Complete Streets Commission

REGULAR MEETING AGENDA

Date: 10/10/2018
Time: 7:00 p.m.
City Council Chambers
701 Laurel St., Menlo Park, CA 94025

A. Call To Order

B. Roll Call

C. Reports and Announcements

Under "Reports and Announcements," staff and Commission members may communicate general information of interest regarding matters within the jurisdiction of the Commission. No Commission discussion or action can occur on any of the presented items.

D. Public Comment

Under "Public Comment," the public may address the Commission on any subject not listed on the agenda. Each speaker may address the Commission once under Public Comment for a limit of three minutes. Please clearly state your name and address or political jurisdiction in which you live. The Commission cannot act on items not listed on the agenda and, therefore, the Commission cannot respond to non-agenda issues brought up under Public Comment other than to provide general information.

E. Regular Business

E1. Approve the Complete Streets Commission regular meeting minutes of September 12, 2018 (Attachment)

E2. Review loading zones options for Draeger's Market located at 1010 University Drive and provide a recommendation to City Council. (Staff Report #18-010-CSC)

E3. Recommend to City Council to approve the permanent installation of bicycle improvements on Oak Grove Avenue, Crane Street, and University Drive (Staff Report #18-011-CSC)

F. Informational Items

F1. Update on major project status

G. Committee/Subcommitte Reports

G1. Update from Active Transportation Network Subcommittee (Behroozi/Kirsch/Nash/Weiner)

G2. Update from Electric Vehicle Subcommittee (Meyer/Nash/Walser)

G3. Update from Downtown Access and Parking Subcommittee (Behroozi/Levin/Nash)

G4. Update from Multimodal Subcommittee (Levin/Walser)

G5. Update from Placemaking and Outreach Subcommittee (Lee/Meyer)

G6. Update from Safe Routes to School Program Subcommittee (Lee/Mazzara/Walser/Meyer)

G7. Update from Transportation Master Plan Subcommittee (Behroozi/Levin/Nash)

H. Adjournment

At every Regular Meeting of the Commission, in addition to the Public Comment period where the public shall have the right to address the Commission on any matters of public interest not listed on the agenda, members of the public have the right to directly address the Commission on any item listed on the agenda at a time designated by the Chair, either before or during the Commission's consideration of the item.

At every Special Meeting of the Commission, members of the public have the right to directly address the Commission on any item listed on the agenda at a time designated by the Chair, either before or during consideration of the item.

Any writing that is distributed to a majority of the Commission by any person in connection with an agenda item is a public record (subject to any exemption under the Public Records Act) and is available for inspection at the City Clerk's Office, 701 Laurel St., Menlo Park, CA 94025 during regular business hours.

Persons with disabilities, who require auxiliary aids or services in attending or participating in Commission meetings, may call the City Clerk's Office at 650-330-6620.

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Complete Streets Commission

REGULAR MEETING MINUTES - DRAFT

Date: 9/12/2018
Time: 7:00 p.m.
City Council Chambers
701 Laurel St., Menlo Park, CA 94025

A. Call to Order

Chair Kirsch called the meeting to order at 7:02 p.m.

B. Roll Call

Present:	Behroozi, Kirsch, Lee, Meyer, Nash, Walser, Weiner
Absent:	Levin, Mazzara
Staff:	Associate Transportation Engineer Kevin Chen, Senior Transportation Engineer Kristiann Choy
Consultant:	Alta Planning + Design, Inc.

C. Reports and Announcements

Behroozi announced the cancellation of an upcoming bike rodeo at Hillview Middle School and the need to work with City staff to organize future school education and training events. Staff Chen announced upcoming City events, new bicycle curb cut locations, and a summary of City Council actions on transportation related items since the August 8, 2018, Complete Streets Commission meeting.

D. Public Comment

- Jen Wolosin spoke in support of using the Transportation Master Plan to design safe and comfortable streets and citywide transportation networks for all age groups.

E. Regular Business

E1. Approve the Complete Streets Commission regular meeting minutes of August 8, 2018 (Attachment)

ACTION: Motion and second (Weiner/Behroozi) to approve the Complete Streets Commission regular meeting minutes of August 8, 2018. The motion passed (4-0-3-2, Lee and Meyer and Nash abstained, Levin and Mazzara absent).

E2. Provide feedback on the bicycle and pedestrian network recommendations for the Transportation Master Plan (Staff Report #18-009-CSC)

Staff Choy and consultant Jeff Knowles provided a presentation (Attachment).

- Jen Wolosin spoke about changing the levels of stress in the document to reflect existing

conditions and the importance of getting City Council support.
- Jacqui Cebrian spoke in support of making the overall transportation network safer for pedestrians and bicyclists.

Chair Kirsch led a discussion and each Commissioner provided feedback on the bicycle and pedestrian network recommendations.

F. Informational Items

F1. Update on major project status

Staff Chen provided updates on the Draeger's Market loading zone, two ongoing Neighborhood Traffic Management Program projects, Belle Haven Neighborhood Traffic Calming Plan, Willow Road/U.S. 101 Interchange Construction, Ravenswood Avenue Railroad Crossing Project, Middle Avenue Pedestrian and Bicycle Rail Crossing Project, Oak Grove, University, Crane Bicycle Improvement Project, and Safe Routes to School Program.

G. Committee/Subcommitte Reports

G1. Update from Active Transportation Network Subcommittee

There was no report.

G2. Update from Electric Vehicle Subcommittee

Commissioner Meyer iterated the importance of recognizing electric vehicle (i.e., electric moped) as the next up-and-coming mode of transportation.

G3. Update from Downtown Access and Parking Subcommittee

There was no report.

G4. Update from Multimodal Subcommittee

There was no report.

G5. Update from Placemaking and Outreach Subcommittee

There was no report.

G6. Update from Safe Routes to School Program Subcommittee

There was no report.

G7. Update from Transportation Master Plan Subcommittee

There was no report.

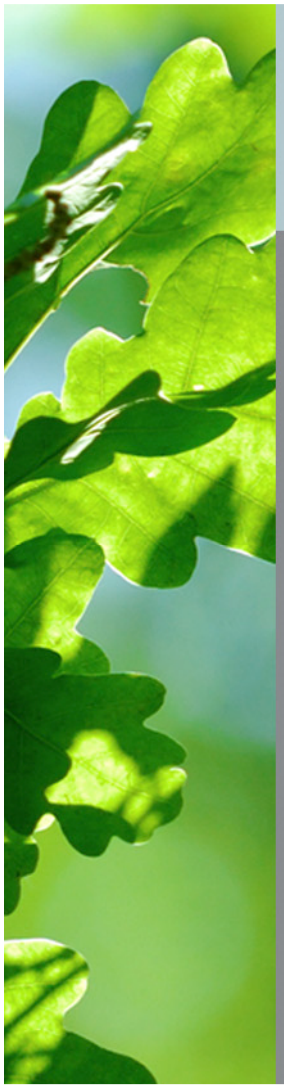
H. Adjournment

Chair Kirsch adjourned the meeting at 8:39 p.m.

TRANSPORTATION MASTER PLAN

Review and Provide Feedback on Bicycle and Pedestrian Network Recommendations

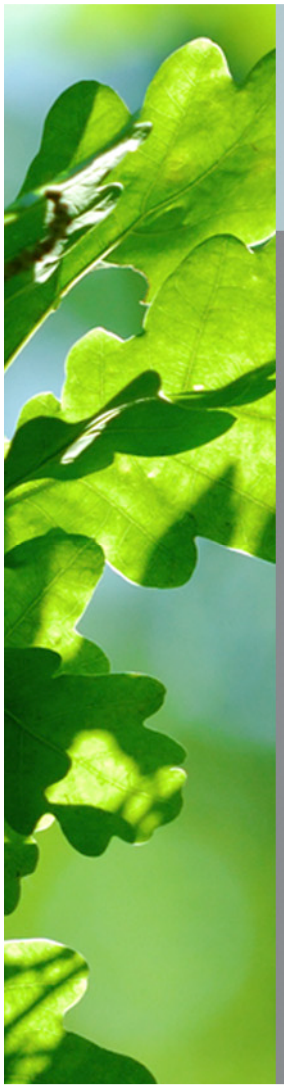
Complete Streets Commission - September 12, 2018



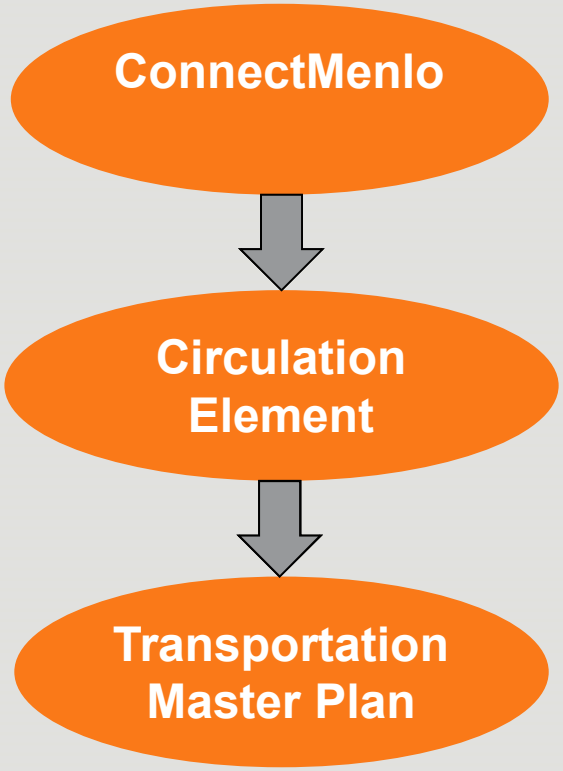
AGENDA

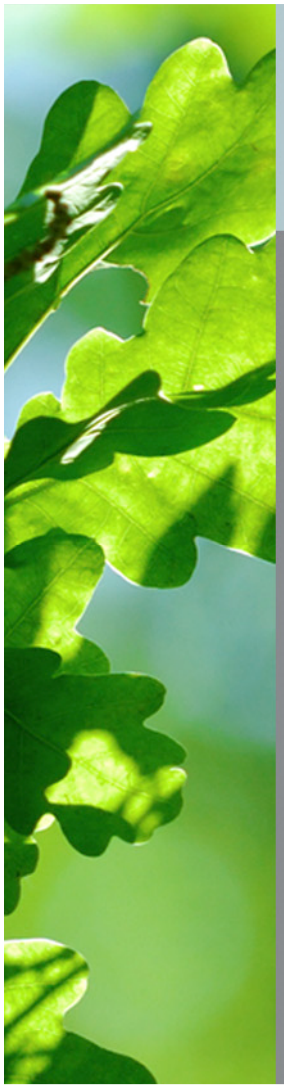
- Review of Project Goals & Purpose
- Needs Assessment
- Recommendations
- Next Steps

REVIEW PROJECT GOALS & PURPOSE



BACKGROUND


ConnectMenlo
Circulation Element
Transportation Master Plan



PURPOSE

Transportation Master Plan
General Plan Circulation – 2.C

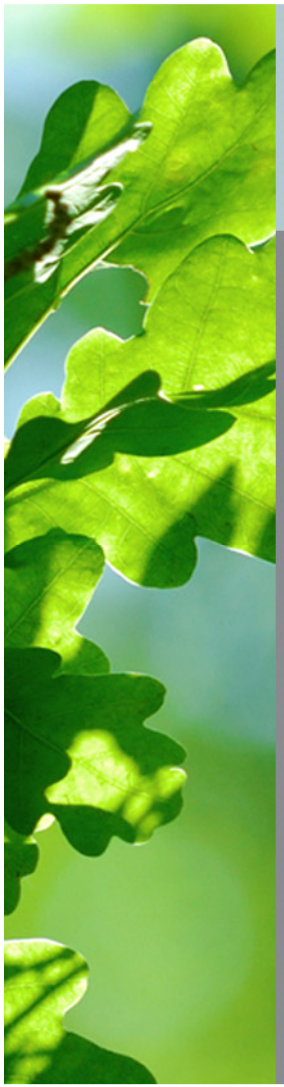
- Community engagement on key issues
- Identify projects
- Cost estimates
- Prioritize improvements

Adopt Impact Fee program
General Plan Circulation – 6.C

- Establish connection between new development and new infrastructure
- Update fee program
- Set fee rates by land use

Development pays new fees

- Fees due at building permit stage
- Improvements constructed as funds accumulate



TRANSPORTATION MASTER PLAN GOALS

- Safety

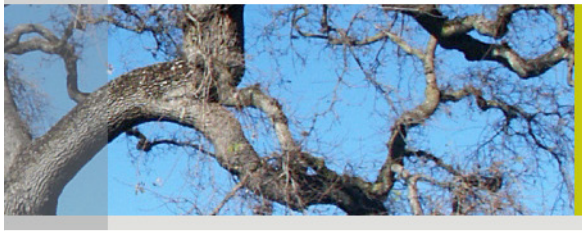
  Vision Zero – Eliminate traffic fatalities and reduce the number of non-fatal collisions by 50% by 2040. (Policy CIRC-1.1)

- Sustainability

  Enable the City to meet the goals of the current and future Climate Action Plan, including a 27 percent greenhouse gas emission reduction

- Mobility Choice

  Design transportation projects to accommodate all modes and people of all abilities. Encourage the use of lower emission modes such as walking, biking and transit. (Policy CIRC-2.1 & 4.1)



PRIORITIZATION CRITERIA

CITY OF MENLO PARK

Cost
- $: Less than $100,000
- $$: $100,000 - $1,000,000
- $$$: $1,000,000 - $3,000,000
- $$$$: Partner Projects
- F: Funded

Ease of implementation
- May be accomplished during routine pavement maintenance or City-guided program
- May be eligible for grant funding
- Significant community support

Sensitive populations
- Proximity to daycares, senior centers, and communities of concern

Transportation sustainability
- Meets City's goals and policies for mobility choices and health & wellness

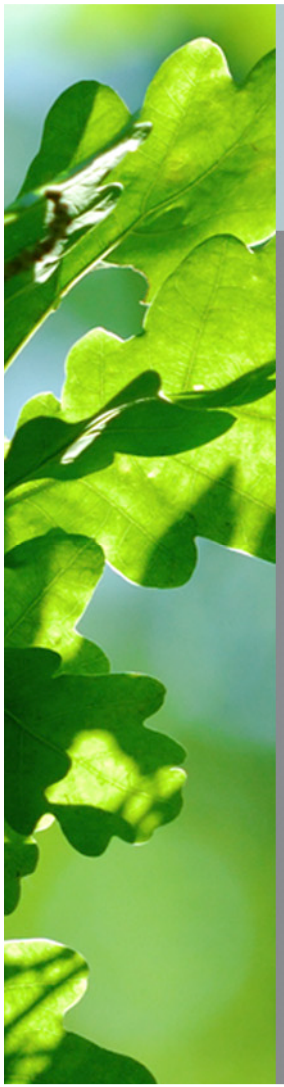
Safety
- Could improve safety conditions

School nearby
- K-12 school located with ½ mile radius

Congestion relief
- Short-Term
- Long-Term
- Circulation Patterns

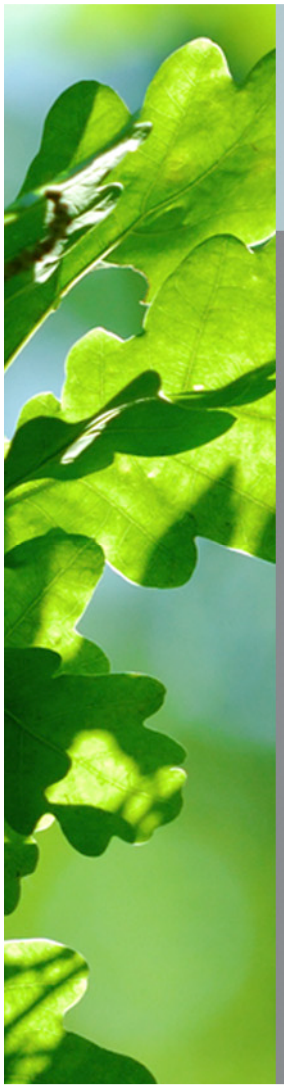
GHG reduction / person throughput
- Moves people out of SOV and into transit, carpools, shuttles, etc.
- Meets City's GHG goal

Green infrastructure
- Reduces impervious surface or increases pervious surface; stormwater treatment



HOW DID WE GET HERE?

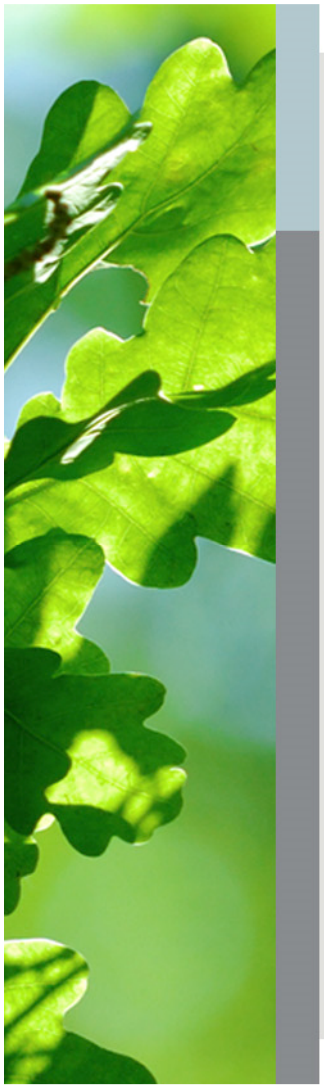
Date	Task
November–December 2016	City Council adopts ConnectMenlo Identifies TMP as highest priority Circulation Element program
January-June 2017	City selects W-Trans, Project Initiated
August 2017	City Council establishes Outreach & Oversight Committee
July–October 2017	1st round community engagement. 1,000 participants.
July–December 2017	Prep existing transportation information summary
January–March 2018	W-Trans develops draft recommendations and strategies
March 14, 2018	City Council info item to prepare for OOC #2



HOW DID WE GET HERE?

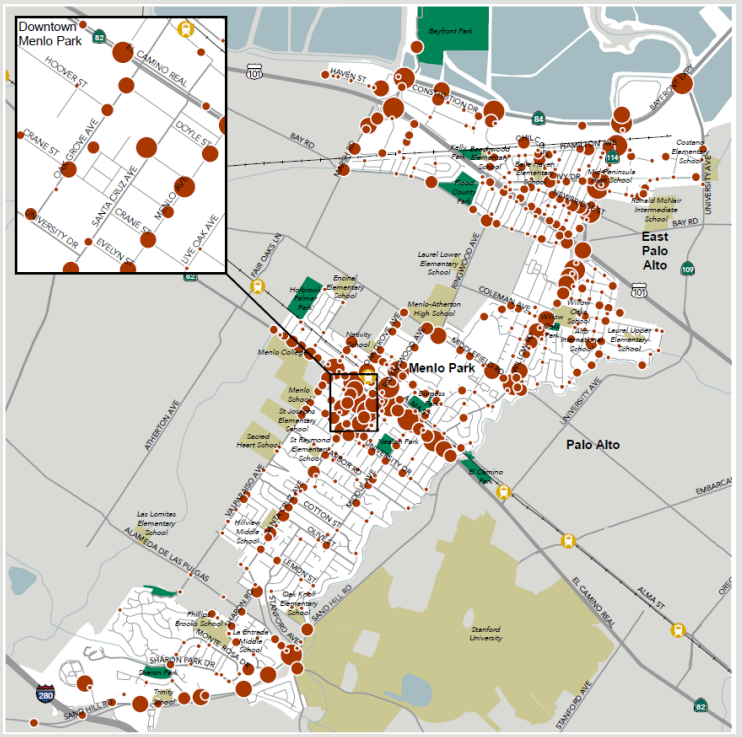
Date	Task
March 20, 2018	Outreach & Oversight Committee #2: Draft strategies and recommendations for high priority corridors
March 27, 2018	City Council info item: Identify need for more meetings Review recommendations from OOC
April 17 & 24, 2018	City Council policy discussion and direction
May 9, 2018	Complete Streets Commission
May 22, 2018	Council approval of revised scope of work
May 30, 2018	OOC #3: Review Council-adopted scope, goals, prioritization criteria and role of OOC
August 30, 2018	OOC #4: Review recommendations for north area of City
September 5, 2018	OOC #5: Review recommendations for central area of City

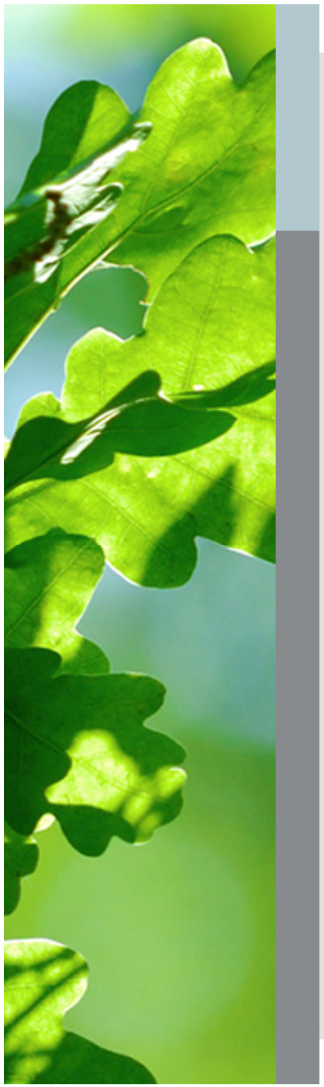
NEEDS ASSESSMENT



BACKGROUND ANALYSIS

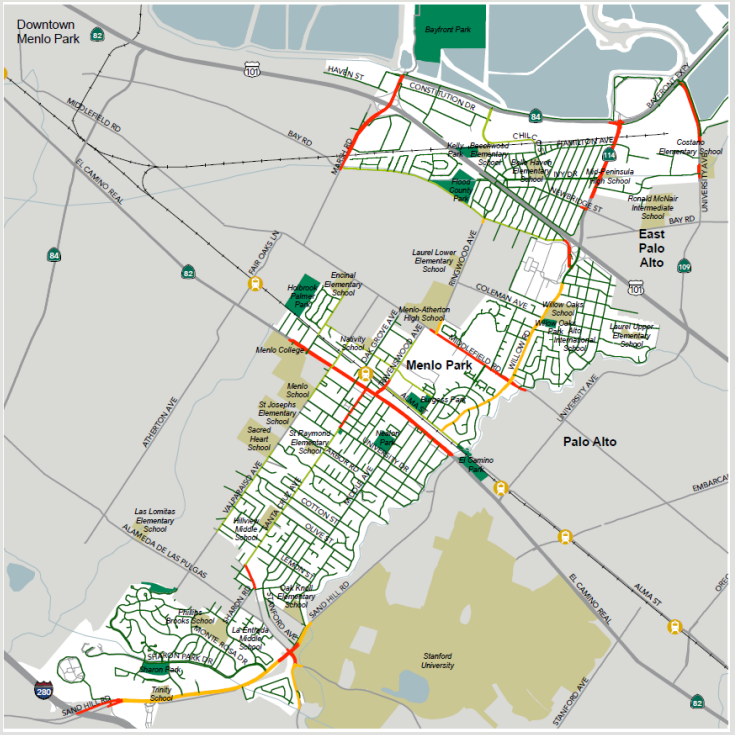
- Collision analysis
  - Identified collision “hotspots”





BACKGROUND ANALYSIS

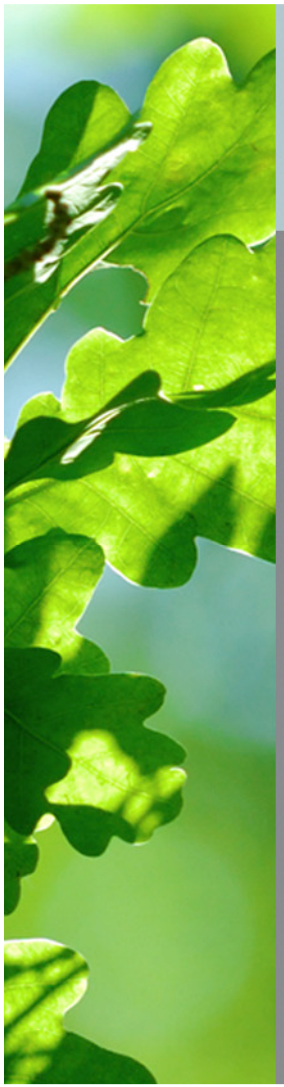
- Level of Traffic Stress (LTS)/Congestion analysis
  - Identified locations with high levels of stress and congestion



BACKGROUND ANALYSIS

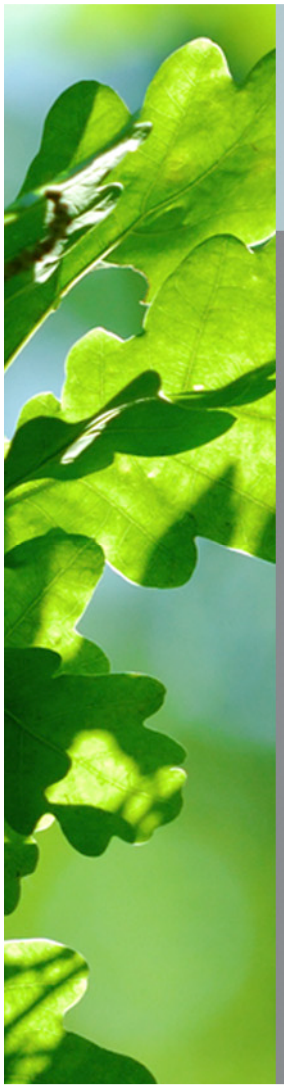
- Public Input
  - Three “Walkshops” in Bellehaven, Downtown, and West Menlo Park

RECOMMENDATIONS



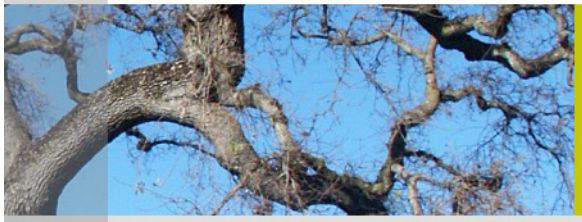
DRAFT
STRATEGIES AND RECOMMENDATIONS

- Framework for development:
  - SamTrans Dumbarton Corridor Transportation Study
  - Dumbarton Forward (MTC)
  - City-prepared Transportation Analyses from past projects
  - Limited right-of-way
  - Critical issues based on transportation data and collision patterns
- Identified 4 high priority, major corridors:
  - Bayfront Expressway
  - Willow Road
  - El Camino Real
  - Sand Hill Road
- Citywide recommendations on other corridors in development



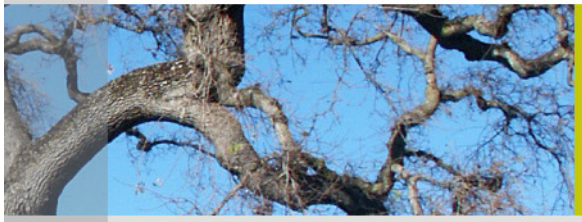
ACTIVE TRANSPORTATION STRATEGIES

- Fill in gaps in the existing network
- Increase comfort and safety of users
- Focus areas (schools, downtown, major corridors)



BICYCLE RECOMMENDATIONS

Class I Shared Use Paths



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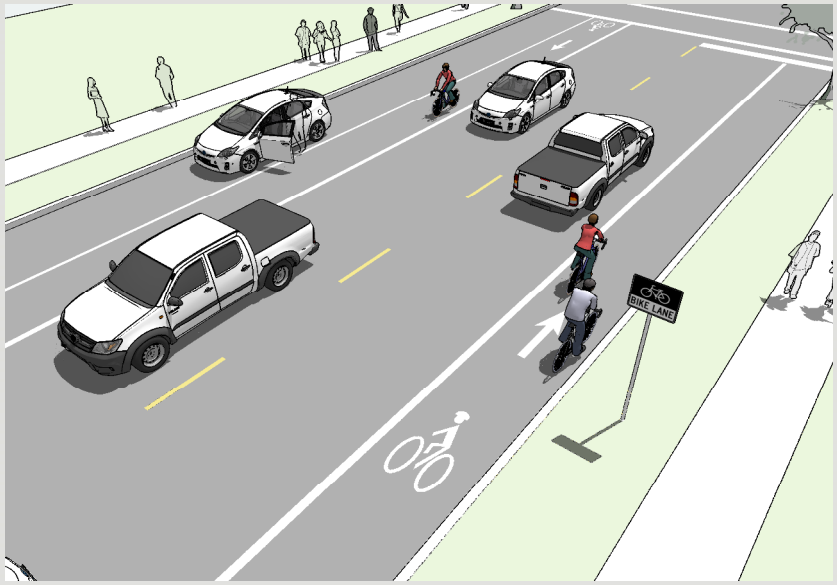
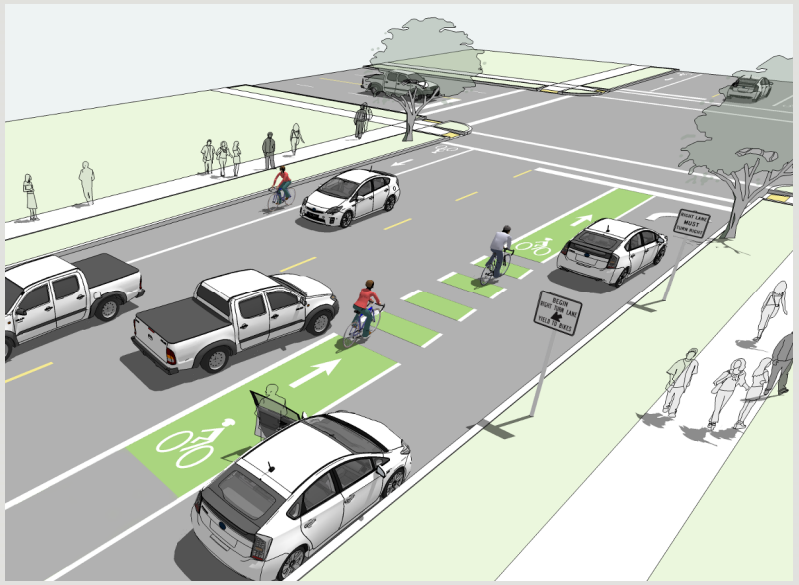
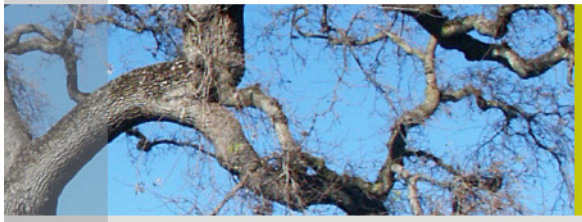




Class II Bike Lanes



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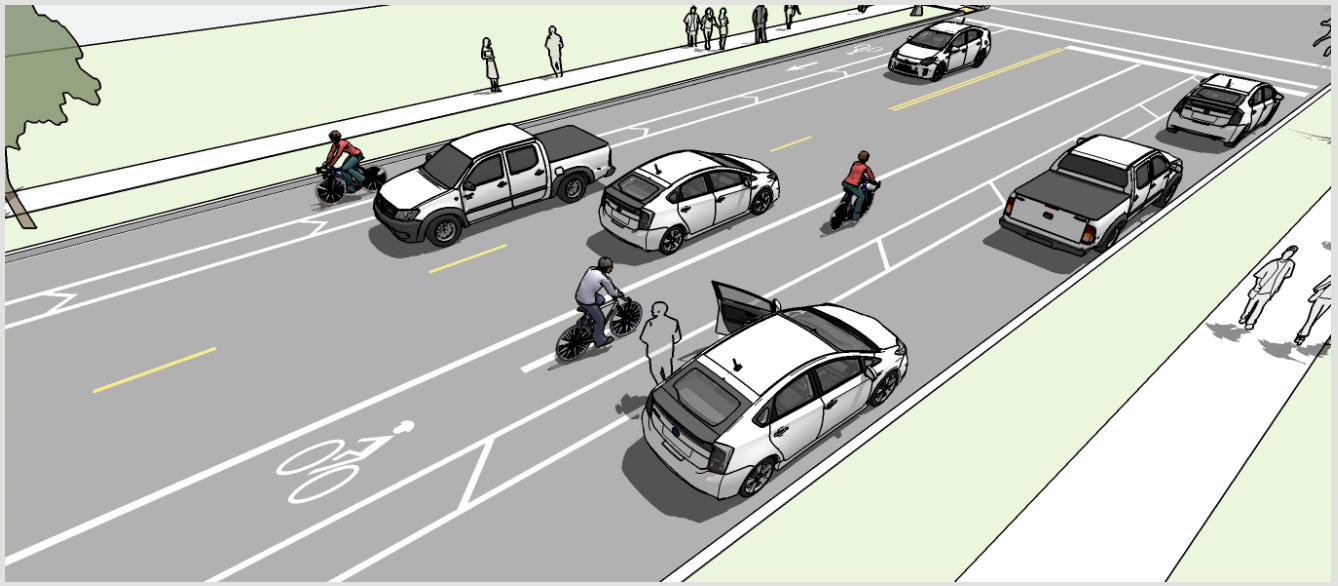
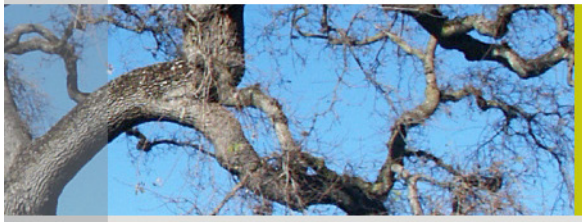


Class II Buffered Bike Lanes



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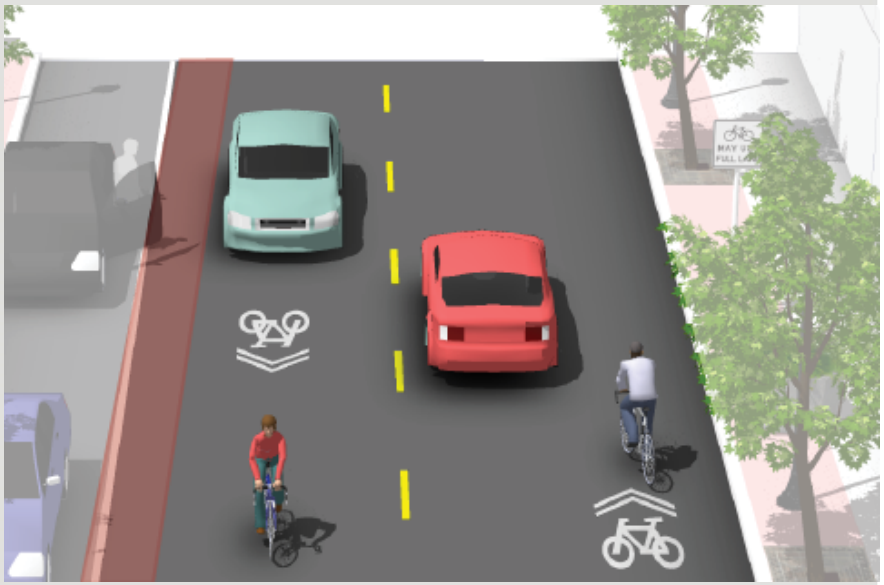
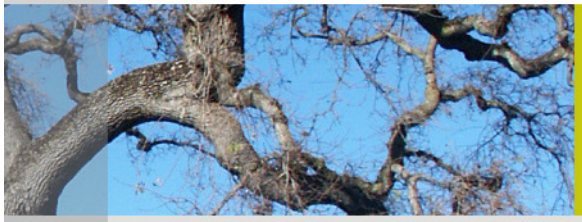


Class III Shared Roadways



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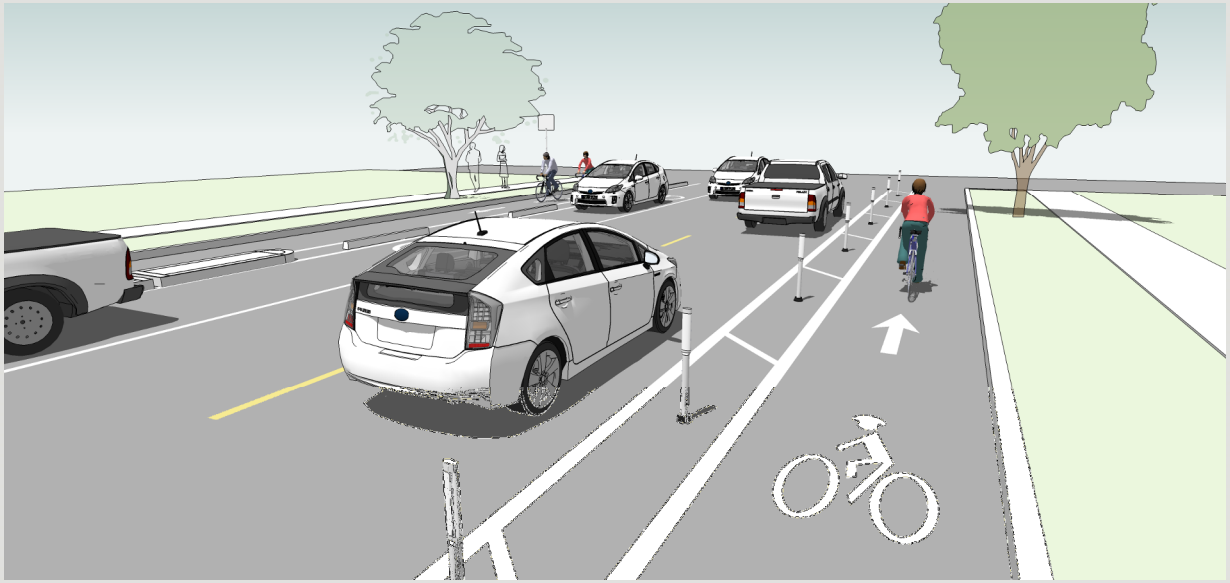
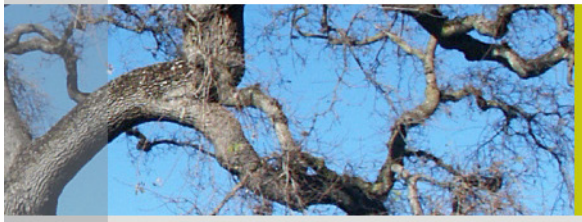


Class IV Separated Bikeways – One Way



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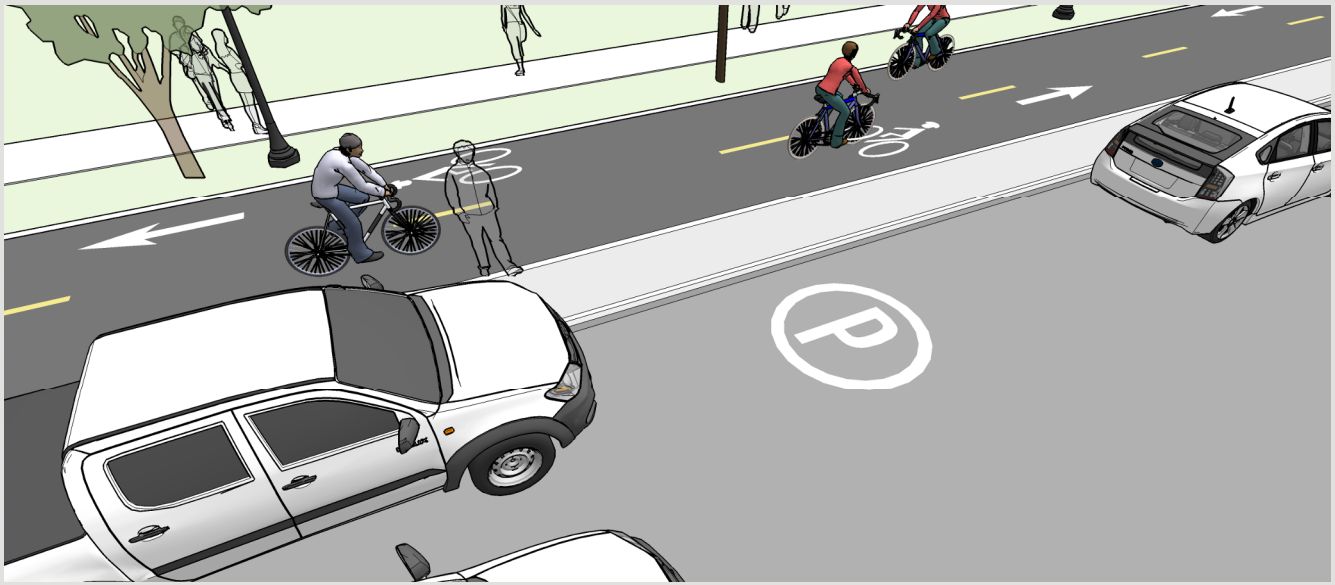
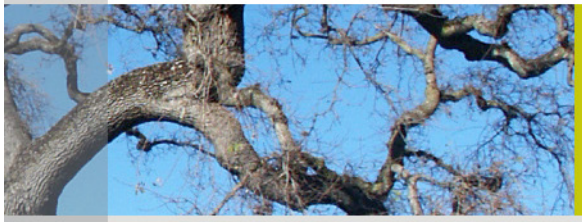


Class IV Separated Bikeways – Two Way



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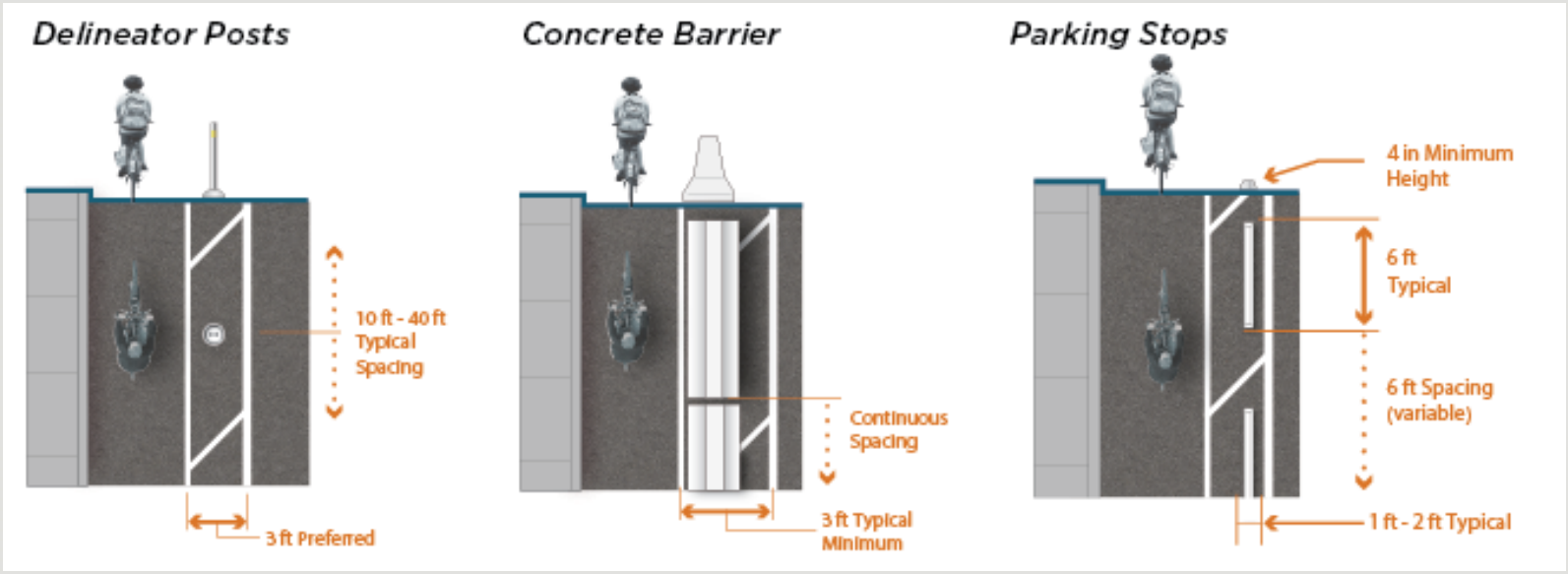
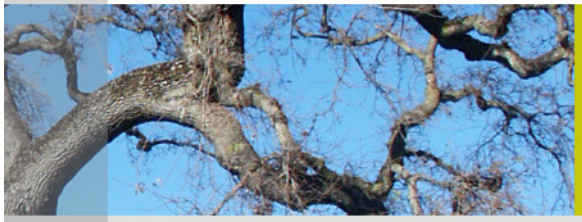
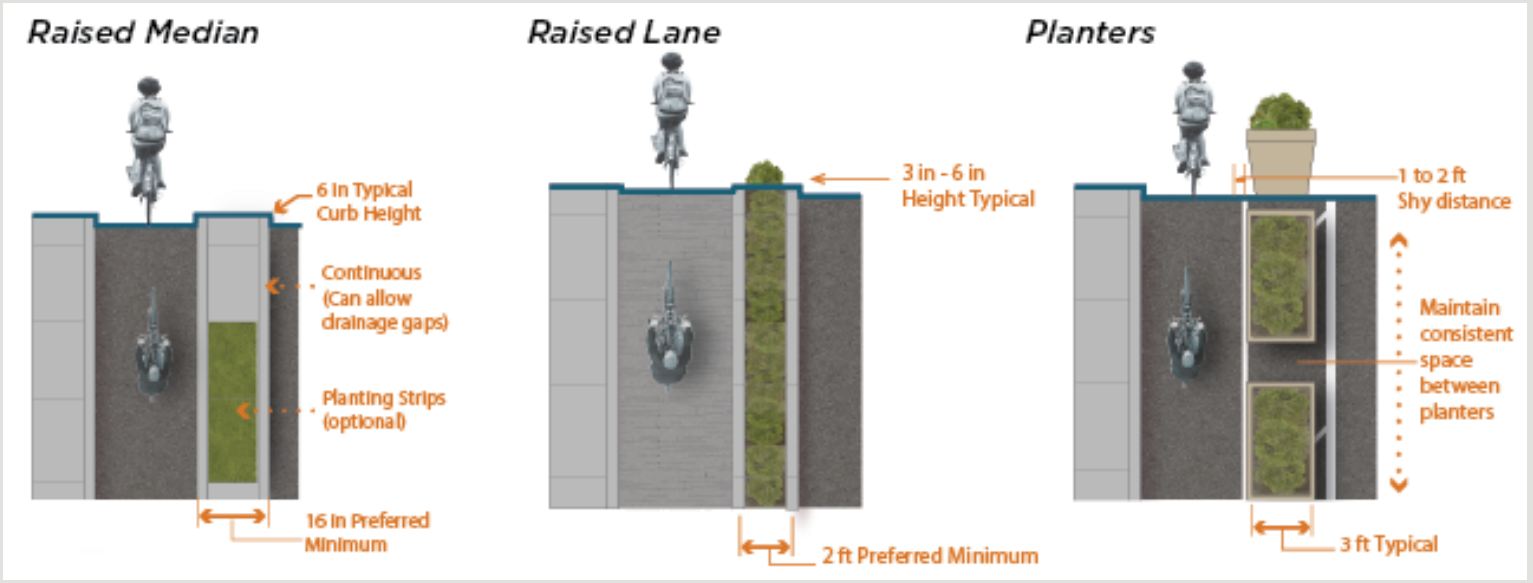


