



City of Sunnyvale

Notice and Agenda Bicycle and Pedestrian Advisory Commission

Thursday, January 16, 2020

6:30 PM

Council Chambers, City Hall, 456 W. Olive
Ave., Sunnyvale, CA 94086

CALL TO ORDER

SALUTE TO THE FLAG

ROLL CALL

PRESENTATION

[20-0188](#)

PRESENTATION - Safe Routes to School Updates

ORAL COMMUNICATIONS

This category provides an opportunity for members of the public to address the commission on items not listed on the agenda and is limited to 15 minutes (may be extended or continued after the public hearings/general business section of the agenda at the discretion of the Chair) with a maximum of up to three minutes per speaker. Please note the Brown Act (Open Meeting Law) does not allow commissioners to take action on an item not listed on the agenda. If you wish to address the commission, please complete a speaker card and give it to the Recording Secretary. Individuals are limited to one appearance during this section.

CONSENT CALENDAR

- 1 A [20-0202](#) Approve the Bicycle and Pedestrian Commission Meeting Minutes of December 19, 2019

Recommendation: Approve the Bicycle and Pedestrian Commission Meeting Minutes of December 19, 2019 as submitted.

PUBLIC HEARINGS/GENERAL BUSINESS

- 2 [20-0093](#) Ranking of 2020 Study Issues

- 3 [20-0094](#) Report and Discussion of Recent Santa Clara Valley
Transportation Authority (VTA) Bicycle and Pedestrian
Advisory Committee (BPAC) Meeting

STANDING ITEM: CONSIDERATION OF POTENTIAL STUDY ISSUES

NON-AGENDA ITEMS & COMMENTS

-Commissioner Comments

-Staff Comments

INFORMATION ONLY REPORTS/ITEMS

- [20-0095](#) Draft Bicycle and Pedestrian Advisory Commission 2020
Annual Work Plan
- [20-0096](#) Active Items List - January 2020
- [20-0097](#) Research on Intersection Bikeway Design

ADJOURNMENT

Notice to the Public:

Any agenda related writings or documents distributed to members of this meeting body regarding any item on this agenda will be made available for public inspection in the originating department or can be accessed through the Office of the City Clerk located at 603 All America Way, Sunnyvale, CA. during normal business hours and at the meeting location on the evening of the board or commission meeting, pursuant to Government Code §54957.5.

Agenda information is available by contacting Ralph Garcia at pubworks@sunnyvale.ca.gov or (408) 730-7415. Agendas and associated reports are also available on the City's website at sunnyvale.ca.gov or at the Sunnyvale Public Library, 665 W. Olive Ave., Sunnyvale, 72 hours before the meeting.

Pursuant to the Americans with Disabilities Act, if you need special assistance in this meeting, please contact Ralph Garcia at (408) 730-7415. Notification of 48 hours prior to the meeting will enable the City to make reasonable arrangements to ensure accessibility to this meeting. (28 CFR 35.160 (b) (1))



City of Sunnyvale

Agenda Item

20-0188

Agenda Date: 1/16/2020

REPORT TO BICYCLE AND PEDESTRIAN ADVISORY COMMISSION

PRESENTATION - Safe Routes to School Updates

Norma O'Connell, the Sunnyvale Safe Routes to School Coordinator, will provide an update on the Safe Routes to School efforts at public schools serving Sunnyvale students.



City of Sunnyvale

Agenda Item

20-0202

Agenda Date: 1/16/2020

REPORT TO BICYCLE AND PEDESTRIAN ADVISORY COMMISSION

SUBJECT

Approve the Bicycle and Pedestrian Commission Meeting Minutes of December 19, 2019

RECOMMENDATION

Approve the Bicycle and Pedestrian Commission Meeting Minutes of December 19, 2019 as submitted.



City of Sunnyvale

Meeting Minutes - Draft Bicycle and Pedestrian Advisory Commission

Thursday, December 19, 2019

6:30 PM

Council Chambers, City Hall, 456 W. Olive
Ave., Sunnyvale, CA 94086

CALL TO ORDER

Chair Mehlinger called the meeting to order at 6:30 p.m.

SALUTE TO THE FLAG

Chair Mehlinger led the salute to the flag.

ROLL CALL

Present 7 - Chair Richard Mehlinger
Vice Chair John Cordes
Commissioner Arwen Davé
Commissioner Dan Hafeman
Commissioner Leia Mehlman
Commissioner Timothy Oey
Commissioner Scott Swail

Council Liaison Gustav Larsson(absent)

PRESENTATION

[19-1036](#) Highway Design Manual Requirements for Off-Street Paths

Commissioner Oey gave a presentation on Caltran's Highway Design Manual Requirements for Off-Street Paths, focusing on the connections to off-street paths. Commissioner Oey stated that there are gaps in the City of Sunnyvale from the streets to the off-street paths and that these gaps should be addressed.

Commissioner Davé asked if the laws have recently changed and is that why there are so many obstacles already there. Commissioner Oey stated that the laws have not changed in the last 20 years.

Kevin Jackson, member of the public, commented on the design of the off-street

paths.

Barry Boole, member of the public, asked about the security of adjacent homes along these paths.

ORAL COMMUNICATIONS

Kevin Jackson, member of the public, suggested that staff provide the BPAC Commission the Complete Streets Checklist so they can see how the policies are working so that they will be better informed to make recommendations to City Council.

CONSENT CALENDAR

- 1.A.** [19-1038](#) Approve the Bicycle and Pedestrian Advisory Commission Meeting Minutes of November 21, 2019

Approve the Bicycle and Pedestrian Advisory Commission Minutes of November 21, 2019 as amended.

