presented to BPAC on January 27, and posted online for community review and feedback, before the project ultimately advances to the City Council for determination of next steps. **Figure 4** shows the project timeline.

Figure 4: Project Timeline

2. Study Methodology

The data collection and analysis methodology are detailed below.

2.1. Speed and Average Daily Traffic (ADT)

Daily traffic and speed counts were collected at nine locations across the three corridors for a 48-hour weekday period from November 13th through November 14, 2024. For each corridor, the 85th percentile speed (the speed at which 85 percent of all motorists travel at or below) was averaged over the two collection dates. The ADT counts were aggregated for both directions of travel and then averaged between the two collection dates. It should be noted that count collection sites on Scott Boulevard were only located south of Martin Avenue as this is the only area of the corridor that has proposed travel lane removal.

2.2. Safety Analysis

The City's Traffic Engineering Division provided collision data for the five-year period from January 1, 2018, to December 31, 2023, for all three corridors. The safety analysis considered crash level of severity, pedestrian-related crashes, and bicyclist-related crashes to understand collision patterns and safety trends throughout the study area.

2.3. Traffic Analysis

Existing Conditions

Traffic counts for the analysis were provided by the City for two peak hour periods: AM (7-9 AM) and PM (4-6 PM). Data was collected on weekdays in April and May of 2024. Additionally, the City provided a Vistro model as a base point for the traffic analysis that had existing roadway geometry and signal configurations for major arterials. The traffic analysis evaluated the current Level of Service (LOS) for each study intersection based on criteria established in the City's Transportation Analysis Policy. Per City policy, intersections on City-owned streets should meet LOS D or better. Intersections that lie within the County of Santa Clara jurisdiction, including county expressways, should meet LOS E or better.

Project Conditions

Several concepts propose the removal of travel lanes. To estimate the impact of lane removal on traffic congestion, new Vistro model scenarios were built to reflect changes in roadway geometry.

The City also provided its citywide travel demand model, which was used to model how roadway changes affect travel patterns. The analysis found minimal change in delay with lane reductions on project corridors (see Section 3.4), thus no significant vehicle diversion to other streets is forecast to occur with the proposed lane reduction.

2.4. Parking Analysis

Existing Conditions

A parking analysis was completed to determine parking occupancy along each of the three Study corridors, as well as adjacent side streets within 500 ft of the three Study corridors. Parking counts were collected on three consecutive weekdays (Tuesday through Thursday) on October 8, 9, and 10, 2024, and on Saturday, October 12, 2024. Data was collected in 30-minute periods from 7 AM to 7 PM and 11 PM to 2 AM.

Parking inventories, or the number of available parking spaces on a given roadway segment, were estimated in-field using an assumption of 22’ to 24’ for the average car length. It should be noted that parking inventories near crosswalks were adjusted to account for California’s New Daylighting Law (AB 413) that took effect on January 1, 2025.

To identify the peak daytime and nighttime parking hours for weekdays, parking occupancy was averaged across the three weekdays for each hour, and the hour with the highest average occupancy was chosen as the peak hour. A peak hour was chosen for both daytime (7AM-7PM) and nighttime periods (11PM-2AM). The same process was used to determine weekend peak hour occupancy for the Saturday data.

Project Conditions

Several design alternatives propose the removal of parking on one or both sides of the street. As a result, cars that currently park along the project corridors where parking removal is proposed will need to relocate to available parking spaces on

nearby side streets. In this instance, nearby side streets are assumed to be those that are within 500ft of the parking space in question. This parking diversion was estimated for each of the applicable design alternatives. The analysis notes locations where cars do not have nearby available parking spaces to relocate. Additionally, some of the proposed alternatives include parking-protected bike lanes. These separated bike lanes will require a reduction in the number of parking spots due to required setbacks from driveways for visibility. The full parking analysis results can be seen in Section 3.5.

2.5. Travel Time

Existing Conditions

A travel time analysis was completed to evaluate the time it takes to travel the entire length of each study corridor in a car. Travel time data was obtained from INRIX, a web based software that uses roadway sensors and vehicle data to provide traffic data and visualizations. Data for each of the Project corridors was averaged for both travel directions from 7 AM to 7 PM across typical weekdays (Tuesday, Wednesday, and Thursday) from September 1 to September 30, 2024.

Project Conditions

A travel time analysis was also completed for all project alternatives that include the removal of up to one travel lane in each direction on the study corridor. Changes in approach level intersection delay, derived from the traffic analysis, was averaged for each travel direction, and then added to the existing travel time to arrive at a With Project travel time condition.

2.6. Vehicles Miled Traveled (VMT)

Project Conditions

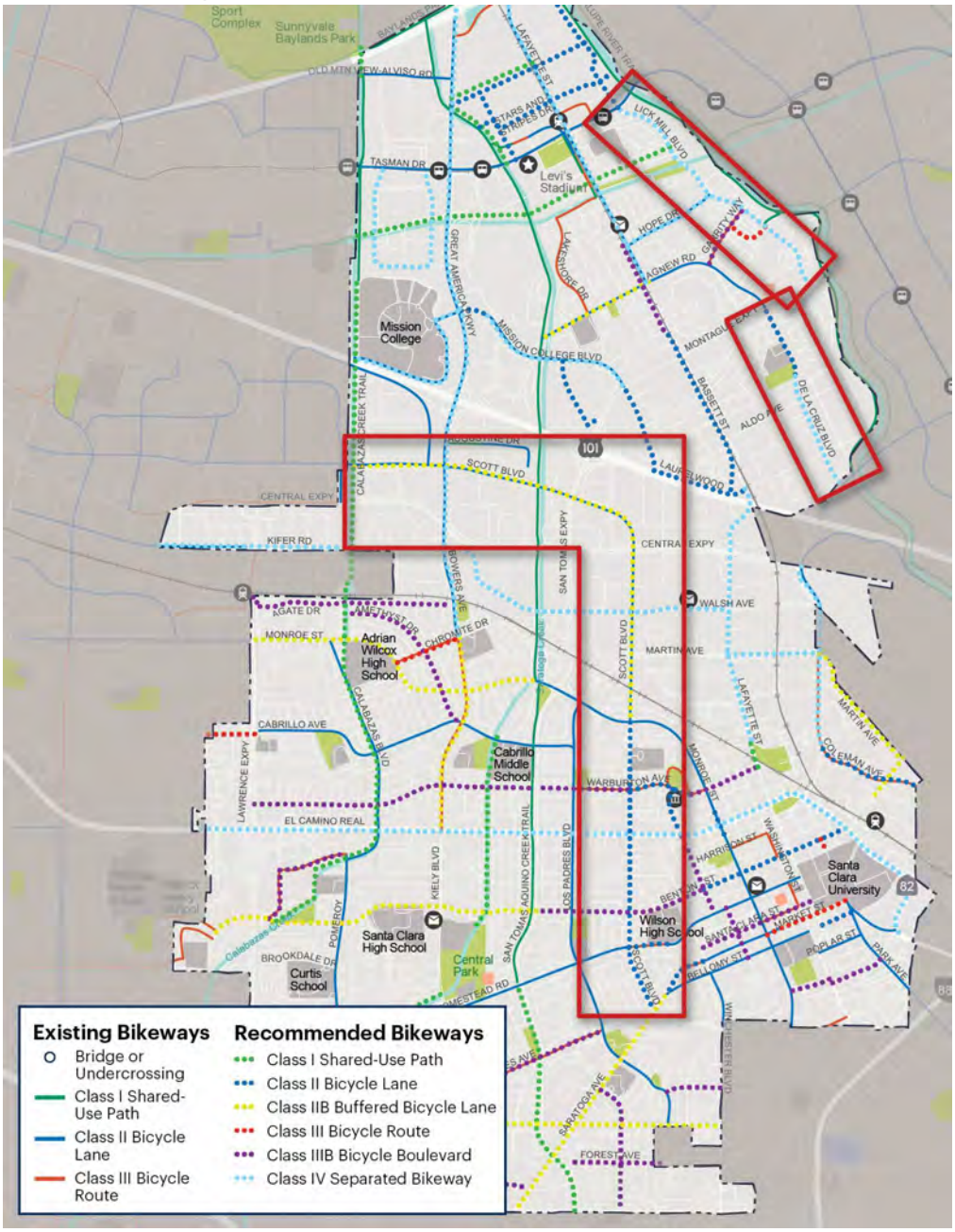
Quantifying Reductions in Vehicle Miles Traveled from New Bike Paths, Lanes, and Cycle Tracks (California Air Resources Board) provides a methodology to estimate the reduction in annual vehicle miles traveled (VMT) as a result of a proposed bike facility. The calculation considers bicycle counts (counts taken on the street to be improved with the bike facility, or, in the case of a facility not on an existing street, a parallel street), the corridor length, and a seasonal adjustment factor.

3. Existing Conditions

3.1. Existing Bicycle and Pedestrian Network

Existing and recommended bicycle infrastructure per the City's Bike Plan within and connecting to the Study area is shown in **Figure 5.**

Figure 5: 2018 Bike Plan Update Recommendations



De La Cruz Boulevard

Within the Study limits, De La Cruz Boulevard has no existing bicycle infrastructure. The 2018 Bike Plan Update recommends Class II bike lanes north of Montague Park, and Class IV separated bike lanes south of the park.

Lick Mill Boulevard

Within the Study limits, Lick Mill Boulevard is classified as a Class III bike route with vehicles and bikes sharing the roadway. The 2018 Bike Plan Update recommends Class IV separated bike lanes throughout the entire corridor.

Scott Boulevard

From Arques Ave to Monroe Street Scott Boulevard has existing Class II bike lanes. The remainder of the corridor currently has no bike facilities. The 2018 Bike Plan Update recommends Class II bike lanes or Class IIB buffered bike lanes throughout the entire corridor.

3.2. Existing Conditions Overview Summary

Table 1 summarizes the 85th percentile speed, ADT, and travel time for each of the project corridors.

Table 1: Speed and ADT Summary

Roadway	Posted Speed	85th Percentile Speed (mph)	Average Daily Traffic (ADT)	Travel Time
De La Cruz Boulevard	35 MPH	40	9,949	5 Minutes and 16 Seconds
Lick Mill Boulevard	35 MPH	43	9,753	6 Minutes and 33 Seconds
Scott Boulevard[1]	35 MPH	39	15,757	15 Minutes and 23 Seconds

[1] Data for Scott Boulevard includes corridor extents south of Martin Avenue.

On De La Cruz Boulevard, which has a posted speed limit of 35 mph, 39% of drivers drove over the posted speed limit. On Lick Mill Boulevard, which also has a posted speed limit of 35 mph, 62% of drivers drove over the speed limit. Of the 62% of drivers measured to be exceeding the speed limit on Lick Mill Boulevard, 89% were within 9 mph of the posted speed. For the portion of Scott Boulevard with a posted speed of 35 mph (south of Martin Ave), 33% of drivers exceeded the speed limit.

3.3. Safety

De La Cruz Boulevard

De La Cruz Boulevard had 68 collisions in the five-year period, including two pedestrian-involved collisions and two bike-involved collisions. 28 of the 68 collisions resulted in some level of injury or complaint of pain, and each of the four non-motorized collisions resulted in a level of injury. Mapped collision locations along De La Cruz Boulevard is shown in

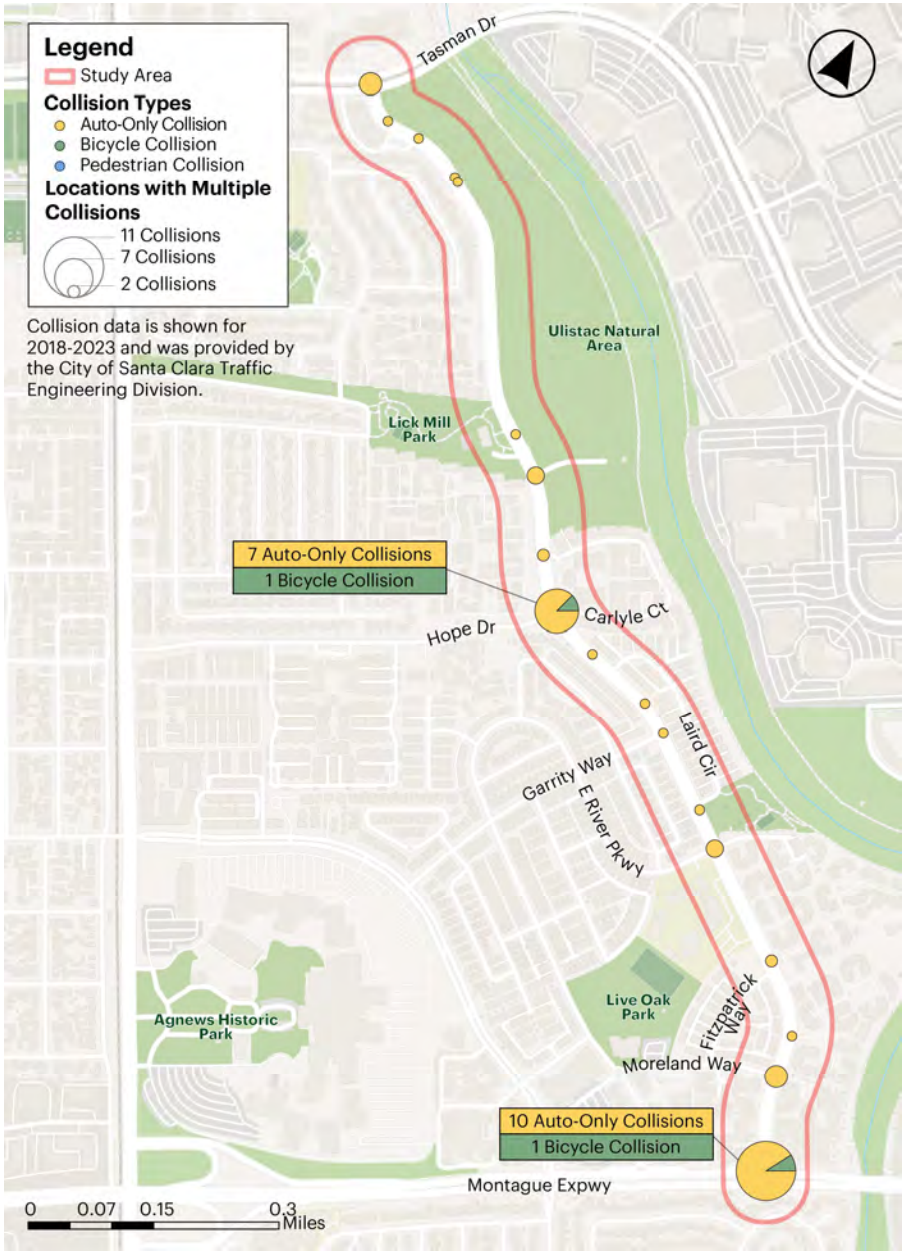
Figure 6. All collisions within a 150-ft radius of an intersection were assigned to the intersection. These intersections are represented using circles of varying size with a larger circle representing a higher number of collisions.

Figure 6: De La Cruz Boulevard Collision Summary Map

Lick Mill Boulevard

Lick Mill Boulevard had 47 collisions in the five-year period, including two bike-involved collisions. Some level of injury or complaint of pain were noted in 13 of the 47 collisions. The two bicyclist-related collisions resulted in a level of injury or complaint of pain. Mapped collision locations along Lick Mill Boulevard can be found in **Figure 7**.

