Complete Streets Commission

REGULAR MEETING AGENDA

Date: 9/8/2021
Time: 7:00 p.m.
Regular Meeting Location: Zoom.us/join – ID# 959 6579 2741

NOVEL CORONAVIRUS, COVID-19, EMERGENCY ADVISORY NOTICE

On March 19, 2020, the Governor ordered a statewide stay-at-home order calling on all individuals living in the State of California to stay at home or at their place of residence to slow the spread of the COVID-19 virus. Additionally, the Governor has temporarily suspended certain requirements of the Brown Act. For the duration of the shelter in place order, the following public meeting protocols will apply.

Teleconference meeting: All members of the Complete Streets Commission, city staff, applicants, and members of the public will be participating by teleconference. To promote social distancing while allowing essential governmental functions to continue, the Governor has temporarily waived portions of the open meetings act and rules pertaining to teleconference meetings. This meeting is conducted in compliance with the Governor Executive Order N-25-20 issued March 12, 2020, and supplemental Executive Order N-29-20 issued March 17, 2020.

- How to participate in the meeting
  - Access the meeting real-time online at:
    Zoom.us/join – Meeting ID 959 6579 2741
  - Access the meeting real-time via telephone at:
    (669) 900-6833
    Meeting ID 959 6579 2741
    Press *9 to raise hand to speak

Subject to Change: Given the current public health emergency and the rapidly evolving federal, state, county and local orders, the format of this meeting may be altered or the meeting may be canceled. You may check on the status of the meeting by visiting the City's website www.menlopark.org. The instructions for logging on to the Zoom webinar and/or the access code is subject to change. If you have difficulty accessing the Zoom webinar, please check the latest online edition of the posted agenda for updated information (menlopark.org/agenda).

Regular Meeting (Zoom.us/join – ID# 959 6579 2741)

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 August 11, 2021 (Attachment)

E2. Adopt Resolution No. 2021-2 to remove one on-street parking space at 951 College Avenue to construct a retaining curb extension (Staff Report #21-007-CSC)

E3. Recommend the City Council adopt a resolution to remove the left turn restriction on Constitution Drive (Staff Report #21-008-CSC)

E4. Evaluate commission subcommittees to support City Council priorities

F. Informational Items

F1. Update on major project status

G. Committee/Subcommittee Reports

G1. Update from Climate Action Plan Subcommittee (Jensen/Levin)

G2. Update from Downtown Access and Parking Subcommittee (Altman/Behroozi/Cole)

G3. Update from Multimodal Metrics Subcommittee (Altman/Behroozi/Levin)

G4. Update from Multimodal Subcommittee (Cebrian/Levin)

G5. Update from Safe Routes to School Program Subcommittee (Behroozi/Cebrian/King/Lee)

G6. Update from Transportation Master Plan Implementation Subcommittee (Altman/Behroozi/Cebrian/Levin)

G7. Update from Zero Emission Subcommittee (Cromie)

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.

For appeal hearings, appellant and applicant shall each have 10 minutes for presentations.

If you challenge any of the items listed on this agenda in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the City of Menlo Park at, or prior to, the public hearing.

Any writing that is distributed to a majority of the City Council 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 by request by emailing the city clerk at jaherren@menlopark.org. Persons with disabilities, who require auxiliary aids or services in attending or participating in City Council meetings, may call the City Clerk's Office at 650-330-6620.

Agendas are posted in accordance with Government Code §54954.2(a) or §54956. Members of the public can view electronic agendas and staff reports by accessing the City website at menlopark.org/agenda and can receive email notification of agenda and staff report postings by subscribing to the "Notify Me" service at menlopark.org/notifyme. Agendas and staff reports may also be obtained by contacting City Clerk at 650-330-6620. (Posted: 9/2/2021)

Complete Streets Commission

REGULAR MEETING MINUTES – DRAFT

Date: 8/11/2021
Time: 7:00 p.m.
Special Meeting Location: Zoom.us/join – ID# 959 6579 2741

Regular Meeting (Zoom.us/join – ID# 959 6579 2741)

A. Call to Order

Chair Levin called the meeting to order at 7:04 p.m.

B. Roll Call

Present: Altman, Behroozi, Cebrian, Cole, Jensen, King, Lee, Levin
Absent: Cromie
Staff: Engineering Technician Patrick Palmer, Senior Transportation Engineer Kevin Chen

C. Reports and Announcements

Staff Chen reported on the Federal infrastructure bill.

The Commission received clarification on timelines related to updates on the Metropolitan Transportation Commission's (MTC) Dumbarton Forward initiatives and other regional efforts.

D. Public Comment

None.

E. Regular Business

E1. Approve the Complete Streets Commission regular meeting minutes of July 14, 2021 (Attachment)

ACTION: Motion and second (Cebrian/ Cole), to approve the Complete Streets Commission regular meeting minutes of July 14, 2021, passed 5-0 (Behroozi, King, and Lee abstained, Cromie absent).

E2. Recommend to City Council to approve permanent installation of Belle Haven neighborhood traffic Management Plan (Staff Report #21-005-CSC)

Staff Chen made the presentation (Attachment).

The Commission discussed individual element objectives, advantages and disadvantages, public outreach efforts, and additional recommendations.

ACTION: Motion and second (Levin/ Cebrian), to recommend that the City Council approve:

- Existing speed feedback signs on Chilco Street;
- Permanent roadway improvements on Ivy Drive and direct staff to explore installing a bike

pathway on the existing center medians;
- Signal improvements at the intersection of Willow Road and Newbridge Street;
- Permanent bulbouts on minor side streets along Newbridge Street;
- Pause permanent bulbout installation on Newbridge Street; and,
- Consider temporary measures on Newbridge Street that still reduce car speed and improve pedestrian safety without impacting bicycle travel,

passed 8-0 (Cromie absent)

E3. Re-evaluate and recommend to City Council to approve the Complete Streets Commission 2021-2022 work plan (Staff Report #21-006-CSC)

Staff Chen made the presentation (Attachment).

- Cecilia Taylor spoke in support of the Seamless Transit Principles and the Complete Streets Commission to bring Seamless Transit Principles to the City Council.
- Rachel Horst spoke in support of the Seamless Transit Principles.

The Commission discussed work plan priorities, schedules, and impact to City resources.

ACTION: Motion and second (Jensen/ Behroozi), to recommend to City Council to approve the Complete Streets Commission 2021-2022 work plan, passed 8-0 (Cromie absent)

E4. Evaluate commission subcommittees to support City Council priorities

Staff Chen introduced the item.

ACTION: Motion and second (Lee/ Cole) to select Commissioner King to the Safe Routes to School Program Subcommittee, passed 8-0 (Cromie absent).

F. Informational Items

F1. Update on major project status

Staff Chen provided an update on the 15 miles per hour school zones project and the transportation management association feasibility study.

G. Committee/Subcommittee Reports

G1. Update from Climate Action Plan Subcommittee

Chair Levin reported on the Intergovernmental Panel on Climate Change (IPCC) climate report.

G2. Update from Downtown Access and Parking Subcommittee

None.

G3. Update from Multimodal Metrics Subcommittee

None.

G4. Update from Multimodal Subcommittee

Chair Levin reported on MTC's Dumbarton Forward initiatives and the regional fare study and recommendations release schedules.

G5. Update from Safe Routes to School Program Subcommittee

Commissioner Lee reported on upcoming school start dates and the next task force meeting, scheduled for September 16, 2021 at 9 a.m.

G6. Update from Transportation Master Plan Implementation Subcommittee

Chair Levin reported on the need to coordinate a future meeting.

G7. Update from Zero Emission Subcommittee

None.

H. Adjournment

Chair Levin adjourned the meeting at 10:13 p.m.

Kevin Chen, Senior Transportation Engineer

NOVEL CORONAVIRUS, COVID-19, EMERGENCY ADVISORY NOTICE On March 19, 2020, the Governor ordered a statewide stay-at-home order calling on all individuals living in the State of California to stay at home or at their place of residence to slow the spread of the COVID-19 virus. Additionally, the Governor has temporarily suspended certain requirements of the Brown Act. For the duration of the shelter in place order, the following public meeting protocols will apply.

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BELLE HAVEN NEIGHBORHOOD TRAFFIC CALMING PLAN – PERMANENT INSTALLATION

Complete Streets Commission: August 11, 2021

AGENDA

- Plan development
- Current plan
- Implementation process
- Data collection
- Survey results
- Recommendations
- Next steps

PLAN DEVELOPMENT

- Oct. 2017
  - City Council approved Plan study
- Nov. - Dec. 2017
  - Collected data
- Jan. – Jun. 2018
  - Developed draft Plan
- Jul. – Dec. 2018
  - Conducted community meetings and outreach
- Apr/Aug. 2019
  - City Council approved original/revised Plan

* Project webpage: www.menlopark.org/bellehaventraffic

CURRENT PLAN

Right-of-Way Approval Authority

City

San Francisco Public Utilities Commission

Caltrans

EXISTING TRAFFIC CONTROL MEASURES

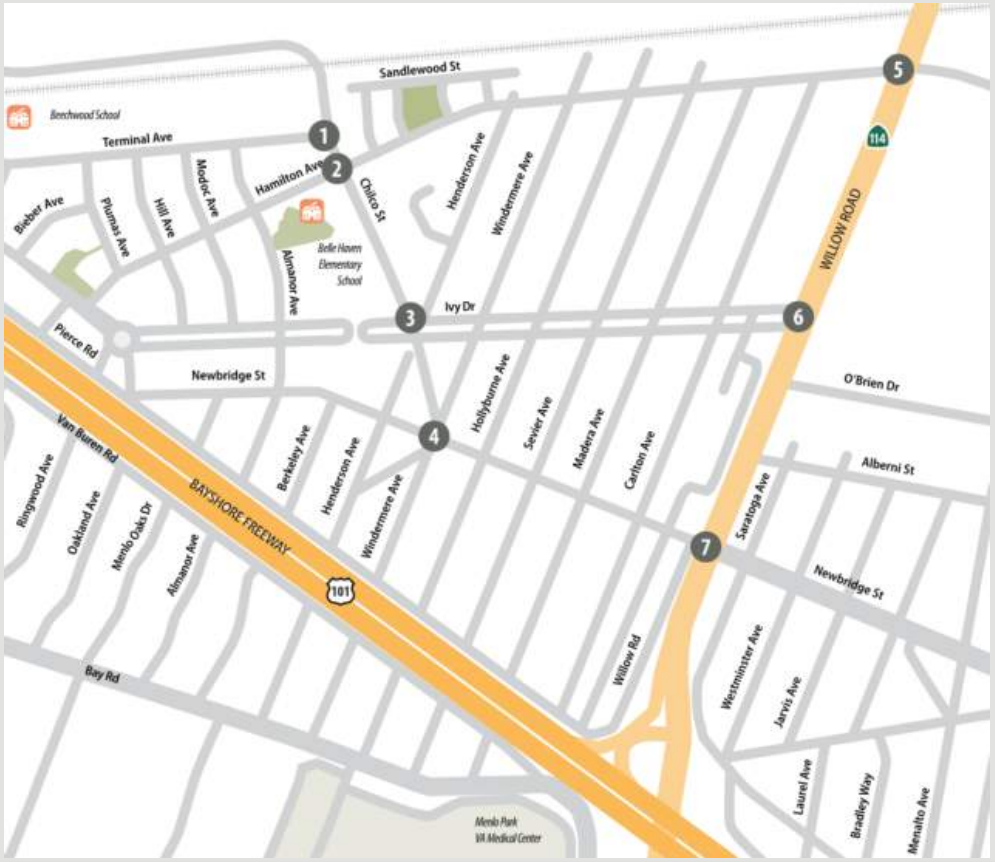
IMPLEMENTATION PROCESS

Standard Neighborhood Traffic Management Program Implementation Process		Adjusted Belle Haven Neighborhood Traffic Calming Plan Implementation Process
Trial Installation	<=>	June 2020 - Trial installed (City ROW)
Follow-up Survey	<=>	July 2021 - Conducted survey Apr 2021 - Collected data
CSC and City Council Review	<=>	***CSC in August 2021*** ***City Council in September 2021***
Permanent Installation	<=>	***Permanent City jurisdiction installation in 2022******