Commissioner Hafeman moved and Commissioner Oey seconded the motion to approve the amended Bicycle and Pedestrian minutes of November 21, 2019. The amendment was made by Kevin Jackson, member of the public, who stated that the sharrow design on Fair Oaks Avenue appears to violate the Complete Streets Guidelines. The motion carried the following vote:

Yes 7 - Chair Mehlinger
 Vice Chair Cordes
 Commissioner Davé
 Commissioner Hafeman
 Commissioner Mehلمان
 Commissioner Oey
 Commissioner Swail

No 0

PUBLIC HEARINGS/GENERAL BUSINESS

- 2.** [19-1028](#) Active Transportation Plan Draft Recommendations

Lillian Tsang, Principal Transportation Engineer/Planner, stated there was a public community workshop on December 5, 2019 on the Active Transportation Plan (ATP) draft recommendations. Jeff Knowles, Project Manager at Alta Planning + Design, provided an overview of the draft recommendations and key comments that were

obtained at the community workshop.

Allen Takahashi, member of the public, commented on the posted information on the website, specifically recommendations on what to do in regards to pedestrian safety and timing of signals.

Kevin Jackson, member of the public, commented on including the off-street bike paths and bridges as facilities to be improved to the greatest extent possible. Mr. Jackson commented on Homestead Road on the All Ages and Abilities network and the use of sharrows. Mr. Jackson also commented on the Evelyn Avenue two-way cycle track.

David Simons, VTA BPAC Representative, believes the draft recommendation is ignoring routes that have had a great deal of past investment and that are cost-effective to improve and to make better routes.

James Keller, member of the public, commented on areas in the city where he lives where connectivity is missing and would like to see more Class 1 paths.

Barry Boole, member of the public, commented on there is no Borregas Avenue connections between Maude and Awhanee Avenues. Mr. Boole requested putting a four-way stop on Duane Avenue.

Diane Gleason, member of the public, commented on Pastoria Avenue through Hollenbeck Avenue and making that area more accessible for bikes. Ms. Gleason commented on Tasman Avenue and suggested eliminating one travel lane in each direction and converting the other lane to a raised super wide sidewalk for both bikes and pedestrians.

Commissioner Oey commented on the following:

- Include definition of Complete Streets in this plan
- Signal timing
- Pastoria and Hollenbeck Avenues are a major bike thoroughfare
- Possible East-West streets for bicycle boulevards
- Improving Fair Oaks Avenue and Wolfe Road bike routes
- Use of Sharrows
- Mind the gap
- Include bike boxes
- Appreciate the trails

Commissioner Hafeman commented on the following:

- Hollenbeck and Pastoria Avenues should have been included in the improvements
- Washington Avenue needs easier access to get to downtown Sunnyvale
- Sharrows with use of the Class 3 bike lane
- Carson Drive and Mary Avenue and making the crosswalks better and having the HAWK beacon
- El Camino Real, Sunnyvale Avenue and Wolfe Road in need of a HAWK beacon
- Bernardo Caltrain undercrossing

Commissioner Mehlman commented on the following:

- Include Summit Public School Denali
- Fair Oaks Avenue needs sufficient speed controls
- Disconnect on Tasman Avenue

Vice Chair Cordes commented on the following:

- Would like to see the different chapters of the ATP document not just the map
- Protected intersection on AAA network?
- Improvements on Lawrence Expressway?
- How is Vision Zero implemented in the ATP
- Connections to neighboring cities
- Upgrade access to Las Palmas Park
- Way finding standards
- Maude Avenue between Mathilda and Sunnyvale Avenues should be improved from Class 2 Buffer to Class 4
- Connections on Tasman Avenue corridor

Commissioner Davé commented on the following:

- Educating non-bicyclist and pedestrians on what their rights are on sharing roads

Commissioner Swail commented on the following:

- Need to have a continuous Class 2 bike lane extension on Sunnyvale-Saratoga Road/Mathilda Avenue from El Camino Real to Washington Avenue
- Support the Hollenbeck Avenue idea submitted by Ms. Gleason
- Continuous bike way or bike path extension on Fair Oaks Avenue

Chair Mehlinger commented on the following:

- Align the ATP with the Vision Zero Plan and the Climate Action Plan
- Sharrows should be removed on any streets that are faster than 25mph

- Insets around the Caltrain stations
- Outreach to the PTA's and the schools
- Pave the pathways at the Sunnyvale Caltrain station
- Install a scramble signal at the intersection of Evelyn Avenue and Francis Street.
- Crosswalks at Canary Park on California Avenue
- Remington Drive and Mango Avenue should have a HAWK beacon
- Focus on connecting gaps in the proposed network by acquiring easements from properties
- Bike boulevard signage standards
- Bike connection on Hollenbeck Avenue
- Need to prioritize bikability to the Apple campus
- Cut-through pathway at Reed and Evelyn Avenues need to be improved
- Need to replace the Wolfe Road and Fair Oaks Avenue sharrows with Class 2B at a minimum
- Bike route on Homestead Road should be protected
- Need to connect the East Channel Trail to Homestead Road
- Bridge across Central Expressway/Pastoria Avenue
- Extend Sunnyvale-Saratoga Road Class 4 bike lanes to Maude Avenue
- Extend Evelyn Avenue bike path to the Mathilda Avenue bridge
- Bike parking retrofit program at commercial spaces
- Protected bike lane on Maude Avenue

Chair Mehlinger called for a recess at 8:00 p.m. Chair Mehlinger reconvened the meeting at 8:08 p.m.