Figure 7: Lick Mill Boulevard Collision Summary Map

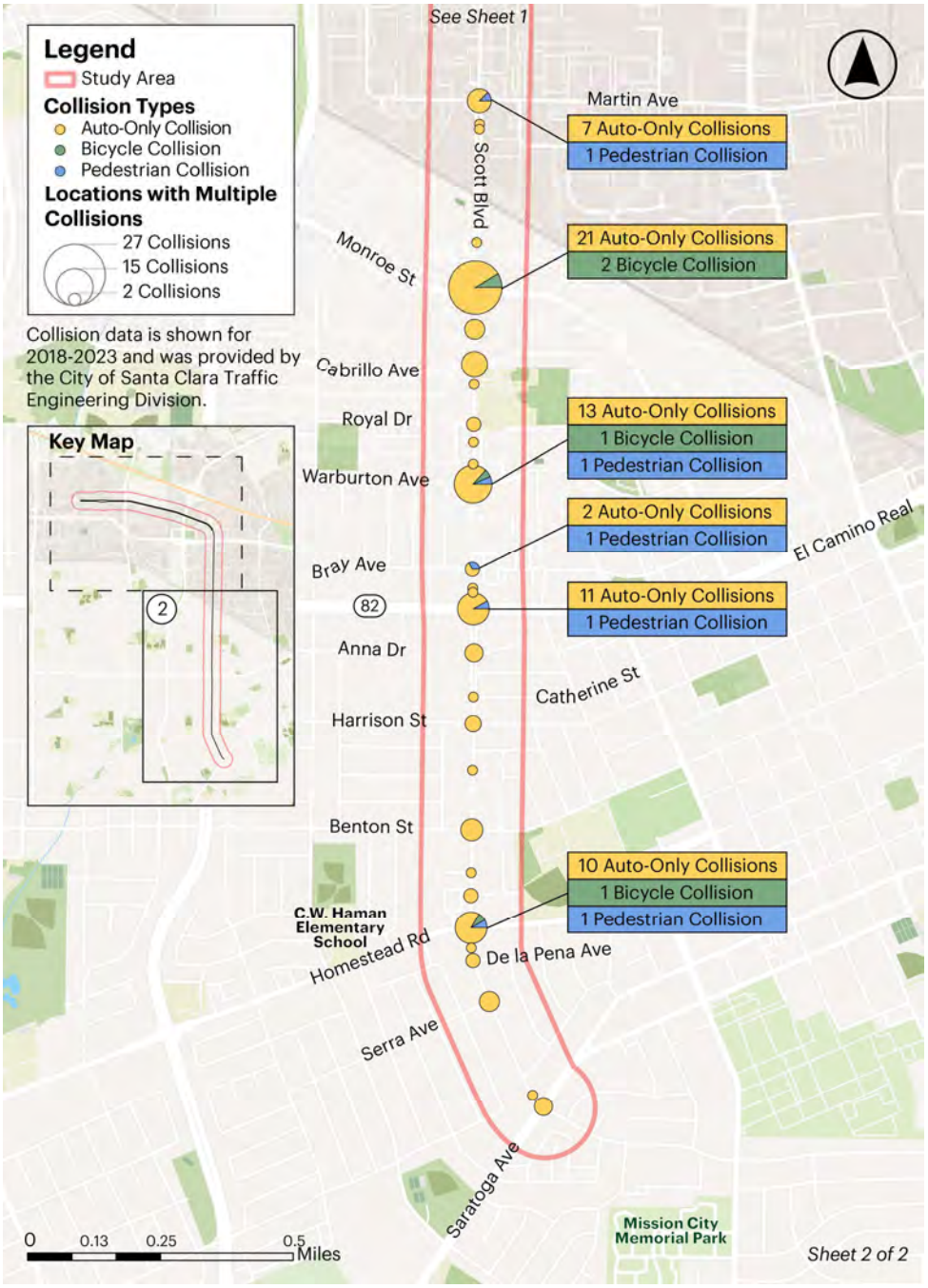


Scott Boulevard

Scott Boulevard had 231 collisions in the five-year period, including seven pedestrian-involved collisions and seven bike-involved collisions. Some level of injury or complaint of pain were noted in 96 of the 231 collisions, including 13 of the 14 non-motorized collisions. Additionally, one vehicular collision at the intersection of Scott Boulevard and Jay Street resulted in a fatality. Mapped collision locations along Scott Boulevard **Figure 8** and **Figure 9.**

Figure 8: Scott Boulevard Collision Summary Map 1/2 (Arques Ave to Walsh Ave)

Figure 9: Scott Boulevard Collision Summary Map 2/2 (Walsh Ave to Saratoga Ave)



3.4. Traffic

Detailed traffic modeling was completed at 46 study intersections along the three Project corridors. As noted in the Study Methodology section of this report, the traffic analysis evaluated the current Level of Service (LOS) for each study intersection based on criteria established in the City's Transportation Analysis Policy. Maps showing LOS at each intersection can be found in Appendix A.

De La Cruz Boulevard

Based on the analysis, 8 of 9 De La Cruz Boulevard intersections operate acceptably under existing conditions during the AM and PM peak hours. The one intersection that currently does not meet the City's LOS standard is De La Cruz Boulevard & Laurelwood Avenue, which operates as LOS E in the AM and LOS F in the PM.

Lick Mill Boulevard

Based on the analysis, 14 of 16 intersections operate acceptably under existing conditions during the AM and 15 of 16 operate acceptably during PM peak hours. The intersections that currently do not meet the City's LOS standard in the AM period are Lick Mill Boulevard & East River Parkway and Lick Mill Boulevard & Fitzpatrick Way, which both operate at LOS E. The intersection that does not meet the City's LOS standard in the PM period is Lick Mill Boulevard & East Tasman Drive, which operates at LOS E.

Scott Boulevard

Based on the analysis, 20 of 21 intersections operate acceptably under existing conditions during the AM and 18 of 21 operate acceptably during PM peak hours. The intersection that currently does not meet the City's LOS standard in the AM period is Scott Boulevard & Cabrillo Avenue, which operates at LOS E. The intersections that do not meet the City's LOS standard in the PM period are the intersections of Scott Boulevard & Cabrillo Avenue and Scott Boulevard & Harrison Street which operate at a LOS F and Scott Boulevard & Serra Avenue which operates at a LOS E.

3.5. Parking

The existing conditions parking data is detailed for each corridor below. For additional parking occupancy maps see Appendix B.

De La Cruz Boulevard

Figure 10 shows De La Cruz Boulevard's existing parking inventory.

Figure 10: De La Cruz Boulevard Parking Inventory

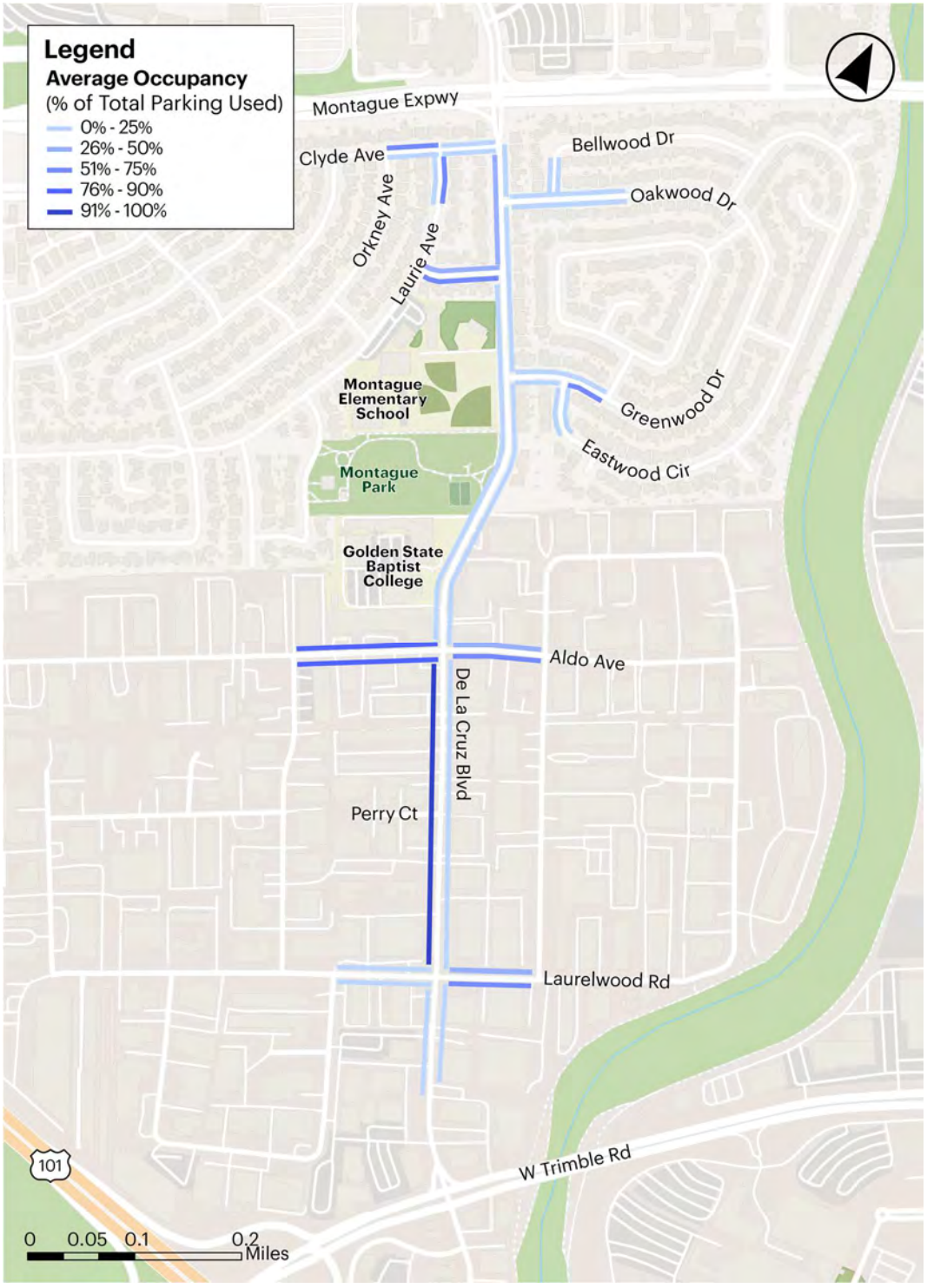
On De La Cruz Boulevard, the highest parking occupancy was observed on weekdays from 10 AM to 11 AM. During this hour, 34% of all available parking was used, leaving two-thirds of the parking inventory unoccupied. **Table 2** summarizes the weekday parking occupancy for daytime and nighttime conditions on De La Cruz Boulevard.

Table 2: De La Cruz Parking Utilization

On-Street Parking Location	Parking Inventory	Weekday Daytime Peak Hour Parking Occupancy	Weekday Nighttime Peak Hour Parking Occupancy
North of Montague Park	111	22%	17%
South of Montague Park	55	49%	0%
Side Streets	249	37%	22%
Total	415	34%	18%

During the daytime, the industrial area south of Montague Park was observed to have the highest occupancy. During the nighttime, the residential area north of Montague Park was observed to have higher occupancy. The parking occupancy for the daytime peak hour period is shown in **Figure 11**. Darker blue segments represent a higher utilization of the existing parking spaces.

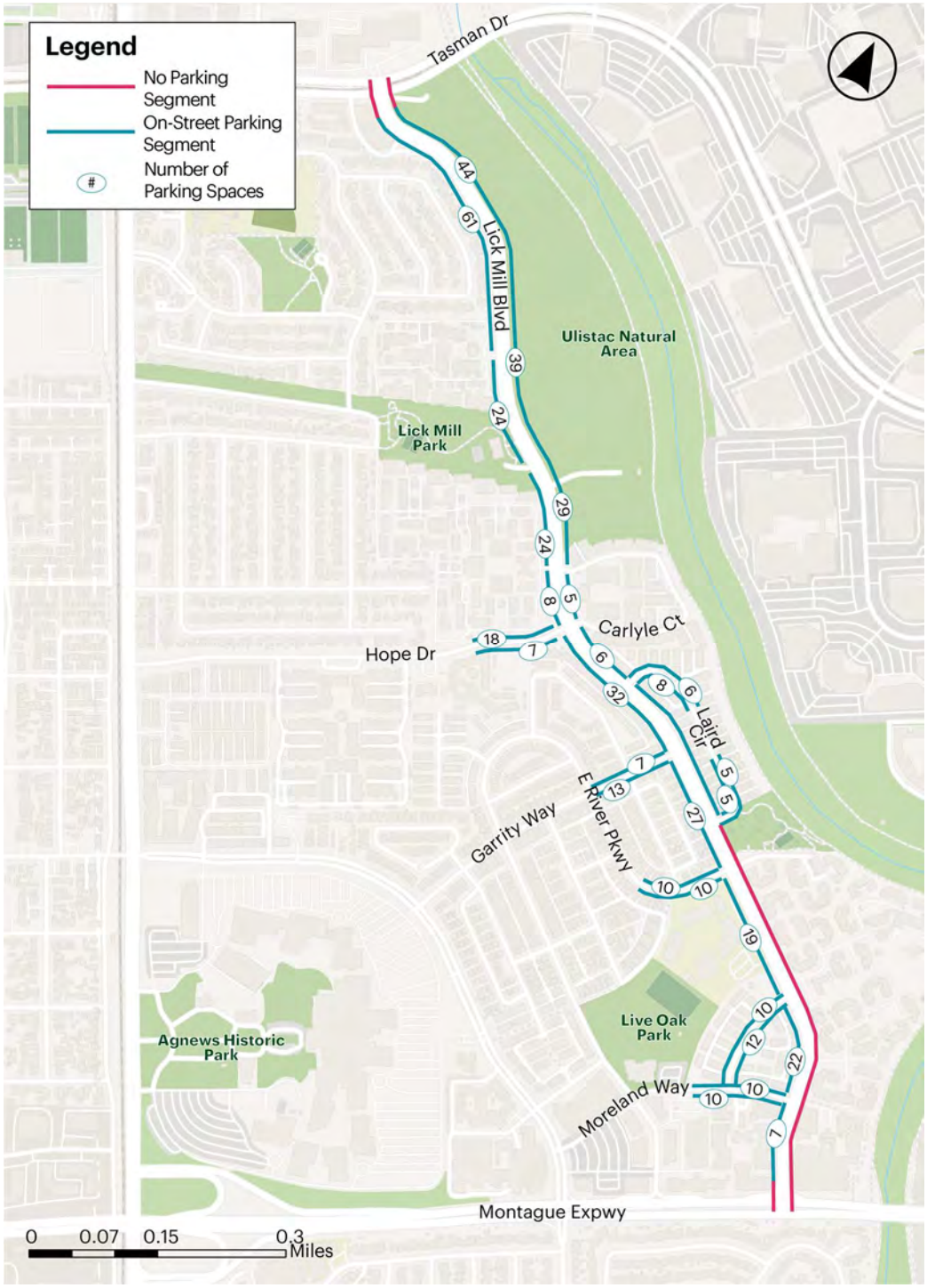
Figure 11: De La Cruz Boulevard Weekday Daytime Peak Hour Parking (10 AM to 11 AM)



Lick Mill Boulevard

Figure 12 shows the parking inventory along Lick Mill Boulevard and adjacent side streets.