ROADWAY DATA COLLECTION

- Volumes:
  - 12% to 49% reduction
- Speeds:
  - ± 2 mph or less

INTERSECTION DATA COLLECTION



- Veh./ped./bike volumes:
  - Wide range of reduction

SURVEY RESULTS - RESPONDERS

- 94 responses (45 paper, 47 online, 1 phone, 1 email)
  - renters: 12% (11), owners: 76% (71), business: 2% (2), other 10% (10)
  - neighborhood residents/businesses: 65% (61) yes
  - Plan awareness: 51% (48) yes

SURVEY RESULTS – PLAN

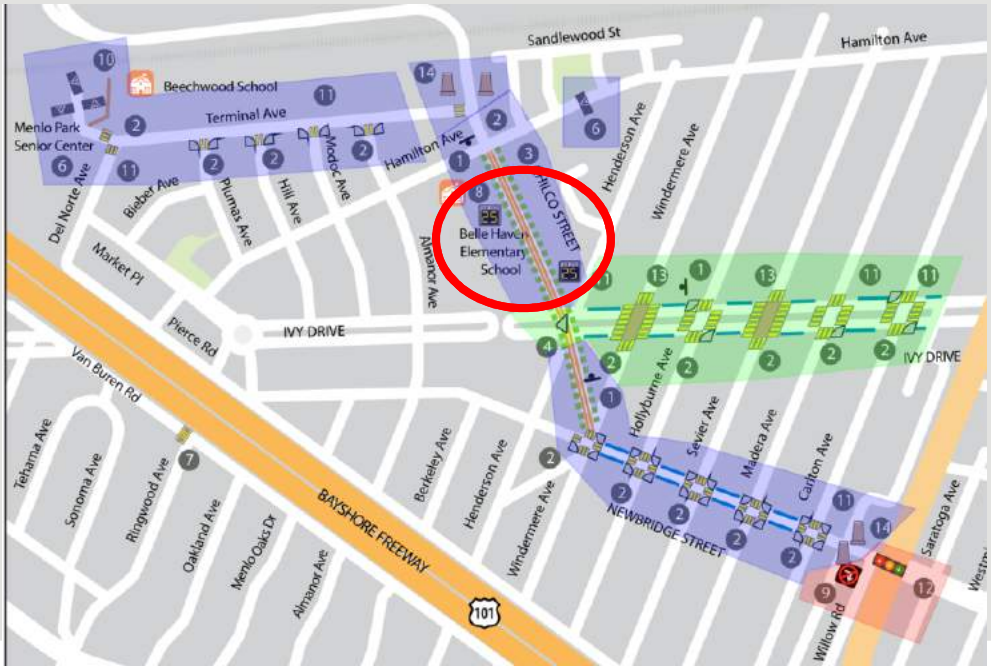
- Severity of cut-through traffic pre-pandemic (87):
  - Problematic 93%, not a problem 7%
- Trial impact to neighborhood (89):
  - Positive 57%, neutral 18%, negative 25%
- Driving patterns due to turn restrictions (91):
  - Impacted 34%, same 51%, do not drive 1%, uncertain 14%
- General circulation (90):
  - Beneficial 51%, neutral 36%, not beneficial 14%

SURVEY RESULTS – PLAN

Support	Opposition
Raises awareness for drivers, pedestrians, and bicyclists	Turn restrictions are inconvenient to residents
Fewer traffic violations	City need to address excess developments and traffic on major corridors.
Some reduction in speed with speed feedback signs	Difficult to attribute any benefits to the Plan given the ongoing Pandemic
Increased pedestrian safety	Reassign resource for more police enforcement and open up streets

SURVEY RESULTS – SPEED LIMIT SIGNS

- Speed reduction effectiveness (83)
  - increase: 4%, decrease: 24%, no change: 72%



SURVEY RESULTS – BULBOUTS AND GATEWAYS (CITY ROW)

- Permanent installation (82)
  - Support: 52%, oppose: 32%, neutral: 16%
- Given visible scuffmarks, designs should focus (89):
  - Pedestrian access/safety: 57%, vehicular access/maneuverability: 22%, neutral: 21%
- Bulbout design style: traditional vs. detached
  - Approximately equal support for each style

Traditional

Detached

SURVEY RESULTS – GATEWAYS (CITY ROW)

University Dr. @ Middle Ave.

SURVEY RESULTS – BULBOUTS AND GATEWAYS (CITY ROW)

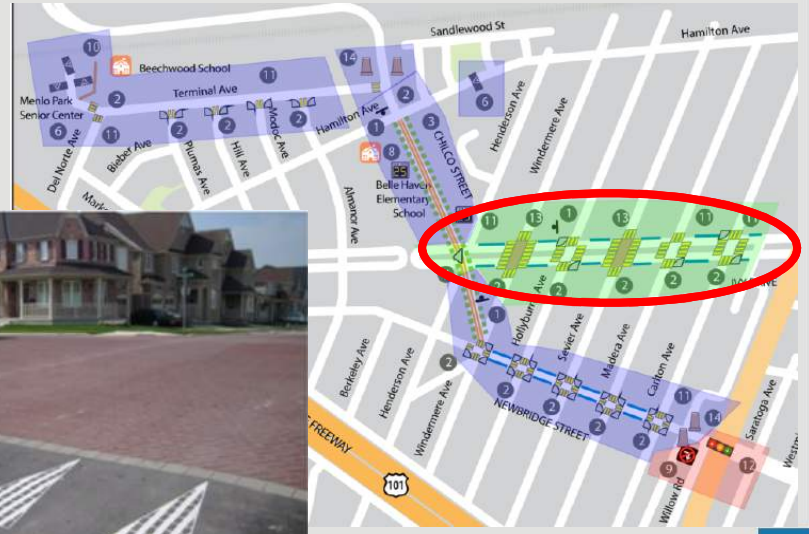
Support	Opposition
Reduced vehicular turning speed	Potential damage to turning vehicles
Raised driver awareness	Potential collision between turning vehicle and oncoming vehicles
Reduced pedestrian crossing distance	Did not reduce vehicular straightaway speed

SURVEY RESULTS – IVY DRIVE (SFPUC)

- Bulbouts, raised intersections, crosswalks/nose medians (84)
  - Support: 49%, Oppose: 26%, Neutral: 25%

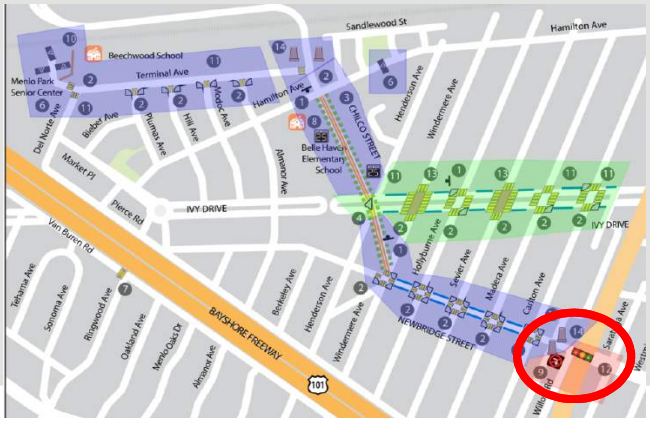
Crosswalk/nose median

Raised intersection



SURVEY RESULTS – WILLOW RD. / NEWBRIDGE ST. (CALTRANS)

- Reverse Newbridge St. signal phase sequence
- Convert Newbridge St. left turn to a protected phase
- Prohibit Newbridge St. right turn when Willow Rd. eastbound left is activated (84)
  - Modification awareness: 33% yes, 67% no
  - Concern: longer congestion on Newbridge St. during the morning peak hours



SURVEY RESULTS – ADDITIONAL CONSIDERATIONS

Considerations	
More police enforcement	Major corridor signal timing should be re-evaluated (i.e., Willow Rd., Bayfront Expwy.)
More bike lane improvements	The frontage road serving businesses and residents should be re-evaluated (i.e., double parking, street directionality, jaywalking)
More speed humps neighborhood wide	Keep the signal on Chilco St. at Instagram driveway green
More improvements for Pierce Rd.	Enforcement should address the issue of vehicles doing donuts at intersections

RECOMMENDATIONS (TO CITY COUNCIL)

- Speed feedback signs: retain permanent measure
- Temporary bulbouts and gateways (City ROW): proceed with permanent installation, after consultation on design constrains
- Ivy Drive: proceed SFPUC application for permanent installation
- Willow Rd. / Newbridge St. signal modifications: proceed Caltrans application for permanent installation
  - "Third modification": weekday 4 p.m. to 6 p.m.

NEXT STEPS

- Incorporate Commission feedback
- Seek City Council approval (Sept.)

THANK YOU

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COMPLETE STREETS COMMISSION 2021-2022 WORK PLAN

Complete Streets Commission: August 11, 2021

AGENDA

- Objective
- Process
- Requests
- Recommendations
- Actions
- Next steps

OBJECTIVE

- Advisory
  - Hear public testimony on projects
  - Provide project recommendations to City Council

- Support City Council annual work plan
  - “The Complete Streets Commission shall advise the City Council on realizing the City's adopted goals for complete streets, vision zero, climate action plan, and provide input on major land use and development projects as it relates to transportation.”