3. [19-1029](#) Roadway Safety Plan Updates and Discussion

Lillian Tsang, Principal Transportation Engineer/Planner, stated that staff has been working with the consultant team on the Roadway Safety Plan and there was a Technical Advisory Group (TAG) meeting on December 11, 2019.

Ralph Garcia, Senior Transportation Engineer, gave the following updates on the Roadway Safety Plan from the TAG meeting and made the following comments:

- The plan includes 20 locations for application of grant funding in the future. The specific list was provided.
- On January 22, 2020 at the Sunnyvale Public Library, there will be a community meeting at 6:00 p.m.

Commissioner Mehlman commented on how the meeting was very productive. The locations were determined based on collision data. Ms. Mehlman stated the TAG

looked at where left turns were permitted for bikes and suggested to have bike boxes installed at those intersections wherever possible so that bikes could be in front of and visible to cars.

Vice Chair Cordes had the following questions:

- What criteria were used to select these locations? Mr. Garcia stated these locations were determined from a 5-year collision data report.
- Are they ranked? Mr. Garcia stated these locations will be ranked.
- How does this list compare with the Vision Zero list? Mr. Garcia stated there is an overlap with the two lists and there are some locations not included in the list because they are already included in other projects.
- If any of these locations get updated, will they be included on the Complete Streets list? Mr. Garcia addressed the question.

Commissioner Mehlman stated that any additional comments should be addressed to Mr. Garcia.

Commissioner Oey inquired about bike boxes.

4. [19-1031](#) Report and Discussion of Recent VTA BPAC Meeting

Dave Simons, VTA BPAC Representative, gave the meeting summary report regarding the following topics:

- Workshop on Vision Zero by City of San Jose
- Workshop presentation from Caltrans District 4 discussing the Pedestrian plan the district is working on

Commissioner Mehlman asked if motorized scooters are included in the data collision report and if it could be part of the agenda in one of the future VTA meetings. Mr. Simons stated it is in the discussions at the meetings.

Chair Mehlinger called for a recess at 8:44 p.m. Chair Mehlinger and Commissioner Mehlman left the meeting. Vice Chair Cordes reconvened the meeting at 8:45 p.m.

5. [19-1039](#) Review and Abide by the Code of Ethics and Conduct for Elected and Appointed Officials

Lillian Tsang, Principal Transportation Engineer/Planner, stated that the 2020 Code of Ethics and Conduct for Elected and Appointed Officials is attached in the agenda packet for the commission to review and motion to agree to abide to it.

Commissioner Oey motions and Commissioner Vice Chair Cordes seconded the motion to agree to abide to the 2020 Code of Ethics and Conduct for Elected and Appointed Officials. The motion carried the following vote:

Yes 7 - Chair Mehlinger
Vice Chair Cordes
Commissioner Davé
Commissioner Hafeman
Commissioner Mehلمان
Commissioner Oey
Commissioner Swail

No 0

STANDING ITEM: CONSIDERATION OF POTENTIAL STUDY ISSUES

None.

NON-AGENDA ITEMS & COMMENTS

-Commissioner Comments

All of the Commissioners introduced themselves to new Commissioner Davé. Commissioner Davé introduced herself and talked about her background in regards to BPAC.

Vice Chair Cordes stated he would like the online input map for ATP to be re-open. Ms. Tsang stated that the map was open to the public for comments but has been closed after the public input period.

-Staff Comments

Lillian Tsang, Principal Transportation Engineer/Planner, made the following comments:

- The Bordeaux Drive Bike and Pedestrian Project should be completed by the end of January.
- Caltrans is tentatively scheduled to activate the HAWK Beacon on El Camino Real at Helen Avenue around the 3rd week in January.
- Measure B Bike and Pedestrian Competitive grant application is due in March 2020. Staff is currently reviewing the list of tentative projects.

INFORMATION ONLY REPORTS/ITEMS

[19-1033](#)

Bicycle and Pedestrian Advisory Committee 2019 Annual Work Plan

[19-1034](#) Active Items List - December 2019

[19-1035](#) Bicycle and Pedestrian Advisory Commission 2020 Annual Work Plan
Revised

Vice Chair Cordes asked where the review of the Vision Plan is on the 2020 Annual Work Plan. Ms. Tsang stated it is on the October agenda.

ADJOURNMENT

Vice Chair Cordes adjourned the meeting at 8:56 p.m.



City of Sunnyvale

Agenda Item

20-0093

Agenda Date: 1/16/2020

REPORT TO BICYCLE AND PEDESTRIAN ADVISORY COMMISSION

SUBJECT

Ranking of 2020 Study Issues

Board/Commission Process for Ranking Study Issues

The Study Issues process is designed to assist City Council with setting policy study priorities for the coming calendar year. Board and commission members have two roles in this process:

- To advise Council regarding the identification of policy issues to study (i.e., the generation of study issue ideas for Council's consideration); and
- To advise Council on those issues Council has decided to study.

All procedures must comply with Council Policies [7.2.19 Boards and Commissions](#), [7.3.26 Study Issues Process](#), and Administrative Policy [Chapter 1, Article 15 Boards and Commissions](#). All board and commission members shall adhere to those operational practices and procedures as contained in the *Board and Commission Handbook* prepared by the Office of the City Clerk.

To ensure consistency in approach and practice, all boards/commissions shall use the same ranking process as Council for all proposed Study Issues (described below and captured in Council Policy [7.3.26 Study Issues Process](#)).