Figure 12: Lick Mill Boulevard Parking Inventory



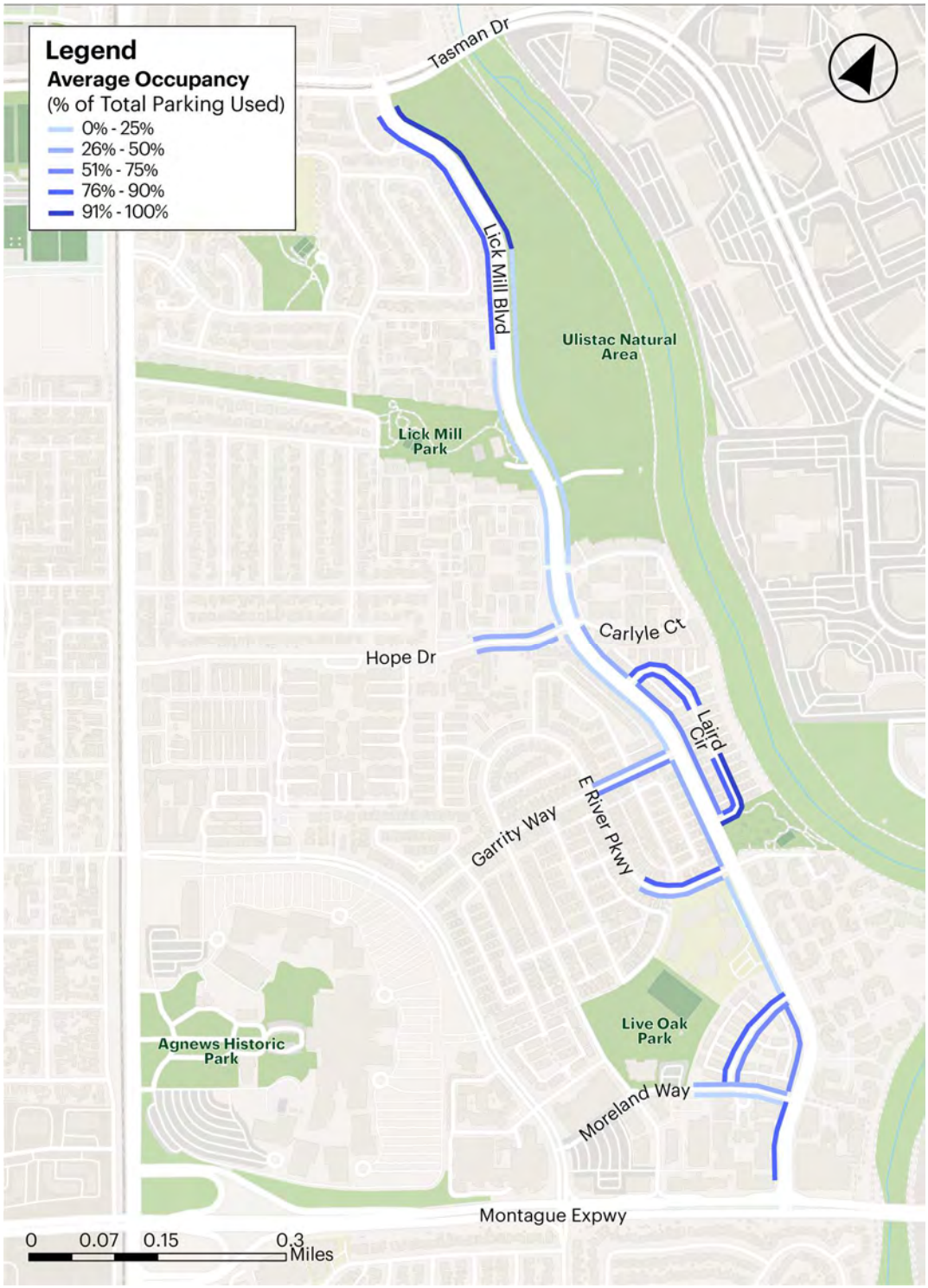
On Lick Mill Boulevard, the highest parking occupancy was observed on weekdays from 7 AM to 8 AM. During this hour, 46% of all available parking was used, leaving roughly half of the parking inventory unoccupied. Table 3 summarizes the weekday parking occupancy for the corridor.

Table 3: Lick Mill Boulevard Parking Utilization

On-Street Parking Location	Parking Inventory	Weekday Daytime Peak Hour Parking Occupancy	Weekday Nighttime Peak Hour Parking Occupancy
North of Laird Circle (South)	339	40%	13%
South of Laird Circle (South)	48	46%	48%
Side Streets	131	60%	65%
Total	**518**	**46%**	**29%**

On weekdays, side streets were more highly utilized than parking on Lick Mill Boulevard. It should be noted that portions of Lick Mill Boulevard near Laird Circle were observed to have parking availability less than 10%. Additionally, low parking availability was observed near East Tasman Drive. The parking demand in this location is expected to be temporary, however, as parking patterns suggest that the parked cars are associated with temporary construction north of Lick Mill Boulevard. The parking occupancy for the daytime peak hour period is shown in Figure 13.

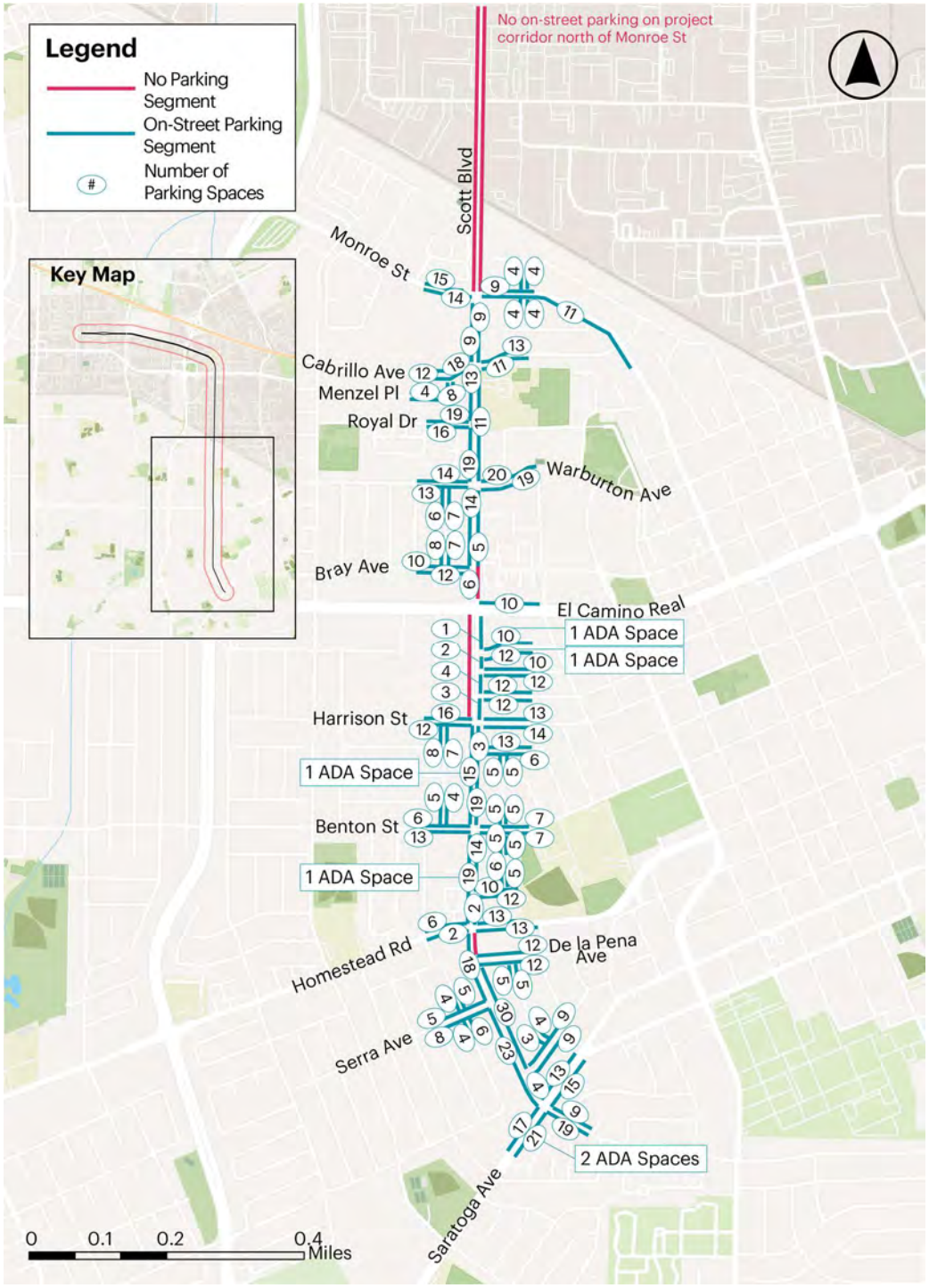
Figure 13: Lick Mill Boulevard Weekday Daytime Peak Hour Parking (7 AM to 8 AM)



Scott Boulevard

Figure 14 shows parking inventory along Scott Boulevard and adjacent to the corridor. On-street parking is not allowed north of Monroe Street.

Figure 14: Scott Boulevard Parking Inventory



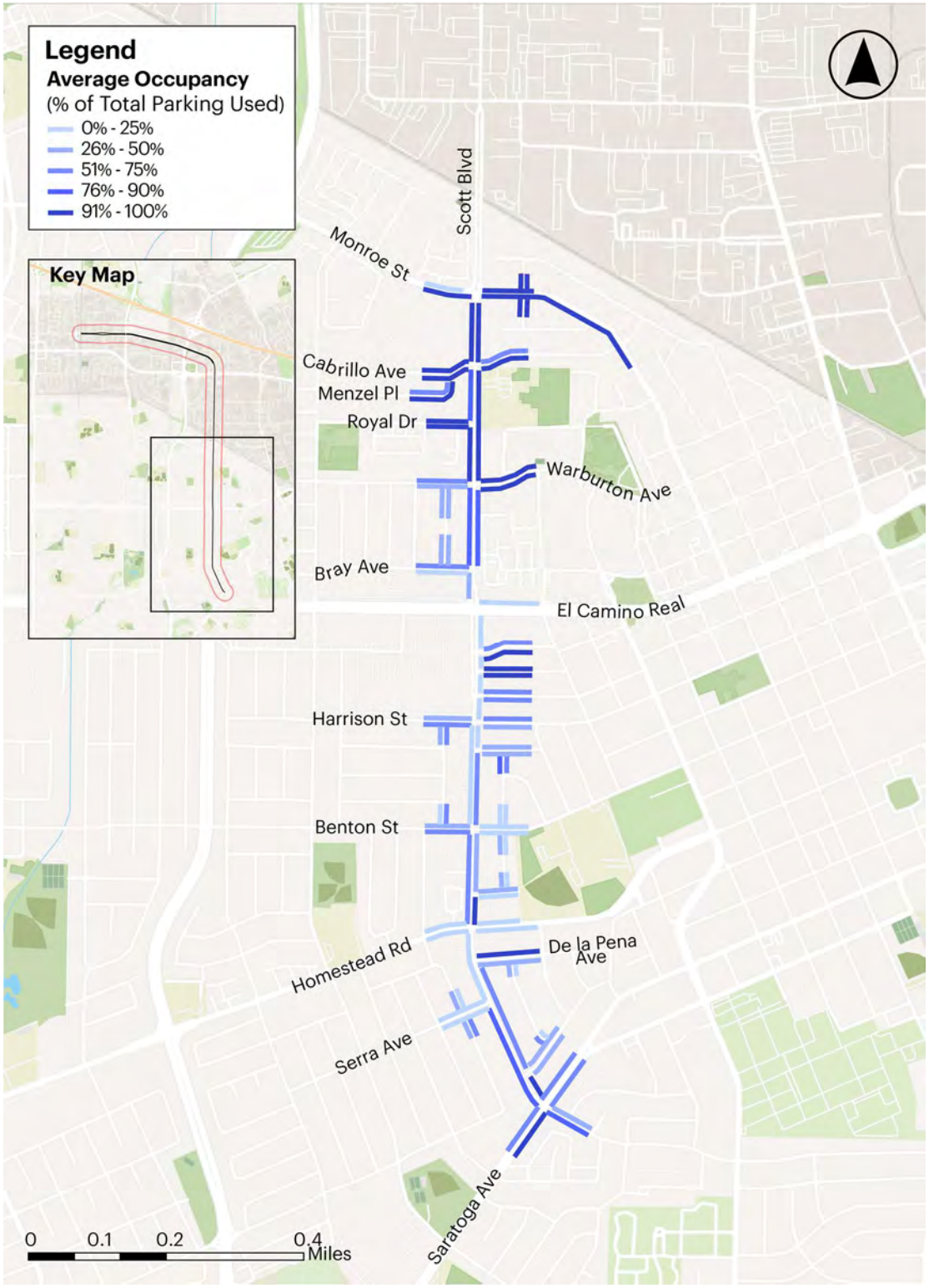
On Scott Boulevard, the highest overall parking occupancy was observed from 12 AM to 1 AM, both during weekdays and on weekends. The occupancy during this hour was 62% for both weekdays and the weekend, leaving less than 40% unoccupied. **Table** 4 summarizes the weekend parking occupancy for Scott Boulevard.

Table 4: Scott Boulevard Parking Utilization

On-Street Parking Location	Parking Inventory	Weekend Daytime Peak Hour Parking Occupancy	Weekend Nighttime Peak Hour Parking Occupancy
Between Monroe Street and Harrison Street	96	77%	81%
Between Harrison Street and Homestead Road	72	40%	42%
South of Homestead Road	75	60%	59%
Side Street	777	60%	61%
Total	1,020	60%	62%

All segments of Scott Boulevard and side streets were more highly utilized during nighttime than daytime. It should be noted that portions of Scott Boulevard were observed to have parking availability less than 10%. Parking occupancies are shown by segment in **Figure 15**.

