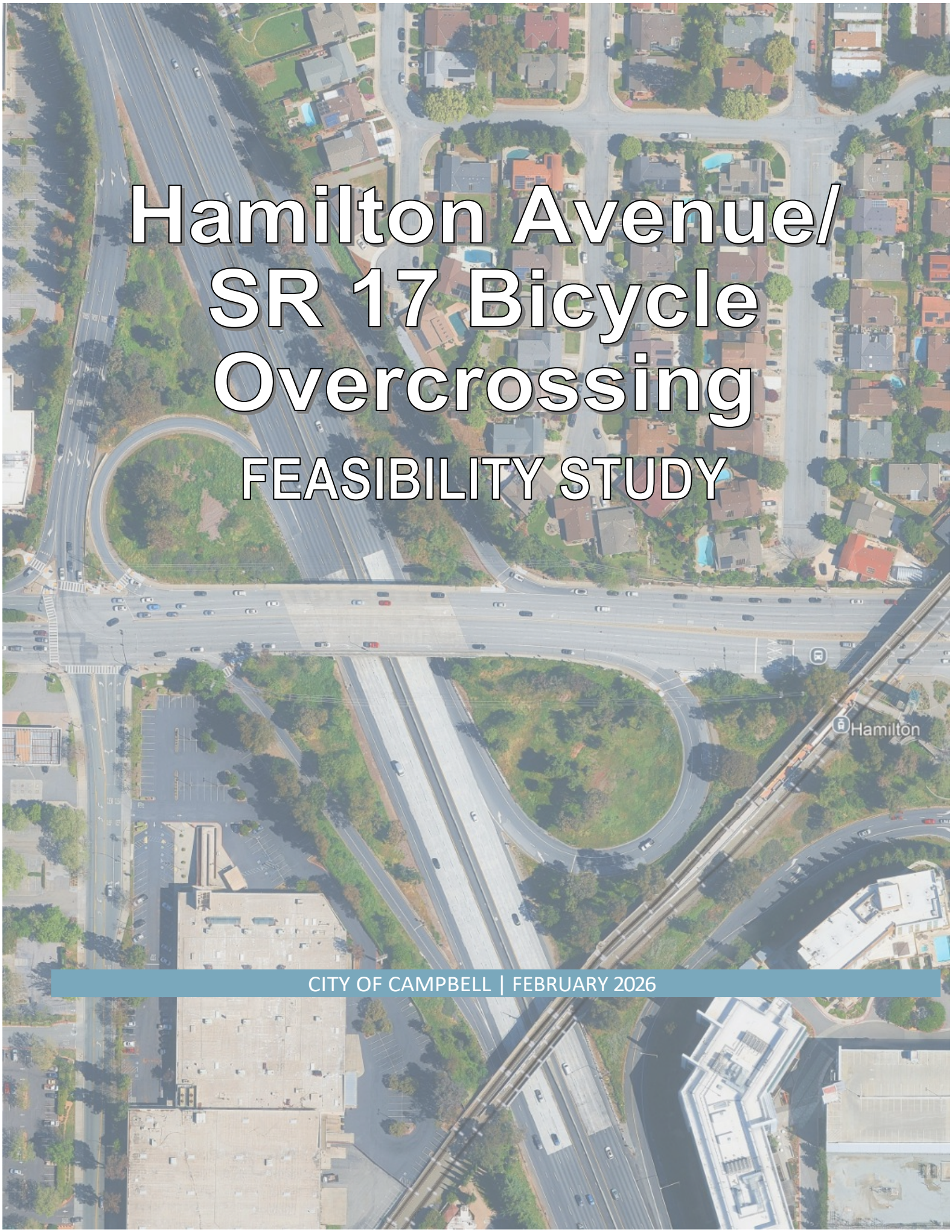

Hamilton Avenue/ SR 17 Bicycle Overcrossing

FEASIBILITY STUDY

CITY OF CAMPBELL | FEBRUARY 2026

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1. EXECUTIVE SUMMARY

INTRODUCTION

The existing interchange at State Route 17 and Hamilton Avenue is perceived as a barrier to multimodal users who wish to cross from east to west and vice versa. While there are numerous destination points on either side of the highway, including the Pruneyard/ Creekside District, the VTA Hamilton Light Rail Station, the Los Gatos Creek Trail, and local schools, the existing facilities for bicycles and pedestrians are deficient in addressing these users' needs. The Hamilton Avenue/ State Route 17 Bicycle Overcrossing project envisions bridging this gap by providing a higher level of connectivity with a more convenient, inviting, and safer facility for active transportation users of all levels and abilities. This feasibility study explores various alternatives to accomplish this goal. These alternatives and goals were presented to the community and discussed with various stakeholders to come up with a locally preferred alternative that could move forward into a future project phase.

All of the alternatives explored by the feasibility study were consistent with other City of Campbell studies and objectives, such as those presented in the City of Campbell's General Plan 2040 and the 2018 County Bicycle Plan.

Image 1.1 Bicyclists on Hamilton Avenue

EXISTING CONDITIONS

The existing bike and pedestrian facilities along Hamilton Avenue over SR-17 are dated and deficient in meeting the needs of users looking to travel across the highway. These facilities are perceived as unwelcoming to active transportation users. There are currently no dedicated bike facilities along the Hamilton Avenue overcrossing over SR-17. Existing vehicle travel lanes are 11 and 12 feet wide with no shoulders. Narrow 5-foot sidewalks extend from the west to east end of the project and provide little protection for users on the north side adjacent to the high volume of vehicles traveling along Hamilton Avenue. Pedestrians traveling on the south side are separated from vehicle traffic by a short concrete barrier next to the narrow shoulder.

The planned alignment is almost entirely within Caltrans right-of-way. Because of this, the City of Campbell will need to have extensive coordination not only with Caltrans but also utility providers and agencies such as San Jose Water (SJW), Valley Transportation Authority (VTA), Pacific Gas & Electric Company (PG&E), and West Valley Sanitation District (WVSD), all of which have facilities in the project are.

Critical Locations

The project impacts two critical, high-volume intersections. The west end connects Hamilton Avenue to SR-17 at Salmar Avenue. The east end connects Hamilton Avenue to Creekside Way just beyond the northbound SR-17 interchange. These are high volume intersections, especially at peak travel times with vehicles entering and exiting the freeway.

Image 1.2 Hamilton Avenue & SR 17 Southbound Ramps

Image 1.3 Hamilton Avenue & SR 17 Northbound Ramps

PUBLIC OUTREACH

The project held community outreach meetings, tabled at local events, and conducted online surveys during the preparation of the Study. A coordination meeting with The City of Campbell's Bike and Pedestrian Advisory Committee (BPAC) was held.

Residents of Campbell expressed a desire for improved bicycle and pedestrian facilities that prioritize safety and comfort for all users. The existing conditions feel uncomfortable and deter residents from using the interchange for multimodal travel. The Campbell Bike and Pedestrian Advisory Committee expressed concerns about the current lack of bike facilities, which make the area unsafe and unwelcoming for cyclists, with unclear travel paths and conflicts with freeway ramps. Additionally, the interchange design prioritizes cars, creating equity issues for communities that rely on biking for commuting.

PROPOSED ALIGNMENTS

The project considered several alternative alignments which include alignments with a fully separated bike/ped overcrossing, alignments which partially utilize on-street alternatives, and alternatives which fully utilize on-street facilities.

Alternative	Description
No Build	No change to current conditions. Requires on-street bike travel in the vehicle trave lane. Sidewalk on the north side of the structure is 5 feet wide and unprotected. Sidewalk on the south side has a short concrete barrier and railing. All SR 17 ramp crossings are at-grade.
The Southern Route	Provides a new, fully grade-separated 1,400-foot alignment for bicyclists and pedestrians along the south side of the overcrossing from Salmar Avenue to Creekside Way. The north side has a Class II bike lane and sidewalk with at-grade crossings at the SR 17 ramps.
The Campbell Loop	Provides a new, mostly grade-separated 1,300-foot bicycle and pedestrian alignment along the south side of the Hamilton Avenue overcrossing. The route includes a loop and undercrossing beneath the northbound SR 17 on-ramp, an at-grade crossing of the diagonal southbound on-ramp, and an optional stair connection to shorten pedestrian travel. A Class II bike lane and sidewalk are also provided along the north side of Hamilton Avenue with at-grade crossings at the SR 17 ramps.
The Straight Shot	Provides a direct 1,050-foot bicycle and pedestrian alignment on a detached structure that parallels Hamilton Avenue on the south side. The route Includes at-grade crossings of the SR 17 ramps. A Class II bike lane and sidewalk are also provided along the north side of Hamilton Avenue with at-grade crossings at the SR 17 ramps.
The Minimalist	Retains users on the existing Hamilton Avenue bridge structure, creating a dedicated bicycle and pedestrian route primarily through restriping and shifting the median island. The alignment travels approximately 1,000 feet from Salmar Avenue to Creekside Way, using at-grade crossings of the SR 17 ramps. This alternative includes no bicyclist or pedestrian facilities on the north side of Hamilton Avenue as those facilities would no longer fit within the existing structure.

Table 1.1 Summary of Alignment Alternatives of the Hamilton Avenue Bicycle Overcrossing

EVALUATION

The Study qualitatively and quantitatively evaluated the proposed alternatives with respect to its peers using the following evaluation categories:

- Multimodal Use/ Access
- Traffic Operations
- Environmental Considerations
- Caltrans Approvability
- Estimated Project Cost
- Right-of-Way
- Consistency with Public Input

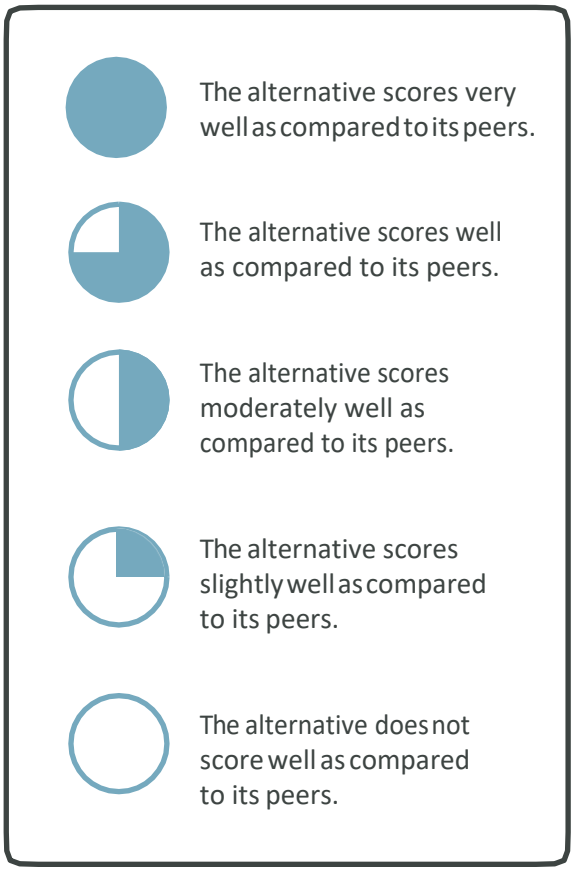
The scoring of these categories are not weighted equally as some categories (e.g. User Safety) carry more significance than others.

RECOMMENDED ALTERNATIVE

After evaluation of Alternatives, the Study recommends The Southern Route alternative, a fully grade separated facility, be progressed forward. This alternative scored well when evaluated against its peers, for meeting the goals of the Hamilton Avenue Public Improvement Plan and the Countywide Bike Plan, for its ability to provide safe and convenient access to nearby destinations and for its safety benefits in separating cyclists and pedestrians from on-street vehicular conflicts. See table 1.2 below for scoring results, and Table 6.6 in Section 6 for a full score breakdown.

Scoring Rubric

Alternatives were scored qualitatively using the rubric below:



Alternative Name	Weighted Total Score*
No Build Alternative	
The Southern Route	
The Campbell Loop	
The Straight Shot	
The Minimalist	

Table 1.2 Summary of Alignment Alternative Evaluation

*Each evaluation criteria category was assigned an individual weight with emphasis on Consistency with Public Input

2.INTRODUCTION

VISION

The Hamilton Avenue/State Route 17 Bicycle Overcrossing Feasibility Study aims to enhance connectivity across Highway 17 for all types of users. The project team gathered public input through a series of outreach activities, hearing directly from the community about their challenges and priorities for a new facility. It is evident that the existing facilities have shortcomings that discourage many potential cyclists and pedestrians from using this route. A detailed discussion about the current conditions at the project site can be found in this document.

The goal of this project is to create a facility that encourages active transportation by providing a safe and inviting route for traveling east and west. Additionally, the facility will need to comply with current design standards to gain approval from overseeing agencies. Adhering to these standards will also ensure that best practices are implemented for the benefit of the community who will ultimately use the overcrossing.

Stakeholders associated with the project are The City of Campbell, Campbell Bicycle and Pedestrian Advisory Committee (BPAC), Caltrans, VTA, San Jose, and Campbell residents. Collaboratively, these stakeholders share goals to create and maintain open-space access for pedestrians and cyclists through developing joint-use agreements, capital projects, grants, and partnerships.

Image 2.1 Crosswalk at Hamilton Avenue & SB SR 17 loop on-ramp

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Figure 2.1 Hamilton Avenue Vicinity Map

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BACKGROUND

City of Campbell 2040 General Plan

In April 2023, the City of Campbell adopted the 2040 General Plan, known as Envision Campbell, which serves as a comprehensive planning document guiding growth and development through the year 2040. The General Plan establishes a comprehensive framework of goals, policies, and actions related to land use, transportation, sustainability, housing, economic development, and public services, ensuring that future development aligns with community priorities, local values, and state planning requirements. A key focus of the 2040 General Plan is the promotion of higher-density and mixed-use development within proximity to major transit corridors and activity centers. This approach is intended to support walkable, transit-oriented neighborhoods that reduce reliance on single-occupancy vehicles, improve access to daily destinations, and enhance overall quality of life for residents.

The General Plan also places a strong emphasis on environmental sustainability with policies that encourage energy-efficient building practices, water conservation, and reductions in greenhouse gas emissions. Improving mobility and access for all users is another central objective of Envision Campbell. The plan calls for investments in public transit, expanded and connected bicycle networks, and enhanced pedestrian infrastructure to create a safe, accessible, and multimodal transportation system. These improvements are intended to serve users of all ages and abilities while supporting active transportation and reducing transportation-related emissions.

The 2040 General Plan was developed through an extensive public engagement process. This collaborative approach ensured that the plan reflects the shared vision, priorities, and values of Campbell residents and stakeholders.

The Hamilton Ave/ SR 17 Bicycle Overcrossing project is consistent with the goals of the 2040 General Plan by providing an improved bicycle and pedestrian facility that promotes active transportation for users of all ages and abilities across State Route 17.

City of Campbell 2040 General Plan Goals

Plan for Regional Growth: Balance local and regional transportation needs while preserving Campbell's small-town character

Support Alternative Transportation: Promote alternative transportation methods to reduce congestion and improve accessibility

Enhance Multimodal Transportation: Improve transportation options for all modes, including walking, biking, and public transit, to support community connectivity and sustainability

Bikeway Classifications

The Bike Plan recommends bikeway treatments that will collectively form a bicycle transportation network and will accommodate the safety needs of all mobility types, users, and ability levels.

Class I Shared-Use Paths

Class I bicycle or shared-use paths are designated bicycle and pedestrian travel routes that are completely separated from automobile traffic. These facilities provide safe passageways for users and promote local green spaces. Class I facilities can be popular for recreational bicycling for users of all abilities as well as commuting.

Class II Bike Lanes

Class II bike lanes are bicycle travel routes located along roads and are visually separated from automobile traffic by road striping. Because these roads often connect key businesses and community centers, they are viewed as vital commuter routes for community members. Bike lanes can be further enhanced by green paint, which highlights areas of potential conflict with vehicles.

Class III Bike Routes

Class III bike routes are roads where automobile and bicycle traffic share travel lanes. Signage and striping are used to indicate the shared condition and travel lanes tend to be wider to allow for parallel travel. These types of paths are often used on slower streets, where parallel travel is safer.

Class IV Separated Bikeways

Class IV separated bikeways are a type of bicycle travel route located along roads similar to Class II bike lanes, but physically separated by elements such as curbs, planting areas, posts, barriers, parking, and grade separation. The added physical separation provides increased safety for cyclists along higher speed roadways that may serve as commuter routes.

Agencies & Stakeholders

The City is sensitive to the needs of partner agencies. Of particular concern are the existing Caltrans Right of Way, UPRR tracks, and the existing VTA Light Rail facilities. Early and continued engagement with Caltrans and other partner agencies will be needed to support future project development into the next phase.

PG&E owns and operates three utility lines along Hamilton Avenue, within Caltrans right-of-way, which support electric and communication facilities. VTA light rail facilities are also present throughout the project site and will require design considerations for the light rail station and overhead rail line. UPRR operates street level lines near Hamilton Avenue and Creekside Way intersection with railroad gates and lighting that the project will need to work around. Throughout design and construction of the project, careful consideration shall be taken to protect these existing utilities and facilities and preserve agency's rights to accessibility and maintenance.

Caltrans

Caltrans will be a key partner in this project, as it takes place almost entirely within their right of way. Therefore Caltrans has the ultimate approving authority of what will be built. They will take into consideration how this project could not only impact their current operations but also any future improvements they may want to consider. Other considerations from the Caltrans perspective include: Impacts to environment, impacts to traffic operations, adherence to Caltrans design standards, among others.

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THE STUDY

The purpose of the feasibility study is to define the project, identify major constraints, and assess the feasibility of developing the 1/4 mile shared-use facility along Hamilton Avenue between Salmar Avenue and Creekside Way.

The study evaluated alternatives to identify preferred alignments, access points, and roadway features in consideration of constraining factors and the goals set forth by the VTA Countywide Bicycle Plan and City of Campbell General Plan.

The following categories were used to evaluate the various design alternatives:

- Multimodal Use/ Access
- Traffic Operations
- Environmental Considerations
- Caltrans approvability
- Estimated Project Cost
- Right-of-Way
- Consistency with Public Input

3. EXISTING CONDITIONS

LAND USE AND ZONING

Land Use

The Hamilton Avenue project resides approximately one- half mile from The Pruneyard, Campbell's iconic shopping and dining destination. It is a key commercial and recreational hub in Campbell, with a mix of retail, dining, and entertainment options.

Downtown Campbell is located southwest of Hamilton Avenue. It is a destination that combines historical charm with modern attractions, offering a variety of locally owned businesses, cultural events, and community spaces. Its walkability, proximity to parks and trails, and excellent transit connectivity make it an important center for both residents and visitors.

Zoning

The zoning designations in the immediate vicinity of the study area:

- GC: General Commercial
- TO-MU: Transit-Oriented Mixed-Use
- P-D: Planned Development
- C-PD: Condominium Planned Development

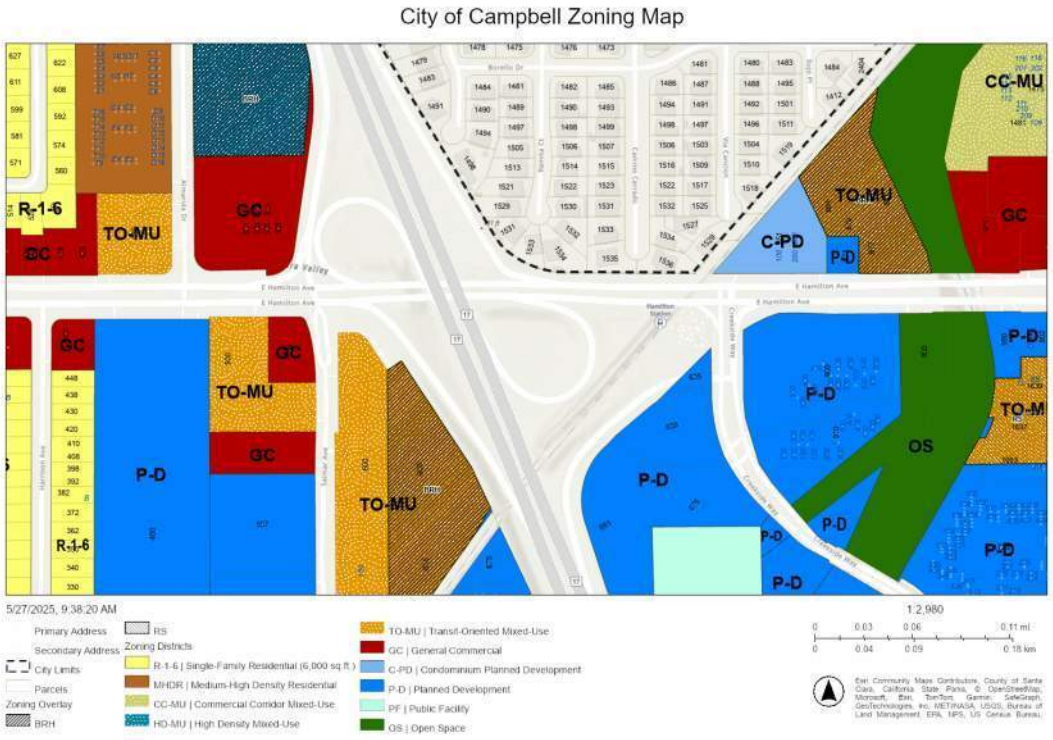

Figure 3.1: Hamilton Avenue Area Land Use Diagram

EXISTING BICYCLE FACILITIES

The Hamilton Avenue/State Route 17 interchange is a high-stress crossing with heavy, fast-moving vehicular traffic, particularly near the highway on-ramps. Currently, Hamilton Avenue east of Salmar Avenue lacks designated bike lanes, signage, and shoulders, forcing cyclists to either share lanes with motor vehicles or ride on the sidewalk. The entirety of the project has been identified in VTA's Santa Clara Countywide Bicycle Plan as a bicycle level of traffic stress three (LTS3). This means the area is designed for "enthused and confident" cyclists- those who are comfortable cycling with traffic.

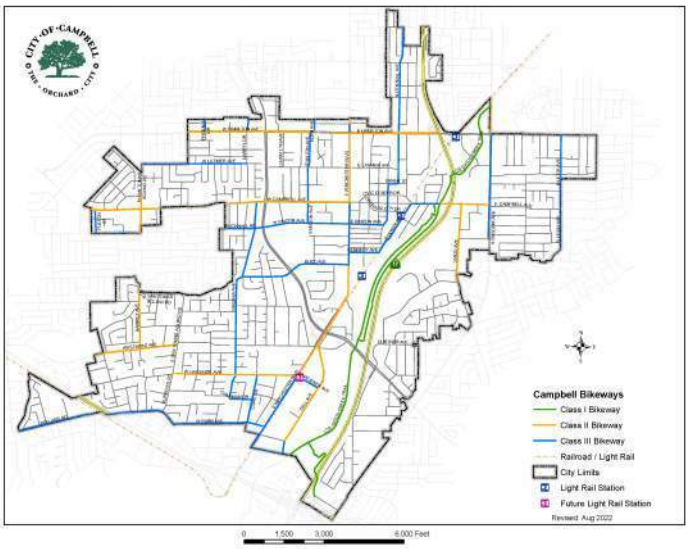

Figure 3.2 Campbell Bikeways

Hamilton Avenue west of SR-17 is designated as a Class II Bikeway. The existing bikeway ends at the Hamilton Avenue and Salmar Avenue intersection, leaving cyclists to decide between riding in traffic or on the narrow sidewalk with pedestrians.

Hamilton Avenue east of SR-17 currently has no bike route classification. The Los Gatos Creek Trail, a Class I bikeway, is approximately 700 ft east of the Hamilton Avenue and Creekside Way intersection and is a vital recreational and transportation resource that connects Campbell, San Jose, and Los Gatos, offering a safe, comfortable route for biking, walking, and running.

Bascom Avenue has existing Class II and III Bikeways and crosses Hamilton Avenue approximately 1000 ft east of Creekside Way. The Bascom Avenue Complete Streets Corridor Study (2020) focuses on improving bike infrastructure along Bascom Avenue. VTA is designing Phase 1 of the project, which extends from Interstate 880 near Hedding Street to Hamilton Avenue. This phase will reduce traffic lanes from three to two in each direction and introduce Class IV bike lanes, separated from vehicle traffic by raised islands. Phase 1 will address bike improvements at the Hamilton Avenue/Bascom Avenue intersection, including removing pork-chop islands and tightening corner radii to improve bike safety. The environmental stage of the Bascom Avenue project has been completed, and the design and engineering phase is underway. The right-of-way phase of the project was funded from a two-million-dollar federal grant and the project is still seeking funding for the construction phase.

ACTIVITY GENERATORS

The area surrounding the project alignment contains several schools, parks, residences, retail, and municipal buildings. The addition bicycle and pedestrian facilities would offer a safe alternative for students and residents to various destinations nearby.

Parks & Recreation

- Campbell Park
  Campbell Park is approximately one mile from the project and includes basketball courts, play equipment, horseshoe pits, and a water feature. The park also provides direct access to the Los Gatos Creek Trail.
- Marijane Hamann Park
  Marijane Hamann Park is ¾ of a mile from the project. The Park includes softball, soccer, and tennis facilities with a playground and picnic areas.

Schools

- Rosemary Elementary School
  0.8 miles from the project
- Castlemont Elementary School
  0.9 miles from the project
- San Jose Christian School
  1.0 mile from the project
- Blackford Elementary School
  1.0 mile from the project

Commercial and Retail

- Hamilton Plaza
  0.5 miles from the project
- The Pruneyard
  0.7 miles from the project
- Downtown Campbell
  1.3 miles from the project

Campbell Community Center

The community center is located one mile from the project and includes

- Athletic Fields
- Tennis Center
- Banquet Halls
- Community Programs

Image 3.1 Campbell Park

Image 3.2 The Pruneyard

Image 3.3 Campbell Community Center

LIGHT RAIL & TRANSIT CONNECTIONS

The VTA's Hamilton Light Rail Station is located between the SR-17 interchange and Creekside Way. This station serves as a key transit hub, offering important connections for local commuters to regional rail services including Caltrain, ACE, and Amtrak. Based on VTA's 2024 daily ridership statistics, the station serves over 5,000 passengers starting or ending their journeys here each day.

In addition to light rail service, several VTA bus routes operate in the surrounding area. Route 56 directly serves the Hamilton station, while Route 61 runs along nearby Bascom Avenue. Route 202 provides late-night service on Creekside Way, and Routes 60 and 102 operate along Winchester Boulevard, roughly three-quarters of a mile from the Hamilton/SR-17 interchange. See figure 3.4 for a map of the transit routes that run within the City of Campbell limits. Collectively, these bus routes support around 400 daily riders, according to the latest VTA ridership data.

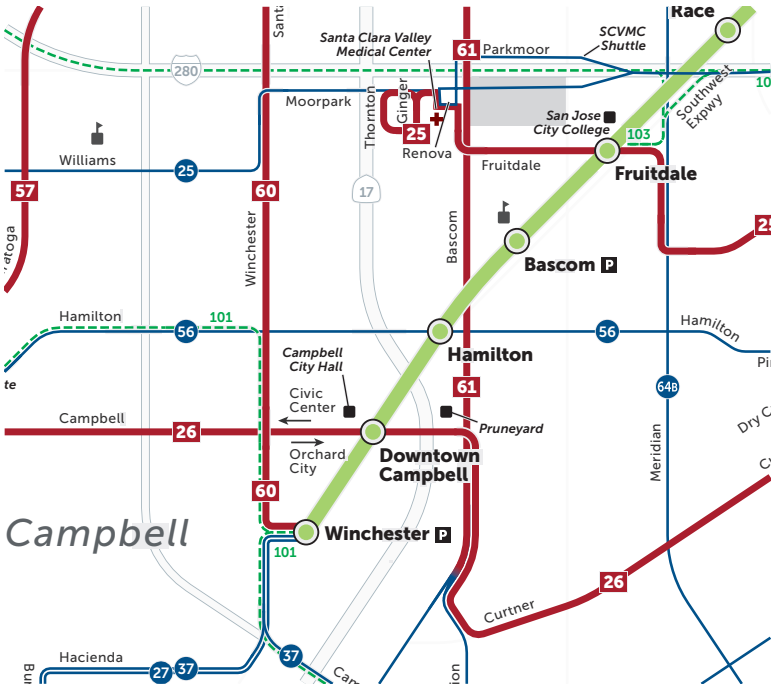

Figure 3.4 VTA Campbell Map

Image 3.4 Hamilton Light Rail Station

Image 3.5 Hamilton Avenue Bus Stop

EXISTING BICYCLE AND PEDESTRIAN CONDITIONS

Image 1 - View facing east from the north side of Hamilton Avenue at the west end of the uncontrolled crosswalk that crosses southbound right-turn lane of the SR 17 Southbound Off-ramp.

Image 2 - View facing west from the north side of Hamilton Avenue at the east end of the signalized crosswalk that crosses southbound left-turn lanes of the SR 17 southbound off-ramp.

Image 3 - View facing east from the north side of Hamilton Avenue at the western end of the uncontrolled crosswalk that crosses SR 17 southbound loop on-ramp.

Image 4 - View facing west from the north side of Hamilton Avenue east of the VTA light rail bridge.

Image 5 - View facing south from the north end of the signalized crosswalk that crosses the east leg of Hamilton Avenue at Creekside Way. This crosswalk provides access to the Hamilton Light Rail station and nearby VTA bus stops.

Image 6 - View facing northeast from the southwest corner of Hamilton Avenue/ Creekside Way intersection. The uncontrolled crosswalk provides access to the Hamilton Light Rail station and nearby VTA bus stops.

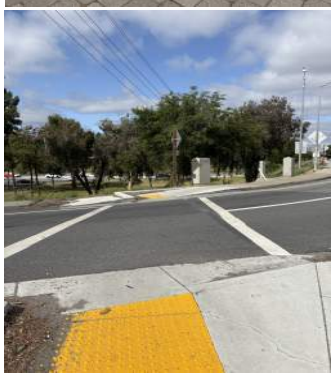

Image 7 - View facing west from the south side of Hamilton Avenue at the east end of the uncontrolled crosswalk that crosses the SR 17 northbound loop on-ramp.

Image 8 - View facing east from the south side of Hamilton Avenue at the west end of the uncontrolled crosswalk that crosses the SR 17 southbound on-ramp.

Image 9 - View facing east from the south side of Hamilton Avenue at the west end of the signalized crosswalk that crosses Salmar Avenue.

Image 10 - View facing south from the north side of Hamilton Avenue just west of Salmar Avenue. The signalized crosswalk crosses the west leg of Hamilton Avenue at Salmar Avenue.