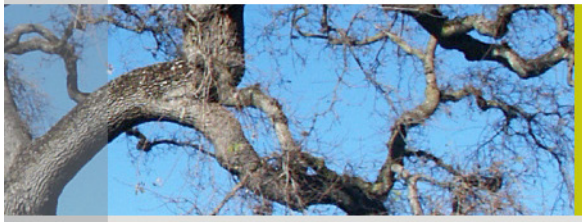
Class IV Separated Bikeways Separation



BICYCLE RECOMMENDATIONS



Class IV Separated Bikeways Separation



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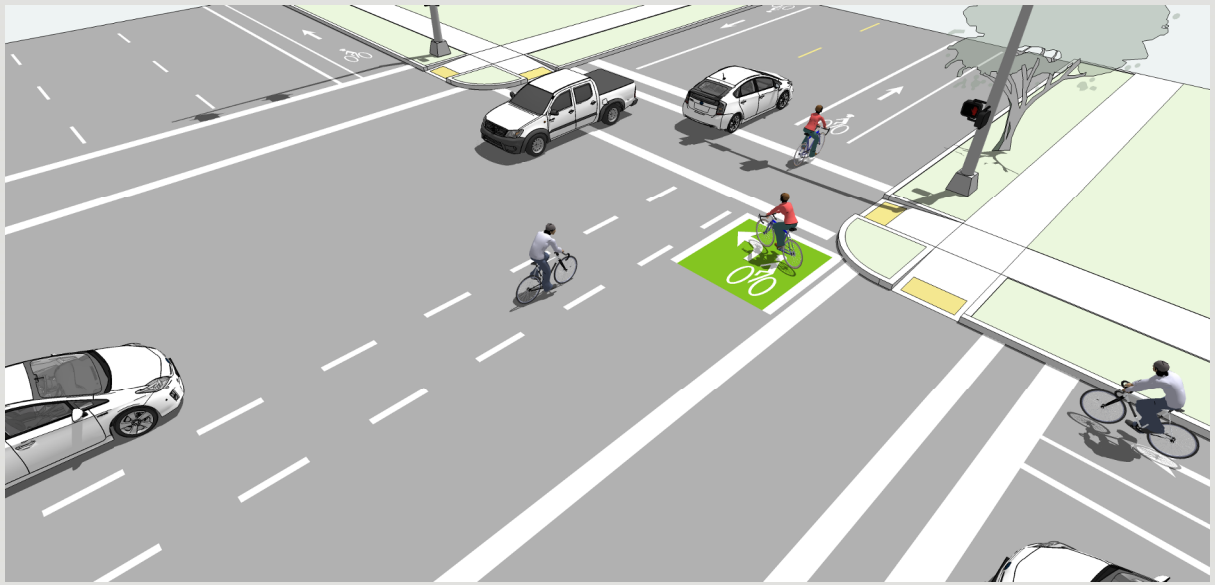
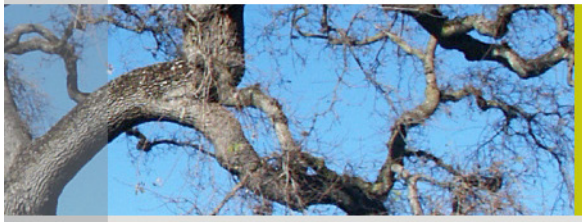
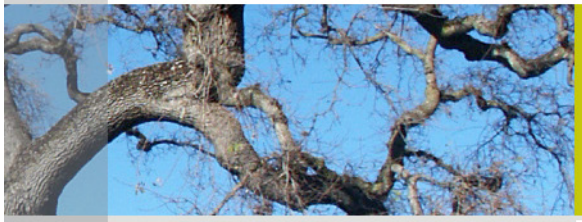


Two-Stage Turn Boxes



BICYCLE RECOMMENDATIONS

Grade Separation

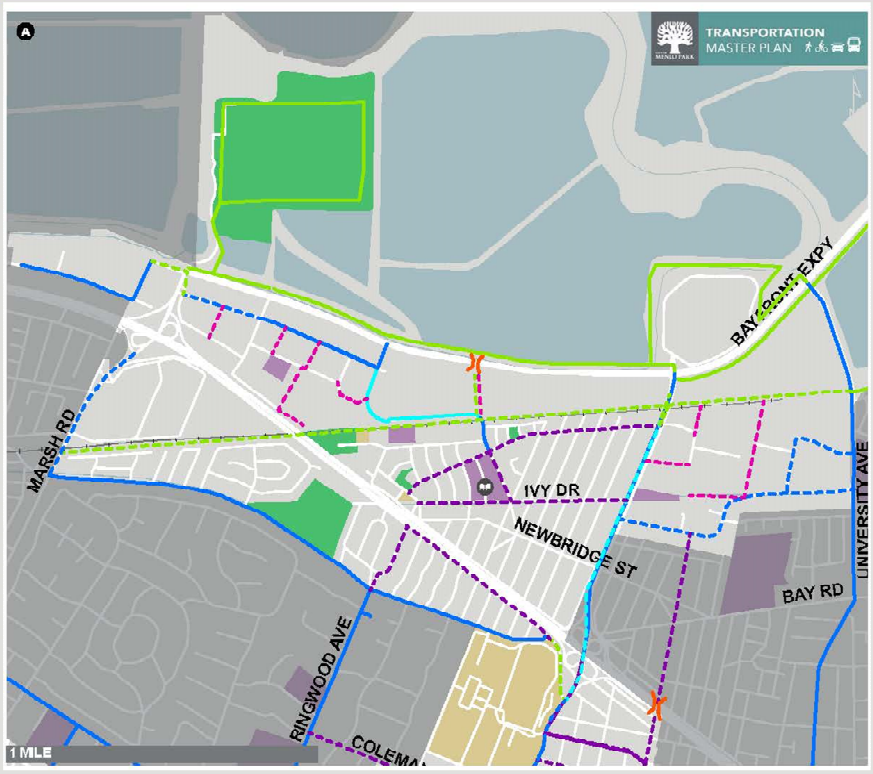


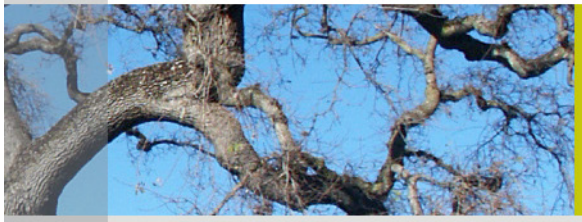
BICYCLE RECOMMENDATIONS - NORTH

Proposed Bike Network
- Bike Bridge
- Class I Bike Path
- Class II Bike Lane
- Class III Bike Route
- Class IV Separated Bikeway
- Paseo

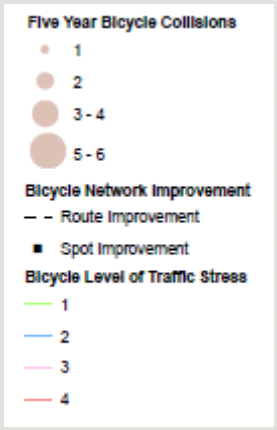
Existing Bike Network
- Class I Bike Path
- Class II Bike Lane
- Class III Bike Route
- Class IV Separated Bikeway

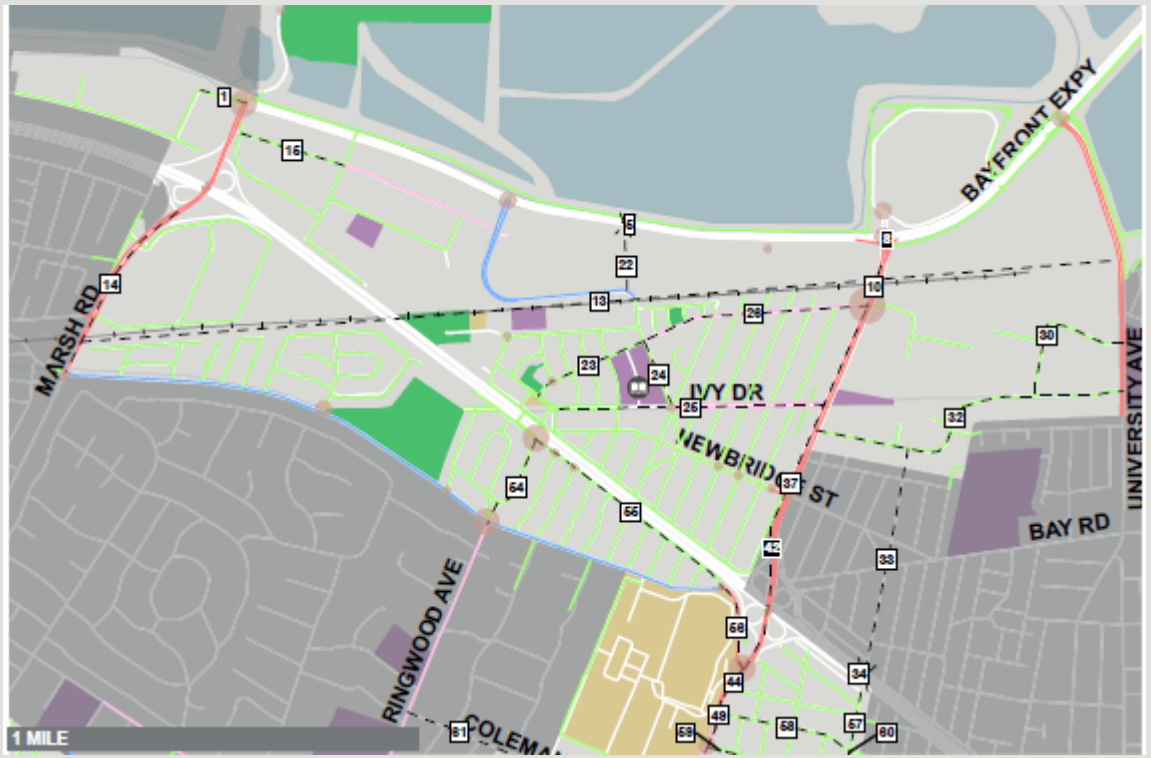
- City Hall
- Library
- Caltrain Station
- School/University
- Menlo Park Destination
- Park
- City of Menlo Park

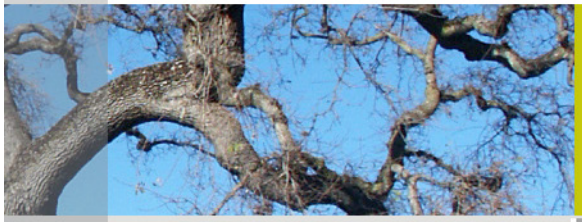




BICYCLE RECOMMENDATIONS - NORTH





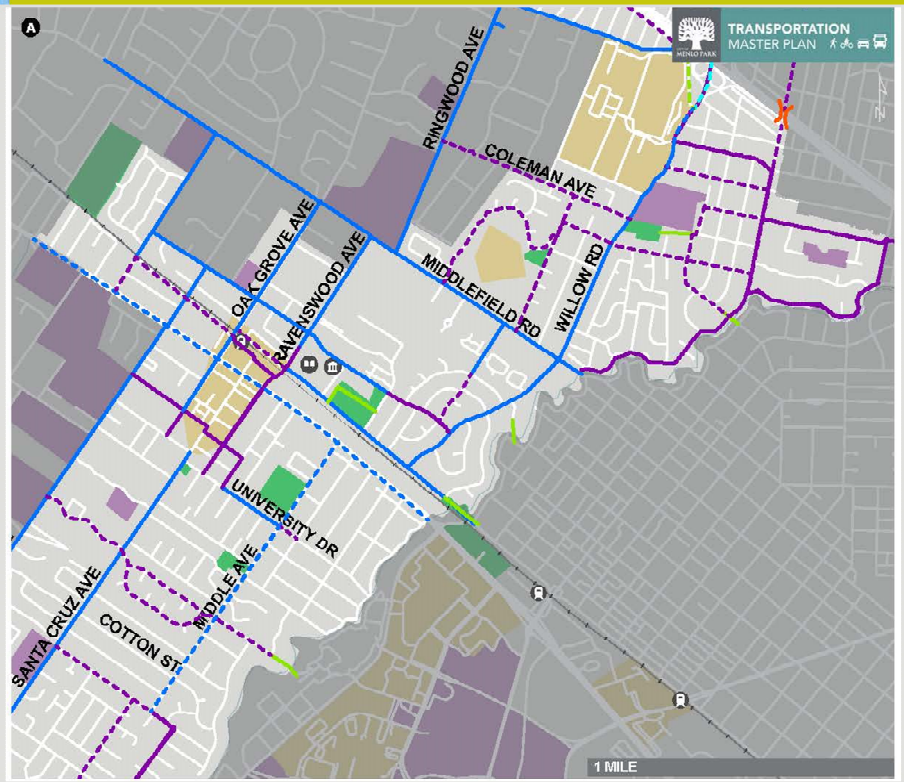


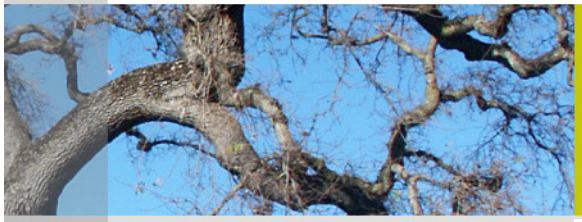
BICYCLE RECOMMENDATIONS - CENTRAL

Proposed Bike Network
- Bike Bridge
- Class I Bike Path
- Class II Bike Lane
- Class III Bike Route
- Class IV Separated Bikeway
- Paseo

Existing Bike Network
- Class I Bike Path
- Class II Bike Lane
- Class III Bike Route
- Class IV Separated Bikeway

- City Hall
- Library
- Caltrain Station
- School/University
- Menlo Park Destination
- Park
- City of Menlo Park





BICYCLE RECOMMENDATIONS - CENTRAL

Five Year Bicycle Collisions

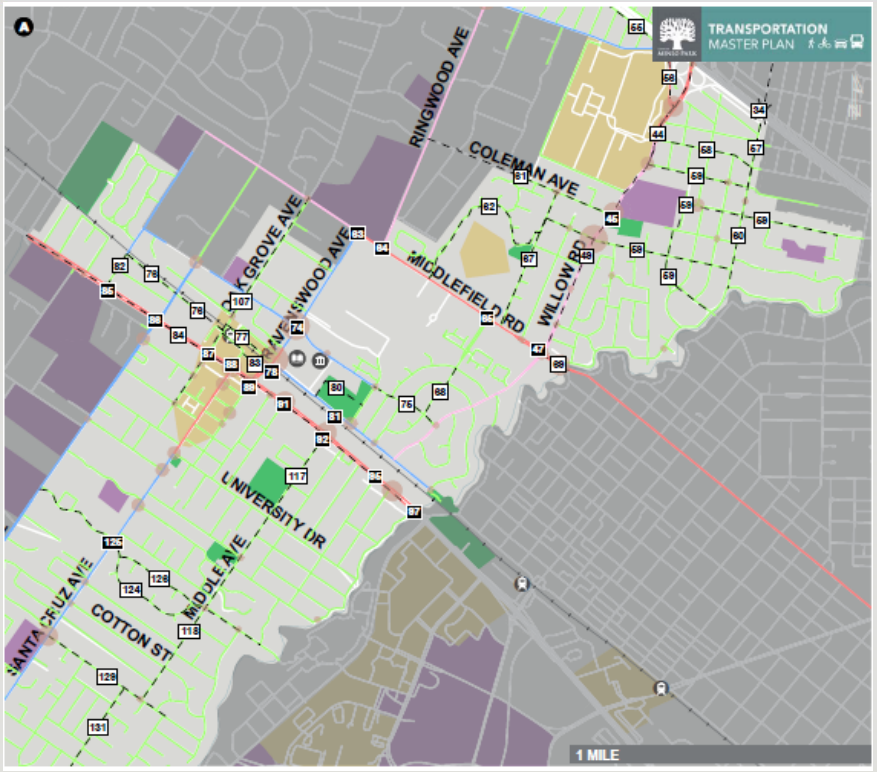
- 1
- 2
- 3 - 4
- 5 - 6

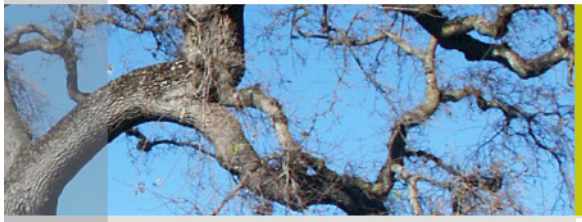
Bicycle Network Improvement

- Route Improvement
- Spot Improvement

Bicycle Level of Traffic Stress

- 1
- 2
- 3
- 4





BICYCLE RECOMMENDATIONS - CENTRAL

Proposed Bike Network
- Bike Bridge
- Class I Bike Path
- Class II Bike Lane
- Class III Bike Route
- Class IV Separated Bikeway
- Paseo

Existing Bike Network
- Class I Bike Path
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- City Hall
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- Caltrain Station
- School/University
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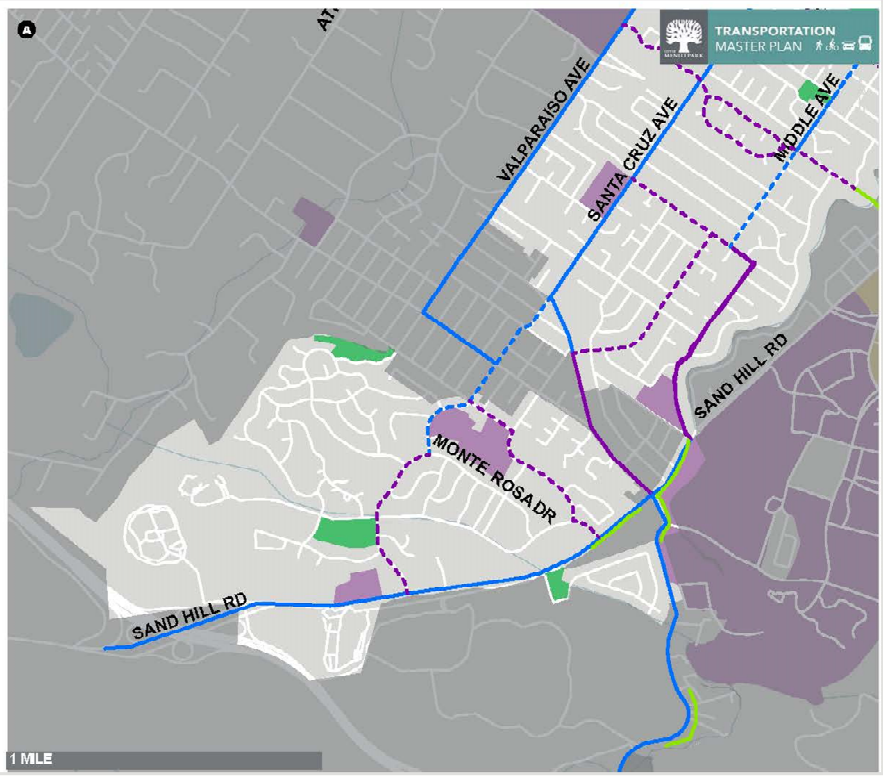
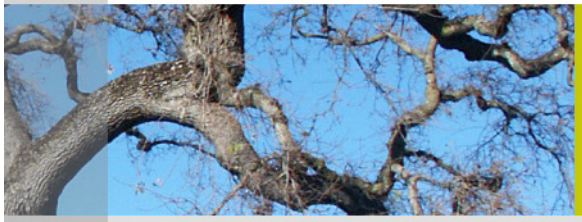
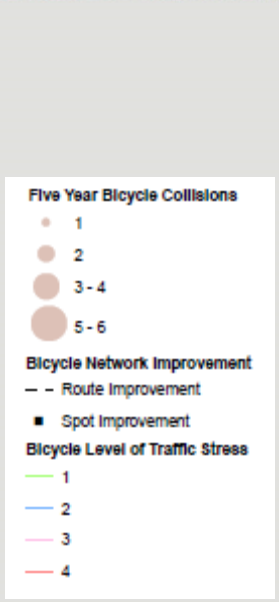
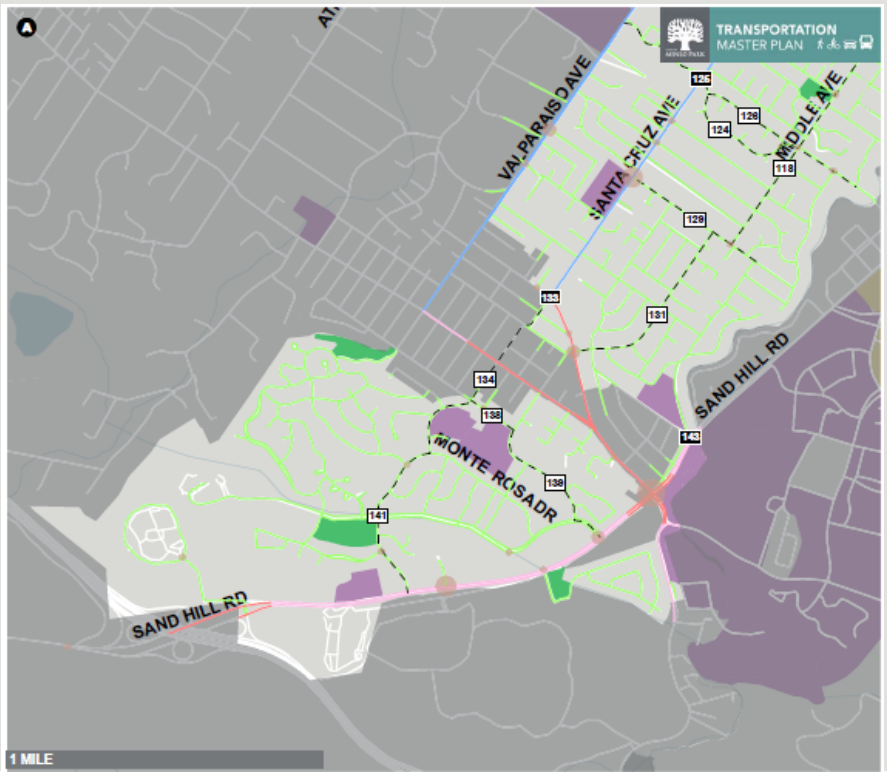
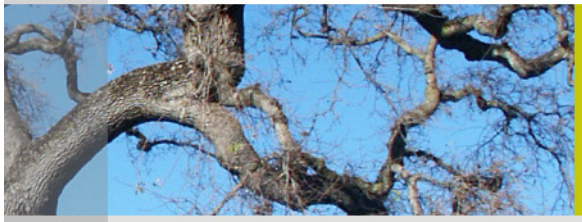




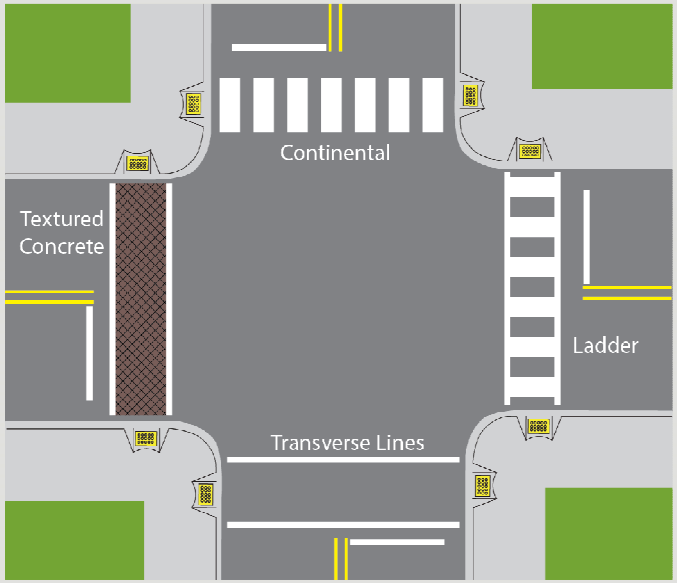
BICYCLE RECOMMENDATIONS - SOUTH



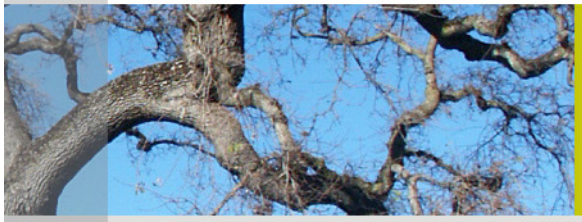




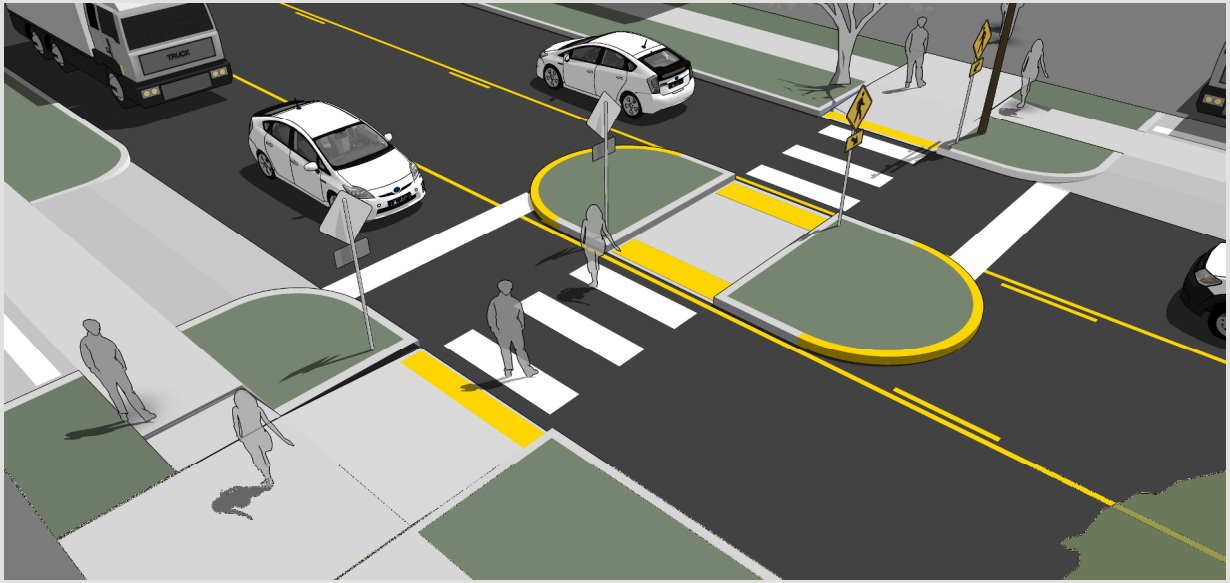
PEDESTRIAN RECOMMENDATIONS



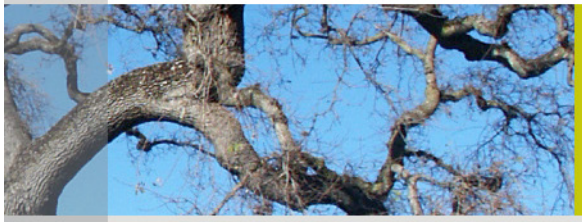
Marked Crosswalks



PEDESTRIAN RECOMMENDATIONS

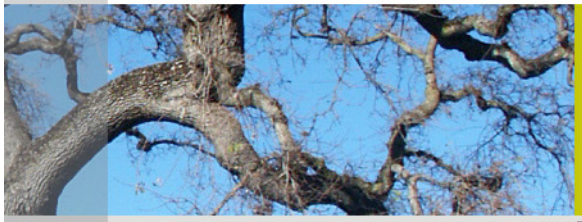


Median Refuge Islands



PEDESTRIAN RECOMMENDATIONS

Beacons



PEDESTRIAN RECOMMENDATIONS - NORTH

CITY OF MENLO PARK

Five Year Pedestrian Collisions

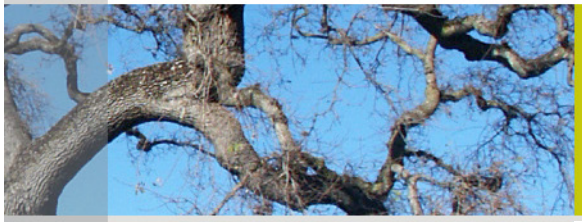
- 1
- 2
- 3
- 4 - 5

Pedestrian Network Improvement

- Route Improvement
- Spot Improvement

Proposed Pedestrian Network

- Bike Bridge
- Class I Multi-Use Path
- Paseo
- Existing Class I Multi-Use Path



PEDESTRIAN RECOMMENDATIONS - CENTRAL

Five Year Pedestrian Collisions

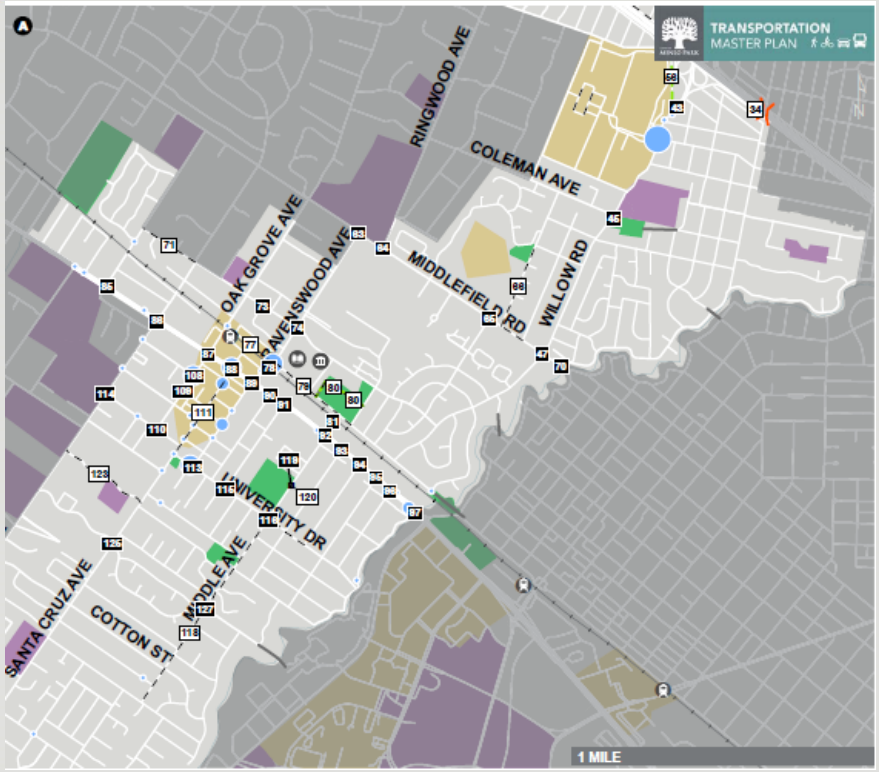
- 1
- 2
- 3
- 4 - 5

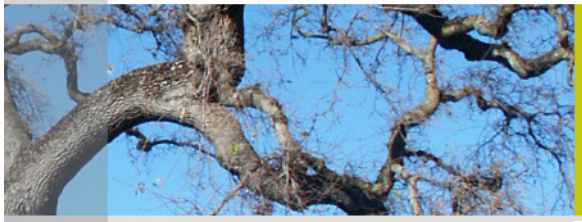
Pedestrian Network Improvement

- Route Improvement
- Spot Improvement

Proposed Pedestrian Network

- Bike Bridge
- Class I Multi-Use Path
- Paseo
- Existing Class I Multi-Use Path





PEDESTRIAN RECOMMENDATIONS - SOUTH

Five Year Pedestrian Collisions

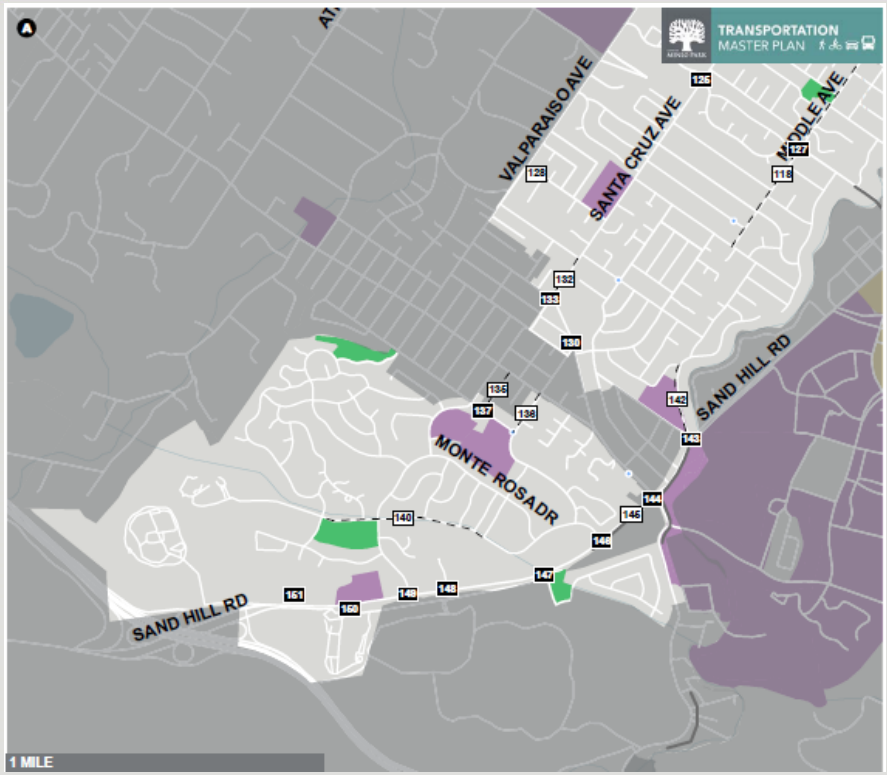
- 1
- 2
- 3
- 4 - 5

Pedestrian Network Improvement

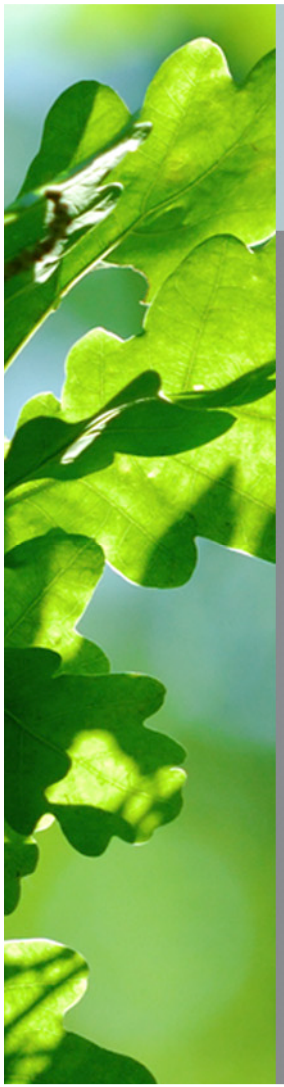
- Route Improvement
- Spot Improvement

Proposed Pedestrian Network

- Bike Bridge
- Class I Multi-Use Path
- Paseo
- Existing Class I Multi-Use Path



WILLOW ROAD



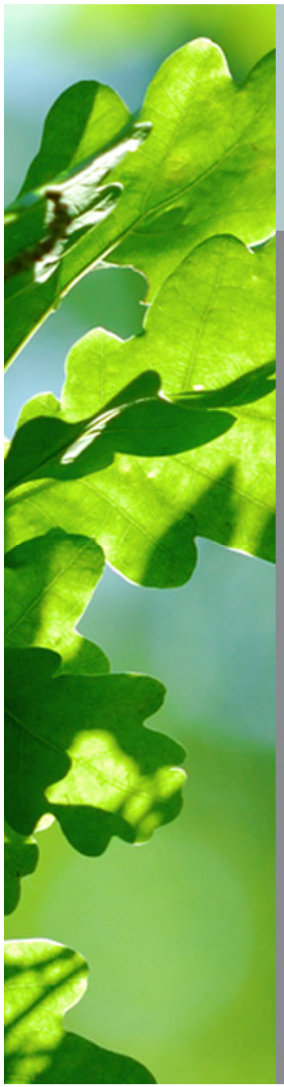
WILLOW ROAD OPTIONS/TRADEOFFS

1. Project 35 - Create Exclusive Bus Lanes, Remove Bike Lanes and Median/Parallel Bike Routes/New Menalto Bike/Ped Overcrossing (If median to remain, road needs to be widened)

2. Project 36 - Bus Queue Jump Lane at O'Brien Drive

3. Project 37 - New Class IV Separated Bike Lanes, Removal of Median

EL CAMINO REAL

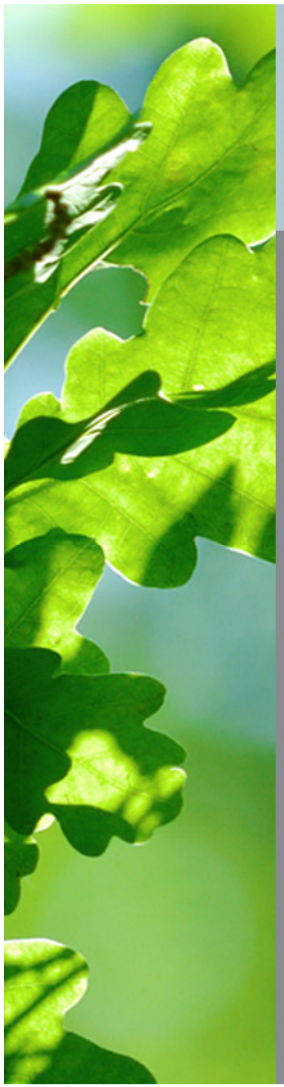


EL CAMINO REAL OPTIONS – PROJECT 84

- Corridor Study

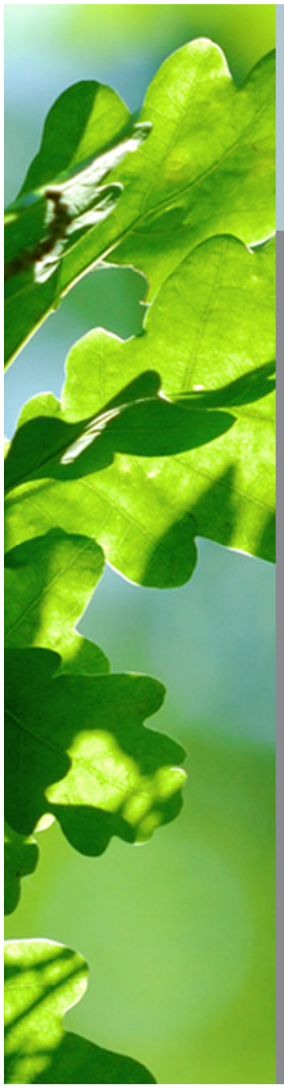
- Council Preferred Option
  - Buffered Bike Lanes (requires parking removal)
  - No modification of curb placement requires shared right-turn lanes for bicycles and cars

- Alternative Option
  - Remove median to allow for dedicated bike lanes



PROJECT HIGHLIGHTS/TRADEOFFS

- Middle Avenue (Project 117 & 118)
  - Install bike lanes (requires removal of parking on at least one side)
  - Connects to future Middle Avenue bicycle & pedestrian crossing (Project 81)

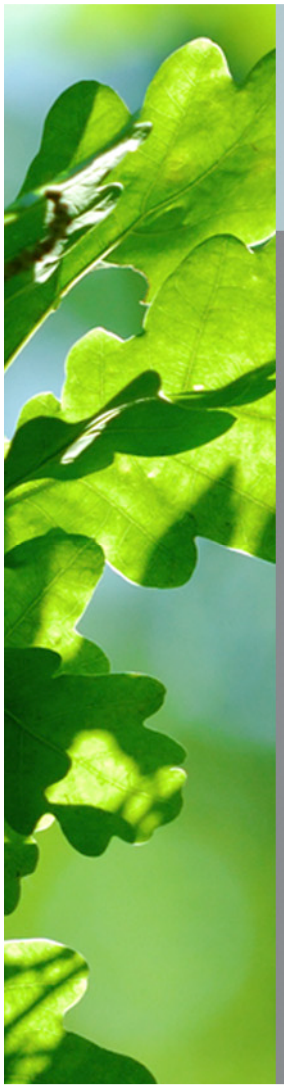


OTHER PROJECT HIGHLIGHTS

- Wider Sidewalks
  - Project 27 Ivy Drive (requires SFPUC approval)
  - Project 28 Newbridge Avenue (narrows travel lanes)

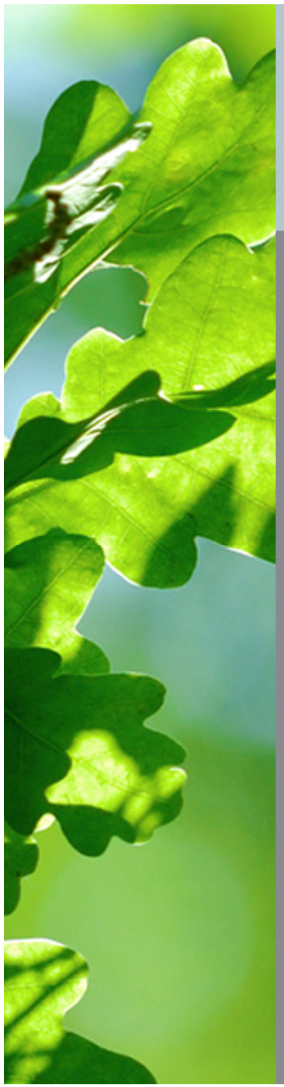
- Close Sidewalk Gap
  - Project 136 Sharon Road New sidewalks requires removal of on-street parking and landscaping.

NEXT STEPS



SCHEDULE

Task	Schedule
OOC #6: Review recommendations for south area of City	September 25, 2018
Community workshop and online open house	Fall 2018/Winter 2019
Release draft Master Plan	Spring 2019
OOC #7 & Complete Streets Commission review draft Master Plan	Spring 2019
City Council review and adoption	Summer 2019
Develop Fee Program update	Fall 2019



DISCUSSION

- Is the list complete or are there projects missing?
- Do any of the projects need clarifications or refinements?
- Are there any projects that should be removed?

THANK YOU

STAFF REPORT

Complete Streets Commission
Meeting Date: **10/10/2018**
Staff Report Number: **18-010-CSC**

Regular Business: **Review loading zones options for Draeger's Market located at 1010 University Drive and provide a recommendation to City Council**

Recommendation

Staff recommends that the Complete Streets Commission review the loading zone options for Draeger's Market located at 1010 University Drive and provide a recommendation to City Council. The possible locations for the Draeger's loading zone include:

- Convert two existing on-street spaces on Menlo Avenue to a loading zone and remove one parking space located on the west side of Menlo Avenue.
- Create a shortened loading zone on the south side of Evelyn Avenue adjacent to 840 Menlo Avenue property.
- Convert two existing on-street spaces on the north side of Evelyn Street to a loading zone.

Policy Issues

The proposed modifications originated from condition of approval number 17 associated with the Draeger's Market long term plan for market operations approved by the City Council in March 2002.

The condition states, "At such time as City approvals are actively pursued for the development of the property located at 840 Menlo Avenue, the City Council shall reconsider the placement, design, and/or use of the loading zones on Evelyn Street."

Background

On January 3, 2014 an architectural control application for a new development of the vacant site located at 840 Menlo Avenue was received. After a lapse in time, a revised scope of work was submitted on December 8, 2016, by Hayes Group Architects, on behalf of the property owner.

The development includes the construction of a three-story mixed-use building, consisting of a parking garage and lobby entrances on the ground floor. The entrance to the ground floor parking garage would be accessed from Evelyn Street.

This application also necessitated the reevaluation of the existing loading zones on Evelyn Street as stated above, under Policy Issues. The current loading zone is located on the south side of Evelyn Street near Menlo Avenue, with time limits starting from 5:00 a.m. to 10:00 p.m. In addition, Draeger's Market is allowed to use the parking aisle closest to the building in Parking Plaza 4 until 10:00 a.m. and the parking across the drive aisle until 9:00 a.m.

On January 10, 2018, the Complete Streets Commission reviewed the modifications to the loading zone. At the meeting, staff recommended relocation of the loading zone to Menlo Avenue and the Draeger's Market and 840 Menlo Avenue representatives presented on the proposed loading zone options. After the staff and applicant presentations, the Complete Streets Commission voted 8-0-1 for staff to work with Draeger's Market and 840 Menlo Avenue representatives to develop an alternative loading zone location without using Menlo Avenue, with one Commissioner absent. The staff report for the Complete Streets Commission meeting is included as Attachment A.

On March 12, 2018, the Planning Commission reviewed the architectural control request for the subject property. After considering public comments and the proposal, the Planning Commission approved the project 6-1. The Planning Commission did not provide a recommendation on the loading zone, because it was not directly part of the architectural control permit actions.

On August 28, 2018, the City Council was scheduled to consider an appeal to the Planning Commission's approval of the 840 Menlo Avenue project and modifications to the long term plan for operations at Draeger's Market. The item was continued to a future date to allow staff to review modifications for an alternative loading zone on Menlo Avenue proposed by the 840 Menlo Avenue applicant and to bring the loading zone alternatives back to the Complete Streets Commission for consideration. The staff report for the City Council meeting is included as Attachment B.

Analysis

Because Draeger's Market does not have a dedicated loading dock, deliveries occur within Parking Plaza 4 which is adjacent to the store and the existing loading zone on Evelyn Street, according to the Draeger's Market loading plan adopted by the City Council March 5, 2002. The market has a delivery door that opens onto Plaza 4, near Evelyn Street, where deliveries are processed. Delivery trucks using the Evelyn Street zone access the delivery door via the sidewalk on Evelyn Street and the Parking Plaza 4 parking aisle.

Staff's initial recommendation to the Complete Streets Commission at their January 10, 2018 meeting recommended that the Draeger's loading zone be moved to Menlo Avenue adjacent to an existing service door. The Menlo Avenue location was chosen based on several factors including: timing and number of deliveries, location of the delivery zone, minimizing crossing of public streets, minimizing conflicts with pedestrians, preserving parking in Plaza 4, and loading zone length. In addition, an existing service door that provides access into the Draeger's Market is located on Menlo Avenue which would allow for deliveries to move directly from the trucks across the sidewalk into the store. Draeger's Market has indicated that this door is not currently used, and the store layout would require modifications to accommodate deliveries at this location. At their meeting, the Commission expressed strong concerns with a loading zone on Menlo Avenue citing potential conflicts between the delivery trucks and bicyclists and higher volume of traffic on Menlo Avenue, and the tight turning radius for right-turning trucks onto University Drive. The Commission voted unanimously at that meeting to direct staff to work with the applicant and Draeger's Market to find an alternative loading zone from Menlo Avenue.

Since that meeting, staff has received additional information from Draeger's Market regarding their delivery operations and proposals for four possible loading zone options (see Attachment C). All of the

proposed options would provide a loading zone on Evelyn Street. In addition, the applicant for the 840 Menlo Avenue property provided an exhibit that included striping modifications to accommodate a loading zone on Menlo Avenue. The advantages and disadvantages of each option is described below and summarized in Attachment D.

Two of the options provided by Draeger's, Options A and B, require modification of the 840 Menlo Avenue project design by moving the project driveway either to Menlo Avenue or closer to the intersection of Menlo Avenue and Evelyn Street, respectively. Staff reviewed the proposed driveway locations and confirmed that they would meet the City's guidelines for placement of driveways near intersections, but noted that the driveway relocation would also require redesign of the parking garage layout which would need further review. As such, Options A and B, causing redesign of the project, are not recommended at this time.

The remaining two options, Options C and D, would not require relocation of the project driveway and could potentially convert the existing 22 feet regular parking space, located between the two Parking Plaza 4 driveways, into a loading zone. Option C would provide a loading zone on Evelyn Street between the project driveway and Menlo Avenue. Approximately 59 feet of curb space is provided between the project driveway and Menlo Avenue. In addition, there is currently 18 feet of red curb on Evelyn Street near the stop sign. Staff determined that this red curb could be shortened by 2 feet to maintain 16 feet of red curb and still provide visibility for pedestrians waiting to cross Evelyn Street. In addition, 3 feet of red curb should be added adjacent to the project driveway to provide better visibility for vehicles exiting the project site. This would allow for a 40-foot loading zone. This loading zone would be located to the east of the project driveway and would require deliveries to cross the project driveway and front entrance to access the Draeger's delivery door off Plaza 4.

Draeger's Market has also indicated that a 40-foot loading zone on Evelyn Street (Option C) would accommodate 90 percent of their deliveries, but occasionally, they will have deliveries by larger trucks that would occur outside the allowable delivery hours (7 a.m. to 10 a.m.) in Parking Plaza 4, as outlined in the Draeger's Market loading policy. With this option, Draeger's Market would need to work with their delivery providers to schedule these deliveries to occur during the Plaza 4 delivery hours. To provide for some flexibility, staff would recommend that loading options for Parking Plaza 4 be modified to allow for the parking spaces to be blocked off for up to one delivery per week outside of the set delivery hours.