PROCESS

- Development
- Commission approval
- City Council adoption (prior to Sept.)
- Quarterly report outs

REQUESTS

- From City Council
  - Current state of the safe routes to school program
  - Process and procedure of the neighborhood traffic management program

- From Multimodal subcommittee (request to City Council)
  - Sign the Seamless Transit Principles reso.
  - Allocate resources to assist the subcommittee to review future transit recommendations

WORK PLAN RECOMMENDATIONS

- To advance the goals of the city's newly adopted Climate Action plan by making alternatives to driving safer and more attractive, namely by:
  - Reviewing the city's Transportation Master Plan (TMP) and recommending the projects most likely to reduce Vehicle Miles Traveled (VMT)
  - Providing input on major development projects such as the Menlo Park Community Campus, by looking at them through the lens of transportation accessibility, especially bicycle/pedestrian/public transportation accessibility

- Advise City Council on the implementation of the TMP:
  - Evaluate the current process and procedure of the neighborhood traffic management program (TMP Project #165)

- Continue to advocate for and advise the Council on the planning and installation of the Middle Avenue pedestrian and bicycle rail crossing, and safe cycling/pedestrian infrastructure connecting the Burgess complex to the Middle Avenue corridor to Olive Street, and north on Olive Street to Hillview Middle School.

WORK PLAN RECOMMENDATIONS (CON'T)

- Continue to support Council in ongoing initiatives to improve access to Downtown and support downtown businesses.

- Continue to support the implementation of the Safe Routes to School strategy and advocate for community engagement, program continuity and engineering implementation:
  - Evaluate the current state of the safe routes to school program

- Continue to support City Council's role as a stakeholder with regard to regional multimodal and transportation demand management programs projects to increase sustainable transportation for Menlo Park:
  - Request the City Council to sign the Seamless Transit Principles
  - Request the City Council to allocate staff resources to assist the Multimodal Subcommittee to review future transit related study recommendations that could impact the City of Menlo Park and develop an action list for City Council approval

ACTIONS

- Review revised work plan
  - Confirm current tasks to remain
  - Select new tasks to be included
- Approve revised work plan
- Designate a commissioner for presentation

NEXT STEPS

- CSC designee presentation
- City Council adoption

THANK YOU

Public Works

CITY OF MENLO PARK

STAFF REPORT

Complete Streets Commission
Meeting Date: **9/8/2021**
Staff Report Number: **21-007-CSC**

Regular Business: **Adopt Resolution No. 2021-2 to remove one on-street parking space at 951 College Avenue to construct a retaining curb extension**

Recommendation

Staff recommends the Complete Streets Commission adopt Resolution No. 2021-2 (Attachment A) to remove one on-street parking spaces at 951 College Ave to construct a retaining curb extension to preserve and protect existing tree with large roots which are uprooting the existing roadway and alleviate a drainage issue.

Policy Issues

The recommendation is consistent with Section 11.24.026 of the Menlo Park Municipal Code, which authorizes the Complete Streets Commission to designate no parking zones (i.e., red curb and other on-street parking restrictions) adjacent to driveways, intersections and crosswalks under specific criteria for safety concerns.

Background

Residential parking removal

Staff received a resident request to evaluate drainage issue which was occurring at 951 College Ave (Attachment B):

The request stated that there was significant ponding in front of the residence, 951 College Ave, and upon performing a field investigation staff had determined the issue was created from roots of an adjacent tree. Further field investigation would show that the roots were uprooting significant portions of the street and causing drainage issue at this area. After consulting with the City Arborist it was determined that the best solution would be to create a retaining curb around said tree in a bulb fashion to fix the drainage issue and protect roots nearest to tree.

Analysis

Removing the space and constructing the new retaining curb extension around the tree would provide the following benefits:

- Alleviate drainage issue on street
- Protect existing tree and roots

Commission Actions

Based on the explanations stated above, staff recommends the Complete Streets Commission to adopt Resolution No. 2021-2 to remove one on-street parking spaces on College Avenue in front of 951 College

Avenue.

Next steps

Per Section 11.24.028 of the Municipal Code, if the parking removal project is approved, any Menlo Park property owner / resident or business owner may appeal to the City Council in writing within fifteen (15) days after the decision, by September 24, 2021. Such a request shall be submitted to the city clerk and state the reasons for the appeal. The project will not be implemented until all appeals are completed and/or the time for filing an appeal has expired.

Impact on City Resources

If approved, implementation of the project will be funded through the City's CIP 2021 On-Call Asphalt and Concrete Repair Program.

Environmental Review

This project is categorically exempt under Class 1 of the California Environmental Quality Act Guidelines. 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 mailed to residents/property owners within 500 feet of the proposed project site. In addition, poster with meeting information was placed on A-frame at the project site.

Attachments

A. Resolution No. 2021-2
B. Project location

Report prepared by:
Phillip Linarte, Associate Civil Engineer

Report reviewed by:
Kevin Chen, Senior Transportation Engineer

RESOLUTION NO. 2021-2

RESOLUTION OF THE COMPLETE STREETS COMMISSION OF THE CITY OF MENLO PARK AUTHORIZING THE INSTALLATION OF NO PARKING ZONE ON COLLEGE AVENUE FRONTING 951 COLLEGE AVENUE

WHEREAS, the City of Menlo Park received a resident request to evaluate drainage issue on College Avenue fronting 951 College Avenue; and

WHEREAS, a field investigation revealed ponding issue due to pavement uprooting from roots of an adjacent tree; and

WHEREAS, installation of 25 feet of red curb on College Avenue fronting 951 College Avenue is needed to construct a retaining curb extension around the tree to preserve tree health and alleviate drainage issue on street; and,

WHEREAS, Section 11.24.026 of the Menlo Park Municipal Code authorizes the Complete Streets Commission to designate no parking zones as described in the Municipal Code; and

WHEREAS, the City of Menlo Park, acting by and through its Complete Streets Commission, having considered and been fully advised in the matter and good cause appearing therefore; and

NOW, THEREFORE, BE IT RESOLVED, that the Complete Streets Commission of the City of Menlo Park does hereby authorize the installation of no parking zones on College Avenue fronting 951 College Avenue.

I, Kevin Chen, City staff liaison to the Complete Streets Commission of Menlo Park, do hereby certify that the above and foregoing Commission Resolution was duly and regularly passed and adopted at a meeting by said Commission on the eighth day of September, 2021, by the following votes:

AYES:

NOES:

ABSENT:

ABSTAIN:

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the Official Seal of said City on this eighth day of September, 2021.

_____

Kevin Chen
Complete Streets Commission Liaison

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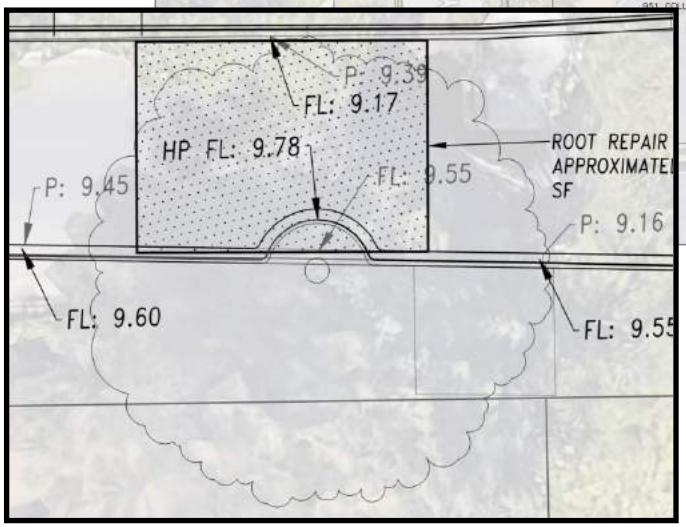

Proposed conditions

Existing conditions

CALL UTILITY NOTIFICATION CENTER OF CALIFORNIA
811
Know what's **below.**
Call before you dig.
CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

DATE:
SCALE: AS SHOWN
DRAWN BY: PEL
DRAWING NAME: WILLOW RD
DESIGNED BY: PEL
CHECKED BY:
SURVEYED BY: PEL

NO.	BY	DATE	REVISIONS

CITY OF MENLO PARK
ENGINEERING DIVISION
701 LAUREL STREET, MENLO PARK, CA 94025-3483
PHONE (650) 330-6740 FAX (650) 327-5497

ATTACHMENT B - COLLEGE AVE

SHEET
OF SHEETS
PROJ. NAME

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Public Works

CITY OF MENLO PARK

STAFF REPORT

Complete Streets Commission
Meeting Date: **9/8/2021**
Staff Report Number: **21-008-CSC**

Regular Business: **Recommend the City Council adopt a resolution to remove the left turn restriction on Constitution Drive**

Recommendation

Staff recommends that the Complete Streets Commission recommend the City Council adopt a resolution (Attachment A) to remove the left-turn restriction to the 105/125 Constitution Drive driveway.

Policy Issues

This project is consistent with policies stated in the 2016 general plan circulation element. These policies seek to maintain a safe, efficient, attractive, user-friendly circulation system that promotes a healthy, safe and active community and quality of life throughout Menlo Park.

The City's Municipal Code 11.12.010 establishes the powers and duties of City Council to, by resolution, order the installation, use, change or removal of such traffic control devices as the council deems appropriate and as are permitted by the Vehicle Code.

Background

In 2010, voters approved Measure T, a General Plan Amendment for the Menlo Gateway project to be developed by the Bohannon Development Company. The Menlo Gateway project includes a 250-room hotel, a 41,000 square foot fitness center, and 735,000 square feet of office. The project includes two sites located at 100-190 Independence Drive (Independence site) and 101-155 Constitution Drive (Constitution site). The Menlo Gateway project is now complete, and Facebook is the tenant for the office space.

On February 13, 2018, the City Council approved the design for the relocated connection of Marsh Road to Independence Drive. The design was a safety improvement for the Marsh Road/Constitution Drive/ Independence Drive intersection and included converting Constitution Drive into a one-way street for approximately 150 feet in the southbound direction from Marsh Road to the recently constructed garage at the northeast corner of the Constitution Drive/Independence Drive intersection (Attachment B). The design also included a left-turn restriction into the driveway between the garage and newly constructed office building. The left-turn restriction was put in place to minimize any queuing that might occur behind a left-turning vehicle waiting for a gap to access this driveway.

Analysis

Constitution Drive is a two-lane roadway with bicycle lanes on both sides and no on-street parking. Constitution Drive is designated as mixed-use collector in the City's general plan circulation element. As mentioned previously, Constitution Drive is one way in the southbound direction until the first garage

driveway. Currently, the northbound direction terminates with a left-turn lane that allows access to 104 and 110 Constitution Drive properties. For vehicles that erroneously turn onto Constitution Drive and need to return to Chrysler Drive, a public access license was provided across a portion of the Menlo Gateway Constitution site for the purpose of allowing vehicles to turn around.