Permitting
The proposed project would require permitting from Caltrans, UPRR, and VTA with special consideration of the sidewalk adjacent to the UPRR tracks.

Cultural Resources
Cultural Resources was beyond the scope of this study but will likely need to be studied in future phases, especially due to the project's proximity to Los Gatos Creek. Proximity to creek banks can be an indicator of the potential presence of cultural resources.

Construction-related Impacts
The project area is primarily developed with Planned Development and Transit-Oriented Mixed-Use areas. Residential users are sensitive to construction dust, heavy equipment emissions and noise. These potential impacts will be evaluated in the CEQA Initial Study; however, due to the temporary nature of construction, impacts are not anticipated to be significant. Standard construction measures and conformance with the City's Municipal Code would reduce or avoid any potential impacts.

Long-term Noise Impacts
Users of the new bicycle and pedestrian facilities adjacent to existing residential uses can generate additional noise when compared to existing conditions; however, the new structure project would not be located adjacent to rear yard fences and would result in no significant noise impact from the study. A noise analysis would be required during the preparation of the CEQA document for the project. Conformance with the City's Municipal Code related to hours of use may reduce impacts to a less than significant level.

Geology
The project is located in the Coast Ranges Geomorphic Province and is mapped to be underlain by Holocene-aged alluvial fans and levees. Alluvial fans are composed of sand, gravel, silt, and clay. Alluvial fan levees are composed of loose, moderately well-sorted sand, silt, and clay.

Subsurface Condition
Overall, the logs indicate a transition from stiff near-surface cohesive soils to very dense granular soils at depth, characteristic of alluvial fan and levee deposits. Given the geomorphological position of the Project in the Santa Clara Valley, depth to bedrock is likely greater than 500 feet below the surface. Data from well completion reports in the vicinity of the Project and from borings drilled in the project vicinity indicate that the depth to groundwater in the Project area is expected to be greater than about 50 feet below the surface.

Seismicity
The USGS Quaternary Fault and Fold Database shows the Project is not located within 1,000 feet of an unzoned fault that is Holocene/Latest Pleistocene (15,000 years) or younger in age. The closest active fault to the Project is the Monte Vista-Shannon fault zone located about 3.3 miles to the southwest. The closest section of the San Andreas fault zone is located about 7.7 miles to the southwest of the Project. The closest section of the Hayward fault zone is located about 8.3 miles to the northeast of the Project.

Bike & Pedestrian Incidents
Table 3.1 summarizes recorded bicycle and pedestrian incidents within the project area between January 2020 and December 2024.

TIME PERIOD	TOTAL NUMBER OF BICYCLE COLLISIONS	TOTAL NUMBER OF PEDESTRIAN COLLISIONS	INJURIES	FATALITIES
2020	0	1	1	0
2021	0	0	0	0
2022	0	0	0	0
2023	0	0	0	0
2024	0	2	2	0
TOTAL	0	3	3	0

Table 3.1 Bike and Pedestrian Incidents

MAJOR CONSTRAINTS

Hamilton Avenue has several unique and challenging characteristics which are potential challenges and constraints for the implementation of the Hamilton Avenue POC.

Available Right of Way

The project is sensitive to the needs of partner agencies, with Caltrans being of particular importance given that the project is located almost entirely within their right-of-way. As part of the alternatives analysis, each option was reviewed for its potential impacts to Caltrans facilities, standards, and operations to ensure that right-of-way constraints were respected and disturbances minimized. The alternatives also considered the presence of VTA light rail facilities and UPRR tracks within the project limits, both of which require compatibility with Caltrans right-of-way requirements. These intersecting facilities reinforce the importance of coordination and underscore the need to preserve safe and reliable operations for all agencies involved.

Early and continued engagement with Caltrans and other partner agencies will be critical for project advancement. Caltrans will remain a key partner, as their review and approval will guide which alternative is most feasible within the state's transportation network. The study team met with Caltrans to present the alternatives under consideration and provide them the chance to review. While they did not commit to concurring with a single preferred alternative, they did not find any fatal flaws on the Evaluation findings.

Overall, the alternatives analysis demonstrates the City's commitment to evaluating improvements in a way that minimizes disturbance to Caltrans facilities and preserves long-term accessibility, safety, and operational needs within the public right-of-way.

Utilities

All design alternatives were evaluated with careful attention to the presence of existing utilities to ensure that disturbance would be minimized throughout both design and construction. PG&E owns and operates three utility lines along Hamilton Avenue within Caltrans right-of-way that support overhead electric and communication facilities. These facilities were reviewed during alternative analysis, and alignments were refined to avoid unnecessary conflicts. In addition, VTA light rail facilities extend throughout the project limits, requiring thoughtful consideration of the overhead rail line. The alternatives account for the need to maintain safe clearances, protect rail infrastructure, and preserve operational reliability.

At the Hamilton Avenue and Creekside Way intersection, UPRR operates at-grade rail lines equipped with railroad gates and lighting. Going forward, engagement with UPRR will be necessary to understand what is acceptable for the study at that crossing. All alternatives have considered measures to work around these facilities to minimize impacts to railroad safety features or accessibility.

Overall, the project alternatives carefully considered each utility and agency facility. Efforts were made to reduce impacts, provide adequate protection, and preserve all agencies' rights to accessibility and ongoing maintenance. This approach ensures the project could be implemented with minimal disruption to existing infrastructure while maintaining reliable service to the surrounding community.

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4. BICYCLE OVERCROSSING CRITERIA

OVERCROSSING DESIGN GUIDELINES

There exist many guidance documents regarding the planning, design, and construction of a Bicycle Overcrossing. The following references were used as a basis for the design, construction, and maintenance of the project:

- Santa Clara Countywide Bicycle Plan (SCCBP)
- City of Campbell General Plan (CCGP)
- VTA Bicycle Technical Guidelines (BTG)
- Caltrans Highway Design Manual – (HDM)
- City of Campbell Streetscape Standards
- California Manual on Uniform Traffic Control Devices (MUTCD)
- A Policy on Geometric Design of Highways and Streets (AASHTO)
- NACTO Urban Bikeway Design Guide (NBDG)
- NACTO Urban Street Design Guide (NSDG)
- Americans with Disabilities Act Standards for Accessible Design (ADA)

These guidelines establish design criteria and provide direction for the planning and implementation of the proposed bike and pedestrian overcrossing. Several key documents provide authoritative and advisory input for the project. The *Caltrans Highway Design Manual (HDM)*, *AASHTO's Policy on Geometric Design of Highways and Streets*, and the *Americans with Disabilities Act (ADA) Standards for Accessible Design* set forth definitive, mandatory standards that must be met.

Additional guidance is drawn from resources such as the *Santa Clara Countywide Bicycle Plan*, *VTA Bicycle Technical Guidelines*, *City of Campbell Streetscape Standards*, *California Manual on Uniform Traffic Control Devices (MUTCD)*, and NACTO's *Urban Bikeway Design Guide* and *Urban Street Design Guide*. These documents provide recommended practices and best design approaches but are not strictly mandatory.

The design of the overcrossing will be evaluated on a case-by-case basis, with consideration given to site-specific conditions, user needs, and the surrounding land use context. Content from the referenced documents, in conjunction with direct input from relevant local agencies, will serve as key resources throughout the design process.

BICYCLE OVERCROSSING DESIGN CRITERIA

Drainage

- For proper drainage, the surface of a bike path should have a minimum cross slope of 1 percent to reduce ponding and a maximum of 2 percent per Caltrans Design Information Bulletin (DIB) 82. Sloping of the traveled way in one direction usually simplifies longitudinal drainage design and surface construction, and accordingly is the preferred practice. The bike path shoulder shall slope away from the traveled way at 2 percent to 5 percent to reduce ponding and minimize debris from flowing onto the bike path (HDM 1003.1(16))

POC Structures

- The clear width of a bicycle path on structures between railings shall be no less than 10 feet. It is desirable that the clear width of structures (inclusive of traveled way and shoulders) be equal to the minimum clear width of the path plus shoulders (HDM 1003.1(2))

- Bike bridge live loads should allow for the passage of an occasional maintenance/service vehicle. Also, depending on the emergency service providers' routes, a bike bridge might be designed to accommodate an occasional ambulance or other emergency vehicle. (BTG 9.3.6)

- Considering that all bike bridges will also be open to pedestrians, the bridge performance should consider the vibrations caused by runners and walkers (BTG 9.3.7)

- The pavement material and structure of a bike path should be designed in the same manner as a highway, with a recommendation from the District Materials Branch. (HDM 1003.1(15))

- The surface to be used by bicyclists should be smooth, free of potholes, and with uniform pavement edges (1003.5(1))

POC Safety

- Optimally, bike paths should be lit at night year-round to increase safety and to maximize the number of trips made by bicycle. If lighting is provided, special attention should be given to the design and placement of lighting on bike paths located within environmentally sensitive areas and near residential areas. (BTG 9.1.3)

- Providing an interconnected network of bikeways will improve safety for all users and access for bicycles. (HDM 1002.1 (2))

Design and Construction Practices

- Typically 25 feet of right of way is required to accommodate the trail tread...Occasionally a bike path is forced to be contained within a restricted right of way. (BTG 9.1.4)

- Traveled Way. The minimum paved width of travel way for a two-way bike path shall be 8 feet, 10-foot preferred. (HDM 1003.1 (1a))

- An overcrossing/undercrossing of the arterial (road) should be considered if trail volumes are very high and/or the arterial volumes are high enough that trail users benefit from reduced delay and so that progression is maintained on the arterial. (BTG 9.2.2)

- A clear width of 16' -20' is optimum where bridge has extremely high use by pedestrians and bicyclists; Consider design cues to separate users (BTG 9.3.3)

- The minimum height of bicycle rail in certain circumstances is 48 inches; however, in most situations 42 inches above the deck surface is appropriate (HDM 209.10(6))

-The best way of discouraging non-authorized motor vehicles is through design. Past solutions of installing bollards or other barrier treatments should be considered a last resort (BTG 9.4)

Monitoring and Maintenance

- Bike paths that are used for transportation, (i.e. virtually all paved trails and many unpaved trails) should be open 24 hours a day just as roads are. (BTG 9.1.3)

5. PUBLIC OUTREACH

OUTREACH PLAN & STRATEGIES

The City committed to providing a robust community outreach process as part of this study, developing multiple formats for community dialogue and interaction. The primary purpose was to listen to potential facility users and the community at large to gain an understanding of current concerns and desires for the proposed project. The City wanted to learn how and why people might use this route, important destinations and connections, barriers to using this overcrossing, and amenities the community would like to see.

To reach as many residents and community members as possible, the project and outreach events were announced through several channels online and through mailings. The City also shared information about the events through social media on NextDoor, Twitter, Instagram, and Facebook. The City maintained an active online presence by posting outreach materials, meeting presentations, and outreach summaries following each event on the project website and various social media. Project promotion materials were provided in English and Spanish, and the first survey used geo-targeted ads to promote the survey to the project area including equity priority communities.

OUTREACH EVENTS

Valentine Fun Run - February 8, 2025

Community outreach for the project focused on in-person engagement at the Fun Run event, where project staff held approximately 75 face-to-face conversations with members of the public. The event also served as a key opportunity to share a QR code for Public Meeting No. 1, helping draw attention to and increase participation in the online survey. Based on interactions at this event, the general sentiment was supportive of a project to address existing deficiencies for bicyclists and pedestrians crossing SR 17.

Public Outreach Meeting – February 20, 2025

On Thursday, February 20, the City hosted a public outreach meeting to engage community members in the early stages of the study. The purpose of the meeting was to gather input and share information regarding potential improvements to bicycle and pedestrian crossings at the SR 17/Hamilton Avenue Interchange.

City staff and project team members provided an overview of the project area, including existing conditions, design constraints, and key objectives. To illustrate potential approaches, several example treatments were displayed. These visuals were intended to help residents better understand the range of features and options that could be considered to enhance safety and connectivity for bicyclists and pedestrians at the project site.

The meeting also included an open question-and-answer session, allowing attendees to seek clarification, raise concerns, and share their perspectives. In addition, the project team presented a project schedule outlining next steps in the study and implementation process. Attendees were invited to provide further feedback through comment cards and an online survey, accessible via a QR code displayed at the event.

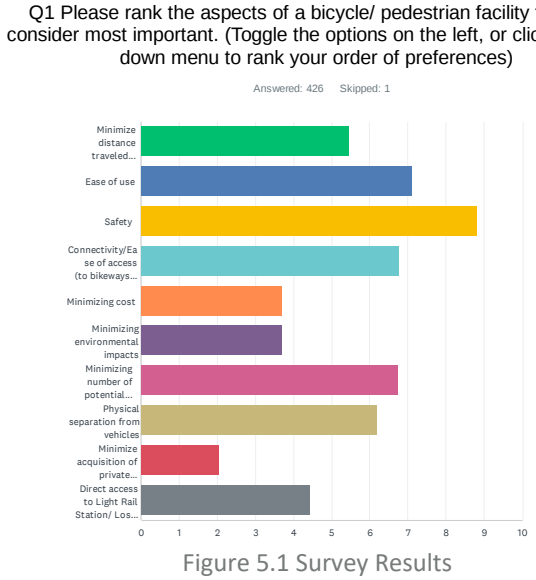

Figure 5.1 Survey Results

Community Survey – February 2, - March 14, 2025

Following the first community outreach meeting, the project team launched an online community survey to gather more detailed input on potential bicycle and pedestrian improvements at the SR 17/Hamilton Avenue Interchange. The survey was designed to better understand

The survey included seven multiple-choice questions focused on user priorities, travel patterns, and facility preferences. Participants were asked to rank various aspects of the proposed design—such as safety, connectivity, and convenience—based on what they considered most important. Consistent with feedback received during outreach meetings, safety emerged as the top priority among respondents (Fig. 5.1).

In addition to ranking priorities, respondents were asked to describe their level of cycling experience. Most participants identified themselves as advanced or experienced riders, suggesting that many current users of the interchange are already comfortable navigating more complex traffic conditions. This provides insight into existing travel demand while also underscoring the need to create a facility that is accessible to riders of all skill levels, including less experienced cyclists and pedestrians.

The survey also gathered information on destinations commonly accessed through the interchange. Responses were relatively evenly split among three nearby commercial areas and the Los Gatos Creek Trail, reflecting the corridor's importance as both a utilitarian and recreational route. When asked about trip purposes, participants most often cite tasks or errands, along with recreational activities, as their primary reasons for travel.

Survey respondents were predominantly between the ages of 25 and 44, with respondents' areas of residence within Campbell being evenly distributed. Approximately two-thirds of respondents identified as male. Thirteen percent identified as Hispanic, Latino, or Spanish in origin. In terms of race and ethnicity, 68 percent identified as White, and just under 15 percent identified as Asian or Asian American. Representation from other demographic groups was limited, and 13 percent of respondents declined to state their race or ethnicity.

Overall, survey responses demonstrated strong community support for improvements for bicyclists and pedestrians at the SR 17/Hamilton Avenue Interchange. Many participants expressed concern about the safety and usability of the existing crossing, reinforcing the importance of designing a facility that prioritizes safety, accessibility, and connectivity for all users.

Image 5.1 Oktoberfest Fun Run Community Event

Public Outreach Event – October 18, 2025

On Saturday, October 18th the city hosted a table at the Campbell Oktoberfest Fun Run community event to share an overview of the project and solicit feedback on possible features and alternatives. The feedback was overwhelmingly positive and supportive. Community members seemed optimistic about the potential of the city doing something to improve the user experience at the intersection.

Image 5.2 Oktoberfest Fun Run Community Event

HAMILTON AVE / SR 17 BICYCLE OVERCROSSING FEASIBILITY STUDY MEETING

Figure 5.3 Community Meeting Posting

Public Outreach Meeting – November 13, 2025

On Thursday, November 13th, the City hosted a public outreach meeting to give an overview of the study, background and goals, and a recap of previous community engagement and its influence on the alternatives presented. The public had the option to attend or watch a recording virtually. There was a question-and-answer session that allowed community members to speak directly with the team to better understand what was being proposed and how it could work with existing conditions.

Most attendees indicated a preference for the Southern Route, noting its greater separation from vehicle traffic, gentler grade, and avoidance of freeway on-ramps. Feedback on bridge design was divided between the Box Girder and Steel Truss options, while the Network Tied Arch received no support due to its higher cost and maintenance needs. Several participants selected the Box Girder option primarily because any overcrossing would improve current conditions, though many agreed the Steel Truss would be aesthetically preferable if funding allows. Attendees also asked clarifying questions about overcrossing maintenance, how the project aligns with broader active-transportation planning efforts, and whether typical community destinations are being considered in the proposed design.

FEEDBACK DURING EVENTS

Feedback received from the community meetings, comment cards, community discussions, online surveys, letters, and emails during and after outreach meetings fell into several "themes." Many comments touched on multiple themes. The themes were as follows:

Safety

- Concern about the number of areas, specifically at the intersections within the project, where bicyclists and pedestrians must cross vehicle traffic
- A desire for physical separation from vehicles for both bicyclists and pedestrians from traffic

Connectivity

- The desire for an improved route that provides connectivity for users coming from either side of SR 17
- The need for a connection to local public transit options
- The desire for non-vehicle options to access nearby shopping and dining areas
- Access to the nearby Los Gatos Creek Trail
- Improved connections to nearby neighborhoods

Ease of Use

- The desire for an easy-to-use route through the project area
- Clear and intuitive wayfinding
- An upgraded design that is user friendly

Maintenance/ Cost

- Concerns about the potential for bike lanes to become covered in debris
- The need for a maintenance plan
- The lack of maintenance becoming a hazard

Timeframe

- Concerns about the potential time frame being longer than users desire

These are the most common concerns that were voiced by residents; a more comprehensive list of the public's specific comments and concerns is provided in Appendix C.

SUMMARY

Respondents broadly emphasized the need for safer and better-maintained bike and pedestrian infrastructure, with many calling for clearer separation from vehicle traffic and more consistent upkeep of any future projects. They also highlighted the importance of improving connections between existing routes and key destinations, while noting that changes should avoid worsening traffic congestion. Overall, respondents were supportive of improvements in the area with some concern as to the short-term effects of construction and possible expense.

6. ALTERNATIVE ANALYSIS

The bicycle overcrossing alternatives were compiled based on reviews of existing conditions, property ownership, public input, and recommendations from the City of Campbell. Alternatives for the route, elements, and features are presented to address the following major themes of the project:

Improved Recreation and Transportation Options

Safety, Security, and Privacy

Crossing Busy Streets

BICYCLE OVERCROSSING ALIGNMENT

Four design alternatives were evaluated to address the goals and objectives of the project, the Campbell General Plan, and the Hamilton Avenue Public Improvement Plan.

Route Descriptions

No Build Alternative

The No Build Alternative will not provide new bicycle or pedestrian facilities and does not propose any improvements to any existing facilities. This alternative was evaluated as a control against its peers (Alternatives 1 through 4).

The Southern Route

Alternative 1, The Southern Route (Appendix A), proposes a new alignment beginning at the southbound SR 17 ramp and reconnecting with Hamilton Avenue just west of the Hamilton Light Rail station. This option provides fully grade-separated travel near the north bound SR 17 on-ramps and improves visibility at the Salmar Avenue and Creekside Way intersections.

Starting west of SR 17 at the intersection of Hamilton Avenue and Salmar Avenue, the route parallels the right-turn lane for the southbound SR 17 on-ramp while remaining grade-separated for approximately 600 feet. The route then turns eastward, crossing over and perpendicular to SR 17 for approximately 350 feet, before curving north to run parallel to the VTA Light Rail tracks for another 350 feet. From there, the alignment turns east, passes beneath the light rail tracks for the final 100 feet, and ties into Hamilton Avenue at Creekside Way next to the light rail station entrance. With this alignment, the total distance traveled from the Salmar Avenue to Creekside Way intersection is approximately 1,400 feet.

This alternative includes a Class II bike lane along the north side of Hamilton Avenue to cross SR 17. Beginning at the intersection of Hamilton Avenue and Creekside Way, cyclists from any direction can access the bike lanes through the signalized intersection. The 1,200-foot bike lane runs the full length of the interchange, ending at the west side of Hamilton Avenue and Salmar Avenue, where riders can continue south or west using the existing network.

Pedestrian facilities are also included, with a sidewalk running parallel to the Class II bike lane on the north side of Hamilton Avenue. To accommodate the new lane, the Hamilton Avenue median will be shifted approximately 6 feet south, with 11-foot-wide travel lanes maintained for both through and turning movements.

The Campbell Loop

Alternative 2, The Campbell Loop (Appendix A), primarily follows the alignment of Hamilton Avenue with the addition of a loop near the northbound SR 17 on-ramp and an undercrossing.

The route begins west of SR 17 at the intersection of Hamilton Avenue and Salmar Avenue. From there, it runs parallel to the right-turn lane for the southbound SR 17 on-ramp for roughly 80 feet before crossing the ramp at grade via a designated crosswalk and bike crossing. The alignment then continues east, parallel to Hamilton Avenue, for approximately 450 feet before looping clockwise and dropping below grade. This allows the path to pass under the northbound SR 17 loop on-ramp. A new pedestrian stairway provides a more direct connection for people walking, allowing them to bypass the loop and take a shorter route. East of the undercrossing, the route climbs back to Hamilton Avenue grade just west of the VTA Light Rail tracks, where it ties into the existing roadway at the intersection of Hamilton Avenue and Creekside Way near the Light Rail entrance. With this alignment, the total distance traveled from the Salmar Avenue to Creekside Way intersection is approximately 1,350 feet.

In addition to the loop alignment, Alternative 2 includes an option for cyclists to use a Class II bike lane in the westbound direction along the north side of Hamilton Avenue to cross SR 17. This route begins at the intersection of Hamilton Avenue and Creekside Way, where riders traveling from any direction can connect to the bike lanes at the signalized intersection. The 1,200-foot bike lane spans the length of the interchange, ending at the west side of the Hamilton Avenue and Salmar Avenue intersection. From there, cyclists may continue traveling either south or west using the existing bike lanes.

On the north side of Hamilton Avenue, pedestrian accommodations are also included. A continuous sidewalk will run parallel to the new Class II bike lane on the north side of Hamilton Avenue, providing a safe and direct option for walking. Additionally, stairs will be constructed at both ends of the loop, allowing pedestrians to shorten their travel distance if desired. These added connections are intended to make the facility more convenient for all types of users.

To accommodate the new bike lane, the traffic median on Hamilton Avenue will be shifted approximately 6 feet south. As a result, travel lanes will be adjusted but will remain 11 feet wide for both through traffic and turning movements, ensuring adequate capacity and safety for vehicles.

The Straight Shot

Alternative 3, The Straight Shot (Appendix A), primarily follows the Hamilton Avenue roadway alignment while creating a separate, dedicated route for both bicyclists and pedestrians. This option provides a direct connection across SR 17, with fewer vertical changes compared to other alternatives.

The alignment begins west of SR 17 at the intersection of Hamilton Avenue and Salmar Avenue, running parallel to the southbound SR 17 on-ramp for approximately 100 feet. It then crosses the ramp at grade using a designated crosswalk and bike crossing. It is envisioned that additional signage and rectangular rapid flashing beacons will be installed ahead of this crossing. From there, the route continues east, offset about 10 feet from the existing bridge structure for approximately 450 feet, before turning slightly south to follow along the northbound SR 17 on-ramp traffic for 75 feet. At that point, it crosses the ramp at grade via another crosswalk and bike crossing before rejoining eastbound Hamilton Avenue traffic for the remaining 350 feet. With this alignment, the total distance traveled from the Salmar Avenue to the Creekside Way intersection is approximately 1,050 feet.

This alternative also includes an option for cyclists to use a class II bike lane on the north side of Hamilton Avenue to cross SR17. Beginning at the intersection of Hamilton Avenue and Creekside Way, users traveling from any direction will be able to use bike lanes in the intersection to access the bike route. The 1200-foot route runs the length of the interchange, ending at the west end of the Hamilton Avenue and Salmar Avenue intersection. Cyclists can then use bike lanes to travel south or west.

The traffic median on Hamilton Avenue will be adjusted approximate 6 feet south to allow for the addition of the class II bike lane. The shifted travel lanes will be 11’ for through traffic and turning vehicles.

There is a sidewalk for pedestrians along the bike lane on the north side of Hamilton Avenue. The traffic median on Hamilton Avenue will be slightly adjusted to allow for the addition of the class II bike lane. The shifted travel lanes will be 11’ for through traffic and turning vehicles.

The Minimalist

Alternative 4 (Appendix A) is the low build alternative and keeps users on the existing bridge structure alongside eastbound traffic. The difference between this alternative and the existing conditions is primary restriping the existing lanes to have a dedicated bike and pedestrian route.

This route takes users south of the southbound SR17 on-ramp for approximately 80 feet before crossing over the southbound lane via a crosswalk and bike crossing and rejoining eastbound traffic on the bridge structure. Cyclists and pedestrians will continue that route for approximately 500 feet before turning slightly south with the northbound SR17 on ramp for 50 feet before crossing the on-ramp at grade via a crosswalk and bike crossing and rejoining eastbound Hamilton Avenue traffic for the remaining 350 feet. With this alignment, the total distance traveled from the Salmar Ave to the Creekside Way intersection is approximately 1,000 feet.

This alternative includes class II bike crossings for westbound and eastbound cyclists at the Salmar Avenue intersection as well as southbound travel on Salmar Avenue. At the Hamilton Avenue and Creekside Way intersection there are class II facilities for eastbound and northbound travel. There are crosswalks for pedestrians at both intersections to allow for seamless travel in the area. This alternative does not include any bike or pedestrian routes on the north side of the bridge.

Structures

The proposed bicycle overcrossing will be located over Highway 17 to the south of the existing Hamilton Ave Overcrossing (OC) and north of the existing Hamilton Ave Underpass (UP) (light rail).

The overcrossing will be owned and maintained by the City of Campbell.

Two-Span Structure

The two-span structure option is anticipated to consist of a 200 foot long bridge with a maximum span length of approximately 110 feet and a clear width of 12 feet. The bridge will be supported by an approximate 4'-0" diameter column and large diameter cast-in-drilled-hole (CIDH) concrete pile in the SR 17 median and on seat type abutments supported on CIDH concrete piles. The column in SR 17 median will be protected from vehicular impact by the Caltrans Standard Concrete Barrier Type 60MGF.

Bent construction in the SR 17 median will require temporary shifting of lanes to accommodate construction of the CIDH pile foundation and column. The two-span superstructure is anticipated to be a cast-in-place prestressed (CIP/PS) concrete box girder with anticipated structure depth of 4'-6". The CIP/PS concrete box girder superstructure provides standard minimum permanent vertical clearance of 18'-6" above SR 17. Temporary vertical clearance of 15'-0" above SR 17 will be provided with standard falsework depths. A falsework bent is anticipated in the SR 17 median.

Architectural treatment can be included on the concrete surfaces and on the metal railings to improve the visual impact of the structure.

Maintenance of a concrete structure can include spall repair and treatment of the deck with methacrylate to seal cracking in the concrete or a polyester concrete overlay. Routine maintenance of a concrete structure is less costly than maintenance of a steel structure.

Estimated structure construction cost per square foot is $600/SF excluding mobilization and contingency.

Pros

1. Cast-in-place concrete box girder is a cost-effective structure type.
2. Cast-in-place concrete box girder is a Caltrans standard bridge type.
3. Matches structure layout, structure type and aesthetics of the adjacent existing bridges (Hamilton Ave OC and Hamilton Ave UP).
4. Cast-in-place concrete box girder requires the least amount of routine maintenance.

Cons:

1. Traffic control and detouring will be required to construct the column in the median
2. Falsework over SR 17 will be required.

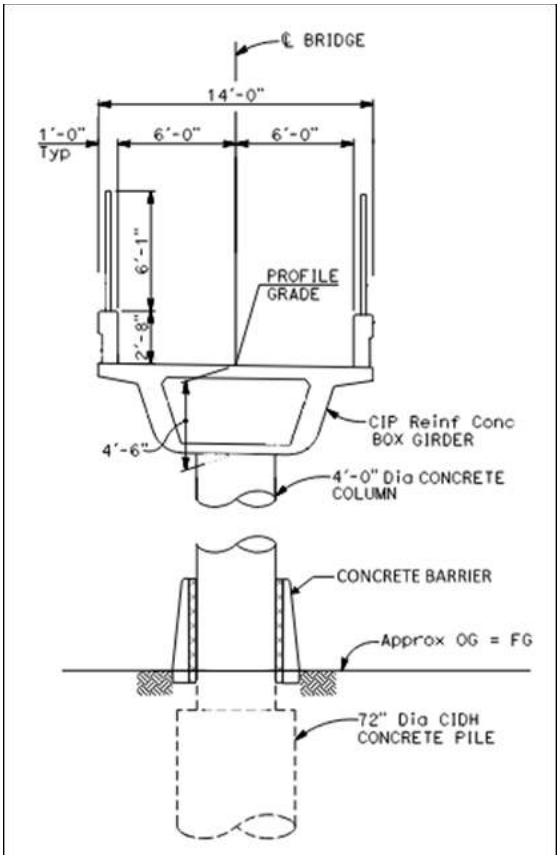

Figure 6.1 Two-Span Option Typical Section - CIP/PS Concrete Box Girder Superstructure

Image 6.1 CIP/PS Concrete Box Girder Example

Image 6.2 CIP/PS Concrete Box Girder Example

Single-Span Structure

Prefabricated Steel Truss

Based on the design team's experience, Caltrans has not allowed a prefabricated steel truss bridge (designed and fabricated by the contractor during construction) to span State highways. Caltrans Structure Technical Policy 6.2 requires steel pedestrian bridges crossing state highways to be a Standard Bridge. A Standard Bridge needs to have steel member identifications including fracture critical members (FCMs). Prefabricated bridge manufacturers are not Caltrans certified and do not have the capabilities to fabricate steel structures with FCMs to meet Caltrans standards. Therefore, a special design and fabrication at a Caltrans certified manufacturing facility will be required.

Special Designed Steel Truss

A single span structure option is a special designed steel truss option with an approximate length of 200 feet. The anticipated structure depth is approximately 4'-0".

A special designed steel truss with a clear width of 12 feet may span approximately 200 to 220 feet. If the span length is increased beyond 220 feet, there are seismic concerns regarding meeting Caltrans seismic requirements.

The bridge will be delivered to the site in multiple pieces and will require a staging area for bridge assembly and erection.

Aesthetic options for the bridge include a painted steel truss as shown in Image 3 below or a weathering steel truss shown in Image 4. A painted steel truss requires additional maintenance compared to a concrete superstructure option to maintain the paint system and prevent corrosion.

Estimated structure construction cost per square foot is $1,000/SF*excluding mobilization and contingency.