Figure 15: Scott Boulevard Weekend Nighttime Peak Hour Parking (12 AM to 1 AM)



4. Concepts/Alternatives

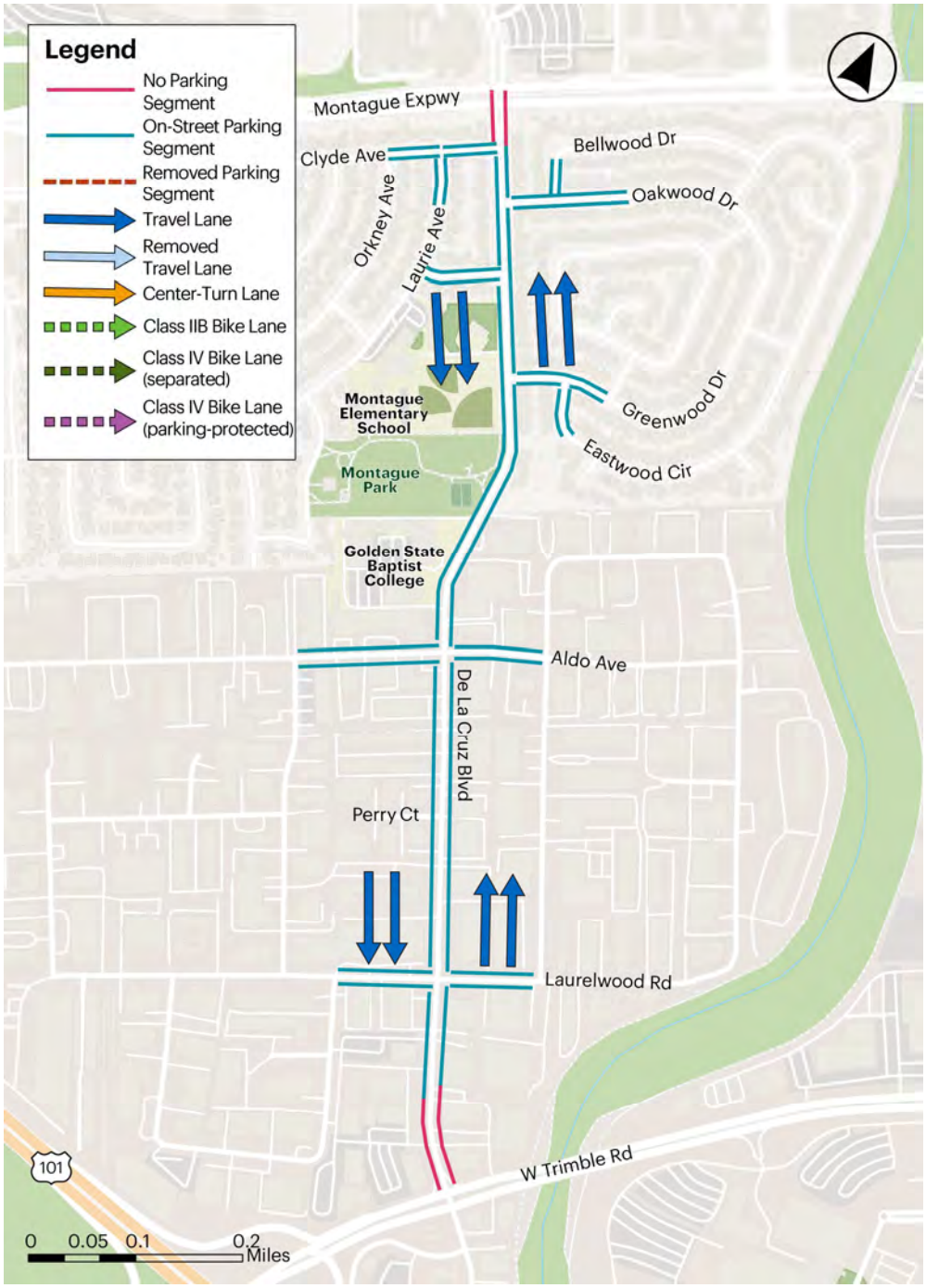
The Study identifies roadway concepts and a no-build option for each of the three Project corridors. The concept alternatives (see **Appendix C**) were developed and modified based on feedback from BPAC. Each concept is summarized by Project corridor below.

4.1. De La Cruz Boulevard

No Build Option

This concept represents a "No Build" scenario and matches the existing condition on De La Cruz Boulevard from Montague Expressway to West Trimble Road. See **Figure 16** for a schematic of existing conditions.

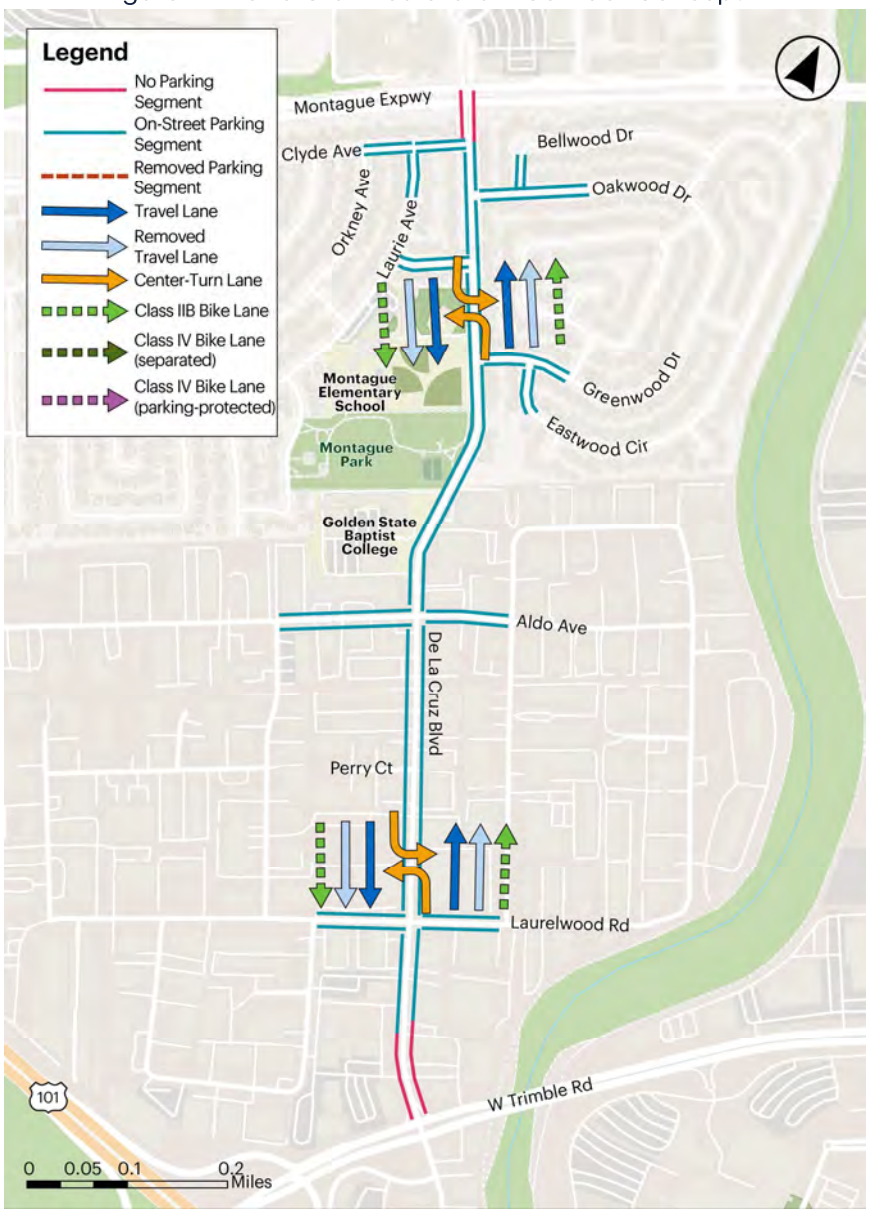
Figure 16: De La Cruz Boulevard – No Build Option



Corridor Concept A: Two Lanes, Buffered Bike Lanes, Center Turn Lane, Parking on Both Sides

This concept removes one travel lane in each direction to make room for Class IIB buffered bike lanes. It also provides a center-turn lane throughout the corridor. See Figure 17 for a schematic of the alternative.

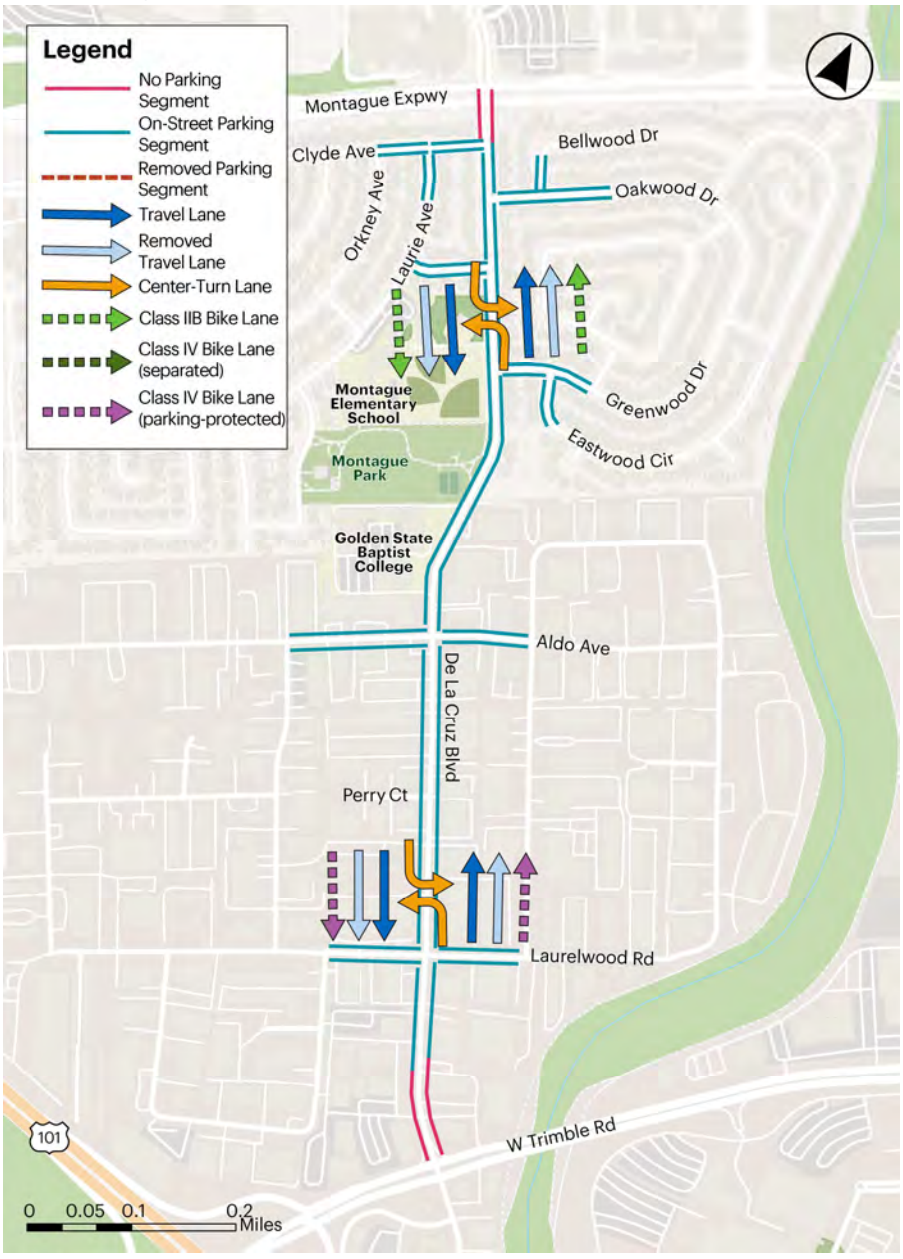
Figure 17: De La Cruz Boulevard – Corridor Concept A



Corridor Concept B: Two Lanes, Buffered and Parking Protected Bike Lanes, Center Turn Lane, Parking on Both Sides

This concept removes one travel lane in each direction to make room for Class IIB buffered bike lanes north of Montague Park and Class IV parking-protected, separated bike lanes south of the park. It also provides a center-turn lane throughout the corridor. See **Figure 18** for a schematic of the alternative.

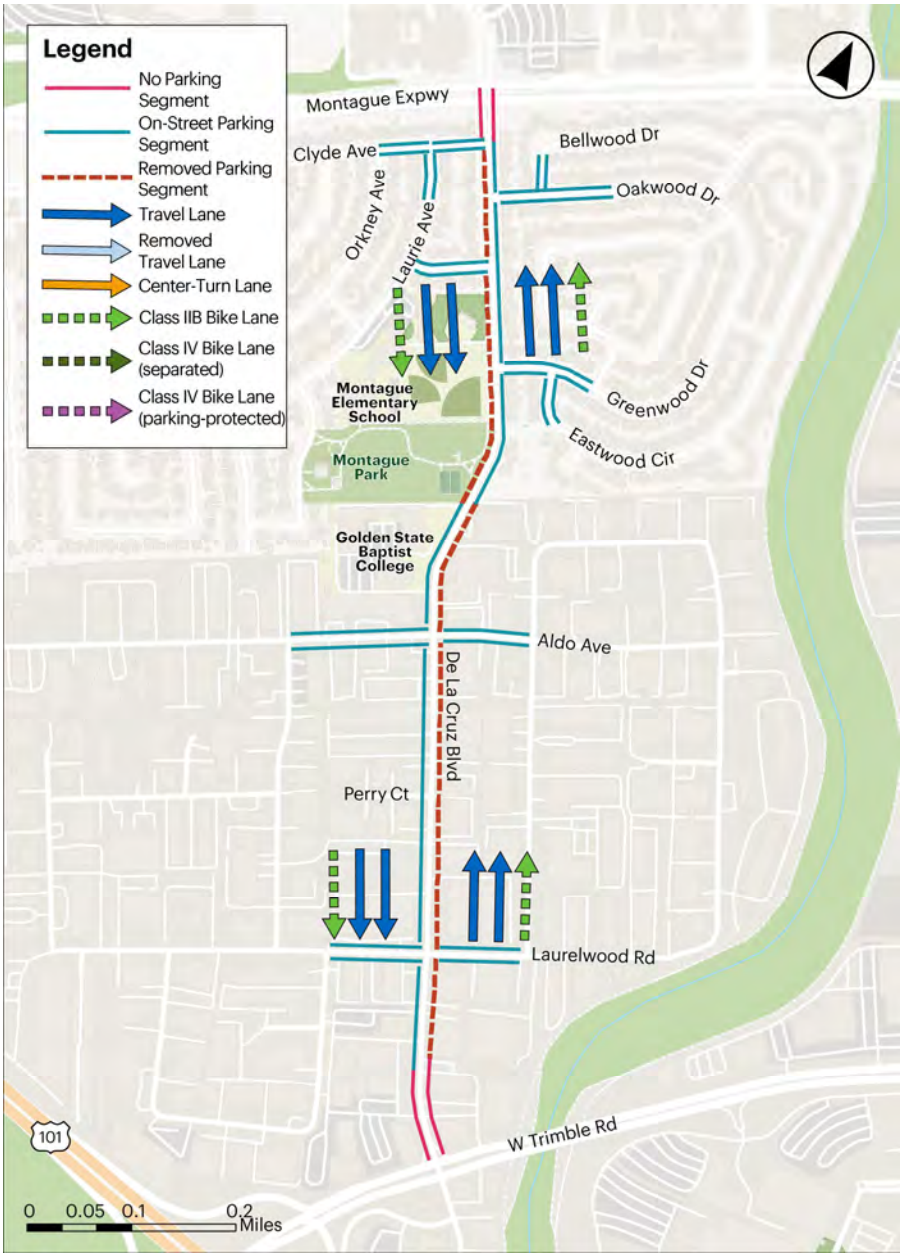
Figure 18: De La Cruz Boulevard – Corridor Concept B



Corridor Concept C: Four Lanes, Buffered Bike Lanes, Remove Parking On One Side

This concept removes parking on one side of the street to make room for Class IIB buffered bike lanes. See **Figure 19** for a schematic of the alternative.