On August 9, 2021, the Planning Commission approved the Menlo Portal project, a mixed-use residential and office development to replace the buildings currently on the 104/110 Constitution properties. An appeal to City Council is currently pending for the Menlo Portal project. Whether the Menlo Portal project is approved or the existing development remains, left-turn access would continue to be provided to 104/110 properties. The attached analysis (Attachment C) assumed Menlo Portal traffic volumes to provide an analysis of the most conservative traffic conditions was taken into account.

The design of the Menlo Gateway Constitution site includes two parking garages on each end of the property and two office buildings (Buildings 62 and 63) in the middle (Attachment B). The site has four driveways, two driveways provide direct access to the parking garages and one driveway is located between each garage and an office building. The site also includes a one-way roadway in the southbound direction at the back of the property. As a result of the roadway direction and turn restriction, vehicles accessing that back roadway are required to enter from the south and make a right-turn into the driveway between Building 62 and the northern parking garage. Facebook is planning to use the back roadway for commuter shuttle drop off and pick up. This allows employees to be dropped off on the right side of road next to the buildings. Facebook has requested that the left-turn restriction at the second driveway be removed to allow for their commuter shuttles that come from Marsh Road to access this driveway without having to travel on Bayfront Expressway and Chrysler Drive (Attachment C).

Facebook has submitted an analysis evaluating the queuing on Constitution Drive both with and without the left-turn restriction and including the Menlo Portal development. This analysis is included in Attachment C. According to the analysis, the 95th percentile queue at the 105/125 driveway would be 1 car during the AM peak hour and 0 cars during the PM peak hour. Similar results would occur with the Menlo Portal development. Although the Menlo Portal driveway would not be aligned with the 105/125 driveway, the conflicting volumes are expected to be minimal since the peak for the residential project would be outbound in the morning when there are more vehicles turning left into the 105/125 driveway and vice versa for the PM peak hour. The addition of the proposed left-turn access is not expected to have any adverse effects on pedestrians or bicyclists since the driveway is expected to operate as a typical driveway similar to the other driveways along Constitution Drive.

Recommendation and next steps

Based on the limited expected queuing and to provide better circulation for the commuter shuttles, staff is recommending that the left-turn restriction at the 105/125 Constitution driveway be removed. Following the Complete Streets Commission recommendation, staff anticipates bringing this item to the City Council for approval in October.

Impact on City Resources

This project would be funded from developer contributions. No additional funds are required.

Environmental Review

This project is categorically exempt under Class 1 of the California Environmental Quality Act. 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 mailed to property owners and occupants located within of 500-foot radius of the project location.

Attachments

A. Resolution
B. Project Area Map
C. Request of Removal of Left-turn Restriction to Building 62/63 Memorandum, Fehr & Peers, dated August 18, 2021

Report prepared by:
Kristiann Choy, Senior Transportation Engineer

Report reviewed by:
Hugh Louch, Assistant Public Works Director

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DRAFT RESOLUTION NO.

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MENLO PARK AUTHORIZING THE REMOVAL OF LEFT-TURN RESTRICTION ON CONSTITUTION DRIVE

WHEREAS, the redesign of the Marsh Road intersection with Constitution Drive approved on February 13, 2018, included a southbound left-turn restriction at the 105/125 Constitution Drive driveway; and,

WHEREAS, the proposed development at 105/125 Constitution Drive includes a one-way southbound roadway which requires vehicles to access the driveway from northbound Constitution Drive; and,

WHEREAS, the City has received a request to remove the left-turn restriction to provide more direct access for commuter shuttle buses serving the 105/125 Constitution Drive property; and,

WHEREAS, more direct commuter shuttle access would improve transit accessibility and connectivity to the site, reducing drive alone vehicle traffic, associated greenhouse gas emissions, and traffic congestion; and,

WHEREAS, the queuing analysis shows limited queuing on Constitution Drive; and,

WHEREAS, this modification does not otherwise impact safety on Constitution Drive; and,

WHEREAS, the City of Menlo Park, acting by and through its City Council, having considered and been fully advised in the matter and good cause appearing therefore.

NOW, THEREFORE BE IT RESOLVED, that the City Council of Menlo Park does hereby authorize the removal of the left-turn restriction at 105/125 Constitution Drive.

I, Judi A. Herren, City Clerk of Menlo Park, do hereby certify that the above and foregoing Council Resolution was duly and regularly passed and adopted at a meeting by said City Council on the XX day of October, 2021, by the following votes:

AYES:

NOES:

ABSENT:

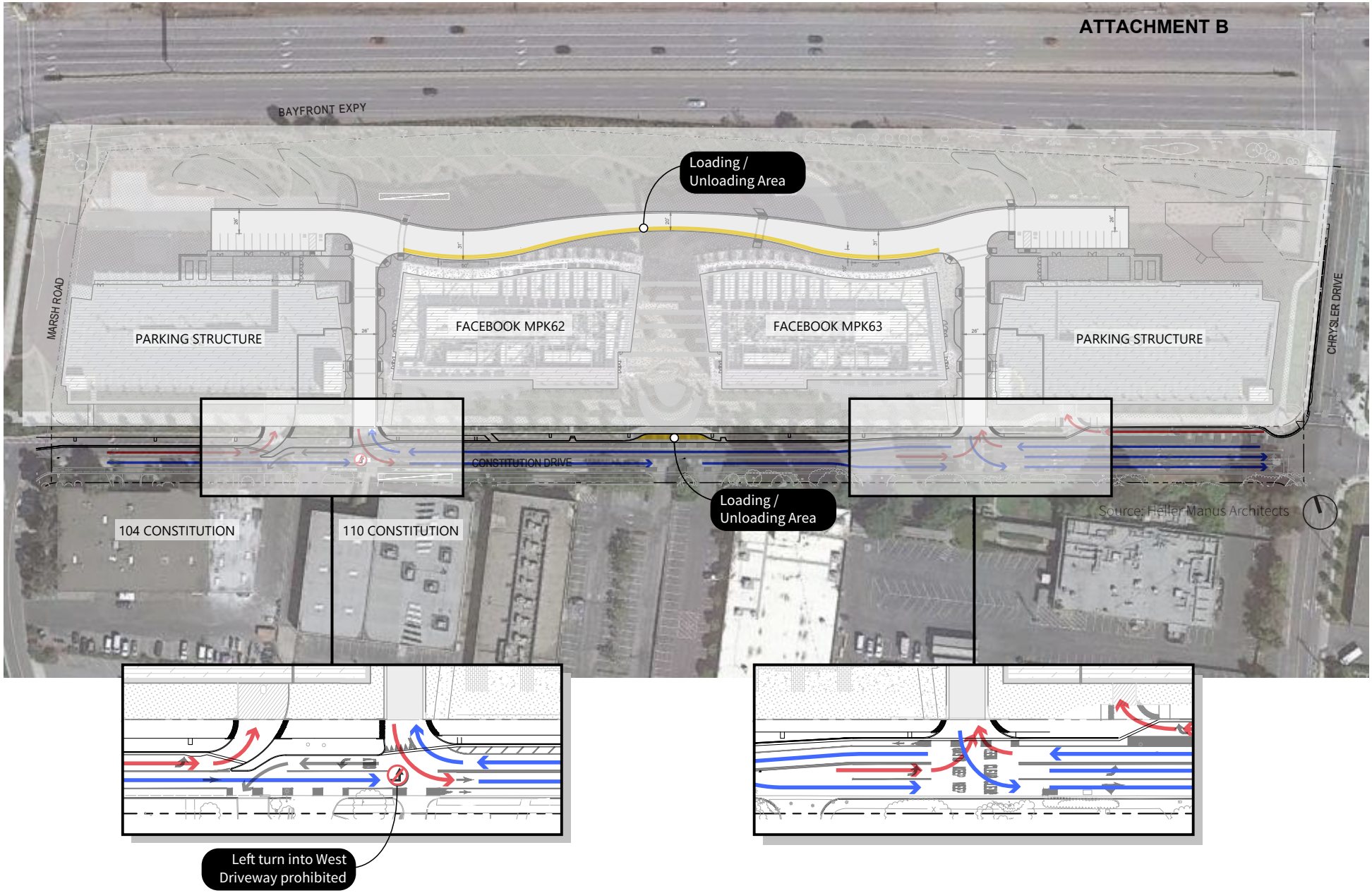
ABSTAIN:

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the Official Seal of said City on this XX day of October, 2021.

_____

Judi A. Herren, City Clerk

ATTACHMENT B



Project Area Map

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FEHR PEERS

Memorandum

Date: August 18, 2021

To: Jonathan Schuppert and Vanessa Peers, Facebook

From: Steve Davis, Robert Eckols, and Mark Soendjojo, Fehr & Peers

Subject: Facebook Buildings 62/63 Access Evaluation

SJ20-2020

Facebook is proposing site access modifications to Buildings 62/63 to improve the operations of the employee shuttles, intra-campus trams, and on-demand vehicles. Buildings 62/63 are located on Constitution Drive between Marsh Road and Chrysler Drive. The key access modification would allow all vehicles to make the inbound left-turn from eastbound Constitution Drive to the West Driveway. The left turn restriction at the West Driveway was included in the City of Menlo Park's project entitlements for Buildings 62/63 and prohibits all eastbound vehicles from entering the West Driveway including transit vehicles.

This memorandum presents the findings of a traffic analysis of the proposed access modifications on the operations of both driveways that serve Buildings 62/63 (East and West Driveways).

Background and Purpose

Currently, left turns are prohibited from eastbound Constitution Drive into the West Driveway. Facebook proposes eliminating the left-turn prohibition so that eastbound shuttles, on-demand vehicles, and transportation network companies (e.g., Uber, Lyft) may access Buildings 62/63 via the West Driveway. Allowing this left turn movement for transit vehicles will improve the access and circulation of the employee shuttles and inter-campus trams that Facebook uses to reduce vehicle trips.

With the current left-turn prohibition, shuttles and trams must enter the site through Chrysler, as shown in **Figure 1**. From Bayfront Expressway, all transit vehicles must use Chrysler Drive and turn right onto Constitution Drive and enter the site at the West Driveway. Entering at the West Driveway allows clockwise circulation of the transit vehicles through the site allowing passengers to exit on the right side of the road in front of the building entrances.

A new mixed-use development, *Menlo Portal*, is proposed on the south side of Constitution Drive opposite Buildings 62/63 (see **Figure 3**). *Menlo Portal* will include 335 multi-family dwelling units, 1,608 square feet of commercial space, and 34,819 square feet of office space. Due to the location and site access, the traffic generated by both the Menlo Portal development and Facebook Buildings 62/63 will use Constitution Drive, therefore, the traffic from Menlo Portal was added to the future scenario.