Pros

1. A single span option clear spans SR 17 and does not have a column in the SR 17 median
2. Falsework over SR 17 is not required
3. Enhanced aesthetic opportunities

Cons:

1. More expensive structure option than concrete box girder
2. A painted steel truss requires more maintenance than concrete structure

Image 6.3 Special Design Painted Steel Truss Example

Image 6.4 Special Design Weathering Steel Truss Example

Network Tied Arch

A single-span structure option is anticipated to be a steel network tied arch superstructure approximately 200'-0" long. The network tied arch is anticipated to be supported on seat-type abutments founded on piles. The network tied arch is the most expensive option from a structure perspective.

The painted network tied arch bridge would require additional maintenance compared to a concrete structure.

The bridge will be delivered to the site in multiple pieces and will require a staging area for bridge assembly and erection.

Estimated structure construction cost per square foot is $1,500/SF* excluding mobilization and contingency.

Pros

1. A single span option clear spans SR 17 and does not have a column in the SR 17 median
2. Falsework over SR 17 is not required
3. Enhanced aesthetic opportunities

Cons

1. Most expensive structure option
2. A painted network tied arch requires more maintenance than a concrete structure

Image 6.5 Network Tied Arch Bridge Example

Approach Structures

The east approach is anticipated to be a cast-in-place concrete slab bridge to minimize settlement risk to the adjacent existing light rail MSE walls. Precast closure walls are anticipated to prohibit public access underneath the bridge. Access openings can be provided for structure inspection and maintenance purposes. The east approach structure is anticipated to be a multi-span structure supported on large diameter shaft foundations at the bents. Pile foundations are anticipated for the abutment foundation.

Image 6.6 CIP Concrete Slab Bridge Example

A column layout for the east approach will be developed to minimize impacts to the SR 17 northbound loop on-ramp and to provide access for future maintenance of the light rail mechanically stabilized embankment (MSE) wall.

Removable railings on the overcrossing can also be evaluated to facilitate future maintenance of the adjacent existing light rail MSE wall.

Estimated structure construction cost per square foot is $500/SF* excluding mobilization and contingency.

Image 6.7 Closure Wall with Surface Texture Example

The west approach will be in a fill condition and is anticipated to be supported by a Mechanically Stabilized Embankment (MSE) wall or back-to-back MSE walls where grading to the trail is not feasible.

*All estimated costs listed are approximate and in 2026 dollars.

MSE wall panels can include architectural treatments to enhance the aesthetic appearance of the retaining wall. A standard Caltrans Concrete Barrier Type 60MD will be provided at the face of wall to protect the wall from vehicular impacts.

Image 6.8 MSE Wall Example

Image 6.9 MSE Wall Aesthetic Example

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7. ALTERNATIVE EVALUATIONS & RECOMMENDATIONS

EVALUATION

To effectively determine the preferred alternative, the project team evaluated proposed trail alternatives against several measures of effectiveness. Alternatives were qualitatively and quantitatively considered, relative to their peers, to determine their effectiveness in meeting the purpose and need of the project. These factors include:

Multimodal Use/ Ease of Access: How well does the proposed facility minimize conflict points, account for elevation and travel distance, ensure strong bicycle and pedestrian connections to key destinations, and provide clear separation between vehicles and pedestrians? Traffic Operations: How will the project impact traffic operations on Hamilton Avenue, SR-17 ramps, Creekside Way, and Salmar Avenue?

Traffic Operations: How will the project impact traffic operations on Hamilton Avenue, SR-17 ramps, Creekside Way, and Salmar Avenue?

Environmental Concerns: What is the significance and impact of improvements to the existing environment including visual impacts and vegetation?

Caltrans Approvability: How consistent is the design with Caltrans HDM? As the project footprint sits mostly within Caltrans right-of-way. Caltrans will need to approve any proposed changes to the existing conditions.

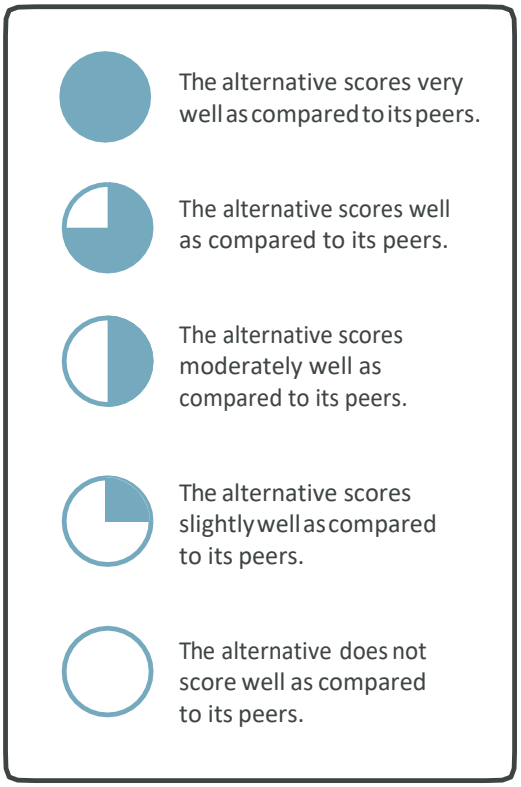
Estimated Project Cost: What How significant are the anticipated project costs?

Right-of-Way: What are the preliminary property needs, including temporary construction easements, and how significant are the impacts of proposed improvements on existing utilities?

Consistency with Public Input: How well do the proposed facilities align with public feedback and priorities?

Scoring Rubric

Each of the factor's scores are developed relative to the other alternatives. Factors are not weighted equally and are weighed on the relative importance to their peers. Each factor was scored qualitatively using the rubric below:



BICYCLE OVERCROSSING ALIGNMENT

No Build Alternative

By means of no construction, the No Build Alternative inherently scores well compared to its peers for environmental concerns, approvability, cost, and Right-of-Way needs. However, the No Build Alternative does not meet the goals of the Hamilton Avenue Public Improvement Plan, nor does it provide increased bicycle and pedestrian connectivity or increase user safety. The No Build Alternative fails to meet the goals of the project.

Category	Score	Rationale
Multimodal Use/ Ease of Access		The No Build alternative does nothing to improve multimodal use or access
Traffic Operations		The No Build alternative does nothing to improve traffic operations
Environmental Concerns		Because there is no construction or new structures, there will be no change in impact to the environment
Caltrans Approvability		The No Build Alternative would not require approval from Caltrans
Estimated Project Cost		The No Build Alternative would have no anticipated project cost
Right-of-Way		The No Build Alternative would have no effect on the existing Right-of-Way
Consistency with Public Input		The No Build Alternative does not address the public's concerns or desire for an improved route at this location

Table 6.1 Evaluation Table for the No Build Alternative

Alternative 1 - The Southern Route meets the intent of the Hamilton Avenue Public Improvement Plan, the Countywide Bike Plan, and is consistent with the vision statements contained in these plans. Because this route is mostly off-street, the alternative scores substantially well for user safety as the likelihood of vehicle- cyclist/pedestrian collisions is greatly reduced. The alternative scores are lower than its peers for cost, primarily driven by the cost of a long bridge crossing structure.

Category	Score	Rationale
Multimodal Use/ Ease of Access		The Southern Route alternative provides a route for bicyclists and pedestrians that is convenient and separated from vehicle traffic. Total travel distance is 1,400 ft
Traffic Operations		The Southern Route alternative does not negatively effect vehicle traffic and further separates multimodal users from vehicle interactions
Environmental Concerns		Because there is a large structure being added, The Southern Route alternative has a higher environmental impact
Caltrans Approvability		The Southern Route would require a moderate number of design exceptions by Caltrans, including non standard shoulders and lane widths
Estimated Project Cost		The Southern Route alternative has the highest expected capital cost due to the structures required, approximately $9.5M - $11.0M in 2026 figures
Right-of-Way		The Southern Route alternative creates a fairly significant impact to the Right-of-Way when compared to the other alternatives and has impacts on two utilities
Consistency with Public Input		The Southern Route alternative most adequately addresses the desires of the public for a safe an convenient alternative away from vehicle traffic

Table 6.2 Evaluation Table for the Southern Route Alternative

Alternative 2 - The Campbell Loop is only partially along Hamilton Avenue. It does not fully meet the intent or vision contained in the Hamilton Avenue Public Improvement Plan or the Countywide Bike Plan. This alternative requires use of on-street facilities on Hamilton Avenue. The alternative subsequently scored well for access and traffic operations, but poorly for environmental concerns and cost.

Category	Score	Rationale
Multimodal Use/ Ease of Access		The alternative provides a route for bicyclists and pedestrians that is convenient and mostly separated from vehicle traffic. It has a large grade change. Total travel distance is 1,350 ft
Traffic Operations		The Campbell Loop alternative does separates multimodal users from vehicle interactions but requires a difficult crossing with vehicles accessing the SR 17 on ramp
Environmental Concerns		Because there are multiple large structure being added, The Campbell Loop alternative has a higher environmental impact
Caltrans Approvability		The Campbell Loop would require a moderate amount of design exceptions by Caltrans, including non standard shoulders and lane widths
Estimated Project Cost		The Campbell Loop alternative has the second highest expected capital cost due to the structures required, approximately $7.5M -$9M in 2026 figures
Right-of-Way		The Campbell Loop alternative creates a minimal impact to the Right-of-Way when compared to the other alternatives and has impacts on three utilities
Consistency with Public Input		The Campbell Loop alternative addresses the public's desire for a safe and convenient route that is mostly separated from vehicle traffic

Table 6.3 Evaluation Table for the Campbell Loop Alternative

Alternative 3 - The Straight Shot is only partially separated from Hamilton Avenue. It does not fully meet the intent or vision contained in the Hamilton Avenue Public Improvement Plan and the Countywide Bike Plan. While multimodal users are separated from vehicle traffic, the separation is minimal compared to the alternatives. The alternative scores moderately for most categories but contains multiple at grade crossings for cyclists and pedestrians.

Category	Score	Rationale
Multimodal Use/ Ease of Access		The alternative provides a route for bicyclists and pedestrians that is direct and mostly separated from vehicle traffic but requires at grade crossings. Travel distance is 1,050 ft
Traffic Operations		The Straight Shot alternative does separates multimodal users from most vehicle interactions but requires a difficult crossing with vehicles accessing the SR 17 on ramps
Environmental Concerns		Because there are less intrusive structures being added, The Straight Shot alternative has a lower environmental impact than most of the other alternatives
Caltrans Approvability		The Straight Shot would require a moderate amount of design exceptions by Caltrans, including non standard shoulders and lane widths
Estimated Project Cost		The Straight Shot alternative has a moderate expected capital cost as compared with other alternatives, approximately $4M - $4.5M in 2026 figures
Right-of-Way		The Straight Shot alternative creates a minimal impact to the Right-of-Way when compared to the other alternatives and has impacts on three utilities
Consistency with Public Input		The Straight Shot alternative addresses some of the public's desire for a safe and convenient route but does require at grade crossings and traffic interactions

Table 6.4 Evaluation Table for the Straight Shot Alternative

Alternative 4 - The Minimalist is entirely on-street. Subsequently, this alternative does not meet the intent or vision contained in the Hamilton Avenue Public Improvement Plan or the Countywide Bike Plan. It scores poorly on user safety as cyclists are exposed to vehicular traffic for the entire route. The alternative scores substantially well in many categories due to being a low-build option that requires minimal funding and Caltrans approval.

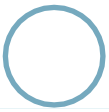
Category	Score	Rationale
Multimodal Use/ Ease of Access		The Minimalist alternative provides a bike lane for cyclists but does little to improve existing conditions. Travel distance is 1,000 ft
Traffic Operations		While the Minimalist alternative separates multimodal users from vehicles for the majority of the corridor, it requires multiple at-grade interactions with vehicles.
Environmental Concerns		Because there are no structures being added, The Minimalist alternative has a lower environmental impact than most of the other alternatives
Caltrans Approvability		The Minimalist alternative would require a minimal amount of design exceptions by Caltrans, including non standard shoulders and lane widths
Estimated Project Cost		The Minimalist alternative has the lowest estimated capital cost due to the lack of additional structures, approximately $600,000 - $800,000 in 2026 figures
Right-of-Way		The Minimalist Alternative has no Right-of-Way needs as it is within the existing footprint
Consistency with Public Input		The Minimalist alternative does little to address the public's desire for a safe and convenient route and does not satisfy the desires of the Hamilton Avenue Plan

Table 6.5 Evaluation Table for the Minimalist Alternative

Bicycle Overcrossing Alignment Recommendations

The study recommends moving forward with design and environmental clearance for Alternative 1 – the Southern Route. This alternative offers the safest conditions for bicyclists and pedestrians by separating them from vehicle traffic on Hamilton Avenue. It removes potential conflict points by not having at-grade crossings where vehicle traffic enters the on-ramps to SR 17, a significant concern for users.

While it does require the longest route, the elevation change is minimal and the addition of a class II bike lane and sidewalk on the north side of the existing bridge structure provides an alternative for users who feel comfortable being alongside traffic to shorten their commute. Having the majority of bicycle and pedestrian traffic completely separated from vehicles also allows for limited delay impacts for vehicles.

Although no significant noise impacts are anticipated, several trees just west of the SR 17 southbound on-ramp will need to be removed to accommodate the new overcrossing structure. This will contribute to visual impacts; however, the study concludes that the overall benefits outweigh these drawbacks, and that thoughtful design choices can help mitigate the visual effects.

This design has many nonstandard features, such as shoulder widths, lane widths, and horizontal clearances that will require design exception approval from Caltrans. While these concerns were carefully considered during the analysis, the study concluded that these design exceptions were all within reason and would be worth the exception request with Caltrans due to the overall improvement for users. During a coordination meeting, Caltrans also expressed concerns about this alternative potentially limiting the ability to widen the southbound on-ramp loop in the future. In the event Caltrans determines this constraint is unacceptable and does not approve the Southern Route, the study identifies Alternative 2, The Campbell Loop, as the next most desirable option. This decision was partially driven by The Campbell Loop's lower right-of-way needs compared to The Southern Route and fewer conflicts with future ramp modifications. When compared to The Straight Shot and The Minimalist, The Campbell Loop was more closely aligned to public input. In regards to traffic operations, The Straight Shot and The Minimalist would have a higher impact than the Campbell Loop which could also be a concern for Caltrans.

The Southern Route has the highest estimated design cost among the alternatives, largely due to the substantial structure required. It is also the only option that would require an easement dedication to construct the path along the southbound SR-17 on-ramp. Additionally, two overhead power lines conflict with the proposed structure and would need to be relocated, further contributing to overall costs. While cost is an important consideration, funding sources are available that are specifically designated for bicycle and pedestrian projects, active transportation, safety improvements, and projects identified in Measure B, which may help offset these concerns.

While all perspectives were carefully considered, public input had the greatest influence on the final decision, ultimately leading to the selection of The Southern Route. Safety and user experience are among the top concerns of Campbell residents.

Alternative Name	Multimodal Use/ Ease of Access					Traffic Operations	Environmental Considerations	Caltrans Approvability	Cost	Right-of-way	Consistency with Public Input	Weighted Total Score*
	Conflict Points	Ease of Use (Bike)	Ease of Use (Pedestrian)	Connectivity	Physical Separation from Vehicles							
No Build Alternative												
The Southern Route												
The Campbell Loop												
The Straight Shot												
The Minimalist												
Weight*	10%	10%	10%	10%	5%	15%	5%	15%	2.5%	2.5%	15%	

Table 6.6 Alignment Alternative Evaluation

*Each evaluation criteria category was assigned an individual weight as shown on the table above

APPENDICES

A. ALTERNATIVE EXHIBITS
B. PUBLIC OUTREACH MEMOS & COMMENTS
C. TRAFFIC DOCUMENTATION

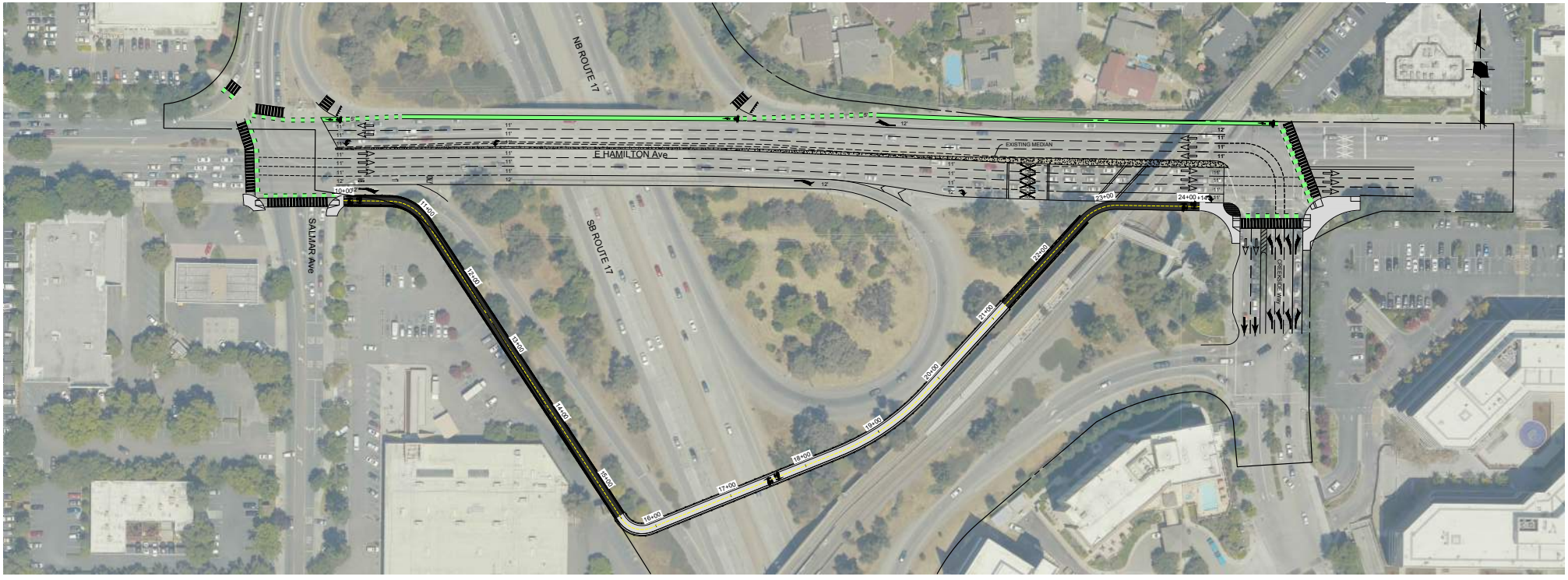
APPENDIX A

A1. ALTERNATIVE 1 - THE SOUTHERN ROUTE
A2. ALTERNATIVE 2 - THE CAMPBELL LOOP
A3. ALTERNATIVE 3 - THE STRAIGHT SHOT
A4. ALTERNATIVE 4 - THE MINIMALIST

Hamilton Avenue/ Highway 17 Bicycle Overcrossing

The Southern Route Alternative

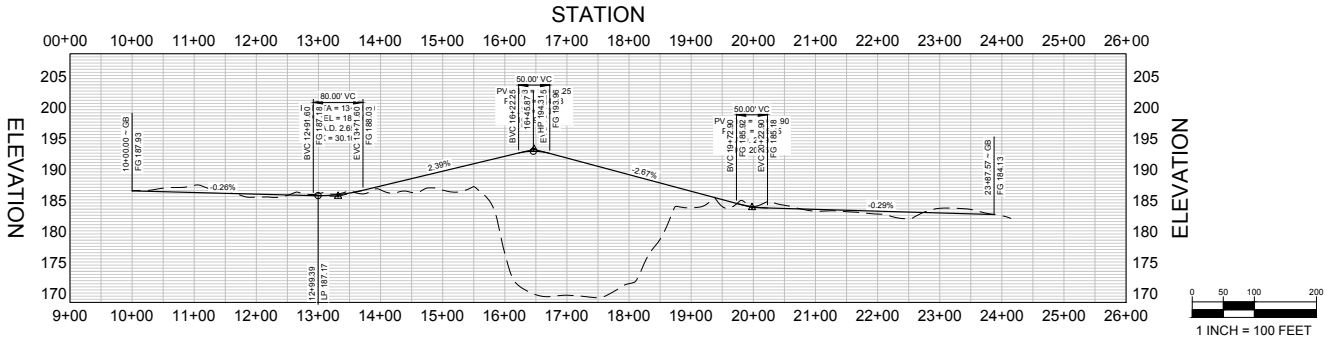
APPENDIX A1



0 30 60 120

1 INCH = 60 FEET

PROFILE VIEW OF BP LINE



0 50 100 200

1 INCH = 100 FEET

Hamilton Avenue/ Highway 17 Bicycle Overcrossing

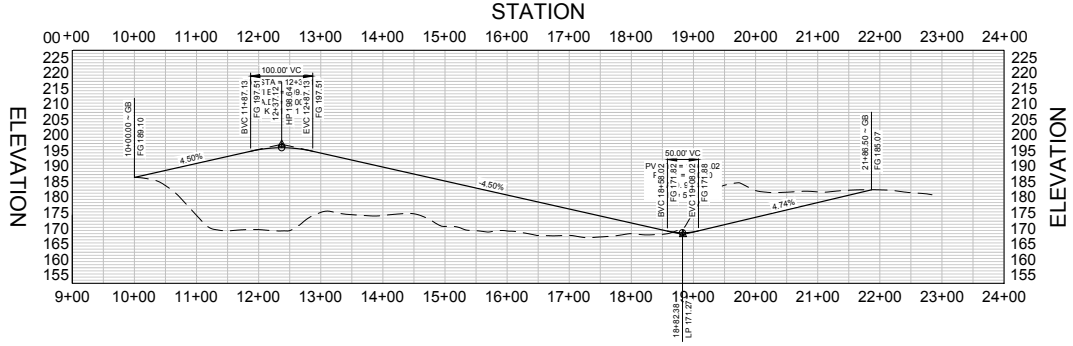
The Campbell Loop Alternative

APPENDIX A2

0 30 60 120

1 INCH = 60 FEET

PROFILE VIEW OF BP LINE



0 50 100 200

1 INCH = 100 FEET

Hamilton Avenue/ Highway 17 Bicycle Overcrossing

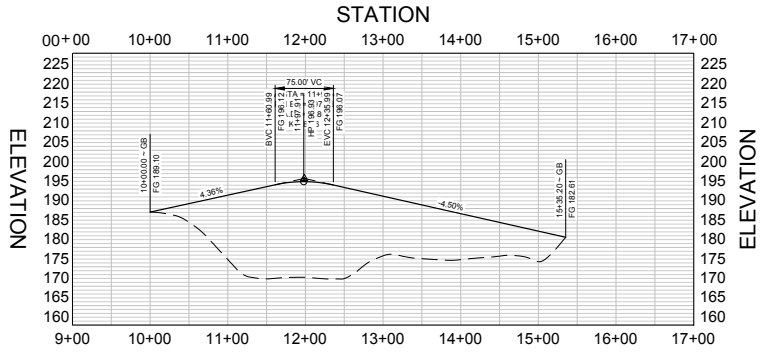
The Straight Shot Alternative

APPENDIX A3

0 30 60 120

1 INCH = 60 FEET

PROFILE VIEW OF BP LINE



0 40 80 160

1 INCH = 80 FEET

Hamilton Avenue/ Highway 17 Bicycle Overcrossing

The Minimalist Alternative

APPENDIX A4

0 30 60 120

1 INCH = 60 FEET

APPENDIX B

B1. VIRTUAL COMMUNITY MEETING SUMMARY
B2. PUBLIC OUTREACH MEMOS
B3. VIRTUAL COMMUNITY MEETING SURVEY RESULTS
B4. ONLINE SURVEY RESULTS

APPENDIX B1

City of Campbell: Hamilton Ave-SR 17 Bicycle Overcrossing Feasibility Study
Virtual Community Meeting Summary
Thursday, November 13, 6 p.m.

Overview
The City of Campbell's Hamilton Ave-SR 17 Bicycle Overcrossing Feasibility Study is seeking to improve bicycle and pedestrian access on Hamilton Avenue over Highway 17. This study will develop potential concepts for a raised pathway over SR 17 for people of all ages and abilities to feel more comfortable while walking, rolling, and biking, and improve connectivity to destinations across the City.

This community meeting was designed for the public to learn more about the feasibility study and provide input about design alternatives. Community members had the opportunity to share their feedback and ask questions about the study.

Meeting Notification
The City promoted the second community workshop in a variety of ways, including its social media and website, a newsletter, and flyers handed out at a community event.

Meeting Summary
The second community meeting took place on Thursday, November 13 at 6 p.m. via Zoom. There were six people in attendance. The meeting featured a presentation providing an overview of the study, its background and goals, a recap of previous engagement efforts and how they informed alternatives, information on each overcrossing design alternative and its alignment. There were opportunities for community input throughout via polling and a Q&A session.

During the facilitated discussions, attendees were asked:

- What alternative would you be more supportive of?
- What structure option do you prefer?

A summary of the feedback received is provided below.

What alternative would you be more supportive of?	#
Southern Route	5
Campbell Loop	1

The majority of attendees preferred the Southern Route. When asked why, several commented that they preferred this option because they found it to have more separation from cars, be the easier grade option, and liked that it avoids the freeway on-ramps.

What structure option do you prefer?	#
Box Girder	3
Steel Truss	3
Network Tied Arch	0

Community members were split on whether they preferred the Box Girder or Steel Truss option, while no one preferred the Network Tied Arch option. When asked why they preferred each option, attendees expressed that they would prefer any overcrossing over the current circumstances, which factored into why they selected the Box Girder option. However, attendees agreed that if the budget can accommodate it, they aesthetically prefer the Steel Truss option. Attendees said they did not select the Network Tied Arch option due to increased cost and maintenance.

Questions about the feasibility study were related to what maintenance means for overcrossings, and how the overcrossing will be tied in with larger planning initiatives that work to understand active transportation as a complete journey. Attendees also asked if the destination of community members is being considered when building out the proposed plan.

To complement the recording of the meeting and allow people who couldn't tune in live to learn more about each alternative and share input, a brief survey asking the same questions as the interactive polling and discussion questions was offered online. There were 10 respondents, and results are summarized below.

What alternative would you be more supportive of?	#
Southern Route	7
Campbell Loop	3

Online survey respondents also favored the Southern Route for similar reasons as to the meeting attendees, including avoiding conflict with traffic, a flatter grade, and the more direct route.

What structure option do you prefer?	#
Box Girder	6
Steel Truss	2
Network Tied Arch	1

A majority of respondents (66%) preferred the Box Girder structure option, citing that it matched existing aesthetics in the area and its lower cost.

Next Steps

The feasibility study will be finalized in December 2025 and presented to the city council in January 2026. If the city council authorizes the project and funding becomes available, a timeline for the design and construction of the overcrossing will be created.

Hamilton Avenue-SR 17 Bicycle Overcrossing Feasibility Study

Communications Memo

Project Overview

The City of Campbell's Hamilton Avenue-SR 17 Bicycle Overcrossing Feasibility Study will evaluate how best to improve bicycle and pedestrian mobility and connectivity on Hamilton Avenue over Highway (State Route) 17. Study goals include:

- Evaluate existing bicycle and pedestrian facilities and travel patterns
- Develop and study feasibility of overcrossing alternatives and assess their impacts
- Determine preferred alternative to move forward with into Caltrans approval process and final design

Engagement Approach

The primary goal of engagement is to gather input about community needs and priorities for a bicycle overcrossing over SR 17. Using a variety of communication channels and a thoughtful outreach strategy, the project team will create meaningful engagement opportunities for people traveling to and from destinations near the study area. Our engagement approach will emphasize those who are traditionally underrepresented in planning processes, including Equity Priority Communities west of Hamilton Avenue, older adults, and people with disabilities.

Public engagement is proposed to take place in the following two phases:

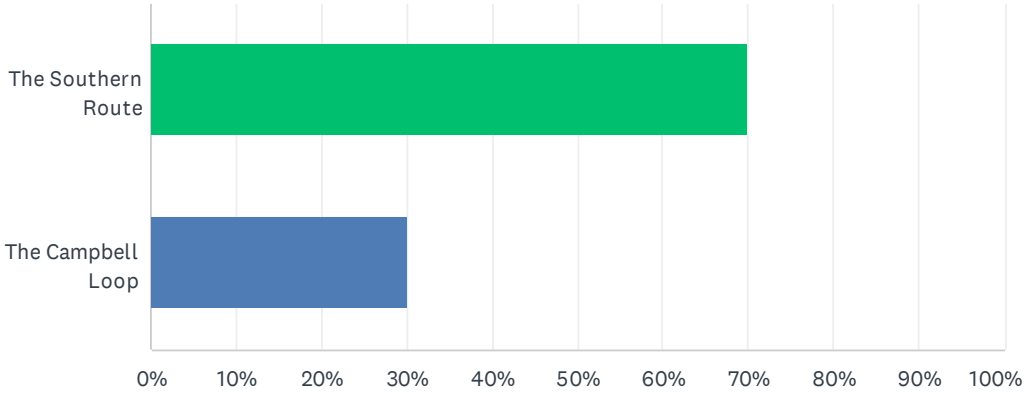
- **Phase 1** *(January – February 2025)*
    - The first phase of engagement will introduce the project and assess community perceptions of bicycle and pedestrian accessibility as well as other priorities and desired project outcomes. Community feedback will inform the selection criteria and design of the draft alternatives.
- **Phase 2** *(May 2025)*
    - The second phase of engagement will present feasible draft alternatives to the community for review and input on architectural treatments and structure types. Community feedback will inform the selection of the preferred alternative.

Target Audiences

Target audiences for this Alternatives Analysis include people who live, work or travel near the Hamilton Ave-SR 17 study area, particularly those who walk, bike, and roll. Throughout the Feasibility Study, communication efforts will target audiences including the Equity Priority Community west of Hamilton Avenue; older adults; and others (e.g., non-English speakers, people with disabilities).

Q1 What alternative would you be more supportive of?

Answered: 10 Skipped: 0



ANSWER CHOICES	RESPONSES	
 The Southern Route	70.00%	7
 The Campbell Loop	30.00%	3
TOTAL		10

Q2 What do you like about the Southern Route?