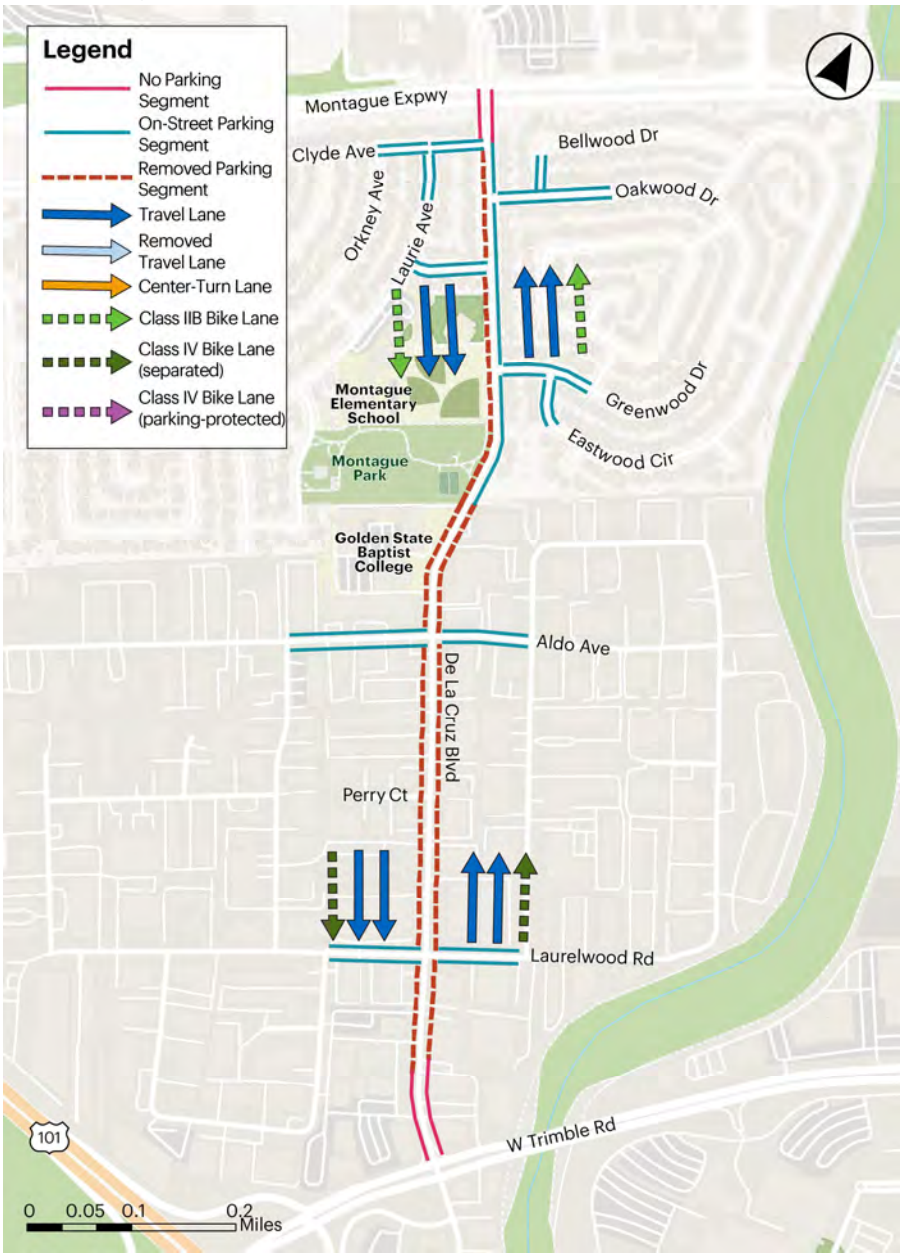
Figure 19: De La Cruz Boulevard – Corridor Concept C



Corridor Concept D: Four Lanes, Buffered and Protected/Buffered Bikeways, Remove Parking

This concept removes parking on one side of the street to make room for Class IIB buffered bike lanes north of Montague Park and parking on both sides of the street to make room for Class IV separated bike lanes south of the park. See **Figure 20** for a schematic of the alternative.

Figure 20: De La Cruz Boulevard – Corridor Concept D

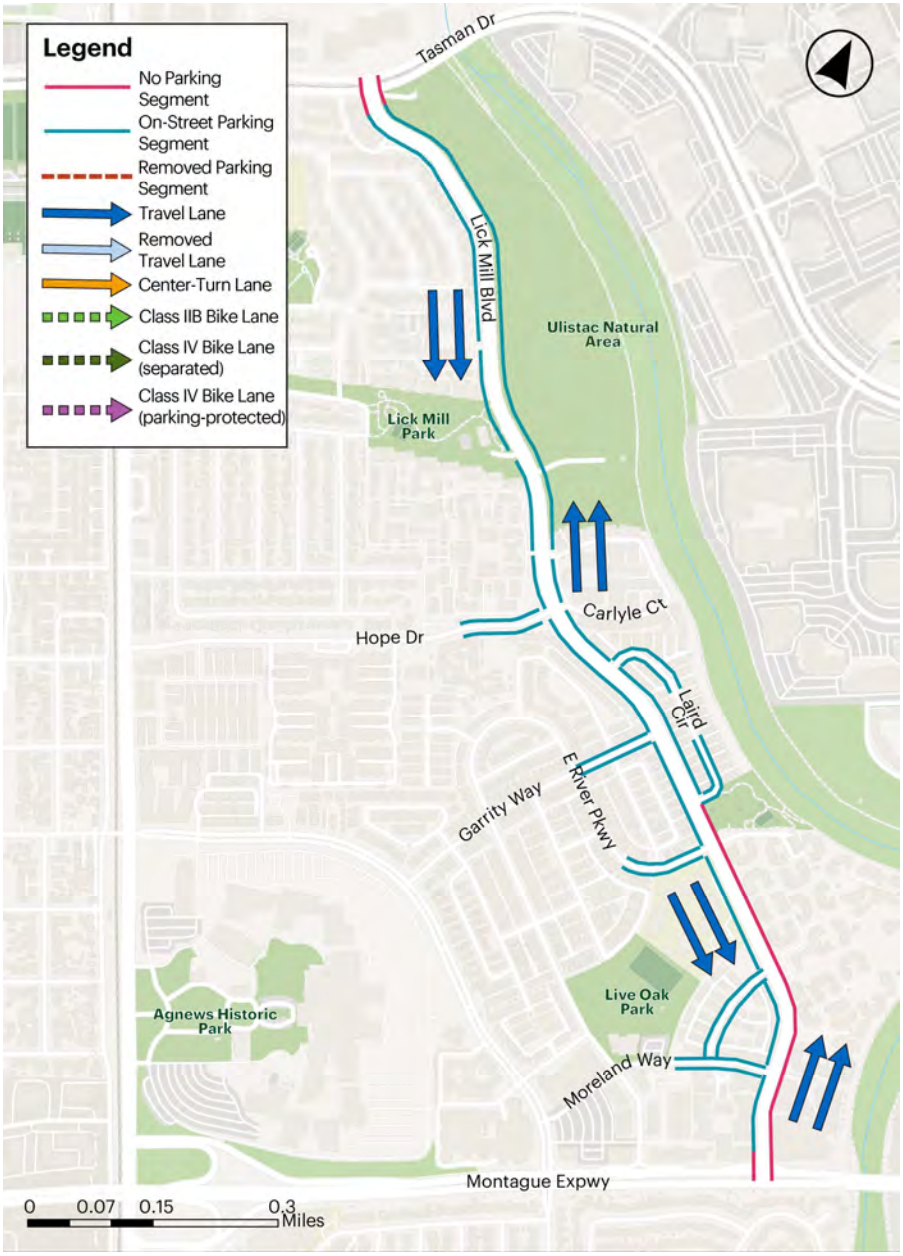


4.2. Lick Mill Boulevard

No Build Option

This concept represents a "No Build" scenario and matches the existing configuration of Lick Mill Boulevard from Tasman Drive to Montague Expressway. See Figure 21 for a schematic of existing conditions.

Figure 21: Lick Mill Boulevard – No Build Option



Concept E: Two Lanes, Buffered Bike Lanes, Parking on Both Sides

This concept removes one travel lane in each direction to make room for Class IIB buffered bike lanes. See **Figure 22** for a schematic of the alternative.

Figure 22: Lick Mill Boulevard – Concept E

Concept F: Two Lanes, Parking Protected Bike Lanes

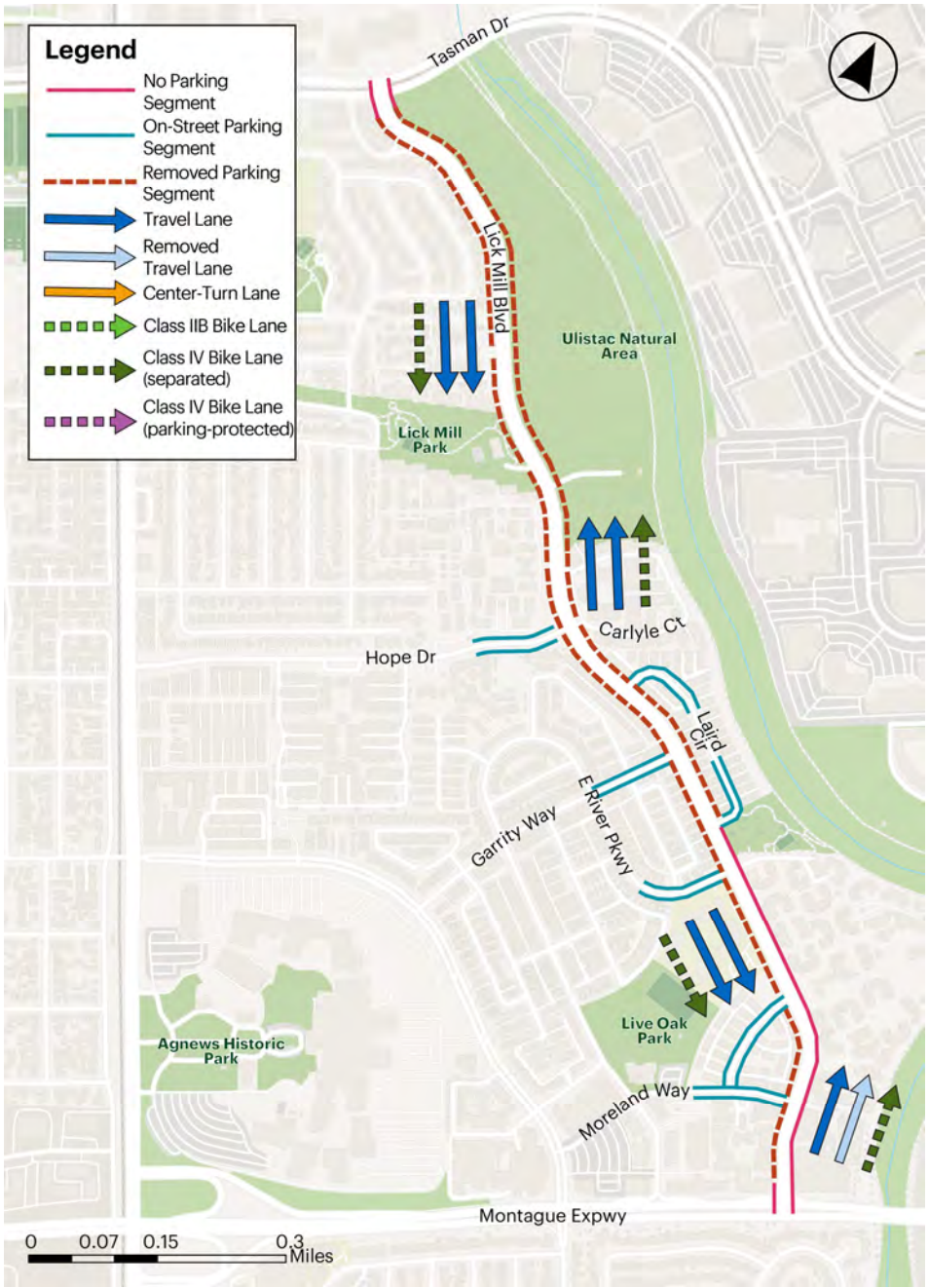
This concept removes one travel lane in each direction to make room for Class IV parking-protected bike lanes. See **Figure 23** for a schematic of the alternative.

Figure 23: Lick Mill Boulevard – Concept F

Concept G: Three/Four Lanes, Protected and Buffered Bike Lanes, Remove Parking

This concept removes parking on both sides of the street to make room for Class IV separated bike lanes. Parking does not exist today on the east side of Lick Mill Boulevard, south of Laird Circle (S), so this concept removes a northbound travel lane for this segment. See **Figure 24** for a schematic of the alternative.

Figure 24: Lick Mill Boulevard – Concept G

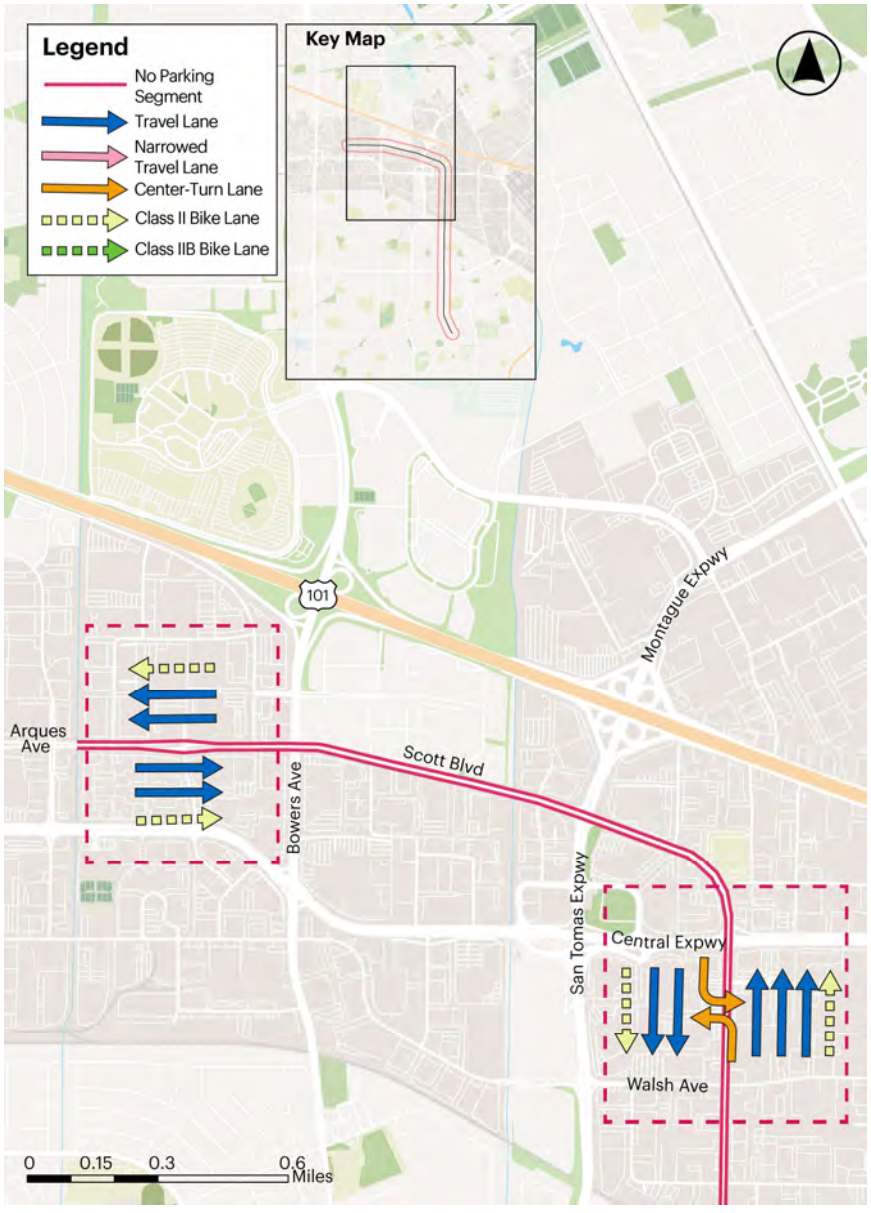


4.3. Scott Boulevard Between Arques Avenue and Martin Avenue

No Build Option

This concept represents a "No Build" scenario and matches the existing configuration of Scott Boulevard from Arques Avenue (City limit) to Martin Avenue. See **Figure 25** for a schematic of existing conditions.