Analysis Scenarios

The following traffic volume scenarios were analyzed:

- Near-Term Existing Conditions - operating conditions without access modifications (e.g., maintain left-turn restriction) and occupancy of Buildings 62/63
- Near-Term with Modifications - operating conditions with proposed access modifications and occupancy of Buildings 62/63
- Future Conditions with Menlo Portal - operating conditions with proposed access modifications, occupancy of Buildings 62/63, and development of the *Menlo Portal* site located south of Constitution Drive

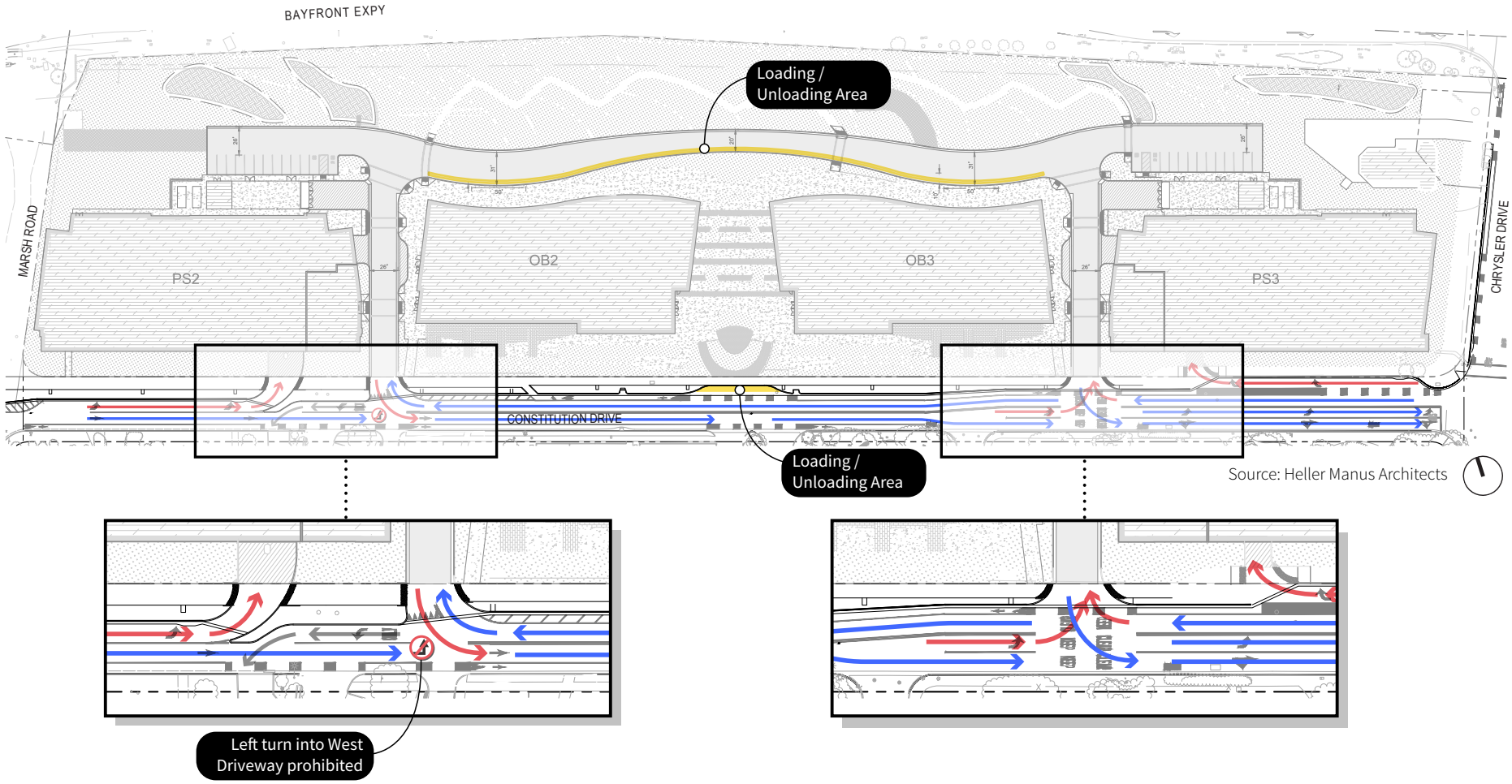

Figure 1

Near-Term Existing Conditions

Analysis Methodology

Traffic operations of the project driveways were analyzed using the Synchro 10.0 software. The Synchro software uses procedures outlined in the Transportation Research Board's *Highway Capacity Manual (HCM) 6th Edition* to analyze intersection operations and performance.

The analysis results include level of service (LOS) for individual intersections. LOS is a measure of traffic operating conditions, which varies from LOS A (indicating free-flow traffic conditions with little or no delay) to LOS F (representing over-saturated conditions where traffic flows exceed design capacity resulting in long queues and delays). These ratings represent the perspective of drivers and are an indication of the comfort and convenience associated with driving.

Near-Term Conditions

A baseline Synchro model was created using the Near-Term traffic volumes provided by the City of Menlo Park from counts taken in 2019. Due to COVID-19 and Facebook's subsequent work from home policy until July 2021, Fehr & Peers was unable to conduct field observations at Buildings 62/63 for existing queuing and delay. The volumes provided by the City and Facebook were recorded prior to the work from home policy and were assumed to accurately represent vehicle demand prior to the state-wide shelter in place orders.

The trip generation for the office buildings were estimated using the AM and PM trip cap rates per employee. The AM and PM peak hour trip cap rates are 0.2 trip per employee. Since the Facebook TDM program is same for all workers in Menlo Park, trip generation even in unmonitored locations are approximately the same as the Classic and Bayfront campuses. This assumption is supported by campus wide monitoring that was conducted by Fehr & Peers in 2018 and 2019.

For the other vehicle types, Facebook provided data related to the number of trips generated by their shuttles, trams, and on-demand services as described in **Attachment A**. We were also provided information on the routings used by these vehicles. TNCs activity was estimated using data collected at the ride lounges by Fehr & Peers during the annual trip cap monitoring calibration effort.

Volumes were balanced throughout the study area to account for slight difference in volumes. The Near-Term Condition assumed the existing roadway geometry with no left-turn inbound access at the West Driveway, and the Near-Term with Modification volumes were adjusted to account for vehicles using the left-turn inbound access to the site at West Driveway.

The Future Conditions with Menlo Portal Synchro model uses the Near-Term with Modifications volumes and adds the trip generation estimates for the *Menlo Portal* site. In addition, this scenario includes access modifications to the Menlo Portal site along Constitution Drive (at the West Driveway) and Independence Drive. The trip generation for *Menlo Portal* was estimated using Fehr & Peer's MainStreet tool and the results are included in **Attachment A**. The estimate was prepared prior to publication of the draft

environmental impact report (DEIR) for the project. A comparison of the analysis trip generation to the DEIR trip generation showed that the DEIR provides trip reductions which were not considered in this analysis, resulting in the analysis volumes being higher than the DEIR volumes. As a result, the operations analysis is conservative, and the traffic operations would be anticipated to be better than reported.

Near-Term Operations

The Synchro software package was used to evaluate the Buildings 62/63 Inbound Access for the two driveways on Constitution Drive between Independence Drive and Chrysler Drive. The technical results from Synchro simulations are provided in **Attachment B**.

Near-Term Operations Existing Conditions (Near-Term Existing)

The analysis considered the following types of vehicles access the project site during the peak hours: personal vehicles, employee shuttles, intercampus trams, Facebook on-demand vehicles, and transportation networking companies (TNCs). TNCs include ride hailing companies such as Uber and Lyft. The following describes our assumptions regarding how inbound vehicles would approach site and outbound vehicles will depart the from site.

All the shuttles in the AM and PM peak hours come from Chrysler Drive and turn right to enter the West Driveway. All the TNCs and on-demand vehicles in the AM and PM peak hours come from Chrysler Drive. Half of the TNCs and on-demand vehicles drop off passengers in front of Buildings 62/63 and turn right into the West Driveway and the other half drop off passengers behind Buildings 62/63 and turn right into the East Driveway.

For all conditions, all the trams approach from Chrysler Drive and turn right into the West Driveway.

For all conditions, during the AM peak hour 75% of inbound personal vehicles come from US 101 using Marsh Road, and 50% of those vehicles turn into the west parking garage. The remaining 50% go to the east parking garage. 25% of the inbound personal vehicles come from Chrysler Drive, and 50% of those cars turn into the east parking garage. The remaining 50% go to the west parking garage.

For all conditions, during the PM peak hour 50% of inbound personal vehicles come from US 101 using Marsh Road, and 50% of those vehicles turn into the west parking garage. The remaining 50% go to the east parking garage. The remaining 50% of inbound personal vehicles come from Chrysler Drive, and 50% of those cars turn into the east parking garage. The remaining 50% go to the west parking garage.

Due to the roadway configuration along the project frontage, all outbound vehicles will travel eastbound on Constitution Drive to the Chrysler Drive intersection. The majority of personal vehicles and TNCs will turn left onto Chrysler while the remainder travel through the intersection on Constitution Drive toward Chilco Road. Facebook trams will primarily travel through on Constitution Drive at Chrysler Drive. Employee shuttles and on-demand vehicles will primarily turn left onto Chrysler Drive to access Bayfront Expressway. The existing site access for Buildings 62/63 is shown on **Figure 1**. **Table 1** shows the results of

the Synchro analysis intersection delay and LOS at the two driveways, and **Table 2** shows the queuing at the two driveways under the Near-Term Existing conditions.

At the West Driveway (Intersection 1), the LOS for the southbound left leaving the Facebook site during both peak hours is C with an average delay of about 15.6 seconds per vehicle. The 95th percentile queue lengths range from 25 feet in the AM peak hour to 50 feet in the PM peak hour.

At the East Driveway (Intersection 2), the LOS for the eastbound left into the Facebook site during the AM and PM peak hours is A, with an average delay of eight seconds per vehicle. For the southbound left, the LOS during the AM peak hour is D, with an average delay of 33 seconds per vehicle, whereas the LOS during the PM peak hour is E, with an average delay of 41 seconds per vehicle. The low LOS / high delay is due to the high eastbound through volume reducing the number of available gaps for southbound vehicles to turn left. The 95th percentile queue length for eastbound left is approximately one vehicle long (approximately 25 feet) in the AM and PM peak hours, whereas the southbound left ranges from 75 feet in the AM peak hour to 175 feet in the PM peak hour.

Near-Term Operations with Modifications (Near-Term with Modifications)

The access modifications include allowing left-turn access for all vehicles on eastbound Constitution Drive to enter the West Driveway, as shown in **Figure 2**. These left turns will occur from a shared-through left lane; therefore, some vehicles could be queued behind other vehicles as they wait to make the left turn. A bus turn template analysis for this movement is included in **Attachment C**.

Half the TNCs in the AM and PM peak hours come from US 101 using Marsh Road and make the left-turn into the West Driveway. The other half come from Bayfront Expressway using Chrysler Drive and turn right to enter the West Driveway.

10% of the on-demand vehicles in the AM and PM peak hours come from Marsh Road and make the left-turn into the West Driveway. The remaining 90% come from Chrysler Drive and turn right to enter the West Driveway.