Ranking Process

Step 1: Review issues

Staff provides a brief summary of each proposed Study Issue. Any Study Issue ranked by a Board/Commission, must be signed/approved by the City Manager prior to ranking. Boards and commissions shall review and take action on only those issues under their purview, as determined by the City Manager. Items not under the specific purview of a board or commission may be presented to them for "information only".

Step 2: Questions of Staff

Staff will address questions Commissioners may have regarding each study issue.

Step 3: Public Hearing

Chairperson opens Public Hearing for public input on any of the issues under consideration. (Note: the Commission may not take action on, or rank any new issue raised by the public for which there is not already a study issue paper developed. Those seeking to raise new issues at this point in the process should be informed that their options are to seek Council sponsorship of their issue or submit it to the Board/Commission for the following year's process.) Chairperson will close the Public Hearing.

Step 4: Determine which issues, if any, will be dropped

Commissioners may make motions to drop issues from consideration. After the motion is seconded, discussion on each item may ensue. If the motion passes by a simple majority of those present, the Board/Commission will drop the issue. Such action suggests that there is no need to study the issue.

If the Board/Commission votes to drop an issue that was initiated by the Commission that same year, the issue will not be forwarded to City Council for the Council's consideration. If, however, the Commission votes to drop an issue that was not initiated by the Commission - meaning that it was initiated by staff, Council or another Commission - or that had been deferred or fell below the line in the previous year, the issue would be forwarded to Council with a notation that the Commission recommended it be dropped from consideration.

Step 5: Determine which issues, if any, will be deferred

Commissioners may make motions to defer issues from consideration to a later year. After the motion is seconded, discussion on each item may ensue. If the motion passes by a simple majority of those present, the Commission will not rank the issue. Such action suggests only that the issue is not currently a priority and/or it is not the appropriate time to study the issue.

If the Commission votes to defer an issue that was initiated by the Commission that year, the issue will not be forwarded to City Council for the Council's consideration. If the Commission votes to defer an issue that was not initiated by the Commission - meaning that it was initiated by staff, Council or another Commission - or that had been deferred or fell below the line in the previous year, the issue would be forwarded to Council with a notation that the Commission recommended it be deferred from consideration.

Step 6: Commission discussion on issues to be ranked

Commissioners have the opportunity to speak to the remaining issues to be ranked and to discuss merits and priorities before ranking the remaining issues. No motion is required.

Step 7: Commissioners rank issues individually

Depending on the number of issues left to rank, the Board/Commission shall utilize one of the following ranking methods:

Simple Majority/Borda Count (for ranking ten or fewer issues) – Commissioners individually and simultaneously rank each of the remaining issues. Rankings are from 1 to the total number of issues, with “1” representing the issue with the highest priority for study. Each number can be used only once (no ties) and each issue must receive a ranking.

Choice Ranking (for ranking eleven or more issues) – the number of items to be ranked is divided by three and each Commissioner is given that many votes. Each Commissioner allocates his or her votes, one each, to different issues. Some issues will receive votes, others may not, depending on the total number of issues and the number targeted for selection. A tally is made for each issue selected. Two-way ties between issues are resolved by quick votes of the group. Multiple ties are resolved in the same manner as before: dividing by three (if four items are tied, for example, each member gets one vote to assign to one of those issues). The issues that receive the most votes are thereby prioritized. If necessary and desired, the process is repeated for the remaining issues (the ones that didn't get votes the first time).

Regardless of ranking method, all individual Commissioner ranking votes and final Board/Commission rank recommendations will become a part of the official record and shall be made available to the public.

Step 8: Combined ranking determined

A combined Commission ranking is determined when staff totals the individual ranking from all Commissioners for each issue.

Simple Majority/Borda Count The issue with the lowest total becomes the Commission's Priority 1 issue; the next lowest total is Priority 2, etc.

Choice Ranking The issues that receive the most votes becomes the Commission's Priority 1 issue; the next lowest total is Priority 2, etc.

Step 9: Tie Breaks

Two-way ties should be resolved by quick hand votes of the Board/Commission.

Three-way (or more) ties should be resolved using a tie break ranking sheet. The sheet lists all tied issues and the Board/Commission ranks in order, first to last choice. The issues receiving the most votes get the higher priority. This step is repeated if there are multiple ties.

Step 10: Acceptance of rankings

A motion is then made to accept, reject or modify the overall Commission rankings for issues. After the motion is seconded, discussion may ensue. Simple majority is required for passage.

After the Commission Ranking

B/C liaisons are responsible for inputting the commission's rankings in the B/C Ranking Spreadsheet provided by OCM. The completed sheet is due to OCM in early December.

Council will hold a Public Hearing on Study Issues in early January. The Chair or his/her appointee is encouraged to speak before Council and share the Board/Commission's recommended rankings.

Issues Sponsored AFTER Commission Ranking

If a study issue is sponsored after the Commission has held its ranking meeting, the issue will identify the paper as "too late to rank" for the B/C. In this instance, Commissioners are able to attend the January Public Hearing, identify themselves as Commissioners, and testify on how they would have voted (as an individual) had this item gone before the Commission (I would have voted to [drop, defer, rank] this item).

Key Dates for each year are available on Sunspot at <http://ocm/pams/default.aspx>

Note: There is no proxy ranking: Commissioners must be present to rank study issues.