Answered: 8 Skipped: 2

#	RESPONSES	DATE
1	A bit more "scenic" is there potential to connect to the development on the old Fry's site so you could travel south to Campbell Downtown easier.	11/24/2025 7:41 AM
2	More separation from Hamilton noise and an opportunity to create a new Campbell landmark. I would like to see something with a similar presence to what that bridge is in Cupertino, where the community has a lot of pride in the bridge. The southern option gives the city a chance to build an aesthetically pleasing bridge that matches Campbell's character and welcomes folks to the City. It would also be a much more enjoyable bridge to walk and bike. A loop would be annoying and dangerous at corners where bikers would speed down hill, not pay attention, and hit oncoming walkers. 30 years from now, when Fry's has housing on it, the southern bridge will be the bridge the community is glad to have chosen. The southern route also gives walkers a view of the light rail and would just be more enjoyable. I would take a longer, more enjoyable trip over a shorter, more irritating one.	11/13/2025 5:04 PM
3	Avoids southbound on-ramp traffic	11/13/2025 4:57 PM
4	No conflicts with traffic, looks like a safer and more pleasant bike route.	11/5/2025 7:53 PM
5	The Flatter Grades, the Loop concerns me	11/5/2025 10:07 AM
6	more direct for bikes, less up/down/stairs for walking, no freeway lane crossings	11/3/2025 4:02 PM
7	I forgot to add this to my submission: It would be amazing if there was a way to connect the neighborhood at the end of Poplar avenue, even with just a walking path. It's very hard to access.	10/29/2025 2:46 PM
8	I like that it is less steep and does not cross any traffic onramp lanes with highway 17	10/29/2025 2:38 PM

Q3 What do you dislike about the Southern Route?

Answered: 8 Skipped: 2

#	RESPONSES	DATE
1	too far away from traffic, allowing homelessness and vagrants	12/4/2025 8:45 AM
2	The southern route appear to have one less conflict crossing near Salamar, that is appealing, but it's really not convenient. Four signalized crossings if you are going WB on Hamilton, really really slows your route. I think it would be cheaper to square up the Caltrans off ramps, then construct the bridge. This would slow cars entering the freeway and make the crossing slower and safer.	11/24/2025 7:41 AM
3	Nothing	11/13/2025 5:04 PM
4	Longer (but not so long that it pushes me toward the Campbell Loop option)	11/13/2025 4:57 PM
5	Looks like it could be made slightly shorter?	11/5/2025 7:53 PM
6	As a cyclist, honestly nothing, I like that I don't have to interact with cars at any point and the flatter grade and straighter route (as opposed to the loop) make it easy to navigate.	11/5/2025 10:07 AM
7	walking distance is longer	11/3/2025 4:02 PM
8	I wish that the southern route had provisions for direct access to the Fry's redevelopment site and the VTA light rail station. These areas could and should be really efficiently connected, with a staircase/direct ramp access to Fry's and a second station entrance in the southwest end of the station (Which also reduces distance for people coming from west of 17)	10/29/2025 2:38 PM

Q4 What do you like about the Campbell Loop?

Answered: 8 Skipped: 2

#	RESPONSES	DATE
1	less likely to encourage crime	12/4/2025 8:45 AM
2	It's a similar design to the De La Cruz interchange, it's proven. Could this be connected to the existing bridge deck and save costs?	11/24/2025 7:41 AM
3	Nothing	11/13/2025 5:04 PM
4	Shorter	11/13/2025 4:57 PM
5	Nothing.	11/5/2025 7:53 PM
6	I do like that it's shorter	11/5/2025 10:07 AM
7	walking distance is shorter, but maybe not as much time shorter counting crossing light wait time	11/3/2025 4:02 PM
8	This route is slightly shorter for through pedestrians on Hamilton, but compromises safety. It is a false choice to pick the most direct route anyway because pedestrians would wait longer at the signals.	10/29/2025 2:38 PM

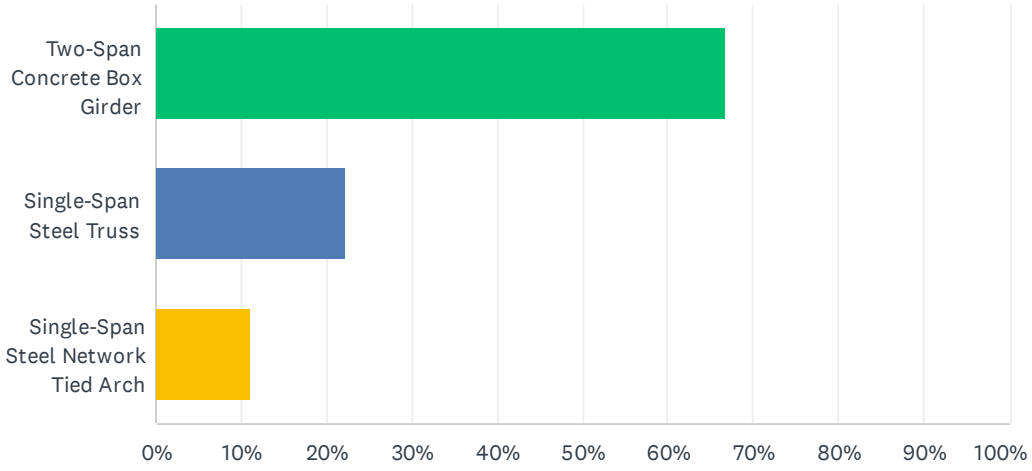
Q5 What do you dislike about the Campbell Loop?

Answered: 7 Skipped: 3

#	RESPONSES	DATE
1	I strongly reccomend finding space for a two way cycle track all the way to Bascom on the southside of Hamilton to make this a viable option. The three crossings points near Salamar really slow this down for people on bikes and will discourage use. Likely that bike priority could not be provided at that intersection because of the Freeway.	11/24/2025 7:41 AM
2	The loop seems unsafe based on my experience with other overcrossings like the ones over 280 because they’re steep and feel dangerous, especially when you encounter a cyclist coming the opposite way.It would blend too much with the existing bridge over Hamilton, and there wouldn't be any meaningful opportunities to create a gateway infrastructure that the City would be proud of. I want the new bridge to be something I’d actually seek out and enjoy using. I live off Hamilton and usually walk to downtown by taking Bascom to Campbell. If there were an iconic bridge like the southern one I would stay on Hamilton and use Salmar	11/13/2025 5:04 PM
3	People must still cross in front of on-ramp traffic	11/13/2025 4:57 PM
4	Looks like a death trap. An accident waiting to happen.	11/5/2025 7:53 PM
5	The loop and the steeper grades!	11/5/2025 10:07 AM
6	less safe	11/3/2025 4:02 PM
7	I dislike the tunnel which could end up being dark at night and an unintended refuge for homeless (which has already happened at campbell ave underpass of 17), I dislike the steep slopes and traffic crossing lane, I dislike the tight turns required for bikes which would slow things down.	10/29/2025 2:38 PM

Q6 Please review each of the pedestrian overcrossing structure types and aesthetics, and the summary of the pros and cons for each. What structure option would you prefer?

Answered: 9 Skipped: 1



ANSWER CHOICES	RESPONSES	
 Two-Span Concrete Box Girder	66.67%	6
 Single-Span Steel Truss	22.22%	2
 Single-Span Steel Network Tied Arch	11.11%	1
TOTAL		9

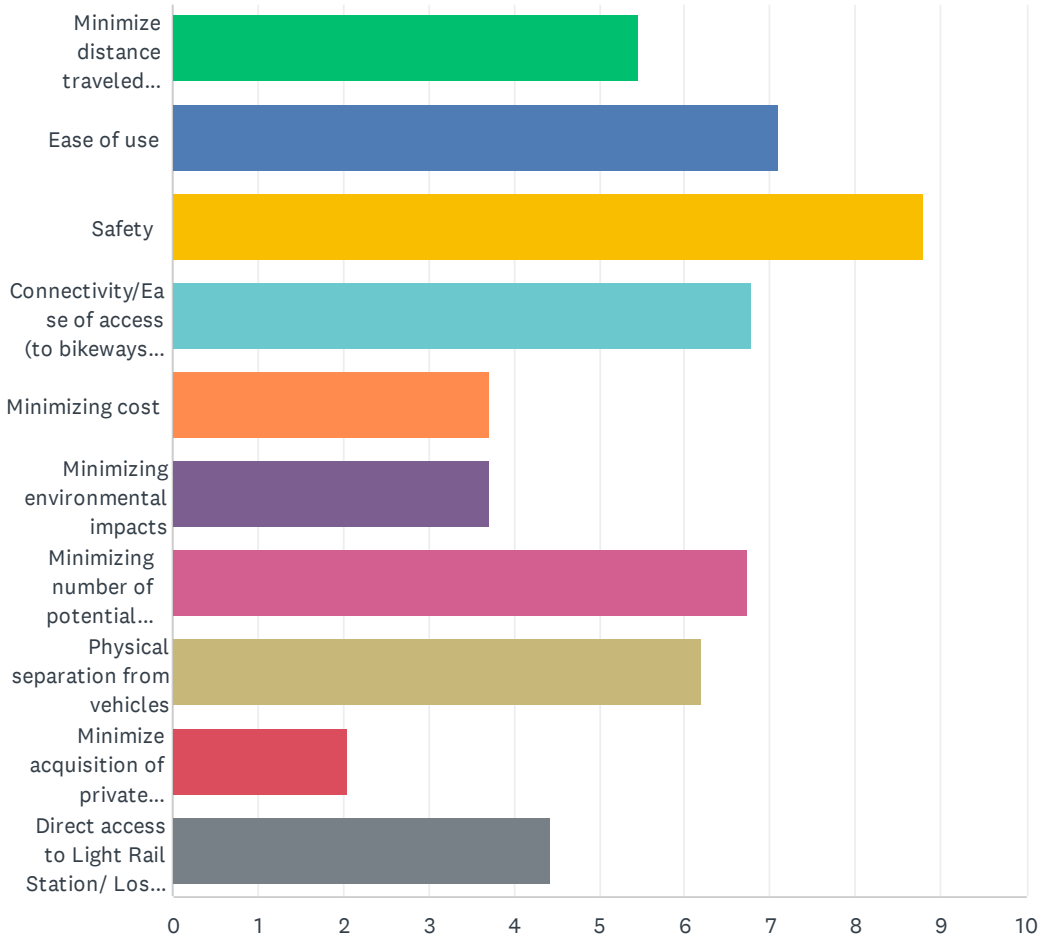
Q7 Why did you choose the option you did?

Answered: 8 Skipped: 2

#	RESPONSES	DATE
1	Let's Campbell be known on the map! Nice bridge design!	12/4/2025 8:46 AM
2	Zero point to invest more in a truss or arch at this location.	11/24/2025 7:42 AM
3	because it better matches the existing railroad bridge. Id choose option 3 if the railroad didnt exist	11/13/2025 5:08 PM
4	1. It matches our general freeway look. It may not be a statement, but I don't think it looks bad. Also, sometimes statement architecture tends to age in a way that just looks out of date. 2. Costs less to build and maintain. 3. I don't think I fully understand the downside of a permanent column in the freeway median.	11/13/2025 5:05 PM
5	Seems most practical option	11/5/2025 7:57 PM
6	I think the Tied Arch, while aesthetic, is a bit much. The Steel Truss is appropriately aesthetic, I believe the Steel fits in better to the Campbell Aesthetic, and believe it is worth the additional cost to avoid building into the highway & falsework. Personally I am tired of concrete structures and think we deserve spaces to walk that are also aesthetic. I believe the additional maintenance forces us to take care of our spaces.	11/5/2025 1:48 PM
7	most cost effective and it looks fine. Would rather more infrastructure for the same money rather than spend more to make a fancier bridge	11/3/2025 4:03 PM
8	I really want this project to happen, so I selected the cheapest option. The Single-Span Steel Truss image looks the best out of these three but I know the Concrete bridge could be made to look nice, I think there is one like that in mountain view.	10/29/2025 2:39 PM

Q1 Please rank the aspects of a bicycle/ pedestrian facility that you consider most important. (Toggle the options on the left, or click the drop down menu to rank your order of preferences)

Answered: 426 Skipped: 1



	1	2	3	4	5	6	7	8	9	10	TOTA
Minimize distance traveled (length of facility)	5.87% 25	7.75% 33	7.51% 32	12.44% 53	11.97% 51	15.26% 65	19.72% 84	9.62% 41	5.16% 22	4.69% 20	4
Ease of use	10.80% 46	17.37% 74	16.43% 70	18.08% 77	15.49% 66	12.44% 53	6.57% 28	1.88% 8	0.70% 3	0.23% 1	4
Safety	51.88% 221	15.73% 67	13.38% 57	7.98% 34	6.34% 27	2.35% 10	1.41% 6	0.23% 1	0.70% 3	0.00% 0	4
Connectivity/Ease of access (to bikeways, services, residential areas, schools)	5.40% 23	11.50% 49	18.54% 79	23.24% 99	18.78% 80	12.68% 54	5.63% 24	2.35% 10	1.17% 5	0.70% 3	4
Minimizing cost	3.05% 13	2.58% 11	1.88% 8	2.58% 11	8.69% 37	10.80% 46	14.08% 60	22.54% 96	20.89% 89	12.91% 55	4
Minimizing environmental impacts	0.70% 3	0.70% 3	3.05% 13	3.76% 16	6.57% 28	13.85% 59	18.54% 79	26.06% 111	18.78% 80	7.98% 34	4
Minimizing number of potential conflicts with motorized vehicles	7.04% 30	23.24% 99	16.20% 69	12.91% 55	9.86% 42	7.98% 34	12.44% 53	6.10% 26	3.29% 14	0.94% 4	4
Physical separation from vehicles	9.15% 39	15.26% 65	15.96% 68	10.09% 43	10.09% 43	8.45% 36	9.15% 39	12.91% 55	7.04% 30	1.88% 8	4
Minimize acquisition of private property	1.41% 6	2.11% 9	0.70% 3	0.23% 1	0.47% 2	1.64% 7	2.58% 11	10.09% 43	30.99% 132	49.77% 212	4
Direct access to Light Rail Station/ Los Gatos Creek Trail	4.69% 20	3.76% 16	6.34% 27	8.69% 37	11.74% 50	14.55% 62	9.86% 42	8.22% 35	11.27% 48	20.89% 89	4

Q2 Use this space to add any additional aspects of bicycle/pedestrian facilities you'd like to be considered:

Answered: 107 Skipped: 320

#	RESPONSES	DATE
1	Not sharing the path with the gutter like on Campbell Ave.	3/12/2025 8:09 PM
2	Smooth safe paths	3/11/2025 11:11 PM
3	Do not make protected lanes unless you have specific equipment to clean the narrow protected lanes.	3/11/2025 5:04 PM
4	Given the congestion and the freeway ramps, this is a dangerous area. A solution is needed.	3/11/2025 4:27 PM
5	I'm very happy that this is being considered seriously. Hamilton Ave. is extremely busy with auto / bus / truck traffic, and it needs to become a more bicycle-friendly & pedestrian-friendly thoroughfare. Connections that facilitate access to the Hamilton light rail station are essential since the station otherwise exists on an "island" with very poor accessibility right now.	3/11/2025 2:03 PM
6	Actually separated bike lanes, not just paint and bumper ticklers	3/11/2025 11:44 AM
7	The City should ensure that any future project will be utilized by bicycle riders, as many bike lanes are not used. The cost of installing bike infrastructure is often high compared to the relative usage. Further, ongoing maintenance by the PW department should be budgeted for using realistic numbers and accounting for inflation.	3/11/2025 11:39 AM
8	Redesigning horrendous intersection when exiting 17N at Hamilton. Hazardous to vehicles peds and bikes. Improving entrance to creek trail on Hamilton	3/11/2025 9:40 AM
9	Cleaning, it must be kept clean of all debris daily. One of the problems of bike lanes is that they aren't swept clean by cars so they quickly become dangerous. The same happens with bike overpasses. Bikes and pedestrians should not be able to mix. The bike overpass should only be useable by bikes; no pedestrians, no skateboarders, no scooters, bicycles ONLY.	3/11/2025 7:56 AM
10	I feel like if you make connectivity/ease of access, and minimize vehicle conflicts the safety and ease of use will be there naturally.	3/10/2025 8:30 PM
11	Preferred location would be a 2nd pedestrian crossing between 280 and Hamilton ave exit. Do Not interrupt any traffic at Hamilton and 17. Already a terrible exit from freeway.	3/10/2025 6:43 PM
12	Don't remove traffic lanes for vehicles or congestion will suffer even more	3/10/2025 5:32 PM
13	Just do it. Biking is very important as a means of transportation for a great variety of reasons	3/10/2025 3:33 PM
14	"No right turn" on red for all vehicles in all directions. Minimize the "right hooking" of cyclists. For all traffic intersections, allow pedestrians ample time to cross in any direction by having red light in all directions. Separate traffic movement from pedestrian movement by having pedestrian only signal lights. Vehicles have red signal in all directions allowing pedestrians to cross safely.	3/10/2025 12:53 PM
15	More safety for bikers. Cars don't stop and yield to bikers	3/10/2025 12:06 PM
16	I don't think a bicycle pass is needed. It is a waste of money.	3/10/2025 8:05 AM
17	Hopefully the City makes the bike lane the legal width, unlike just about all the bike lanes they already have which are under the minimum width.	3/10/2025 6:18 AM
18	There needs to be a separation of cars and mikes/pedestrians. This area is a complete hazard.	3/9/2025 8:53 PM
19	don't take away any lanes to accomplish this. Already congested on Hamilton	3/9/2025 11:32 AM
20	Needs to feel safe day and night	3/9/2025 8:03 AM
21	No intervention to any up coming vehicle traffic.	3/9/2025 6:51 AM

22	Safer cycling infrastructure will increase bike use and decrease traffic congestion by reducing the number of cars. Normalize active mobility.	3/8/2025 9:18 PM
23	crazy traffic area, too dangerous.	3/8/2025 2:42 PM
24	Minimize disruption to flow of traffic. Emphasis should be place on maximizing efficiency of car traffic movement. Anything that interferes with the current flow should not be considered, only options to improve the flow.	3/8/2025 1:06 PM
25	Get it done!	3/8/2025 12:27 PM
26	The interchange is just dangerous for bikes and peds. Big time. A POC isn't a bad idea to get bikes and peds out of the area. Calma court to behind the Kohls. El Patio Drive to the other side of the trail to connect it. Maybe a POC that follows the light rail for better connection. The EB Hamilton to NB loop crosswalk is particularly dangerous. Drivers are speeding up without expecting peds as they enter the on-ramp. Flashing beacons aren't a bad idea for that crosswalk. Also that loop needs the second lane opened up so that two lanes come off Hamilton for vehicles. It seems like it was just forgotten to be stripped correctly off Hamilton? You have a 2 lane ramp that can only be realistically used as 1 lane. If you read this and my ideas get implemented I'm going to be impressed. :)	3/8/2025 9:47 AM
27	I don't ever feel safe riding a bicycle on Hamilton Avenue. Connections should be made to creek trails not busy roads with freeway exits and entrances	3/7/2025 10:13 PM
28	Why would you build an overdressing here??? No one bikes on Hamilton Avenue. It is way too busy and unsafe. You either get on the creek trail at the end of Willow St (off Meridian by the school) or use Campbell Ave to get on in Campbell. Focus on making Campbell crossings of Leigh and Bascom more bike friendly	3/7/2025 12:46 PM
29	Signage and enforcements	3/7/2025 12:06 AM
30	It'd be nice to at least avoid the traffic between central ave and creekside.	3/6/2025 10:07 PM
31	Avoid the use of wooden bridges like the ones on parts of Los Gatos Creek trail, they are very slippery when wet. I've fallen on them on my bike and foot. Better wayfinding signs, and bikeways that connect without leaving people wondering where to go next when the trail suddenly ends. Wide enough to accommodate bikes and pedestrians.	3/6/2025 9:49 PM
32	Don't. Just dont.	3/6/2025 7:17 PM
33	Improving bike and pedestrian ways, along with better public transit is the only way the public will embrace the necessary denser housing. If people can get around safely and quickly, they will be more open to dense housing.	3/6/2025 7:06 PM
34	Safety is most important. Pedestrian crossing on Hamilton across 17 entrance is only a matter of time until someone dies. Very dangerous, drivers usually in a hurry getting onto 17, even if first car stops they can get rear ended by inattentive drivers. Infrastructure that doesn't lead anywhere is useless. As a driver and bicycle commuter it's safer to have a bike lane so that cars can pass without changing lanes. This decreases driver frustration, because being a car driving behind a cyclist sucks. Frustrated drivers become reckless to pass, which is dangerous to everyone on the road	3/6/2025 5:39 PM
35	Thank you for trying to improve bike safety. Alternative transportation is important.	3/6/2025 4:53 PM
36	Anything to improve the current situation is welcomed. As a cyclist, I will go miles out of the way to avoid crossing Highway 17 on Hamilton ave given the current situation that exists	3/6/2025 12:45 PM
37	Make crossing Leigh at Campbell safe with light and you don't need to do this project	3/6/2025 12:32 PM
38	Ensure it doesn't become just another homeless encampment	3/6/2025 6:01 AM
39	I can't imagine how you can do this. It's a terrible traffic area.	3/5/2025 11:32 PM
40	Use resources such as project zero and Silicon Valley bicycle collation that use updated guidance standards. Watch videos of how the Netherlands gives bicycles automatically the green light when it has to cross or be near vehicles. Consider adjustment to the under crossing on the Lis Gatos Creek trail. It is dark,blind,and too steep.	3/5/2025 10:10 PM
41	We really need more interconnected bike routes in the south bay.	3/5/2025 9:44 PM

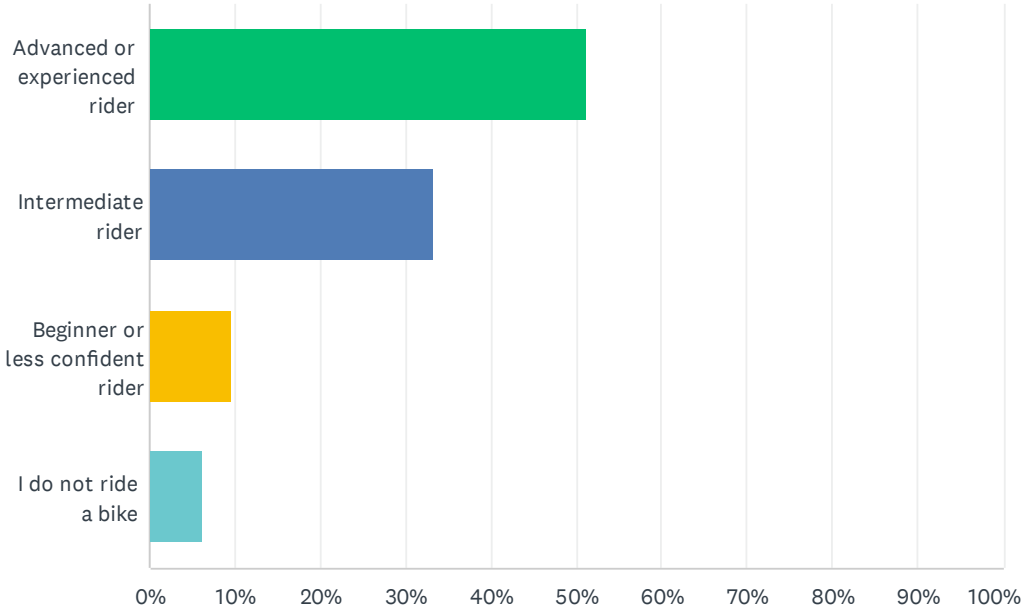
42	Keep up the good work and projects	3/5/2025 9:38 PM
43	Well lit and marked	3/5/2025 7:17 PM
44	Some of these seems redundant like safety and minimizing conflicts with vehicles + separation, etc. They're all safety.	3/5/2025 4:56 PM
45	We really need better bike access!	3/5/2025 4:17 PM
46	Separate pathway. Too many pedestrians and bicycles cross at the highway entrance. Plus that 1/2 stretch is terrible with Home Depot	3/5/2025 3:20 PM
47	Thereare already side walks there and bikes are SUPPOSED to follow the rules of the road. Better lane markings and signage would help. Possible crosswalk signal flashers at the ramp crossings. Lane deliniators to avoid cars cutting across at the last second.	3/5/2025 12:36 PM
48	Safety is very important especially at such a chaotic area	3/5/2025 10:53 AM
49	I'd like it to be safe enough to send my kid across it. I don't feel safe crossing it as a grown adult on foot or by bike right now.	3/5/2025 8:08 AM
50	Easy to understand signage or pillars for drivers, cyclists, and pedestrians will make it more navigable. Disability and limited mobility friendly design (everything from Blind to wheel chair user).	3/5/2025 1:13 AM
51	.	3/4/2025 11:59 PM
52	Whatever can attract people out of their cars is a good idea.	3/4/2025 11:44 PM
53	Hamilton is not safe to bike on period… making one over crossing at 17 is only going to put more people on this road to be subjected to in attentive speeding motorists…. It would be a death trap. Unless there is something like an elevated bike Bridge from Bascom to San Tomas it's it's not worth it…	3/4/2025 11:02 PM
54	Ayudaría a muchos niños y jóvenes estudiantes a acortar distancia desde y hacia la escuela.	3/4/2025 8:10 PM
55	More trees	3/4/2025 4:56 PM
56	Ham Ave is a horrible cycling corridor as is Campbell Ave. These roads need dedicated bike lanes with physical barriers.	3/4/2025 4:48 PM
57	Campbell police substation and clean and maintaned public bathrooms	3/4/2025 3:20 PM
58	Enough with these unused bicycle routes. This is the USA, not Europe. Fix the roads. Time traffic lights. Reduce traffic fatalities.	3/4/2025 2:35 PM
59	I'm concerning about safety route that intersection has a hight level of traffic, is scary and dangerous walking by or rite a bike.	3/4/2025 1:19 PM
60	The onramps to 17 are highly and aggressively used. The Hamann Park pedestrian bridge and Campbell Ave are far safer. I ride 150m/wk and will never use Hamilton.	3/4/2025 10:38 AM
61	Downtown Campbell needs a better bike network to connect it with the VTA lighrail	3/4/2025 9:50 AM
62	The City of Campbell should worry about more important matters.	3/4/2025 8:53 AM
63	Keeping the community and neighbors informed and active participants/partners. Minimize outside influences.	3/4/2025 4:52 AM
64	Just don't have bicycles trying to ride down Hamilton with the cars. That area is insane, and reducing the rate of traffic flow to bring bicycles into the mix would be painful.	3/4/2025 12:14 AM
65	Minimize slope	3/3/2025 10:23 PM
66	having a Dedicatedbike lane/ Pedestrian crossway on this specific road Would help ease traffic, flow and protect pedestrians and cyclist from danger.	3/3/2025 8:37 PM
67	Safe and easy access from the Los Gatos Creek Trail to Hamilton is key. A bike lane on Bascom near the creek trail entrance would also help access a lot.	3/3/2025 8:16 PM
68	Make the marking easy to navigate	3/3/2025 7:47 PM
69	Can't think of anything.	3/3/2025 7:25 PM

70	A similar overpass that is north of the CA17 and CA85 interchange would be a great design for this	3/3/2025 3:28 PM
71	I think this is a great plan. I see this feasible.	2/25/2025 10:42 PM
72	noise level	2/22/2025 9:53 PM
73	Making a right from Salmar invites conflicts with westbound pedestrians because drivers only look left. Offramp across the street alleviates this with pedestrian island.	2/20/2025 8:54 PM
74	Hamilton is extremely busy street, many times cars are merging last minute to get onto the 17 North on ramp	2/17/2025 12:16 PM
75	where there are physical barriers, the bike lanes are not swept of debris, resulting in cyclist riding in traffic to prevent flats. Please regularly street-sweep the separated bike lanes	2/17/2025 11:31 AM
76	I'm a Campbell resident. I regularly ride a bike through Campbell. I personally think the bike access and facilities are awful.	2/16/2025 11:53 AM
77	I would prefer a longer route that is better connected to existing infrastructure and better separated from vehicle traffic over a shorter one.	2/14/2025 1:34 PM
78	Still works and is safe/pleasant to use at night and in rain	2/13/2025 11:34 AM
79	The most important would be to separate car and bike/pedestrian traffic and connection to existing pathways. There's no point in a protected path if I am going to be hit by a motorist trying to get to the path.	2/13/2025 9:38 AM
80	A divided access lane separate from cars is the most ideal.	2/13/2025 8:24 AM
81	If the path goes parallel or intersects motor vehicles, make it easy for motorists to see and difficult to cross over (i.e. lights, physical barriers, pillars)	2/12/2025 11:33 PM
82	I live in downtown Campbel, ride my bike often, and would love to have more options to cross or avoid some of the wider/busier/ faster roads.	2/12/2025 9:01 PM
83	separating bikes from pedestrians is great. separating bikes and pedestrians from cars is amazing	2/12/2025 2:37 PM
84	I cross this path on foot/bicycle often as well as drive it nearly daily. It's terrifying, both as a driver and not. Much too much room for error merging onto 17 esp going Eastbound on Hamilton. This is great that the city is looking for better solutions.	2/12/2025 11:35 AM
85	The entire Hamilton Ave./Salmar Ave./Highway17 intersection is a complete nightmare. It's one of the most dangerous intersections in the city. The lanes are hard to read and people cut over to get into the right highway on ramp lane, too late and too dangerously. Highway 17 acts like a river cutting through the city, and it only has a few crossing points, which act as bottlenecks for traffic. Campbell Ave is the same way.	2/12/2025 11:26 AM
86	Ramp access to the LG Creek Trail from Hamilton seems like a prudent first step; even though there is a nearby access point on Bascom there is still an issue for northbound cyclists/pedestrians coming from the Pruneyard that may be oblivious to trail access on Campisi.	2/12/2025 8:21 AM
87	Biking in San Jose / Campbell is so scary with the way people drive. If we had more physically separate routes for bikers (like extending the sidewalk a bit and making the bike lane elevated) I would turn most of my errands into bike trips from car trips	2/12/2025 8:03 AM
88	complex freeway onramp with many speeding cars trying to squeeze in is no place for pedestrians or bikes, this is never safe, face the truth.	2/12/2025 7:14 AM
89	Slow down vehicles at any crossings	2/12/2025 7:02 AM
90	To me the most important thing is that it doesn't interrupt the flow of biking, i.e if I have to stop or get off my bike I'm much less likely to use it.	2/12/2025 3:24 AM
91	Whatever you build-- please hop on a bike and ride over it during rush hour when it's done	2/12/2025 1:09 AM
92	Road, path quality. Cars can drive on poor surfaces, but bikes can't.	2/12/2025 12:05 AM
93	Proper separation from vehicles	2/11/2025 11:58 PM

94	As a pedestrian it’s not uncommon to get honked at by cars. Just make those 4 access points really slow for cars.	2/11/2025 11:13 PM
95	Separate bike lane between the second and first lane from the left (dividing roadway similar to bike lane in Camden that goes under the 17)	2/11/2025 10:59 PM
96	I bike less because there are too many close calls with cars on the roads.	2/11/2025 10:09 PM
97	No matter the type of crossing, it should be visible to traffic, have lighting for pedestrians and bikes, be wide enough to walk at LEAST 2 people side by side comfortably (6ft+ if sidewalk, 10ft+if standalone bridge). Please do not make it as steep as the crossing from Downing/Westfield, it is tough to get across at times.	2/11/2025 9:55 PM
98	Protected bike lanes are proven to work in protecting the biker, pedestrian and driver.	2/11/2025 9:54 PM
99	The bike lane in question is dangerous and disruptive	2/11/2025 9:42 PM
100	left turn boxes, or accomodations for left turns via bike	2/11/2025 8:43 PM
101	A lot of these are redundant (eg safety, minimizing interaction with vehicles, and physical separation are all basically the same) Make it easy and practical to use, easy to maintain, and safe from dangerous cars and you’re good to go	2/11/2025 8:39 PM
102	For the love of Flying Spaghetti Monster, please do NOT install anything that prevents street sweepers from sweeping the bike lanes… San Jose has been installing those stupid bollards all over the place. When the bike lanes are unusable due to the debris, we are left without choice but to ride in traffic. And it sucks. I do upwards of 20k miles per year on the bike and can attest to the fact that the “protected” bike lanes are trash when they can’t be swept.	2/11/2025 8:35 PM
103	Health	2/11/2025 8:28 PM
104	I prefer to use a bike for local travels (within Campbell) if it's safe and doesn't take too long.	2/11/2025 8:21 PM
105	With the rise of the e-bike it is an inevitable need. Please do it now, it won’t get cheaper & we’ll be able to enjoy it sooner.	2/11/2025 8:21 PM
106	This would be a great, but very expensive, project for Campbell. My 2 cents is that, first, the adjacent sections of Hamilton must be made far safer for bikes, and pedestrians. Really would require eliminating street parking and getting a bike lane well separated from traffic, if at all possible.	2/8/2025 4:56 PM
107	Aesthetics!	2/8/2025 9:29 AM

Q3 How would you describe yourself as a bicyclist?