80% of the AM peak hour shuttles come from US 101 using Marsh Road (28 shuttles) and make the left turn. The remaining 20% (seven shuttles) come from Bayfront Expressway using Chrysler Drive and turn right to enter the West Driveway. The shuttles make up 62% of the 45 vehicles turning left to enter the West Driveway in the AM peak hour, with the remainder of the traffic turning left into the driveway – 17 vehicles – consisting of Facebook on-demand vehicles, TNCs, and personal vehicles. This would reflect pick-up/drop-off activity that is reasonable to expect for large office buildings.

20% of the PM peak hour shuttles come from Marsh Road (2 shuttles) and make the left turn. The remaining 80% (18 shuttles) come from Chrysler Drive and turn right to enter the West Driveway. The shuttles make up 14% of the 14 vehicles turning left to enter the West Driveway in the PM peak hour, with the other 12 vehicles turning left into the site representing pick-up/drop-off activity.

Table 1 shows the results of the Synchro analysis of the Near-Term Existing intersection delay and LOS at the two driveways, and **Table 2** shows the queuing at the two driveways with access modifications.

At the West Driveway, the LOS for the southbound left remains at C in both peak hours, along with an average delay of about 17 seconds per vehicle. The shared-through left lane into West Driveway has a LOS of A during the AM and PM peak hours, and an average delay of about 8 seconds per vehicle. The 95th percentile queue length remains the same for the southbound left as the Near-Term Existing scenario. The 95th percentile queue length for the eastbound queue ranges from 25 feet in the AM peak hour to no queue in the PM peak hour.

At the East Driveway, the LOS for the eastbound left into the East Driveway during the AM and PM peak hours remains at A, with an average delay of about eight seconds per vehicle. Similarly, for the southbound left, the LOS remains the same during the AM and PM peak hours compared to the Near-Term Existing conditions, with a slight decrease in average delay of 31 seconds per vehicle in the AM peak hour and 40 seconds per vehicle in the PM peak hour. The 95th percentile queue length remain the same for both the eastbound left and southbound left as the Near-Term Existing conditions.

These results indicate that the addition of the eastbound left-turn access from Constitution Drive into the West Driveway of the Facebook site would not have an adverse effect on vehicle queuing and operations along Constitution Drive.

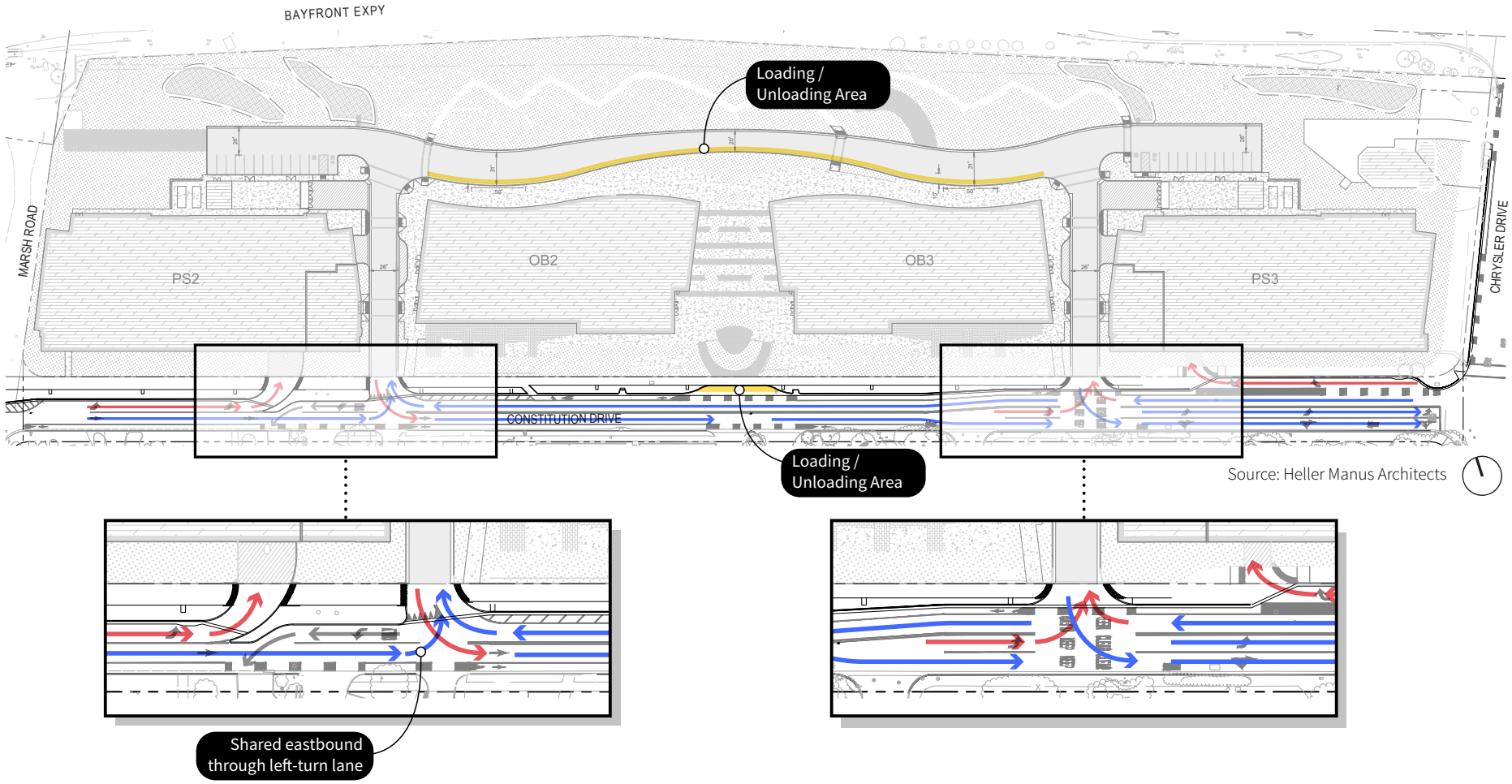

Figure 2

Near-Term with Modifications

Future Operations with Menlo Portal (Future with Menlo Portal)

It is our understanding that the proposed *Menlo Portal* driveway on the south side of Constitution Drive will be offset slightly west of the Buildings 62/63 West Driveway, as shown in **Figure 3**. The existing driveways on the south side of Constitution west of the West Driveway will be closed. The shared-through left lane from the Near-Term with Modifications scenario would be maintained. **Table 1** shows the results of the Synchro analysis of the Future with Menlo Portal intersection delay and LOS at the two driveways, and **Table 2** shows the queuing at the two driveways with access modifications and Menlo Portal.

The *Menlo Portal* site is proposed to have a total of two driveways – one on Independence for the office uses and one on Constitution for the residential uses. The number of inbound residential trips to the *Menlo Portal* Constitution driveway would be low during the AM peak hour. Inbound residential trips would generally be higher in the PM peak hour, but a large proportion of them would arrive from Marsh Road and turn right into the site. Generally, inbound traffic to the Buildings 62/63 West Driveway will be highest when conflicting inbound demand to the *Menlo Portal* Constitution driveway is lower.

It is anticipated that fewer than 5 vehicles will make the westbound left turn from Constitution Drive into the Menlo Portal driveway during the AM peak hour, and fewer than 15 would make the same movement during the PM peak hour. It is expected that 45 and 14 vehicles would make the opposing eastbound left turn from Constitution Drive to the Buildings 62/63 West Driveway during the same respective peaks. The potential for conflicts between the opposing movements is relatively low given that they combine for fewer than one vehicle per minute during each of the peak periods. Additionally, a large proportion of the vehicles making the eastbound left turn movement are operated for Facebook by professional drivers who can be trained to yield to drivers making westbound left turns at this intersection.

Half the TNCs in the AM and PM peak hours come from US 101 using Marsh Road and make the left-turn into the West Driveway. The other half come from Bayfront Expressway using Chrysler Drive and turn right to enter the West Driveway.

10% of the on-demand vehicles in the AM and PM peak hours come from Marsh Road and make the left-turn into the West Driveway. The remaining 90% come from Chrysler Drive and turn right to enter the West Driveway.

80% of the AM peak hour shuttles come from US 101 using Marsh Road (28 shuttles) and make the left-turn. The remaining 20% (seven shuttles) come from Bayfront Expressway using Chrysler Drive and turn right to enter the West Driveway. The shuttles make up 62% of the 45 vehicles turning left to enter the West Driveway in the AM peak hour.

20% of the PM peak hour shuttles come from Marsh Road (2 shuttles) and make the left-turn. The remaining 80% (18 shuttles) come from Chrysler Drive and turn right to enter the West Driveway. The shuttles make up 14% of the 14 vehicles turning left to enter the West Driveway in the PM peak hour.

At the West Driveway, the LOS for the southbound left during the AM and PM peak hours remains at C, though the average delay goes up to about 20 seconds per vehicle, as compared to 17 seconds per vehicle in the Near-Term with Modifications condition. The eastbound left into West Driveway has the same LOS and delay as the Near-Term with Modifications. The 95th percentile queue length remains the same for eastbound left, whereas the 95th percentile queue length for southbound left in the PM peak hour increases from 50 feet in the Near-Term with Modifications to 75 feet.

At the East Driveway, the LOS for the southbound left during the AM peak hour is the same as the Near-Term with Modifications, with a slight increase in delay to 33 seconds per vehicle. In the PM peak hour, the delay goes up to 50 seconds per vehicle, and operates at LOS F. The increase in delay is due to the additional *Menlo Portal* trips using Constitution Drive to access Bayfront Expressway via Chrysler Avenue. The LOS and average delay for the eastbound left remains the same as the Near-Term with Modifications for the AM and PM peak hours. The 95th percentile queue length for the southbound left in the PM peak hour increases from 175 feet to 200 feet, whereas the other 95th percentile queue lengths remain the same as the Near-Term with Modifications.

These results indicate that the allowance of eastbound left turns from Constitution Drive into the West Driveway of the Facebook site and modified access associated with the Menlo Portal site would not have an adverse effect on vehicle queuing and operations along Constitution Drive. Due to the relatively small turning volumes, interactions between left turns from Constitution Drive into the West Driveway and Menlo Portal sites, respectively, are anticipated to be minimal.

Conclusion

In both the Near-Term with Modifications (shared eastbound through left lane) and Future with Menlo Portal (shared eastbound through left lane) scenarios, the addition of the eastbound left access into West Driveway does not have an adverse effect on either vehicle queuing or intersection operations along Constitution Drive.