Option D would provide a loading zone on Evelyn Street located across the street from the project site, adjacent to 830 Menlo Avenue. There is currently 73 feet of curb space between the Parking Plaza 5 driveway and Menlo Avenue. Of this, 39 feet of red curb is provided reducing the available curb space to 34 feet. Staff has determined that the existing red curb could be shortened to provide a 40 foot loading zone. The curb area on this side of Evelyn does not have a building entrance or driveway; however, this loading zone location would require deliveries to cross Evelyn Street, likely to occur mid-block instead of at the intersection, causing potential conflicts with drivers turning onto Evelyn Street from Menlo Avenue. Similar to Option C, a modification to the loading options for Parking Plaza 4 could be modified to allow for the parking spaces to be blocked off for up to one delivery per week outside of the set delivery hours.
A modification of the Menlo Avenue option originally presented to the Commission was provided by the 840 Menlo Avenue applicant. This option, Option E, is also included in Attachment C. With the removal of one additional parking space on the east side of Menlo Avenue, for a total of four parking spaces, Menlo

Avenue between University Drive and Evelyn Street could be restriped with bike lanes on each side of Menlo Avenue and a loading zone on Menlo Avenue. The restriping of the center double yellow line would provide additional width to accommodate a truck parked in the loading zone and space for a vehicle and bicyclist traveling adjacent to the loading zone. In addition, the proposed design does meet design standards for bicycle lanes adjacent to a parking stall and is supported by Draeger's Market as documented in Attachment E. While this option would provide bike lane for one block of Menlo Avenue, bicyclists are expected to transition into/from bike routes (i.e., bike sharrows) for the remainder of Menlo Avenue, a design standard staff typically avoids in favor of a continuous and consistent bicycle facility.

Based on the Commission's concerns raised at their previous meeting, staff also prepared a truck turning diagram (Attachment F) for right-turning trucks from Menlo Avenue to University Drive. As shown in the diagram, even when trucks use the left-turn lane on Menlo Avenue to turn right, they will still encroach into the opposing lane on University Drive. In practice, this means the truck driver will need to wait until the opposing lane is clear to make their turn. It's likely that having a loading zone on Menlo Avenue would increase the number of trucks that currently make this turn, although some of the trucks currently using the Evelyn Avenue loading zone would also make this turn. Draeger's Market has indicated that the majority of their deliveries occur before 10 a.m. when the Parking Plaza 4 loading area is available, so the increase in trucks making this turn is expected to be small.

A review of the five-year collision history for the intersection of Menlo Avenue and University Drive indicates that there have been 8 collisions at this intersection. None of these collisions involved a delivery truck. Although standard traffic analysis practiced focuses on reviewing recent collision history between two to five years, staff requested collision data from prior years to capture any collisions that may have involved trucks. Collision reports have been saved since 2004 and only one collision involved a large delivery truck. That collision occurred in 2004 and involved a passenger vehicle attempting to pass the truck on the right side as the truck was turning right from Menlo Avenue to University Drive.

As shown in Attachment D, each of the loading zone options have their advantages and disadvantages. While staff does not recommend the first two options, the remaining three options have different potential conflicts due to their location and size. Staff recommends that the Commission consider the three options and provide their feedback in a recommendation to the City Council.

Impact on City Resources

Staff time spent on development applications and reviews is covered by fees paid by the project sponsor and the adopted City annual budget.

Environmental Review

The modifications, if approved, would be categorically exempt under Class 1 of California Environmental Quality Act (CEQA). Class 1 allows for minor alterations of existing facilities, including highways and streets, sidewalks, gutters, bicycle and pedestrian access, and similar facilities, as long as there is negligible or no expansion of use.

Public Notice

Public notification was achieved by posting the agenda, with the agenda items being listed, at least 72 hours prior to the meeting. Postcards were also sent to property owners and occupants located within 500 feet of the subject area.

Attachments

A. Hyperlink: Complete Streets Commission Staff Report, January 10, 2018 - https://www.menlopark.org/DocumentCenter/View/16400/E2---Draeger-Loading-Zones?bidId
B. Hyperlink: City Council Staff Report, August 28, 2018 - https://www.menlopark.org/DocumentCenter/View/18439/G1---840-MENLO-AVE-APPEAL-18-169
C. Loading Zone Options
D. Summary of Loading Zone Options
E. Draeger's Market Memorandum
F. Truck Turning Diagram

Report prepared by:
Kristiann Choy, Senior Transportation Engineer

Report reviewed by:
Justin Murphy, Public Works Director

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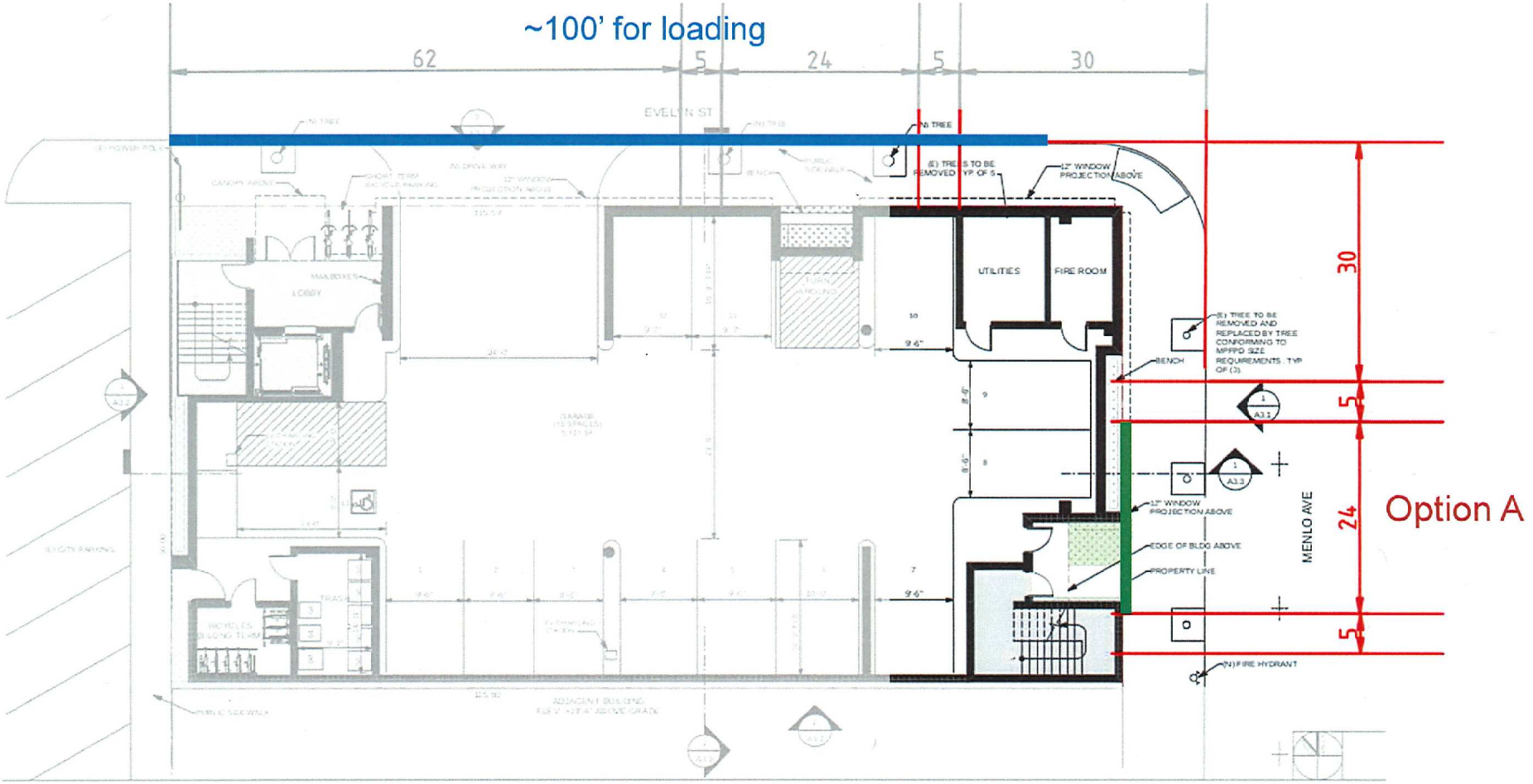
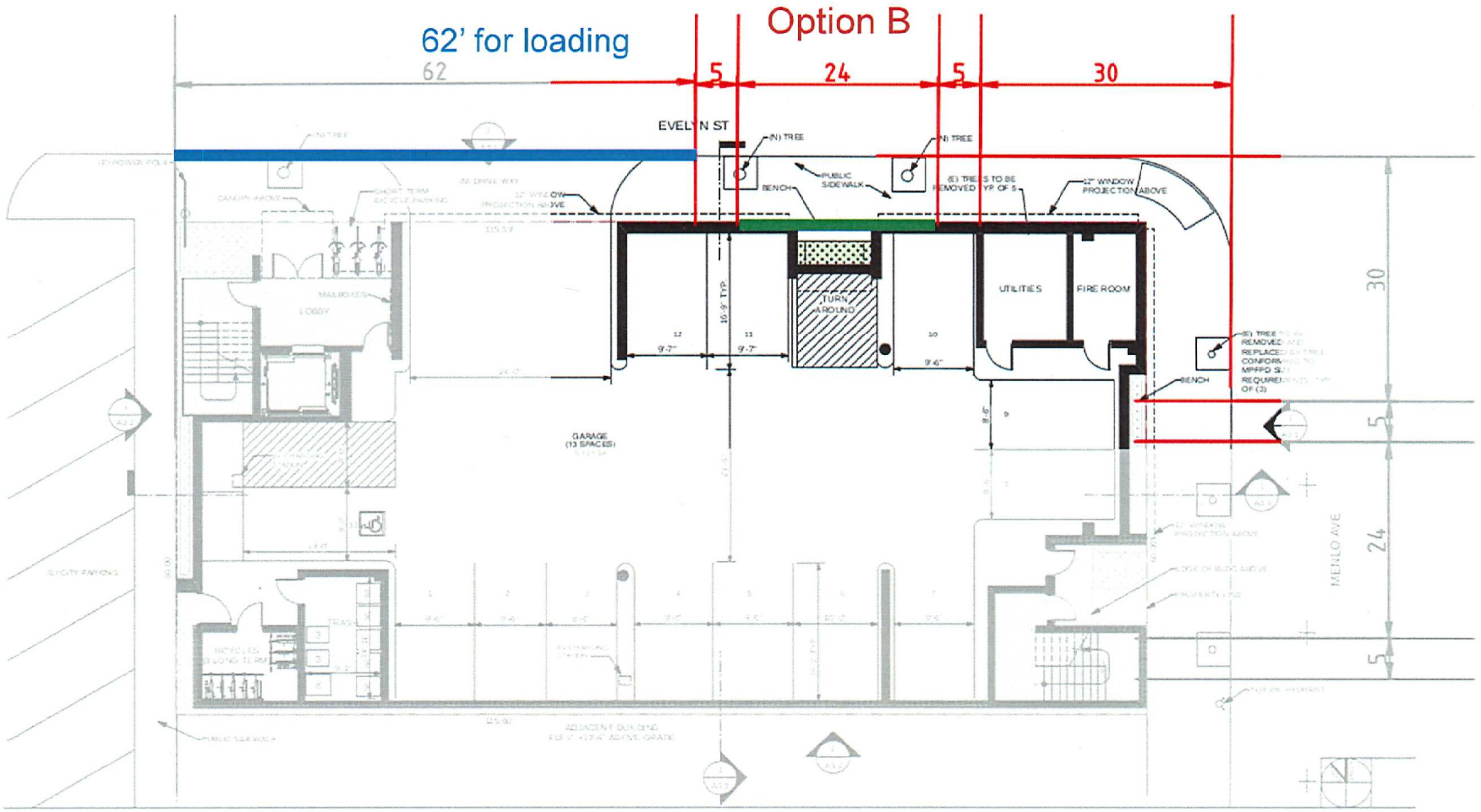
Option A

Alternate Driveway Locations, per Guidelines

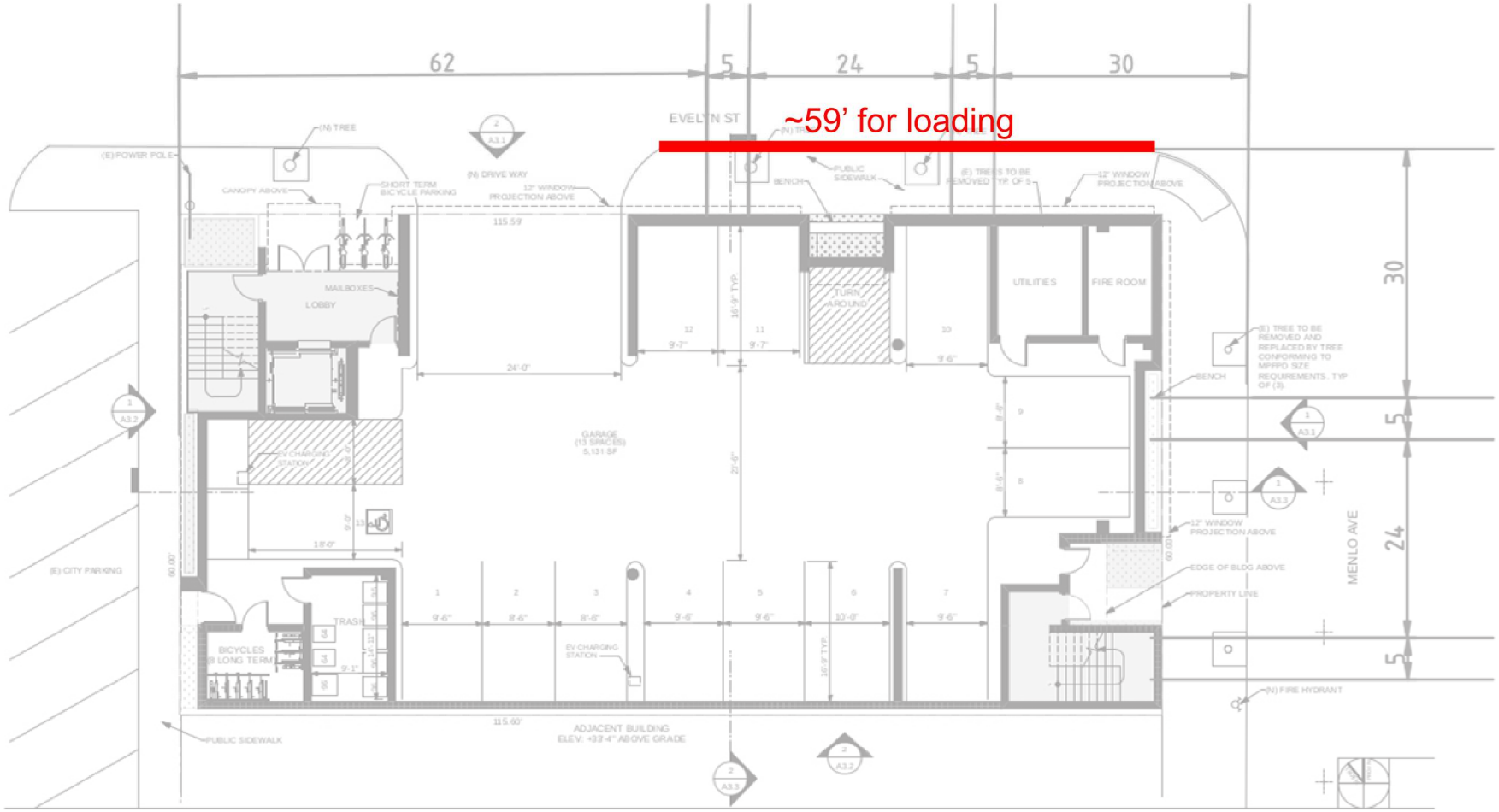


Option B

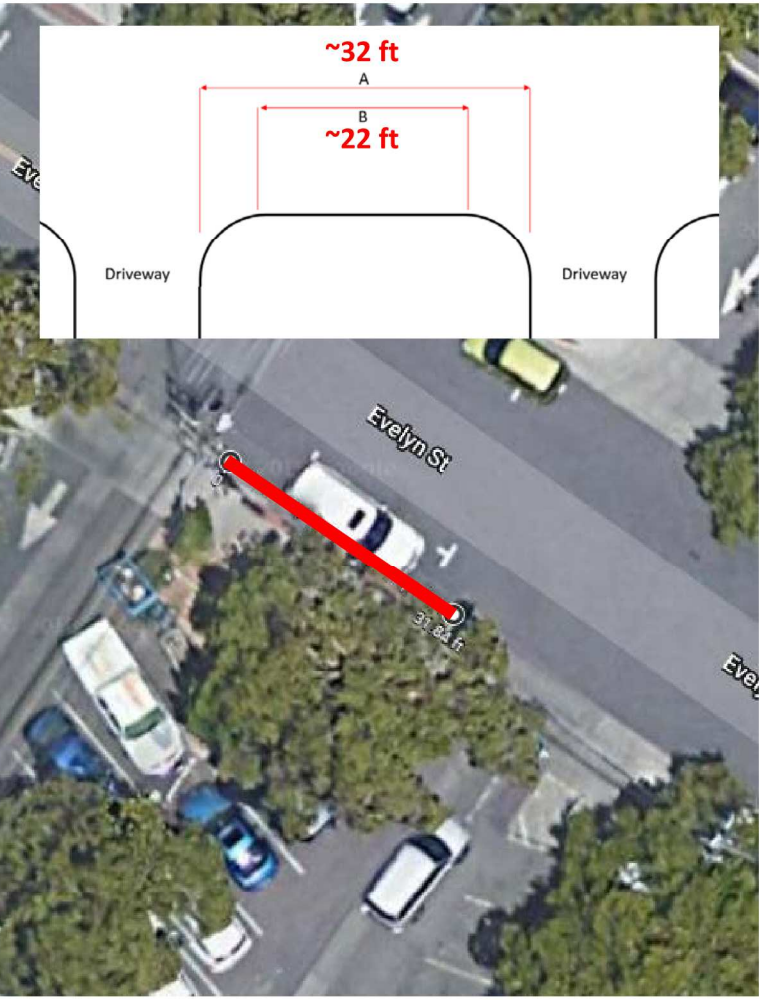
Alternate Driveway Locations, per Guidelines

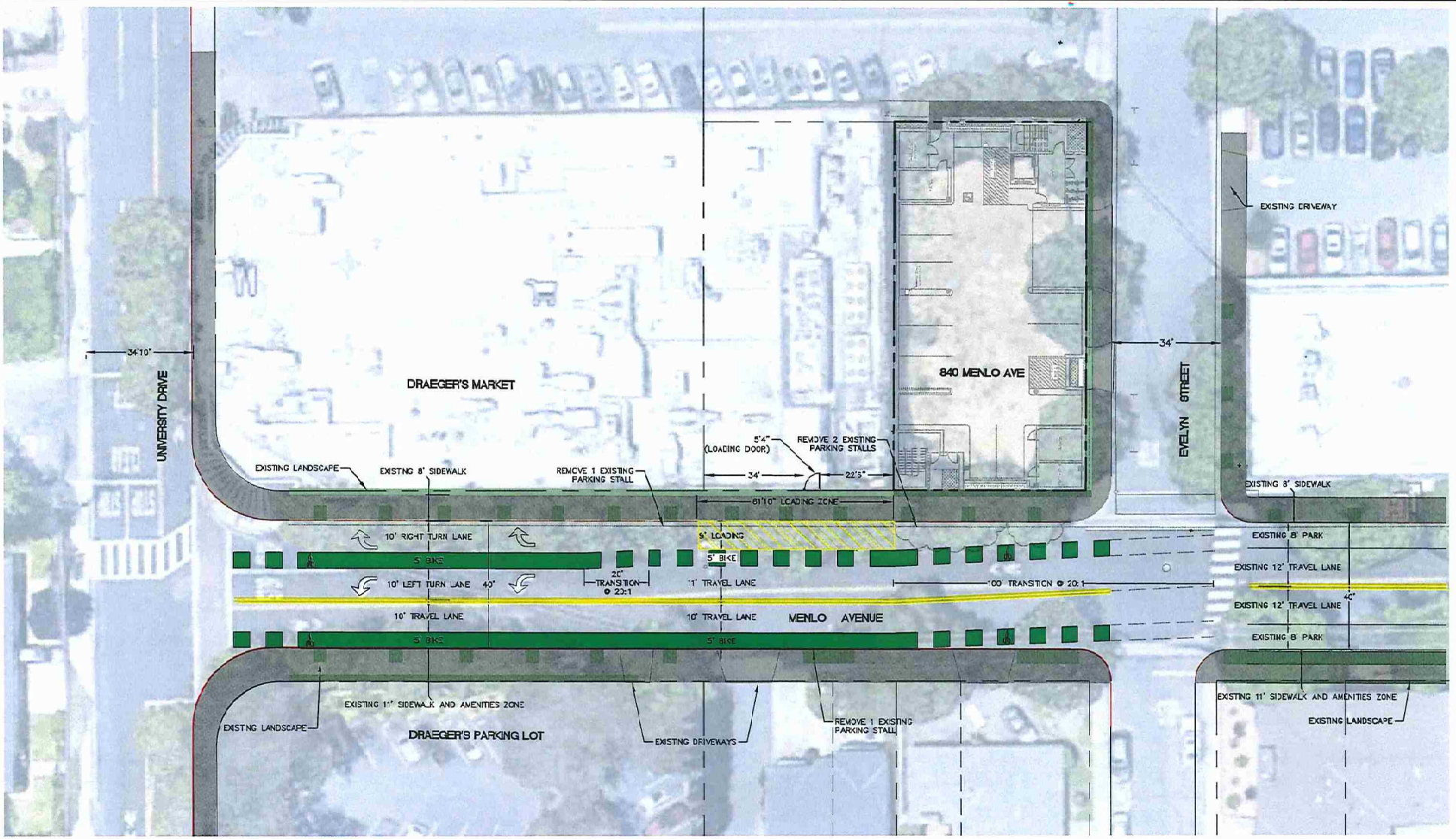


Option C: Loading Between Development Driveway and Crosswalk



Option D: Short & Long Loading Spaces on Opposite Sides of Evelyn





1" = 20'

GRAPHIC SCALE

20 0 20 40

HAYES GROUP ARCHITECTS

HAYES GROUP ARCHITECTS INC.
2657 SPRING STREET
REDWOOD CITY, CA 94063
P: 650.365.0500
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1650 TECHNOLOGY DR.,
SUITE 650
SAN JOSE, CA 95110
(408) 457-9100
www.bkf.com

Option E

STRIPING EXHIBIT
840 MENLO AVE

SAN MATEO COUNTY MENLO PARK CALIFORNIA

DATE 05.15.2017
SCALE 1"=20'
JOB NO. 20156016

EX 1

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Table 1: Summary of Loading Zone Options		
Alternative	**Advantages**	**Disadvantages**
Option A – Relocate driveway to Menlo, ~ 100' loading zone on Evelyn	Loading operation is similar to existing No crossing of public streets required Located on side street with fewer cars and bicycle traffic Longer loading zone available	Requires redesign of project Driveway is closer to Menlo and Evelyn intersection with potential conflicts with intersection movements Loading activity may conflict with front door of new development
Option B – Move Evelyn driveway east towards Menlo, ~ 60' loading zone on Evelyn	Loading operation is similar to existing No crossing of public streets required Located on side street with fewer cars and bicycle traffic	Requires redesign of project Driveway is closer to Menlo and Evelyn intersection with potential conflicts with intersection movements Loading activity may conflict with front door of new development Shorter loading zone doesn't accommodate all trucks
Option C – South side of Evelyn, ~ 40' loading zone	Loading operation is similar to existing No crossing of public streets required Located on side street with fewer cars and bicycle traffic No redesign of project required	Loading activity may conflict with front door of new development Shorter loading zone doesn't accommodate all trucks
Option D – North side of Evelyn, ~ 40' loading zone	Located on side street with fewer cars and bicycle traffic No entrance to adjacent building No redesign of project required	Requires crossing of Evelyn to access Draeger's loading door Shorter loading zone doesn't accommodate all trucks Potential for deliveries to occur midblock

Table 1: Summary of Loading Zone Options		
Alternative	**Advantages**	**Disadvantages**
Option E – Menlo Avenue, ~ 60’ loading zone	No entrance to adjacent building	Higher vehicle and bicycle traffic volumes
	Potential for a direct loading route through unused loading door	Requires store layout modification to access unused loading door on Menlo Avenue
	Crossing of public streets is not required	Potential for increased truck traffic turning right at Menlo and University intersection
	Longer loading zone available	
	No redesign of project required	

ATTACHMENT E

ADMINISTRATIVE OFFICE
291 UTAH AVENUE
SO. SAN FRANCISCO, CA 94080-6802

CONTACT INFORMATION
TEL 650-244-6500 FAX 650-244-6548
WWW.DRAEGERS.COM

Celebrating Family & Food Since 1925

October 4, 2018

Complete Streets Commission Members
c/o Kevin Chen, Associate City Engineer
KChen@menlopark.org

Via Email

Re: Possible Loading Zone Options to Accommodate 840 Menlo Avenue Project – PLN 2014-00002

Dear Complete Streets Commission Members:

Draeger's understands that the existing 100 ft loading zone on Evelyn Street will need to be modified or recloated in order to accommodate the 840 Menlo Avenue Project as proposed. Draeger's depends on this loading zone to receive deliveries that cannot be accommodated during the loading hours in the public parking plaza. We are writing to ask that you consider five (5) possible loading zone options and make a recommendation to Council on each of these options individually.

From the beginning, Draeger's has been open to any compromise possible with the developer of 840 Menlo Avenue that would preserve a street-based loading zone. The following possible options have been identified, all of which Draeger's can support, and all of which have been confirmed by City staff to be viable with the exception of the last option which staff does not prefer because it could result in mid-block crossings:

(1) Moving the project garage entrance to Menlo Ave. to retain the existing 100 ft. Evelyn Street loading zone;
(2) Adjusting the proposed garage entrance on Evelyn Street further toward Menlo Ave. in order to preserve a 60 ft. loading zone on Evelyn Street;
(3) Creating a 40 ft. loading zone on Evelyn Street between Menlo Ave. and the garage entrance as proposed;
(4) Relocating the loading zone to Menlo Avenue; and
(5) Relocating the loading zone across the street to the other side of Evelyn Street

BLACKHAWK
4100 BLACKHAWK PLAZA C.
DANVILLE, CA 94506
925-648-5800

LOS ALTOS
342 FIRST STREET
LOS ALTOS, CA 94022
650-948-4425

MENLO PARK
1010 UNIVERSITY DRIVE
MENLO PARK, CA 94025
650-324-7700

SAN MATEO
222 E. FOURTH AVENUE
SAN MATEO, CA 94401
650-685-3700

We understand that the project applicant has rejected each of these alternatives with the exception of the Menlo Avenue loading zone option (no. 4) which it recently came out in favor of at the August 28th City Council meeting. As part of its submittal to the City Council, the project applicant team included a design of the Menlo Avenue loading option prepared by its consultant, BKF. Enclosed is a memorandum from our transportation consultant Nelson\Nygaard assessing and confirming the viability of the BKF design and this loading zone option in general. Also enclosed is Nelson\Nygaard's earlier memorandum submitted to the City Council which assesses and confirms the viability of the other above listed options. We ask that you consider these reports in making your recommendations on each of the above listed loading zone options at your upcoming October 10th meeting.

Sincerely,

Anthony Draeger, Vice-President
Draeger's Super Markets, Inc.

Enclosures:

- October 1, 2018 Nelson\Nygaard Report
- August 27, 2018 Nelson\Nygaard Report

cc: Kaitie Meador, Project Planner
Kristiann Choy, Senior Transportation Engineer

MEMORANDUM

To: Draeger's Supermarkets, Inc.

From: Nelson\Nygaard Consulting Associates, Inc.

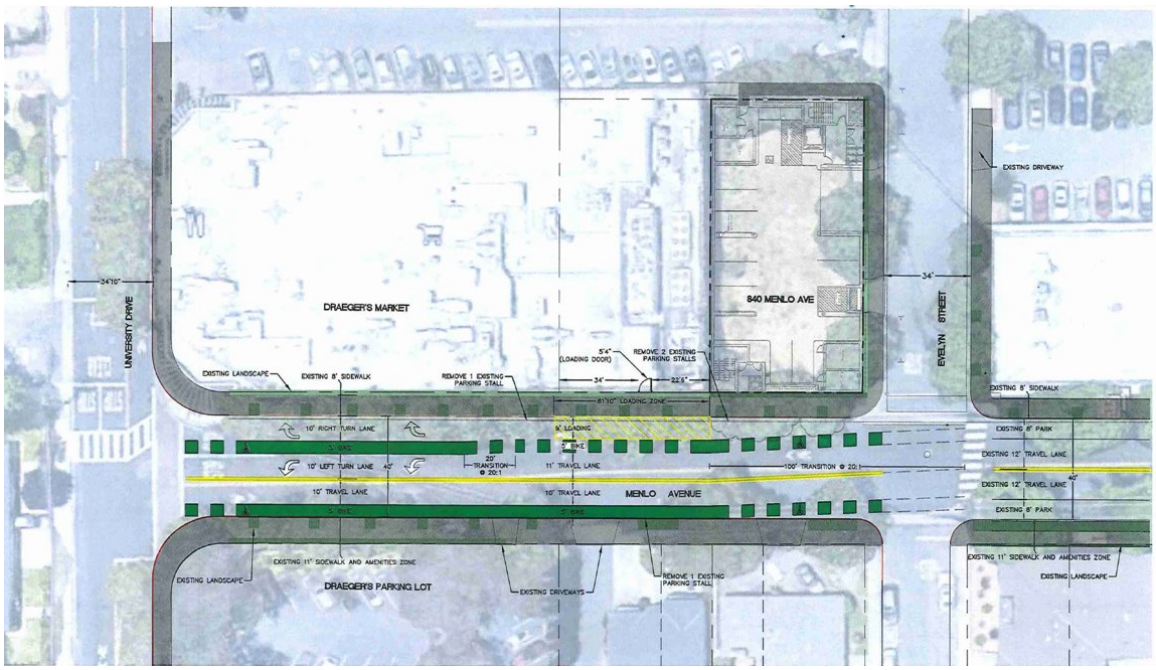
Date: October 1, 2018

Subject: Assessment of Proposed Menlo Avenue Loading Zone

INTRODUCTION

Following up on our memorandum dated August 27, 2018 which was submitted to the City Council prior to their August 28, 2018 meeting, this memorandum assesses the design prepared by BKF (see Figure 1) at the request of the 840 Menlo Ave. project team for a possible loading zone on Menlo Avenue to replace the existing Evelyn Street loading zone that the project proposes to eliminate. This memorandum also assesses the impact of this proposed loading zone if any on truck delivery routes and pedestrian and bicycle safety.

Figure 1 BKF Menlo Avenue Loading Proposal



Source: BKF Striping Exhibit, 06.15.2017

EXECUTIVE SUMMARY

While each of the possible loading zones proposed to accommodate the project have their own set of benefits, compromises, and risks, there appear to be no insurmountable issues associated with the BKF design for a loading zone on Menlo Avenue which we understand both the project applicant and Draeger's Market can support. As detailed below:

- BKF Design meets city and industry standards
- Relocated loading zone to Menlo Avenue would not increase truck traffic through the University/ Menlo Avenue intersection.
- There are no recorded truck collisions at the University/ Menlo Avenue intersection.
- 85% of unloading in relocated loading zone would occur between the hours of midnight - 8 am or 10 am - 2pm when volume of bicyclists and other traffic is lowest, therefore limiting the potential for conflict.
- While the sidewalk would be temporarily impassable to pedestrians during some stages of loading, the impact to pedestrians would be minimal, as there are no other storefronts on this block face and many alternate pedestrian routes exist.

BKF Design Meets City and Industry Standards

The BKF design depicts a 61' 10" x 9' loading zone on Menlo Avenue, adjacent to the Draeger's Market building. This loading zone would require removal of three trees and would require some structural modifications to the existing building in order to use the existing store doors on Menlo Avenue to receive deliveries. The design incorporates bicycle lanes, as planned for Menlo Avenue in the Bicycle Master Plan. In order to fit two vehicle travel lanes, two bicycle lanes, and the loading zone in the available right of way, the design eliminates three designated on-street parking spaces on the north side of Menlo Avenue and one on the south side.

Because trucks would be able to pull straight into and out of the loading zone, the full length of 61' 10" is available for loading. Design standards typically require a minimum width of 8', with 9' being the preferable width. The proposed zone complies with this guidance. In order to keep loading activities entirely within the loading zone, the practical maximum truck length that could be accommodated by this loading zone is 55' to allow room for lowering the lift gate inside the zone.

Draeger's Truck Circulation Through University/ Menlo Avenue Intersection Would Not Change

Truck access to the Draeger's supermarket is provided by "limited truck routes" on Menlo Avenue, University Avenue, and Santa Cruz Avenue. Limited truck routes are streets on which larger delivery vehicles are only permitted when they have an origin or destination within Menlo Park.

Figure 2 Menlo Park Truck Routes

Source: Menlo Park Truck Route Map. https://www.menlopark.org/DocumentCenter/View/353/Truck-Route-Map?bidId=

The majority of trucks delivering to Draeger's Market today access the store by driving up Menlo Avenue, whether they will be unloading in the parking plaza or on Evelyn Street. To access the plaza, they turn right from Menlo Avenue onto University Avenue and then right into the plaza. After 10 am when plaza loading hours end, they turn right from Menlo Avenue onto University Avenue, right again onto Santa Cruz Avenue, and right again onto Evelyn Street.

Figure 3 Draeger's Delivery Truck Routes

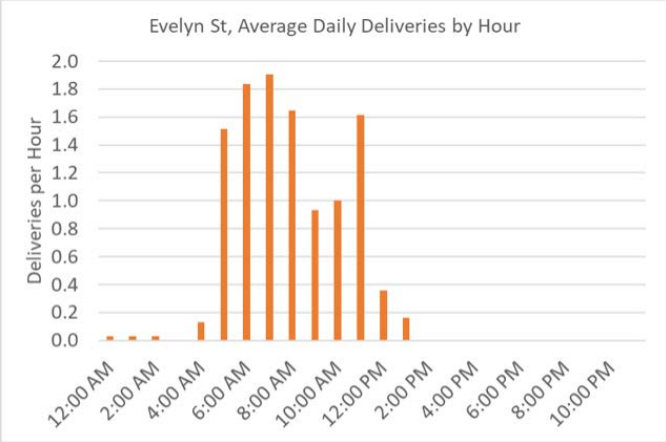
If the on-street loading zone were relocated from Evelyn Street to Menlo Avenue it would have minimal impact on existing delivery patterns, other than to eliminate turns from Santa Cruz

Avenue onto Evelyn Avenue. Instead trucks would come up Menlo Avenue, unload and then turn right on University to Santa Cruz Avenue and continue to El Camino.

Draeger's Truck Volume and Delivery Hours Would Not Change; 85% of Loading Would Occur Outside Peak Commute Hours

Relocating the loading zone from Evelyn Street to Menlo Avenue would simply shift the existing loading that occurs on Evelyn Street to Menlo Avenue. Nelson\Nygaard counted 666 deliveries at the Evelyn Street loading zone between January 13th 2018 and February 14th 2018. On average, 12 deliveries occur at Evelyn Street loading zone daily around the clock. 49% of Draeger's loading occurs between 12am and 8am (which translates to 5 deliveries per day), 15% occurs during the peak morning hour of 8am and 9am (which translates to less than two deliveries per day), and 36% occurs between 9am and 2pm (which translates to 4 deliveries per day).[1] No deliveries were observed between 2pm and 12am and therefore no deliveries were observed during the afternoon peak hours commuting home from school and work.

Figure 4 Daily Deliveries



Evelyn St, Avg. Daily Delivery Vehicles		
Large	Medium	Small
1	6	3

No History of Truck Collisions At University/ Menlo Avenue Intersection

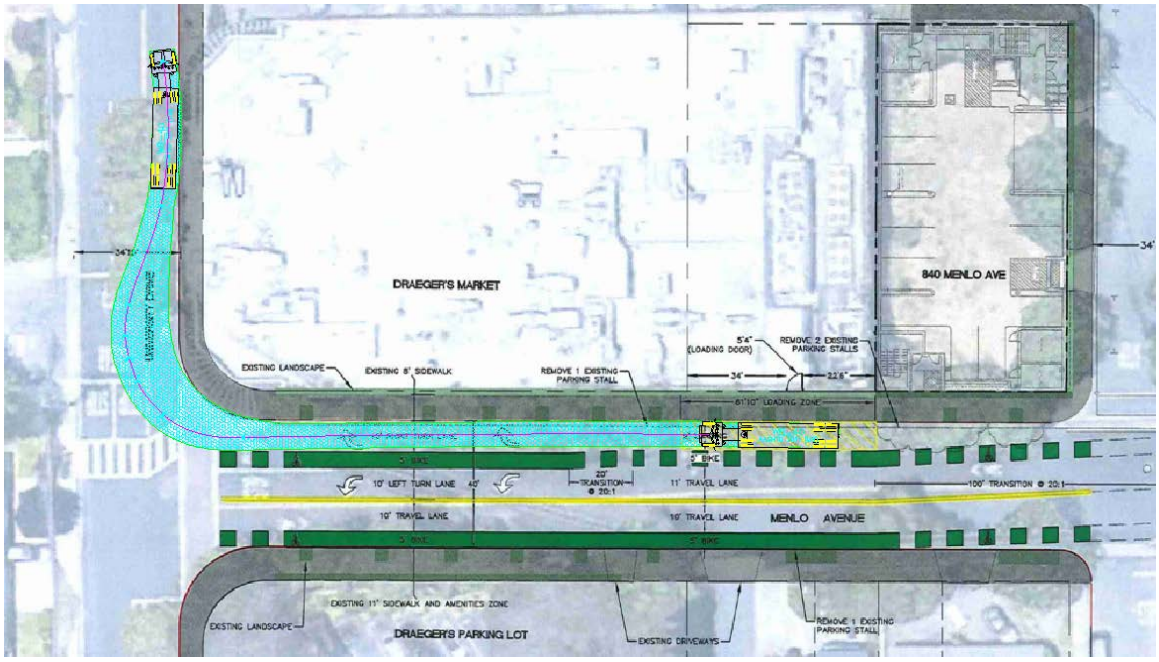
The intersection of Menlo Avenue and University Avenue is complicated due to the offset in Menlo Avenue. The intersection also experiences high pedestrian volumes. Despite this, there are no records of collisions involving trucks in the last ten years[2], suggesting that trucks are not a safety issue at this location. In the same time period, three pedestrians were involved in collisions

[1] As shown in Figure 4 of our August 27, 2018 memorandum, 3.1 daily deliveries on average occur between the hours of 10am and 12am (8.9 daily deliveries on average therefore occur between 12am and 10am).

[2] California Highway Patrol, Statewide Integrated Traffic Records System, 1/1/2008 - 12/31/2017

with passenger vehicles. Of these, two experienced minor injuries, and one suffered severe injuries.

Figure 5 Semi-Trailer Turning onto University



Source: BKF Striping Exhibit, 06.15.2017, AutoCAD

Minimal Impact on Cyclists and Pedestrians

Moving the loading zone from Evelyn Street to Menlo Avenue could impact people walking and bicycling in one of two ways: either through changes to truck circulation, or through changes associated with the loading activity itself.

As described above, moving the loading zone from Evelyn Street to Menlo Avenue would not result in any changes to truck circulation patterns other than to eliminate right turns of trucks turning from Santa Cruz Avenue onto Evelyn Street. Hence there should be no new impacts to walking and bicycling resulting from truck circulation.

Because the BKF design accommodates space for a bike lane, the loading activity itself should not impact cyclists. However, even with the removal of street trees adjacent to the loading zone, the sidewalk is likely too narrow to comfortably allow pedestrians to pass a pallet jack. Therefore, loading is likely to make the sidewalk impassable to people walking for short periods of time while loading occurs. However, the impact to pedestrians would be minimal, as there are no storefronts on this block face and several other routes available to any other destination. Furthermore, based on our counts described above, less than two truck deliveries occur during the morning peak commute hour of 8 am – 9 am and no deliveries occur during the afternoon peak commute hour of 5 pm - 6 pm, therefore those walking and biking to school or work should not be impacted by loading activity.

NELSON
NYGAARD

MEMORANDUM

To: Draeger's Supermarkets, Inc.

From: Nelson\Nygaard Consulting Associates, Inc.

Date: August 27, 2018

Subject: Assessment of Proposed Parking and Loading Changes at Menlo Park Draeger's Market Associated with 840 Menlo Avenue Development

BACKGROUND AND INTRODUCTION

A 39-foot-tall, 11,471-square-foot, three-story mixed-use building is currently being proposed for 840 Menlo Avenue, at the corner of Menlo Avenue and Evelyn Street. The project proposes 6,610 square feet of office space, three dwelling units, and a lobby and parking garage. Both the main entrance and driveway to the building are currently being proposed along the Evelyn Street side of the building.

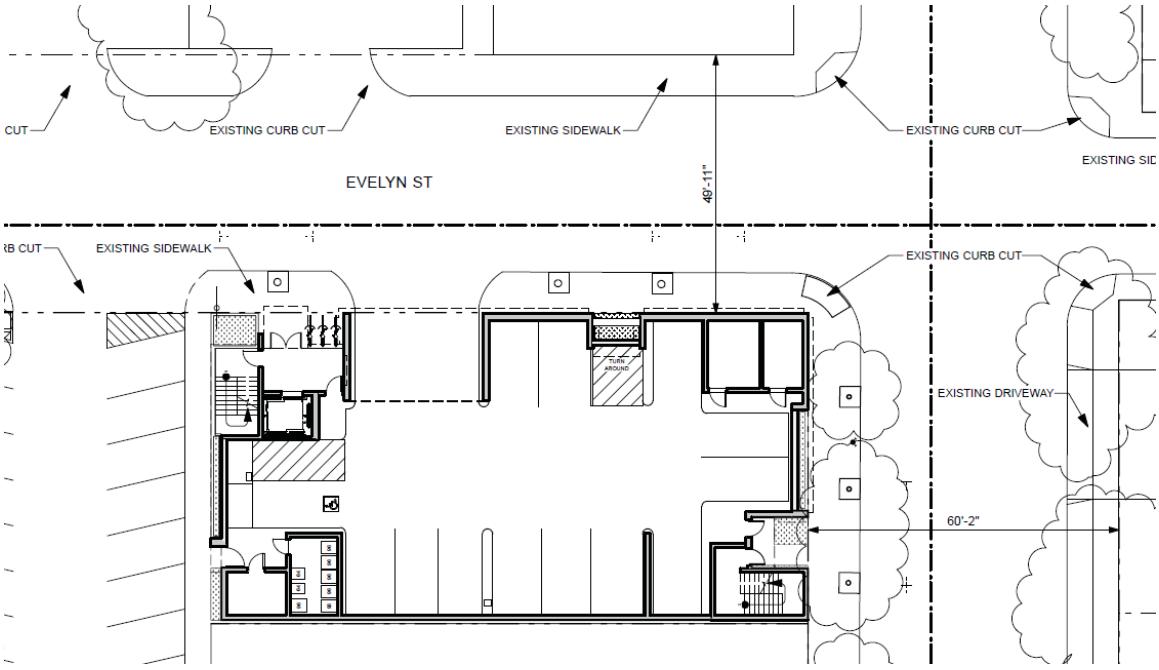
The project site abuts Draeger's Market, a family-owned grocery store that has been in operation at this location for over 60 years. The project site also abuts a 100-foot loading zone on Evelyn Street which has been in place since it was approved by the City in 2002. Draeger's relies on the Evelyn Street loading zone to receive a portion of its deliveries. The location of Draeger's Market and the existing Evelyn Street loading zone, along with loading zones within Parking Plaza 4, are illustrated in Figure 1.

As currently located and shown on Figure 2, the proposed location of the project's driveway would require changes to the loading zone on Evelyn Street. City staff previously recommended establishing a new loading zone on Menlo Avenue and extending the allowed hours for the loading zones within Parking Plaza 4, to offset the removal of the Evelyn Street loading zone. The current staff recommendation is to locate the loading zone between the project driveway and Menlo Avenue, while shortening it to 40 ft to preserve safe visibility between delivery drivers and people in the crosswalk. The recommendation also includes extended delivery hours in Parking Plaza 4.

This memorandum examines the potential negative implications of the elimination and/or relocation of the Evelyn Street loading zone and presents two alternative driveway configurations that would preserve the Evelyn Street loading zone while providing safe access to the project site that meets both City design guidelines and Institute of Transportation Engineers guidance for driveways and curb cuts.

Figure 1 Study Area

Figure 2 840 Menlo Avenue Proposed Ground Floor Layout



Source: Architectural Control/Hayes Group Architects/840 Menlo Avenue, Menlo Park Staff Report, 3/12/2018

EXISTING DRAEGER'S LOADING AND RECEIVING OPERATIONS

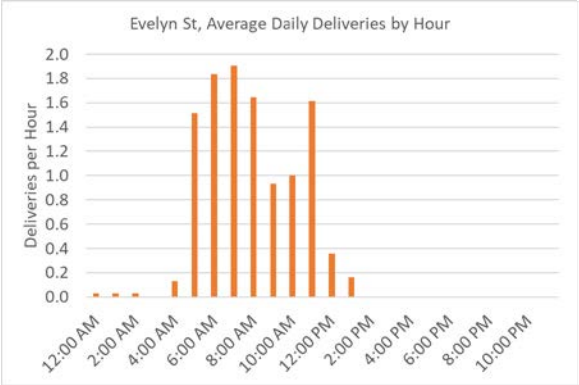
Pursuant to the City Council's 2002 approval of Draeger's Long Term Receiving and Operations Plan, Draeger's currently is permitted to receive deliveries in the Evelyn Street loading zone between the hours of 5:00a.m. and 10:00p.m. and is permitted to use 11 spaces in Parking Plaza 4 closest to Draeger's (primary loading zone) to receive deliveries between the hours of 9:00p.m. and 10:00a.m. and another 11 spaces in the opposite side of the drive aisle (expanded loading zone) between the hours of 12:00a.m. and 7:00a.m. While a portion of Parking Plaza 4 is owned by Draeger's and has been leased to the City of Menlo Park for $1 / year since the 1950's, the spaces encompassing the primary loading zone and the expanded loading zone are outside this leased portion.

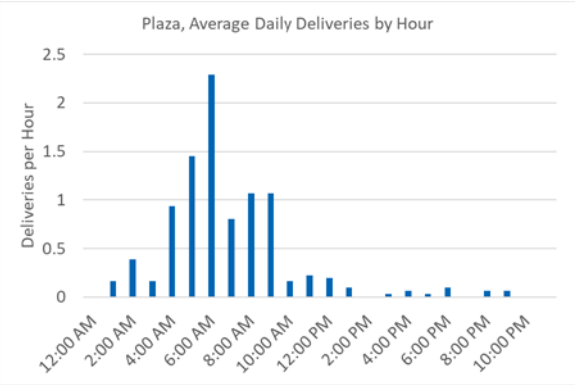
In exchange for approval of the Evelyn Street loading zone component of its long term receiving operations plan in 2002, Draeger's was required to designate and make available to the general public four parking spaces in its private parking lot across the street from the store on Menlo Avenue. In addition, Draeger's was required to make the remaining fifty-nine (59) spaces in its private lot available to the general public for short term parking between the hours of 9:00pm and 10:00am. (Condition 11, Long Term Plan for Receiving Operations at Draeger's Supermarket dated March 5, 2002).

There are no records of any safety incidents related to Draeger's loading and receiving in the public record. There is also no record of complaints from neighbors regarding safety or noise in relation to loading operations.

Daily loading counts were carried out over the course of four weeks in January and February 2018. In this period, just under 600 deliveries were made – or about 150 per week. Figure 3 summarizes the average daily deliveries received by the hour in both the Evelyn Street loading zone and Parking Plaza 4. On average, 3 total average deliveries are received on Evelyn Street after 10a.m, 94% of which were vans or small/medium box trucks.