**Study Issues with an asterisk fell below the line or were deferred last year.
These will be reviewed by Council regardless of any Commission recommendations.*

Proposed 2020 Study Issues		Commissioner's Ranking #1 = Highest Priority								Composite Score of ALL	Commission's Final Ranking
Number	Title	Staff Rec	Cordes	Davé	Hafeman	Mehlman	Mehlinger	Oey	Swail		
CDD 19-07	Develop Citywide Guidelines or Criteria for Allowing Reduced Parking for Development Projects and for Future Conversions of Parking to Other Uses	Defer									
CDD 19-10*	Adopt Personal Transportation Vehicle (PTV) Parking Standards	Drop									
DPW 20-02	Improve Bicycle and Pedestrian Access at Sunnyvale Caltrain Station	Support									
DPW 20-04	El Camino Real Protected Bikeways	Drop									

Proposed 2020 Study Issues		Commissioner's Ranking #1 = Highest Priority								Composite Score of ALL	Commission's Final Ranking
Number	Title	Staff Rec	Cordes	Davé	Hafeman	Mehlman	Mehlinger	Oey	Swail		
DPW 20-05	Evelyn Avenue Multi-Use Trail and Bikeway Study	Defer									
DPW 20-06	Create Safer Streets by Narrowing Travel Lanes	Drop									
DPW 20-07	Personal Transportation Vehicles (PTV) Usage on City Streets, Sidewalks and Bike Lanes	Drop									

TIE BREAK RANKING SHEET

Board/Commission Member: _____

FIRST TIE BREAK

Please **print the study issue number of all that are tied**, ranked in order of first to last choice.

First Choice:	
Second Choice:	
Third Choice:	
Fourth Choice:	
Fifth Choice:	
Sixth Choice:	
Seventh Choice:	

SECOND TIE BREAK

Please **print the study issue number of all that are tied**, ranked in order of first to last choice.

First Choice:	
Second Choice:	
Third Choice:	
Fourth Choice:	
Fifth Choice:	
Sixth Choice:	
Seventh Choice:	



City of Sunnyvale

Agenda Item

20-0136

Agenda Date: 2/27/2020

2020 COUNCIL STUDY ISSUE

NUMBER

CDD 19-07

TITLE Develop Citywide Guidelines or Criteria for Allowing Reduced Parking for Development Projects and for Future Conversions of Parking to Other Uses

BACKGROUND

Lead Department: Community Development

Support Departments: Office of the City Manager

Office of the City Attorney

Sponsor(s): Planning Commission

History: 1 year ago: Deferred by Planning Commission

2 years ago: N/A

SCOPE OF THE STUDY

What precipitated this Study?

The general parking standards in the Sunnyvale Municipal Code (SMC) establish required parking for residential and non-residential development based on a variety of factors. The number of bedrooms, the number of assigned spaces to a dwelling unit, and the type (i.e., private enclosure or open) also affect the requirements for parking. Lower parking space rates are established for affordable housing, senior housing and housing for persons with disabilities. Non-residential parking is based on the use and has both minimum and maximum parking requirements. The SMC includes provisions for adjustments to non-residential uses and special housing development. Further reductions (if not covered by an adjustment) require approval of a Variance or approval of a Special Development Permit (only allowed within specified zoning districts). The Planning Commission thinks there may be circumstances where reduced parking could be appropriate, especially when considering a multi-family project that may be able to increase the total number of units if given relaxed parking requirements, or on a single-family property where the size of an existing one-car garage restricts the total allowable square footage of the house; thereby potentially restricting large or extended families from living together in one dwelling.

The Planning Commission also considered this Study important when discussing the future of autonomous vehicles, and whether parking structures should be built with considerations that they may be converted to other uses in the future.

What are the key elements of the Study?

There are certain areas within the City where parking standards are reduced compared to the generic citywide standards (e.g., Downtown Specific Plan, Lawrence Station Area Plan). Generally, the areas with reduced parking standards are located near major transit stations, but reduced parking standards have also been considered in other areas of the City (e.g., Peery Park Specific Plan) if a

project can demonstrate other trip reduction strategies. Additionally, it may be appropriate to study all parking standards to determine if the City has some general parking standards that could be reduced.

This Study may include:

- Evaluation of the City's current parking regulations in comparison to other cities;
- Examination of the covered parking requirement for single-family zoning districts;
- Mapping major or frequent transportation lines to see if there are other areas of the City where reduced parking may be appropriate;
- Considering and developing guidelines or criteria that could be used to evaluate a project requesting reduced parking standards; and
- Establishing guidelines for future conversion of parking into other uses if autonomous vehicles become a primary means of transportation in the future.

Estimated years to complete study: 2 years

FISCAL IMPACT

Cost to Conduct Study

Level of staff effort required (opportunity cost):	Moderate
Funding Required for Non-Budgeted Costs:	\$100,000
Funding Source:	Will seek budget supplement

Non-budgeted costs would be utilized to hire a consultant who specializes in parking requirements, design guidelines, and has specialized knowledge in the parking industry.

Cost to Implement Study Results

Unknown. Study would include assessment of potential costs, including capital and operating, as well as revenue/savings.

EXPECTED CITY COUNCIL, BOARD OR COMMISSION PARTICIPATION

Council-Approved Work Plan: No

Council Study Session: No

Reviewed by Boards/Commissions: Bicycle and Pedestrian Advisory Committee, Planning Commission

STAFF RECOMMENDATION

Defer. This policy issue merits discussion at a future Study Issues Workshop.

While it may be appropriate to evaluate existing parking requirements, and begin to think about future conversion of parking into other uses with the potential of autonomous vehicles, there are a few studies/changes underway that may make it appropriate to defer this study issue.