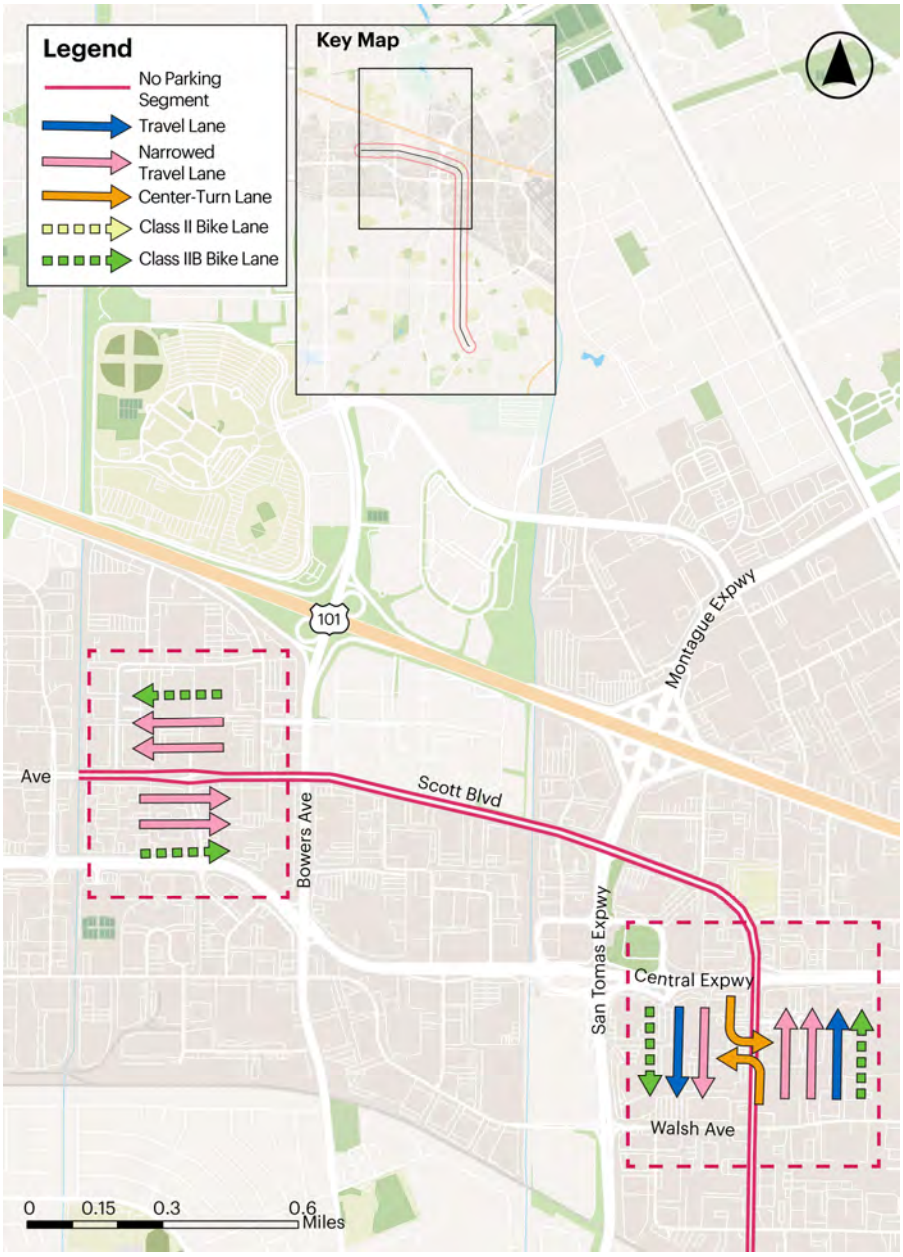
Figure 25: Scott Boulevard Between Arques Avenue and Martin Avenue – No Build Option



Concept H: Four/Five Lanes, Buffered Bike Lanes

This concept narrows travel lanes to improve the existing Class II bike lanes to Class IIB buffered bike lanes. See **Figure 26** for a schematic of the alternative.

Figure 26: Scott Boulevard Between Arques Avenue and Martin Avenue – Concept H



4.4. Scott Boulevard Between Martin Avenue and Monroe Street

No Build Option

This concept represents a "No Build" scenario and matches the existing configuration of Scott Boulevard from Martin Avenue to Monroe Street. See **Figure 27** for a schematic of existing conditions.

Figure 27: Scott Boulevard Between Martin Avenue and Monroe Street – No Build Option

Concept I: Four Lanes, Buffered Bike Lanes

This concept removes one travel lane in each direction to improve the existing Class II bike lanes to Class IIB buffered bike lanes. See **Figure 28** for a schematic of the alternative.

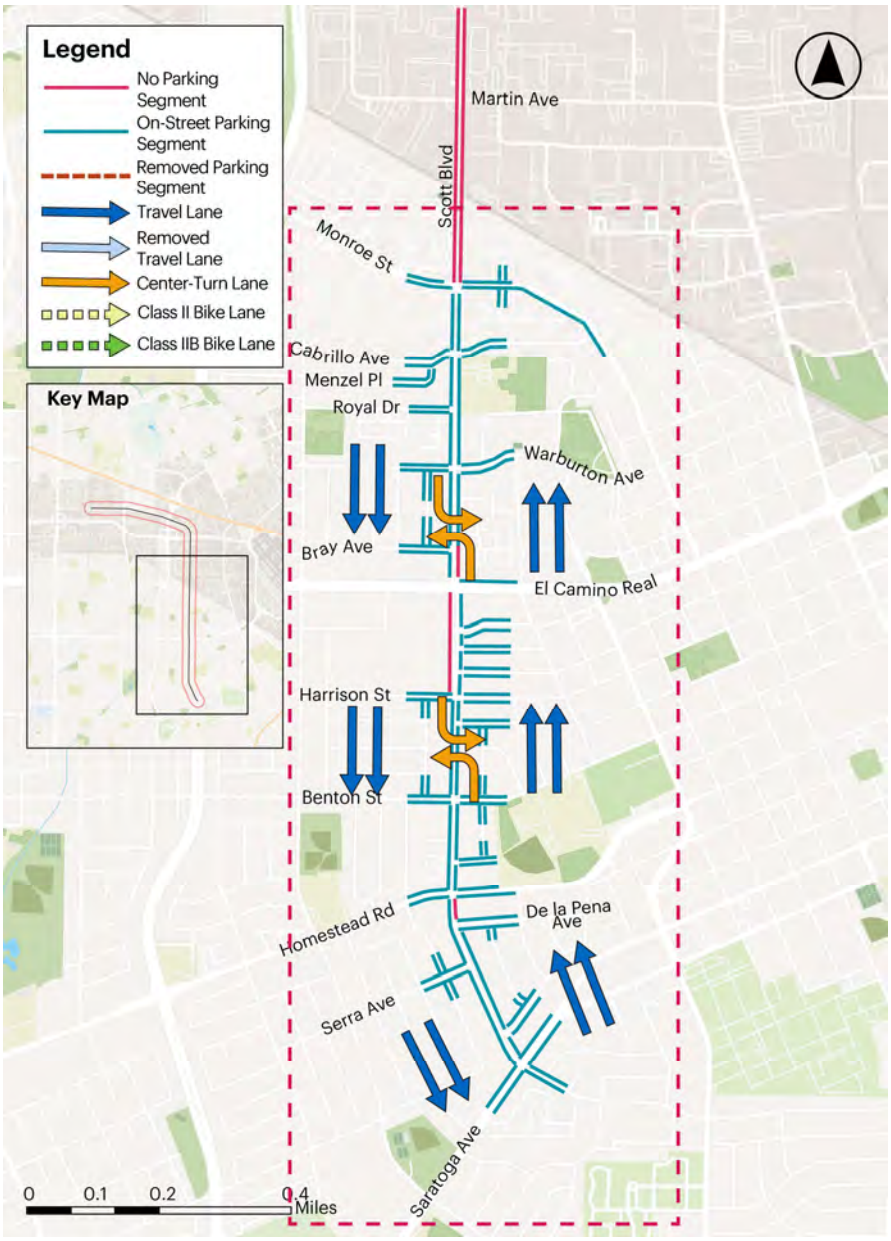
Figure 28: Scott Boulevard Between Martin Avenue and Monroe Street – Proposed Alternative I

4.5. Scott Boulevard Between Monroe Street and Saratoga Avenue

No Build Option

This concept represents a "No Build" scenario and matches the existing configuration of Scott Boulevard from Monroe Street to Saratoga Avenue. See Figure 29 for a schematic of existing conditions.

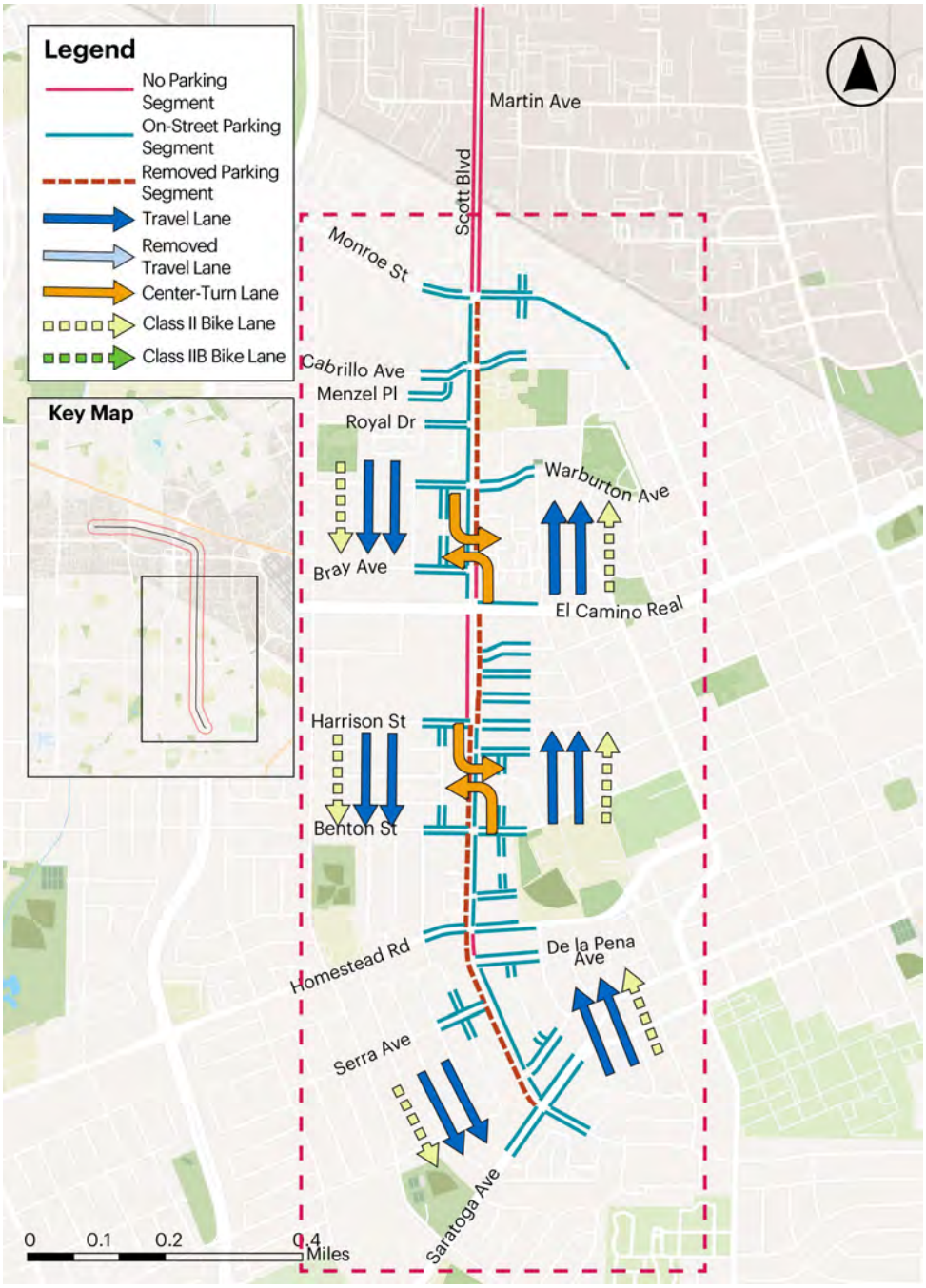
Figure 29: Scott Boulevard Between Monroe Street and Saratoga Avenue – No Build Option



Concept J: Four Lanes, Standard Bike Lanes, Remove Parking on One Side

This concept removes parking on one side of the street to make room for Class II bike lanes. See **Figure 30** for a schematic of the alternative.