Figure 3 Summary of Loading Observations





Evelyn St, Avg. Daily Delivery Vehicles		
Large	Medium	Small
1	6	3

Plaza, Avg. Daily Delivery Vehicles		
Large	Medium	Small
3	3	2

Below is the average count of Draeger's deliveries occurring after 10:00am in the Evelyn Street loading zone based on a two-month survey:

Size of Truck	Count After 10 am		
	1 month	Weekly	Avg. Daily
Small	45	10.2	1.5
Medium	43	9.7	1.4
Large	7	1.6	0.2
Total	*95*	*21.5*	*3.1*

IMPLICATIONS OF RELOCATING EVELYN STREET LOADING TO MENLO AVENUE

As currently located, and as shown in Figure 2, the project driveway on Evelyn Street requires complete removal of the Evelyn Street loading zone in order to conform to the City's standards for driveways. To offset this loss, City staff previously recommended removing two existing on-street spaces on Menlo Avenue and converting them to a loading zone between the hours of 7:00 a.m. to 8:00 p.m. on weekdays and 9:00 a.m. to 8:00 p.m. on weekends.

The Draeger's Market does have a rear entrance opening to Menlo Avenue. However, door is currently too narrow for deliveries and would need significant modifications to be made suitable.

We understand from City staff that the Evelyn Street driveway location was favored by staff because Evelyn Street is less traveled by vehicles in comparison to Menlo Avenue, and therefore presents less opportunity for conflicts with passing traffic. In addition, Menlo Avenue is designated a mixed-use collector and is planned to receive bike lanes in recognition of its importance as a connection for people bicycling to get to local destinations. The available right-of-way is too narrow to provide a loading zone in addition to bicycle lanes, while maintaining existing on-street parking.

Additionally, the sidewalk is lined with mature trees that limit clear sidewalk width to 4 ft or less, making the sidewalk impassable to a pallet truck unless the trees are removed. Removing street trees would change the neighborhood character, as well as reduce shade for people walking in downtown.

Limited available sidewalk width
Source: © Google Maps Streetview, 2018

IMPLICATIONS OF CONSOLIDATING ALL DRAEGER'S LOADING INTO PUBLIC PARKING PLAZA

The Complete Streets Commission recommended against staff's recommendation to relocate the Evelyn Street loading zone to Menlo Ave., thereby effectively recommending that all Draeger's loading be consolidated into public parking plaza. Consolidating all Draeger's loading into the parking lot would require removal of approximately ten (10) parking spaces from the plaza in order to accommodate the largest delivery vehicles. This amounts to approximately 10% of total parking in the plaza serving Draeger's and surrounding community-serving retail. As shown in Figure 4, because the plaza fills relatively early in the day, there likely would be an overlap between loading activity (Figure 3) and peak parking demand.

Safety is also of primary concern with consolidating loading into Parking Plaza 4. Although there are no recorded safety incidents related to Draeger's loading activities, introducing additional delivery trucks into the parking lot would increase the potential for conflicts as customers would need to navigate around large trucks on their walk between their car and the store. Figure 5 illustrates the size of a typical large delivery truck used by Draeger's suppliers that pedestrians would need to navigate around.

Existing experience suggests that occasional obstructions in the parking lot drive aisles at peak times can cause vehicles waiting to park at Draeger's to back up into University Drive. Consolidating loading into the parking plaza has the potential to make this condition more likely by introducing additional large vehicles that are likely to temporarily block drive aisles.

Consolidating loading in the parking plaza therefore appears to be a less than ideal solution, given the potential safety and congestion implications.

Figure 4 Average Parking Occupancy, Public Parking Plaza

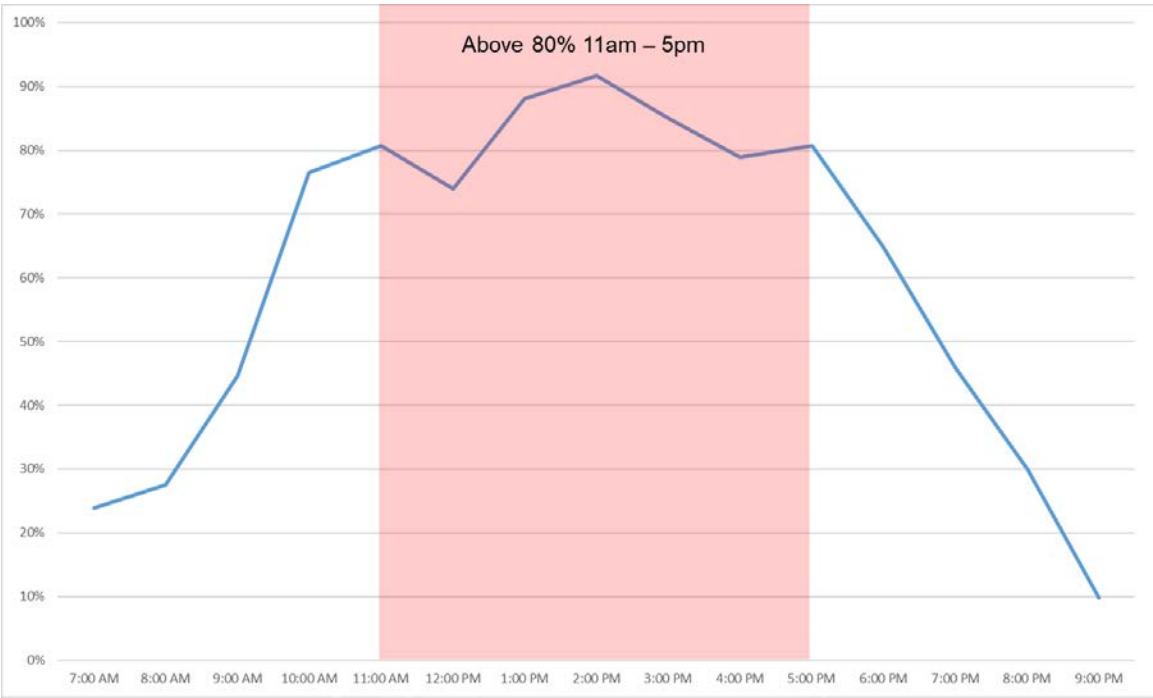
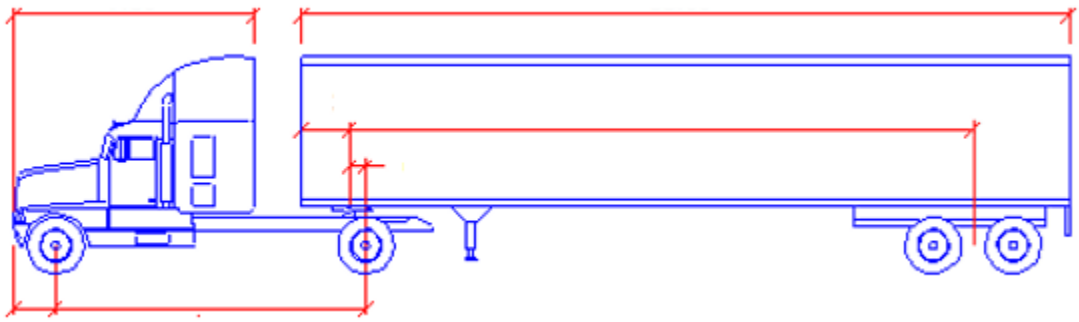


Figure 5 Typical Large Delivery Vehicle, 45' - 52'



Source: AutoTURN 10, Transoft Solutions

IMPLICATIONS OF DRAEGER'S LOADING IN PRIVATE PARKING LOT

As shown in Figure 1, the Draeger's Market owns a private parking lot for store customers on the corner of University Drive and Menlo Avenue. Pending further study, the lot might be suitable for limited loading from smaller delivery vehicles. However, it would be entirely unsuited for large trucks due to driveway constraints and lack of internal circulation space suitable for these vehicles.

Aside from physical space constraints, loading in the private lot would require delivery staff to walk almost 300 ft to the Draeger's delivery entrance, and to cross Menlo Avenue at University Drive. This would be a greater distance than is typical and would likely be impractical for delivery staff.

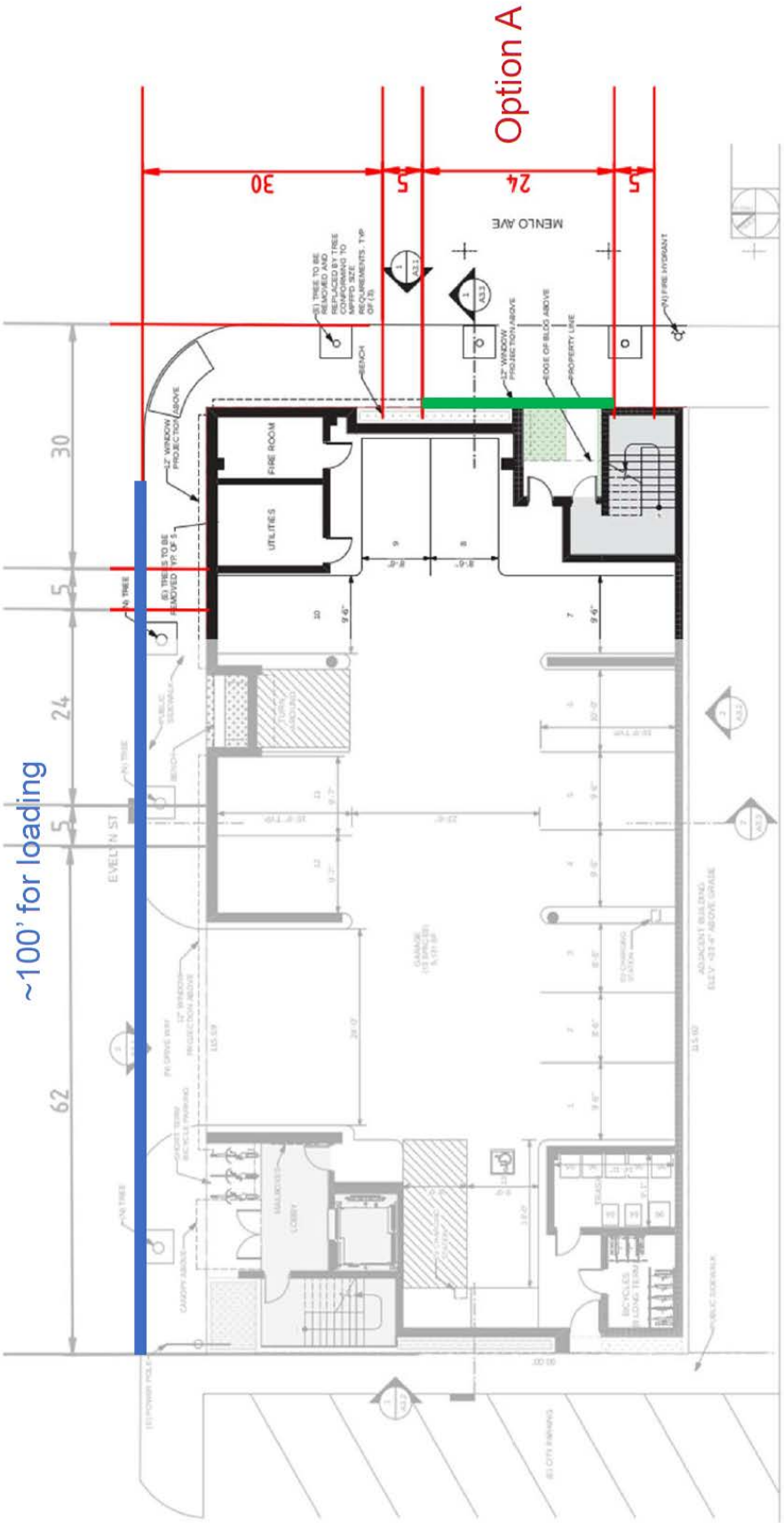
RECOMMENDATIONS

Nelson\Nygaard Consulting Associates, Inc. recommends three possible loading zone options that could accommodate both the project and Draeger's receiving operations. The first two options involve modifying the proposed driveway location. City staff has confirmed that both safely accommodate a loading zone on Evelyn Street while meeting the City's driveway standards and guidelines that driveway locations be located at least 30 feet from the nearest intersection and include a 5 -foot curb radius. The third option would preserve the existing driveway location as proposed by the applicant and adjust the loading zone to fit within the space between this driveway and Menlo Avenue. This is the alternative now recommended by City staff.

Option A – Preferred Driveway Location

Option A depicted in Figure 4 relocates the driveway to Menlo Avenue and preserves the Evelyn Street loading zone in its exact location. Option A is the preferred alternative because it would allow the loading zone to remain in its current location without any modification or reduction in length. It would also allow unhindered access to the proposed project. This alternative provides ample space for entrance and egress to 840 Menlo Avenue on Menlo Avenue while allowing Draeger's Market to maintain their loading zone along Evelyn Street.

Figure 6 Option A: Preferred Driveway Location



While Menlo Avenue is more heavily traveled than Evelyn Street, as shown in Figure 4, the proposed development is projected to generate a low number of trips into and out of the development each day (11 morning peak hour trips and 12 afternoon peak hour trips). Therefore, any potential for conflicts is reduced – especially when compared to a much more active driveway Menlo Avenue driveway entrances such as the Trader Joe's at 720 Menlo Avenue, which does not have any history of collisions.

Figure 7 840 Menlo Avenue Trip Generation Summary

						AM Peak Hour				PM Peak Hour			
				Daily	Daily	Pk-Hr	Trips			Pk-Hr	Trips		
Land Use	ITE Code	Size	Unit	Trip Rates	Trips	Rate	In	Out	Total	Rate	In	Out	Total
Proposed Land Use													
General Office Building	710	6.6	ksf	11.03	73	1.56	9	1	10	1.49	2	8	10
Condominium/Townhouse	230	3	du	5.81	17	0.44	0.3	1.1	1.3	0.52	1.0	0.9	1.6
Estimated Total Project Trips					90		9	2	11		3	9	12

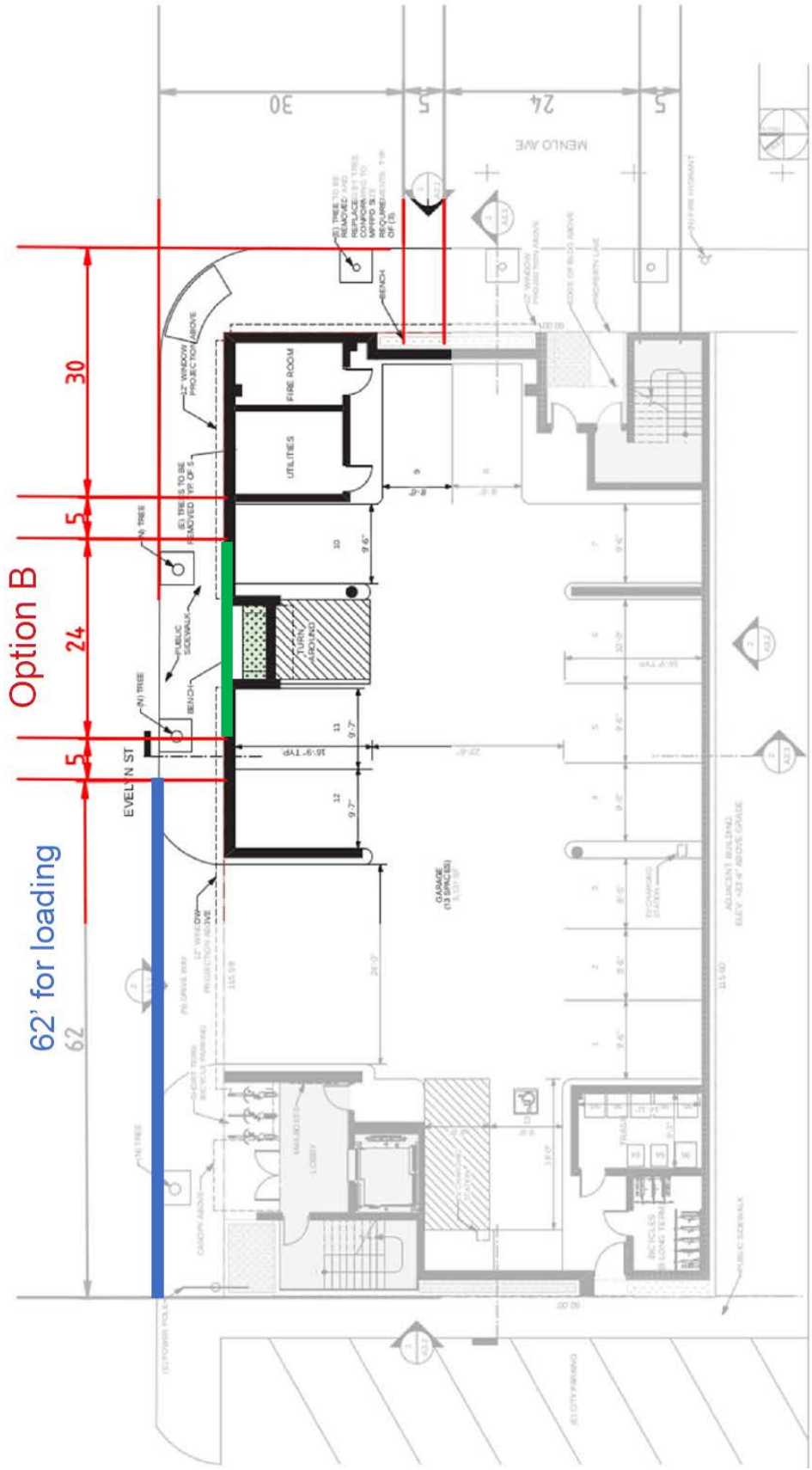
Source: Architectural Control/Hayes Group Architects/840 Menlo Avenue, Menlo Park Staff Report, 3/12/2018

Option B – Acceptable Driveway Location

Option B depicted in Figure 7 relocates the driveway approximately 32 feet from Menlo Avenue while shortening the existing Evelyn Street loading which t is approximately 100 feet in length to approximately 62 feet. As shown in Figure 6, this is the approximate location of the existing driveway to the project site. While this reduces Draeger's loading by approximately 40%, this length would continue to be able to accommodate 52-foot trucks which is Draeger's primary criteria.

Figure 8 Option B: Existing Driveway in Approximate Location of Option B Driveway

Figure 9 Option B: Second Feasible Alternative



Option C Staff Recommended Driveway Location

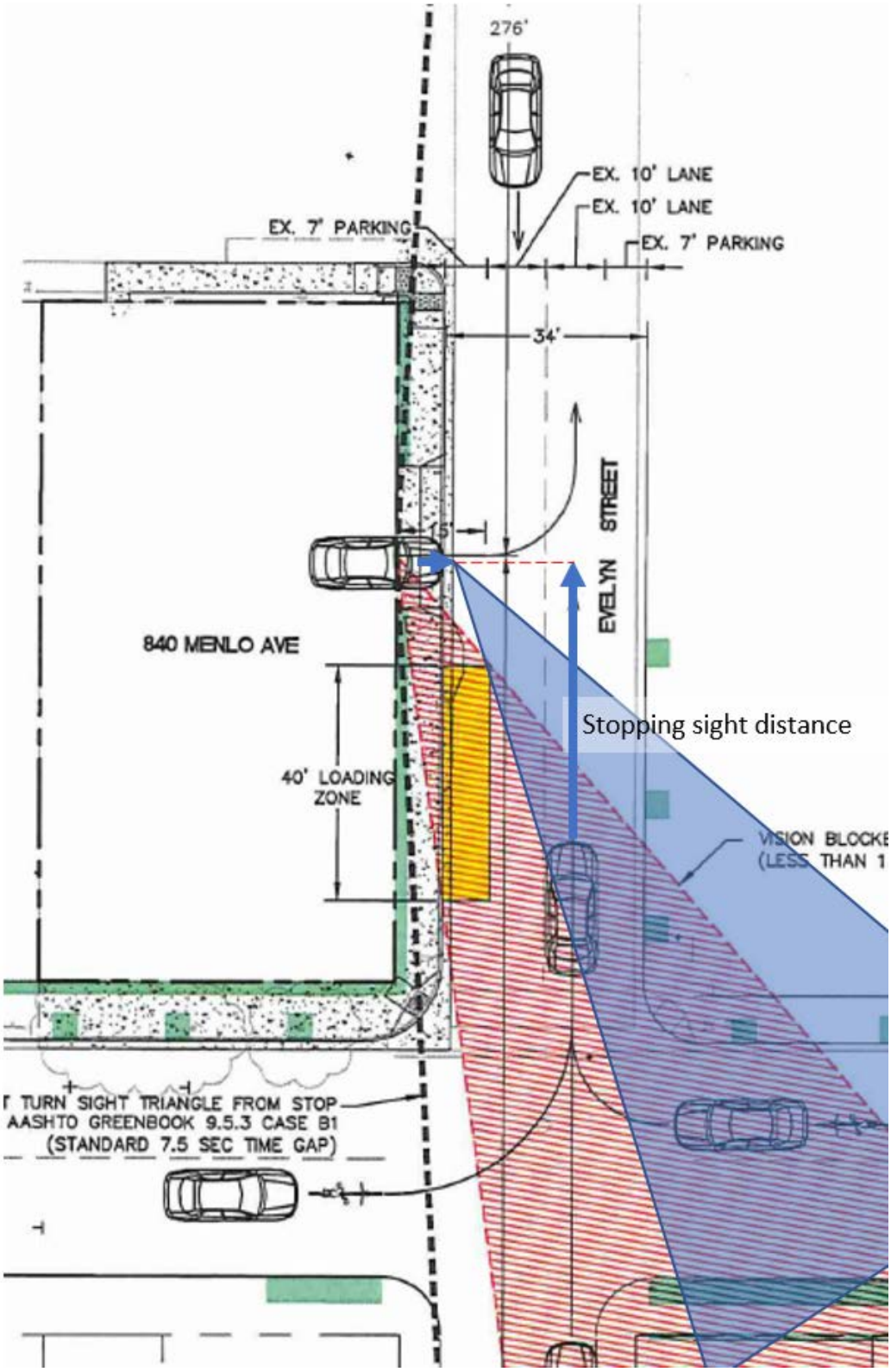
City of Menlo Park staff now recommends a 40' loading zone on Evelyn Street, between the proposed 840 Menlo Avenue garage entrance, and Evelyn Street. A variation of this option was previously presented to staff as Option C. Staff modified this alternative by reducing the loading zone to 40 ft and adding a red curb length between the loading zone and the crosswalk at Menlo Avenue to preserve good visibility between delivery vehicle operators and people walking.

This alternative would accommodate 94% of delivery vehicles that arrive after plaza loading hours, see Figure 3. Draeger's would need to work with the remaining large delivery vehicles to ensure that deliveries are either accommodated on smaller vehicles, or that larger vehicles arrive only within plaza loading hours.

The 840 Menlo Avenue project team commissioned the engineering firm BKF to evaluate visibility from the driveway and expressed concern that exiting vehicles would not have adequate sightline to safely exit the garage. This situation is common in downtown areas and would exist whether there is a loading zone, or a parking space with a large SUV parked. The analysis neglected to consider that the typical driver's response to this situation is to pull forward into the parking lane, allowing them to see approaching vehicles as shown in Figure 10. The analysis was also carried out at 25 mph, which is the posted limit on Evelyn Street. However, that assumption is more suitable for a suburban context with long blocks where vehicles are likely to reach and hold the speed limit. In this downtown core context with 350 ft blocks, few vehicles are likely to have reached the speed limit this close to an intersection. At a speed of 15 mph, a speed more likely in this location, the stopping sight distance is workable.

The safety concerns presented by Hanna and BKF are overstated as similar situations are typical of most downtowns and are demonstrated to work in practice. Drager's has determined that while not preferred, they can support this option, though it will require working with their vendors to reduce the number of large delivery vehicles after 10am.

Figure 10 BKF Sightline Analysis and Revision



Source: "Intersection Stopping Sight Distance, 840 Menlo Ave", BKF, 05.15.2017

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SU-40
AASHTO 2011 (US)
SU-40
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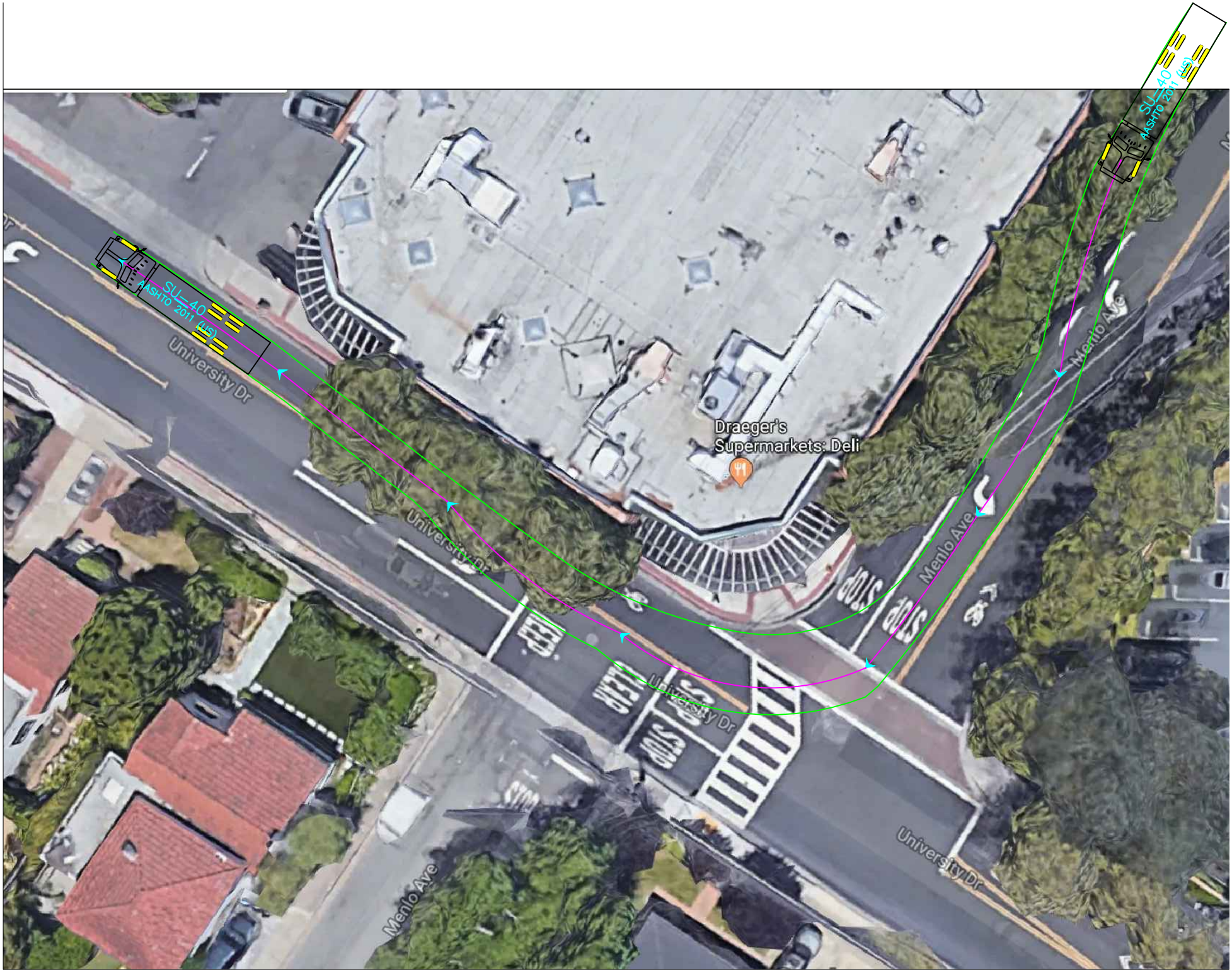
University Dr
Draeger's
Supermarkets: Deli
Menlo Ave
STOP
Google
Imagery ©2018 Google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CITY OF MENLO PARK

STAFF REPORT

Complete Streets Commission
Meeting Date: **10/10/2018**
Staff Report Number: **18-011-CSC**

Regular Business: **Recommend to City Council to approve the permanent installation of bicycle improvements on Oak Grove Avenue, Crane Street, and University Drive**

Recommendation

Staff requests that the Complete Streets Commission recommend to City Council to approve the permanent installation of bicycle improvements on Oak Grove Avenue, Crane Street, and University Drive and provide feedback on frontage parking along Vallombrosa Center.

Policy Issues

On February 7, 2017, the City Council approved their 2017 Work Plan, which includes this project (Item No. 50), and their 2018 Work Plan. This Project is also consistent with the policies stated in the 2016 City of Menlo Park General Plan Circulation Element. These policies seek to improve safe multi-modal transportation and encourage health and wellness through active transportation options.

Background

On December 6, 2016, City Council approved a concept plan for a one-year trial installation of bicycle improvements on Oak Grove Avenue, Crane Street and University Drive. The City Council's approval also included direction to include parking on the south side of Oak Grove Avenue between Alma Street and Laurel Street, to include raised delineators where the buffered space narrowed to 18 inches, and to identify a set of metrics to measure the effectiveness of the trial. At this meeting, the City Council also appropriated funds for the design and construction of this project and authorized the City Manager to award a construction contract after the project was bid.

On March 28, 2017, City Council reviewed metrics to assess the one-year trial installation. As part of that review, the City Council directed staff to move forward with time-sensitive trial metrics on parking, traffic and speed data, but to bring back the remaining three metrics for City Council's review at a future meeting. The City Council also directed staff to conduct additional community outreach before installing the trial, and to identify potential design alternatives to address parking needs during large special events.

On April 18, 2017, City Council directed staff to construct the bicycle facility in a single phase during the summer in order to begin the one-year trial installation prior to the start of local schools, modify the design to allow parking on weekends on Oak Grove Avenue between Laurel Street and the city limits to the east, and to allow on-street parking for 15 Nativity Church special events each year. Staff was also directed to bring forward recommendations for Marcussen Drive and Pine Street to manage potential overflow parking.

On July 12, 2017, City Council approved the remaining trial metrics for the Oak Grove University Crane Bicycle Improvement Project which include an online survey, intercept survey and collision analysis. The

City Council also adopted a resolution to implement a Residential Parking Permit program for Marcussen Drive residents to manage the potential of overflow parking from the project.

Analysis

Construction of the pilot began in August 2017 and was completed in its entirety in September 2017. Following City Council approval of the remaining trial metrics, staff and the consultant team Alta Planning & Design (Alta) scheduled midtrial data collection to take place in November 2017 and end-trial data collection to take place in May 2018, after April recess and before the end of the school year. The end-trial data period was also scheduled to cover the same timeframe as the pre-trial data which was taken in May 2017.

In August 2017, the City made signal improvements to the intersection of Oak Grove Avenue and Laurel Street. These signal improvements upgraded the traffic signal heads from 8" to 12" diameter as well as changing the signal phasing to include split phasing on Laurel Street. Split-phasing changed the operation of the lights to include a protected left-turn to run concurrently with the corresponding through lane for both approaches on Laurel Street. This permanent change to the signal will improve visibility and safety for all road users.

Since the implementation of the pilot, one change to the design plan was made. The delineators within the bike lane buffers along both sides of Oak Grove Avenue were removed to accommodate Recology trucks that had trouble accessing the waste bins along the curb. Cyclists also reported that the posts made it difficult to use the buffer area when obstructions were present in the bike lane. These safety concerns justified the removal of the delineator posts.

Pilot Evaluation Report

Alta Planning & Design prepared an evaluation report that summarizes information from the entire pilot project, including data collected before, during, and one year after installation (Appendix A). The performance metrics analyzed in the report were established prior to the installation of the project, through feedback from the former Bicycle and Transportation Commissions, and adopted by City Council. The summary reviews data on volumes (both auto and bicycle), vehicle speeds, and parking occupancy. In addition, community feedback was received through an online survey, intercept survey, business owner surveys, and through emails sent to Staff.

The evaluation addresses how the pilot bikeway has changed the use, safety, and parking convenience along the corridor as well as the response of the community to these improvements.

Vehicle & Bicycle Volumes

Volumes for all modes were counted at four intersections:

- Oak Grove Avenue at Crane Street
- Oak Grove Avenue at El Camino Real
- Oak Grove Avenue at Laurel Street
- University Drive at Live Oak Avenue

At these intersections, volumes were counted for the following periods:

- Weekdays (Tuesday, Wednesday, Thursday) during morning peak (7 a.m. to 9 a.m.), midday (12 p.m. to 2 p.m.) and evening peak (3 p.m. to 6 p.m.)
- Saturday (10 a.m. to 2 p.m.)
- Sunday (8:30 a.m. to 12:30 p.m.)

This provides a comprehensive understanding of travel in this corridor across a number of periods and

usage contexts (commute, school, midday, weekend, and church-related)

Table 1: Change in Traffic Volumes (Pre-Pilot to Mid-Pilot to End-Pilot) Change in Motor Vehicle Volumes				
	Oak Grove Avenue at Crane St	Oak Grove Avenue at El Camino Real	Oak Grove Avenue at Laurel St	University Dr at Live Oak Ave.
Weekday % Change	4 %	-3 %	-2 %	4 %
Weekend % Change	4 %	0 %	0 %	2 %

Change in Bicycle Volumes				
	Oak Grove Ave. at Crane St	Oak Grove Avenue at El Camino Real	Oak Grove Avenue at Laurel St	University Dr at Live Oak Ave.
Weekday % Change	15 %	10 %	-4 %	9 %
Weekend % Change	-27 %	-9 %	-20 %	42 %

Most vehicle volumes were within normal variation (3 to 5 %) across the data collection period. Overall, there was no significant increase or decrease in vehicle travel in Menlo Park as a result of the project.

The number of bicyclists riding along the corridor increased at 3 out of the 4 intersections during the weekday periods. Conversely, bicycle volumes decreased on the weekend at 3 out of the 4 intersections. Analysis of bicycle volumes show an increase of bicyclists along the corridor during peak travel periods, although there was an overall decrease in bicycling on the weekends which could suggest route-shifting for bicyclists. The declines of bicyclists on Laurel Street and El Camino Real suggest changing travel patterns as a result of the new bikeway.

Vehicle Speeds

The following table presents the 85 percent vehicle speed for pre-trial, midtrial, and end-trial data collection. The 85 percent vehicle is used as the speed at or below which 85 percent of the traffic is moving and is justified in determining the posted speed limit of a roadway.

Table 2: 85th %ile Vehicle Speeds (MPH) and Change from Pre-Pilot							
			EB/NB			WB/SB	
Location	**Between**	**Pre**	**Mid**	**End**	**Pre**	**Mid**	**End**
Oak Grove Ave.	Pine St. and Marcussen Dr	34.6	34.8 0.7 %	34.2 -0.9 %	34.3	34.7 0.9 %	34.2 -0.4 %
	El Camino Real and Hoover St	24.9	23.2 -7.1 %	25.4 2.0 %	24.8	23.9 -3.7 %	25.2 1.5 %
	University Dr and Crane St	27.3	25.7 -5.8 %	25.5 -6.4 %	27.3	27.2 -0.6 %	28.0 2.4 %
University Dr	Menlo Avenue and Oak Ln	24.8	25.8 4.0 %	24.5 -1.4 %	26.9	27.7 3.2 %	27.5 2.5 %

Most speeds on Oak Grove Avenue presented insignificant change and remain close to the posted speed limit. As vehicles approach Crane Street from Oak Grove in the westbound direction, speeds have shown to increase. The bikeway stops before this segment turns onto Crane Street. It is recommended that monitoring of this section continue.

Parking

Parked motor vehicles were counted on-street and in the eight public parking plazas within Downtown. Parking use was counted for six periods, with one count occurring in each period:

- One weekday early morning (between 7:45 a.m. and 8:45 a.m.)
- One weekday morning (between 9 a.m. and 11 a.m.)
- One weekday midday (between noon and 2 p.m.)
- One weekday evening (between 6 p.m. and 8 p.m.)
- One Saturday late afternoon (between 4 p.m. and 6 p.m.) to accommodate church schedules
- One Sunday morning (between 8:45 a.m. and 9:30 a.m.) to accommodate church schedules

Two parking occupancy measures were calculated:

- Average occupancy – average percentage of parking spaces in use relative to available capacity
- Maximum occupancy – highest observation of parking use relative to available capacity. Maximum occupancy captures the worst-case scenario

On-Street Parking

There were a total of 960 on-street parking spaces before the trial. During the trial, there were 793 available on the weekday and 836 available on the weekend. Parking is prohibited in the new bike lanes, except near Nativity Church and School where parking is permitted on the weekends. The parking data was aggregated into four contiguous subareas within the overall project to capture the ability of individuals to park in a desired area:

- Oak Grove Avenue: East of El Camino Real and adjacent blocks
- Downtown: both sides of Santa Cruz Avenue from El Camino Real to University Drive
- Oak Grove Avenue: West of El Camino Real and adjacent blocks
- University Drive and adjacent blocks

Table 5: On-Street Parking Utilization

	Pre-Trial	MidTrial	End-Trial
Max. % Utilized	62 %	66 %	67 %
Avg. % Utilized	41 %	47 %	46 %

Compared with the pre-trial period, average on-street parking utilization for the whole project area increased from 41 percent to 46 percent. The number of available spaces declined east of El Camino Real and along University Drive, but remained constant in the downtown area and West of El Camino Real.

Peak parking on weekdays occurred during the midday count period (noon to 2 p.m.). Parking availability is constrained at these periods, but sufficient capacity is still relatively available. Conversely, the weekend peak parking period most often occurred on Sunday mornings.

As directed by City Council and in consultation with local residents through surveys and feedback forms, Staff implemented a Residential Parking Permit (RPP) program on Marcussen Drive from Oak Grove Avenue to Ravenswood Avenue. These changes were made and signs installed in late September 2017. This residential block resulted in a significant decline in parking usage from pre-trial to mid-trial and end-

trial.

Parking Plazas

Downtown Parking Plazas provide an additional 1,215 spaces in the downtown area, except on Sunday when half of Plaza 6 (70 spaces) is used for the farmers market. The parking plazas saw a slight increase in occupancy and was to be expected due to the removal of on-street parking. Most parking plazas allow for free three-hour parking with the exception of Plaza 4, which has a combination of one-hour and two-hour stalls, and Plaza 1 and Plaza 5, which allow for longer-term parking at $1 per hour after an initial 3 free parking hours.

Table 6: End-Pilot Plaza Parking Utilization

		Maximum			Average		
Plaza	Capacity	Count	% Utilized	% Change from Pre-Pilot	Count	% Utilized	% Change from Pre-Pilot
1	266	254	96 %	9 %	146	55 %	-10 %
2	92	91	99 %	1 %	69	75 %	3 %
3	219	211	96 %	-4 %	147	67 %	-16 %
4	103	92	89 %	10 %	53	52 %	-27 %
5	160	149	93 %	15 %	67	42 %	-19 %
6	140	134	96 %	30 %	53	38 %	-14 %
7	95	85	90 %	4 %	60	63 %	-13 %
8	140	137	98 %	2 %	90	64 %	-16 %

In comparison to the pre-trial, the average number of motor vehicles parking in the parking plazas decreased within almost all of the parking plazas.

Generally, the overall peak period for plaza parking use occurred midday (Noon to 2 p.m.) during the week. Peak parking utilization increased for most parking plazas with the exception of Plaza 3. Prior to the pilot, Plazas 1, 2, and 3 were near capacity and continue to be so during the pilot. The demand for parking shifted to Plazas 4, 5, and 6, but 41 spaces remained available during the period of highest use.

Oak Grove “Dirt” Parking

As requested by City Staff, Alta also conducted parking counts for vehicles parked in the frontage area of Vallombrosa Center on the north side of Oak Grove Avenue between Church of the Nativity and Nativity School. There is approximately 550 feet of parking space, totaling to 25 potential parking spots in this area (Menlo Park standard is 22 feet minimum).

Table 7: Dirt Parking Utilization									
Estimated Available Parking Spaces	Early (7:45 a.m. – 8:45 a.m.)	Morning (9 a.m. – 11 a.m.)	Afternoon (Noon – 2 p.m.)	Evening (6 p.m.-8 p.m.)	Saturday (4 p.m. – 6 p.m.)	Sunday (8:45 a.m. – 9:30 a.m.)	Average Cars Observed	Average % In Use	Max % In Use
25	1	8	27	1	1	8	7.6	30.7 %	108 %

The frontage parking area is heavily used on weekday afternoons, with modest use in the mornings and on Sundays. Consultant and staff observations indicate that some Menlo-Atherton High School students use this area to park their cars during school.

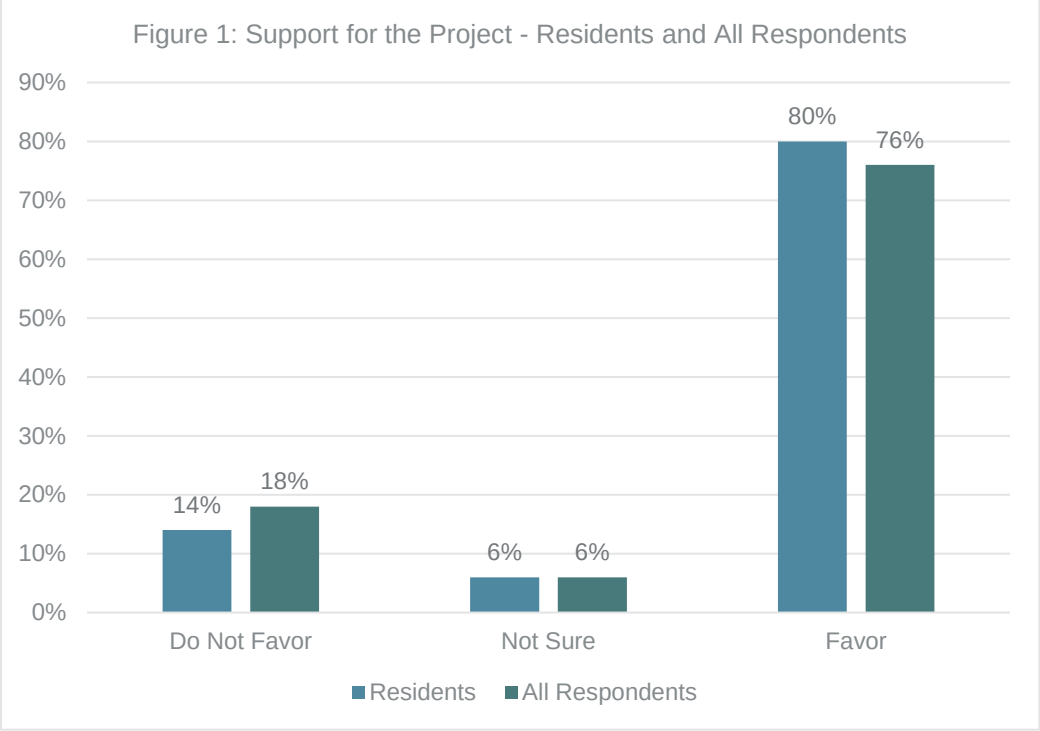
Survey Input

An online survey was developed to gather and consolidate the opinions of the community on the Oak Grove Bike Pilot. The survey was open to the public from April 23, 2018 to May 22, 2018. Surveys were collected

online and advertised through NextDoor, through business cards distributed at Bike to workday energizer stations, and through other City media channels such as Facebook and Twitter. Alta also placed consultant staff to collect surveys in person through intercept surveys on May 1 and May 2, 2018 for two hours during typical lunch hours along Santa Cruz Avenue and Oak Grove Avenue. Passersby included drivers, pedestrians, and bicyclists and were asked the same questions as listed in the online survey. A total of 756 people took the public survey

With direction of the City, Alta also developed a separate survey for businesses and were distributed by staff. These surveys were to be returned by mail or in person to City Hall. Nine (9) business surveys were received.

Public Survey



Most respondents to the survey supported the project with 76% of respondents indicating they were in favor of the permanent addition of the Oak Grove Bicycle Project. Of the respondents not in favor of the project, the primary reason provided is concerns about parking availability (on- and off-street).

Business Survey

Nine businesses responded to the business owner survey. Business surveys were distributed to businesses by staff and were received back via return mail or in person at City Hall. Most of the feedback received was in regards to parking availability since the pilot began, with one business owner indicated the need for more visible striping and another indicating that it has not changed how bicyclists use Santa Cruz Avenue.

Collision Data

Staff provided collision data along the project corridor to Alta Planning to determine if there were safety effects for roadway users as a result of the pilot. Data was collected from July 1, 2015 to July 1, 2018 for the four main roadways: Oak Grove Avenue, Crane Street, Live Oak Avenue, and University Drive.

Collision data from July 1, 2015 to May 31, 2016 were used to represent pre-pilot conditions. Collision data from June to August 2017 were omitted from the analysis when the project was under construction. Post-pilot conditions include collision data collected after September 1, 2017 to July 31, 2018.

Table 8: Pre- and Post-Pilot Collisions

	Pre-Pilot	Post-Pilot
Primary Streets		
Live Oak Ave.	1	0
University Dr	2	1
Crane St	6	5
Santa Cruz Ave.	2	0
Oak Grove Ave.	18	11
Sub Total	**29**	**17**
Cross Streets		
El Camino Real	14	7
Other*	12	3
Sub Total	**26**	**10**
Total	**55**	**27**
Mode		
Bicycle	1	3
Pedestrian	4	2
Severity		
Minor Injury	29	7
Sever Injury or Fatality	0	0

Total collisions along the project corridor declined from 55 to 27 total including cross streets. Twelve (12) of the 27 collisions were experienced during construction of nearby projects. The two primary collision factors were unsafe lane changes and speeding. After the pilot, unsafe lane changing declined from 16 to 13 and speed related collisions declined as well from 17 to 7.

Observations

As requested by City Staff, Alta Planning performed additional qualitative observations during the end-trial data collection period:

- Oak Grove Avenue between Maloney Lane and El Camino Real at the parking lot entrance west of behind 1189 El Camino Real to address vehicle operations
- University Drive at Florence Lane to address pedestrian crossing challenges

The observations on Oak Grove Avenue were requested in response to community feedback about vehicle queues backing into El Camino Real due to drivers waiting to turn left. City Staff installed KEEP CLEAR pavement markings to make left turn movements easier. The observation for this area was performed on May 1, 2018 from 2 p.m. to 3 p.m. Observations conclude that most vehicles turning left were not impeded by vehicles in the KEEP CLEAR area. Where vehicles did have to wait to turn left, there was one vehicle waiting and not stopped on El Camino Real. During this time period, traffic volumes were low as not to cause backup or incident. It is recommended that monitoring of this section continue.

The observations on University Drive were requested in response to comments about vehicle speeding and failure to yield to pedestrians attempting to use the crosswalk at Florence Lane. Staff installed an in-street crosswalk sign to increase the visibility of the crosswalk. The observations for this issue were conducted on May 1, 2018 between 3 p.m. to 3:30 p.m. and on May 2, 2018 between 10:30 a.m. to 11 a.m. During the

observation period, 10 pedestrians used the crosswalk where only 5 pedestrians were properly yielded to cross by drivers. The remaining 5 pedestrians had to wait for drivers to pass before they could safely cross. It is recommended that monitoring of this section continue.

Other Project Considerations

The direction of the Oak Grove Bicycle Improvement Project will determine the outcome of future Capital Improvement Programs (CIP). The City has recently received a grant to install sidewalk and green infrastructure for storm water along the north side of Oak Grove Avenue from Nativity Church to Nativity School. This CIP project would result in having to remove the dirt parking area. Staff reached out to Nativity Church, Nativity School, Vallombrosa Center, and Corpus Christi Monastery and are awaiting feedback about on-street parking. Parking counts and observations provided by the Consultant suggests that Menlo-Atherton High School Students currently use this area to park their vehicles during school as detailed in the parking volumes.

The Managers Mobility Partnership, a joint venture between managers of four Silicon Valley cities (Palo Alto, Mountain View, Redwood City, and Menlo Park) to address transportation issues, has worked collaboratively to create the Peninsula Bikeway. The bikeway is a route that uses existing bikeways and local streets to better connect the cities and the region together. Oak Grove Avenue and Crane Street are currently identified as part of the Peninsula Bikeway in large part because of the bicycle improvements installed. The interim Peninsula Bikeway launched recently on September 8, 2018 at Burgess Park where Menlo Park served as the host city for the event.

Impact on City Resources

The City's current adopted budget includes staff time to complete this project. Funding for construction and consultant services were appropriated in December 2016.