With the addition of BART into San Jose, and the future electrification of Caltrain, the Santa Clara Valley Transportation Authority (VTA) will be making changes to some of their routes. These changes may lead to increased bus routes or headways within Sunnyvale and could justify the potential to reduce parking in some areas of the City that had not been previously considered within area-wide plans.

Additionally, it would be challenging to assess the potential for conversion of existing parking into other uses because a lot is still unknown about the impacts autonomous vehicles will have on land use planning. Therefore, it may be best to defer a study of that nature because the technology is still evolving and the full adaptation to the use of these vehicles may take decades.

Finally, staff believes that evaluating the existing single-family parking regulations and comparing the City's regulations with other jurisdictions could be a valuable study. Further enhancement of permeable pavement may warrant a look at the regulation that limits front yard paving on a single-family lot. However, staff has recommended deferral of this study issue due to the unknowns of the other key components of the Study and current workload in the Planning Division.

Prepared by: Trudi Ryan, Director, Community Development

Reviewed by: Teri Silva, Assistant City Manager

Approved by: Kent Steffens, City Manager



City of Sunnyvale

Agenda Item

20-0129

Agenda Date: 2/27/2020

2020 COUNCIL STUDY ISSUE

NUMBER

CDD 19-10

TITLE Adopt Personal Transportation Vehicle (PTV) Parking Standards

BACKGROUND

Lead Department: Community Development

Support Departments: Office of the City Manager
Office of the City Attorney Public Works

Sponsor(s): Bicycle and Pedestrian Advisory Commission

History: 1 year ago: Deferred by Council
2 years ago: N/A

SCOPE OF THE STUDY

What precipitated this study?

Personal Transportation Vehicles (PTV) such as bicycles, scooters and Segways are increasing in popularity as an alternative transportation mode. Although the City's parking design standards already include requirements for both secured and unsecured bicycle parking in conjunction with new construction, the regulations do not refer to other types of PTVs that are emerging. The Bicycle and Pedestrian Advisory Commission (BPAC) sponsored this Study Issue because having adequate parking for PTV's would help promote and accommodate the vehicle types encouraged by the City's Complete Streets policies.

What are the key elements of the Study?

The goal of the Study would be to ensure safe and secure parking regulations for PTVs in association with new development projects to promote alternative modes of transportation. To meet this goal, the study may include:

- Analysis of various types of PTVs;
- Review of the City's existing regulations for bicycle parking;
- Review of parking standards and options from other jurisdictions;
- Analysis of electric charging options for electronic mobility devices; and
- Data collection and analysis of PTV parking demand for various land use types.

After the analysis is completed, the Study may provide recommendations on PTV parking demand, preferred PTV parking options (including electric charging capabilities), and potential policy changes to accommodate PTVs.

Estimated years to complete study: 2 years

FISCAL IMPACT**Cost to Conduct Study**

Level of staff effort required (opportunity cost):	Major
Funding Required for Non-Budgeted Costs:	\$100,000
Funding Source:	Will seek budget supplement

The cost associated with this Study would be for consultant services to gather and evaluate the existing and future data on PTVs, perform research and analysis on various PTV mobility options, review data from other jurisdictions, and lead the public and stakeholders outreach effort. City staff will work with the consultant to review existing policies, design guidelines and standards, and recommend changes to existing parking standards, and propose new guidelines and standards, if necessary.

Cost to Implement Study Results

Unknown. Study would include assessment of potential costs, including capital and operating costs.

EXPECTED CITY COUNCIL, BOARD OR COMMISSION PARTICIPATION

Council-Approved Work Plan: No

Council Study Session: No

Reviewed by Boards/Commissions: Planning Commission, Bicycle and Pedestrian Advisory Commission

STAFF RECOMMENDATION

Drop. This policy issue does not merit discussion at a Study Issues Workshop.

The City launched a Dockless Bikeshare Pilot Program in December 2018, which included electric bikes. However, the service provider terminated the operation in Sunnyvale in March 2019. Given the short duration of the pilot program, the City did not have significant data to evaluate the usage of dockless bikes and the demand for bike parking.

Although there was no significant data obtained from the Dockless Bikeshare Pilot Program, the City has standards for secured and unsecured bicycle parking for new developments under the Sunnyvale Municipal Code. Secured bicycle parking spaces can be used for not only for bicycle parking, but may also be used for PTV parking.

Since personal transportation technologies are evolving rapidly, each of these new devices could be reviewed on a case by case basis to determine if fit within the current bicycle parking areas or if a variation from those standards would be necessary.

Prepared by: Amber Blizinski, Principal Planner, Community Development

Reviewed by: Trudi Ryan, Director, Community Development

Reviewed by: Chip Taylor, Director, Public Works

Reviewed by: Teri Silva, Assistant City Manager

Approved by: Kent Steffens, City Manager



City of Sunnyvale

Agenda Item

20-0120

Agenda Date: 2/27/2020

2020 COUNCIL STUDY ISSUE

NUMBER

DPW 20-02

TITLE Improve Bicycle and Pedestrian Access at Sunnyvale Caltrain Station

BACKGROUND

Lead Department: Public Works

Support Departments: Office of the City Manager
Office of the City Attorney Community Development

Sponsor(s): Bicycle and Pedestrian Advisory Commission

History: 1 year ago: N/A
2 years ago: N/A

SCOPE OF THE STUDY

What precipitated this Study?

The Bicycle and Pedestrian Advisory Commission requests evaluation of the existing pedestrian and bicycle access to the Sunnyvale Caltrain Station north and south of the station. The Sunnyvale Caltrain Station is a major transportation hub for the City providing access to and from the downtown area. Currently the station serves over ten northbound trains during the morning commute (6 a.m. to 9 a.m.) and over ten southbound trains during the evening commute (4 p.m. to 7 p.m.), as well as five VTA bus transit lines. The station is bicycle-friendly with 74 bicycle lockers and bicycle accommodations on most transit lines.