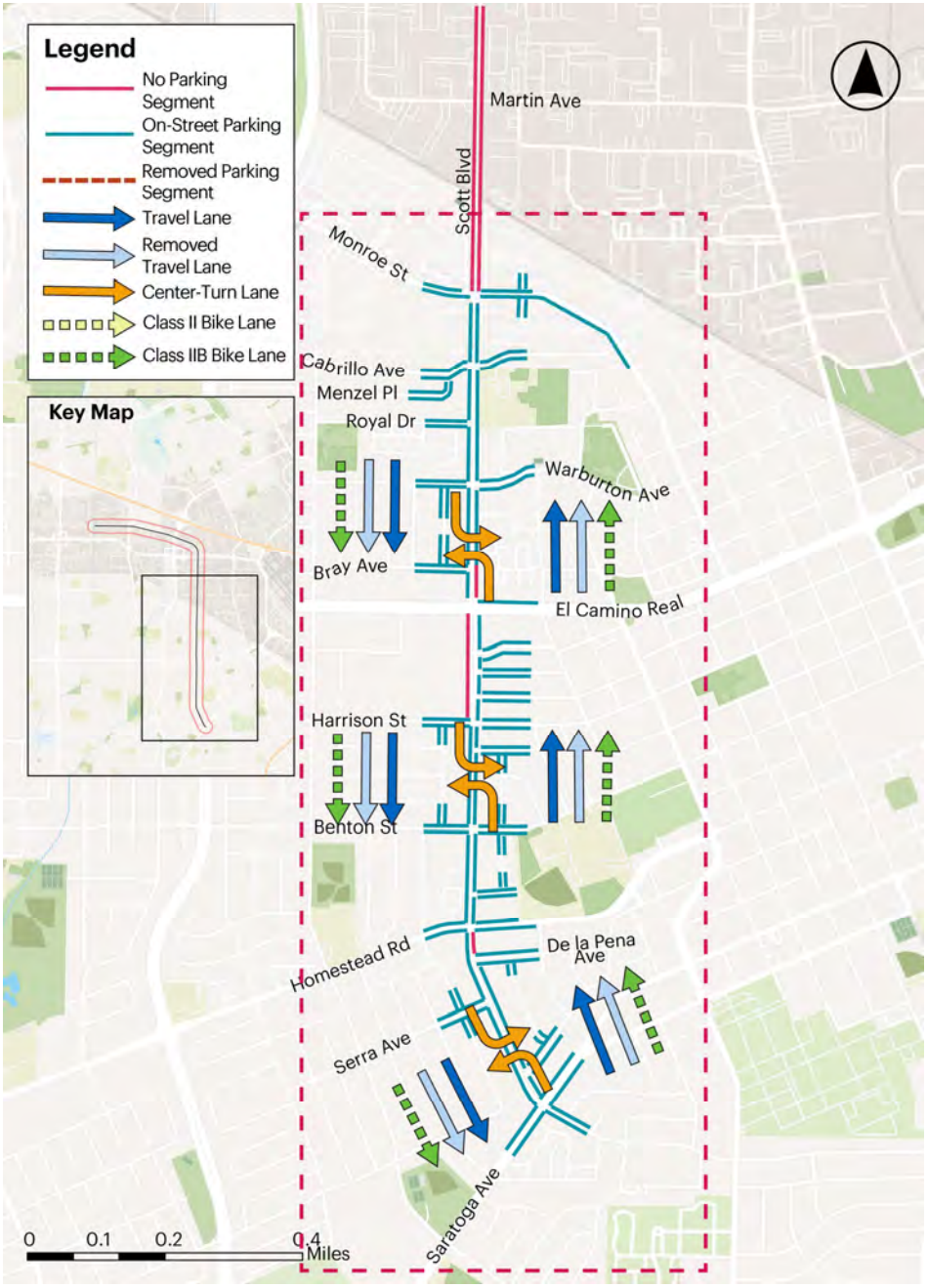
Figure 30: Scott Boulevard Between Monroe Street and Saratoga Avenue – Concept J



Concept K: Two Lanes, Buffered Bike Lanes, Parking on Both Sides

This concept removes one travel lane in each direction to make room for Class IIB buffered bike lanes. It also provides a new center-turn lane south of Homestead Road. See **Figure 31** for a schematic of the alternative.

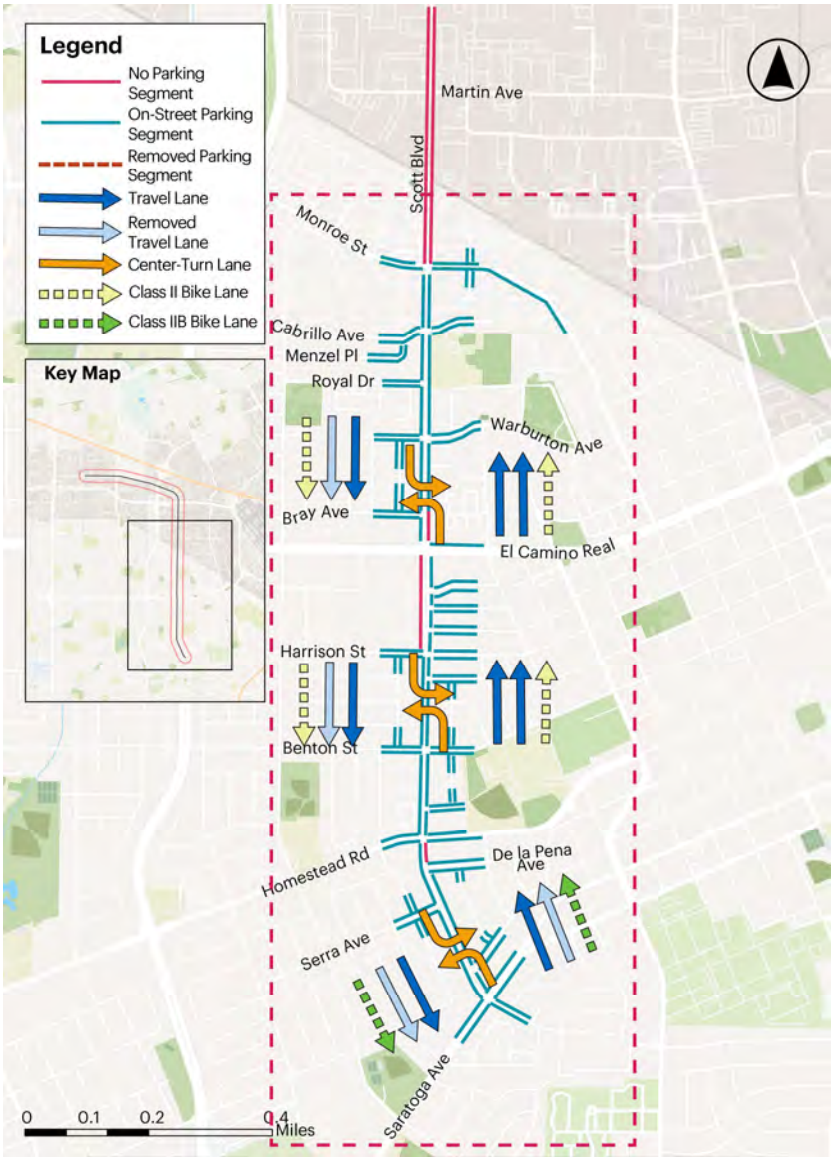
Figure 31: Scott Boulevard Between Monroe Street and Saratoga Avenue – Concept K



Concept L: Two Lanes, Buffered Bike Lanes, Standard Bike Lanes

This concept removes a SB travel lane to make room for Class II bike lanes north of Homestead Road and removes one travel lane in each direction to make room for Class IIB buffered bike lanes south of Homestead Road. It also provides a new center-turn lane south of Homestead Road. See **Figure 32** for a plan view of the alternative.

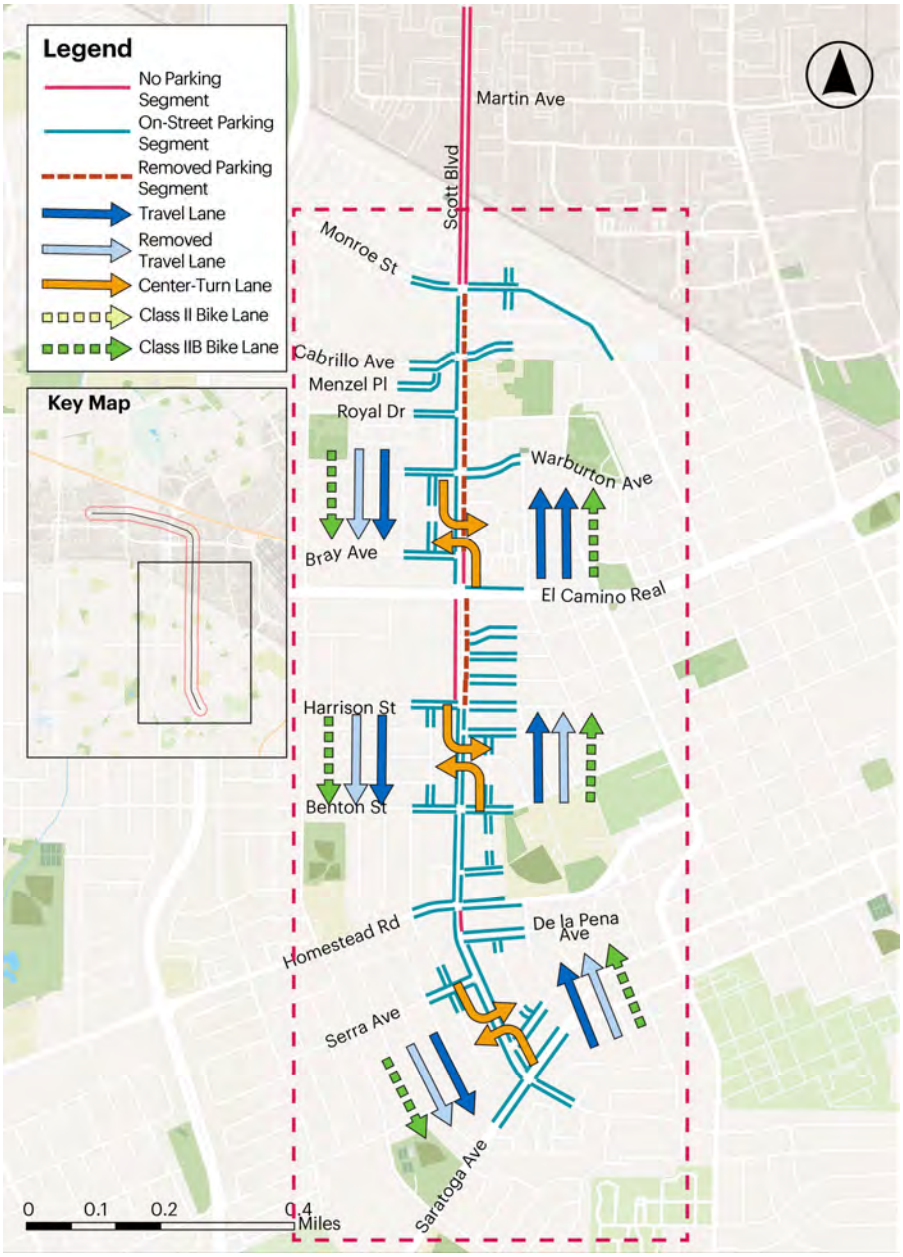
Figure 32: Scott Boulevard Between Monroe Street and Saratoga Avenue – Concept L



Concept M: Two/Three Lanes, Buffered Bike Lanes

This concept removes a SB travel lane and parking on one side of the street north of Harrison Street and removes one travel lane in each direction south of Harrison Street to make room for Class IIB buffered bike lanes. See **Figure 33** for a plan view of the alternative.

Figure 33: Scott Boulevard Between Monroe Street and Saratoga Avenue – Concept M



5. Evaluation Findings

Traffic Analysis Overview

A detailed traffic analysis was conducted for all project alternatives that include the removal of up to one travel lane in each direction on the study corridor. The analysis evaluated the With Project LOS for each study intersection against the same LOS thresholds noted above in Study Methodology section of this report. Analysis results per corridor can be seen in Table 5 through Table 9. Vistro LOS worksheets for each intersection can be found in Appendix D.

De La Cruz Boulevard

Based on the analysis, 8 of 9 intersections will continue to operate acceptably during the AM peak hours (no change from existing conditions) and 8 of 9 will continue to operate acceptably during the PM peak hours (no change from existing conditions). The average increase in delay was 1.1 seconds per intersection in the AM period and 0.7 seconds per intersection in the PM period.

Lick Mill Boulevard

For Lick Mill Boulevard, 14 of 16 intersections will continue to operate acceptably during the AM peak hours (no change from existing conditions) and 15 of 16 will continue to operate acceptably during the PM peak hours (no change from existing conditions). The average increase in delay was 9.8 seconds per intersection in the AM period and 2.3 seconds per intersection in the PM period.

Scott Boulevard

For Scott Boulevard, 20 of 21 intersections will continue to operate acceptably during the AM peak hours (no change from existing conditions) and 19 of 21 will continue to operate acceptably during the PM peak hours (one more intersection operating acceptably than existing conditions). In the PM peak hour, Scott Boulevard & Serra Avenue sees an improvement with the project due to the introduction of a center-turn lane in conjunction with the travel lane removal. The benefits for side street turning movements associated with the center-turn lane offset the reduced capacity on Scott Boulevard with the through lane removal, providing a net benefit to LOS at the intersection. No intersections that operate acceptably in No-Build conditions deteriorate below established LOS standards with the lane reduction.

Parking Analysis

A parking analysis was completed for all project alternatives that include the removal of parking lanes or provision of parking-protected bike lanes. Using existing parking inventories and parking counts, parking diversion, or reallocation of cars parked on-street, was estimated for each corridor. Analysis results per corridor can be seen in Table 5 through Table 9. Maps showing parking utilization for all time periods can be found in Appendix E.

De La Cruz Boulevard

While Concepts B, C, and D all propose a reduction in parking, the estimated availability for all proposed concepts remains greater than 50%. For each of the alternatives, all diverted cars have nearby, available side street parking to relocate to.

Lick Mill Boulevard

For Lick Mill Boulevard, Concept F has minimal impact on parking availability, and Concept G has a larger impact on availability. With Concept G, there is far more parking demand than available parking. Additionally, with this concept a total of 121 vehicles would not have nearby and available on-street parking to relocate to. However, this includes 98 vehicles that are assumed to be associated with temporary construction parking. Besides the parking demand on the north side of the corridor, the additional vehicles that do not have nearby and available side street parking are located near Laird Circle. Even by excluding the demand for the temporary construction parking, there is more parking demand than available parking with Concept G.

Scott Boulevard

For Scott Boulevard, Concept J and M propose a reduction in parking with Concept J having an estimated parking availability of 31% and Concept M having an estimated parking availability of 36%. In both concepts, it is estimated that 11 vehicles will not have a nearby, available side street location to relocate to. This is due to high parking utilization on side streets between Monroe Street and Warburton Avenue.

Travel Time Analysis

A travel time analysis was completed for all project alternatives that include the removal of up to one travel lane in each direction on the study corridor. With Project travel times are noted for each corridor in Table 5 through Table 9.

Table 5: De La Cruz Boulevard Analysis Summary Table

Project Corridor	Concept	Collision Reduction Potential	Estimated Parking Availability[1,2]	Number of Deficient Intersections	Corridor Travel Time[3]	Estimated VMT Reduction
De La Cruz Boulevard	No Build Option	N/A	66%	AM: 1 PM: 1	5 Minutes 16 Seconds	N/A
	Corridor Concept A: Two Lanes, Buffered Bike Lanes, Center Turn Lane, Parking on Both Sides	Yes	Same as No Build	Same as No Build	5 Minutes and 28 Seconds	9,782 miles/ year
	Corridor Concept B: Two Lanes, Buffered and Parking Protected Bike Lanes, Center Turn Lane, Parking on Both Sides	Yes	62%	Same as No Build	5 Minutes 28 Seconds	9,782 miles/ year
	Corridor Concept C: Four Lanes, Buffered Bike Lanes, Remove Parking On One Side	Negligible	55%	Same as No Build	Same as No Build	9,782 miles/ year
	Corridor Concept D: Four Lanes, Buffered and Protected/Buffered Bikeways, Remove Parking	Negligible	51%	Same as No Build	Same as No Build	9,782 miles/ year

[1] Reflects average parking availability (total parking minus utilization) for the peak parking hour during observations: Weekdays, 10AM-11AM

[2] Includes parking availability of side streets within 500ft of the study corridor

[3] Reflects change in delay at signalized intersections only. Additional travel time may occur with lane removal due to increased friction in remaining lane(s).