Environmental Review

The recommendation is categorically exempt underclass 1 (Existing Conditions) and Class 4 (Minor Modifications) of the current State of California Environmental Quality Act Guidelines.

Public Notice

Public notification was achieved by posting the agenda, with the agenda items being listed, at least 72 hours prior to the meeting. Additional public outreach was made by mailing postcards to the affected residences and businesses two weeks in advance of the meeting.

Attachments

A. Oak Grove Pilot Evaluation Report - Alta Planning

Report prepared by:
Marlon Aumentado, Junior Engineer

Report reviewed by:
Kristiann Choy, Senior Transportation Engineer

ATTACHMENT A

MEMORANDUM

84 W Santa Clara St. Suite 830
San José, CA 95113
408.564.8606
www.altaplanning.com

To: Marlon Aumentado, Kristiann Choy, City of Menlo Park

From: Lola Torney, Aaron Fraint, Hugh Louch, Alta Planning + Design

Date: August 28, 2018

Re: Evaluation Report for the Oak Grove – University – Crane Bike Project

Introduction

The City of Menlo Park is conducting a one-year trial of a Class II buffered bike lanes on Oak Grove Avenue, University Drive and connected by Class III bike routes on Crane Street and Live Oak Avenue. The project was developed to addressed multimodal transportation challenges noted in prior Menlo Park planning efforts, including the Downtown Specific Plan. Menlo Park has limited east-west bicycle connectivity. Many corridors require users to change streets at offset intersections to maintain direction. Approaching Downtown Menlo Park, the challenges also include lack of bicycle or pedestrian facilities (e.g., bike lanes or sidewalks) and the need to cross busy roads such as El Camino Real and Middlefield Road. Many students cross these streets daily, especially to access Menlo-Atherton High School and Hillview Middle School.

This report summarizes the findings of an evaluation conducted of this project to help the City adapt the design, if needed. After the trial, City staff will make a recommendation to Council on whether to install the treatments permanently or convert the roadways back to their original design.

The trial includes installation of Class II buffered bike lanes on Oak Grove Avenue between the City border with Atherton and Crane Street and along University Drive between Oak Lane and Middle Avenue (Figure 1). These facilities are also connected by Class III bike routes on Crane Street, Live Oak Avenue, and portions of Santa Cruz Avenue.

The installation of buffered bike lanes required removing on-street parking from:

- Oak Grove Avenue between Rebecca Lane/City border and Laurel Street (both sides of street)
- Oak Grove Avenue between Laurel Street and Alma Street (north side of street)
- Oak Grove Avenue between Alma Street and Crane Street (both sides of street)
- University Drive between Oak Lane and Middle Avenue (both sides of street)

Parking was available on sections of Oak Grove on the weekend to accommodate Nativity Church and School parking needs.

Figure 1 Study Area Corridors

Project Timeline

Alta Planning + Design gathered data about the project before, during, and a year after the project was installed to help the City and the community determine the efficacy of the trial. The timeline for data collection was as follows:

- Pre-Trial: May 2017
- Construction: August 2017
- Mid-Trial: November 2017
- End-Trial: May 2018

Pilot Summary

This report summarizes information from the entire pilot, including data collected before, during, and one year after installation. The performance metrics analyzed in this report were established prior to the installation of the project, through feedback from the Bicycle and Transportation Commissions, and were adopted by the City Council on April 26, 2017, with additional metrics adopted on August 29, 2017. The end-trial data and pre-trial data were collected at the same time of year to minimize variations due to schools traffic patterns and weather. The summary reviews data on volumes (both auto and bicycle), automobile speeds, and parking occupancy. It also summarizes the feedback received from the community via an online survey, a business owner survey, and through emails sent to City staff.

The summary evaluation addresses how the pilot bikeway has changed the use of the corridor (by people biking, walking, and driving), the safety of people using the corridor, the convenience of parking along the corridor, and the response of the community to the improvements. Each of these areas of analysis is presented in turn.

Use of the Corridor – Multimodal Volumes

Volumes for all modes were counted at four intersections:

- Oak Grove Avenue at Crane Street
- Oak Grove Avenue at El Camino Real
- Oak Grove Avenue at Laurel Street
- University Drive at Live Oak Avenue

Volumes were counted for the following periods:

- Weekdays – for three days (Tuesday, Wednesday, and Thursday), counts were conducted during the morning peak (7 AM to 9 AM), mid-day (12 PM to 2 PM) and evening peak (3 PM to 6 PM), the last of which also captures school-based traffic that is often heaviest from 3 to 4 PM
- Saturday mid-days, from 10 AM to 2 PM
- Sunday mornings from 8:30 AM to 12:30 PM, to ensure counts during periods of peak church attendance.

This provides a comprehensive understanding of travel in this corridor across a number of periods and usage contexts (commute, school, mid-day, weekend, and church-related).

Motor Vehicle Volumes

From pre-trial to mid-trial to end-trial, there were modest changes in the motor vehicle volumes on Oak Grove Avenue or on the cross streets where counts were taken. Most vehicle volumes were within normal variation (3 to 5 percent) across the data collection periods (**Table 3**).

Table 1: Change in Motor Vehicle Volumes – Pre-Pilot to End-Pilot

	Oak Grove Ave at Crane St	Oak Grove Ave at El Camino Real	Oak Grove Ave at Laurel St	University Dr at Live Oak Ave
Weekday % change	4%	-3%	-2%	4%
Weekend % change	4%	0%	0%	2%

A closer look at vehicle patterns on the primary pilot routes (Oak Grove Avenue and University Drive) and key cross streets are shown, respectively, in **Figure 2** and **Figure 3**. A small number of changes worth noting:

- Oak Grove Avenue at Laurel Street saw a dip in vehicle volumes from the pre-trial of 8 percent in the mid trial period and 5 percent at the end of the trial. This suggests some slight shifting of vehicle travel away from Oak Grove Avenue.
- Laurel Avenue saw a more substantial dip (12 percent at mid-trial and 15 percent at end trial) during the morning peak period. During project implementation, the City made signal improvements at this intersection that included installing larger signal heads and changing the timing to a split phase on Laurel Street to increase visibility and make it easier to turn. It is impossible to know with certainty, but these signal changes may have contributed to a shift in driver behavior.
- El Camino Real saw a fairly substantial decline in trips during the evening peak period (8 percent at the end of the trial). Vehicle volumes on El Camino Real include substantial amounts of through traffic, suggesting that other external factors are likely contributing to this change.
- Crane Street saw a steady increase in vehicle traffic across all time periods of 6 to 10 percent. However, on this low volume street, that means an increase of only 10 to 20 vehicles per hour.
- University Drive saw a small increase (9 percent) in vehicle volumes in the evening peak period.

These changes do not show a pattern of changes that can be attributed to the bikeway. Overall, there was no significant increase or decrease in vehicle travel in Menlo Park as a result of this project.

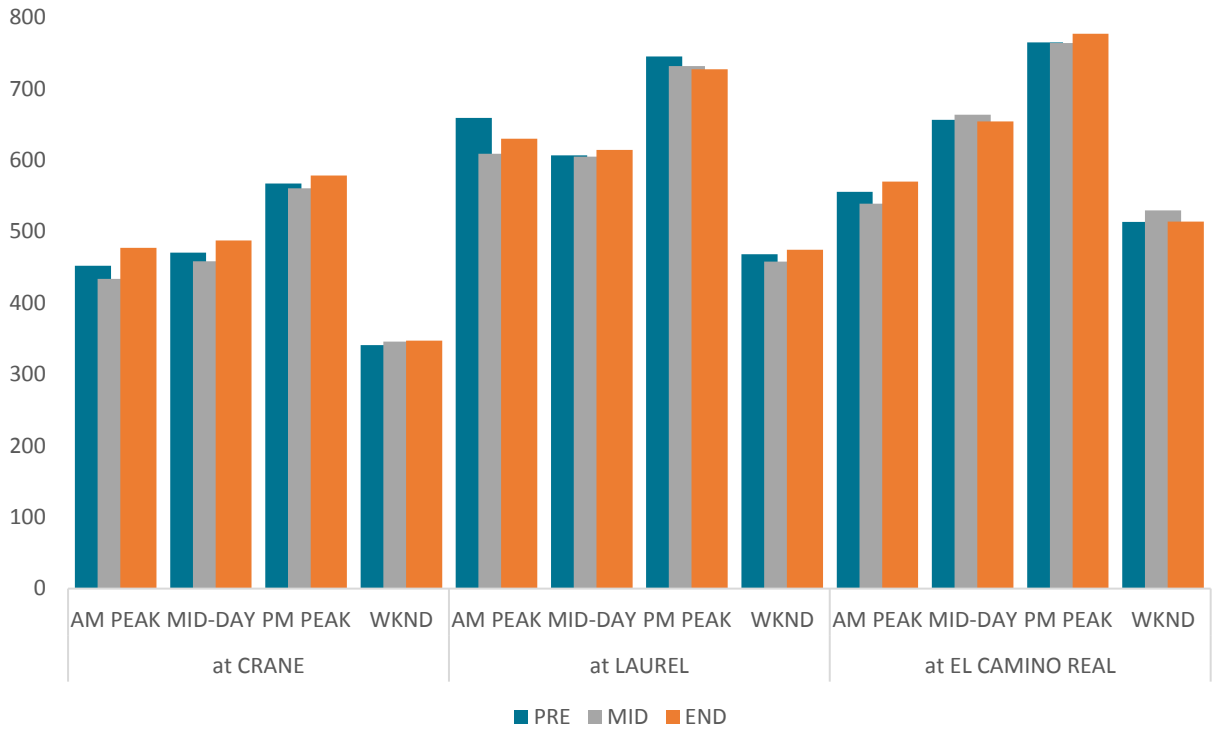


Figure 2: Changes in Vehicle Volumes Along Oak Grove Avenue by Cross Street and Period

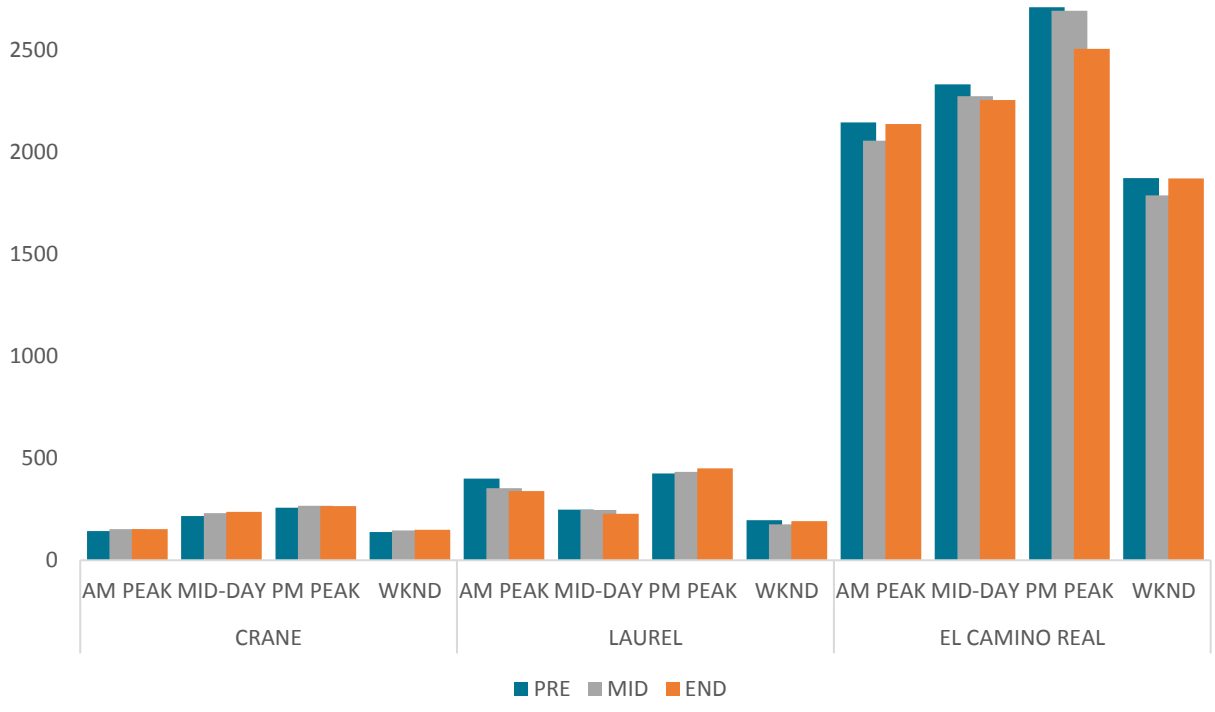


Figure 3: Change in Average Hourly Vehicle Volumes on Cross Streets by Street and Period

Bicycle Volumes

The number of people riding a bicycle through the four intersections increased at three of the intersections (Oak Grove Avenue at Crane Street and at El Camino Real as well as University Drive at Live Oak Avenue) during the weekdays. However, bicycle volumes decreased at the Oak Grove Avenue at Laurel Street intersection during the weekday and at three intersections during the weekend. University Drive at Live Oak Avenue intersection saw a 42 percent increase over the weekend.

Table 2: Change in Bicycle Volumes (Number and Percent))

	Oak Grove Ave at Crane St	Oak Grove Ave at El Camino Real	Oak Grove Ave at Laurel St	University Dr at Live Oak Ave
Weekday change (%)	22 (15%)	19 (10%)	-13 (-4%)	17 (9%)
Weekend change (%)	-18 (-27%)	-5 (-9%)	-21 (-20%)	41 (42%)

A closer examination of bicycle volumes shows that volumes during the week increased on Oak Grove Avenue and University Drive compared to the pre-trial when there were no facilities present. **Figure 4** identifies the change in average hourly bicyclists for each intersection for bicyclists on the primary street only (Oak Grove Avenue and University Drive) by the street of the bicyclist origin, the time of day (AM peak, mid-day, PM peak, and weekend), and the period of data collection (pre, mid, and end trial). Notable changes included:

- Average bicycle volumes increased substantially in the AM and PM peak periods at all locations. Overall there were approximately 37 new AM peak period bicyclists each hour and 29 new PM peak period bicyclists, with the greatest increases on Oak Grove at Crane and at El Camino Real.
- Mid-day and weekend volumes remained generally flat from pre-pilot to end-pilot, except for weekend bicycle volumes, which increased by 11 bicyclists per hour.
- There was substantial variation at the mid-pilot, with volumes generally lower on the weekend and mid-day, though there are some exceptions.

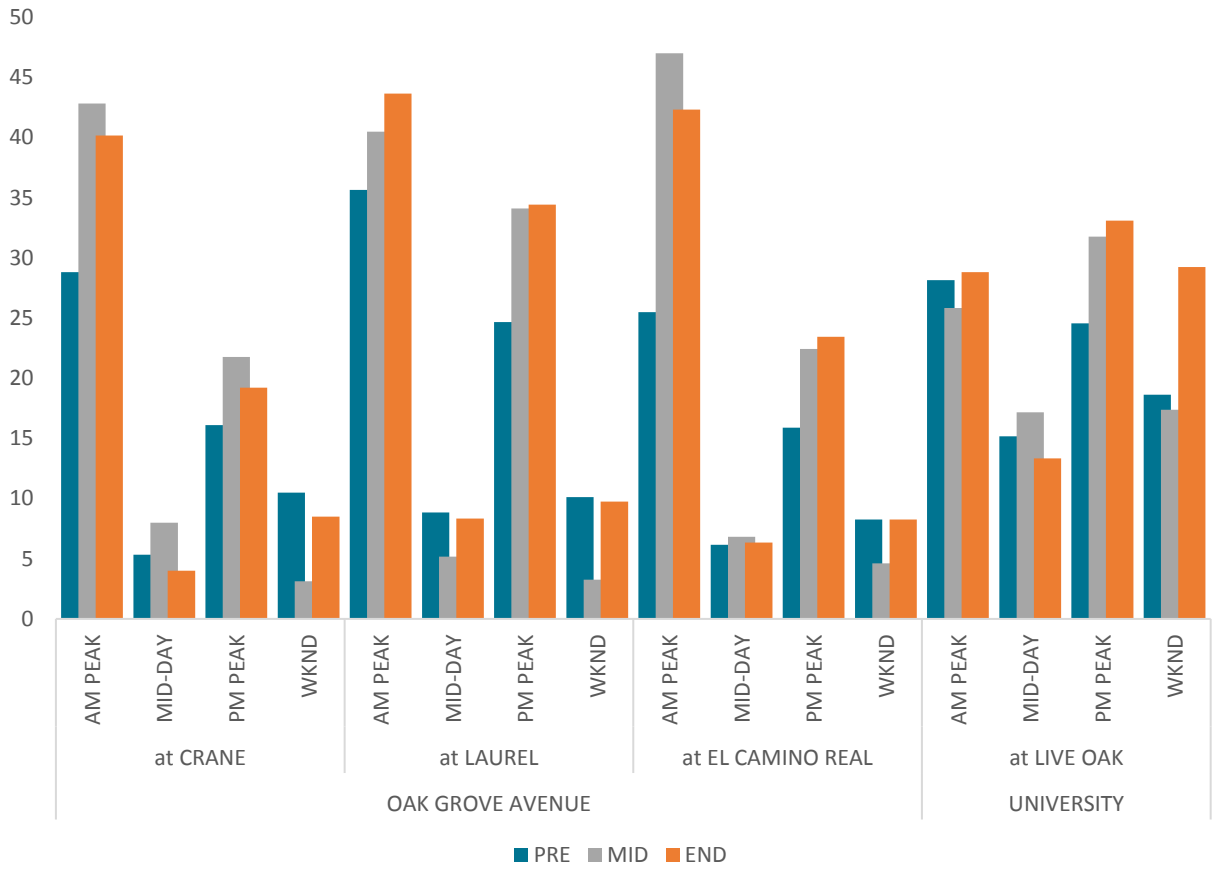


Figure 4 Bicycle Volumes by Location, Time of Day, and Data Collection Period on Oak Grove and University

By contrast, bicycle volumes on cross streets generally declined from the pre-trial to both the mid-trial and end-trial periods across all times of day and locations (**Figure 5**). Note that the cross street at University is not shown on this figure because of generally very small counts (1 or 2 per hour) and because one of the 'legs' of this intersection is a driveway, creating potential confusion.

The most significant declines occurred on Laurel Street, suggesting a potential re-routing of bicycle travel on to the new Oak Grove bikeway. Bicycles also declined on El Camino Real, especially in the peak period. Given the current lack of bicycle accommodation on El Camino Real, this suggests that the Oak Grove bikeway may be providing an improved alternative for several commuters. Changes on Crane Street were modest, but also declined.

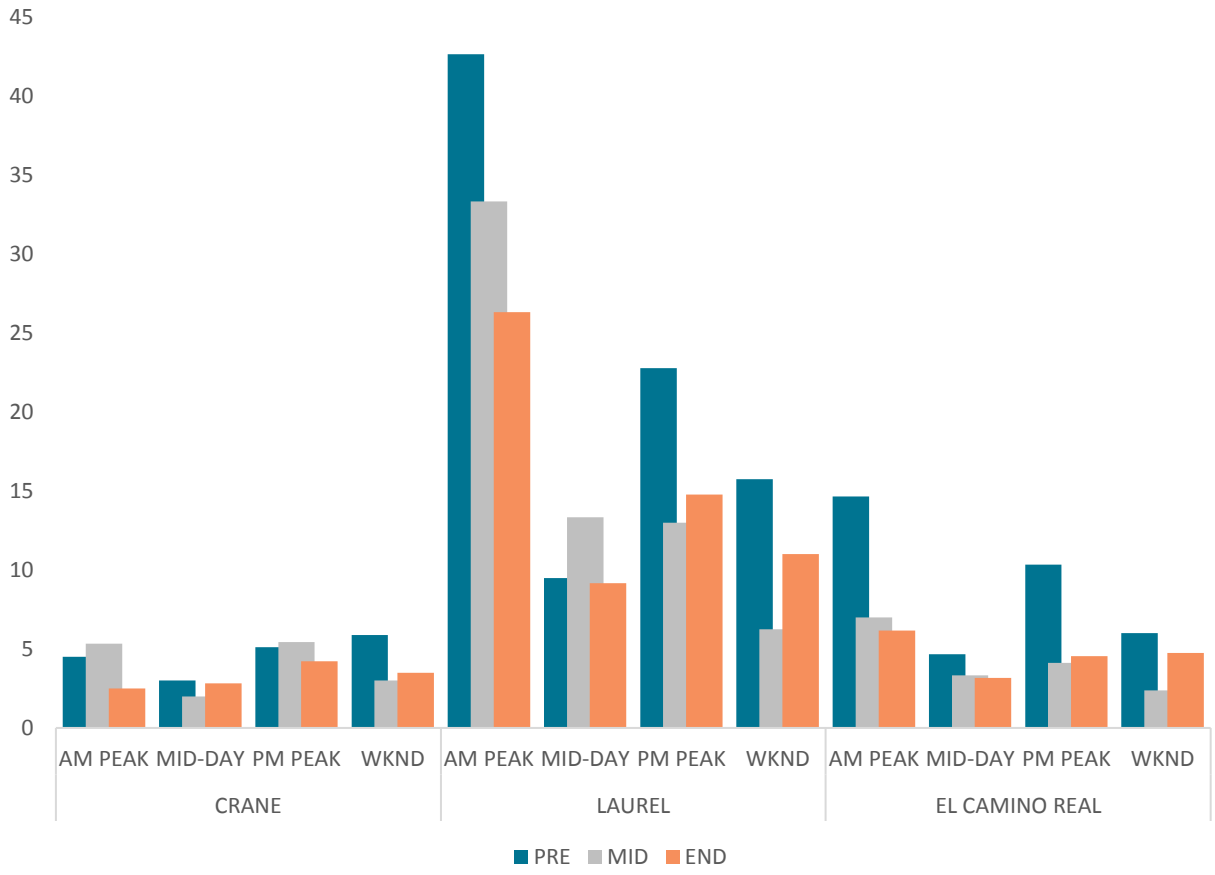


Figure 5 Bicycle Volumes by Location, Time of Day, and Data Collection Period on Cross Streets

Vehicle Speeds

The Oak Grove bikeway project was implemented to increase separation of bicyclists from motor vehicles, reducing the number of potential conflicts. Table 4 presents the change in 85th percentile speeds for pre-, mid-, and end-trial periods. Notable changes include:

- On Oak Grove Avenue between Pine Street and Marcussen Drive, speeds showed insignificant change from pre to mid and end-trial.
- On Oak Grove Avenue between El Camino Real and Hoover Street, speeds initially declined but increased slightly at the end period. These increases are not significant and remain close to the posted speed limit.
- On Oak Grove Avenue between University Drive and Crane Street, speeds declined significantly in the eastbound direction, but increased slightly in the westbound direction. In the eastbound direction, 85th percentile speeds are now closer to the posted speed limit. Note that the bikeway stops before this segment, with the primary route turning on to Crane Street. Speeds in the westbound direction may be a concern and should continue to be monitored.

- On University Drive, speeds initially increased in the northbound direction, then declined slightly, but the changes were not significant and remain close to the posted speed limit. In the southbound direction, speeds increased slightly and remain slightly faster than the speed limit. Reduced stopping for pedestrians was raised as a concern during the pilot, and the City installed signage to help improve yielding behavior (image at right). Additional pedestrian-focused improvements may be useful where speeds exceed desired levels. The removal of parking on University Drive may have contributed to increased speed as the street may appear wider to drivers.

Table 4: 85th Percentile Vehicle Speeds (MPH) and Change from Pre-Pilot

Location	Between	EB/NB Pre	EB/NB Mid	EB/NB End	WB/SB Pre	WB/SB Mid	WB/SB End
Oak Grove Ave	Pine St and Marcussen Dr	34.6	34.8 0.7%	34.2 -0.9%	34.3	34.7 0.9%	34.2 -0.4%
	El Camino Real and Hoover St	24.9	23.2 -7.1%	25.4 2.0%	24.8	23.9 -3.7%	25.2 1.5%
	University Dr and Crane St	27.3	25.7 -5.8%	25.5 -6.4%	27.3	27.2 -0.6%	28.0 2.4%
University Dr	Menlo Ave and Oak Ln	24.8	25.8 4.0%	24.5 -1.4%	26.9	27.7 3.2%	27.5 2.5%

Parking Occupancy

Parked motor vehicles were counted on-street and in the eight public parking plazas within Downtown. Parking use was counted for six periods, with one count occurring in each period:

- One weekday early morning (between 7:45 am and 8:45 am)
- One weekday morning (between 9am and 11am)
- One weekday mid-day (between noon and 2pm)
- One weekday evening (between 6pm and 8pm)
- One Saturday late afternoon (between 4 and 6 PM) to accommodate church schedules
- One Sunday morning (between 8:45 and 9:30 AM) to accommodate church schedules

Two parking occupancy measures were calculated:

- Average occupancy – average percent of parking spaces in use relative to available capacity. Average capacity captures typical use.
- Maximum occupancy – highest observation of parking use relative to available capacity. Maximum occupancy captures the worst-case scenario.

These parking measures were evaluated for the City as a whole and for individual neighborhoods within the study area.

On Street Parking

There were 960 on-street parking spaces before the trial. During the trial period, there were 793 available on the weekday and 836 on the weekend. Compared with the pre-trial period, average on-street parking utilization for the whole project area increased from 41 percent to 46 percent (Table 5). The parking plazas provide an additional 1,215 spaces in the downtown area, except on Sunday when half of Plaza 6 (70 spaces) is used for the farmers market.

Table 5: On-Street Parking Utilization

	Pre-Trial	Mid-Trial	End-Trial
Max % Utilized	62%	66%	67%
Avg. % Utilized	41%	47%	46%

Parking is prohibited in the new bike lanes in the project area, except near the Nativity Church and School where parking is permitted on the weekends. There were several instances of parking on weekdays in the area where parking is permitted on the weekend only and a few instances of motor vehicles parked in the bike lanes along blocks where parking is no longer allowed at any time.

Even though overall on-street parking remained available during the pilot, a closer look at parking data was completed to evaluate potential impacts in focused areas. The parking data were aggregated into four contiguous subareas within the overall project to capture the ability of individuals to park in a desired area (Figure 6):

- East of El Camino Real along Oak Grove Avenue and adjacent blocks
- Downtown, including the block either side of Santa Cruz Avenue from El Camino Real to University Drive. The eight parking plazas in this area are analyzed separately.
- West of El Camino Real, focused on the blocks along University Drive and Crane to the north of the downtown
- University Drive area, focused on University Drive and adjacent blocks to the south of the downtown.

Figure 7 presents the average number of parking spaces available for the pre-trial and end-trial periods for each of these areas and the eight parking plazas. The number of available spaces declined East of El Camino Real and along University Drive, but remained steady in the downtown area and West of El Camino Real. The parking plazas saw a slight increase, in part due to the number of spaces increasing after completion of a construction project.

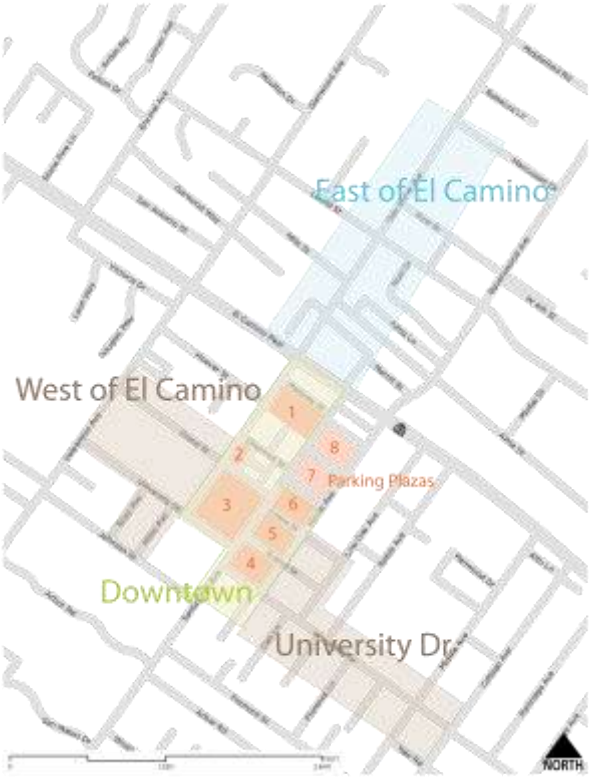


Figure 6 Parking Analysis Zones

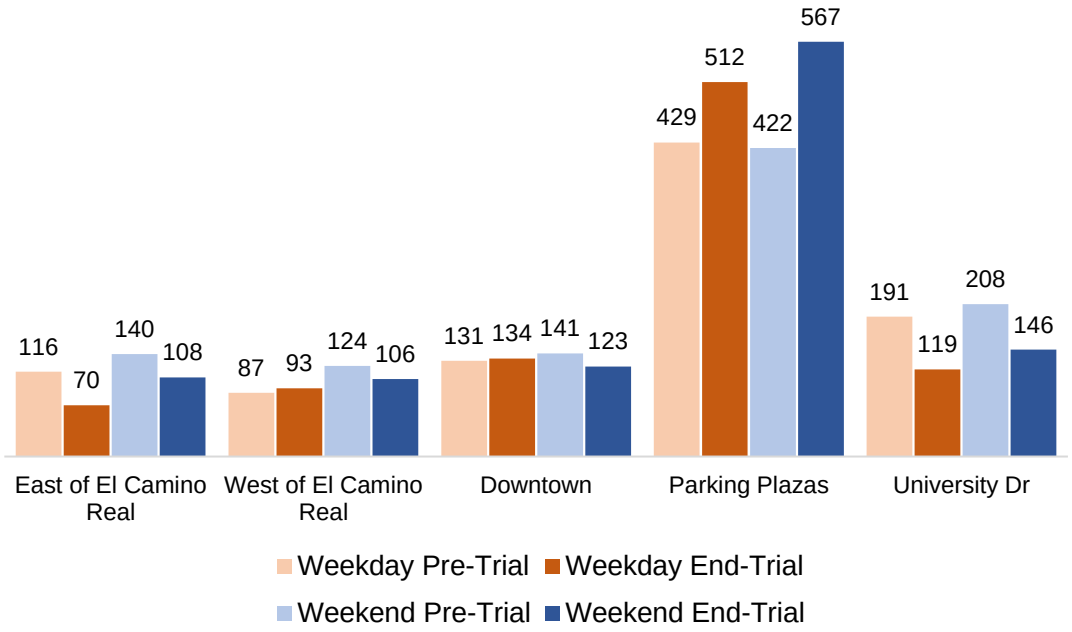


Figure 7: Street Parking Spaces Available During Average Occupancy

Figure 8 shows the number of parking spaces available on-street during the maximum occupancy for the pre-trial and end-trial periods. During the week, parking availability is more constrained at the periods of most intense use (generally mid-day), but sufficient capacity is available in each case. On the weekend, there are no significant parking constraints, although a space may not be available in the exact block desired during maximum occupancy periods.

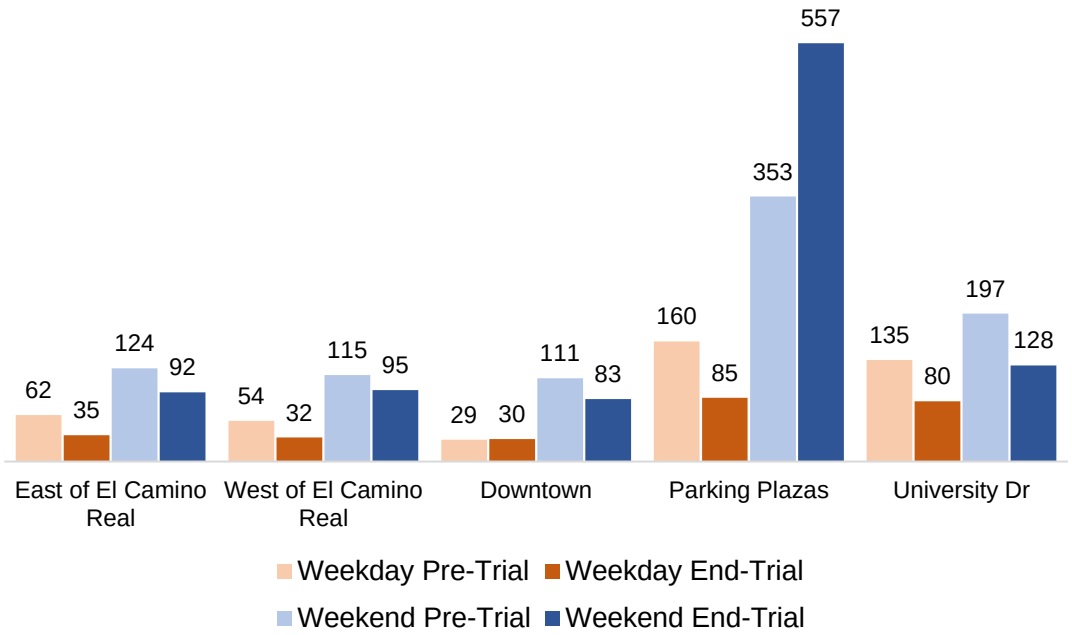


Figure 8: Street Parking Spaces Available During Max Occupancy

Block-by-block change in parking availability are presented in the following figures:

- Figure 9 presents weekday average use. Only one block face was consistently fully parked on an average weekday, though most of the study area shows 10 or fewer spaces available.
- Figure 10 presents weekday maximum use. Several block faces in the downtown area had no spaces available at peak use, as did the east side of Crane Street. Typically, parking was available within one block or a parking plaza.
- Figure 11 presents weekend average use. Most blocks had available capacity, except the eastern side of Crane Street and a couple blocks in the downtown area on a typical weekend. This shows a difference in parking use compared to typical weekday patterns.
- Figure 12 presents weekend maximum use. In maximum use, many downtown block faces and the east side of Crane Street had no parking available, but parking was generally available within one block.

Peak parking on weekdays generally occurred during the mid-day count period (from Noon to 2 PM). The peak parking period on weekends tended to fall on Sunday mornings, relative to Saturday afternoon, though the differences were small (7 more parked cars on Sunday morning than Saturday afternoon in aggregate).

Note that Marcussen Drive from Oak Grove Avenue to Ravenswood Avenue was changed to permit only parking by the City Council in late August 2017 and signs were installed on September 28, 2017. This block saw a significant decline in parking usage from pre-trial to mid- and end-trial (from an average of 5 vehicles before the pilot to one vehicle at the end).

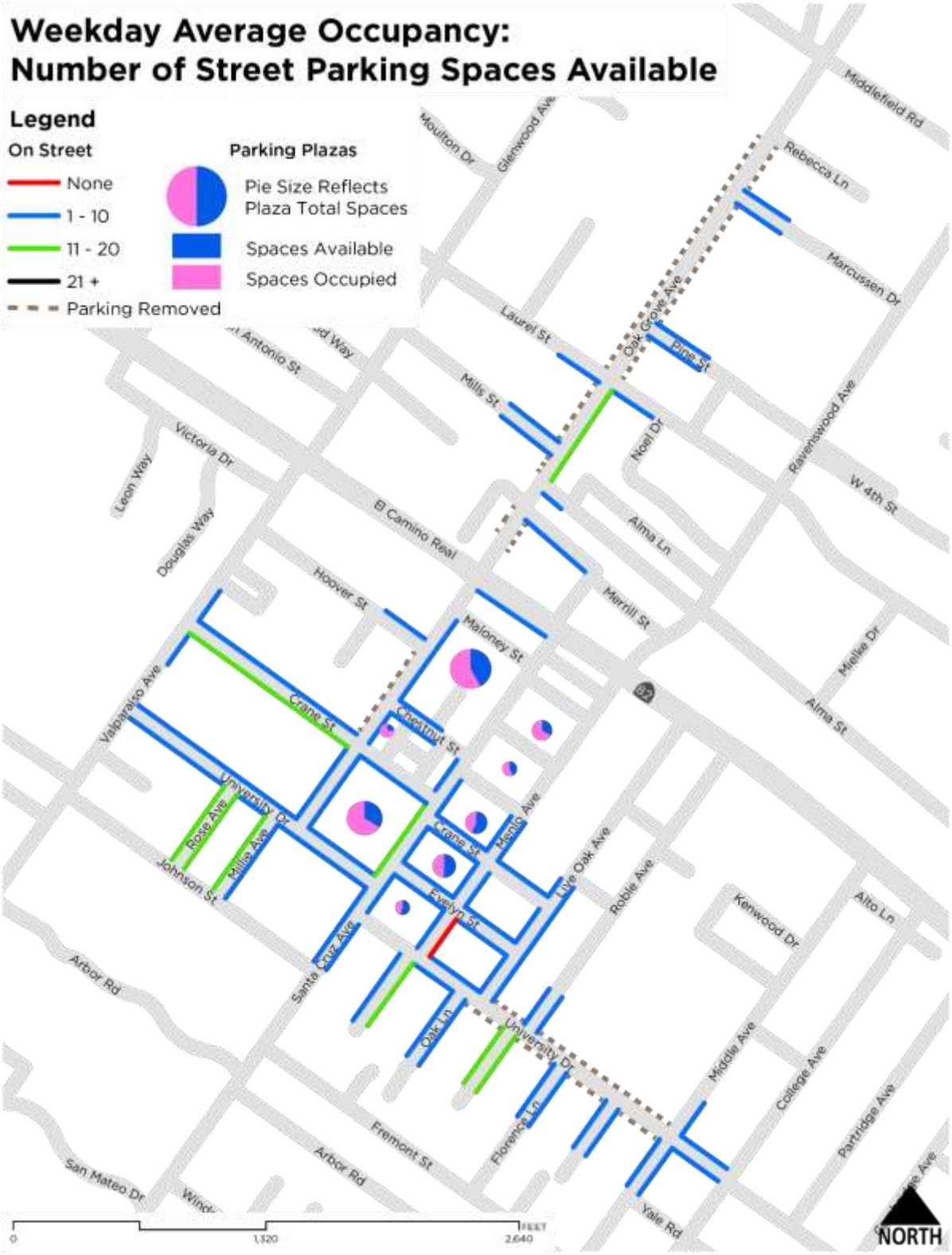


Figure 9: Parking Spaces Available on Weekdays on Average

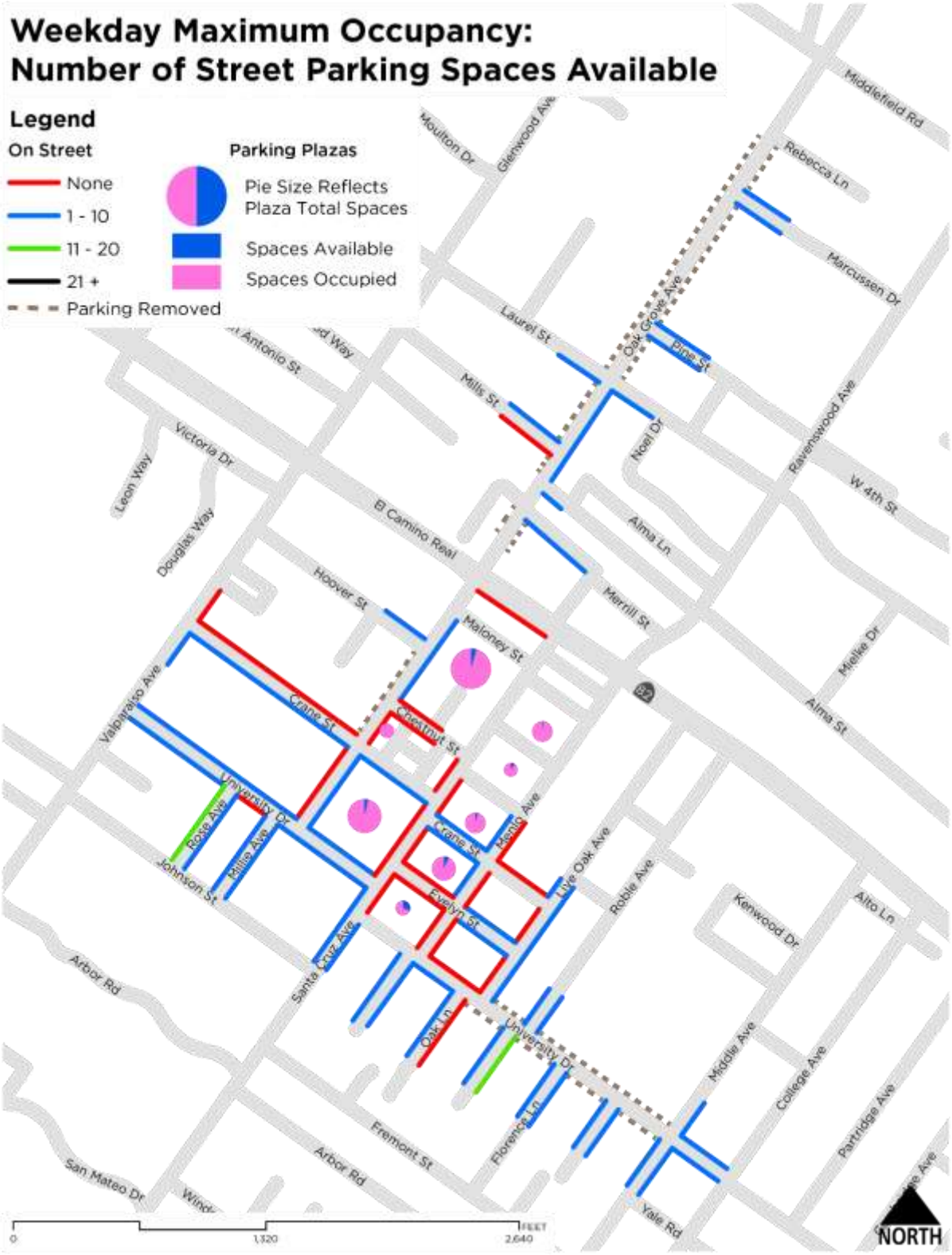


Figure 10: Parking Spaces Available on Weekdays during Maximum Occupancy

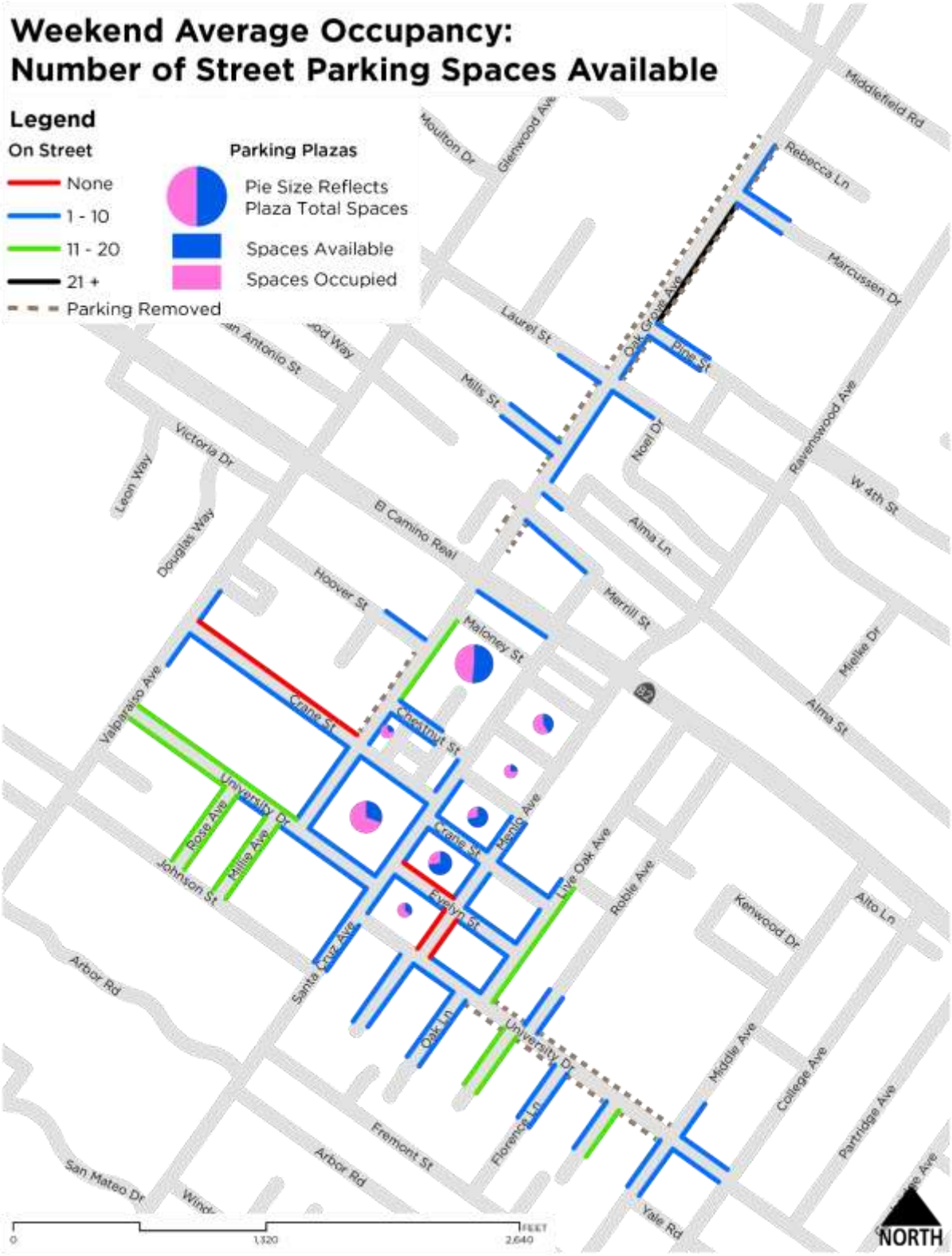


Figure 11: Parking Spaces Available on Weekends on Average

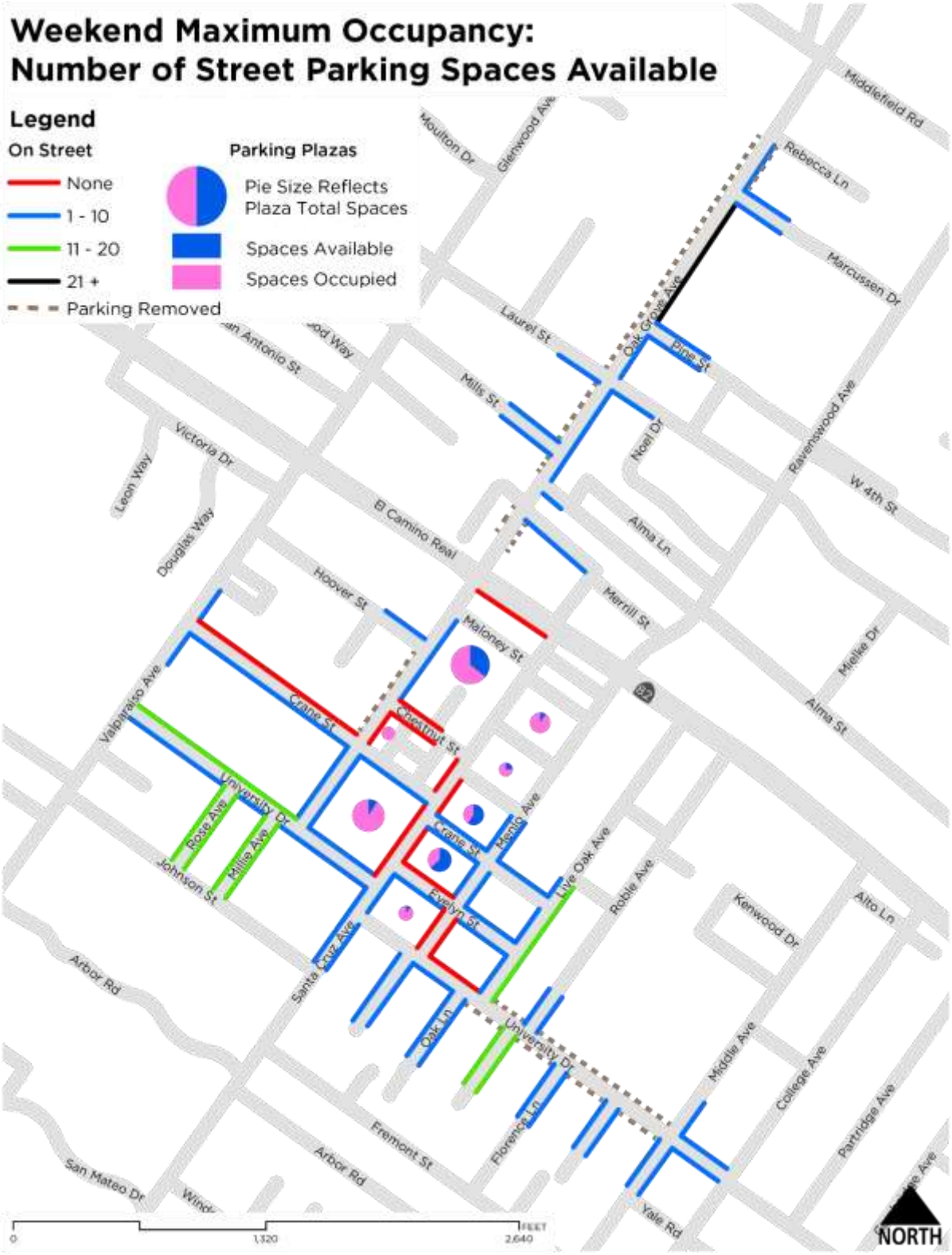


Figure 12: Parking Spaces Available on Weekends during Maximum Occupancy

Parking Plazas

With the removal of on-street vehicle parking spaces, it was expected that drivers would park in the parking plazas or elect to ride a bicycle when visiting downtown. This section provides additional detail on average and peak use of the parking plazas in downtown. Most of the parking plazas in Menlo Park allow for free 3-hour parking, except for Plaza 4, which has a combination of 1 and 2-hour parking stalls, and Plazas 1 and 5, which allow for long term parking at $1 per hour after three free hours.