Table 1: Delay and Level of Service for All Scenarios

Intersection		Intersection Control	Movement	Peak Hour[1]	Near-Term Existing		Near-Term w/ Modifications		Future with Menlo Portal	
					Delay[2]	LOS[3]	Delay[2]	LOS[3]	Delay[2]	LOS[3]
1	West Driveway / Constitution Drive / Future Menlo Portal Driveway	TWSC	EBL (Inbound)	AM PM	N/A		8.2 8.2	A A	8.2 8.1	A A
			SBL (Outbound)	AM PM	15.9 15.2	C C	17.6 15.8	C C	20.5 20.1	C C
2	East Driveway / Constitution Drive	TWSC	EBL (Inbound)	AM PM	8.2 7.6	A A	8.0 7.5	A A	8.0 7.6	A A
			SBL (Outbound)	AM **PM**	32.6 **41.4**	D **E**	30.8 **40.4**	D **E**	32.5 **50.2**	D **F**

Notes:
TWSC = Two-way stop control.
Bold text indicates intersection operates at LOS E.
1. AM = morning peak hour, PM = evening peak hour
2. Whole intersection weighted average control delay expressed in second per vehicle for two-way stop-controlled intersections.
3. LOS = Level of Service.

Source: Fehr & Peers, 2021.

Table 2: 95th Percentile Queuing for All Scenarios

Intersection		Intersection Control	Movement	Peak Hour[1]	Near-Term Existing	Near-Term w/ Modifications	Future with Menlo Portal
					95th %tile Queue[2]	95th %tile Queue[2]	95th %tile Queue[2]
1	West Driveway / Constitution Drive / Future Menlo Portal Driveway	TWSC	EBL (Inbound)	AM PM	N/A	25 ft 0 ft	25 ft 0 ft
			SBL (Outbound)	AM PM	25 ft 50 ft	25 ft 50 ft	25 ft 75 ft
2	East Driveway / Constitution Drive	TWSC	EBL (Inbound)	AM PM	25 ft 0 ft	25 ft 0 ft	25 ft 0 ft
			SBL (Outbound)	AM PM	75 ft 175 ft	75 ft 175 ft	75 ft 200 ft

Notes:
1. AM = morning peak hour, PM = evening peak hour
2. Queue lengths are rounded to the nearest 25 feet

Source: Fehr & Peers, 2021.

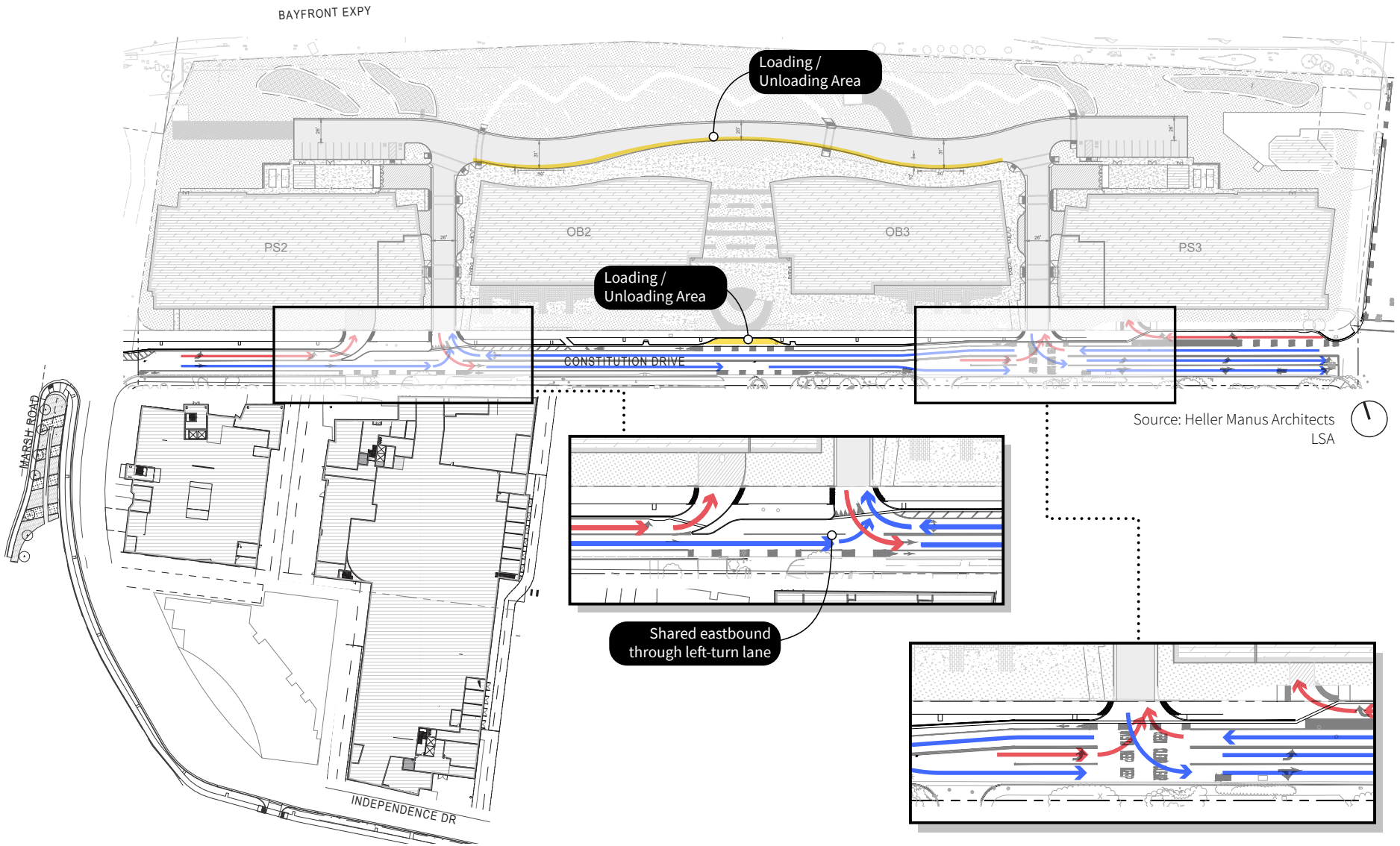

Figure 3

Future Conditions with Menlo Portal

Attachment A: Trip Generation

Facebook Trip Generation						
	AM Peak Hour			PM Peak Hour		
	Inbound	Outbound	Total	Inbound	Outbound	Total
Shuttles	35	35	70	20	20	40
TNC	30	30	60	20	20	40
Trams	36	36	72	36	36	72
On-demand	20	20	40	20	20	40
Personal Cars	383	9	392	48	394	442
Total	504	130	634	144	490	634

Source: Facebook, 2020

City of Menlo Park Traffic Counts - Chrysler Drive & Constitution Drive												
Peak Hour	Northbound			Southbound			Eastbound			Westbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
AM	2	153	19	79	368	19	15	234	211	36	20	100
PM	2	490	14	194	84	3	128	205	53	13	6	114

Source: City of Menlo Park, 2019

Menlo Portal Trip Generation												
Edition	FP Category	ITE Land Use	ITE Code	Units	Quantity	Daily Total	AM In	Am Out	AM Total	PM In	PM Out	PM Total
10th	Residential	(221) - Multifamily Housing Mid-Rise (Adj Streets, 7-9A, 4-6P)	221	Dwelling Units	335	1822	31	90	121	90	57	147
10th	Office	(710) - General Office Building (Adj Streets, 7-9A, 4-6P)	710	1000 Sq. Ft. FLA	34.819	339	34	6	40	6	34	40
Source: City of Menlo Park, 2020						2161	65	96	161	96	91	187

Attachment B: Synchro Results

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	643	21	143	30	0
Future Vol, veh/h	0	643	21	143	30	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	14	14	14	14	14	14
Mvmt Flow	0	656	21	146	31	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	750	-
Stage 1	-	-	-	-	94	-
Stage 2	-	-	-	-	656	-
Critical Hdwy	-	-	-	-	6.54	-
Critical Hdwy Stg 1	-	-	-	-	5.54	-
Critical Hdwy Stg 2	-	-	-	-	5.54	-
Follow-up Hdwy	-	-	-	-	3.626	-
Pot Cap-1 Maneuver	0	-	-	-	362	0
Stage 1	0	-	-	-	900	0
Stage 2	0	-	-	-	494	0
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	362	-
Mov Cap-2 Maneuver	-	-	-	-	362	-
Stage 1	-	-	-	-	900	-
Stage 2	-	-	-	-	494	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	15.9
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	362
HCM Lane V/C Ratio	-	-	-	0.085
HCM Control Delay (s)	-	-	-	15.9
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0.3

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	143	490	184	25	100	0
Future Vol, veh/h	143	490	184	25	100	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	14	14	14	14	14	14
Mvmt Flow	146	500	188	26	102	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	214	0	-	0	993	201
Stage 1	-	-	-	-	201	-
Stage 2	-	-	-	-	792	-
Critical Hdwy	4.24	-	-	-	6.54	6.34
Critical Hdwy Stg 1	-	-	-	-	5.54	-
Critical Hdwy Stg 2	-	-	-	-	5.54	-
Follow-up Hdwy	2.326	-	-	-	3.626	3.426
Pot Cap-1 Maneuver	1288	-	-	-	259	810
Stage 1	-	-	-	-	805	-
Stage 2	-	-	-	-	426	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1288	-	-	-	230	810
Mov Cap-2 Maneuver	-	-	-	-	230	-
Stage 1	-	-	-	-	714	-
Stage 2	-	-	-	-	426	-

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	32.6
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1288	-	-	-	230
HCM Lane V/C Ratio	0.113	-	-	-	0.444
HCM Control Delay (s)	8.2	-	-	-	32.6
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0.4	-	-	-	2.1

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	358	6	88	217	0
Future Vol, veh/h	0	358	6	88	217	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	12	12	12	12	12	12
Mvmt Flow	0	365	6	90	221	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	416	-
Stage 1	-	-	-	-	51	-
Stage 2	-	-	-	-	365	-
Critical Hdwy	-	-	-	-	6.52	-
Critical Hdwy Stg 1	-	-	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	5.52	-
Follow-up Hdwy	-	-	-	-	3.608	-
Pot Cap-1 Maneuver	0	-	-	-	574	0
Stage 1	0	-	-	-	947	0
Stage 2	0	-	-	-	681	0
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	574	-
Mov Cap-2 Maneuver	-	-	-	-	574	-
Stage 1	-	-	-	-	947	-
Stage 2	-	-	-	-	681	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	15.2
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	574
HCM Lane V/C Ratio	-	-	-	0.386
HCM Control Delay (s)	-	-	-	15.2
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	1.8