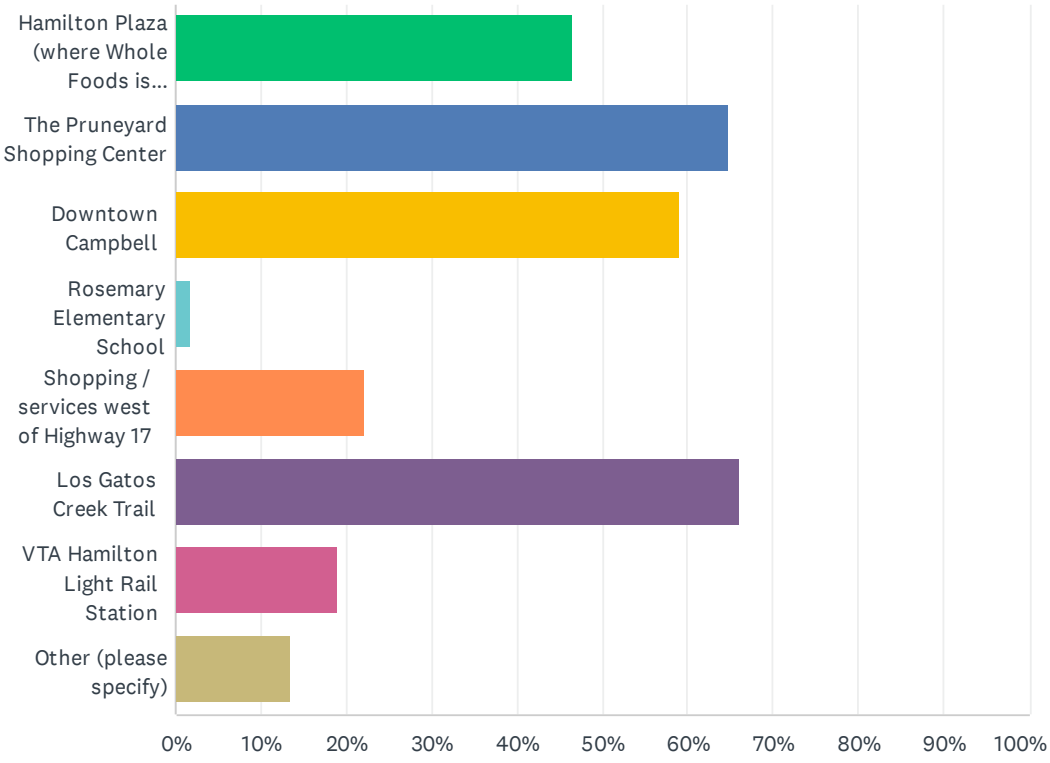
Answered: 411 Skipped: 16



ANSWER CHOICES	RESPONSES	
Advanced or experienced rider	51.09%	210
Intermediate rider	33.33%	137
Beginner or less confident rider	9.49%	39
I do not ride a bike	6.08%	25
TOTAL		411

Q4 Where do you typically travel when going over Highway 17 along Hamilton Ave.? (Select all that apply)

Answered: 401 Skipped: 26



ANSWER CHOICES	RESPONSES	
Hamilton Plaza (where Whole Foods is located) and surrounding shopping centers	46.38%	186
The Pruneyard Shopping Center	64.84%	260
Downtown Campbell	59.10%	237
Rosemary Elementary School	1.75%	7
Shopping / services west of Highway 17	22.19%	89
Los Gatos Creek Trail	66.08%	265
VTA Hamilton Light Rail Station	18.95%	76
Other (please specify)	13.47%	54
Total Respondents: 401		

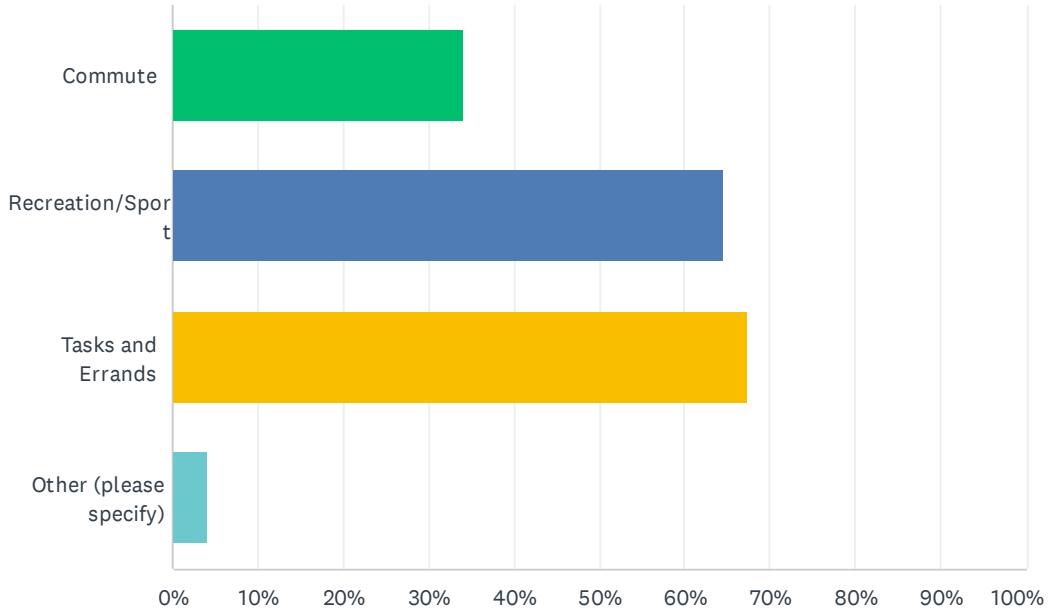
#	OTHER (PLEASE SPECIFY)	DATE
1	Home	3/13/2025 11:44 AM
2	Lynnhaven ave	3/12/2025 9:45 PM
3	Leisure riding in general area from my house in SJ	3/12/2025 8:24 AM

4	Our home	3/11/2025 8:08 PM
5	Work commute across campbell	3/11/2025 11:48 AM
6	All the above as I ride for fun, commuting and other purpose activities. Any bike over pass needs to support average speeds of at least 15 miles/hr.	3/11/2025 8:00 AM
7	I avoid using Hamilton over SR17.	3/10/2025 9:19 PM
8	Willow Glen	3/10/2025 7:15 PM
9	Maryjane hamann park	3/10/2025 6:48 PM
10	Campbell Library	3/10/2025 12:54 PM
11	Campbell Community Center	3/10/2025 12:39 PM
12	Avoid this route. Prefer to bike along Los Gatos trail.	3/10/2025 8:06 AM
13	but I go there directly. No one bikes on Hamilton Ave after Meridian Ave.	3/7/2025 12:47 PM
14	Going over to Bascom ave to head towards my home.	3/7/2025 11:14 AM
15	To work	3/6/2025 5:39 PM
16	Never have	3/6/2025 2:21 PM
17	I leave my home in WG to cycle up the peninsula	3/6/2025 12:46 PM
18	I don’t travel on Hamilton over hwy 17-it’s too dangerous	3/5/2025 5:31 PM
19	school	3/5/2025 3:18 PM
20	I don't..it's too busy	3/5/2025 12:36 PM
21	I don't cross 17 at Hamilton because of safety issues.	3/5/2025 12:26 PM
22	The Franciscan Apartments	3/5/2025 8:08 AM
23	Mary Jane Hammond park	3/4/2025 11:03 PM
24	Home/Work	3/4/2025 10:27 PM
25	Try to avoid these surface streets. They are very unsafe.	3/4/2025 4:49 PM
26	I absolutely avoid Hamilton Ave between Meridian and Winchester	3/4/2025 3:56 PM
27	I have no need to ride a bicycle over a major freeway. There’s no utilitarian need to do that.	3/4/2025 2:37 PM
28	Los Gatos, Santana Row…	3/4/2025 10:40 AM
29	Hamilton/Meridian	3/4/2025 4:53 AM
30	I don’t bike there, tooo dangerous	3/3/2025 9:15 PM
31	My work on Bascom Ave	3/3/2025 8:17 PM
32	West side of san jose	3/3/2025 7:47 PM
33	I don't need this route on my bike. But I'm a vigilant driver and know the dangers for bikes and pedestrians	2/20/2025 8:57 PM
34	Daycare east of 17	2/20/2025 4:37 PM
35	Near the old Fry's. Scary!	2/19/2025 6:39 AM
36	I just past through, as Hamilton is one of a few East/West roads	2/18/2025 1:17 PM
37	I do not cross here because it's too dangerous. I detour to Cambell Ave.	2/17/2025 11:38 AM
38	Commuting to work from SJ to Cpto	2/17/2025 9:17 AM
39	My workplace is also located on Salmar Ave	2/15/2025 9:16 AM
40	a connection to Santana row / valley fair	2/13/2025 9:42 AM

41	If I'm in a hurry, I just take Hamilton, though it is very sketchy	2/13/2025 8:26 AM
42	To Leigh Ave. and parallel roads	2/12/2025 9:02 PM
43	Exercise, not a specific destination	2/12/2025 2:46 PM
44	dont', too dangerous, I take the car	2/12/2025 7:15 AM
45	Little Caesar’s	2/12/2025 3:25 AM
46	Home via Bascom	2/11/2025 11:24 PM
47	Campbell School of Innovation	2/11/2025 9:56 PM
48	I try to avoid going that way	2/11/2025 9:38 PM
49	Home depot	2/11/2025 8:40 PM
50	Towards downtown San Jose	2/11/2025 8:40 PM
51	Riding up the peninsula and back on hwy 1 and home.	2/11/2025 8:37 PM
52	I usually take a different route because I don't feel safe with the on and off ramps	2/11/2025 8:22 PM
53	Cycling routes in east San Jose like Mt. Hamilton	2/11/2025 8:22 PM
54	I use this intersection as seldom as possible.	2/8/2025 4:57 PM

Q5 Why do you typically travel when going over Highway 17 along Hamilton Ave.? (Select all that apply)

Answered: 390 Skipped: 37



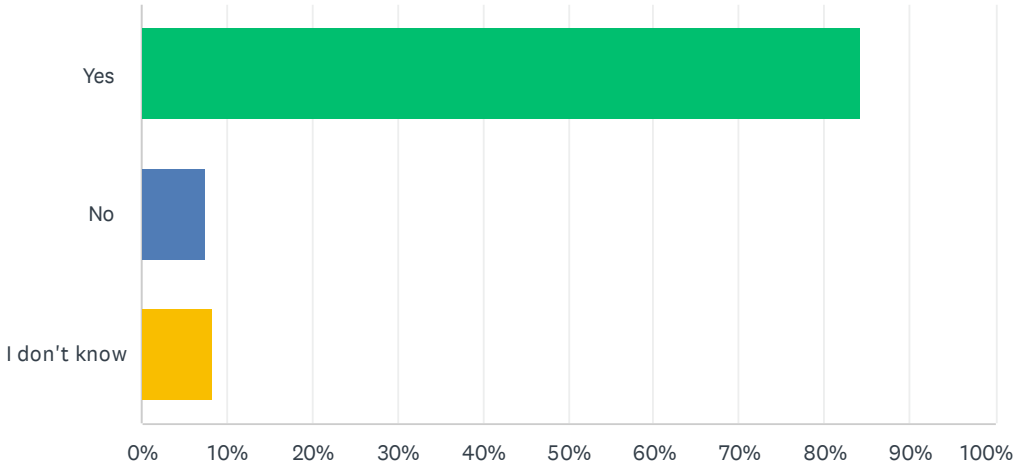
ANSWER CHOICES	RESPONSES	
Commute	34.10%	133
Recreation/Sport	64.62%	252
Tasks and Errands	67.44%	263
Other (please specify)	4.10%	16
Total Respondents: 390		

#	OTHER (PLEASE SPECIFY)	DATE
1	Grocery shopping. But generally I detour to Campbell ave or Los Gatos Creek Trail to avoid death or dismemberment.	3/11/2025 4:34 PM
2	See question 4	3/10/2025 9:20 PM
3	I travel along Campbell Ave because of congestion on Hamilton. Make the over crossing between Hamilton and Campbell Ave?	3/10/2025 8:36 PM
4	i would never	3/8/2025 2:44 PM
5	Too dangerous don't take it	3/7/2025 10:19 PM
6	I don't- it would be insane.	3/7/2025 12:47 PM
7	I use Campbell Ave.	3/4/2025 3:57 PM
8	Groceries and restaurants	3/4/2025 3:23 PM
9	I don't travel there on a bike.	3/4/2025 2:38 PM

10	Exercise	3/4/2025 8:55 AM
11	Shopping	3/4/2025 4:55 AM
12	I avoid it like the plague. Too dangerous.	3/3/2025 11:06 PM
13	Do not go tgerey	3/3/2025 9:16 PM
14	leisure	3/3/2025 7:07 PM
15	I try to avoid it.	2/11/2025 8:38 PM
16	I've never attempted taking Hamilton over 17 - it's not safe. Would love the option.	2/11/2025 8:31 PM

Q6 If better accommodations were available, would you consider walking or biking to destinations in this area that you currently drive to/from?

Answered: 401 Skipped: 26



ANSWER CHOICES	RESPONSES	
Yes	84.29%	338
No	7.48%	30
I don't know	8.23%	33
TOTAL		401

Q7 Please provide any additional considerations or input about this project (optional):

Answered: 78 Skipped: 349

#	RESPONSES	DATE
1	Hamilton is a terrible choice for a bike lane improvement unless you're going to do the entire length from Meridian to Prospect. Make Campbell Ave better or use residential side streets like Bucknal and improve them.	3/12/2025 8:13 PM
2	We already utilize the pedestrian overpass near Hamann Park and like that it feels safe and separate from motorists	3/11/2025 10:14 PM
3	I would love to update the overpass that ties to Mary Jane park and make that accessible to bikers as well as pedestrians.	3/11/2025 9:25 PM
4	I cross 17 on Hamilton by bike a few times a year, but work hard to avoid it because it is so dangerous. it would be great to have it safer.	3/11/2025 8:10 PM
5	better safer bike ride experience would motivate less driving!	3/11/2025 7:21 PM
6	Again, Protected bike lanes seem like a great safety plan, but then they get filled with dirt, leaves, branches, trash and the cities don't have the equipment to keep them clean. You build it, you clean it, then people will use it regularly. Don't clean it, people won't use it and you'll have wasted a whole bunch of tax dollars.	3/11/2025 5:07 PM
7	While projects like this very likely carry a completion target of 8 - 10 years out (2035), I urge you to compress the target to 4 - 5 years (2030) since this is such an important improvement.	3/11/2025 2:06 PM
8	Current crossing setup is comically dangerous and has been since I was a child	3/11/2025 11:50 AM
9	The City needs to consider the current infrastructure that is aging and prioritize repairs versus new infrastructure. Of course safety is important andshould be considered, but through the lens of cost versus reward. I reiterate that cost of these projects is not just a one time investment, but cost of maintenance also needs to be considered before committing to such a project.	3/11/2025 11:44 AM
10	Addressing the intersection exiting 17N should be considered in this project	3/11/2025 9:41 AM
11	To make bicycling safer, we need to stop separating bikes from cars. We need to reduce the space for cars; reduce the existing Hamilton overpass to one lane each direction for cars and use the rest for bicycles and other non-motorized methods of transportation. Crossing over 17 should be extremely difficult and time consuming for motorized vehicles. This includes throttle capable eBikes, akooters and skateboards.	3/11/2025 8:10 AM
12	With new high density housing on Bascom, it’s important to make this easily accessible for them. They haven’t moved in yet, not completely, but I think they should have easy access to LGCT to access Pruneyard and Downtown Campbell	3/10/2025 8:36 PM
13	Better flow of traffic onto 17 and increased safety for bikers/walkers/runners (I fall into the later two) is paramount. The intersections are not safe as currently designed given the volume of motor vehicle traffic.	3/10/2025 7:18 PM
14	There are already crossings at Los Gatos creek trail and Campbell Avenue. Hwy 17 and Hamilton is a major intersection and the capacity should not be reduced for bicycles	3/10/2025 5:34 PM
15	This intersection is especially dangerous with entrance/exits from 17 at 4 points, and drivers not paying attention speeding through lights, or last second lane changes to enter 17 at the cloverleafs. Left turns onto 17 would minimize interactions. Alternatively, tunnels under the cloverleafs for pedestrian and cyclists would benefit all. Drivers making an illegal U-Turn at Hamilton/Salmar adds to the frustration as car traffic can be erratic with swerving into lanes may cause accidents. Paint the entire bike lanes green and add "separation sticks" for visual deterrent.	3/10/2025 1:02 PM

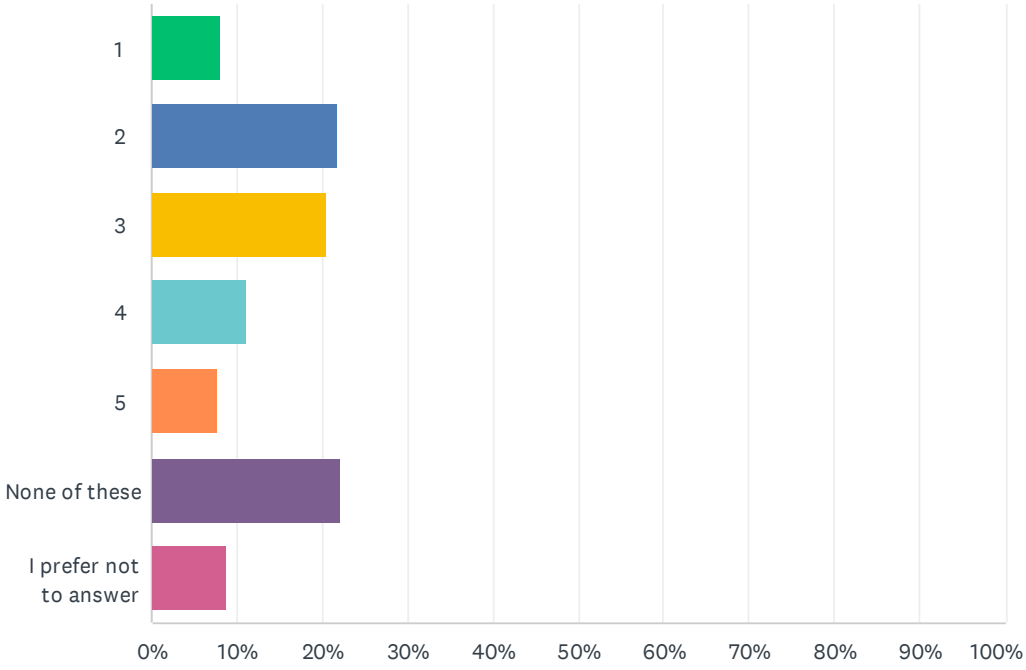
16	Separate bikers and cars	3/10/2025 12:07 PM
17	Please don’t waste money on this project.	3/10/2025 8:06 AM
18	Bike and pedestrian lanes please!	3/10/2025 7:48 AM
19	Before the City spends money on a bike lane, maybe the engineering department for the City should actually do their job and get Hamilton Ave replaced and striped. They have been working on it for over 6 years and nothing to show for it.	3/10/2025 6:22 AM
20	crazy traffic, drivers dont get into proper lane until last min	3/8/2025 2:44 PM
21	This is needed, NOW	3/8/2025 1:19 PM
22	Work with the pruneyard to improve their traffic congestion problem	3/8/2025 12:28 PM
23	Making safer routes for cyclists and pedestrians in less car populated is more ideal than putting them in areas of high traffic and freeway exits and entrances.	3/7/2025 10:19 PM
24	Don't waste taxpayer dollars doing this when much more cost effective sensible options are available.	3/7/2025 12:47 PM
25	If cars were physically separated with barriers then I would be comfortable biking more and happy to explore more	3/7/2025 7:07 AM
26	Prioritize other modes of transportation to normalize walking, biking, and transit as alternatives to driving. Especially for distances around 5 miles. Why can't we have proper bike parking too? If we did more people would feel comfortable riding places and storing their bikes while they run an errand. Instead of worrying about their bike getting stolen. Bike Valet like at Levi's Stadium or many bike parking lots in the Netherlands makes a significant difference in the amount of riding for every day life people are willing to do. Also, slowing down the car that have zero tolerance to pedestrians and bikers. So many run the light on winchester and hacienda intersection. An intersection that connects riders and walkers to the trail.	3/6/2025 9:56 PM
27	Don't do it.	3/6/2025 7:18 PM
28	It’s exciting to see Campbell take bikes and pedestrians seriously!!	3/6/2025 7:13 PM
29	Typically use Campbell ave it would be hard to make Hamilton preferable to Campbell ave	3/6/2025 6:51 PM
30	I am much less likely to use roads in which I have to merge/share the road with cars unless I have a separate lane the whole way. If a bike lane ends and it ends and I have to merge onto the street, it’s dangerous for bikers and annoying for drivers. Any bike lane that has to cross a freeway entrance or exit is very dangerous and not worth it for me. I’ve had way too many close calls. Safer to take backroads where there are less interactions with cars.	3/6/2025 5:44 PM
31	If biking in the area was safer and physically separated from cars/motor vehicles, then I would consider biking in the area instead of driving	3/6/2025 3:51 PM
32	Campbell Ave. Already exists. Residents don't want it used as through street for cars, thus speed humps and no direct crossing of Leigh or Bascom . This is a great alternative route for cyclists and pedestrian	3/6/2025 12:34 PM
33	I am also a motorist. This area is too congested to be adding silly green painted sections and plastic sticks. It will only cause problems.	3/6/2025 7:21 AM
34	The issue with riding bike to shopping/dining is lack of bike security	3/6/2025 6:02 AM
35	I commented on the under crossing on the Los Gatos Creek trail. It it too steep,blind curve,dark and narrow. More signs of how to get to the trail in the area. Create a trail along Salamar a bike ped crossing over 17 toward light rail station.	3/5/2025 10:17 PM
36	Electric bicycles are more popular by the year	3/5/2025 9:40 PM
37	Should start with wider clearly marked bike lanes, Prospect road in Saratoga and Stevens Creek in Cupertino are excellent baseline examples	3/5/2025 8:00 PM
38	Currently there are too many speeding cars. A speed bump or two might help.	3/5/2025 7:20 PM
39	I usually avoid this overcrossing of 17,favoring Campbell Av or the pedestrian bridge because this crossing currently has too many potential conflicts with cars.	3/5/2025 6:01 PM

40	Connection to Los Gatos Creek trail and VTA are critical, I think.	3/5/2025 4:57 PM
41	Again safety is important especially cars vs bikes and walkers. Also how to be safe from people who are unhealthy or up to go good in those areas. On Campbell Ave under 17 the walk areas have a lot of uncomfortable situations for walkers/bikers	3/5/2025 10:56 AM
42	I specifically avoid biking here, because it's insanely dangerous. Someone is going to get killed if this isn't improved.	3/5/2025 8:09 AM
43	Please look at the whole picture when it comes to making Hamilton “bike” safe… road diet is not going to stop traffic backups, it will make it worse than Camden/hillsdale	3/4/2025 11:05 PM
44	I currently detour through downtown Campbell to avoid crossing 17 on Hamilton. It adds a good 10 minutes to my commute. I would use a safer 17 crossing every day on my commute to work.	3/4/2025 10:29 PM
45	While I do not bicycle, I do walk a lot. Any chance to keep me from cars running me over would be great. The crossing over the entrances to 17 can be tricky	3/4/2025 9:38 PM
46	I’m disabled, but safety and accessibility for cyclists is important to me.	3/4/2025 6:38 PM
47	It needs to be separated from Hamilton Rd. Any intersection where pedestrians cross the roadway is unsafe, even if it were in a crosswalk or protected by a traffic signal. Consider building a pathway using the light rail property/Hwy corridor and a pedestrian bridge over 17 and returning to Hamilton between the onramp and the former Fry’s building.	3/4/2025 10:49 AM
48	Huge waste of money.	3/4/2025 8:55 AM
49	Los gatos creek trail is great, but has poor connectivity to the amenities it passes near: pruneyard, home Depot, downtown Campbell	3/4/2025 5:49 AM
50	Also make the Trails safer, perhaps wider.	3/4/2025 4:55 AM
51	Thank you for investing in the bike-ability of our city!	3/4/2025 12:16 AM
52	I have Vast knowledge in the improvement of infrastructure to better suit, cyclist, pedestrians, and vehicles. for all inquiries or advice, please email me at; josephiguardado@gmail.com. Please let me know if you are hiring as well.	3/3/2025 8:43 PM
53	Add good lighting for evening and nighttime riding	3/3/2025 7:48 PM
54	Do it!!!!	3/3/2025 7:26 PM
55	I typically avoid this route because I don't feel it's safe. Although I live closer to Hamilton Ave., I would rather go through town and use the LG trail to get to the other side of the freeway.	3/3/2025 6:15 PM
56	Please consider not only the hwy 17 overpass, but also the areas before/after that. A great overpass means nothing if pedestrians/cyclists can’t really get to it easily.	3/3/2025 4:56 PM
57	Bicyclist and pedestrian need a much safer place to getting around.	2/25/2025 10:51 PM
58	I am a regular cyclist; I find this intersection so sketchy I tend to go out of my way to avoid going through it	2/17/2025 3:29 PM
59	Honestly, anymore I mostly just avoid anything west of 17 on Hamilton because of how challenging that interchange is.	2/13/2025 10:34 AM
60	I have a cargo bike that I would use more regularly if it were safer. In the winter I can barely use it as it’s too dark and drivers are crazy when it rains. I’ve already been hit by a driver once so usually take my car to avoid that happening again. Better bike infrastructure would motivate to take it more often.	2/13/2025 9:42 AM
61	The Pruneyard is great, and to be able to get there from other locations would be ideal	2/13/2025 8:26 AM
62	Clean up the Salmar/Hamilton Ave intersection. Maybe close it off and make it a dead end. Demolish the old Fry's Computer building and build the bridge there over the highway.	2/12/2025 11:28 AM
63	Please make biking more safe!	2/12/2025 8:49 AM
64	The safest project seems like raised pedestrian/cyclist bridges built along the existing sideways, eastbound from Salmar to the VTA station and westbound from before the NB17 onramp all the way to the plaza where Panera Bread is located.	2/12/2025 8:26 AM

65	safety is key, distracted rush hour drivers trying to beat the intersection are unsafe for biking or walking	2/12/2025 7:16 AM
66	I typically bike along the creek trail into the area and bike to downtown. Or I take light rail to the area via Hamilton and then bike/walk from there to the pruneyard, downtown Campbell, or other general errands/shopping.	2/12/2025 5:28 AM
67	6 does not apply for me since I don't drive, my bike is my only mode of transportation.	2/12/2025 3:26 AM
68	Protected bike lanes would provide safety for biker, pedestrian and drivers.	2/11/2025 9:58 PM
69	On top of this project, please make the sidewalk on the current overcrossing wider to allow for people to pass one another (very difficult on bikes right now)	2/11/2025 9:57 PM
70	I do not personally understand how the bike lane came to exist as it is, it's a high traffic area and someone crossing the on ramp impedes traffic. It would be mutually beneficial to spend the money to address this, for bikes and motorized vehicles alike	2/11/2025 9:44 PM
71	Very excited you are exploring this!	2/11/2025 9:38 PM
72	Intentionally avoid biking across the Hamilton 17 interchange	2/11/2025 8:47 PM
73	I often have to drive because people I'm with don't consider biking safe or practical	2/11/2025 8:40 PM
74	Whatever you do. No bollards or posts please. Make the bike lanes accessible to street sweepers.	2/11/2025 8:38 PM
75	Even the cars can't handle this intersection	2/11/2025 8:31 PM
76	I will go to those locations more frequently if I can go there by bike.	2/11/2025 8:24 PM
77	Deal with the homeless in parallel	2/11/2025 8:18 PM
78	This project really is a last step after A. Hamilton Ave. in general is planned and B. an effective citywide bike circulation plan is planned and at least partly completed. (Yes, way easier said than done!)	2/8/2025 4:59 PM

Q8 Please indicate which area of the map in which you live:

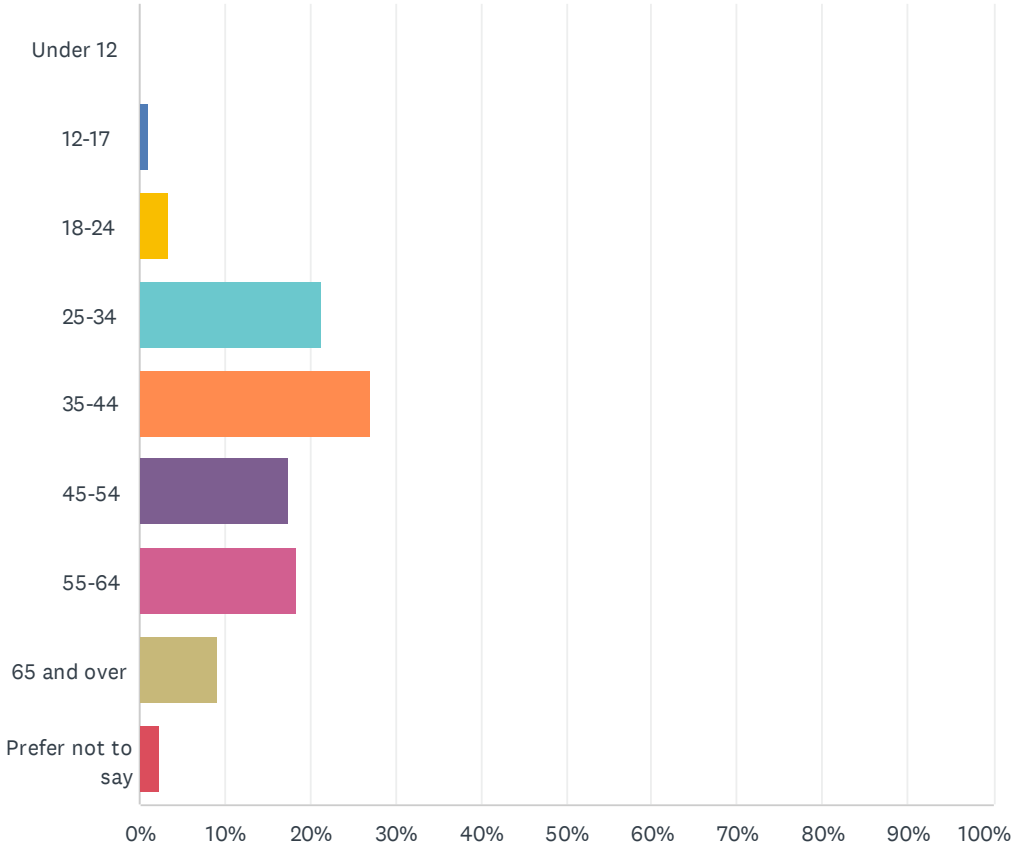
Answered: 387 Skipped: 40



ANSWER CHOICES	RESPONSES	
1	8.01%	31
2	21.71%	84
3	20.41%	79
4	11.11%	43
5	7.75%	30
None of these	22.22%	86
I prefer not to answer	8.79%	34
TOTAL		387

Q9 What is your age?