Table 6: Lick Mill Boulevard Analysis Summary Table

Segment	Concept	Collision Reduction Potential	Estimated Parking Availability[1,2]	Number of Deficient Intersections	Corridor Travel Time[4]	Estimated VMT Reduction
Lick Mill Boulevard	No Build Option	N/A	54%	AM: 2 PM: 1	6 Minutes 33 Seconds	N/A
	Concept E: Two Lanes, Buffered Bike Lanes, Parking on Both Sides	Yes	Same as existing	Same as No Build	6 Minutes 36 Seconds	16,095 miles/ year
	Concept F: Two Lanes, Parking Protected Bike Lanes	Yes	53%	Same as No Build	6 Minutes 36 Seconds	16,095 miles/ year
	Concept G: Three/Four Lanes, Protected and Buffered Bike Lanes, Remove Parking	Yes	No Parking Available (121 Cars with No Available Parking)[3]	Same as No Build	6 Minutes 34 Seconds	16,095 miles/ year

[1] Reflects average parking availability (total parking minus utilization) for the peak parking hour during observations: Weekdays, 7AM-8AM

[2] Includes parking availability of side streets within 500ft of the study corridor

[3] A total of 121 cars would not have nearby and available on-street parking to relocate to, resulting in an availability of -80%. This includes 98 cars that are assumed to be associated with temporary construction parking. **Excluding the cars associated with temporary construction, the estimated parking availability would be -5%.**

[4] Reflects change in delay at signalized intersections only. Additional travel time may occur with lane removal due to increased friction in remaining lane(s).

Table 7: Scott Boulevard Analysis Summary Table (Arques Ave to Martin Ave)

Segment	Concept	Collision Reduction Potential	Estimated Parking Availability	Number of Deficient Intersections	Corridor Travel Time	Estimated VMT Reduction
Scott Boulevard (Arques Avenue to Martin Avenue)	No Build Option	N/A	N/A	N/A	8 Minutes 50 Seconds	N/A
	Concept H: Four/Five Lanes, Buffered Bike Lanes	Negligible	N/A	N/A	Same as No Build	Same as No Build

Table 8: Scott Boulevard Analysis Summary Table (Martin Ave to Monroe St)

Segment	Concept	Collision Reduction Potential	Estimated Parking Availability	Number of Deficient Intersections	Corridor Travel Time	Estimated VMT Reduction
Scott Boulevard (Martin Avenue to Monroe Street)	No Build Option	N/A	N/A	N/A	1 Minute 43 Seconds	N/A
	Concept I: Four Lanes, Buffered Bike Lanes	Negligible	N/A	N/A	Same as No Build	Same as No Build

Table 9: Scott Boulevard Analysis Summary Table (Monroe St to Saratoga Ave)

Segment	Concept	Collision Reduction Potential	Estimated Parking Availability[1,2]	Number of Deficient Intersections	Corridor Travel Time[4]	Estimated VMT Reduction
Scott Boulevard (Monroe Street to Saratoga Avenue)	No Build Option	None	38%	AM: 1 PM: 3	4 Minutes 50 Seconds	None
	Concept J: Four Lanes, Standard Bike Lanes, Remove Parking on One Side	Negligible	31%[3]	Same as No Build	Same as No Build	18,117 miles/year
	Concept K: Two Lanes, Buffered Bike Lanes, Parking on Both Sides	Yes	Same as No Build	AM: 1 PM: 2 (-1)	5 Minutes 18 Seconds	18,117 miles/year
	Concept L: Two Lanes, Buffered Bike Lanes, Standard Bike Lanes	Yes	Same as No Build	AM: 1 PM: 2 (-1)	5 Minutes 16 Seconds	18,117 miles/ year
	Concept M: Two/Three Lanes, Buffered Bike Lanes	Yes	36%[3]	AM: 1 PM: 2 (-1)	5 Minutes 18 Seconds	18,117 miles/year

[1] Reflects average parking availability (total parking minus utilization) for the peak parking hour during observations: Weekends, 12AM-1AM

[2] Includes parking availability of side streets within 500ft of the study corridor

[3] A total of 11 cars would not have nearby and available on-street parking to relocate to.

[4] Reflects change in delay at signalized intersections only. Additional travel time may occur with lane removal due to increased friction in remaining lane(s).

6. Outreach Process and Results

Community engagement was a major component of advancing the Project and a variety of outreach strategies were used to seek input from stakeholders. Residents were provided with multiple opportunities to share feedback on the project, including corridor surveys, pop-up events, and community meetings. Project information, including how to share input, was distributed via the project webpage, road signs, and a mailer sent out to approximately 12,000 addresses near the three project corridors. To promote community meetings, the City of Santa Clara shared social media posts, e-newsletters, and flyers via various communication channels. The project team also reached out to five local schools near the corridors to raise awareness, with Don Callejon School, Montague Elementary School, and CW Haman Elementary School distributing project materials to their school networks. Digital copies of outreach collateral can be found in Appendix F.

6.1. In-Person Outreach Events

Outreach began with a virtual project kick-off meeting on November 14, 2024, via Zoom, to introduce the project and share potential road diet options; there were 11 community members in attendance. Two pop-up events were then held at Santa Clara's Tree Lighting Ceremony and Farmers Market on December 6 and 7, 2024, to raise awareness of the corridor surveys and corridor-specific community meetings, reaching almost 100 community members. This phase of outreach concluded with the second and third community meetings for De La Cruz/Lick Mill Boulevard and Scott Boulevard, respectively, which presented corridor-specific bike facility designs and corridor collision analyses. These hybrid meetings took place on December 10 and 11 via Zoom and in-person at City Hall; there were 7 community members in attendance at the De La Cruz/Lick Mill Boulevard meeting and 12 community members in attendance at the Scott Boulevard meeting.

Figure 34: Community Meeting #2

Figure 35: Community Meeting #3

Feedback from First Community Meeting

Community members expressed concerns about parking impacting bike facilities, including parked vehicles occupying the bike lane and a high volume of game-day parking around Lick Mill Blvd. There were also questions raised about changes to traffic flow, streamlined bike traffic to schools and parks, and the feasibility of intersection infrastructure improvements, including improving the crosswalk and

modifying signalized intersections. Some community members were also curious about whether repaving would be included in the installation of new bike facilities, and there was a question about the City and Caltrans collaborating to improve the El Camino Real and Scott Boulevard intersection.

Feedback from Second and Third Community Meetings

Across all three project corridors, community members expressed concerns about proposed changes to parking availability, citing both commercial and residential needs for parking. Some community members were also worried about potential impacts to existing school pick-up and drop-off zones. There were several comments about including a floating parking lane, with the bicycle lane closest to the curb and parking in between the traffic and bicycle lanes.

Community members also had comments and questions about the impact of proposed bike facilities on reducing speeding and congestion, which included support for lane narrowing and travel lane removal. While some attendees expressed hesitation about parking removal, others were very supportive of the project and of City efforts to balance the needs of cyclists, motorists, and pedestrians.

Feedback from Farmer's Market Pop-Up

Key themes from feedback received during this pop-up included:

- Protected Bike Lanes: Many people advocated for physical barriers, such as poles or dividers, on De La Cruz Blvd to enhance cyclist safety.
- Traffic Flow Concerns: Residents questioned how removing a lane for bike infrastructure might impact side street traffic patterns.
- Parking Availability: Concerns were raised about reducing parking availability, particularly given the area's growing population.
- Lick Mill Blvd Safety: Participants expressed support for bike lanes on Lick Mill Blvd, emphasizing their potential to improve safety for both drivers and children.
- Community Involvement: On Jefferson St., the implementation of a bike lane without prior resident notification caused frustration. Suggestions included increasing transparency and engagement in future projects.
- Road Sharing Education: Several suggested initiatives to educate drivers and cyclists on safely sharing the road.

- **Helmet Enforcement:** Participants highlighted the need for better enforcement of bicycle helmet laws.
- **San Tomas and Homestead Concerns:** On San Tomas, the bike lane's routing away from the mall raised concerns about the removal of trees and increased light pollution on nearby homes along Homestead Rd.

Feedback from Tree Lighting Ceremony

The project team gave out 35 project flyers and engaged with an estimated 50 people, encouraging them to attend the upcoming hybrid community meetings on December 10 and 11. Most community members were excited for the project and to take the surveys, with only a handful of community members expressing concern over parking or lane removal.

Figure 36: Tree Lighting Ceremony Project Booth

6.2. Project Voicemail and Email

Community members were able to share feedback by recording a voicemail or sending the project team an email; a total of 2 voicemails and 27 emails were received, as of January 10th, 2024.

6.3. Online Survey Results

Three corridor surveys, one each for De La Cruz Boulevard, Lick Mill Boulevard, and Scott Boulevard, were administered to Santa Clara community members from December 5 to December 22, 2024. The surveys received 551 public responses: 140 for the De La Cruz Boulevard survey, 180 for the Lick Mill Boulevard survey, and 231 for the Scott Boulevard survey. Each survey included a question allowing respondents to select their preferred alternative, including the no-build option, for each segment of the study area roadways. A map showing each of the corridor segments used in the survey can be found in Appendix G. Each survey included the same three demographic questions; the first question asked for respondents' connection to the study area, the second question asked for what modes of travel respondents used, and the third question asked how often respondents biked along the roadway. The first two questions allowed respondents to select all options that applied. Complete survey data is available in the Appendix H.

De La Cruz Boulevard

There were 140 responses to the De La Cruz Boulevard survey. Respondents primarily travel through the corridor to a destination outside the study area (51%), live along or near the area (39%), and shop or visit recreational destinations in the study area (35%). Respondents also primarily drove alone (80%), carpooled with others (42%), and used bicycles or scooters (34%) to travel along De La Cruz Boulevard.

For De La Cruz Boulevard, there was no clear consensus between parking removal or lane removal in order to provide bike lanes; however, respondents overwhelmingly supported one of the two in order to add protected or buffered bike lanes. Throughout the corridor, approximately 80% of respondents preferred an alternative that provided a bike facility by removing parking or travel lanes, with the remainder preferring the No Build Option.

North of Montague Park, 44% of respondents preferred parking removal (Concept C and D) to create space for the bike lanes, while 35% of respondents preferred lane removal (Concept A and B). Therefore, while there was a clear preference to add bike lanes (79% of respondents supported a Build alternative), there was not clear preference between removing travel lanes or removing a parking lane. Only 21% of respondents preferred the No Build Option.

South of Montague Park, lane removal was slightly preferred (Concept A and B received a total of 42%) over parking removal (Concept C and D received a total of 38%). Therefore, while there was a clear preference to add bike lanes (80% of respondents supported a Build alternative), there was not clear preference between removing travel lanes or removing a parking lane. Only 20% of respondents preferred No Build/Existing Conditions. The separated bike lane options (Concepts B and D received a total of 56% of the votes) were much more supported than the buffered concepts (Concepts A and C received a total of 24% of the votes).

In the open response section, respondents were concerned about traffic and parking lane reduction worsening congestion and accessibility. There were also some hesitations about the need for a bike lane along De La Cruz Boulevard, while others were supportive of bike lanes and advocating for more physical bike lane separation. In the southern section, some respondents said off-street parking lessens demand for street parking, but others wanted to preserve street parking for businesses.

Lick Mill Boulevard

There were 180 responses to the Lick Mill Boulevard survey. Respondents primarily live along or near the area (67%), shop or visit social or recreational destinations in the study area (43%), and travel through the corridor with a destination outside of the study area (42%). Respondents also primarily drove alone (77%), walked (49%), used bicycles or scooters (43%), and carpooled with others (41%).

For Lick Mill Boulevard, there was no clear consensus between parking removal or lane removal in order to provide bike lanes; however, respondents overwhelmingly supported one of the two in order to add separated bike lanes. Throughout the corridor, approximately 75% of respondents preferred an alternative that provided a bike facility by removing parking or travel lanes, with the remainder preferring the No Build Option.

North of Laird Circle (South), approximately 50% preferred an alternative that preserved parking where it exists today (Concepts E and F). Another 26% preferred removing parking to maintain the existing travel lanes (Concept G). The remaining 24% preferred the No Build Option. Between the two alternatives that removed a

travel lane and preserved parking, most preferred providing parking-protected instead of buffered bike lanes (Concept F received 38% of the votes).

Preferences South of Laid Circle (South) were very similar to the northern segment. Approximately 49% preferred an alternative that preserved parking where it exists today (Concepts E and F). Another 21% preferred removing parking to maintain the existing travel lanes (Concept G). The remaining 30% preferred the No Build Option. Between the two alternatives that removed a travel lane and preserved parking, most preferred providing parking-protected instead of buffered bike lanes (Concept F received 38% of the votes).

In the open response section, respondents had mixed opinions about each of the alternatives. Overall, they expressed concerns about removing parking, especially for those accessing Lick Mill Park and Ulistac Natural Area, and residents who rely on street parking. Other respondents expressed support for a parking-protected bike lane to reduce the risk of "dooring" and increasing visibility. Some do not believe that existing biking demand warrants the implementation of bike lanes, while others support buffered bike lanes and physically separated bike lanes to improve cyclist safety.

Scott Boulevard

There were 231 responses to the Scott Boulevard survey. Respondents primarily live along or near the area (66%), travel through the corridor with a destination outside of the study area (43%), and shop or visit social or recreational destinations in this study area (37%). Respondents also primarily drove alone (81%), used bicycles or scooters (42%), and carpooled with others (39%).

For Scott Boulevard North of Monroe Street, the Build alternative (Concepts H and I - Buffered bike lanes with lane removal, or lane width reduction) was the preferred concept, with more than 60% of the votes. The other option, the No Build Option, received less than 40% of the votes for each segment.

In the open response section, some respondents expressed concerns about congestion and traffic impacts, while others advocated for further bicycle lane protection like physical barriers. General sentiment appeared to call for safer roads for both cars and cyclists, which includes addressing speeding and traffic congestion.

For the southern portion of Scott Boulevard from Monroe Street to Saratoga Avenue, there was no clear consensus between parking removal or lane removal in order to provide bike lanes; however, respondents overwhelmingly supported one of the two in order to add buffered or protected bike lanes. Throughout the corridor, approximately 70% of respondents preferred an alternative that provided a bike facility by removing parking or travel lanes, with the remainder preferring the No Build Option.

For the segment between Monroe Street and Harrison Street, respondents were approximately equally split between preserving parking on both sides (Concepts K and L, 34%) and providing additional travel lanes while preserving parking on one side (Concepts J and M, 37%). The No Build Option received 29% of the vote. The Build alternative with the highest vote total was Concept K, with 28% of the vote.

For Scott Boulevard from Harrison Street to Homestead Road, Concepts K and M (which are the same for this portion of Scott Boulevard) were the preferred concepts, with 43% of the votes. An additional 12% preferred Concept L, which also maintains parking on both sides, but with Class II bike lanes and three travel lanes. Thus, a total of 55% of respondents preferred a configuration with bike lanes and parking preserved on both sides. The No Build Option received 28% of the vote. The remaining 17% preferred keeping all of the travel lanes with Concept J.

For Scott Boulevard from Homestead Road to Saratoga Avenue, the vote was very similar. Concepts K, L, and M (which are the same for this portion of Scott Boulevard), were the preferred concepts, with 54% of the votes. The No Build Option received 28% of the vote. The remaining 18% preferred keeping all of the travel lanes with Concept J.

In the open response section, respondents were concerned with maintaining existing parking, negative impacts of the alternatives on traffic flow, and negative effects on access to local businesses. In addition to the parking demand concern, respondents also expressed concerns about cyclist safety near busy traffic lanes and parked cars, including “dooring.”

7. Recommendations and Conclusion

Final Report will include City Council approved preferred design concepts.