The station is adjacent to Evelyn Avenue which provides direct access for the area south of the railroad. Access to the station north of the railroad can be made through a pedestrian opening to the station at the intersection of North Frances Street and West Hendy Avenue. In addition, there is an unpaved pedestrian pathway leading to the station from the City-operated parking lot north of the railroad under the Mathilda Avenue overpass.

The City-operated parking lot is accessible by vehicle through the Sunnyvale Business Park driveway on California Avenue west of Mathilda Avenue. At the southeast corner of the parking lot, there are 12 bicycle parking lockers. The unpaved pedestrian pathway connecting to the Caltrain southbound platform is on the south side of the parking lot to serve Caltrain patrons that park in the City lot.

What are the key elements of the Study?

The purpose of the Study is to make recommendations for improvements to signage, access paths, roadways, traffic control and bicyclist/pedestrian amenities. The Study will also determine areas for the inclusion of public art displays. Finally, the Study will include an evaluation of right-of-way restrictions, feasibility of improvements and possible sources of funding.

The Study will include several elements to produce a full evaluation of bicycle and pedestrian accessibility of the Caltrain Station. One of the components of the Study will be a land survey to determine right-of-way constraints between the City, Union Pacific Railroad, Caltrain, and private land owners that would affect proposed modifications. The land survey will also be used to determine American with Disability Act (ADA) compliance for existing and proposed facilities as well as geometric requirements for all proposed travel modes (i.e., bikeways, sidewalks, curb ramps, multi-use paths, etc.).

Another element of the Study will be a public outreach component to obtain information about station users. Public outreach will include a community workshop, an on-site commuter survey, and an online survey. The data collected from the public outreach efforts will be supplemented with weekday and weekend peak period bike and vehicle parking counts at the Caltrain lot as well as the City owned public parking lots in the area, driveway counts at the station entrance, and Caltrain rider counts with travel mode split.

Lastly, the Study will provide feasible recommendations for Sunnyvale Caltrain access improvements. These recommendations might include adding additional pedestrian and/or bicycle access from the neighborhood north of the station which may include increasing or decreasing the number of vehicle or bicycle parking spaces based on the analysis. All recommendations will include conceptual drawings of the proposed modifications with a cost estimate and any identifiable constraints. The Study will also include possible funding sources and eligible grants for design and construction of the recommended improvements.

The Sunnyvale Caltrain Station is in the northern area of the Downtown Specific Plan. The Study would be consistent with the goals, policies and vision statement of the Downtown Specific Plan or the Update to the Plan, if adopted by Council.

Estimated years to complete study: 2 years

FISCAL IMPACT

Cost to Conduct Study

Level of staff effort required (opportunity cost): Major

Funding Required for Non-Budgeted Costs: \$ 350,000

Funding Source: Will seek budget supplement

The cost associated with this study would be for consultant services to include in the project scope a detailed survey of the Caltrain station and adjacent properties, traffic data collection including bicycle and pedestrian counts, community outreach activities, conceptual plans with recommended improvements and cost estimates, and possible funding sources. City staff will work with the consultant throughout the project process in the development of the recommended improvements.

Cost to Implement Study Results

Unknown. Study would include assessment of potential costs, including capital and operating, as well

as revenue/savings.

EXPECTED CITY COUNCIL, BOARD OR COMMISSION PARTICIPATION

Council-Approved Work Plan: Yes

Council Study Session: No

Reviewed by Boards/Commissions: Bicycle and Pedestrian Advisory Commission

STAFF RECOMMENDATION

Support. This policy issue merits discussion at a Study Issues Workshop.

There is potential for improvements to the existing bicycle and pedestrian facilities and amenities near the Sunnyvale Caltrain Station that would improve access. Potential improvements may be at locations owned or maintained by various jurisdictions or entities. The Study would provide a plan for stakeholder coordination on the proposed improvements and construction. The stakeholders will include the City, Caltrain, VTA, the Sunnyvale Business Park, Downtown Business Association, and nearby residents. In addition, the Study will propose opportunities to acquire grant funding for feasible improvements.

Prepared by: Ralph Garcia, Senior Transportation Engineer

Reviewed by: Chip Taylor, Director, Public Works

Reviewed by: Teri Silva, Assistant City Manager

Approved by: Kent Steffens, City Manager



City of Sunnyvale

Agenda Item

20-0139

Agenda Date: 2/27/2020

2020 COUNCIL STUDY ISSUE

NUMBER

DPW 20-04

TITLE El Camino Real Protected Bikeways

BACKGROUND

Lead Department: Public Works

Support Departments: Office of the City Manager
Office of the City Attorney

Sponsor(s): Bicycle and Pedestrian Advisory Commission

History: 1 year ago: N/A
2 years ago: N/A

SCOPE OF THE STUDY

What precipitated this Study?

El Camino Real (State Route 82) is a six-lane divided arterial that extends from the city limits at Mountain View to the city limits at Santa Clara. Within the vicinity of Sunnyvale, El Camino Real has a posted speed limit of 40 miles per hour (mph). Sidewalks are present along both sides of the roadway, and Class II bike lanes are present between Fair Oaks Avenue and Sunnyvale Avenue. On-street parking is permitted along certain segments of the roadway. Under the existing 2006 Bicycle Plan, El Camino Real is proposed to have Class II bike lanes for the entire corridor.