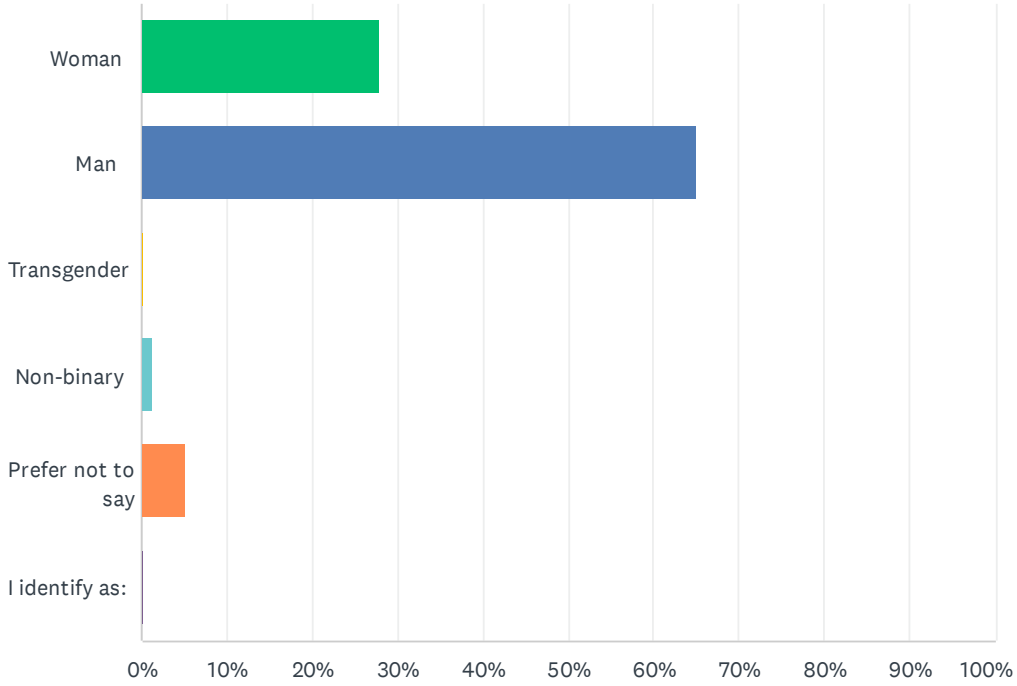
Answered: 389 Skipped: 38



ANSWER CHOICES	RESPONSES	
Under 12	0.00%	0
12-17	1.03%	4
18-24	3.34%	13
25-34	21.34%	83
35-44	26.99%	105
45-54	17.48%	68
55-64	18.25%	71
65 and over	9.25%	36
Prefer not to say	2.31%	9
TOTAL		389

Q10 What is your gender:

Answered: 386 Skipped: 41

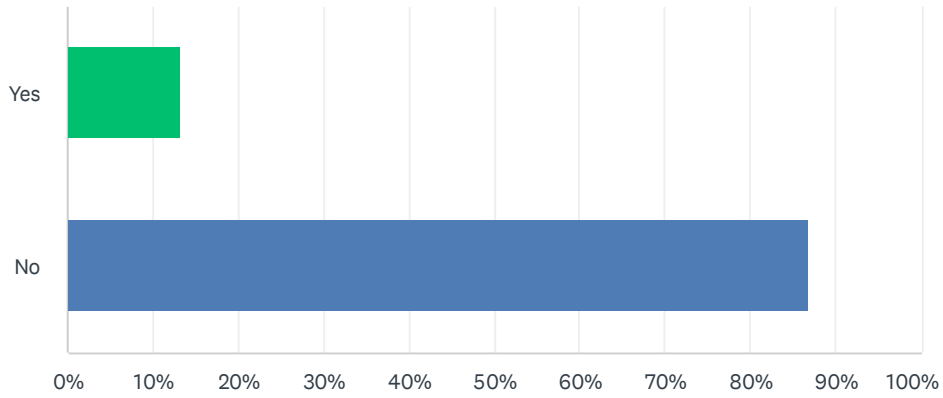


ANSWER CHOICES	RESPONSES	
Woman	27.98%	108
Man	65.03%	251
Transgender	0.26%	1
Non-binary	1.30%	5
Prefer not to say	5.18%	20
I identify as:	0.26%	1
TOTAL		386

#	I IDENTIFY AS:	DATE
1	The Easter bunny	3/10/2025 5:35 PM

Q11 Are you of Hispanic, Latino or Spanish origin?

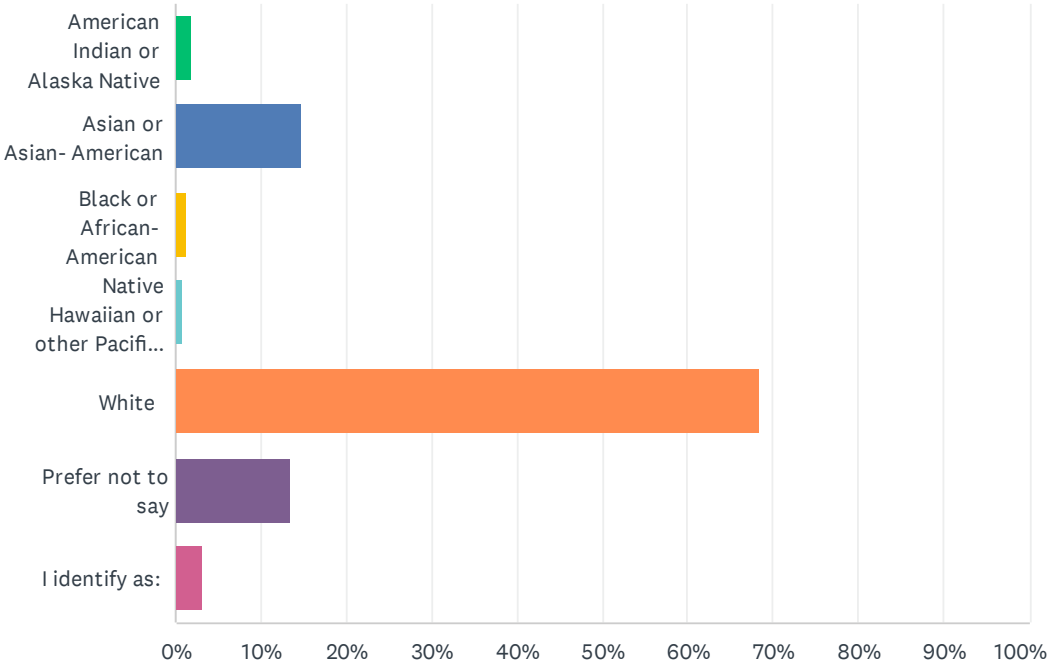
Answered: 377 Skipped: 50



ANSWER CHOICES	RESPONSES	
Yes	13.26%	50
No	86.74%	327
TOTAL		377

Q12 With which racial group do you identify? (select all that apply)

Answered: 374 Skipped: 53



ANSWER CHOICES	RESPONSES	
American Indian or Alaska Native	1.87%	7
Asian or Asian- American	14.71%	55
Black or African- American	1.34%	5
Native Hawaiian or other Pacific Islander	0.80%	3
White	68.45%	256
Prefer not to say	13.37%	50
I identify as:	3.21%	12
Total Respondents: 374		

#	I IDENTIFY AS:	DATE
1	Rachel Dolezal	3/10/2025 5:35 PM
2	Jew	3/8/2025 6:00 PM
3	a private citizen	3/8/2025 2:45 PM
4	Hispano	3/6/2025 8:46 PM
5	Native American	3/6/2025 7:22 AM
6	Latino	3/5/2025 9:44 PM
7	Chicano	3/4/2025 5:52 PM

8	Native Latinx	3/4/2025 3:26 PM
9	Two races	3/4/2025 1:24 PM
10	Mexican	3/3/2025 7:49 PM
11	biracial (B/W)	2/11/2025 8:24 PM
12	Latino	2/8/2025 9:30 AM

Hamilton Ave /State Route (SR) 17 Bicycle Overcrossing Feasibility Study Survey – Open Response Question Summary

Question 2: Use this space to add any additional aspects of bicycle/pedestrian facilities you'd like to be considered (107 responses)

Safety
Many respondents emphasized the importance of physical separation between cars, bicycles, and pedestrians for safety. There were concerns about dangerous interactions on Hamilton Avenue, where cyclists and pedestrians are often put at risk by speeding drivers and poor infrastructure. Suggestions included physically protected bike lanes, overpasses, and dedicated crossings to reduce accidents and conflicts.

Infrastructure
Respondents highlighted the need for better-designed infrastructure that ensures safety, comfort, and usability. This includes requests for smoother, well-maintained bike lanes, proper signage, and minimal debris. The importance of ongoing maintenance was frequently mentioned, with a particular focus on ensuring that bike lanes remain clean and usable, especially in areas prone to accumulating trash and dirt.

Connectivity
Many survey participants called for improved connectivity between existing bike paths, trails, and key locations such as transit stations and neighborhoods. Clear and intuitive wayfinding, along with better access to popular trails like the Los Gatos Creek Trail, was emphasized. Additionally, ensuring that new bike lanes link up with existing infrastructure was seen as essential for encouraging greater use.

Traffic Flow
A significant number of comments stressed that efforts to improve bike and pedestrian safety should not disrupt vehicle traffic flow on Hamilton Avenue, as it is particularly congested. Respondents would like there to be a balance that allows for improved cycling infrastructure without exacerbating existing traffic issues.

Question 7: Please Provide any additional considerations or input about this project (78 responses)

Safety
Safety of cyclists and pedestrians was a major concern, given the danger of the traffic causing accidents and near-misses. Many respondents supported the idea for physical separation from vehicles, such as barriers, or improving existing infrastructure for increasing safety.

APPENDIX C

C1. TRAFFIC MEMO

Fehr & Peers

Draft Memorandum

Date: December 23 2025

To: Tony Silva, HMH

From: Valerie Tan, Ashley Weiss, Steve Davis, Fehr & Peers

Subject: Hamilton Avenue Bicycle Overcrossing Feasibility Study - Traffic Operations Analysis

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This memorandum documents the traffic operations analysis ("Project") for the Hamilton Avenue Bicycle Overcrossing Feasibility Study ("Study") in Campbell, California. The Project identifies pedestrian and bicycle crossing configurations at the two study intersections and evaluates their impact on vehicle intersection operations. The Project may not directly align with alternatives in the Study, but information in this memo was incorporated into alternatives presented in the Study.

The Project studied three Build Alternatives to determine the preferred intersection configurations to be used in the Study:

1. All Build Alternatives
    a. **Hamilton Avenue/SR 17 southbound off-ramp:** Updates SR 17 southbound off-ramp configuration. Provides pedestrian crossings across north, south, and west legs.
    b. **Hamilton Avenue/Creekside Way:** Provides two-way bicycle crossing across south and east legs. Provides pedestrian crossing across south leg and straightens crossing across east leg. Restricts right-turn on red and provide overlap phase at northbound right and eastbound right movements.
2. Build Alternative 1
    a. **Hamilton Avenue/SR 17 southbound off-ramp:** Includes all build alternative changes described above. Additionally provides two-way bicycle crossing across south leg and one-way northbound bike crossing across west leg. Restricts right-turn on red at northbound right and eastbound right movements
    b. **Hamilton Avenue/Creekside Way:** Includes all build alternative changes described above. Removes pork chop island on southeast and southwest corners.
3. Build Alternative 2
    a. **Hamilton Avenue/SR 17 southbound off-ramp:** Includes all build alternative changes described above. Additionally provides two-way bicycle crossing across south leg and one-way northbound bike crossing across west leg. Restricts right-turn on red at northbound right and eastbound right movements
    b. **Hamilton Avenue/Creekside Way:** Includes all build alternative changes described above. Removes pork chop island on southeast corners
4. Build Alternative 3

a. **Hamilton Avenue/SR 17 southbound off-ramp:** Includes all build alternative changes described above. Additionally provides one-way bicycle crossing across north, south, and east legs.
b. **Hamilton Avenue/Creekside Way:** Includes all build alternative changes described above. Removes pork chop island on southwest corners

Study Overview

The Hamilton Avenue Bicycle Overcrossing is envisioned as part of the City of Campbell's General Plan 2040 and the 2018 Countywide Bicycle Plan, designated as a Category 2 Across Barrier Connection (ABC) – Unfriendly Freeway Interchanges, No. BP4. The Hamilton Avenue Public Improvement Plan proposes the development of a facility that will provide a safe and convenient alternative route for both cyclists and pedestrians. This will allow easier access to key nearby destinations, including the Pruneyard/ Creekside District, the VTA Hamilton Light Rail Station, the Los Gatos Creek Trail, local schools, and surrounding residential neighborhoods. The overcrossing will improve connectivity and safety for non-motorized travelers in the area. This memo summarizes the existing conditions, intersection operations methodology, and alternatives analysis and findings.

The Study proposes four Study Alternatives:

1. **The Southern Route Alternative:** Provides westbound bike lane north of Hamilton Avenue with crossings at SR 17 northbound diagonal on-ramp and SR 17 southbound off-ramp. Provides SR 17 overcrossing south of Hamilton Avenue with multimodal at-grade crossings at Salmar Avenue and Creekside Way.
2. **The Campbell Loop Alternative:** Provides westbound bike lane north of Hamilton Avenue with crossings at SR 17 northbound diagonal on-ramp and SR 17 southbound off-ramp. Provides SR 17 overcrossing south of Hamilton Avenue with multimodal at-grade crossings at Salmar Avenue, SR 17 southbound diagonal on-ramp, and Creekside Way.
3. **The Straight Shot Alternative:** Provides westbound bike lane north of Hamilton Avenue with crossings at SR 17 northbound diagonal on-ramp and SR 17 southbound off-ramp. Provides SR 17 overcrossing south of Hamilton Avenue with multimodal at-grade crossings at Salmar Avenue, SR 17 southbound diagonal on-ramp, SR 17 northbound loop on-ramp, and Creekside Way.
4. **The Minimalist Alternative:** Provides SR 17 overcrossing south of Hamilton Avenue with multimodal at-grade crossings at Salmar Avenue, SR 17 southbound diagonal on-ramp, SR 17 northbound loop on-ramp, and Creekside Way.

Existing Conditions

Existing Roadway Network

Hamilton Avenue is an east-west arterial through the study area and provides a critical connection between local and regional facilities. Within the project limits, Hamilton Avenue is a six-lane facility with three lanes in each direction. Hamilton Avenue connects Winchester Boulevard to the west with Bascom Avenue to the east. The corridor supports both regional commuter traffic and local access to adjacent commercial and residential land uses. Hamilton Avenue provides transit operations with eastbound VTA bus stops located west of Creekside Way adjacent to the VTA Hamilton Light Rail Station and westbound VTA bus stops located east of Creekside Way. The posted speed limit is 35 mph.

Salmar Avenue is a north-south local roadway that provides access to commercial parcels located adjacent to the SR 17/Hamilton interchange. The facility consists of a single travel lane in each direction and intersects Hamilton Avenue at the SR 17 southbound ramp terminal. The posted speed limit is 30 mph.

Creekside Way is a north-south minor collector that provides access from SR 17 northbound off-ramp and to retail, office, and residential land uses adjacent to Hamilton Avenue. The facility consists of two travel lanes in each direction. The roadway intersects Hamilton Avenue at a signalized intersection. Creekside Way provides transit operations with VTA bus stops located south of the intersection adjacent to the VTA Hamilton Light Rail Station. The posted speed limit is 30 mph.

Existing Bicycle Facilities

Class II bike lanes are provided along both directions of Hamilton Avenue west of SR 17 southbound off-ramp and along eastbound Hamilton Avenue east of Creekside Way. A Class I bike path is provided on the Los Gatos Creek Trail with access via Hamilton Avenue east of Creekside Way.

Bicycle facilities at Hamilton Ave/SR 17 southbound off-ramp and Hamilton Ave/Creekside Way intersections are limited. There are no dedicated or protected bicycle crossings, and bicyclists share travel lanes with motor vehicles between the intersections.

Existing Pedestrian Facilities

Pedestrian facilities in the study area include sidewalks, crosswalks, and pedestrian signals at signalized intersections. Sidewalks are generally provided along Hamilton Avenue, with continuous sidewalks at Hamilton Ave/SR 17 southbound off-ramp and Hamilton Ave/Creekside Way intersections. Hamilton Ave/SR 17 southbound off-ramp provides marked crosswalks across the north, south, and west legs. Hamilton Avenue/Creekside Way provides marked crosswalks across the north, south, and east legs.

Uncontrolled crosswalks are provided across each of the four free-flow SR 17 on-ramps. In general, the roadway geometry may allow higher vehicle travel speeds at these pedestrian crossings and require pedestrians to seek gaps in vehicular traffic.

Data Collection and Methodology

Data Collection

The City of Campbell provided weekday intersection traffic counts for AM and PM peak hours. The data was collected on June 5, 2024 to capture existing conditions for this analysis. **Attachment A** provides the traffic counts. Lane configurations for the study intersections were retrieved from Google Maps aerial imagery. Signal timing information was received from the City of Campbell.

Analysis Methodology

The Project evaluates pedestrian and bicycle crossing configurations at the two study intersections. The Project may not directly align with alternatives in the Study, but information in this memo was incorporated into alternatives presented in the Study.

The following two study intersections were evaluated for AM and PM peak hour level of service (LOS) under Existing Conditions and Build Alternative Conditions:

1. Hamilton Ave/SR 17 southbound off-ramp
2. Hamilton Ave/Creekside Way

The study intersections were analyzed using procedures and methodologies contained in the Highway Capacity Manual (HCM). The 2000 HCM signalized methodologies were applied using the Synchro 11 software which consider vehicle volumes, lane configurations, bicycle and pedestrian volumes, heavy vehicle percentages and other pertinent parameters of intersection operations. However, it does not factor in the operations of adjacent intersections that may affect queuing or operations at the study intersection. A more detailed analysis using microsimulation is recommended for further study and refinement of alternatives. The LOS method measures average control delay per vehicle including the initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

The intersection analysis uses LOS to evaluate operations. LOS is a qualitative description of traffic flow based on factors such as speed, travel time, delay, and freedom to maneuver. Six levels are defined from LOS A, with little or no delay, to LOS F, with excessive delay. LOS E represents "at-capacity" operations. When traffic volumes exceed the intersection capacity, stop-and-go conditions result, and operations are designated as LOS F.

The average control delay is calculated using Synchro analysis software and is correlated to a LOS designation as shown in **Table 1**.

Table 1: Signalized Intersection Level of Service

Level of Service	Average Control Delay per Vehicle (seconds)
A	< 10.0
B	10.1 to 20.0
C	20.1 to 35.0
D	35.1 to 55.0
E	55.1 to 80.0
F	> 80.0

Source: *Highway Capacity Manual*, Transportation Research Board, 2000.

Historically, the City of Campbell deemed LOS D for signalized intersection acceptable. The LOS analysis conducted is for informational purposes to support identifying alternatives to move forward in future studies.

Existing Intersection Operations

The existing intersection traffic counts, lane configurations, and traffic signal phasing and timing were used as inputs to the LOS calculations. **Table 2** presents the existing LOS analysis results using the analysis methods described above. **Attachment B** provides the LOS results and calculation output sheets. Under Existing Conditions, all study intersections operate at acceptable LOS D or better during the AM and PM peak hours.

Table 2: Existing Conditions Intersection Operations

Study Intersection		Control	Peak Hour	Existing Conditions	
				Delay[1]	LOS[2]
1	Hamilton Ave/SR 17 southbound off-ramp	Signal	AM	33.8	C
			PM	51.6	D
2	Hamilton Ave/Creekside Way	Signal	AM	18.1	B
			PM	24.8	C

Notes:

1. Whole intersection weighted average control delay expressed in seconds per vehicle calculated using the 2000 HCM methods. 2000 HCM is the latest HCM version to analyze custom phasing such as for separating bicycle phases.
2. LOS = Level of service. LOS calculations were conducted using the Synchro 11 software which apply the 2000 HCM methods

Build Alternatives

The existing intersection traffic counts were used as inputs to the Build Alternative LOS calculations. Lane configurations and traffic signal phasing and timing were updated for each alternative based on proposed improvements to accommodate bicycle and pedestrian access to and from the overcrossing.

Based on a review of the Study Alternatives, we considered the following intersection enhancements for Build Alternatives:

- **One-way bike crossings** allow bicycle crossing with the flow of vehicle travel to cross an intersection and facilitate bicycle access on and off the overcrossing on the south side of Hamilton Avenue.
- **Two-way bike crossings** allow both directions of bicycle crossing on one side of the intersection to facilitate bicycle access on and off the overcrossing on the south side of Hamilton Avenue and assist westbound bicycles traveling against the flow of vehicle travel.
- **No right-turn on red** complements two-way bike crossings by reducing potential for conflicts between drivers turning right and bi-directional bicycle traffic obeying a green signal indication. Drivers making a right-turn on red are more likely to focus on finding gaps in vehicle traffic approaching from the left and overlook bicyclists or pedestrians approaching from the right.
- **Overlap phases** allow right-turn to flow through the intersection during complementary protected left-turn signal phases. Overlap phases can help to offset the increased vehicle delay that results from implementation of no right-turn on red. U-turns for conflicting vehicle movements must be restricted where right-turn overlap phases are implemented.
- **Separated bicycle phases** allow bicycles to flow through the intersection without conflicting vehicle movements. Conflicting right-turn movements must be restricted where separated bicycle phases are implemented. Parallel through movements are permitted during bicycle phases.
- **Straight pedestrian crossings** where feasible can reduce the total crossing distance for pedestrians. On the east leg of Hamilton Avenue at Creekside Way, it may be feasible to

realign the northern end of the crosswalk to west of the 851 Hamilton Avenue driveway to reduce crossing distance. Similarly, geometric modifications to the west leg of Hamilton Avenue at SR 17 southbound off-ramp may allow for the crosswalk across that leg to be straightened. Note that pedestrians with vision impairments may struggle to understand crosswalks that change direction within the roadway.

- **Pork chop island removal** reduces pedestrian exposure to traffic which may be turning at higher speeds without stopping at a traffic signal. This is generally preferred to encourage slower right-turn speeds such as at Hamilton Avenue/Creekside Way intersection.

Through discussions with HMH and the City of Campbell staff, the project team considered intersection enhancements described above and recommend three Build Alternatives to evaluate in this analysis. **Table 3** summarizes the evaluated Build Alternative lane configuration and traffic signal assumptions.

Table 3: Summary of Build Alternatives for Traffic Operations Analysis

Possible Study Alternative	Build Alternative	Hamilton Avenue/SR 17 southbound off-ramp	Hamilton Avenue/Creekside Way
	All Build Alternatives	• Updated SR 17 southbound off-ramp configuration: 1 southbound right, 1 southbound through, 3 southbound left[1] • Pedestrian crossings across north, south, and west legs	• Two-way bike crossing across south and east legs • Separated bike phase for south and east bike crossings • No right-turn on red at northbound right and eastbound right • Overlap phase at northbound right and eastbound right • Pedestrian crossings across south and east legs • Straighten pedestrian crossing across east leg
The Minimalist	Build Alternative 1	• Two-way bike crossing across south leg • No right-turn on red at northbound right and eastbound right • One-way northbound bike crossing across west leg	• Remove pork chop islands on southeast and southwest corners
The Southern Route, The Campbell Loop, The Straight Shot	Build Alternative 2		• Remove northbound right pork chop island on southeast corner
	Build Alternative 3	• One-way bike crossing across north, south, and east legs	• Remove eastbound right pork chop island on southwest corner

Note:
1. SR 17 southbound off-ramp lane configuration is based on the Hamilton/Highway 17 Southbound Off-Ramp Widening Project conceptual improvements provided by the City of Campbell.

Source: Fehr & Peers, 2025.

Build Alternatives Intersection Operations

The existing intersection traffic counts along with lane configurations and traffic signal described in **Table 3** were used as inputs to the LOS calculations. **Table 4** presents the Build Alternatives LOS analysis results using the analysis methods described above. **Attachment B** provides the LOS results and calculation output sheets. Under Build Alternative Conditions, most study intersections operate at acceptable LOS D or better during the AM and PM peak hours. Under Build Alternative 3, Hamilton Ave/SR 17 southbound off-ramp operates at LOS E in the PM peak hour.

Table 4: Build Alternatives Intersection Operations

Study Intersection		Control	Peak Hour	Existing		Build Alternative 1		Build Alternative 2		Build Alternative 3	
				Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]
1	Hamilton Ave/SR 17 southbound off-ramp	Signal	AM	33.8	C	30.3	C	31.6	C	37.9	D
			PM	51.6	D	48.1	D	46.9	D	57.0	E
2	Hamilton Ave/Creekside Way	Signal	AM	18.1	B	21.1	C	18.7	B	20.8	C
			PM	24.8	C	36.0	D	25.3	C	27.2	C

Notes:
1. Whole intersection weighted average control delay expressed in seconds per vehicle calculated using the 2000 HCM methods. 2000 HCM is the latest HCM version to analyze custom phasing such as for separating bicycle phases.
2. LOS = Level of service. LOS calculations were conducted using the Synchro 11 software which apply the 2000 HCM methods

Source: Fehr & Peers, 2025.

Under Existing Conditions, the Hamilton Avenue/SR 17 southbound off-ramp intersection operates at LOS C in the AM peak hour and LOS D in the PM peak hour. The Hamilton Avenue/Creekside Way intersection operates at LOS B in the AM peak hour and LOS C in the PM peak hour.

Build Alternative 1

Under Build Alternative 1, the Hamilton Avenue/SR 17 southbound off-ramp intersection delay decreases from Existing Conditions. The intersection continues to operate at LOS C in the AM peak hour and LOS D in the PM peak hour. Although Build Alternative 1 includes two-way bike crossings and no right-turn on red phasing that reduces intersection capacity, the SR 17 southbound off-ramp widening improvements offset the increases in delay that would otherwise occur with only the multimodal improvements.

The Hamilton Avenue/Creekside Way intersection delay increases from Existing Conditions. The intersection operations at LOS C in the AM peak hour and LOS D in the PM peak hour. The multimodal improvements increase the average vehicle delay in the PM peak hour by less than 12 seconds compared to Existing. The intersection continues to perform at an acceptable LOS, however, this is the largest increase in delay of the Build Alternatives.

Build Alternative 2

Under Build Alternative 2, the Hamilton Avenue/SR 17 southbound off-ramp intersection delay decreases from Existing Conditions. Similar to Build Alternative 1, the operational improvements caused by provision of an addition lane on the SR 17 southbound off-ramp offset the two-way bike crossings and no right-turn on red intersection improvements. The intersection continues to operate at LOS C in the AM peak hour and LOS D in the PM peak hour.

The Hamilton Avenue/Creekside Way intersection delay slightly increases from Existing, but the intersection operations remain at LOS B in the AM peak hour and LOS C in the PM peak hour. Removing only the northbound right-turn lane pork chop island on the southeast corner while retaining the eastbound right-turn channelization improves pedestrian safety compared to Existing, but there is still high-speed right-turn exposure for the eastbound right-turn that is not present under Build Alternative 1.

Build Alternative 3

Under Build Alternative 3, the Hamilton Avenue/SR 17 southbound off-ramp intersection delay increases from Existing Conditions. The intersection operates at LOS D in the AM peak hour and LOS E in the PM peak hour. The one-way bike crossing across the east leg adds vehicle delay compared to Existing that does not have a crossing on the east leg. However, it provides access for bicyclists traveling westbound to cross Hamilton Avenue and travel with the flow of vehicle travel.

The Hamilton Avenue/Creekside Way intersection delay slightly increase from Existing Conditions, but the intersection operates at LOS C in the AM peak hour and maintains at LOS C in the PM peak hour. Similar to Build Alternative 2, removing only the eastbound right-turn channelization on the southwest corner while retaining the channelized northbound right-turn lane improves pedestrian safety compared to Existing, but maintains a high-speed right-turn exposure for the northbound right-turn that is not present under Build Alternative 1.

Findings

Based on the intersection operations analysis along with bicyclist and pedestrian safety, **Table 5** summarizes the vehicle delay impacts and findings for each alternative.