The average number of motor vehicles parked in the parking plazas during the end-trial decreased within almost all of the parking plazas compared to the pre-trial, though Plaza 2 saw a small increase. Due to construction during the pre- and mid-trial periods in Plaza 2, the lot increased by eight parking spaces in the end-trial period.

Peak parking utilization increased (between one and 30 percent) for all parking plazas except Parking Plaza 3, which saw a small decrease. Plazas 1, 2, 3 (on the north side of downtown) were near capacity when in peak use before the pilot, and continue to be full during the pilot. Peak period demand shifts to Plazas 4, 5, and 6 (on the south side of downtown). In the periods of highest use, there were 41 spaces available.

The overall peak period for plaza use was mid-day (Noon to 2 PM) during the week, though some plazas peak occurred at other times – Plaza 2 had a slightly higher peak in the morning (9 AM to 11 AM) period and Plaza 4 had a higher peak on Saturday afternoons.

Table 6: End-Pilot Plaza Parking Utilization

		Maximum			Average		
Plaza	Capacity	Count	% Utilized	% Change from Pre-Pilot	Count	% Utilized	% Change from Pre-Pilot
1	266	254	96%	9%	146	55	-10%
2	92	91	99%	1%	69	75%	3%
3	219	211	96%	-4%	147	67%	-16%
4	103	92	89%	10%	53	52%	-27%
5	160	149	93%	15%	67	42%	-19%
6	140	134	96%	30%	53	38%	-14%
7	95	85	90%	4%	60	63%	-13%
8	140	137	98%	2%	90	64%	-16%

Oak Grove "Dirt Parking"

Although not impacted by the Oak Grove Bicycle Project, and therefore not initially counted throughout the project, the City requested that Alta count the number of cars parked in the dirt area on the north side of Oak Grove Avenue between Church of the Nativity entrance and approximately 100 feet east of the Nativity School parking lot entrance. Observations indicate that some Menlo Atherton High School students use this area to park their vehicles while attending school.

There is just under 550 feet of parking space which, using 22 feet per parking space (typical for Menlo Park), means there are 25 potential parking spaces available in this area.

Table 1 shows the number of vehicles counted during the six time periods. The dirt parking area is heavily used on weekday afternoons, with modest use in the mornings and on Sundays.

Table 1: Dirt Parking Utilization

Estimated Available Parking Spaces	# Parked Vehicles Observed						Average Cars Observed	Avg % In Use	Max % In Use
	Early (7:45-8:45 AM)	Morn (9 AM-11AM)	Aft (12-2 PM)	Eve (6-8 PM)	Sat (4-6 PM)	Sun (8:45-9:30 AM)			
25	1	8	27	1	1	8	7.6	30.7%	108%

Public Input

An online survey was developed to gather community members' opinions on the Oak Grove Bicycle Project. The survey was open from April 23 to May 22, 2018. Surveys were collected online and advertised through NextDoor, through business cards distributed at Bike to Work Day energizer stations, and through other City media channels. Surveys were also collected in person on May 1 and May 2, 2018 for two hours during typical lunch hours (11:30 AM to 1:30 PM) along Santa Cruz Avenue in the downtown. Passersby were asked the same questions as listed in the online survey and their responses were entered into the online survey responses. Seven hundred and fifty-six (756) people took the public survey.

The City also developed and distributed a Business Owner survey that was distributed to businesses in the Downtown with free return by mail. Nine business owner surveys were returned.

Public Survey Summary

Over three quarters of respondents report that they live in Menlo Park, with smaller proportions indicating they work, go to school, shop, or have other reasons that bring them to Menlo Park. Over 40 percent of respondents say they ride their bikes more frequently since implementation of the project and, of those who report having children, over 50 percent say their children ride their bikes more frequently. Only 2 percent of respondents indicated that they ride less, though just under one quarter of respondents indicated that they never bicycle.

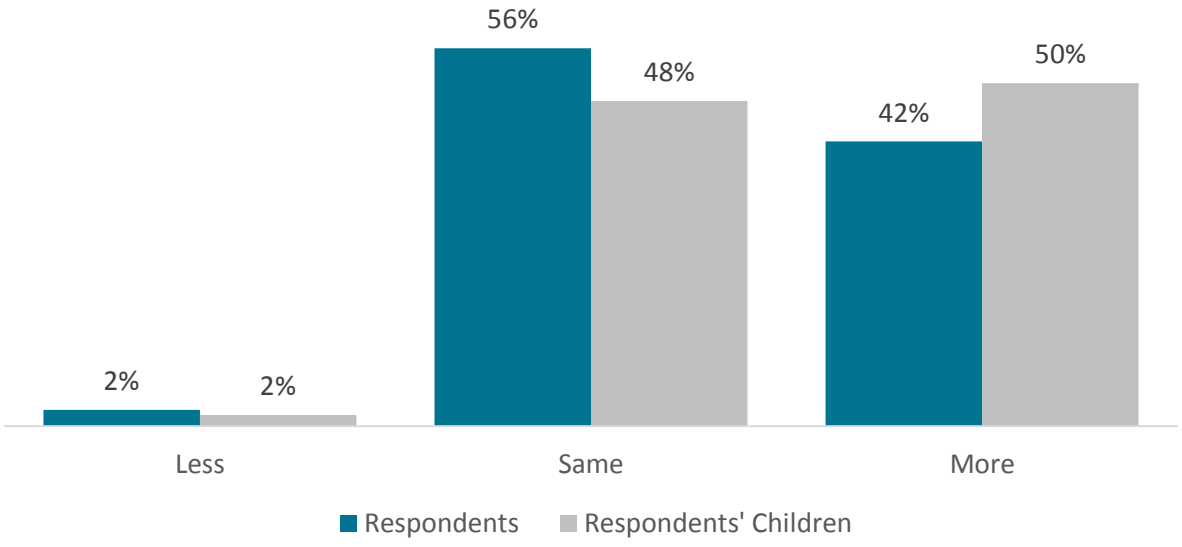


Figure 13: Reported Change in. Frequency of Biking in Menlo Park

Most respondents indicated that the project has increased comfort for both bicyclists and drivers. Over 80 percent feel somewhat or a lot more comfortable riding in Menlo Park since the Oak Grove bicycle project and over 87 percent believe the increased separation from bicyclists make driving more comfortable as well. Only 7 percent thought that biking was less comfortable. These respondents tended to raise concerns about automobile parking, indicate that they prefer sharing the road with vehicles, and in a couple cases noted a pinch point concern along Oak Grove at Maloney St.

Parking was the most commonly raised concern about the project, but most respondents indicated that they did not face challenges finding parking. Roughly one quarter of respondents indicated that it was somewhat or very challenging to find parking in downtown or along University Drive, while one third indicated that parking was somewhat or very challenging along Oak Grove Avenue, reflecting the removal of parking from that street.

Generally, most survey respondents supported the project. Over three quarters of respondents indicated they were in favor of the permanent addition of the Oak Grove bicycle project, including 80 percent of respondents who identified as Menlo Park residents. Of the respondents who are not in favor of the project, the primary reason provided is concerns about parking availability (on- and off-street).

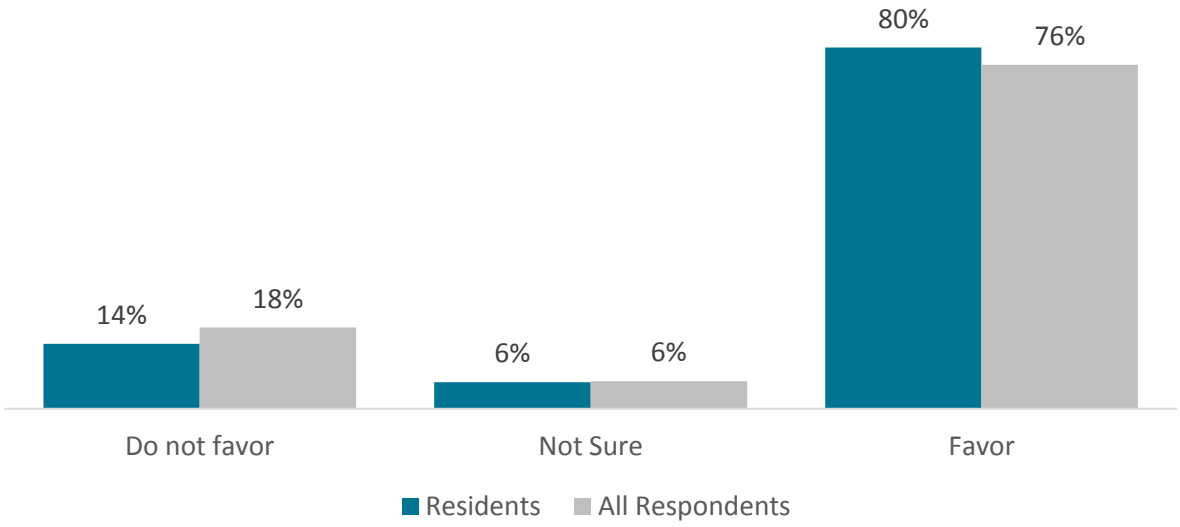


Figure 14: Support for the Project – Residents and All Respondents

Age and bicycling frequency showed a significant relationship with support for implementing the project long term. Over 90 percent of respondents who bike at least one day a week supported the project, while half of respondents who never bike opposed the project. Of those who bike only occasionally (once or twice a month), over three quarters indicated support for the project. Just over half of the respondents who never bike indicated that they do not favor the project (Figure 15).

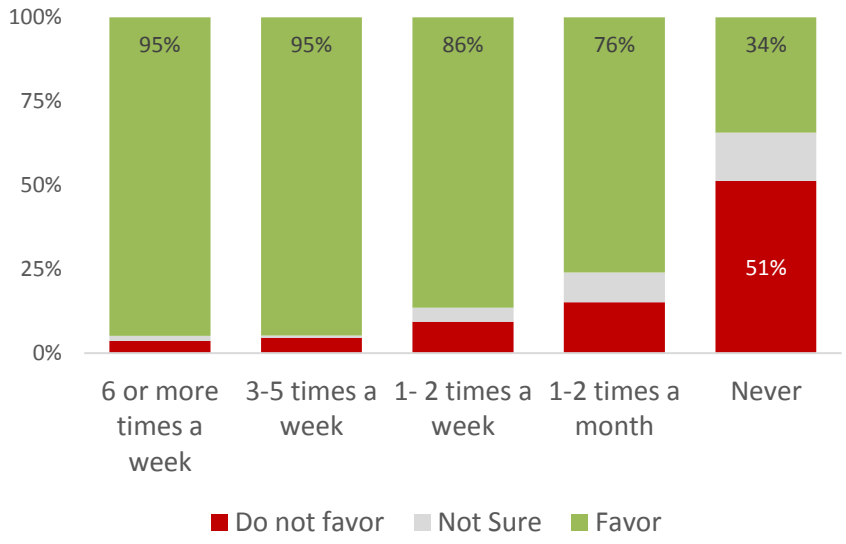


Figure 15: Support for the Project by Frequency of Bicycling

Business Survey Summary

Only nine businesses responded to the business owner survey. Some of the key findings of that survey included:

- Two of the nine respondents said that they had fewer customers since the bikeway was installed, six indicated no impact to the number of customers and one did not respond
- Four indicated that they had received negative patron comments about the bikeway, primarily related to parking
- Six indicated that they had received negative employee comments about the bikeway, again related specifically to parking
- Three businesses indicated that they had employees who biked but none indicated that any additional employees started biking.

Nearly all of the comments related to parking availability since the opening of the bikeway, but one respondent indicated the need for more visible striping, especially when its raining, and one respondent indicated that it has not changed how bicyclists use Santa Cruz Avenue.

Safety – Collision Data

The City of Menlo Park collected collision data in the project area before and during the trial to determine if there were safety effects for roadway users as a result of the reconfiguration. Data was collected between July 1, 2015 and July 1, 2018 for the four main roadways. There were 103 reported collisions total, five involving a bicycle and six involving a pedestrian. Thirty-eight collisions involved a minor injury, but there were no severe injuries or fatalities.

Table 2 presents the number of collisions before (July 1, 2015 to May 31, 2016) and after (September 1, 2017 to July 31, 2018) the project. June to August 2017 are excluded from the analysis when the project was under construction. The table shows the number of collisions on the corridor, on streets that cross the corridor, and by mode and severity.

Table 2: Pre- and Post-Pilot Collisions

	Pre-Pilot	Post-Pilot
Primary Streets		
Live Oak Ave	1	0
University Dr	2	1
Crane St	6	5
Santa Cruz Ave	2	0
Oak Grove Ave	18	11
Cross Streets		
El Camino Real	14	7
Other*	12	3
Mode		
Bicycle	1	3
Pedestrian	4	2
Severity		
Minor Injury	29	7
Severe Injury or Fatality	0	0

Total collisions declined from 55 to 27, with 12 collisions experienced during construction. Overall, collisions declined on each of the corridor streets and on the side streets, with the largest declines on Oak Grove Avenue (7), El Camino Real (22). Most other streets saw a decline of 1 to 2 collisions. The number of injury collisions declined from 29 to seven, potentially suggesting that the moderate speed reductions may have had an impact on overall safety.

Figure 16 presents the location of collisions by the nearest corridor intersection, regardless of which street the collisions occurred on (i.e., there were 28 collisions near Oak Grove Avenue and El Camino Real, but most of these collisions occurred along El Camino Real, not Oak Grove Avenue). Collisions declined at all intersections except at Crane Street and Menlo Street, where there was an increase of 2 collisions. Most of the reductions were small -1 or 2 collisions each – except at Oak Grove Avenue and El Camino Real (declined by 9), at Oak Grove Avenue and Chestnut St (declined by 4), and at Oak Grove Avenue and the Caltrain tracks (or Merrill St/Derry St) (declined by 4).

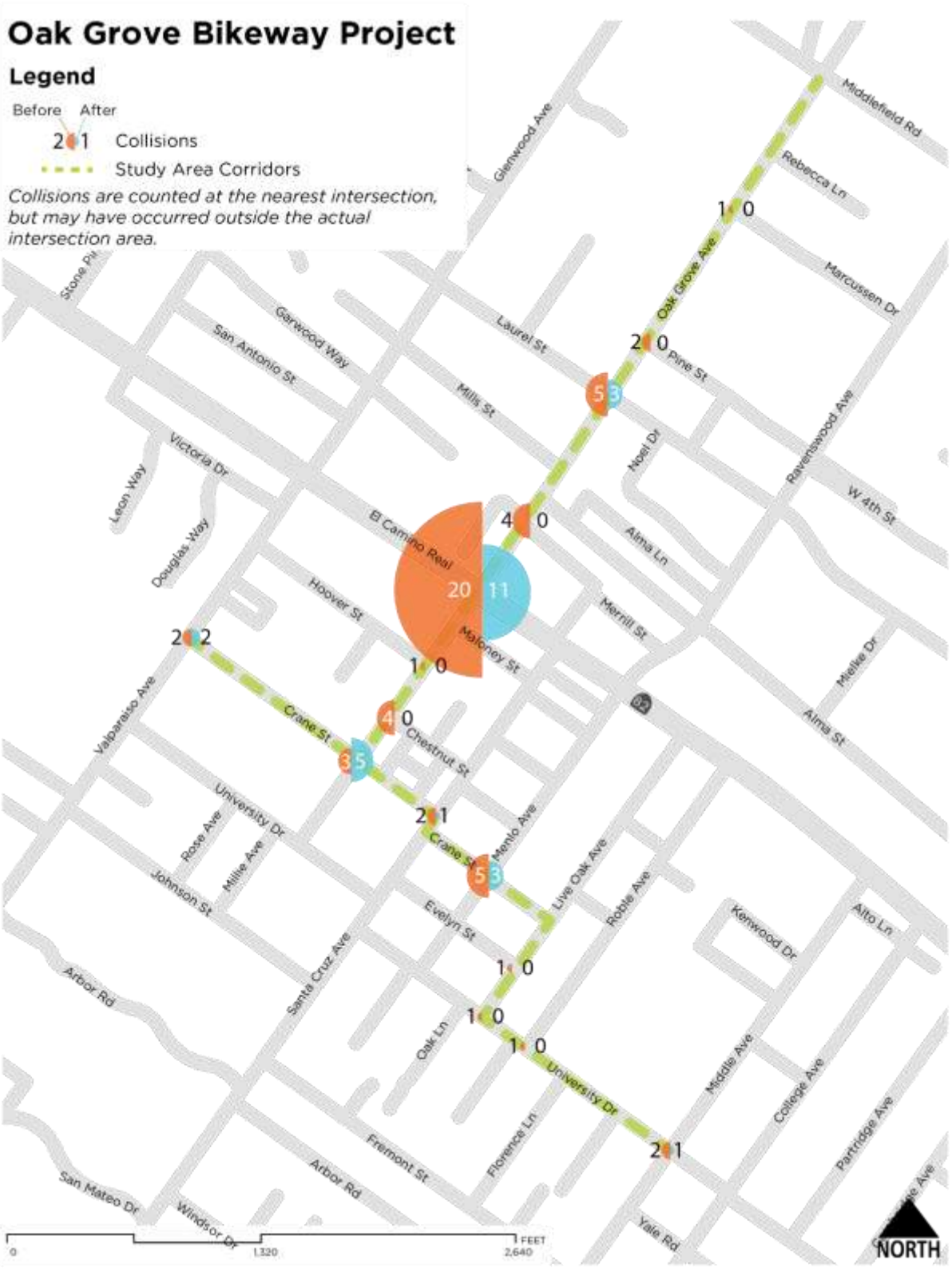


Figure 16 Number of Collisions by Intersection, Pre- and Post-Pilot

The two most primary collision factors were unsafe lane changes and speeding (Figure 17). Unsafe lane changing saw a small decline after the pilot (16 before, 13 after), while speeding related collisions declined from 17 to seven. Unsafe backing up, failure to stop at the limit line (before the stop bar or crosswalk line if no stop bar is present), and failure to yield all declined.

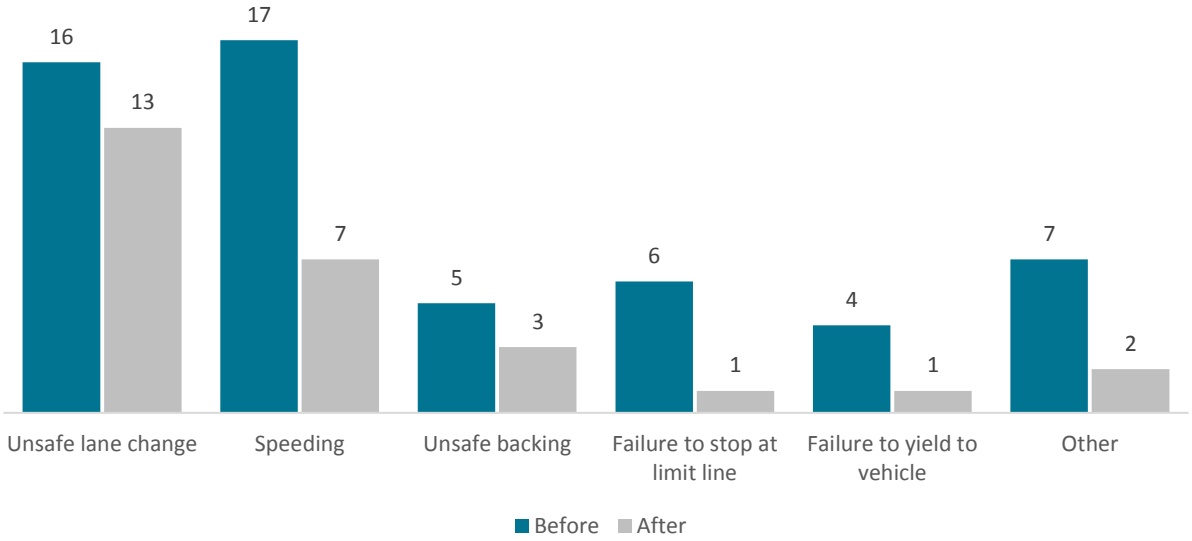


Figure 17 Change in Number of Collisions by Primary Collision Factor

Bicycling collisions increased after installation of the project, from one to three. The small numbers make it difficult to draw conclusions, but the types of collisions may be instructive. Three of the four bicycle-related collisions involved bicyclists struck by vehicles that were speeding. One of these occurred before the project at Oak Grove Avenue and Hoover Street and two occurred after installation – at Oak Grove Avenue and Crane Street and at Oak Grove Avenue and Laurel Street. While it is impossible to draw meaningful conclusions from small numbers of collisions, Crane and Laurel may represent two logical transition points for bicyclists traveling in the afternoon peak. While a number of students of Menlo-Atherton High School likely travel through the Laurel intersection, commuters may be more likely to turn at Oak Grove and Laurel. Additional markings of bike crossings or installation of bike boxes on Laurel Street may be appropriate to consider if the bikeway is made permanent.

There was also one bicycle collision that involved a driver failing to yield at Crane Street and Valparaiso Avenue. This collision took place during the afternoon peak period. Adding crossing improvements in this location would be appropriate as well, in part to help students biking to the Menlo School, which has a driveway access one block away from this intersection and has expressed interest in coordinating improvements at this intersection. This intersection is uncontrolled, requiring bicyclists and drivers to wait for gaps in vehicles traveling east-west on Valparaiso Avenue to cross. Enhanced bike crossing markings should be evaluated.

The location with the highest number of collisions was the intersection of Oak Grove Avenue and El Camino Real, which had 20 collisions before the pilot and 11 after. Most of these collisions (14 before and seven after) were on El Camino Real and involved vehicles, not bicyclists or pedestrians. This project made modest improvements to the crossing of El Camino Real, but did not change traffic operations along the corridor. Overall vehicle volumes decreased slightly and bike volumes decreased significantly.

It will be important to continue to monitor bicycle collisions and speeding behavior to determine if additional countermeasures may be appropriate, especially where there may be new intersection conflicts.

Safety and Operational Observations

As part of the end-trial collection period, qualitative observations were conducted at two locations that a had been flagged as areas of concern by the community:

- Oak Grove Avenue between Maloney Street and the parking lot entrance west of El Camino Real to address vehicle operations
- University Drive at Florence Lane to address noted pedestrian crossing challenges

Each of these is described below, but observations were only made in the end-trial period and do not represent a known change in operations.

Oak Grove Avenue

The observations on Oak Grove Avenue were made in response to comments about vehicles backing up onto El Camino Real as drivers wait to turn left onto Maloney Street. The City installed KEEP CLEAR markings at this intersection to allow for easier left turns.

The observations were conducted on May 1, 2018 between 2:00 and 3:00pm. Most cars turning left onto Maloney Street were not impeded by vehicles in the KEEP CLEAR area. In the cases where vehicles did wait to turn left as an oncoming vehicle approached, there was one vehicle waiting behind. In these instances, the vehicle was able to turn left quickly, preventing further backup. During the observation period, the bike lane and part of the travel lane on the north side of the street was blocked by a delivery truck and a Menlo Fire truck. Bicyclists and drivers were forced into the oncoming lane in order to pass. Volumes were low enough at these times that no backup or incident occurred as a result.

Continued monitoring of this location may be needed.

University Drive

The observations on University Drive were made in response to comments about driver speeding and failing to yield to pedestrians attempting to use the crosswalk at Florence Lane.

The observations were conducted on May 1, 2018 between 3:00 and 3:30pm and on May 2, 2018 between 10:30 and 11:00am. The City installed a "Yield to Pedestrians" sign in the crosswalk to increase crosswalk visibility and encourage drivers to drive the speed limit. At the beginning of the observation period on May 2, 2018, the sign had been knocked down and removed from the roadway. Alta staff moved the sign back into position and notified City staff, who had the sign fixed later that day. Most drivers observed the speed limit during the observation periods, although a few did not. Few pedestrians (10) used the crosswalk during the observation periods. Half (five) of were properly yielded to by drivers and the other half had to wait for drivers to pass before they could safely cross.

Continued monitoring and additional traffic calming measures may be needed to help ensure pedestrian comfort in this area.

Conclusions

The Oak Grove bikeway project was a one-year pilot to provide improved connectivity for bicyclists traveling east-west through Menlo Park. It was designed based on feedback from the Downtown Specific Plan and other transportation planning efforts.

Overall the pilot was a success. It increased the number of bicyclists in Menlo Park, especially during the peak travel periods, though there was an overall decrease in bicycling on the weekends. There was also evident route-shifting for bicyclists, with cross streets like Laurel Street and El Camino Real seeing declines in biking that may represent changing travel patterns for bicyclists that result from the new bikeway. Shifting bicycling from higher speed and higher volume routes (like El Camino Real) to lower stress routes (like Oak Grove Avenue) will enhance the safety and comfort of bicyclists in Menlo Park.

The bikeway removed 167 parking spaces from City streets. During typical use, parking removal did not appear to be a significant issue, though some blocks and parking plazas were at or near capacity during periods of more intense use. The parking analysis suggests that people seeking parking generally only need to travel one or two additional blocks to find a parking space.

The project was overall well received by the public, with 80 percent of Menlo Park residents who responded to a public survey in favor. Some business owners expressed concerns about parking, especially for their employees.

We recommend that the bikeway receive permanent installation. When permanent installation occurs, several potential issues may be appropriate to address:

- Using thermoplastic for permanent installation. At least one business owner noted the lack of reflectivity of the current striping, especially when raining. Using thermoplastic should help address these issues.
- Adding a high visibility crosswalk across University Drive at Florence Lane. Residents indicated a decline in yielding behavior at this location and the City has installed signage to help address this issue. A high visibility (or ladder style) crosswalk has been shown to increase yielding behavior. The City may want to also consider painted bulb outs in this area. The City of Oakland has implemented bulb outs using sturdy plastic bollards and paint and achieved significant increases in vehicles yielding to pedestrians.
- Intersection improvements on Oak Grove. The City may wish to explore additional intersection improvements along Oak Grove Avenue and Crane Street and Laurel Street, where collisions occurred during the pilot. Bulb outs, pavement markings, and other traffic calming may help drivers be more aware of the increased use of Oak Grove Avenue by bicyclists. Similarly, at Crane Street and Valparaiso, markings for bicyclists and signage may help make drivers more aware of bicyclists turning from Crane Street on to Valparaiso Avenue.

Appendix A – Detailed Data Analysis

Detailed tables and data used in the analysis above is provided in the appendix below.

Pedestrian, Bicycle, and Motor Vehicle Volumes

Table 3: Pedestrian, Bicycle, and Motor Vehicle Volumes

		Oak Grove Ave at Crane St[2]					Oak Grove Ave at El Camino Real[3]					Oak Grove Ave at Laurel St[4]					University Dr at Live Oak Ave[5]				
Evaluation Period		Pre	Mid		End		Pre	Mid		End		Pre	Mid		End		Pre	Mid		End	
Day[1]	Mode	Avg. (St. Dev.)	Avg. (St. Dev.)	% Change	Avg. (St. Dev.)	% Change	Avg. (St. Dev.)	Avg. (St. Dev.)	% Change	Avg. (St. Dev.)	% Change	Avg. (St. Dev.)	Avg. (St. Dev.)	% Change	Avg. (St. Dev.)	% Change	Avg. (St. Dev.)	Avg. (St. Dev.)	% Change	Avg. (St. Dev.)	% Change
Weekday	Ped	678 (42)	678 (9)	0%	766 (8)	13%	511 (35)	583 (37)	14%	539 (53)	5%	409 (14)	419 (54)	2%	334 (52)	-18%	238 (48)	294 (10)	24%	267 (25)	12%
	Bike[6]	147 (16)	198 (12)	35%	169 (24)	15%	181 (18)	208 (37)	15%	200 (30)	10%	336 (17)	326 (23)	-3%	323 (21)	-4%	196 (34)	205 (29)	5%	213 (13)	9%
	Auto	5,038 (16)	5,033 (78)	0%	5,242 (57)	4%	21,809 (175)	21,438 (318)	-2%	21,084 (865)	-3%	7,338 (167)	7,121 (167)	-3%	7,158 (82)	-2%	3,675 (49)	3,652 (206)	-1%	3,813 (112)	4%
Weekend	Ped	293 (47)	276 (63)	-6%	364 (15)	24%	232 (30)	245 (41)	6%	237 (76)	2%	117 (45)	89 (23)	-24%	109 (30)	-7%	290 (98)	234 (123)	-19%	273 (91)	-6%
	Bike[6]	66 (23)	29 (16)	-56%	48 (1)	-27%	57 (6)	31 (16)	-46%	52 (8)	-9%	104 (8)	41 (13)	-61%	83 (10)	-20%	97 (9)	81 (65)	-16%	138 (9)	42%
	Auto	1,916 (78)	2,088 (235)	9%	1,986 (211)	4%	9,549 (2,166)	9,942 (1573)	4%	9,543 (1962)	0%	2,662 (185)	2,701 (267)	1%	2,663 (230)	0%	1,507 (202)	1,560 (181)	4%	1,531 (65)	2%

[1]Data Collection Time Periods: Tuesday (7:00 AM - 9:00 AM), Wednesday (12:00 PM - 2:00 PM), Thursday (3:00 PM - 6:00 PM), Saturday (10:00 AM - 2:00 PM), Sunday (8:30 AM - 12:30 PM)
[2]Dates of Date Collection: Pre-Trial (5/16/2017 – 5/18/2017, 5/20/2017 – 5/21/2017), Mid-Trial (10/31/2017-11/2/2017, 11/4/2017-11/5/2017), End-Trial (5/1/2018-5/6/2018)
[3]Dates of Data Collection: Pre-Trial (5/2/2017 – 5/4/2017, 5/6/2017 – 5/7/2017), Mid-Trial (10/31/2017-11/2/2017, 11/4/2017-11/5/2017), End-Trial (5/1/2018-5/6/2018)
[4]Dates of Data Collection: Pre-Trial (5/2/2017 – 5/4/2017, 5/6/2017 – 5/7/2017), Mid-Trial (10/31/2017-11/2/2017, 11/4/2017-11/5/2017), End-Trial (5/1/2018-5/6/2018)
[5]Dates of Data Collection: Pre-Trial (5/2/2017 – 5/4/2017, 5/6/2017 – 5/7/2017), Mid-Trial (10/31/2017-11/2/2017, 11/4/2017-11/5/2017), End-Trial (5/1/2018-5/6/2018)
[6]Includes bicycles on road and in the crosswalk

Motor Vehicle Speed

Table 4: Motor Vehicle Speeds

		Oak Grove Ave b/t El Camino Real and Hoover St			Oak Grove Ave b/t Pine St and Marcussen Dr			Oak Grove Ave b/t University Dr and Crane St			University Dr b/t Menlo Ave and Oak Ln		
Evaluation Period[7]		Pre	Mid	End	Pre	Mid	End	Pre	Mid	End	Pre	Mid	End
Direction	Measure	mph	mph (% Change)	mph (% Change)	mph	mph (% Change)	mph (% Change)	mph	mph (% Change)	mph (% Change)	mph	mph (% Change)	mph (% Change)
EB/ NB	Avg.	19.4	17.4 (-10.3%)	19.7 (1.5%)	30.0	29.9 (-0.3%)	29.6 (-1.3%)	22.0	21.7 (-1.4%)	21.6 (-1.8%)	20.2	20.7 (2.5%)	19.3 (-4.5%)
	50th Perc.	19.6	18.4 (-6.1%)	20.1 (2.3%)	29.9	29.9 (0.0%)	29.5 (-1.5%)	22.3	22.0 (-1.5%)	21.9 (-2.1%)	20.9	21.4 (2.2%)	20.3 (-2.7%)
	85th Perc.	24.9	23.2 (-7.1%)	25.4 (2.0%)	34.6	34.8 (0.7%)	34.2 (-0.9%)	27.3	25.7 (-5.8%)	25.5 (-6.4%)	24.8	25.8 (4.0%)	24.5 (-1.4%)
	100 Perc.	45.6	65.0 (42.5%)	100 (119.2%)	60.0	60.0 (0.0%)	61.7 (2.8%)	55.0	55.0 (0.0%)	100 (81.8%)	40.0	50.0 (25.0%)	45.0 (12.5%)
WB/ SB	Avg.	20.2	19.1 (-5.4%)	20.9 (3.5%)	29.3	30.1 (2.7%)	29.3 (0.0%)	22.4	22.1 (-1.3%)	23.0 (2.7%)	22.1	22.8 (3.2%)	22.7 (2.7%)
	50th Perc.	20.3	19.0 (-6.4%)	21.0 (3.6%)	29.3	30.1 (2.8%)	29.2 (-0.3%)	22.6	22.4 (-0.7%)	23.1 (2.4%)	22.4	22.9 (2.5%)	22.8 (1.9%)
	85th Perc.	24.8	23.9 (-3.7%)	25.2 (1.5%)	34.3	34.7 (0.9%)	34.2 (-0.4%)	27.3	27.2 (-0.6%)	28.0 (2.4%)	26.9	27.7 (3.2%)	27.5 (2.5%)
	100 Perc.	70.0	65.0 (-7.1%)	100 (42.9%)	70.0	61.7 (-11.9%)	31.7 (54.7%)	45.0	55.0 (22.2%)	100 (122.2%)	45.0	100.0 (122.2%)	100 (122.2%)

[7]Data Collection Time Periods: 12:00 AM – 11:59 PM; Dates of Data Collection: Pre-Trial (5/2/2017 – 5/6/2017), Mid-Trial (10/31/2017 – 11/4/2017), End-Trial (May 1, 2018 – May 5, 2018)

Motor Vehicle Parking Occupancy

Table 5: On-Street Motor Vehicle Parking Occupancy

ID	Segment	Begin	End	Location	Available Parking Spaces	Weekday Occupancy (Pre, Mid, End)				Weekend Occupancy (Pre, Mid, End)		Average Occupancy (Pre, Mid, End)	Peak Occupancy (Pre, Mid, End)
						6:45–8:45 AM	9:00-11:00 AM	12:00-2:00 PM	6:00-8:00 PM	Saturday Afternoon	Sunday Morning		
1	Oak Grove Ave*	Marcussen Dr	Rebecca Ln	S	9	4, 3, 0	8, 2, 0	9, 1, 0	1, 1, 0	7, 4, 3	0, 8, 0	56%, 33%, 11%	100%, 89%, 33%
2	Oak Grove Ave*	Pine St	Marcussen St	S	27	2, 2, 0	19, 0, 0	17, 0, 0	2, 0, 0	0, 1, 0	0, 3, 0	26%, 4%, 0%	70%, 11%, 0%
3	Oak Grove Ave*	Laurel St	Pine St	S	8	0, 0, 0	0, 0, 0	0, 0, 0	0, 0, 0	1, 0, 0	0, 0, 0	0%, 0%, 0%	13%, 0%, 0%
4	Marcussen Dr	Oak Grove Ave	1145 Marcussen Dr	W	11	0, 0, 1	11, 0, 1	7, 0, 1	0, 0, 1	1, 5, 1	0, 2, 3	27%, 9%, 9%	100%, 45%, 27%
5	Marcussen Dr	1144 Marcussen Dr	Oak Grove Ave	E	9	0, 0, 0	9, 1, 2	8, 2, 0	0, 0, 0	1, 2, 2	0, 2, 0	33%, 11%, 11%	100%, 22%, 22%
6	Pine St	Oak Grove Ave	1123 Pine St	W	10	2, 3, 1	0, 1, 1	1, 3, 4	2, 2, 3	2, 3, 2	0, 3, 3	10%, 20%, 20%	20%, 30%, 40%
7	Pine St	1126 Pine St	Oak Grove Ave	E	5	1, 1, 0	1, 1, 0	0, 1, 3	3, 0, 0	3, 0, 0	0, 0, 2	20%, 20%, 20%	60%, 20%, 60%
8	Laurel St	Apartment complex driveway	Oak Grove Ave	W	8	4, 1, 4	1, 1, 4	5, 1, 2	1, 2, 4	1, 2, 0	0, 0, 4	25%, 13%, 38%	63%, 25%, 50%
9	Laurel St	Oak Grove Ave	Noel Dr	W	7	0, 2, 3	2, 0, 0	1, 1, 0	4, 3, 4	3, 5, 6	0, 3, 2	29%, 29%, 43%	57%, 71%, 86%
10	Oak Grove Ave	Alma St	Laurel St	S	16	1, 2, 1	10, 7, 0	10, 9, 9	6, 7, 5	9, 3, 12	0, 2, 3	38%, 31%, 31%	63%, 56%, 75%

* Segment had parking removed during trial. Vehicles are allowed to park in bike lane on weekends only.

ID	Segment	Begin	End	Location	Available Parking Spaces	Weekday Occupancy (Pre, Mid, End)				Weekend Occupancy (Pre, Mid, End)		Average Occupancy (Pre, Mid, End)	Peak Occupancy (Pre, Mid, End)
						6:45–8:45 AM	9:00-11:00 AM	12:00-2:00 PM	6:00-8:00 PM	Saturday Afternoon	Sunday Morning		
11	Oak Grove Ave*	Laurel St	Mills St	N	14	0, 0, 0	0, 0, 0	7, 0, 0	6, 0, 0	3, 0, 0	1, 0, 0	21%, 0%, 0%	50%, 0%, 0%
12	Oak Grove Ave*	Mills St	Derry Ln	N	5	1, 0, 0	0, 0, 0	3, 0, 0	1, 0, 0	0, 0, 0	0, 0, 0	20%, 0%, 0%	60%, 0%, 0%
13	Oak Grove Ave*	Derry Ln	El Camino Real	N	7	0, 0, 0	0, 0, 0	0, 0, 0	0, 0, 0	0, 0, 0	0, 0, 0	0%, 0%, 0%	0%, 0%, 0%
14	Oak Grove Ave*	El Camino Real	Merrill St	S	8	2, 0, 0	5, 0, 0	5, 0, 0	3, 0, 0	6, 0, 0	2, 0, 0	50%, 0%, 0%	75%, 0%, 0%
15	Mills St	Oak Grove Ave	1250 Mills St	E	10	0, 0, 0	0, 0, 0	8, 4, 9	5, 3, 7	3, 4, 5	2, 2, 2	30%, 20%, 40%	80%, 40%, 90%
16	Mills St	Driveway of 1249 Mills St	Oak Grove Ave	W	9	0, 0, 0	0, 1, 1	5, 8, 10	3, 8, 4	5, 3, 4	2, 1, 2	33%, 44%, 44%	56%, 89%, 111%
17	El Camino Real	Oak Grove Ave	Santa Cruz Ave	W	4	0, 0, 0	1, 2, 2	2, 4, 3	3, 4, 4	1, 4, 0	3, 4, 4	50%, 75%, 50%	75%, 100%, 100%
18	Merrill St	Oak Grove Ave	Santa Cruz Ave	W	15	11, 6, 6	14, 11, 13	10, 12, 9	11, 12, 13	7, 10, 9	10, 11, 11	73%, 67%, 67%	93%, 80%, 87%
19	Alma St	Oak Grove Ave	Alma Ln	W	18	15, 16, 17	16, 16, 13	18, 16, 16	14, 15, 15	17, 14, 13	14, 14, 15	89%, 83%, 83%	100%, 89%, 94%
20	Oak Grove Ave†	El Camino Real	Hoover St	N	4	0, 0, 0	3, 0, 0	4, 0, 0	0, 0, 0	1, 0, 0	1, 0, 0	50%, 0%, 0%	100%, 0%, 0%
21	Oak Grove Ave*	Hoover St	Crane St	N	15	14, 0, 0	15, 0, 0	15, 4, 0	4, 1, 0	4, 0, 1	0, 0, 0	60%, 7%, 0%	100%, 27%, 7%

* Segment had parking removed during trial.
† Segment had parking removed during trial.