Intersection	
Int Delay, s/veh	11.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	603	99	20	273	0
Future Vol, veh/h	12	603	99	20	273	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	12	12	12	12	12	12
Mvmt Flow	12	615	101	20	279	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	121	0	-	0	750	111
Stage 1	-	-	-	-	111	-
Stage 2	-	-	-	-	639	-
Critical Hdwy	4.22	-	-	-	6.52	6.32
Critical Hdwy Stg 1	-	-	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	5.52	-
Follow-up Hdwy	2.308	-	-	-	3.608	3.408
Pot Cap-1 Maneuver	1407	-	-	-	365	916
Stage 1	-	-	-	-	889	-
Stage 2	-	-	-	-	507	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1407	-	-	-	362	916
Mov Cap-2 Maneuver	-	-	-	-	362	-
Stage 1	-	-	-	-	881	-
Stage 2	-	-	-	-	507	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	41.4
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1407	-	-	-	362
HCM Lane V/C Ratio	0.009	-	-	-	0.77
HCM Control Delay (s)	7.6	-	-	-	41.4
HCM Lane LOS	A	-	-	-	E
HCM 95th %tile Q(veh)	0	-	-	-	6.3

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	45	643	21	107	21	0
Future Vol, veh/h	45	643	21	107	21	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	62	14	14	14	14	14
Mvmt Flow	46	656	21	109	21	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	130	0	-	0	824	-
Stage 1	-	-	-	-	76	-
Stage 2	-	-	-	-	748	-
Critical Hdwy	4.72	-	-	-	6.54	-
Critical Hdwy Stg 1	-	-	-	-	5.54	-
Critical Hdwy Stg 2	-	-	-	-	5.54	-
Follow-up Hdwy	2.758	-	-	-	3.626	-
Pot Cap-1 Maneuver	1156	-	-	-	327	0
Stage 1	-	-	-	-	917	0
Stage 2	-	-	-	-	447	0
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1156	-	-	-	306	-
Mov Cap-2 Maneuver	-	-	-	-	306	-
Stage 1	-	-	-	-	859	-
Stage 2	-	-	-	-	447	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	17.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1156	-	-	-	306
HCM Lane V/C Ratio	0.04	-	-	-	0.07
HCM Control Delay (s)	8.2	0	-	-	17.6
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	143	481	148	16	109	0
Future Vol, veh/h	143	481	148	16	109	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	14	14	14	14	14	14
Mvmt Flow	146	491	151	16	111	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	167	0	-	0	942	159
Stage 1	-	-	-	-	159	-
Stage 2	-	-	-	-	783	-
Critical Hdwy	4.24	-	-	-	6.54	6.34
Critical Hdwy Stg 1	-	-	-	-	5.54	-
Critical Hdwy Stg 2	-	-	-	-	5.54	-
Follow-up Hdwy	2.326	-	-	-	3.626	3.426
Pot Cap-1 Maneuver	1341	-	-	-	278	856
Stage 1	-	-	-	-	841	-
Stage 2	-	-	-	-	430	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1341	-	-	-	248	856
Mov Cap-2 Maneuver	-	-	-	-	248	-
Stage 1	-	-	-	-	749	-
Stage 2	-	-	-	-	430	-

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	30.8
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1341	-	-	-	248
HCM Lane V/C Ratio	0.109	-	-	-	0.448
HCM Control Delay (s)	8	-	-	-	30.8
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0.4	-	-	-	2.2

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	14	358	6	80	211	0
Future Vol, veh/h	14	358	6	80	211	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	75	12	12	12	12	12
Mvmt Flow	14	365	6	82	215	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	88	0	-	0	440	-
Stage 1	-	-	-	-	47	-
Stage 2	-	-	-	-	393	-
Critical Hdwy	4.85	-	-	-	6.52	-
Critical Hdwy Stg 1	-	-	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	5.52	-
Follow-up Hdwy	2.875	-	-	-	3.608	-
Pot Cap-1 Maneuver	1152	-	-	-	556	0
Stage 1	-	-	-	-	950	0
Stage 2	-	-	-	-	661	0
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1152	-	-	-	548	-
Mov Cap-2 Maneuver	-	-	-	-	548	-
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	661	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	15.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1152	-	-	-	548
HCM Lane V/C Ratio	0.012	-	-	-	0.393
HCM Control Delay (s)	8.2	0	-	-	15.8
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	1.9

Intersection	
Int Delay, s/veh	11.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	597	91	14	279	0
Future Vol, veh/h	12	597	91	14	279	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	12	12	12	12	12	12
Mvmt Flow	12	609	93	14	285	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	107	0	-	0	733	100
Stage 1	-	-	-	-	100	-
Stage 2	-	-	-	-	633	-
Critical Hdwy	4.22	-	-	-	6.52	6.32
Critical Hdwy Stg 1	-	-	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	5.52	-
Follow-up Hdwy	2.308	-	-	-	3.608	3.408
Pot Cap-1 Maneuver	1424	-	-	-	374	929
Stage 1	-	-	-	-	900	-
Stage 2	-	-	-	-	511	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1424	-	-	-	371	929
Mov Cap-2 Maneuver	-	-	-	-	371	-
Stage 1	-	-	-	-	893	-
Stage 2	-	-	-	-	511	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	40.4
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1424	-	-	-	371
HCM Lane V/C Ratio	0.009	-	-	-	0.767
HCM Control Delay (s)	7.5	-	-	-	40.4
HCM Lane LOS	A	-	-	-	E
HCM 95th %tile Q(veh)	0	-	-	-	6.3

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	649	3	4	0	107	0	0	18	21	0	0
Future Vol, veh/h	45	649	3	4	0	107	0	0	18	21	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	62	13	13	13	13	13	13	13	13	13	13	13
Mvmt Flow	46	662	3	4	0	109	0	0	18	21	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	109	0	0	665	0	0	-	873	664	828	-	-
Stage 1	-	-	-	-	-	-	-	756	-	63	-	-
Stage 2	-	-	-	-	-	-	-	117	-	765	-	-
Critical Hdwy	4.72	-	-	4.23	-	-	-	6.63	6.33	7.23	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	5.63	-	6.23	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	5.63	-	6.23	-	-
Follow-up Hdwy	2.758	-	-	2.317	-	-	-	4.117	3.417	3.617	-	-
Pot Cap-1 Maneuver	1179	-	-	874	-	-	0	277	442	278	0	0
Stage 1	-	-	-	-	-	-	0	400	-	921	0	0
Stage 2	-	-	-	-	-	-	0	778	-	380	0	0
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1179	-	-	874	-	-	-	258	442	253	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	258	-	253	-	-
Stage 1	-	-	-	-	-	-	-	375	-	864	-	-
Stage 2	-	-	-	-	-	-	-	774	-	342	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.3	13.5	20.5
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	442	1179	-	-	874	-	-	253
HCM Lane V/C Ratio	-	0.042	0.039	-	-	0.005	-	-	0.085
HCM Control Delay (s)	0	13.5	8.2	0	-	9.1	0	-	20.5
HCM Lane LOS	A	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	-	0.1	0.1	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	143	505	152	16	109	0
Future Vol, veh/h	143	505	152	16	109	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	13	13	13	13	13	13
Mvmt Flow	146	515	155	16	111	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	171	0	-	0	970	163
Stage 1	-	-	-	-	163	-
Stage 2	-	-	-	-	807	-
Critical Hdwy	4.23	-	-	-	6.53	6.33
Critical Hdwy Stg 1	-	-	-	-	5.53	-
Critical Hdwy Stg 2	-	-	-	-	5.53	-
Follow-up Hdwy	2.317	-	-	-	3.617	3.417
Pot Cap-1 Maneuver	1342	-	-	-	268	854
Stage 1	-	-	-	-	840	-
Stage 2	-	-	-	-	421	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1342	-	-	-	239	854
Mov Cap-2 Maneuver	-	-	-	-	239	-
Stage 1	-	-	-	-	748	-
Stage 2	-	-	-	-	421	-

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	32.5
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1342	-	-	-	239
HCM Lane V/C Ratio	0.109	-	-	-	0.465
HCM Control Delay (s)	8	-	-	-	32.5
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0.4	-	-	-	2.3

Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	392	9	11	0	80	0	0	11	211	0	0
Future Vol, veh/h	14	392	9	11	0	80	0	0	11	211	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	-	-	0	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	75	11	11	11	11	11	11	11	11	11	11	11
Mvmt Flow	14	400	9	11	0	82	0	0	11	215	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	82	0	0	409	0	0	-	537	405	501	-	-
Stage 1	-	-	-	-	-	-	-	433	-	63	-	-
Stage 2	-	-	-	-	-	-	-	104	-	438	-	-
Critical Hdwy	4.85	-	-	4.21	-	-	-	6.61	6.31	7.21	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	5.61	-	6.21	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	5.61	-	6.21	-	-
Follow-up Hdwy	2.875	-	-	2.299	-	-	-	4.099	3.399	3.599	-	-
Pot Cap-1 Maneuver	1158	-	-	1103	-	-	0	438	627	466	0	0
Stage 1	-	-	-	-	-	-	0	567	-	926	0	0
Stage 2	-	-	-	-	-	-	0	792	-	580	0	0
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1158	-	-	1103	-	-	-	428	627	450	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	428	-	450	-	-
Stage 1	-	-	-	-	-	-	-	560	-	915	-	-
Stage 2	-	-	-	-	-	-	-	783	-	563	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	1	10.8	20.1
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	627	1158	-	-	1103	-	-	450
HCM Lane V/C Ratio	-	0.018	0.012	-	-	0.01	-	-	0.478
HCM Control Delay (s)	0	10.8	8.1	-	-	8.3	0	-	20.1
HCM Lane LOS	A	B	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	-	0.1	0	-	-	0	-	-	2.5

Intersection	
Int Delay, s/veh	13.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	642	102	14	279	0
Future Vol, veh/h	12	642	102	14	279	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	11	11	11	11	11	11
Mvmt Flow	12	655	104	14	285	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	118	0	-	0	790	111
Stage 1	-	-	-	-	111	-
Stage 2	-	-	-	-	679	-
Critical Hdwy	4.21	-	-	-	6.51	6.31
Critical Hdwy Stg 1	-	-	-	-	5.51	-
Critical Hdwy Stg 2	-	-	-	-	5.51	-
Follow-up Hdwy	2.299	-	-	-	3.599	3.399
Pot Cap-1 Maneuver	1416	-	-	-	347	918
Stage 1	-	-	-	-	892	-
Stage 2	-	-	-	-	487	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1416	-	-	-	344	918
Mov Cap-2 Maneuver	-	-	-	-	344	-
Stage 1	-	-	-	-	885	-
Stage 2	-	-	-	-	487	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	50.2
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1416	-	-	-	344
HCM Lane V/C Ratio	0.009	-	-	-	0.828
HCM Control Delay (s)	7.6	-	-	-	50.2
HCM Lane LOS	A	-	-	-	F
HCM 95th %tile Q(veh)	0	-	-	-	7.3

Attachment C: Bus Turn Template Analysis

Figure 1
Constitution Drive & West Driveway
BUS-45 SB Inbound Left Turn Analysis

CONCEPTUAL - NOT FOR CONSTRUCTION. ADDITIONAL
DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.

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Jul 14, 2021

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