Table 5: Summary of Traffic Impacts

Traffic Build Alternative	Study Alternative	Average Intersection Delay Impacts	Change from Existing
Build Alternative 1	The Minimalist	LOS C-D	• Int #1: LOS maintains • Int #2: LOS worsens in AM/PM; Reduced high-speed right-turn exposure at eastbound right-turn and northbound right-turn
Build Alternative 2	The Southern Route, The Campbell Loop, The Straight Shot	LOS B-D	• Int #1: LOS maintains • Int #2: LOS maintains; Reduced high-speed right-turn exposure at northbound right-turn

Build Alternative 3		LOS C-E	• Int #1: LOS worsens in PM • Int #2: LOS worsens in AM; Reduced high-speed right-turn exposure at eastbound right-turn

Note that the traffic operations analysis in this feasibility study is limited to the two signalized intersections in the study area. However, the Study should additionally consider bicycle and pedestrian crossing improvements across the free-flow SR 17 on- and off-ramps in future studies. This is especially true for alternatives which introduce bi-directional bicycle traffic across free-flow ramps where bicycle traffic is not present in the existing condition. Any changes within Caltrans right-of-way, including the ramps and ramp terminal intersections would need approval from Caltrans through a more comprehensive study.

Maintenance
The importance of keeping bike lanes clean and well-maintained was a recurring theme. Comments highlight the issue of debris (dirt, leaves, trash) accumulating in bike lanes, which makes them unusable. Respondents urged the city to not only build the bike lanes but also ensure that regular cleaning and upkeep are part of the plan to maintain their safety and functionality to ensure use.

Connectivity
Respondents emphasized the need for a connected network of bike lanes, pedestrian paths, and public transit options. More respondents would bike or walk with easier access to key areas such as downtown Campbell, the Pruneyard, and Los Gatos Creek Trail. There were also calls for improved access for residents in new high-density areas, such as those near Bascom, and creating more direct routes for cyclists to access important destinations.

Infrastructure
Many respondents were supportive of reducing the reliance on cars by prioritizing walking, cycling, and public transit. Respondents would like to have safer, well-maintained bike lanes and pedestrian paths, as well as better bike facilities. Controlling traffic flow and high speeds was also mentioned to allow for a safer cycling and walking environment.

Timing
Some respondents expressed concern about the scope and timeline of the bike lane project. While many recognize the need for improvements, there were calls to reduce the time frame for completion from 10 years to 4-5 years.

Fehr & Peers

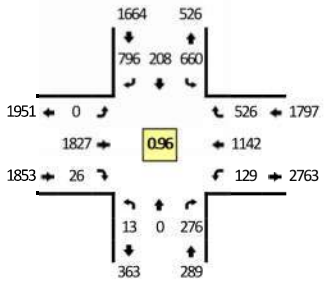
Attachment A – Traffic Counts

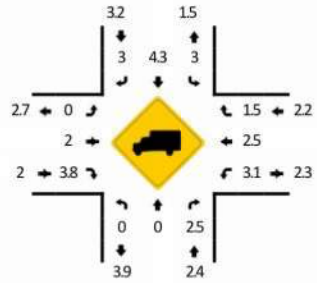
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

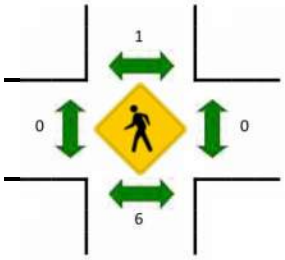
LOCATION: Hwy 17 SB Ramps/Salmar Ave -- E Hamilton Ave
CITY/STATE: Campbell, CA

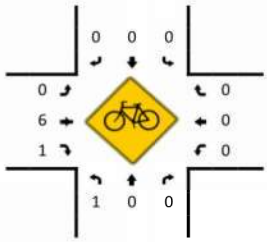
QC JOB #: 16542411
DATE: Wed, Jun 5 2024

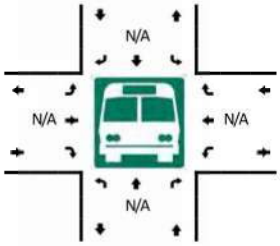
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 8:25 AM -- 8:40 AM

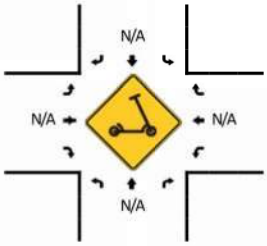












5-Min Count Period Beginning At	Hwy 17 SB Ramps/Salmar Ave (Northbound)				Hwy 17 SB Ramps/Salmar Ave (Southbound)				E Hamilton Ave (Eastbound)				E Hamilton Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	0	17	0	30	22	39	0	0	89	1	0	3	26	19	0	247	
7:05 AM	0	0	18	0	23	18	54	0	0	75	4	0	8	30	22	0	252	
7:10 AM	0	0	21	0	28	20	53	0	0	100	1	0	11	66	17	1	318	
7:15 AM	0	0	22	0	55	14	41	0	0	102	3	0	9	54	30	0	330	
7:20 AM	0	0	18	0	38	12	50	0	0	111	0	0	11	58	15	0	313	
7:25 AM	0	0	23	0	37	16	63	0	0	90	2	0	16	51	33	0	331	
7:30 AM	2	0	25	0	59	20	66	0	0	100	2	0	7	57	25	0	363	
7:35 AM	0	0	24	0	43	16	54	0	0	150	0	0	7	73	45	0	412	
7:40 AM	0	0	12	0	38	14	63	0	0	167	2	0	5	98	50	0	449	
7:45 AM	2	0	26	0	51	9	67	0	0	143	2	0	17	88	47	0	452	
7:50 AM	0	0	29	0	79	27	75	0	0	129	1	0	10	70	47	0	467	
7:55 AM	2	0	19	0	62	18	76	0	0	131	3	0	12	81	53	0	457	4391
8:00 AM	0	0	30	0	64	16	64	0	0	155	0	0	9	82	46	0	466	4610
8:05 AM	2	0	23	0	45	17	71	0	0	136	4	0	11	103	43	0	455	4813
8:10 AM	3	0	28	0	39	21	68	0	0	162	4	0	12	109	40	0	486	4981
8:15 AM	1	0	27	0	53	15	63	0	0	175	3	0	10	99	40	0	486	5137
8:20 AM	1	0	24	0	64	16	61	0	0	109	2	0	12	99	38	0	426	5250
8:25 AM	1	0	18	0	71	29	61	0	0	182	3	0	7	87	38	0	497	5416
8:30 AM	0	0	20	0	44	15	70	0	0	174	1	0	11	112	38	0	485	5538
8:35 AM	1	0	20	0	50	11	57	0	0	164	1	0	13	114	46	0	477	5603
8:40 AM	1	0	29	0	70	16	73	0	0	136	2	0	11	75	33	0	446	5600
8:45 AM	0	0	29	0	62	13	66	0	0	124	0	0	17	91	30	0	432	5580
8:50 AM	3	0	15	0	78	13	82	0	0	128	1	0	7	99	45	0	471	5584
8:55 AM	0	0	21	0	58	11	63	0	0	136	2	0	17	100	29	0	437	5564

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	0	232	0	660	220	752	0	0	2080	20	0	124	1252	488	0	5836
Heavy Trucks	0	0	12		24	12	20		0	40	0		0	32	8		148
Buses																	
Pedestrians		8				0				0				0			8
Bicycles	0	0	0		0	0	0		0	4	0		0	0	0		4
Scooters																	

Comments:

Report generated on 6/14/2024 4:20 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

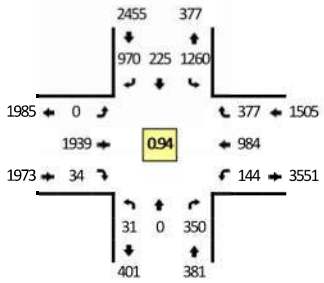
Type of peak hour being reported: Intersection Peak

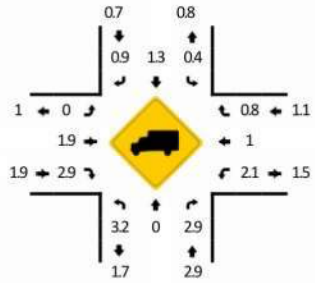
Method for determining peak hour: Total Entering Volume

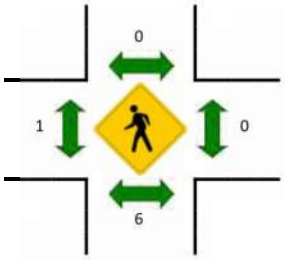
LOCATION: Hwy 17 SB Ramps/Salmar Ave -- E Hamilton Ave
CITY/STATE: Campbell, CA

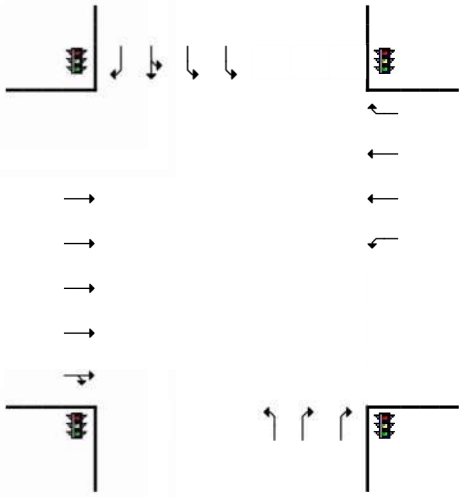
QC JOB #: 16542412
DATE: Wed, Jun 5 2024

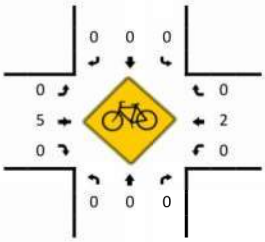
Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

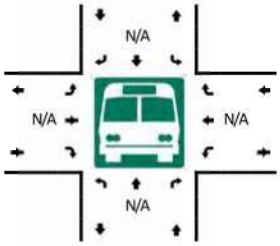


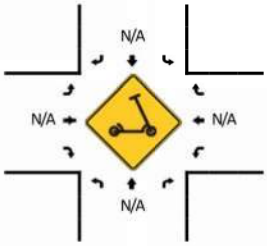












5-Min Count Period Beginning At	Hwy 17 SB Ramps/Salmar Ave (Northbound)				Hwy 17 SB Ramps/Salmar Ave (Southbound)				E Hamilton Ave (Eastbound)				E Hamilton Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	0	23	0	100	18	61	0	0	156	3	0	10	76	21	0	470	
4:05 PM	3	0	24	0	97	14	70	0	0	165	2	0	6	71	23	0	475	
4:10 PM	6	0	31	0	82	20	57	0	0	178	2	0	9	75	34	0	494	
4:15 PM	8	0	51	0	106	22	74	0	0	141	2	0	9	79	24	0	516	
4:20 PM	2	0	29	0	111	29	66	0	0	124	1	0	10	72	25	0	469	
4:25 PM	1	0	20	0	82	26	83	0	0	123	4	0	12	82	22	0	455	
4:30 PM	3	0	26	0	104	20	81	0	0	164	4	0	6	54	30	1	493	
4:35 PM	1	0	26	0	93	20	90	0	0	158	3	0	9	87	31	0	518	
4:40 PM	4	0	28	0	104	13	79	0	0	160	0	0	7	89	29	0	513	
4:45 PM	3	0	28	0	83	11	79	0	0	178	2	0	14	62	36	0	496	
4:50 PM	3	0	20	0	98	20	80	0	0	173	5	0	13	95	30	0	537	
4:55 PM	3	0	20	0	121	21	81	0	0	147	0	0	10	61	26	0	490	5926
5:00 PM	0	0	27	0	119	18	94	0	0	145	2	0	10	70	32	1	518	5974
5:05 PM	4	0	46	0	125	21	77	0	0	142	1	0	15	84	30	0	545	6044
5:10 PM	3	0	47	0	115	18	65	0	0	177	5	0	8	67	33	0	538	6088
5:15 PM	3	0	35	0	103	17	90	0	0	184	6	0	9	106	37	0	590	6162
5:20 PM	1	0	31	0	96	25	84	0	0	153	5	0	14	74	36	0	519	6212
5:25 PM	3	0	12	0	96	21	78	0	0	161	1	0	17	95	29	0	513	6270
5:30 PM	3	0	30	0	107	20	73	0	0	161	4	0	16	94	28	1	537	6314
5:35 PM	3	0	17	0	119	25	78	0	0	129	0	0	17	73	27	0	488	6284
5:40 PM	2	0	26	0	132	19	74	0	0	133	1	0	20	71	27	1	506	6277
5:45 PM	2	0	18	0	116	24	78	0	0	131	6	0	14	74	32	0	495	6276
5:50 PM	2	0	18	0	134	21	79	0	0	161	4	0	11	78	30	0	538	6277
5:55 PM	0	0	20	0	100	33	85	0	0	169	1	0	5	64	21	0	498	6285

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	40	0	512	0	1372	224	928	0	0	2012	48	0	128	1028	400	0	6692
Heavy Trucks	4	0	16		8	4	12		0	44	0		0	16	4		108
Buses																	
Pedestrians		8				0				0				0			8
Bicycles	0	0	0		0	0	0		0	8	0		0	0	0		8
Scooters																	

Comments:

Report generated on 6/14/2024 4:20 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

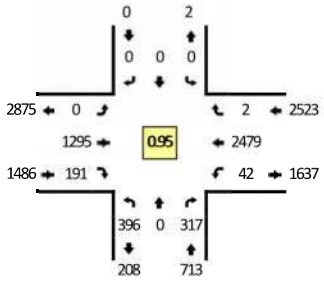
Type of peak hour being reported: Intersection Peak

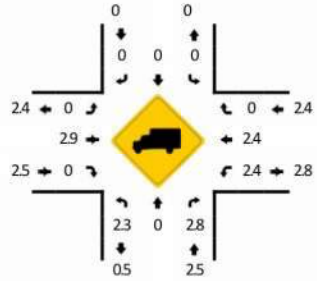
Method for determining peak hour: Total Entering Volume

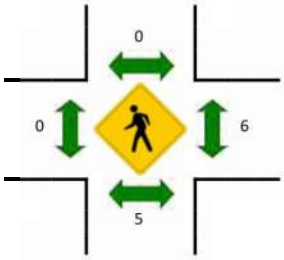
LOCATION: Creekside Way -- E Hamilton Ave
CITY/STATE: Campbell, CA

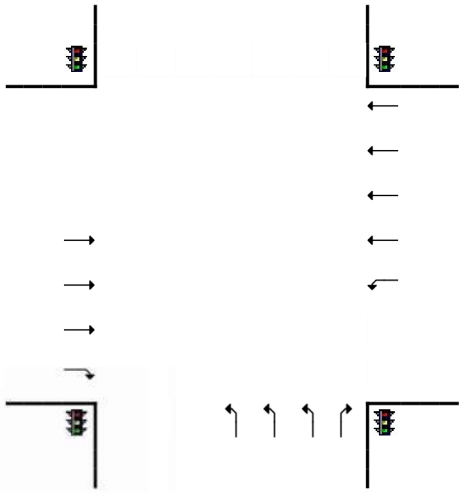
QC JOB #: 16542413
DATE: Wed, Jun 5 2024

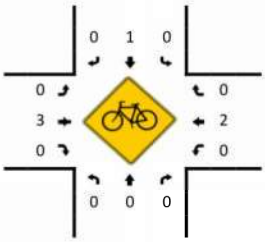
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 8:05 AM -- 8:20 AM

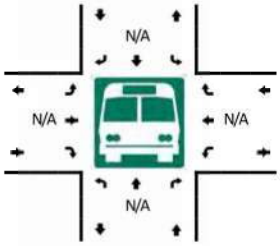


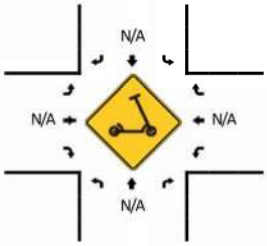












5-Min Count Period Beginning At	Creekside Way (Northbound)				Creekside Way (Southbound)				E Hamilton Ave (Eastbound)				E Hamilton Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	16	0	19	0	0	0	0	0	0	48	9	0	1	95	0	1	189	
7:05 AM	17	0	12	0	0	0	0	0	0	37	2	0	3	119	0	0	190	
7:10 AM	45	0	16	0	0	0	0	0	0	43	9	0	1	125	0	0	239	
7:15 AM	19	0	10	0	0	0	0	0	0	58	9	0	2	154	0	2	254	
7:20 AM	26	0	21	0	0	0	0	0	0	68	13	0	1	135	0	5	269	
7:25 AM	28	0	10	0	0	0	0	0	0	46	10	0	1	155	0	0	250	
7:30 AM	30	0	22	0	0	0	0	0	0	74	12	0	3	168	0	2	311	
7:35 AM	31	0	14	0	0	0	0	0	0	76	10	0	2	176	0	2	311	
7:40 AM	11	0	19	0	0	0	0	0	0	98	10	0	3	247	0	2	390	
7:45 AM	36	0	22	0	0	0	0	0	0	92	17	0	1	220	0	3	391	
7:50 AM	37	0	29	0	0	0	0	0	0	112	20	0	1	181	0	2	382	
7:55 AM	42	0	22	0	0	0	0	0	0	92	14	0	2	192	0	2	366	3542
8:00 AM	28	0	21	0	0	0	0	0	0	116	14	0	0	200	0	3	382	3735
8:05 AM	23	0	21	0	0	0	0	0	0	120	16	0	0	229	0	1	410	3955
8:10 AM	33	0	24	0	0	0	0	0	0	102	17	0	3	241	0	4	424	4140
8:15 AM	48	0	32	0	0	0	0	0	0	120	15	0	1	198	0	0	414	4300
8:20 AM	34	0	33	0	0	0	0	0	0	95	14	0	2	188	1	3	370	4401
8:25 AM	38	0	41	0	0	0	0	0	0	118	16	0	1	179	0	1	394	4545
8:30 AM	33	0	23	0	0	0	0	0	0	121	21	0	1	195	1	2	397	4631
8:35 AM	33	0	30	0	0	0	0	0	0	109	17	0	2	209	0	2	402	4722
8:40 AM	48	0	28	0	0	0	0	0	0	95	28	0	2	166	0	4	371	4703
8:45 AM	53	0	29	0	0	0	0	0	0	108	19	0	1	167	0	3	380	4692
8:50 AM	65	0	47	0	0	0	0	0	0	78	21	0	0	158	0	1	370	4680
8:55 AM	26	0	34	0	0	0	0	0	0	104	24	0	2	196	0	2	388	4702

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	416	0	308	0	0	0	0	0	0	1368	192	0	16	2672	0	20	4992
Heavy Trucks	12	0	16		0	0	0		0	24	0		0	64	0		116
Buses																	
Pedestrians		4				0				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/14/2024 4:20 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

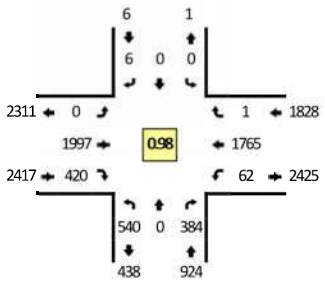
Type of peak hour being reported: Intersection Peak

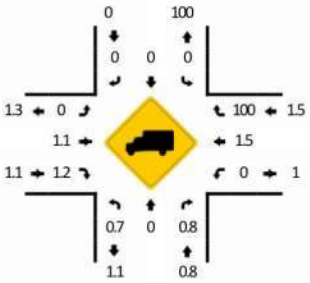
Method for determining peak hour: Total Entering Volume

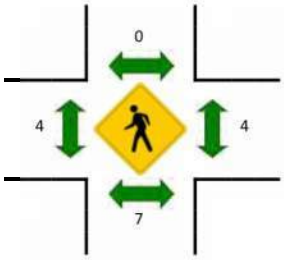
LOCATION: Creekside Way -- E Hamilton Ave
CITY/STATE: Campbell, CA

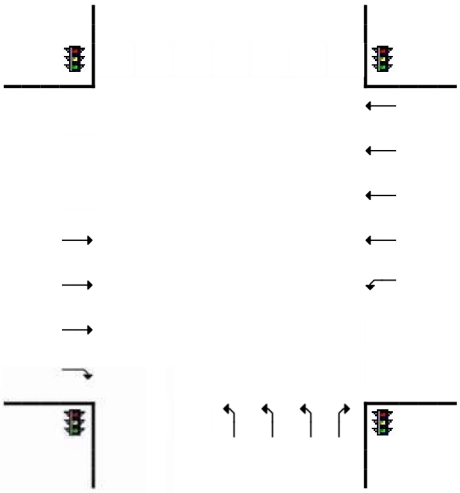
QC JOB #: 16542414
DATE: Wed, Jun 5 2024

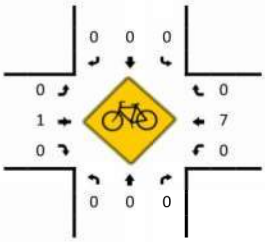
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

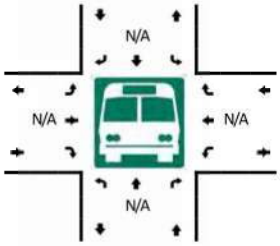


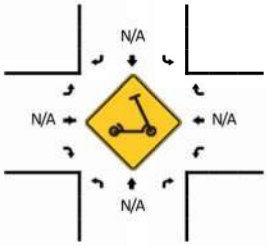












5-Min Count Period Beginning At	Creekside Way (Northbound)				Creekside Way (Southbound)				E Hamilton Ave (Eastbound)				E Hamilton Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	34	0	26	0	0	0	0	0	0	142	34	0	1	143	0	4	384	
4:05 PM	37	0	27	0	0	0	0	0	0	170	32	0	3	120	0	4	393	
4:10 PM	52	0	29	0	0	0	0	0	0	153	35	0	1	122	0	4	396	
4:15 PM	59	0	37	0	0	0	0	0	0	152	40	0	0	136	0	5	429	
4:20 PM	38	0	32	0	0	0	0	0	0	140	29	0	5	132	0	1	377	
4:25 PM	43	0	35	0	0	0	0	0	0	151	25	0	5	124	0	1	384	
4:30 PM	45	0	32	0	0	0	0	0	0	145	32	0	2	103	0	1	360	
4:35 PM	56	0	28	0	0	0	1	0	0	156	29	0	2	143	0	5	420	
4:40 PM	37	0	33	0	0	0	0	0	0	165	28	0	3	150	1	4	421	
4:45 PM	36	0	16	0	0	0	0	0	0	181	30	0	0	147	0	7	417	
4:50 PM	47	0	39	0	0	0	2	0	0	166	39	0	1	146	0	1	441	
4:55 PM	44	0	32	0	0	0	0	0	0	151	39	0	5	133	0	7	411	4833
5:00 PM	48	0	33	0	0	0	0	0	0	156	38	0	0	146	0	3	424	4873
5:05 PM	44	0	37	0	0	0	2	0	0	153	38	0	1	143	0	5	423	4903
5:10 PM	58	0	38	0	0	0	0	0	0	194	40	0	1	142	0	1	474	4981
5:15 PM	43	0	31	0	0	0	1	0	0	154	30	0	4	163	0	2	428	4980
5:20 PM	29	0	23	0	0	0	1	0	0	196	26	0	0	140	0	5	420	5023
5:25 PM	54	0	35	0	0	0	0	0	0	165	39	0	2	148	0	4	447	5086
5:30 PM	56	0	37	0	0	0	0	0	0	159	39	0	1	150	0	4	446	5172
5:35 PM	44	0	30	0	0	0	0	0	0	157	34	0	0	157	0	1	423	5175
5:40 PM	45	0	37	0	0	0	0	0	0	142	30	0	2	124	0	4	384	5138
5:45 PM	45	0	37	0	0	0	1	0	0	172	27	0	3	116	0	6	407	5128
5:50 PM	47	0	28	0	0	0	0	0	0	182	50	0	0	109	0	3	419	5106
5:55 PM	28	0	29	0	0	0	0	0	0	183	30	0	1	121	0	4	396	5091

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	580	0	424	0	0	0	12	0	0	2004	432	0	24	1792	0	32	5300
Heavy Trucks	0	0	0		0	0	0		0	36	8		0	40	0		84
Buses																	
Pedestrians		4				0				4				4			12
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

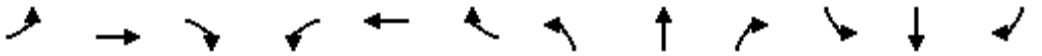
Comments:

Report generated on 6/14/2024 4:20 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Fehr & Peers

Attachment B – LOS Calculations

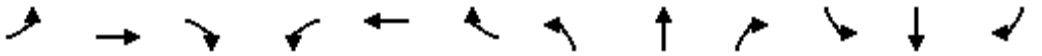


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1827	26	129	1142	526	13	0	276	660	208	796
Future Volume (vph)	0	1827	26	129	1142	526	13	0	276	660	208	796
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3		7.5	5.3		4.7		7.5	5.6	5.6	5.3
Lane Util. Factor		0.81		1.00	0.95		1.00		0.88	0.91	0.91	1.00
Frpb, ped/bikes		1.00		1.00	1.00		1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00		1.00	1.00		1.00		1.00	1.00	1.00	1.00
Frt		1.00		1.00	0.95		1.00		0.85	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	0.99	1.00
Satd. Flow (prot)		7524		1770	3372		1770		2787	3221	1671	1583
Flt Permitted		1.00		0.95	1.00		0.95		1.00	0.95	0.99	1.00
Satd. Flow (perm)		7524		1770	3372		1770		2787	3221	1671	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1884	27	133	1177	542	13	0	285	680	214	821
RTOR Reduction (vph)	0	1	0	0	23	0	0	0	49	0	0	284
Lane Group Flow (vph)	0	1910	0	133	1696	0	13	0	236	592	302	537
Confl. Peds. (#/hr)			6									
Turn Type		NA		Prot	NA		Prot		pm+ov	Split	NA	custom
Protected Phases		2		1	6		8		1	4	4	
Permitted Phases									8			6
Actuated Green, G (s)		82.8		18.2	108.5		4.0		22.2	37.9	37.9	108.5
Effective Green, g (s)		82.8		18.2	108.5		4.0		22.2	37.9	37.9	108.5
Actuated g/C Ratio		0.50		0.11	0.65		0.02		0.13	0.23	0.23	0.65
Clearance Time (s)		5.3		7.5	5.3		4.7		7.5	5.6	5.6	5.3
Vehicle Extension (s)		2.0		2.0	2.0		3.0		2.0	2.0	2.0	2.0
Lane Grp Cap (vph)		3752		194	2203		42		372	735	381	1034
v/s Ratio Prot		0.25		0.08	c0.50		0.01		c0.07	c0.18	0.18	
v/s Ratio Perm									0.02			0.34
v/c Ratio		0.51		0.69	0.77		0.31		0.64	0.81	0.79	0.52
Uniform Delay, d1		27.9		71.1	20.0		79.6		68.1	60.6	60.3	15.1
Progression Factor		1.00		1.19	0.83		1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.5		6.9	2.4		4.2		2.6	6.1	10.1	1.9
Delay (s)		28.4		91.5	19.1		83.8		70.7	66.6	70.5	16.9
Level of Service		C		F	B		F		E	E	E	B
Approach Delay (s)		28.4			24.3			71.3			43.5	
Approach LOS		C			C			E			D	

Intersection Summary			
HCM 2000 Control Delay	33.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	166.0	Sum of lost time (s)	23.1
Intersection Capacity Utilization	113.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1295	191	42	2479	396	317
Future Volume (vph)	1295	191	42	2479	396	317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	4.5	5.3	5.0	5.0
Lane Util. Factor	0.91	1.00	1.00	0.86	0.94	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1563	1770	6395	4990	1552
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1563	1770	6395	4990	1552
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1335	197	43	2556	408	327
RTOR Reduction (vph)	0	0	0	0	0	114
Lane Group Flow (vph)	1335	197	43	2556	408	213
Confl. Peds. (#/hr)						5
Confl. Bikes (#/hr)		3				
Bus Blockages (#/hr)	0	0	0	2	0	0
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2				4
Actuated Green, G (s)	113.4	113.4	8.0	125.9	29.8	29.8
Effective Green, g (s)	113.4	113.4	8.0	125.9	29.8	29.8
Actuated g/C Ratio	0.68	0.68	0.05	0.76	0.18	0.18
Clearance Time (s)	5.3	5.3	4.5	5.3	5.0	5.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	4.0	4.0
Lane Grp Cap (vph)	3473	1067	85	4850	895	278
v/s Ratio Prot	0.26		0.02	c0.40	0.08	
v/s Ratio Perm		0.13				c0.14
v/c Ratio	0.38	0.18	0.51	0.53	0.46	0.77
Uniform Delay, d1	11.3	9.5	77.1	8.1	60.9	64.8
Progression Factor	0.71	0.74	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.3	1.7	0.4	0.5	12.6
Delay (s)	8.3	7.4	78.8	8.5	61.4	77.4
Level of Service	A	A	E	A	E	E
Approach Delay (s)	8.2			9.6	68.5	
Approach LOS	A			A	E	

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	166.0	Sum of lost time (s)	14.8
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