ID	Segment	Begin	End	Location	Available Parking Spaces	Weekday Occupancy (Pre, Mid, End)				Weekend Occupancy (Pre, Mid, End)		Average Occupancy (Pre, Mid, End)	Peak Occupancy (Pre, Mid, End)
						6:45–8:45 AM	9:00-11:00 AM	12:00-2:00 PM	6:00-8:00 PM	Saturday Afternoon	Sunday Morning		
22	Oak Grove Ave	Crane St	University Dr	N	13	13, 13, 13	13, 13, 13	13, 13, 13	5, 10, 7	4, 7, 8	4, 8, 4	69%, 85%, 77%	100%, 100%, 100%
23	Oak Grove Ave	University Dr	Crane St	S	19	9, 2, 4	13, 14, 16	19, 17, 18	2, 3, 7	6, 5, 7	19, 10, 13	58%, 47%, 58%	100%, 89%, 95%
24	Oak Grove Ave	Crane St	Chestnut St	S	8	2, 1, 2	1, 6, 6	8, 8, 8	3, 2, 3	0, 0, 1	1, 0, 8	38%, 38%, 63%	100%, 100%, 100%
25	Oak Grove Ave	Chestnut St	El Camino Real	S	15	5, 1, 0	10, 12, 9	13, 15, 14	4, 4, 3	2, 3, 1	3, 4, 6	40%, 47%, 40%	87%, 100%, 93%
26	Hoover St	El Camino Real	1242 Hoover St	E	6	5, 5, 4	6, 4, 4	6, 3, 4	1, 2, 3	1, 2, 2	1, 2, 3	50%, 50%, 50%	100%, 83%, 67%
27	Chestnut St	Oak Grove Ave	Ryans Ln	W	11	4, 4, 4	8, 7, 9	11, 8, 9	6, 10, 5	9, 8, 3	9, 6, 11	73%, 64%, 64%	100%, 91%, 100%
28	Chestnut St	Chestnut Ln	Oak Grove Ave	E	9	1, 1, 3	6, 7, 7	9, 8, 9	3, 3, 5	5, 4, 4	5, 5, 9	56%, 56%, 67%	100%, 89%, 100%
29	Crane St	Oak Grove Ave	Valparaiso Ave	W	2	0, 0, 0	0, 2, 0	2, 2, 2	2, 0, 2	0, 0, 2	1, 0, 2	50%, 50%, 50%	100%, 100%, 100%
30	Crane St	Valparaiso Ave	Oak Grove Ave	W	25	8, 11, 9	16, 23, 13	23, 20, 21	15, 11, 12	15, 19, 24	13, 10, 18	60%, 64%, 64%	92%, 92%, 96%
31	Crane St	Oak Grove Ave	Santa Cruz Ave	W	13	1, 0, 2	9, 12, 8	9, 13, 12	11, 12, 12	5, 7, 10	11, 2, 11	62%, 62%, 69%	85%, 100%, 92%
32	Valparaiso Ave	Crane St	Chateau Dr	S	7	6, 4, 4	7, 6, 5	7, 6, 7	2, 3, 0	3, 1, 0	2, 2, 0	100%, 80%, 60%	140%, 120%, 140%

ID	Segment	Begin	End	Location	Available Parking Spaces	Weekday Occupancy (Pre, Mid, End)				Weekend Occupancy (Pre, Mid, End)		Average Occupancy (Pre, Mid, End)	Peak Occupancy (Pre, Mid, End)
						6:45–8:45 AM	9:00-11:00 AM	12:00-2:00 PM	6:00-8:00 PM	Saturday Afternoon	Sunday Morning		
33	Valparaiso Ave	645 Valparaiso Ave	Crane St	S	6	6, 2, 5	6, 7, 5	6, 7, 1	0, 1, 0	0, 0, 0	0, 2, 0	50%, 50%, 33%	100%, 117%, 83%
34	University Dr	Oak Grove Ave	Valparaiso Ave	E	24	6, 4, 4	18, 21, 19	15, 15, 22	12, 11, 16	5, 6, 8	3, 10, 4	42%, 46%, 50%	75%, 88%, 92%
35	University Dr	Valparaiso Ave	Rose Ave	W	16	15, 11, 6	16, 17, 15	16, 15, 8	8, 5, 5	5, 6, 6	3, 2, 2	69%, 63%, 44%	100%, 106%, 94%
36	University Dr	Rose Ave	Millie Ave	W	6	5, 5, 4	5, 7, 6	5, 6, 6	2, 3, 5	1, 3, 3	3, 5, 2	67%, 83%, 67%	83%, 117%, 100%
37	University Dr	Millie Ave	Santa Cruz Ave	W	14	1, 2, 1	8, 6, 9	13, 10, 13	5, 5, 5	5, 2, 10	10, 13, 13	50%, 43%, 64%	93%, 93%, 93%
38	University Dr	Santa Cruz Ave	Oak Grove Ave	E	15	6, 3, 2	8, 8, 4	13, 12, 13	8, 9, 7	3, 5, 5	14, 13, 13	60%, 53%, 47%	93%, 87%, 87%
39	Rose Ave	University Dr	Johnson St	N	16	2, 0, 0	3, 7, 1	5, 3, 5	1, 0, 1	1, 1, 3	0, 0, 0	13%, 13%, 13%	31%, 44%, 31%
40	Rose Ave	Johnson St	University Dr	S	15	2, 1, 0	0, 9, 0	2, 1, 5	2, 1, 0	0, 0, 2	0, 0, 0	7%, 13%, 7%	13%, 60%, 33%
41	Millie Ave	University Dr	Johnson St	N	14	1, 1, 1	0, 3, 1	5, 7, 10	2, 1, 0	0, 2, 0	0, 0, 0	7%, 14%, 14%	36%, 50%, 71%
42	Millie Ave	Johnson St	University Dr	S	14	0, 0, 0	1, 1, 0	3, 5, 12	3, 1, 4	0, 0, 0	1, 0, 2	7%, 7%, 21%	21%, 36%, 86%
43	Santa Cruz Ave	University Dr	Johnson St	N	10	6, 7, 5	6, 7, 7	5, 6, 8	1, 2, 2	5, 1, 6	4, 8, 7	50%, 50%, 60%	60%, 80%, 80%
44	Santa Cruz Ave	Johnson St	University Dr	S	6	3, 0, 2	6, 4, 4	6, 4, 5	1, 1, 1	0, 0, 2	2, 4, 4	50%, 33%, 50%	100%, 67%, 83%
45	Santa Cruz Ave	University Dr	Evelyn St	S	8	8, 5, 6	6, 3, 7	7, 5, 8	5, 8, 4	5, 6, 6	8, 7, 4	88%, 75%, 75%	100%, 100%, 100%

ID	Segment	Begin	End	Location	Available Parking Spaces	Weekday Occupancy (Pre, Mid, End)				Weekend Occupancy (Pre, Mid, End)		Average Occupancy (Pre, Mid, End)	Peak Occupancy (Pre, Mid, End)
						6:45–8:45 AM	9:00-11:00 AM	12:00-2:00 PM	6:00-8:00 PM	Saturday Afternoon	Sunday Morning		
46	Santa Cruz Ave	Evelyn St	Crane St	S	7	3, 1, 2	2, 4, 2	5, 4, 5	6, 4, 4	8, 5, 2	5, 5, 5	71%, 80%, 60%	114%, 100%, 100%
47	Santa Cruz Ave	Crane St	Chestnut St	S	8	6, 8, 3	5, 4, 5	7, 8, 8	6, 8, 5	2, 3, 4	8, 6, 8	75%, 75%, 75%	100%, 100%, 100%
48	Santa Cruz Ave	Chestnut St	Crane St	N	10	9, 10, 6	10, 9, 8	10, 10, 9	10, 8, 7	10, 7, 5	9, 7, 10	100%, 90%, 80%	100%, 100%, 100%
49	Santa Cruz Ave	Crane St	University Dr	N	21	13, 21, 2	5, 4, 6	20, 17, 16	19, 20, 9	16, 20, 19	19, 9, 21	71%, 71%, 57%	95%, 100%, 100%
50	Evelyn St	Santa Cruz Ave	Menlo Ave	W	6	2, 2, 3	3, 7, 5	5, 4, 7	4, 5, 5	3, 3, 2	6, 3, 5	57%, 57%, 71%	86%, 100%, 100%
51	Evelyn St	Menlo Ave	Santa Cruz Ave	E	7	3, 1, 1	3, 3, 3	4, 7, 6	2, 3, 2	5, 3, 6	6, 7, 7	57%, 57%, 57%	86%, 100%, 100%
52	Evelyn St	Menlo Ave	Live Oak Ave	W	10	4, 4, 4	9, 7, 9	9, 9, 9	0, 1, 6	1, 4, 4	2, 1, 3	40%, 40%, 60%	90%, 90%, 90%
53	Evelyn St	Live Oak Ave	Menlo Ave	E	10	3, 1, 3	9, 9, 8	7, 9, 9	2, 3, 4	1, 2, 3	2, 4, 1	40%, 50%, 50%	90%, 90%, 90%
54	Crane St	Santa Cruz Ave	Menlo Ave	W	7	2, 0, 0	2, 4, 2	6, 4, 4	1, 1, 3	4, 4, 1	5, 5, 6	43%, 43%, 43%	86%, 71%, 86%
55	Crane St	Menlo Ave	Santa Cruz Ave	E	9	0, 0, 0	4, 6, 1	2, 6, 6	3, 1, 2	7, 4, 3	7, 5, 7	44%, 44%, 33%	78%, 67%, 78%
56	Crane St	Live Oak Ave	Menlo Ave	E	13	13, 12, 13	12, 12, 5	13, 12, 14	5, 9, 10	8, 7, 7	9, 8, 7	77%, 77%, 69%	100%, 92%, 108%
57	University Dr	Menlo Ave	Oak Ln	W	6	5, 3, 5	5, 5, 5	5, 4, 5	2, 3, 5	4, 5, 4	3, 4, 5	67%, 67%, 83%	83%, 83%, 83%

ID	Segment	Begin	End	Location	Available Parking Spaces	Weekday Occupancy (Pre, Mid, End)				Weekend Occupancy (Pre, Mid, End)		Average Occupancy (Pre, Mid, End)	Peak Occupancy (Pre, Mid, End)
						6:45–8:45 AM	9:00-11:00 AM	12:00-2:00 PM	6:00-8:00 PM	Saturday Afternoon	Sunday Morning		
58	University Dr*	Oak Ln	Roble Ave	W	7	2, 0, 0	4, 0, 0	7, 0, 0	0, 0, 0	0, 0, 0	2, 0, 0	43%, 0%, 0%	100%, 0%, 0%
59	University Dr*	Roble Ave	Florence Ln	W	10	0, 0, 0	0, 0, 0	1, 1, 0	0, 0, 0	0, 0, 0	0, 0, 0	0%, 0%, 0%	10%, 10%, 0%
60	University Dr*	Florence Ln	Alice Ln	W	10	0, 0, 0	0, 0, 0	1, 0, 0	1, 0, 0	0, 0, 0	1, 0, 4	10%, 0%, 10%	10%, 0%, 40%
61	University Dr*	Alice Ln	Middle Ave	W	9	0, 0, 0	0, 0, 0	0, 0, 0	1, 0, 0	1, 0, 0	0, 0, 6	0%, 0%, 11%	11%, 0%, 67%
62	University Dr	Middle Ave	College Ave	W	9	2, 0, 0	0, 2, 1	2, 3, 1	0, 1, 1	4, 1, 0	0, 0, 0	11%, 11%, 11%	44%, 33%, 11%
63	University Dr	College Ave	Middle Ave	E	10	0, 0, 0	0, 0, 0	0, 0, 0	0, 0, 0	0, 0, 0	0, 0, 0	0%, 0%, 0%	0%, 0%, 0%
64	University Dr*	Middle Ave	Roble Ave	E	27	2, 0, 0	3, 0, 0	5, 0, 0	3, 1, 0	2, 0, 0	5, 0, 0	11%, 0%, 0%	19%, 4%, 0%
65	University Dr*	Roble Ave	Live Oak Ave	E	5	0, 0, 0	3, 0, 0	3, 0, 0	2, 0, 0	0, 0, 0	0, 0, 0	20%, 0%, 0%	60%, 0%, 0%
66	University Dr	Live Oak Ave	Menlo Ave	E	7	7, 7, 4	7, 4, 7	7, 7, 7	5, 6, 5	6, 4, 5	4, 6, 7	86%, 86%, 86%	100%, 100%, 100%
67	Menlo Ave	University Dr	End	N	14	3, 4, 6	3, 2, 2	4, 2, 0	3, 6, 6	8, 10, 7	6, 4, 6	36%, 36%, 36%	57%, 71%, 50%
68	Menlo Ave	End	University Dr	S	13	1, 2, 3	2, 0, 0	4, 2, 1	2, 1, 2	5, 6, 5	4, 8, 5	23%, 23%, 23%	38%, 62%, 38%
69	Menlo Ave	Crane St	Chestnut St	S	8	7, 8, 5	8, 8, 4	7, 7, 8	5, 4, 3	4, 3, 2	8, 7, 7	88%, 75%, 63%	100%, 100%, 100%
70	Menlo Ave	Chestnut St	Crane St	N	6	1, 0, 1	2, 3, 5	4, 4, 5	2, 2, 3	1, 0, 2	7, 7, 4	50%, 50%, 50%	117%, 117%, 83%
71	Menlo Ave	Crane St	Evelyn St	N	9	0, 1, 1	3, 0, 1	5, 8, 7	2, 2, 1	3, 2, 3	8, 3, 4	44%, 33%, 33%	89%, 89%, 78%
72	Menlo Ave	Evelyn St	University Dr	N	3	1, 0, 0	3, 3, 1	2, 3, 1	0, 3, 2	2, 1, 3	3, 2, 3	67%, 67%, 67%	100%, 100%, 100%
73	Menlo Ave	University Dr	Evelyn St	S	1	0, 1, 1	1, 1, 1	0, 1, 1	0, 0, 0	1, 1, 1	0, 1, 1	0%, 100%, 100%	100%, 100%, 100%

* Segment had parking removed during trial.

ID	Segment	Begin	End	Location	Available Parking Spaces	Weekday Occupancy (Pre, Mid, End)				Weekend Occupancy (Pre, Mid, End)		Average Occupancy (Pre, Mid, End)	Peak Occupancy (Pre, Mid, End)
						6:45–8:45 AM	9:00-11:00 AM	12:00-2:00 PM	6:00-8:00 PM	Saturday Afternoon	Sunday Morning		
74	Menlo Ave	Evelyn St	Crane St	S	10	9, 9, 7	10, 10, 1	0, 10, 10	3, 5, 2	4, 1, 3	4, 6, 5	50%, 70%, 50%	100%, 100%, 100%
75	Oak Ln	University Dr	End	N	12	6, 4, 6	5, 6, 8	11, 9, 8	3, 8, 10	7, 5, 5	5, 5, 2	50%, 50%, 58%	92%, 75%, 83%
76	Oak Ln	End	University Dr	S	12	3, 6, 5	5, 4, 6	10, 11, 6	4, 2, 12	3, 4, 5	3, 3, 1	42%, 42%, 50%	83%, 92%, 100%
77	Roble Ave	University Dr	End	N	15	1, 4, 3	0, 1, 1	2, 3, 1	3, 6, 6	5, 5, 3	2, 3, 3	13%, 27%, 20%	33%, 40%, 40%
78	Roble Ave	End	University Dr	S	20	1, 1, 4	1, 4, 1	4, 4, 1	7, 6, 4	3, 5, 2	3, 4, 3	15%, 20%, 15%	35%, 30%, 20%
79	Florence Ln	University Dr	922 Florence Ln	N	7	0, 3, 1	0, 1, 1	1, 4, 1	3, 0, 1	3, 6, 2	0, 3, 0	14%, 43%, 14%	43%, 86%, 29%
80	Florence Ln	917 Florence Ln	University Dr	S	6	5, 3, 2	2, 3, 0	4, 2, 0	3, 3, 2	2, 5, 1	1, 3, 0	50%, 50%, 17%	83%, 83%, 33%
81	Alice Ln	University Dr	End	N	13	4, 9, 7	4, 8, 8	5, 10, 8	4, 9, 5	6, 11, 8	2, 10, 6	31%, 69%, 54%	46%, 85%, 62%
82	Alice Ln	End	University Dr	S	14	2, 4, 3	4, 5, 4	3, 5, 4	4, 6, 5	3, 8, 4	3, 6, 0	21%, 43%, 21%	29%, 57%, 36%
83	Middle Ave	University Dr	Yale Rd	N	12	3, 6, 7	5, 4, 7	5, 4, 7	7, 9, 9	3, 6, 5	4, 5, 0	42%, 50%, 50%	58%, 75%, 75%
84	Middle Ave	Yale Rd	University Dr	S	9	1, 2, 1	1, 0, 0	3, 2, 0	0, 0, 1	0, 0, 1	1, 1, 0	11%, 11%, 11%	33%, 22%, 11%
85	Middle Ave	University Dr	875 Middle Ave	S	6	0, 0, 0	2, 0, 0	1, 2, 0	0, 1, 0	0, 1, 0	1, 0, 0	17%, 17%, 0%	33%, 33%, 0%
86	Roble Ave	University Dr	879 Roble Ave	S	5	1, 2, 1	0, 3, 2	1, 3, 2	1, 0, 4	2, 0, 3	2, 0, 3	20%, 20%, 60%	40%, 60%, 80%
87	Roble Ave	880 Roble Ave	University Dr	N	6	2, 3, 3	3, 4, 4	1, 4, 4	1, 3, 5	4, 3, 3	2, 2, 1	33%, 50%, 50%	67%, 67%, 83%
88	Live Oak Ave	University Dr	Blake St	S	22	7, 7, 7	17, 16, 17	22, 17, 21	11, 9, 15	6, 6, 7	6, 7, 4	55%, 50%, 55%	100%, 77%, 95%
89	Live Oak Ave	766 Live Oak Ave	Crane St	N	5	3, 1, 2	4, 4, 4	4, 4, 4	1, 1, 1	3, 0, 1	2, 0, 2	60%, 40%, 40%	80%, 80%, 80%

ID	Segment	Begin	End	Location	Available Parking Spaces	Weekday Occupancy (Pre, Mid, End)				Weekend Occupancy (Pre, Mid, End)		Average Occupancy (Pre, Mid, End)	Peak Occupancy (Pre, Mid, End)
						6:45–8:45 AM	9:00-11:00 AM	12:00-2:00 PM	6:00-8:00 PM	Saturday Afternoon	Sunday Morning		
90	Live Oak Ave	Crane St	Evelyn St	N	7	5, 4, 5	7, 6, 7	7, 6, 7	2, 1, 4	2, 4, 4	2, 3, 1	57%, 57%, 71%	100%, 86%, 100%
91	Live Oak Ave	Evelyn St	University Dr	N	7	1, 3, 2	7, 7, 7	7, 7, 7	4, 3, 6	3, 0, 3	3, 2, 4	57%, 57%, 71%	100%, 100%, 100%
				Total	960 (pre)/ 793 (trial – weekday)/ 836 (trial – weekend)	315, 276, 243	472, 432, 364	592, 514, 519	320, 330, 346	319, 313, 319	327, 333, 354	41%, 46%, 45%	62%, 65%, 65%

Table 6: Parking Plaza Parking Occupancy

		Observed Parking Plaza Occupancy (Available Parking Spaces)							
Evaluation Period[9]		Plaza 1 (266)	Plaza 2 (84)	Plaza 3 (219)	Plaza 4 (103)	Plaza 5 (160)	Plaza 6 (140)	Plaza 7 (95)	Plaza 8 (140)
Pre	Weekday, 6:45-8:45 AM	126	44	138	46	69	64	35	75
	Weekday, 9:00-11:00 AM	206	82	214	77	92	80	74	93
	Weekday, 12:00-2:00 PM	234	80	210	75	129	103	89	135
	Weekday, 6:00-8:00 PM	92	46	115	71	35	34	50	131
	Saturday, after 5:30 PM	186	50	219	102	107	46	81	71
	Sunday, 8:45-9:30 AM	133	68	151	58	64	41	79	131
Max (% Utilized)		234 (88.0%)	82 (97.6%)	219 (100.0%)	102 (99.0%)	129 (80.6%)	103 (73.6%)	89 (93.7%)	135 (96.4%)
Avg. (% Utilized)		162 (61.2%)	61 (73.4%)	175 (79.8%)	73 (71.0%)	83 (51.7%)	61 (43.8%)	68 (71.6%)	106 (75.7%)
Mid	Weekday, 6:45-8:45 AM	85	27	58	33	16	19	10	30
	Weekday, 9:00-11:00 AM	193	80	165	71	87	89	47	93
	Weekday, 12:00-2:00 PM	258	83	219	66	133	128	88	139
	Weekday, 6:00-8:00 PM	88	65	128	33	39	30	56	123
	Saturday, 3:30-5:30 PM	98	57	102	84	38	37	75	108
	Sunday, 8:30-10:30 AM	161	35	144	80	68	39	79	64
Max (% Utilized, % Change)		258 (97%, 10%)	83 (99%, 1%)	219 (100%, -1%)	84 (82%, -18%)	133 (83%, 3%)	128 (94%, 24%)	88 (93%, -1%)	139 (99%, 3%)
Avg. (% Utilized, % Change)		147 (55%, -10%)	58 (69%, -6%)	136 (62%, -22%)	61 (59%, -16%)	64 (40%, -23%)	57 (40%, -8%)	59 (62%, -13%)	93 (66%, -12%)
End	Weekday, 6:45-8:45 AM	43	25	48	27	12	9	6	24
	Weekday, 9:00-11:00 AM	210	91	182	54	97	82	60	76
	Weekday, 12:00-2:00 PM	254	89	211	71	149	134	85	137
	Weekday, 6:00-8:00 PM	110	75	137	34	60	18	67	137
	Saturday, 3:30-5:30 PM	86	46	104	92	58	57	69	127
	Sunday, 8:30-10:30 AM	171	90	199	40	28	20	72	38
Max (% Utilized, % Change)		254 (96%, 9%)	91 (99%, 1%)	211 (96%, -4%)	92 (89%, 10%)	149 (93%, 15%)	134 (96%, 30%)	85 (90%, -4%)	137 (98%, 2%)
Avg. (% Utilized, % Change)		146 (55%, -10%)	69 (75%, 3%)	147 (67%, -16%)	53 (52%, -27%)	67 (42%, -19%)	53 (38%, -14%)	60 (63%, -13%)	90 (64%, -16%)

Bicycle Parking Occupancy

Table 7: Bicycle Parking Occupancy

		Observed Bicycle Parking Locations (Available Bicycle Parking Spaces)					
Evaluation Period[9]		Menlo-Atherton School (130)	Menlo Park Caltrain Station (6)	Santa Cruz Ave b/t Doyle St and Curtis St (20)	Chestnut St b/t Oak Grove Ave and Santa Cruz Ave (13)	Draeger's Market Parking Lot (5)	Crane St b/t Oak Grove Ave and San Cruz Ave (6)
Pre	Weekday, 6:45-8:45 AM	13	6	2	1	3	2
	Weekday, 9:00-11:00 AM	99	6	5	1	2	4
	Weekday, 12:00-2:00 PM	88	6	4	0	0	3
	Weekday, 6:00-8:00 PM	20	6	8	1	0	1
	Saturday, after 5:30 PM	-	-	-	-	-	-
	Sunday, 8:45-9:30 AM	4	2	1	1	0	0
Max (% Utilized)		99 (76%)	6 (100%)	8 (40%)	1 (8%)	3 (60%)	4 (67%)
Avg. (% Utilized)		45 (34%)	5 (87%)	4 (20%)	1 (6%)	1 (20%)	2 (33%)
Mid	Weekday, 6:45-8:45 AM	1	0	0	1	1	1
	Weekday, 9:00-11:00 AM	16	1	1	1	2	0
	Weekday, 12:00-2:00 PM	129	1	3	1	1	1
	Weekday, 6:00-8:00 PM	7	1	0	1	1	0
	Saturday, 3:30-5:30 PM	4	2	3	1	1	1
	Sunday, 8:30-10:30 AM	3	2	1	1	3	1
Max (% Utilized, % Change)		129 (99%, 30%)	6 (33%, -67%)	3 (15%, -67%)	1 (8%, 0%)	3 (60%, 0%)	1 (17%, -75%)
Avg. (% Utilized, % Change)		27 (21%, -30%)	1 (19%, -77%)	1 (7%, -72%)	1 (8%, 20%)	2 (30%, 50%)	1 (11%, -60%)
End	Weekday, 6:45-8:45 AM	1	4	0	1	0	0
	Weekday, 9:00-11:00 AM	12	5	1	3	0	1
	Weekday, 12:00-2:00 PM	84	5	4	2	1	3
	Weekday, 6:00-8:00 PM	3	3	3	2	1	1
	Saturday, 3:30-5:30 PM	5	3	3	0	0	1
	Sunday, 8:30-10:30 AM	2	3	1	2	1	4
Max (% Utilized, % Change)		84 (65%, -15%)	5 (83%, -17%)	4 (20%, -50%)	3 (23%, 200%)	1 (20%, -67%)	4 (67%, 0%)
Avg. (% Utilized, % Change)		17 (14%, -62%)	4 (64%, -20%)	2 (10%, -50%)	2 (13%, 117%)	1 (20%, 0%)	2 (28%, 0%)

[9]Dates of Data Collection: Pre-Trial (5/3/2017-5/4/2017, 5/6/2017-5/7/2017), Mid-Trial (10/28/2017, 11/1/2017, and 11/5/2017), End-Trial (4/28/2018, 5/1/2018-5/2/2018, and 5/6/2018)

Collision Data

Table 8: Raw Collision Data

Case #	Date	Time	Location	Minor Injuries	Major Injuries	Fatal Injuries	Parties Involved	Primary Collision Factor	Type of Collision
15-2055	7/14/2015	1745	EL CAMINO REAL/OAK GROVE AV	0	0	0	Other Motor Vehicle	21658 (A) CVC - Divided road unsafe lane change	Side swipe
15-2166	7/23/2015	1533	EL CAMINO REAL/OAK GROVE AV	0	0	0	Other Motor Vehicle	22350 CVC - Speeding	Rear end
15-2223	07/28/2015	911	CRANE ST/VALPARAISO AV	2	0	0	Other Motor Vehicle	22350 CVC - Speeding	Rear end
15-2387	08/10/2015	1652	836 LIVE OAK AV	0	0	0	Other Motor Vehicle	21802 (a) CVC - Failure to yield to oncoming traffic	Broadside
15-2475	8/17/2015	1110	OAK GROVE AV/DERRY LN	1	0	0	Other Motor Vehicle	22350 CVC - Speeding	Rear end
15-2908	9/3/2015	1443	OAK GROVE AV/PINE ST	1	0	0	Other Motor Vehicle	21806 (a) CVC - Failure to yield to emergency vehicle	Side swipe
15-3039	10/3/2015	2154	OAK GROVE AV/RR TRACKS	0	0	0	Other Motor Vehicle	22450 (a) CVC - Stop after the limit line	Broadside
15-3078	10/07/2015	808	CRANE ST/OAK GROVE AV	1	0	0	Other Motor Vehicle	22517 CVC - Open door into oncoming traffic	Other
15-3279	10/22/2015	1250	OAK GROVE AV/CHESTNUT ST	1	0	0	Other Motor Vehicle	22106 CVC - Unsafe Backing	Other
15-3741	12/2/2015	1015	EL CAMINO REAL/OAK GROVE AV	0	0	0	Other Motor Vehicle	22107 CVC - Unsafe lane change	Side swipe
15-3956	12/22/2015	1300	CRANE ST/MENLO AV	0	0	0	Parked Motor Vehicle	22107 CVC - Unsafe lane change	Side swipe
15-4024	12/30/2015	1540	EL CAMINO REAL/OAK GROVE AV	1	0	0	Other Motor Vehicle	22350 CVC - Speeding	Rear end
16-142	1/13/2016	1425	EL CAMINO REAL/OAK GROVE AV	1	0	0	Fixed Object	23152(e) CVC - Driving under the influence of a narcotic	Hit object
16-285	01/26/2016	1720	UNIVERSITY DR/ROBLE AV	1	0	0	Other Motor Vehicle	22107 CVC - Unsafe lane change	Side swipe
16-311	1/29/2016	1345	CHESTNUT ST/OAK GROVE AV	0	0	0	Parked Motor Vehicle	22350 CVC - Speeding	Rear end
16-448	2/11/2016	818	EL CAMINO REAL/OAK GROVE AV	0	0	0	Other Motor Vehicle	22350 CVC - Speeding	Rear end
16-494	2/16/2016	1439	OAK GROVE AV/LAUREL ST	2	0	0	Other Motor Vehicle	21453(A) CVC - Stopped over limit line	Broadside
16-541	2/20/2016	1327	EL CAMINO REAL/OAK GROVE AV	1	0	0	Other Motor Vehicle	22350 CVC - Speeding	Rear end
16-733	2/27/2016	2300	OAK GROVE AV/EL CAMINO REAL	0	0	0	Parked Motor Vehicle	22107 CVC - Unsafe lane change	Side swipe
16-753	3/9/2016	1307	EL CAMINO REAL/OAK GROVE AV	2	0	0	Other Motor Vehicle	21451(a) CVC - Yield to pedestrians	Broadside
16-1058	4/4/2016	1445	OAK GROVE AV/HOOVER ST	1	0	0	Bicycle	22350 CVC - Speeding	Other
16-1555	5/20/2016	920	OAK GROVE AV/EL CAMINO REAL	1	0	0	Pedestrian	22107 CVC - Unsafe lane change	Vehicle-Pedestrian
16-1727	06/05/2016	1040	OAK GROVE AV/CRANE ST	0	0	0	Parked Motor Vehicle	22106 CVC - Unsafe backing	Side swipe
16-1801	6/13/2016	755	CHESTNUT ST/OAK GROVE AV	1	0	0	Fixed Object	22350 CVC - Speeding	Hit object
16-1867	6/18/2016	1423	OAK GROVE AV/EL CAMINO REAL	3	0	0	Other Motor Vehicle	22153 (E) CVC - Drunk driving of passenger for hire	Side swipe
16-2107	07/12/2016	915	MENLO AV/CRANE ST	1	0	0	Pedestrian	21950 (a) CVC - Right away to pedestrian	Vehicle-Pedestrian
16-2243	07/26/2016	1146	SANTA CRUZ AV/CRANE ST	0	0	0	Parked Motor Vehicle	22107 CVC - Unsafe lane change	Side swipe
16-2281	7/29/2016	1601	OAK GROVE AV/LAUREL ST	2	0	0	Other Motor Vehicle	21453(A) CVC - Stopped over limit line	Broadside
16-2444	8/13/2016	2304	MERRILL ST/OAK GROVE AV	0	0	0	Parked Motor Vehicle	22350 CVC - Speeding	Rear end
16-2626	8/23/2016	905	EL CAMINO REAL/OAK GROVE AV	1	0	0	Other Motor Vehicle	22350 CVC - Speeding	Rear end
16-2645	09/02/2016	1215	CRANE ST/MENLO AV	0	0	0	Other Object	22106 CVC - Unsafe backing	Hit object
16-2798	09/16/2016	1400	CRANE ST/RYANS LN	0	0	0	Other Motor Vehicle	22450 (a) CVC - Stop after the limit line	Broadside

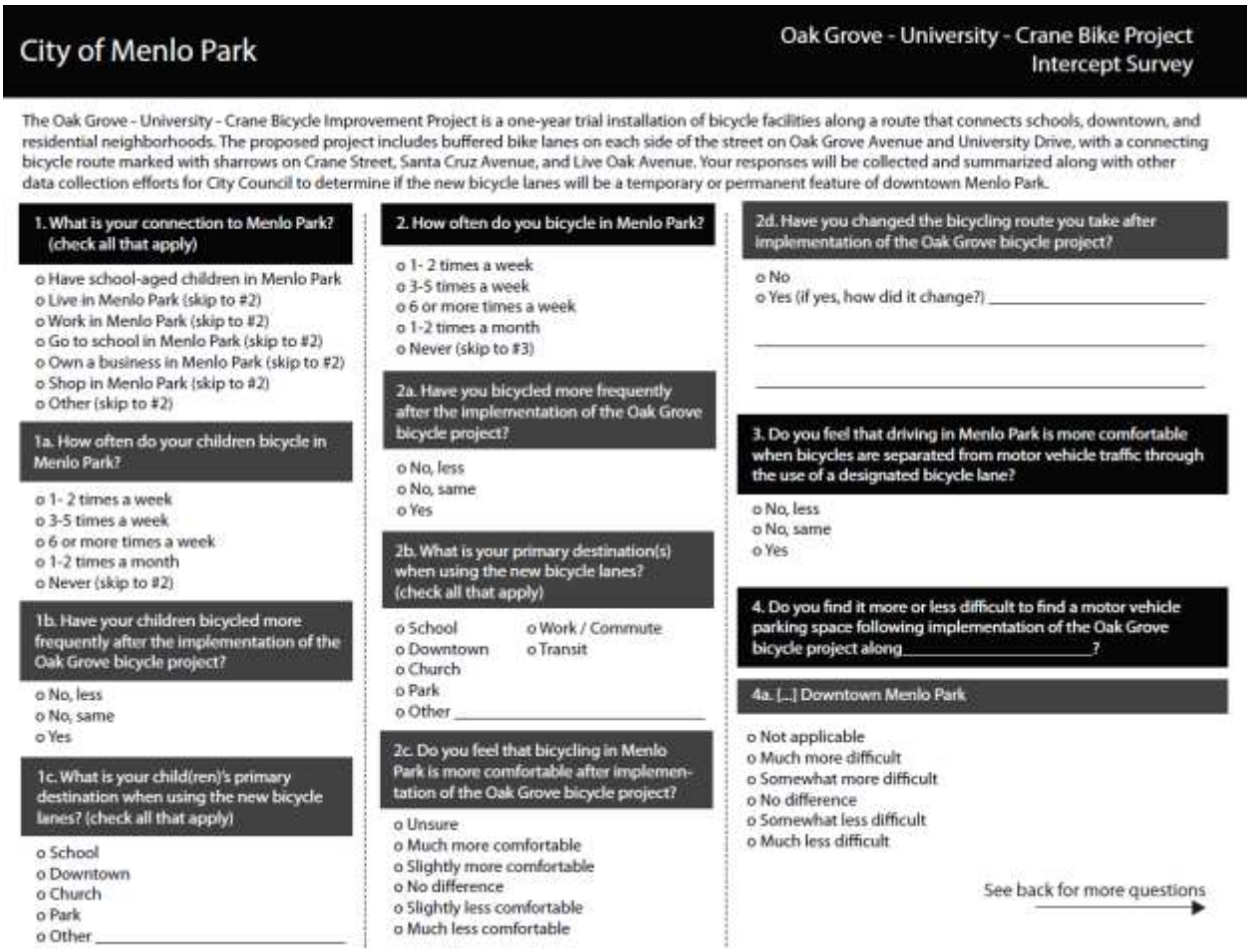
Case #	Date	Time	Location	Minor Injuries	Major Injuries	Fatal Injuries	Parties Involved	Primary Collision Factor	Type of Collision
16-3027	10/8/2016	1650	PINE ST/OAK GROVE AV	0	0	0	Parked Motor Vehicle	22107 CVC - Unsafe lane change	Head-on
16-3246	10/27/2016	1521	MIDDLE AV/UNIVERSITY DR	1	0	0	Pedestrian	21954 CVC - Pedestrian yield to traffic	Vehicle-Pedestrian
16-3380	11/8/2016	1130	LAUREL ST/OAK GROVE AV	2	0	0	Other Motor Vehicle	21453(A) CVC - Stopped over limit line	Broadside
16-3596	11/29/2016	1546	OAK GROVE AV/CHESTNUT ST	0	0	0	Parked Motor Vehicle	22107 CVC - Unsafe lane change	Other
16-3642	12/04/2016	59	UNIVERSITY DR/LIVE OAK AV	0	0	0	Parked Motor Vehicle	22107 CVC - Unsafe lane change	Other
16-3842	12/21/2016	1037	EL CAMINO REAL/OAK GROVE AV	1	0	0	Other Motor Vehicle	22350 CVC - Speeding	Rear end
17-113	1/11/2017	1330	OAK GROVE AV/EL CAMINO REAL	0	0	0	Other Motor Vehicle	22107 CVC - Unsafe lane change	Broadside
17-323	1/31/2017	1647	EL CAMINO REAL/OAK GROVE AV	0	0	0	Fixed Object	22107 CVC - Unsafe lane change	Hit object
17-476	2/15/2017	1016	EL CAMINO REAL/OAK GROVE AV	2	0	0	Other Motor Vehicle	22350 CVC - Speeding	Rear end
17-493	2/16/2017	1411	LAUREL ST/OAK GROVE AV	0	0	0	Other Motor Vehicle	21804 (a) CVC - Failure to yield when exiting private property	Broadside
17-811	03/01/2017	1105	MENLO AV/CRANE ST	0	0	0	Parked Motor Vehicle	22106 CVC - Unsafe backing	Rear end
17-639	3/2/2017	1043	OAK GROVE AV/EL CAMINO REAL	1	0	0	Other Motor Vehicle	22350 CVC - Speeding	Rear end
17-1046	3/29/2017	900	OAK GROVE AV/MARCUSSEN DR	0	0	0	Other Motor Vehicle	22350 CVC - Speeding	Rear end
17-984	03/30/2017	0	CRANE ST/VALPARAISO AV	0	0	0	Parked Motor Vehicle	22107 CVC - Unsafe lane change	Side swipe
17-1027	03/31/2017	1700	SANTA CRUZ AV/CRANE ST	1	0	0	Other Motor Vehicle	22106 CVC - Unsafe backing	Rear end
17-1049	4/6/2017	1722	700 OAK GROVE AV	1	0	0	Parked Motor Vehicle	22107 CVC - Unsafe lane change	Side swipe
17-1070	4/8/2017	1756	OAK GROVE AV/EL CAMINO REAL	0	0	0	Other Motor Vehicle	21658 (A) CVC - Divided road unsafe lane change	Rear end
17-1135	4/15/2017	1025	OAK GROVE AV/MERRILL ST	1	0	0	Other Motor Vehicle	22350 CVC - Speeding	Rear end
17-1266	04/25/2017	1733	MIDDLE AV/UNIVERSITY DR	0	0	0	Other Motor Vehicle	21750 CVC - Pass other than on the left	Side swipe
17-1418	05/09/2017	930	MENLO AV/CRANE ST	0	0	0	Parked Motor Vehicle	22107 CVC - Unsafe lane change	Side swipe
17-1439	5/10/2017	1621	EL CAMINO REAL/OAK GROVE AV	1	0	0	Motor Vehicle on other Roadway	22350 CVC - Speeding	Rear end
17-1492	5/15/2017	1756	LAUREL ST/OAK GROVE AV	2	0	0	Other Motor Vehicle	21453(A) CVC - Stopped over limit line	Broadside
17-1643	5/29/2017	1250	EL CAMINO REAL/OAK GROVE AV	1	0	0	Motorcycle	21804 (a) CVC - Failure to yield when exiting private property	Rear end
17-1677	6/1/2017	1121	525 OAK GROVE AV	0	0	0	Other Motor Vehicle	22106 CVC - Unsafe Backing	Rear end
17-1711	6/4/2017	415	EL CAMINO REAL/OAK GROVE AV	0	0	0	Fixed Object	22106 CVC - Unsafe Backing	Hit object
17-1756	06/07/2017	1150	CRANE ST/VALPARAISO AV	0	0	0	Pedestrian	22106 CVC - Unsafe backing	Vehicle-Pedestrian
17-1990	06/28/2017	1200	OAK GROVE AV/CRANE ST	0	0	0	Parked Motor Vehicle	22107 CVC - Unsafe lane change	Side swipe
17-2006	6/29/2017	1616	EL CAMINO REAL/OAK GROVE AV	0	0	0	Other Motor Vehicle	22350 CVC - Speeding	Rear end
17-2020	6/30/2017	1359	EL CAMINO REAL/OAK GROVE AV	0	0	0	Other Motor Vehicle	22350 CVC - Speeding	Rear end
17-2102	7/6/2017	1600	EL CAMINO REAL/OAK GROVE AV	0	0	0	Other Motor Vehicle	22350 CVC - Speeding	Rear end
17-2600	08/20/2017	1510	UNIVERSITY DR/MIDDLE AV	0	0	0	Other Motor Vehicle	21802(a) CVC - Failure to yield to oncoming traffic	Broadside
17-2637	08/23/2017	1224	MENLO AV/CRANE ST	0	0	0	Parked Motor Vehicle	22106 CVC - Unsafe backing	Side swipe
17-2671	8/25/2017	2102	OAK GROVE AV/LAUREL ST	0	0	0	Other Motor Vehicle	22350 CVC - Speeding	Head-on
17-2716	8/29/2017	1530	EL CAMINO REAL/OAK GROVE AV	0	0	0	Other Motor Vehicle	22107 CVC - Unsafe lane change	Rear end
17-2722	8/29/2017	1743	EL CAMINO REAL/OAK GROVE AV	0	0	0	Parked Motor Vehicle	22107 CVC - Unsafe lane change	Side swipe
17-2903	09/13/2017	1050	MENLO AV/CRANE ST	0	0	0	Parked Motor Vehicle	22350 CVC - Speeding	Other

Case #	Date	Time	Location	Minor Injuries	Major Injuries	Fatal Injuries	Parties Involved	Primary Collision Factor	Type of Collision
17-3271	10/15/2017	915	MENLO AV/CRANE ST	0	0	0	Parked Motor Vehicle	22106 CVC - Unsafe backing	Side swipe
17-3363	10/24/2017	1128	UNIVERSITY DR/MIDDLE AV	0	0	0	Other Motor Vehicle	22350 CVC - Speeding	Rear end
17-3782	12/6/2017	1150	EL CAMINO REAL/OAK GROVE AV	0	0	0	Other Motor Vehicle	22107 CVC - Unsafe lane change	Side swipe
17-3792	12/6/2017	1904	EL CAMINO REAL/OAK GROVE AV	0	0	0	Other Motor Vehicle	22107 CVC - Unsafe lane change	Side swipe
17-3817	12/08/2017	1557	CRANE ST/VALPARAISO AV	1	0	0	Bicycle	21801 (a) CVC - Failure to yield while making a turn	Other
17-3856	12/12/2017	0	EL CAMINO REAL/OAK GROVE AV	0	0	0	Other Motor Vehicle	22107 CVC - Unsafe lane change	Side swipe
17-3910	12/18/2017	1354	OAK GROVE AV/LAUREL ST	1	0	0	Pedestrian	21950 (a) CVC - Right away to pedestrian	Vehicle-Pedestrian
18-72	1/9/2018	1300	OAK GROVE AV/EL CAMINO REAL	0	0	0	Fixed Object	22107 CVC - Unsafe lane change	Hit object
18-168	01/11/2018	1800	OAK GROVE AV/CRANE ST	0	0	0	Other Motor Vehicle	22106 CVC - Unsafe backing	Broadside
18-276	1/31/2018	1139	OAK GROVE AV/EL CAMINO REAL	0	0	0	Other Motor Vehicle	22107 CVC - Unsafe lane change	Side swipe
18-423	2/16/2018	1410	EL CAMINO REAL/OAK GROVE AV	0	0	0	Other Motor Vehicle	22107 CVC - Unsafe lane change	Side swipe
18-539	02/23/2018	600	OAK GROVE AV/CRANE ST	0	0	0	Parked Motor Vehicle	22107 CVC - Unsafe lane change	Side swipe
18-568	02/23/2018	600	OAK GROVE AV/CRANE ST	0	0	0	Parked Motor Vehicle	22107 CVC - Unsafe lane change	Side swipe
18-675	03/12/2018	1637	OAK GROVE AV/CRANE ST	1	0	0	Bicycle	22350 CVC - Speeding	Other
18-718	3/13/2018	1100	EL CAMINO REAL/OAK GROVE AV	0	0	0	Other Motor Vehicle	22107 CVC - Unsafe lane change	Rear end
18-809	3/14/2018	1830	EL CAMINO REAL/OAK GROVE AV	0	0	0	Other Motor Vehicle	22350 CVC - Speeding	Rear end
18-766	03/21/2018	1333	1225 CRANE ST	0	0	0	Other Motor Vehicle	22106 CVC - Unsafe backing	Side swipe
18-781	3/23/2018	1230	OAK GROVE AV/LAUREL ST	1	0	0	Bicycle	22350 CVC - Speeding	Other
18-823	3/28/2018	1529	OAK GROVE AV/EL CAMINO REAL	0	0	0	Other Motor Vehicle	22107 CVC - Unsafe lane change	Side swipe
18-890	04/05/2018	1500	OAK GROVE AV/CRANE ST	0	0	0	Other Motor Vehicle	22107 CVC - Unsafe lane change	Side swipe
18-1000	04/20/2018	1759	CRANE ST/MENLO AV	1	0	0	Other Motor Vehicle	22350 CVC - Speeding	Rear end
18-1008	4/21/2018	1800	LAUREL ST/OAK GROVE AV	0	0	0	Other Motor Vehicle	21453(A) CVC - Stopped over limit line	Broadside
18-1033	04/24/2018	918	CRANE ST/SANTA CRUZ AV	0	0	0	Other Motor Vehicle	22107 CVC - Unsafe lane change	Side swipe
18-1429	4/29/2018	1300	OAK GROVE AV/EL CAMINO REAL	0	0	0	Other Motor Vehicle	21750 CVC - Pass other than on the left	Rear end
18-1311	5/22/2018	1809	EL CAMINO REAL/OAK GROVE AV	2	0	0	Other Motor Vehicle	22350 CVC - Speeding	Rear end
18-1401	06/01/2018	0	CRANE ST/VALPARAISO AV	1	0	0	Pedestrian	22107 CVC - Unsafe lane change	Vehicle-Pedestrian

Public Outreach

Public Survey Questions

The following images show the intercept survey. The questions match the online survey.



City of Menlo Park

Oak Grove - University - Crane Bike Project
Intercept Survey

The Oak Grove - University - Crane Bicycle Improvement Project is a one-year trial installation of bicycle facilities along a route that connects schools, downtown, and residential neighborhoods. The proposed project includes buffered bike lanes on each side of the street on Oak Grove Avenue and University Drive, with a connecting bicycle route marked with sharrows on Crane Street, Santa Cruz Avenue, and Live Oak Avenue. Your responses will be collected and summarized along with other data collection efforts for City Council to determine if the new bicycle lanes will be a temporary or permanent feature of downtown Menlo Park.

1. What is your connection to Menlo Park? (check all that apply)

o Have school-aged children in Menlo Park
o Live in Menlo Park (skip to #2)
o Work in Menlo Park (skip to #2)
o Go to school in Menlo Park (skip to #2)
o Own a business in Menlo Park (skip to #2)
o Shop in Menlo Park (skip to #2)
o Other (skip to #2)

1a. How often do your children bicycle in Menlo Park?

o 1- 2 times a week
o 3-5 times a week
o 6 or more times a week
o 1-2 times a month
o Never (skip to #2)

1b. Have your children bicycled more frequently after the implementation of the Oak Grove bicycle project?

o No, less
o No, same
o Yes

1c. What is your child(ren)'s primary destination when using the new bicycle lanes? (check all that apply)

o School
o Downtown
o Church
o Park
o Other _____

2. How often do you bicycle in Menlo Park?

o 1- 2 times a week
o 3-5 times a week
o 6 or more times a week
o 1-2 times a month
o Never (skip to #3)

2a. Have you bicycled more frequently after the implementation of the Oak Grove bicycle project?

o No, less
o No, same
o Yes

2b. What is your primary destination(s) when using the new bicycle lanes? (check all that apply)

o School
o Downtown
o Church
o Park
o Other _____
o Work / Commute
o Transit

2c. Do you feel that bicycling in Menlo Park is more comfortable after implementation of the Oak Grove bicycle project?

o Unsure
o Much more comfortable
o Slightly more comfortable
o No difference
o Slightly less comfortable
o Much less comfortable

2d. Have you changed the bicycling route you take after implementation of the Oak Grove bicycle project?

o No
o Yes (if yes, how did it change?) _____

3. Do you feel that driving in Menlo Park is more comfortable when bicycles are separated from motor vehicle traffic through the use of a designated bicycle lane?

o No, less
o No, same
o Yes

4. Do you find it more or less difficult to find a motor vehicle parking space following implementation of the Oak Grove bicycle project along_____?

4a. [...] Downtown Menlo Park

o Not applicable
o Much more difficult
o Somewhat more difficult
o No difference
o Somewhat less difficult
o Much less difficult

See back for more questions →

4b. [...] University Drive

- o Not applicable
- o Much more difficult
- o Somewhat more difficult
- o No difference
- o Somewhat less difficult
- o Much less difficult

4c. [...] Oak Grove Avenue

- o Not applicable
- o Much more difficult
- o Somewhat more difficult
- o No difference
- o Somewhat less difficult
- o Much less difficult

5. Do you find it more or less difficult to find a bicycle parking space in downtown Menlo Park following implementation of the Oak Grove bicycle project?

- o Not applicable
- o Much more difficult
- o Somewhat more difficult
- o No difference
- o Somewhat less difficult
- o Much less difficult

6. Are you in favor of the permanent addition of bicycle lanes on Oak Grove Avenue?

- o Not sure (skip to #7)
- o Yes (skip to #7)
- o No

6a. What is your primary reason for not being in favor?

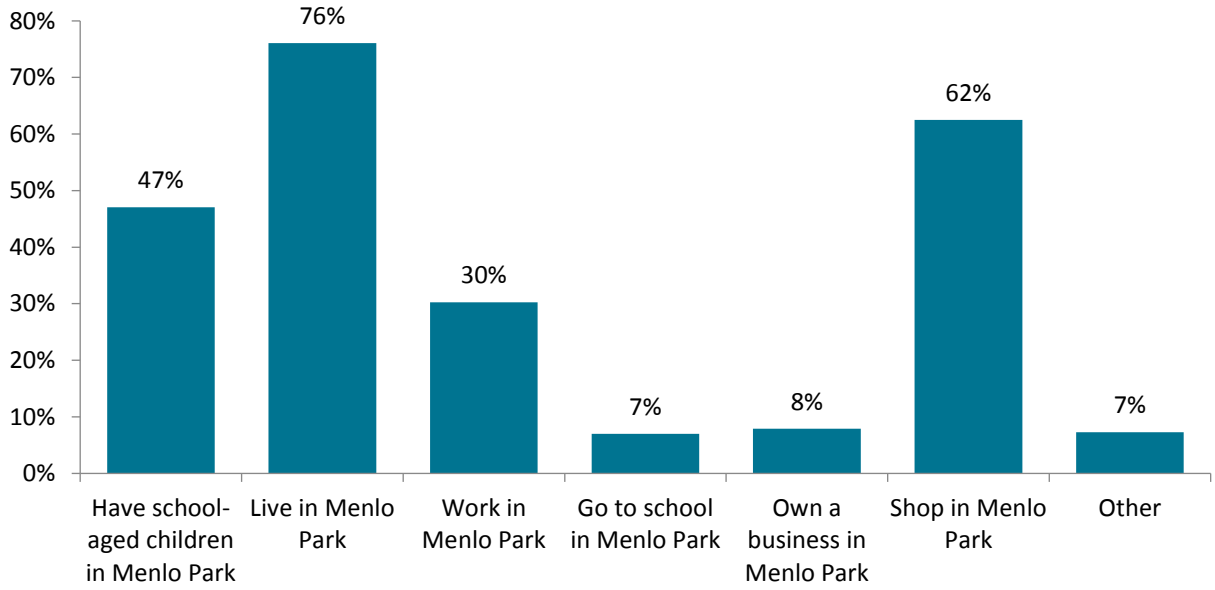
7. Age

- o Prefer not to answer
- o Under 20 years
- o 20 – 29 years
- o 30 – 39 years
- o 40 to 49 years
- o 50 to 59 years
- o 60 to 69 years
- o Over 69 years

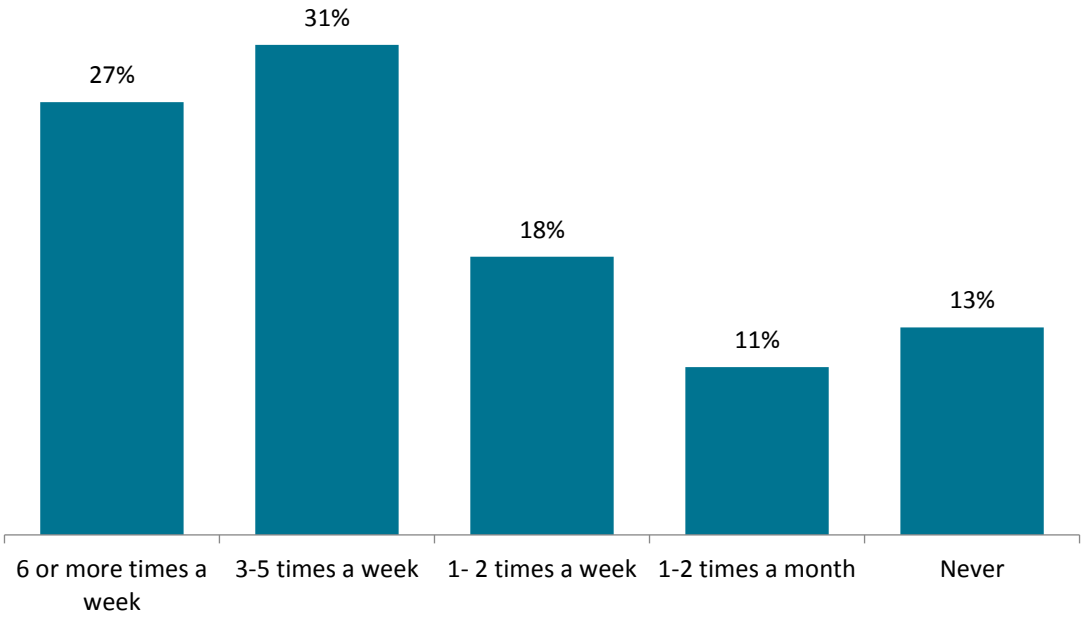
Feel free to take the survey online at *www.menlopark.org/oakgrove*
Survey will close May 18, 2018.

Public Survey Responses

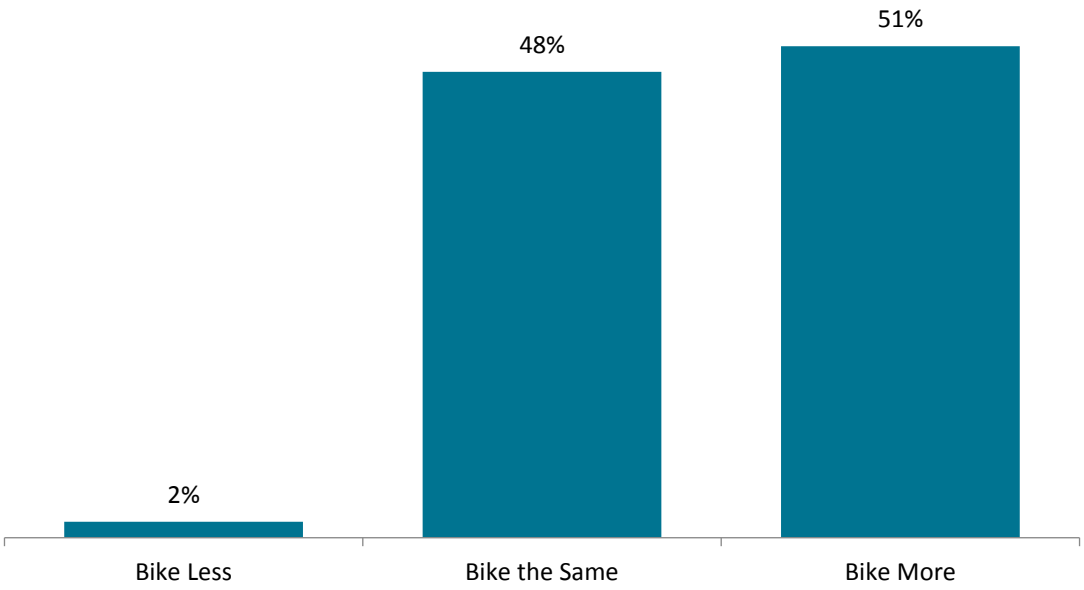
What is your connection to Menlo Park? (check all that apply)



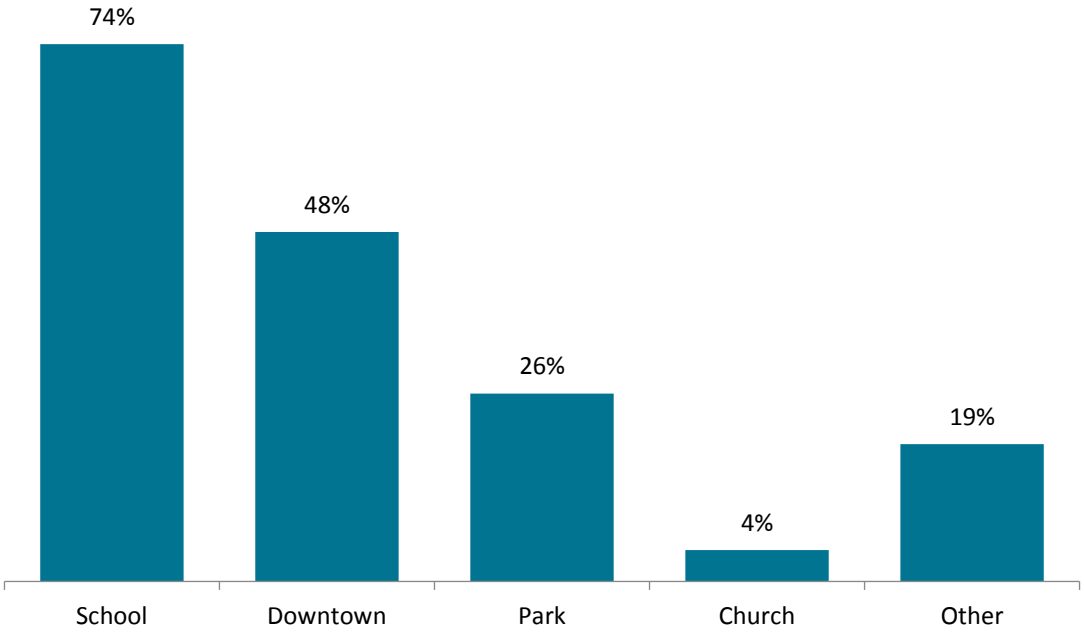
How often do your children bicycle in Menlo Park?



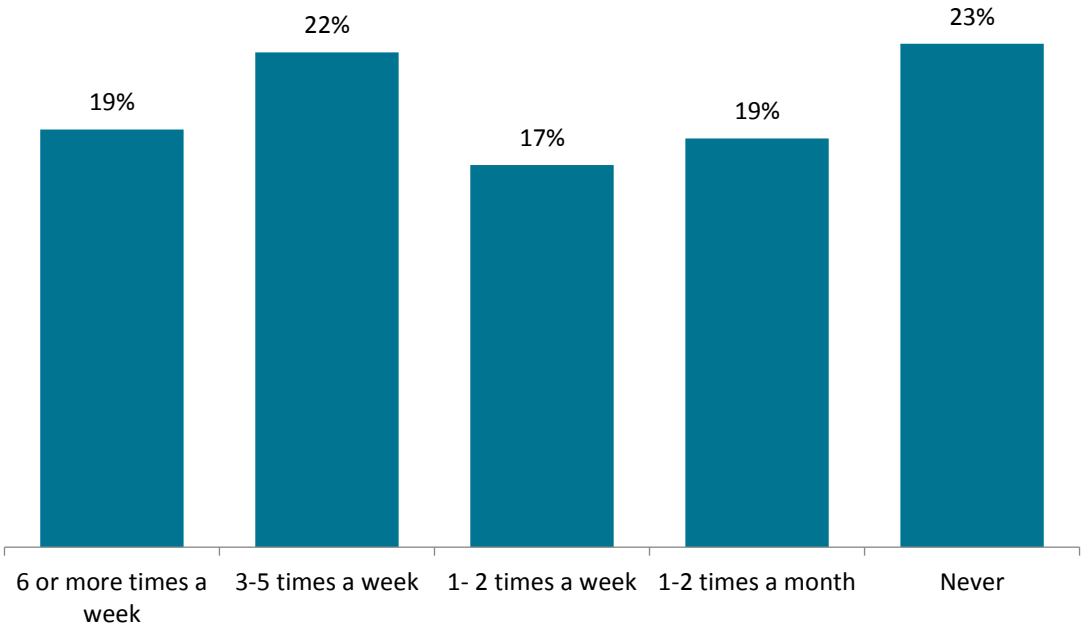
Have your children bicycled more frequently after the implementation of the Oak Grove bicycle project?



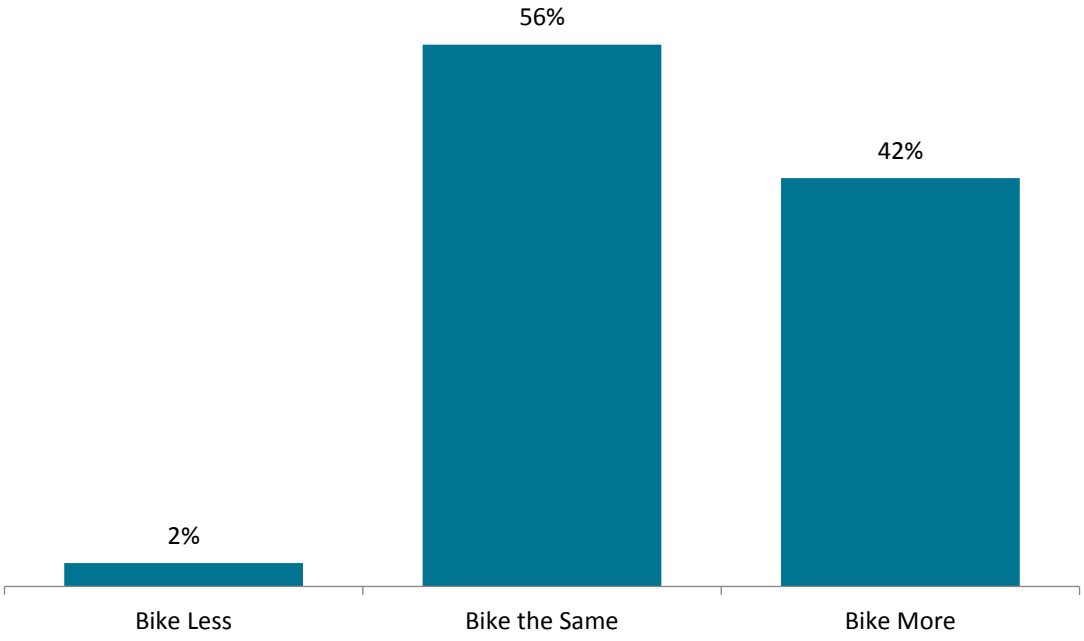
What is your child(rens)'s primary destination when using the new bicycle lanes? (check all that apply)



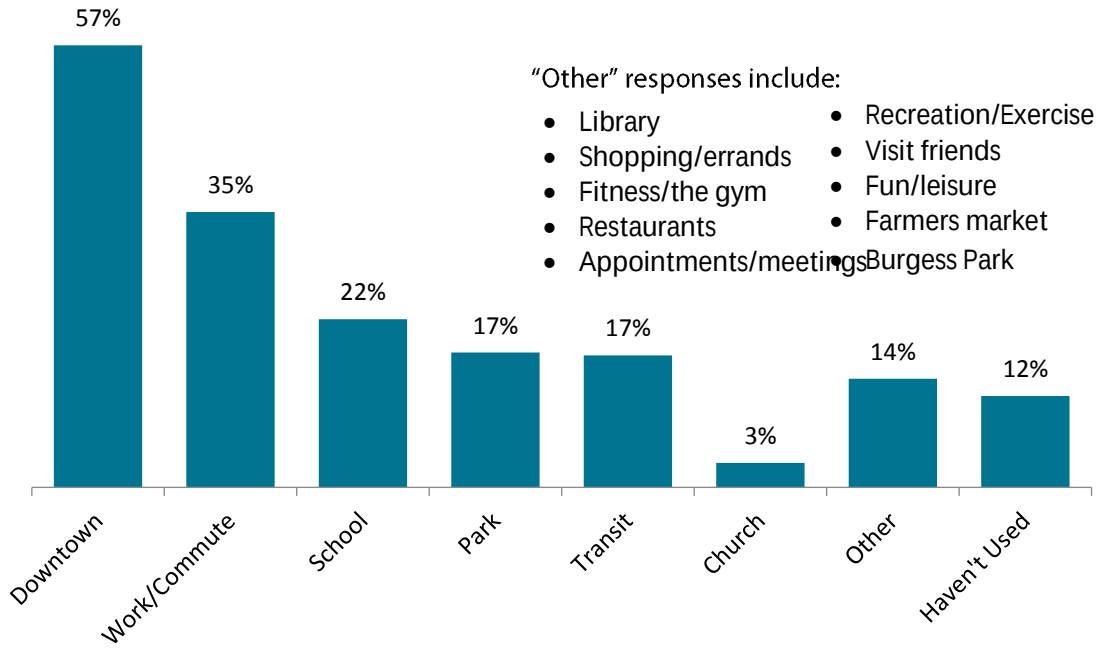
How often do you bicycle in Menlo Park?



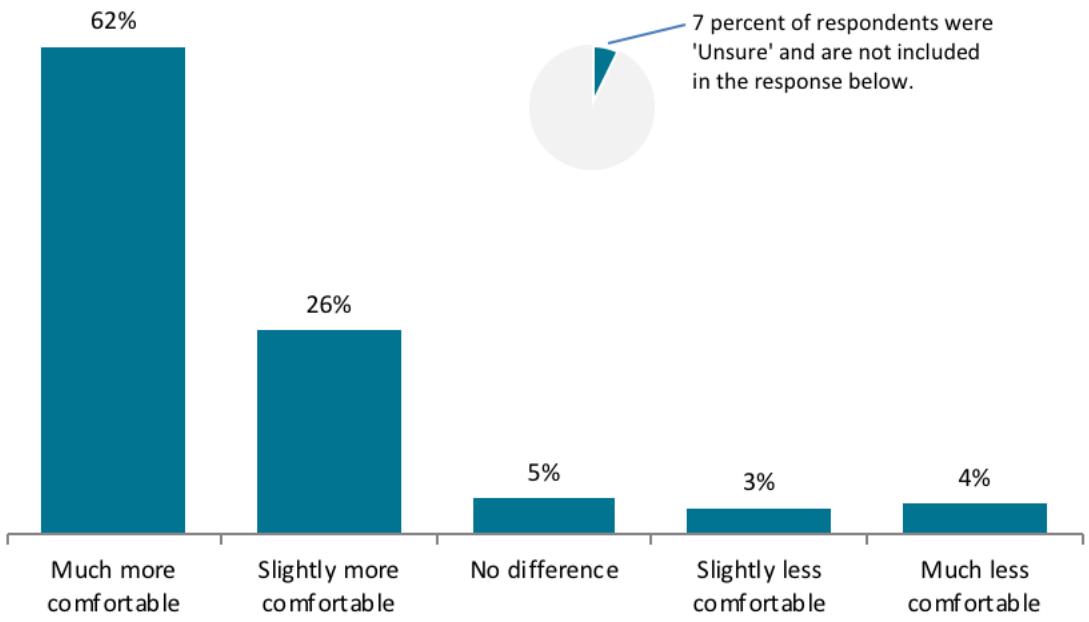
Have you bicycled more frequently after the implementation of the Oak Grove bicycle project?



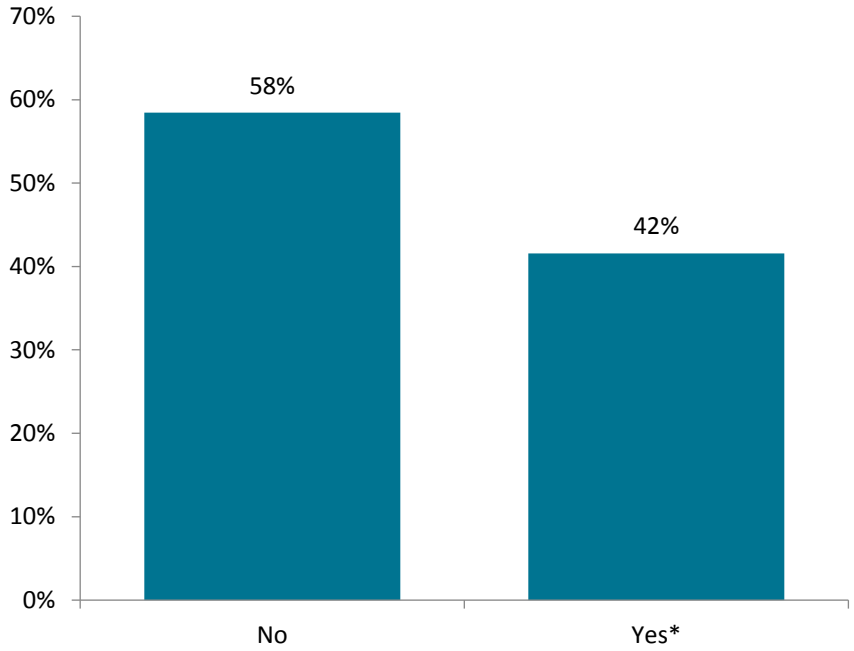
What is your primary destination(s) when using the new bicycle lanes? (check all that apply)



Do you feel that bicycling in Menlo Park is more comfortable following implementation of the Oak Grove bicycle project?



Have you changed the bicycling route you take after implementation of the Oak Grove bicycle project?

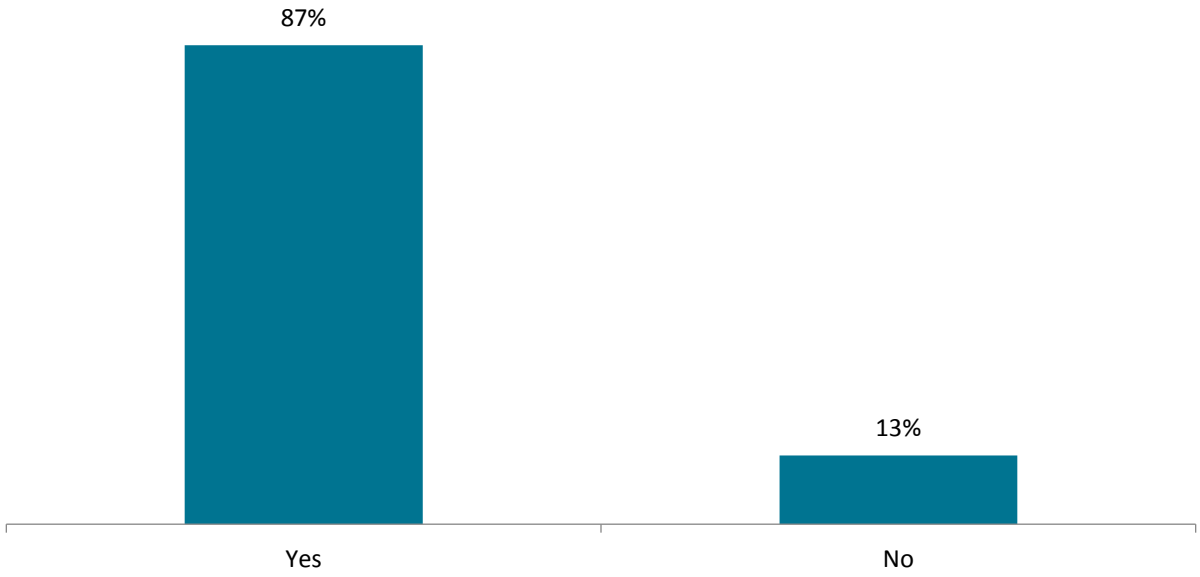


* Respondents no longer use:

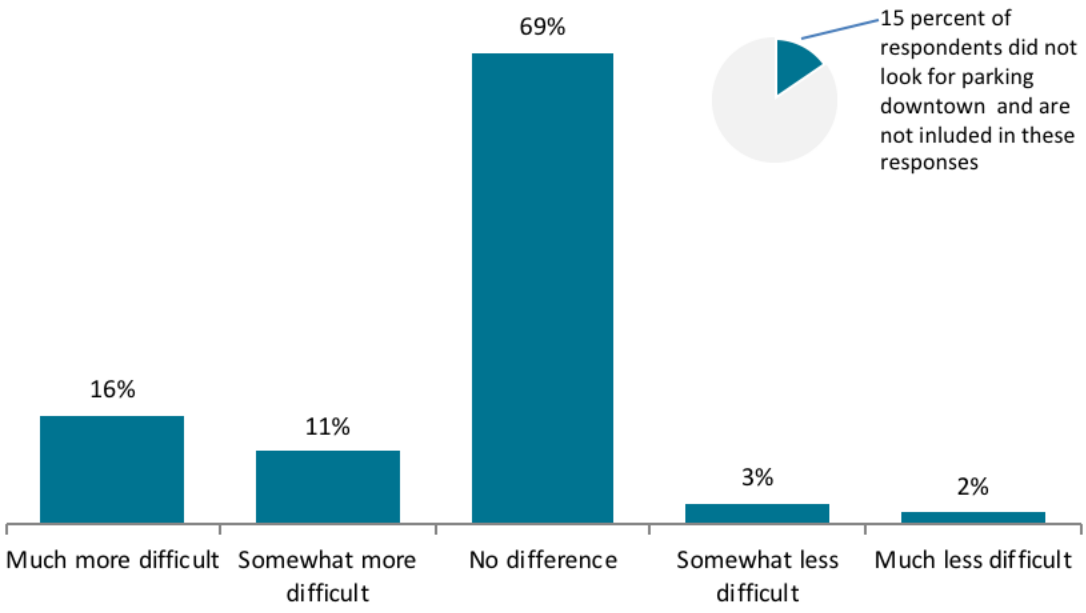
- Menlo College (as a cut-through)
- Valparaiso Street
- Laurel Street
- El Camino Real
- Menlo Avenue
- Ravenswood Avenue
- Ringwood Avenue
- Glenwood Avenue
- Santa Cruz Avenue
- Encinal Avenue
- Marsh Road
- Main Street

Note: Some respondents report avoiding the new routes on Oak Grove Avenue and University Drive.

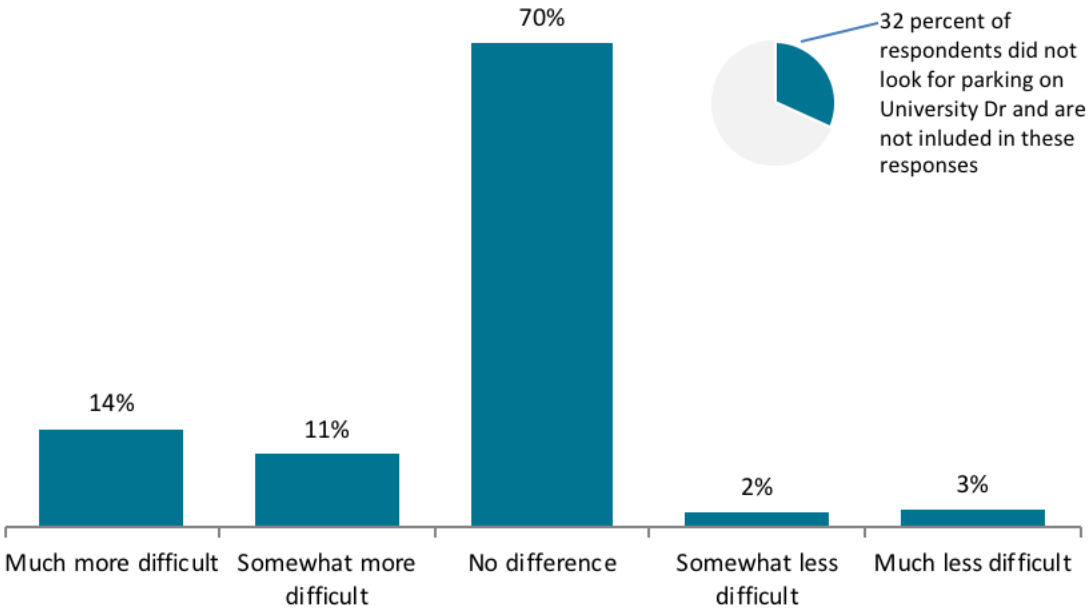
Do you feel that driving in Menlo Park is more comfortable when bicycles are separated from motor vehicle traffic through the use of a designated bicycle lane?



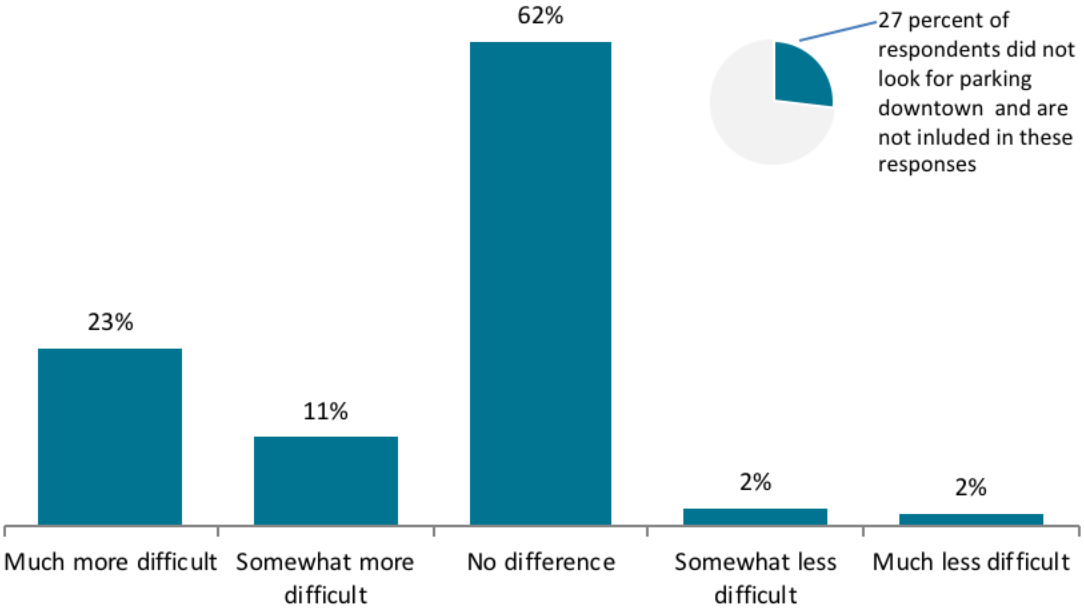
Do you find it more or less difficult to find a motor vehicle parking space following implementation of the Oak Grove bicycle project in downtown Menlo Park?



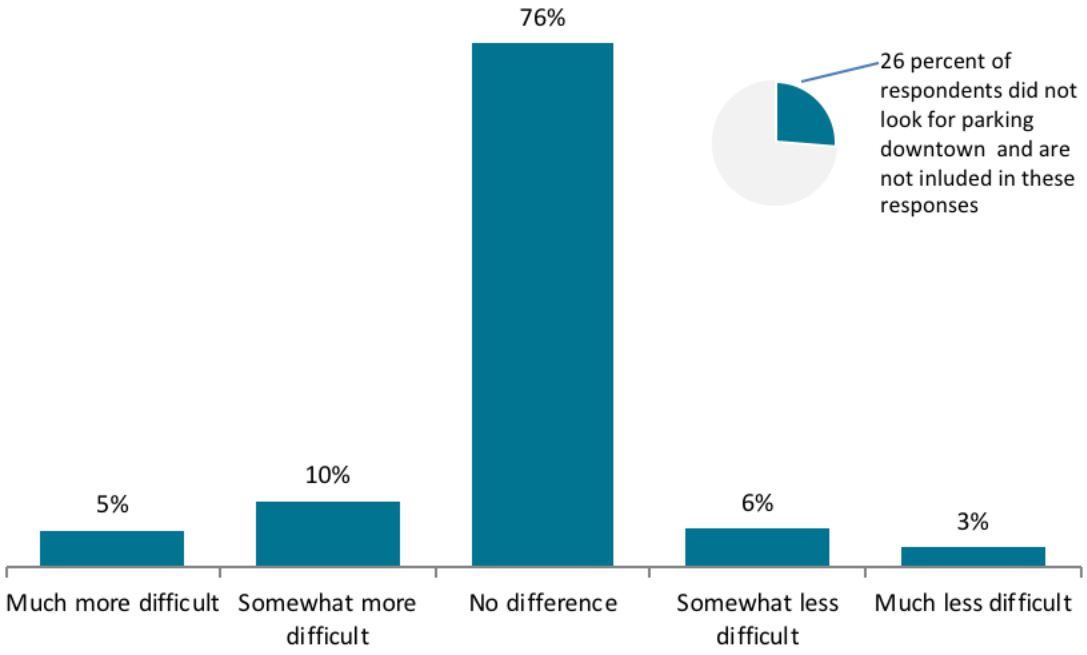
Do you find it more or less difficult to find a motor vehicle parking space following implementation of the Oak Grove bicycle project along University Drive?



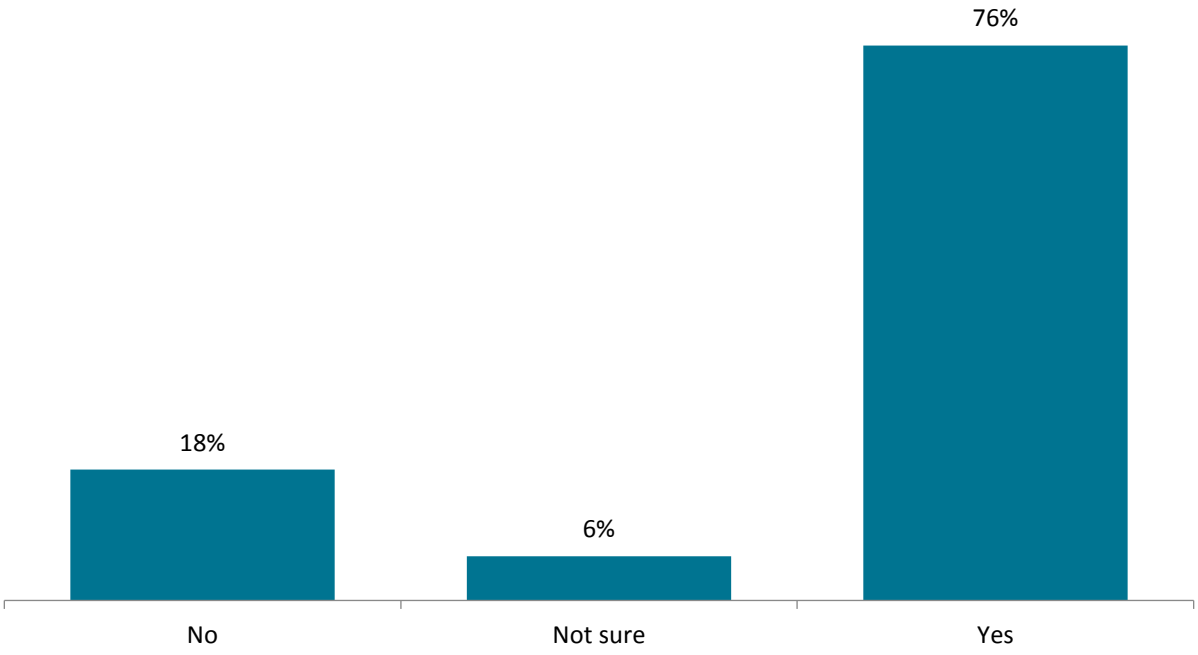
Do you find it more or less difficult to find a motor vehicle parking space following implementation of the Oak Grove bicycle project along Oak Grove Avenue?



Do you find it more or less difficult to find a bicycle parking space in downtown Menlo Park following implementation of the Oak Grove bicycle project?



Are you in favor of the permanent addition of bicycle lanes on Oak Grove Avenue?



What is your primary reason for not being in favor of bicycle lanes on Oak Grove Avenue?

There were 104 responses to this question. Please note, similar responses were not repeated.

- "Bicyclists don't pay attention whether there is or is not a bike lane… Need Biking education!"
- "Added traffic congestion due to lane obstruction and parking limitations"

- "It is one of the few roads that allows residents to travel from east to west by car (downtown) during peak hours."
- "Too many parking spaces have been taken because of the project."
- "Squeezes cars wanting right turn (on red) out of curb lane at ECR & Laurel causing more congestion on Oak Grove"
- "Keep bicycles off streets. Bicyclists are unsafe. Running stop signs. They should be kept off roads"
- "The way they are drawn is dangerous and confusing as they cut in and out of the drivers lane."
- "They are completely incomprehensible and of no help at all, just male cyclists obey the law"
- "Should be on another street, like Middle."
- "I see no bikes using the bike lanes"
- "Over reach by the city government. Leave bicyclists alone…they know how to maneuver within traffic."
- "More complicated traffic flow"
- "It is not the most logical route to use for many bikers."
- "They impose EXTREME DANGER to both bicycle riders and car drivers!!!!! This past year has been horrific! Kids using this road DO NOT ride tandem, but side by side sometimes 4 at a time stretching out into the car lanes, socializing, laughing and trying to beat each other in speed! These kids ARE NOT PAYING ATTENTION!!! You have created a very very DANGEROUS SITUATION FOR ALL INVOLVED. MOST ASININE idea to date. Very poorly thought out with no consideration of the heavy car traffic on Oak Grove."
- "Slows down car traffic on Middlefield in the morning (going to school - nativity school 8am)"
- "NO stopping is in effect 24/5 days per week. It prevents direct access to my home. Since I'm handicapped, it makes life more difficult for me, also for other condo members who have young children."
- "It has taken too many parking places away. I also have witnessed very careless bicycling by all ages since the lanes were installed. It's almost as though since there is now a designated lane , the bikers feel they can do whatever they like. I have noticed a lot more red light runners by bikers since the new lanes were placed."
- "What I don't like is how the street zig zags back and forth between University Drive and El Camino Real with the bike lanes in place. It is not safe and bicyclists are more in the main road because there is not enough room to have parking, a bike lane and then the auto lane. Oak Grove is not wide enough for that."
- "Prohibiting parking at all times is a poor usage of space. The city should allow parking at specific times even if it is time-limited. For example, most middle school students are in school between 8 AM and 2 PM. Also, few bicyclists are riding after sundown."
- "I have children at Nativity School, and parking and accessing the school safely can be very difficult and frustrating. Parking is very limited already, so I wish there was a better way to implement bicycle safety without affecting our school accessibility."
- "The students of Hillview bike sometime 3 across while driving up Santa Cruz Ave. I have seen many near misses as I drive that way every morning. I have also seen students cut across El Camino on the wrong side of the street and almost get hit by oncoming cars who had a green light and wouldn't expect a student to be traveling the wrong way in the cross walk. Driving up Oak Grove has become harder and parking along Oak Grove is now non existent."

- "I live on Oak Grove Avenue, but have no children. It's not a question of whether bike lanes are BETTER than parking spaces but about the best use for the general public. This includes all taxpayers in the state, as they contribute to our roads. To me, social equity dictates that, at the very least, we make parking in Menlo Park easy. We've added way more jobs than housing over the last decade here, so we are forcing people to commute long distances. We can at least make their parking easy. This is for workers in downtown MP. Also, if high school students want to drive to work, I'd like to let them."
- "Oak grove is fine. It's the University Drive project that has turned the neighborhoods we all pay an exorbitant property tax for into parking plazas. Cars constantly coming and going with no regard for the neighborhood kids that want to play in front of their houses together. Tenants buy parking passes which may be an extra perk for the city but it shows no regard for the property owners, specifically Alice Lane. There are enough multi unit complexes on that street alone without the overflow from the university drive apartments. The bike lane on university does not even provide the sufficient distance from the riders about 80% of the time. If supporting oak groves project means university drive stays. Resounding NO."
- "Painted lines on roads do not protect bike riders from collisions with motor vehicles. And only one of these markings are even in the California Vehicle Code, and that is the green paint for the 3-foot distance from bicycles that motor vehicles are required to maintain."
- "Pine Street is a mess with students from MA (who do not ride bikes) parking. Ecology cannot get down the street let alone a fire truck responding to a 911. Bike traffic on Oak Grove is minimal (I know, I walk it every day). People who live on Oak Grove and Pine and have owned their homes for decades are greatly inconvenience as are their guest and service people."
- "I think they need to be tweaked a bit more before becoming permanent. Or the public needs to be educated on how to approach and enter and exit them when making right hand turns"
- "You cannot keep the bicycle lanes properly swept, therefore there is debris in the bike lane, therefore bikes swerve out of the bike lane to avoid debris. They just aren't necessary."

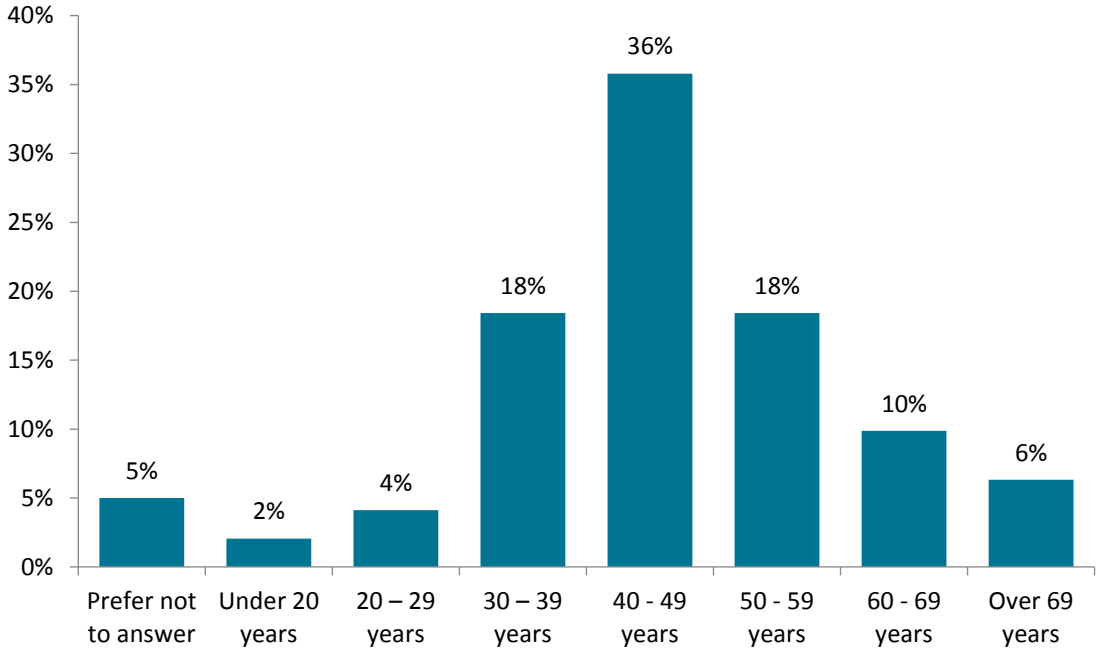
Do you have any other comments about the Oak Grove Bicycle Project?

There were 96 responses to this question. Please note, similar responses and responses not included in the previous question were not repeated.

- "The intersection at Bay and Ringwood is unsafe for bicyclists and pedestrians. We would bike more if it were safe."
- "the deadline to participate in this survey was quite last minute. I learned about it from the Menlo Park Almanac. -With all of the construction traffic at Oak Grove and Alma, the data collected from the Study is not valid. It is not typical to have so much heavy machinery on Oak Grove Avenue, it was a very abnormal year. The data is not representative of the actual vehicle and bike traffic, I am lived in the area for 25 years."
- "Don't make anything permanent until another lengthy trial when construction is finished."
- "since you are just going to be removing this rout when you block off oak grove and Glenwood at the tracks why even bother. I would support an underpass for cars and bicycles at those two intersections but they don't need to be raised in the first place since there is nothing wrong with them and they aren't dangerous."

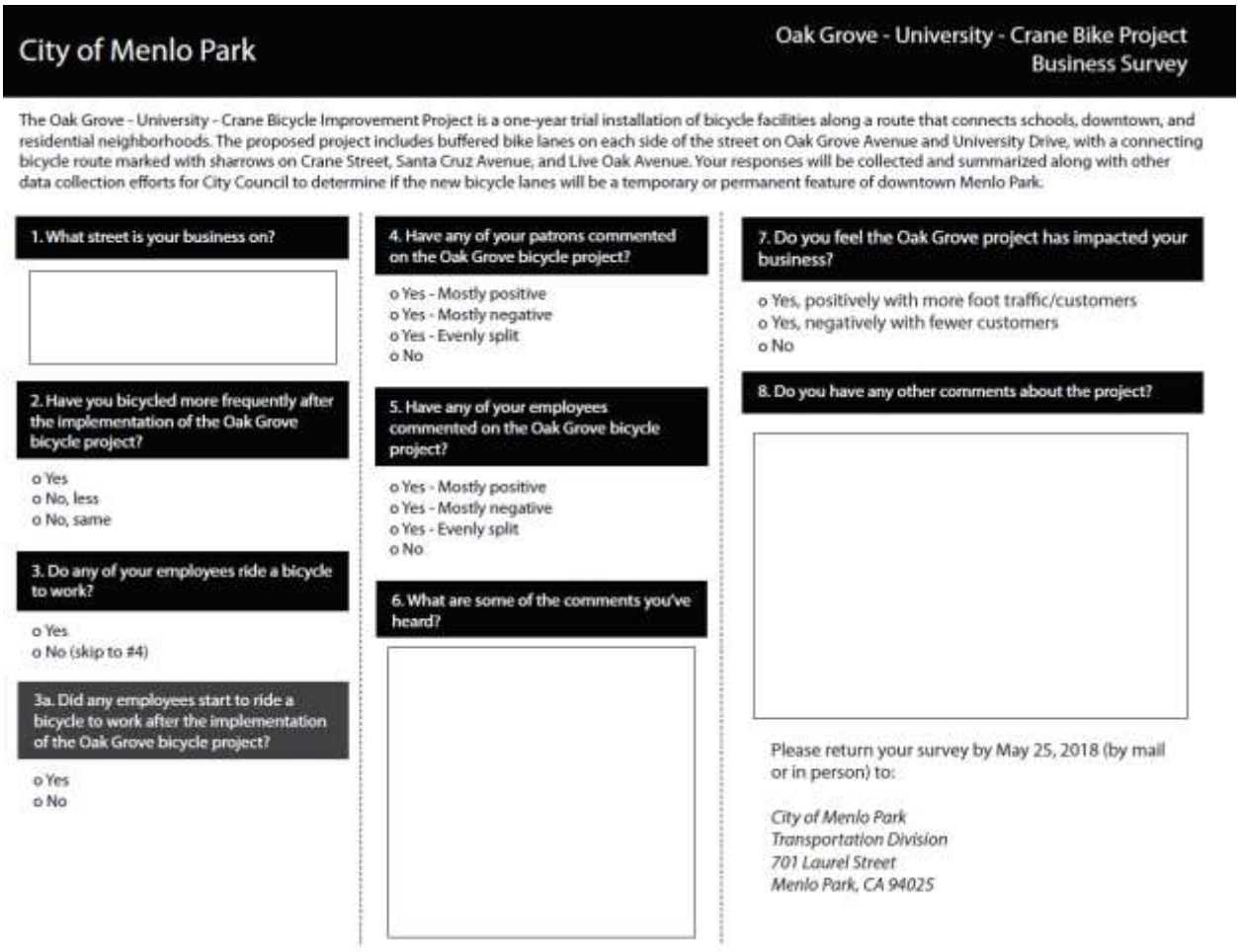
- "There does not appear to be enforcement of bicyclists running lights at ECR, crossing the intersection against turn lights."
- "I thought that 888 Oak Grove would been an example of why the city should demand the developers must have enough parking for their development."
- "I bicycle a lot downtown. It is the bulb-outs on Santa Cruz Avenue that scare me! Get rid of that street interference and you will make me more secure as a cyclist."
- "I think the City should remove the buffer for the bike lanes and restore parking on the south side of the street along Oak Grove. Also, please resurface the street (microsurface or slurry seal) prior to making the improvements permanent. The shadow lines from old striping is confusing for drivers and bicyclist."
- "A waste of money, which should be spent on school buses and public transit."

Age



Business Survey Questions

The following image shows the survey distributed to business owners within the downtown area. Business owners were encouraged to return the survey in person or by mailing it to City Hall.



City of Menlo Park

Oak Grove - University - Crane Bike Project
Business Survey

The Oak Grove - University - Crane Bicycle Improvement Project is a one-year trial installation of bicycle facilities along a route that connects schools, downtown, and residential neighborhoods. The proposed project includes buffered bike lanes on each side of the street on Oak Grove Avenue and University Drive, with a connecting bicycle route marked with sharrows on Crane Street, Santa Cruz Avenue, and Live Oak Avenue. Your responses will be collected and summarized along with other data collection efforts for City Council to determine if the new bicycle lanes will be a temporary or permanent feature of downtown Menlo Park.

1. What street is your business on?

2. Have you bicycled more frequently after the implementation of the Oak Grove bicycle project?

o Yes
o No, less
o No, same

3. Do any of your employees ride a bicycle to work?

o Yes
o No (skip to #4)

3a. Did any employees start to ride a bicycle to work after the implementation of the Oak Grove bicycle project?

o Yes
o No

4. Have any of your patrons commented on the Oak Grove bicycle project?

o Yes - Mostly positive
o Yes - Mostly negative
o Yes - Evenly split
o No

5. Have any of your employees commented on the Oak Grove bicycle project?

o Yes - Mostly positive
o Yes - Mostly negative
o Yes - Evenly split
o No

6. What are some of the comments you've heard?

7. Do you feel the Oak Grove project has impacted your business?

o Yes, positively with more foot traffic/customers
o Yes, negatively with fewer customers
o No

8. Do you have any other comments about the project?

Please return your survey by May 25, 2018 (by mail or in person) to:

City of Menlo Park
Transportation Division
701 Laurel Street
Menlo Park, CA 94025

Business Survey Responses

Nine business surveys were returned to City staff. All nine indicated they were located along Santa Cruz Avenue. Four respondents report that if patrons comment on the Oak Grove bicycle project, the perception is mostly negative. Most relevant comments heard by the patrons were about the lack of on-street parking spaces. Other comments include:

- "Too much construction"
- "My customers panic about parking in our city"
- "Would like to see reflective paint on all bike lanes for night drivers…"
- "[Bicyclists] cut in front of you without consideration"
- "[Bicyclists] keep going without looking"

Two respondents claim the project impacted their business negatively with fewer customers. Six claim the project has not impacted their business, and one did not respond to that question. The completed surveys are attached to the end of this appendix.

Emailed/NextDoor Comments

To the City of Menlo Park:
The Oak Grove Bicycle Project with its new configuration of bike lanes, parking spaces and door areas limits accessibility to the US Post Office by eliminating all parking spaces across the street from the PO. Finding a parking space near any business or service in the city is already a problem. Why make it worse?

Sincerely,

[name omitted for privacy]

Hello Kristiann,
I just completed the online survey for the bike project and was hoping there would be an area where I could add this comment.
I live on Oak Lane just off of University Drive. (Oak Lane is a half block from the corner of University Drive and Menlo Ave (toward Middle Avenue.) I ride my bike into Menlo Park at least once or more per day, seven days a week. I do ride your bike route including over and down Oak Grove. I think the addition of a dedicated bike lane is a great idea and I fully support it.
One thing I would LOVE to see changed is to delete the parking spaces on University Drive between Menlo Avenue and Oak Lane. This small 1/2 - 3/4 block section is extremely dangerous for bikes to ride through as there is no room for bikes and parking and a lane of traffic going in each direction. Try it sometime. You'll see what I'm talking about. The drivers are vicious and are so irritated to have to stay behind a bike. I've been nearly hit several times on my bike since people actually pass me which I was almost knocked over by a vehicle side mirror more than once. Very scary.
The city is proposing deleting a lot of parking on University Drive already with the bike project, why not extend the no parking through the section I just mentioned above? I really wish you or someone involved in this project would take a closer look at this dangerous small section of University Drive.
When I leave on Oak Lane and turn onto University Drive with either a bike or my car, I have to practically go half way out into the oncoming traffic lane to see if I can pull out because the parked cars on University Drive are seriously blocking my view.
I would even be interested in meeting with you or someone else who is working on this project at this dangerous area to discuss further if necessary. Or if you just want to talk on the phone to discuss. That works for me too.
This 1/2 - 3/4 block area on University Drive is adjacent to where you are proposing no parking now because of this bike project but a slight extension of no parking on University Drive would make it even more safe for everyone.

Thank you for considering and reading my email.

Kind regards,

[name omitted for privacy]

I'm glad you included some car/parking questions in this survey. I completely understand that the council wants to turn MP into a bicycle town, but that is unrealistic and we need to cater to drivers as well. Bicyclists are just as or more so dangerous than drivers.

Just going into the post office or any of those medical bldgs. is a 15 min. parking ordeal now. Bring back parking on the north side of oak grove we of el Camino!

Thank you! I am a cyclist, pedestrians and an automobile driver. I feel much safer not because of the bike lanes. I usually park in the parking lots. I feel it was never easy to find a parking spot on the streets. Thank you for thinking of everyone and providing safe access for all types of transportation and town folk including those walking!!! The town is for everyone!

One aspect of the project that was not targeted in the questions was the implementation of the Oak Grove/Laurel intersection. As a cyclist and a driver, I find the lane markers misleading and unhelpful.

Standard California rules of the road (and honestly common sense best practice) indicate drivers should merge into the bike lane before making a right turn at an intersection. This deliberately safeguards against the infamous "right hook", in which a driver makes a right turn without looking and runs over a cyclist traveling in the bike lane to their right. A merge-first approach enforces the following: 1) the driver warns the cyclist of their intentions by a slow merge before a rapid turn (because really, we can't trust drivers to use signals these days) and 2) shuts down and blocks the bike lane to impatient cyclists that might try to creep up on the right side of a stopped car waiting to make a right on red. It's safer for everybody.

This is usually denoted by the solid line for the bike lane turning into a dotted line near the intersection to indicate that cars are now allowed to enter the bike lane. The Oak Grove/Laurel intersection is implemented with the opposite and, in fact, encourages unsafe practices for both drivers and cyclists.

And [name omitted for privacy], accident rate and injury statistics are not on your side regarding your assertion that "bicyclists are just as or more so dangerous than drivers." That's is unrealistic.

Furthermore, cyclists pay just as much in property taxes toward as drivers toward local infrastructure, and I suspect (without research, I admit) that they've historically not gotten their fair share piece of the pie regarding allocation of infrastructure funds. Current lane rollout is more about rebalancing dormer infrastructure oversights than infringing on drivers' inherent right-of-way.