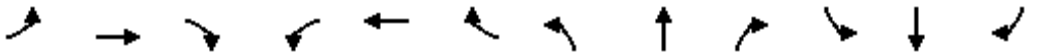
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1939	34	144	984	377	31	0	350	1260	225	970
Future Volume (vph)	0	1939	34	144	984	377	31	0	350	1260	225	970
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3		7.5	5.3		4.7		7.5	5.6	5.6	5.3
Lane Util. Factor		0.81		1.00	0.95		1.00		0.88	0.91	0.91	1.00
Frpb, ped/bikes		1.00		1.00	0.99		1.00		1.00	1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00		1.00		1.00	1.00	1.00	1.00
Frt		1.00		1.00	0.96		1.00		0.85	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	0.97	1.00
Satd. Flow (prot)		7519		1770	3372		1770		2787	3221	1650	1560
Flt Permitted		1.00		0.95	1.00		0.95		1.00	0.95	0.97	1.00
Satd. Flow (perm)		7519		1770	3372		1770		2787	3221	1650	1560
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	2020	35	150	1025	393	32	0	365	1312	234	1010
RTOR Reduction (vph)	0	2	0	0	24	0	0	0	45	0	0	465
Lane Group Flow (vph)	0	2053	0	150	1394	0	32	0	320	1024	523	545
Confl. Peds. (#/hr)			6									1
Confl. Bikes (#/hr)			5			2						
Turn Type		NA		Prot	NA		Prot		pm+ov	Split	NA	custom
Protected Phases		2		1	6		8		1	4	4	
Permitted Phases									8			6
Actuated Green, G (s)		60.1		18.1	85.7		8.3		26.4	50.4	50.4	85.7
Effective Green, g (s)		60.1		18.1	85.7		8.3		26.4	50.4	50.4	85.7
Actuated g/C Ratio		0.38		0.11	0.54		0.05		0.16	0.31	0.31	0.54
Clearance Time (s)		5.3		7.5	5.3		4.7		7.5	5.6	5.6	5.3
Vehicle Extension (s)		2.0		2.0	2.0		3.0		2.0	2.0	2.0	2.0
Lane Grp Cap (vph)		2824		200	1806		91		459	1014	519	835
v/s Ratio Prot		0.27		0.08	c0.41		0.02		c0.08	c0.32	0.32	
v/s Ratio Perm									0.04			0.35
v/c Ratio		0.73		0.75	0.77		0.35		0.70	1.01	1.01	0.65
Uniform Delay, d1		42.9		68.8	29.4		73.3		63.0	54.8	54.8	26.5
Progression Factor		1.00		1.18	0.81		1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		1.7		12.3	3.1		2.3		3.7	30.7	41.4	3.9
Delay (s)		44.6		93.3	26.9		75.6		66.7	85.5	96.2	30.5
Level of Service		D		F	C		E		E	F	F	C
Approach Delay (s)		44.6			33.2			67.4			66.0	
Approach LOS		D			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	51.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	23.1
Intersection Capacity Utilization	114.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1997	420	62	1765	540	384
Future Volume (vph)	1997	420	62	1765	540	384
Ideal Flow (vphpl)	1900	1000	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	4.5	5.3	5.0	5.0
Lane Util. Factor	0.91	1.00	1.00	0.86	0.94	1.00
Frpb, ped/bikes	1.00	0.97	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	810	1770	6395	4990	1555
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	810	1770	6395	4990	1555
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	2080	438	65	1839	562	400
RTOR Reduction (vph)	0	0	0	0	0	120
Lane Group Flow (vph)	2080	438	65	1839	563	280
Confl. Peds. (#/hr)		7				4
Confl. Bikes (#/hr)		1				
Bus Blockages (#/hr)	0	0	0	2	0	0
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2				4
Actuated Green, G (s)	100.5	100.5	9.0	114.0	35.7	35.7
Effective Green, g (s)	100.5	100.5	9.0	114.0	35.7	35.7
Actuated g/C Ratio	0.63	0.63	0.06	0.71	0.22	0.22
Clearance Time (s)	5.3	5.3	4.5	5.3	5.0	5.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	4.0	4.0
Lane Grp Cap (vph)	3194	508	99	4556	1113	346
v/s Ratio Prot	0.41		c0.04	0.29	0.11	
v/s Ratio Perm		c0.54				c0.18
v/c Ratio	0.65	0.86	0.66	0.40	0.51	0.81
Uniform Delay, d1	18.7	24.1	74.0	9.3	54.4	58.9
Progression Factor	0.90	0.90	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	10.5	11.3	0.3	0.5	14.0
Delay (s)	17.4	32.2	85.3	9.5	54.9	72.9
Level of Service	B	C	F	A	D	E
Approach Delay (s)	20.0			12.1	62.4	
Approach LOS	C			B	E	

Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	14.8
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

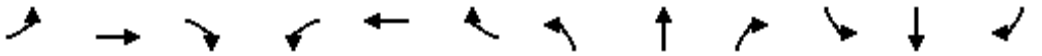


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1827	26	129	1142	526	13	0	276	660	208	796
Future Volume (vph)	0	1827	26	129	1142	526	13	0	276	660	208	796
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.3		7.5	8.3		4.7		7.5	5.6	5.6	5.6
Lane Util. Factor		0.81		1.00	0.95		1.00		0.88	0.94	1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00		1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00		1.00	1.00		1.00		1.00	1.00	1.00	1.00
Frt		1.00		1.00	0.95		1.00		0.85	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	1.00	1.00
Satd. Flow (prot)		7524		1770	3372		1770		2787	4990	1863	1583
Flt Permitted		1.00		0.95	1.00		0.95		1.00	0.95	1.00	1.00
Satd. Flow (perm)		7524		1770	3372		1770		2787	4990	1863	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1884	27	133	1177	542	13	0	285	680	214	821
RTOR Reduction (vph)	0	0	0	0	22	0	0	0	0	0	0	112
Lane Group Flow (vph)	0	1911	0	133	1697	0	13	0	285	680	214	709
Confl. Peds. (#/hr)			6									
Turn Type		NA		Prot	NA		Prot		pm+ov	Split	NA	custom
Protected Phases		2		1	6		8		1	4	4	
Permitted Phases									8			4 6
Actuated Green, G (s)		78.3		21.8	107.6		4.0		25.8	35.8	35.8	151.7
Effective Green, g (s)		78.3		21.8	107.6		4.0		25.8	35.8	35.8	143.4
Actuated g/C Ratio		0.47		0.13	0.65		0.02		0.16	0.22	0.22	0.86
Clearance Time (s)		8.3		7.5	8.3		4.7		7.5	5.6	5.6	
Vehicle Extension (s)		2.0		2.0	2.0		3.0		2.0	2.0	2.0	
Lane Grp Cap (vph)		3548		232	2185		42		433	1076	401	1367
v/s Ratio Prot		0.25		0.08	c0.50		0.01		c0.09	c0.14	0.11	
v/s Ratio Perm									0.02			0.45
v/c Ratio		0.54		0.57	0.78		0.31		0.66	0.63	0.53	0.52
Uniform Delay, d1		31.1		67.7	20.7		79.6		66.0	59.1	57.7	2.8
Progression Factor		1.00		1.30	0.63		1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.6		1.8	2.3		4.2		2.8	0.9	0.7	0.1
Delay (s)		31.6		89.5	15.3		83.8		68.7	60.0	58.4	2.9
Level of Service		C		F	B		F		E	E	E	A
Approach Delay (s)		31.6			20.6			69.4			32.5	
Approach LOS		C			C			E			C	

Intersection Summary			
HCM 2000 Control Delay	30.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	166.0	Sum of lost time (s)	26.1
Intersection Capacity Utilization	115.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1295	191	42	2479	396	317
Future Volume (vph)	1295	191	42	2479	396	317
Ideal Flow (vphpl)	1900	1000	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	4.5	5.3	5.0	4.5
Lane Util. Factor	0.91	1.00	1.00	0.86	0.94	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	833	1770	6395	4990	1568
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	833	1770	6395	4990	1568
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1335	197	43	2556	408	327
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1335	197	43	2556	408	327
Confl. Peds. (#/hr)						5
Confl. Bikes (#/hr)		3				
Bus Blockages (#/hr)	0	0	0	2	0	0
Turn Type	NA	custom	Prot	NA	Prot	pt+ov
Protected Phases	2 9	2 4	1	6	4 10	1 4
Permitted Phases						2
Actuated Green, G (s)	95.4	79.7	9.2	108.3	47.4	93.9
Effective Green, g (s)	95.4	79.7	9.2	108.3	42.9	88.9
Actuated g/C Ratio	0.57	0.48	0.06	0.65	0.26	0.54
Clearance Time (s)			4.5	5.3		
Vehicle Extension (s)			2.0	2.0		
Lane Grp Cap (vph)	2922	399	98	4172	1289	882
v/s Ratio Prot	0.26	c0.24	0.02	c0.40	c0.08	0.07
v/s Ratio Perm						0.14
v/c Ratio	0.46	0.49	0.44	0.61	0.32	0.37
Uniform Delay, d1	20.4	29.4	75.9	16.7	49.7	22.3
Progression Factor	0.73	1.20	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	1.2	1.1	0.7	0.2	0.1
Delay (s)	15.0	36.3	77.0	17.4	49.9	22.4
Level of Service	B	D	E	B	D	C
Approach Delay (s)	17.7			18.4	37.7	
Approach LOS	B			B	D	

Intersection Summary			
HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	166.0	Sum of lost time (s)	23.8
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



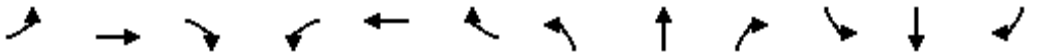
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1939	34	144	984	377	31	0	350	1260	225	970
Future Volume (vph)	0	1939	34	144	984	377	31	0	350	1260	225	970
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.3		7.5	8.3		4.7		4.7	5.6	5.6	8.3
Lane Util. Factor		0.81		1.00	0.95		1.00		0.88	0.94	1.00	1.00
Frpb, ped/bikes		1.00		1.00	0.99		1.00		1.00	1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00		1.00		1.00	1.00	1.00	1.00
Frt		1.00		1.00	0.96		1.00		0.85	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	1.00	1.00
Satd. Flow (prot)		7519		1770	3372		1770		2787	4990	1863	1560
Flt Permitted		1.00		0.95	1.00		0.95		1.00	0.95	1.00	1.00
Satd. Flow (perm)		7519		1770	3372		1770		2787	4990	1863	1560
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	2020	35	150	1025	393	32	0	365	1312	234	1010
RTOR Reduction (vph)	0	0	0	0	25	0	0	0	0	0	0	512
Lane Group Flow (vph)	0	2055	0	150	1393	0	32	0	365	1313	234	498
Confl. Peds. (#/hr)			6									1
Confl. Bikes (#/hr)			5			2						
Turn Type		NA		Prot	NA		Prot		pt+ov	Split	NA	custom
Protected Phases		2		1	6		8		8 1	4	4	
Permitted Phases												6
Actuated Green, G (s)		54.7		16.1	78.3		14.7		35.5	48.4	48.4	78.3
Effective Green, g (s)		54.7		16.1	78.3		14.7		35.5	48.4	48.4	78.3
Actuated g/C Ratio		0.34		0.10	0.49		0.09		0.22	0.30	0.30	0.49
Clearance Time (s)		8.3		7.5	8.3		4.7			5.6	5.6	8.3
Vehicle Extension (s)		2.0		2.0	2.0		3.0			2.0	2.0	2.0
Lane Grp Cap (vph)		2570		178	1650		162		618	1509	563	763
v/s Ratio Prot		0.27		0.08	c0.41		0.02		c0.13	c0.26	0.13	
v/s Ratio Perm												0.32
v/c Ratio		0.80		0.84	0.84		0.20		0.59	0.87	0.42	0.65
Uniform Delay, d1		47.7		70.7	35.5		67.2		55.7	52.8	44.5	30.7
Progression Factor		1.00		1.18	0.86		1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		2.7		25.9	5.1		0.6		1.5	5.6	0.2	4.3
Delay (s)		50.4		109.0	35.6		67.8		57.3	58.4	44.7	35.0
Level of Service		D		F	D		E		E	E	D	C
Approach Delay (s)		50.4			42.7			58.1			47.9	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	48.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	26.1
Intersection Capacity Utilization	119.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1997	420	62	1765	540	384
Future Volume (vph)	1997	420	62	1765	540	384
Ideal Flow (vphpl)	1900	1000	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	4.5	5.3	5.0	4.5
Lane Util. Factor	0.91	1.00	1.00	0.86	0.94	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	833	1770	6395	4990	1570
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	833	1770	6395	4990	1570
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	2080	438	65	1839	562	400
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	2080	438	65	1839	563	400
Confl. Peds. (#/hr)		7				4
Confl. Bikes (#/hr)		1				
Bus Blockages (#/hr)	0	0	0	2	0	0
Turn Type	NA	custom	Prot	NA	Prot	pt+ov
Protected Phases	2 9	2 4	1	6	4 10	1 4
Permitted Phases						2
Actuated Green, G (s)	86.6	71.6	10.9	101.2	48.5	87.5
Effective Green, g (s)	86.6	71.6	10.9	101.2	44.0	82.5
Actuated g/C Ratio	0.54	0.45	0.07	0.63	0.28	0.52
Clearance Time (s)			4.5	5.3		
Vehicle Extension (s)			2.0	2.0		
Lane Grp Cap (vph)	2752	372	120	4044	1372	853
v/s Ratio Prot	c0.41	c0.53	0.04	0.29	c0.11	c0.10
v/s Ratio Perm						0.16
v/c Ratio	0.76	1.18	0.54	0.45	0.41	0.47
Uniform Delay, d1	28.5	44.2	72.1	15.2	47.4	24.8
Progression Factor	0.83	1.61	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	95.7	2.7	0.4	0.3	0.1
Delay (s)	24.4	167.0	74.8	15.5	47.7	24.9
Level of Service	C	F	E	B	D	C
Approach Delay (s)	49.2			17.6	38.2	
Approach LOS	D			B	D	

Intersection Summary			
HCM 2000 Control Delay	36.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	23.8
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

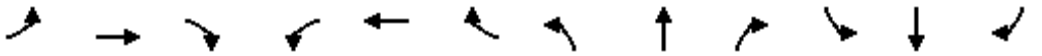


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1827	26	129	1142	526	13	0	276	660	208	796
Future Volume (vph)	0	1827	26	129	1142	526	13	0	276	660	208	796
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.3		7.5	8.3		7.7		7.5	5.6	5.6	5.6
Lane Util. Factor		0.81		1.00	0.95		1.00		0.88	0.94	1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00		1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00		1.00	1.00		1.00		1.00	1.00	1.00	1.00
Frt		1.00		1.00	0.95		1.00		0.85	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	1.00	1.00
Satd. Flow (prot)		7524		1770	3372		1770		2787	4990	1863	1583
Flt Permitted		1.00		0.95	1.00		0.95		1.00	0.95	1.00	1.00
Satd. Flow (perm)		7524		1770	3372		1770		2787	4990	1863	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1884	27	133	1177	542	13	0	285	680	214	821
RTOR Reduction (vph)	0	0	0	0	23	0	0	0	0	0	0	127
Lane Group Flow (vph)	0	1911	0	133	1696	0	13	0	285	680	214	694
Confl. Peds. (#/hr)			6									
Turn Type		NA		Prot	NA		Prot		pm+ov	Split	NA	custom
Protected Phases		2		1	6		8		1	4	4	
Permitted Phases									8			4 6
Actuated Green, G (s)		75.9		21.2	104.6		4.0		25.2	35.8	35.8	148.7
Effective Green, g (s)		75.9		21.2	104.6		4.0		25.2	35.8	35.8	140.4
Actuated g/C Ratio		0.46		0.13	0.63		0.02		0.15	0.22	0.22	0.85
Clearance Time (s)		8.3		7.5	8.3		7.7		7.5	5.6	5.6	
Vehicle Extension (s)		2.0		2.0	2.0		3.0		2.0	2.0	2.0	
Lane Grp Cap (vph)		3440		226	2124		42		423	1076	401	1338
v/s Ratio Prot		0.25		0.08	c0.50		0.01		c0.09	c0.14	0.11	
v/s Ratio Perm									0.02			0.44
v/c Ratio		0.56		0.59	0.80		0.31		0.67	0.63	0.53	0.52
Uniform Delay, d1		32.8		68.3	22.9		79.6		66.5	59.1	57.7	3.5
Progression Factor		1.00		1.31	0.63		1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.7		2.1	2.7		4.2		3.3	0.9	0.7	0.1
Delay (s)		33.4		91.8	17.0		83.8		69.8	60.0	58.4	3.7
Level of Service		C		F	B		F		E	E	E	A
Approach Delay (s)		33.4			22.4			70.4			32.8	
Approach LOS		C			C			E			C	

Intersection Summary			
HCM 2000 Control Delay	31.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	166.0	Sum of lost time (s)	29.1
Intersection Capacity Utilization	115.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1295	191	42	2479	396	317
Future Volume (vph)	1295	191	42	2479	396	317
Ideal Flow (vphpl)	1900	1000	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	4.5	5.3	5.0	4.5
Lane Util. Factor	0.91	1.00	1.00	0.86	0.94	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	833	1770	6395	4990	1556
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	833	1770	6395	4990	1556
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1335	197	43	2556	408	327
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1335	197	43	2556	408	327
Confl. Peds. (#/hr)						5
Confl. Bikes (#/hr)		3				
Bus Blockages (#/hr)	0	0	0	2	0	0
Turn Type	NA	custom	Prot	NA	Prot	pt+ov
Protected Phases	2 9	2 4	1	6	4 10	1 4
Permitted Phases						2
Actuated Green, G (s)	97.9	98.5	9.2	110.8	44.9	112.7
Effective Green, g (s)	97.9	98.5	9.2	110.8	40.4	107.7
Actuated g/C Ratio	0.59	0.59	0.06	0.67	0.24	0.65
Clearance Time (s)			4.5	5.3		
Vehicle Extension (s)			2.0	2.0		
Lane Grp Cap (vph)	2998	494	98	4268	1214	1051
v/s Ratio Prot	0.26	c0.24	0.02	c0.40	c0.08	0.05
v/s Ratio Perm						0.16
v/c Ratio	0.45	0.40	0.44	0.60	0.34	0.31
Uniform Delay, d1	18.9	18.0	75.9	15.3	51.7	12.8
Progression Factor	0.73	0.84	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.6	1.1	0.6	0.2	0.1
Delay (s)	13.9	15.7	77.0	15.9	52.0	12.9
Level of Service	B	B	E	B	D	B
Approach Delay (s)	14.1			16.9	34.6	
Approach LOS	B			B	C	

Intersection Summary			
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	166.0	Sum of lost time (s)	23.8
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



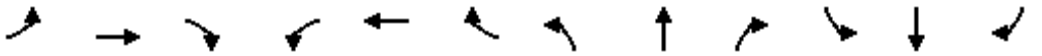
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1939	34	144	984	377	31	0	350	1260	225	970
Future Volume (vph)	0	1939	34	144	984	377	31	0	350	1260	225	970
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.3		7.5	8.3		7.7		7.5	5.6	5.6	8.3
Lane Util. Factor		0.81		1.00	0.95		1.00		0.88	0.94	1.00	1.00
Frpb, ped/bikes		1.00		1.00	0.99		1.00		1.00	1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00		1.00		1.00	1.00	1.00	1.00
Frt		1.00		1.00	0.96		1.00		0.85	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	1.00	1.00
Satd. Flow (prot)		7519		1770	3372		1770		2787	4990	1863	1560
Flt Permitted		1.00		0.95	1.00		0.95		1.00	0.95	1.00	1.00
Satd. Flow (perm)		7519		1770	3372		1770		2787	4990	1863	1560
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	2020	35	150	1025	393	32	0	365	1312	234	1010
RTOR Reduction (vph)	0	0	0	0	24	0	0	0	0	0	0	490
Lane Group Flow (vph)	0	2055	0	150	1394	0	32	0	365	1313	234	520
Confl. Peds. (#/hr)			6									1
Confl. Bikes (#/hr)			5			2						
Turn Type		NA		Prot	NA		Prot		pm+ov	Split	NA	custom
Protected Phases		2		1	6		8		1	4	4	
Permitted Phases									8			6
Actuated Green, G (s)		56.9		17.5	81.9		8.1		25.6	48.4	48.4	81.9
Effective Green, g (s)		56.9		17.5	81.9		8.1		25.6	48.4	48.4	81.9
Actuated g/C Ratio		0.36		0.11	0.51		0.05		0.16	0.30	0.30	0.51
Clearance Time (s)		8.3		7.5	8.3		7.7		7.5	5.6	5.6	8.3
Vehicle Extension (s)		2.0		2.0	2.0		3.0		2.0	2.0	2.0	2.0
Lane Grp Cap (vph)		2673		193	1726		89		445	1509	563	798
v/s Ratio Prot		0.27		0.08	c0.41		0.02		c0.09	c0.26	0.13	
v/s Ratio Perm									0.04			0.33
v/c Ratio		0.77		0.78	0.81		0.36		0.82	0.87	0.42	0.65
Uniform Delay, d1		45.7		69.4	32.5		73.4		65.0	52.8	44.5	28.6
Progression Factor		1.00		1.16	0.87		1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		2.2		15.1	3.8		2.5		11.0	5.6	0.2	4.1
Delay (s)		47.9		95.5	32.0		75.9		76.0	58.4	44.7	32.7
Level of Service		D		F	C		E		E	E	D	C
Approach Delay (s)		47.9			38.1			76.0			47.0	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	46.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	29.1
Intersection Capacity Utilization	119.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1997	420	62	1765	540	384
Future Volume (vph)	1997	420	62	1765	540	384
Ideal Flow (vphpl)	1900	1000	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	4.5	5.3	5.0	4.5
Lane Util. Factor	0.91	1.00	1.00	0.86	0.94	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	833	1770	6395	4990	1561
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	833	1770	6395	4990	1561
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	2080	438	65	1839	562	400
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	2080	438	65	1839	563	400
Confl. Peds. (#/hr)		7				4
Confl. Bikes (#/hr)		1				
Bus Blockages (#/hr)	0	0	0	2	0	0
Turn Type	NA	custom	Prot	NA	Prot	pt+ov
Protected Phases	2 9	2 4	1	6	4 10	1 4
Permitted Phases						2
Actuated Green, G (s)	88.3	91.3	10.7	102.7	47.0	107.0
Effective Green, g (s)	88.3	91.3	10.7	102.7	42.5	102.0
Actuated g/C Ratio	0.55	0.57	0.07	0.64	0.27	0.64
Clearance Time (s)			4.5	5.3		
Vehicle Extension (s)			2.0	2.0		
Lane Grp Cap (vph)	2806	475	118	4104	1325	1039
v/s Ratio Prot	c0.41	c0.53	c0.04	0.29	c0.11	0.08
v/s Ratio Perm						0.18
v/c Ratio	0.74	0.92	0.55	0.45	0.42	0.38
Uniform Delay, d1	27.2	31.1	72.3	14.4	48.6	13.9
Progression Factor	0.82	1.17	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	16.6	3.1	0.4	0.3	0.1
Delay (s)	22.9	53.1	75.5	14.8	48.9	14.0
Level of Service	C	D	E	B	D	B
Approach Delay (s)	28.2			16.8	34.4	
Approach LOS	C			B	C	

Intersection Summary			
HCM 2000 Control Delay	25.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	23.8
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

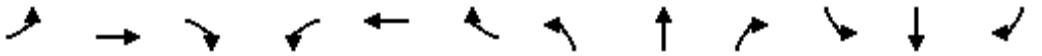


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1827	26	129	1142	526	13	0	276	660	208	796
Future Volume (vph)	0	1827	26	129	1142	526	13	0	276	660	208	796
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3		7.5	5.3		7.7		7.5	8.6	8.6	8.6
Lane Util. Factor		0.81		1.00	0.95		1.00		0.88	0.94	1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00		1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00		1.00	1.00		1.00		1.00	1.00	1.00	1.00
Frt		1.00		1.00	0.95		1.00		0.85	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	1.00	1.00
Satd. Flow (prot)		7524		1770	3372		1770		2787	4990	1863	1583
Flt Permitted		1.00		0.95	1.00		0.95		1.00	0.95	1.00	1.00
Satd. Flow (perm)		7524		1770	3372		1770		2787	4990	1863	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1884	27	133	1177	542	13	0	285	680	214	821
RTOR Reduction (vph)	0	1	0	0	24	0	0	0	246	0	0	180
Lane Group Flow (vph)	0	1910	0	133	1695	0	13	0	39	680	214	641
Confl. Peds. (#/hr)			6									
Turn Type		NA		Prot	NA		Prot		pm+ov	Split	NA	custom
Protected Phases		2		1	6		8 9		1	4	4	
Permitted Phases									8			4 6
Actuated Green, G (s)		71.7		18.7	97.9		14.7		22.7	31.8	31.8	135.0
Effective Green, g (s)		71.7		18.7	97.9		10.0		22.7	31.8	31.8	129.7
Actuated g/C Ratio		0.43		0.11	0.59		0.06		0.14	0.19	0.19	0.78
Clearance Time (s)		5.3		7.5	5.3				7.5	8.6	8.6	
Vehicle Extension (s)		2.0		2.0	2.0				2.0	2.0	2.0	
Lane Grp Cap (vph)		3249		199	1988		106		381	955	356	1236
v/s Ratio Prot		0.25		0.08	c0.50		c0.01		0.01	c0.14	0.11	
v/s Ratio Perm									0.00			0.41
v/c Ratio		0.59		0.67	0.85		0.12		0.10	0.71	0.60	0.52
Uniform Delay, d1		35.9		70.7	28.1		73.8		62.7	62.8	61.3	6.7
Progression Factor		1.00		1.00	1.00		1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.8		6.4	4.9		0.5		0.0	2.1	2.0	0.2
Delay (s)		36.7		77.1	33.0		74.4		62.8	64.9	63.3	6.8
Level of Service		D		E	C		E		E	E	E	A
Approach Delay (s)		36.7			36.1			63.3			36.9	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	37.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	166.0	Sum of lost time (s)	33.8
Intersection Capacity Utilization	115.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1295	191	42	2479	396	317
Future Volume (vph)	1295	191	42	2479	396	317
Ideal Flow (vphpl)	1900	1000	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	4.5	5.3	5.0	4.5
Lane Util. Factor	0.91	1.00	1.00	0.86	0.94	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	833	1770	6395	4990	1559
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	833	1770	6395	4990	1559
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1335	197	43	2556	408	327
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1335	197	43	2556	408	327
Confl. Peds. (#/hr)						5
Confl. Bikes (#/hr)		3				
Bus Blockages (#/hr)	0	0	0	2	0	0
Turn Type	NA	custom	Prot	NA	Prot	pt+ov
Protected Phases	2 9	2 4	1	6	4 10	1 4
Permitted Phases						2
Actuated Green, G (s)	100.4	91.9	9.3	113.4	45.3	106.2
Effective Green, g (s)	100.4	91.9	9.3	113.4	40.8	101.2
Actuated g/C Ratio	0.59	0.54	0.06	0.67	0.24	0.60
Clearance Time (s)			4.5	5.3		
Vehicle Extension (s)			2.0	2.0		
Lane Grp Cap (vph)	3020	452	97	4291	1204	975
v/s Ratio Prot	0.26	c0.24	0.02	c0.40	c0.08	0.07
v/s Ratio Perm						0.14
v/c Ratio	0.44	0.44	0.44	0.60	0.34	0.34
Uniform Delay, d1	18.9	23.0	77.3	15.2	53.0	17.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.9	1.2	0.6	0.2	0.1
Delay (s)	19.0	24.0	78.5	15.9	53.2	17.1
Level of Service	B	C	E	B	D	B
Approach Delay (s)	19.6			16.9	37.1	
Approach LOS	B			B	D	

Intersection Summary			
HCM 2000 Control Delay	20.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	169.0	Sum of lost time (s)	23.8
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1939	34	144	984	377	31	0	350	1260	225	970
Future Volume (vph)	0	1939	34	144	984	377	31	0	350	1260	225	970
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.3		7.5	5.3		7.7		7.7	8.6	8.6	5.3
Lane Util. Factor		0.81		1.00	0.95		1.00		0.88	0.94	1.00	1.00
Frpb, ped/bikes		1.00		1.00	0.99		1.00		1.00	1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00		1.00		1.00	1.00	1.00	1.00
Frt		1.00		1.00	0.96		1.00		0.85	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	1.00	1.00
Satd. Flow (prot)		7519		1770	3372		1770		2787	4990	1863	1560
Flt Permitted		1.00		0.95	1.00		0.95		1.00	0.95	1.00	1.00
Satd. Flow (perm)		7519		1770	3372		1770		2787	4990	1863	1560
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	2020	35	150	1025	393	32	0	365	1312	234	1010
RTOR Reduction (vph)	0	1	0	0	20	0	0	0	292	0	0	484
Lane Group Flow (vph)	0	2054	0	150	1398	0	32	0	73	1313	234	526
Confl. Peds. (#/hr)			6									1
Confl. Bikes (#/hr)			5			2						
Turn Type		NA		Prot	NA		Prot		pt+ov	Split	NA	custom
Protected Phases		2		1	6		8 9		8 1	4	4	
Permitted Phases									8			6
Actuated Green, G (s)		53.6		22.2	83.3		19.7		32.2	38.4	38.4	83.3
Effective Green, g (s)		53.6		22.2	83.3		19.7		32.2	38.4	38.4	83.3
Actuated g/C Ratio		0.34		0.14	0.52		0.12		0.20	0.24	0.24	0.52
Clearance Time (s)		5.3		7.5	5.3					8.6	8.6	5.3
Vehicle Extension (s)		2.0		2.0	2.0					2.0	2.0	2.0
Lane Grp Cap (vph)		2518		245	1755		217		560	1197	447	812
v/s Ratio Prot		0.27		0.08	c0.41		c0.02		0.03	c0.26	0.13	
v/s Ratio Perm												0.34
v/c Ratio		0.82		0.61	0.80		0.15		0.13	1.10	0.52	0.65
Uniform Delay, d1		48.7		64.8	31.4		62.7		52.4	60.8	52.8	27.7
Progression Factor		1.00		1.07	0.73		1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		3.0		2.9	3.5		0.3		0.1	56.7	0.5	4.0
Delay (s)		51.7		72.6	26.5		63.0		52.5	117.5	53.4	31.7
Level of Service		D		E	C		E		D	F	D	C
Approach Delay (s)		51.7			30.9			53.4			77.7	
Approach LOS		D			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	57.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	33.8
Intersection Capacity Utilization	114.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1997	420	62	1765	540	384
Future Volume (vph)	1997	420	62	1765	540	384
Ideal Flow (vphpl)	1900	1000	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	4.5	5.3	5.0	4.5
Lane Util. Factor	0.91	1.00	1.00	0.86	0.94	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	833	1770	6395	4990	1565
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	833	1770	6395	4990	1565
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	2080	438	65	1839	562	400
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	2080	438	65	1839	563	400
Confl. Peds. (#/hr)		7				4
Confl. Bikes (#/hr)		1				
Bus Blockages (#/hr)	0	0	0	2	0	0
Turn Type	NA	custom	Prot	NA	Prot	pt+ov
Protected Phases	2 9	2 4	1	6	4 10	1 4
Permitted Phases						2
Actuated Green, G (s)	88.2	81.4	10.8	102.7	47.0	97.2
Effective Green, g (s)	88.2	81.4	10.8	102.7	42.5	92.2
Actuated g/C Ratio	0.55	0.51	0.07	0.64	0.27	0.58
Clearance Time (s)			4.5	5.3		
Vehicle Extension (s)			2.0	2.0		
Lane Grp Cap (vph)	2803	423	119	4104	1325	945
v/s Ratio Prot	c0.41	c0.53	c0.04	0.29	c0.11	0.11
v/s Ratio Perm						0.15
v/c Ratio	0.74	1.04	0.55	0.45	0.42	0.42
Uniform Delay, d1	27.3	39.3	72.2	14.4	48.6	19.0
Progression Factor	0.80	0.86	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	40.7	2.7	0.4	0.3	0.1
Delay (s)	22.4	74.3	75.0	14.8	48.9	19.1
Level of Service	C	E	E	B	D	B
Approach Delay (s)	31.4			16.8	36.5	
Approach LOS	C			B	D	

Intersection Summary			
HCM 2000 Control Delay	27.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	23.8
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			