In 2015, the City performed a space allocation study for El Camino Real, utilizing a grant obtained from the Metropolitan Transportation Commission. This study made recommendations to install a buffered bicycle lane on El Camino Real primarily by removal of on-street parking. At the time, the El Camino Real Specific Plan (ECRSP) was just getting started, and it was decided that the concepts from the space allocation study could be folded into the larger specific plan document.

The ECRSP is currently evaluating commercial development densities and increasing residential units over the City's current General Plan. The ECRSP area could have more mixed-use and transit-oriented development creating a more walkable community. The City is also currently in the development process of the Active Transportation Plan (ATP), which includes the Bicycle Master Plan, Pedestrian Safety and Circulation Plan, and the Safe Routes to School Plan. Both the ECRSP and the ATP will evaluate the bicycle and pedestrian needs along the El Camino Real Corridor and provide recommendations on the types of bicycle and pedestrian facilities that best serve the corridor. The recommendations provided in two plans will be coordinated and consistent.

The two adjacent cities, Mountain View and Santa Clara, have recently adopted plans with proposed bicycle facilities on El Camino Real. The City of Mountain View adopted the El Camino Real

Streetscape Plan on October 1, 2019. The Streetscape Plan includes public improvement design guidelines to create a more pedestrian, bicycle and transit friendly boulevard environment that identifies the corridor as a welcoming destination. The Streetscape Plan includes various types of proposed bike facilities on El Camino Real, depending on space availabilities. These facilities include Class II bike lanes (for locations with space constrained), Class II buffered bike lanes, and Class IV cycle tracks (for locations with long gaps between commercial driveways). The City of Santa Clara adopted the Bicycle Master Plan Update 2018 on September 24, 2019, which proposed to install Class IV separated bikeway on El Camino Real from city limit to city limit. Installation of Class IV separated bikeways will be evaluated on streets that can accommodate a minimum five-foot bikeway (not including gutter pan), three-foot buffer and have infrequent driveway conflicts.

Since El Camino Real serves as a regional corridor which connects the two neighboring cities, it should be evaluated to determine the most appropriate bicycle facilities that are similar to the bike improvements which Mountain View and Santa Clara are proposing.

What are the key elements of the Study?

The Study will include a review of existing bicycle usage and future forecasted usage on El Camino Real. It will also evaluate the most appropriate bicycle facilities for each segment of El Camino Real based on roadway widths and travel patterns, and to be consistent with our Complete Streets policy. The Study will also include an on-street parking study to determine the existing on-street parking usage and whether on-street parking could be removed. In addition, the Study will include identification of potential driveway consolidations, as well as locations with long gaps between commercial driveways where Class IV bikeways could be implemented. The Study will also evaluate other bicycle improvements for locations with right-of-way constraints. In addition, the Study will evaluate possible bike routes parallel to El Camino Real. Lastly, the Study will include public outreach to businesses and residents along the El Camino Real Corridor and gather feedback from them on their preferred bicycle facilities on this corridor.

Estimated years to complete study: 2 years

FISCAL IMPACT

Cost to Conduct Study

Level of staff effort required (opportunity cost):	Major
Funding Required for Non-Budgeted Costs:	\$ 200,000
Funding Source:	Will seek budget supplement

The cost associated with this Study would be for consultant services to perform the study as listed under the Key Elements of the Study, as well as to conduct community outreach activities. City staff will work with the consultant throughout the project process in the development of parking study, the recommended improvements, as well as the public outreach efforts.

Cost to Implement Study Results

Unknown. Study would include assessment of potential costs, including capital and operating, as well as revenue/savings for recommended improvements that are within the public right-of-way.

EXPECTED CITY COUNCIL, BOARD OR COMMISSION PARTICIPATION

Council-Approved Work Plan: Yes

Council Study Session: Yes

Reviewed by Boards/Commissions: Bicycle and Pedestrian Advisory Commission

STAFF RECOMMENDATION

Drop. This policy issue does not merit discussion at a Study Issues Workshop.

The City is currently developing its Active Transportation Plan (ATP), which includes updating the City's Bicycle Master Plan. As part of the ATP, the plan will evaluate the existing bicycle network, and provide recommendations for new bicycle facilities or improvements to existing bicycle facilities. Evaluation of bicycle facilities on El Camino Real from a holistic citywide network connectivity and accessibility for all users would be included as part of ATP. The City is concurrently preparing the El Camino Real Specific Plan, which will evaluate and make recommendations on transportation network, including bicycle facilities, on El Camino Real and the immediate roadway network in the area. The El Camino Real Specific Plan will also develop detailed cross sections of the corridor allocating the public right of way serving needs of all transportation network users and unify under a cohesive vision for the area.

Prepared by: Lillian Tsang, Principal Transportation Engineer

Reviewed by: Chip Taylor, Director, Public Works

Reviewed by: Teri Silva, Assistant City Manager

Approved by: Kent Steffens, City Manager



City of Sunnyvale

Agenda Item

20-0140

Agenda Date: 2/27/2020

2020 COUNCIL STUDY ISSUE

NUMBER

DPW 20-05

TITLE Evelyn Avenue Multi Use Trail and Bikeway Study

BACKGROUND

Lead Department: Public Works
Support Departments: Office of the City Manager
Office of the City Attorney
Sponsor(s): Bicycle and Pedestrian Advisory Commission
History: 1 year ago: N/A
2 years ago: N/A

SCOPE OF THE STUDY

What precipitated this Study?

This study will evaluate the potential of installation of a two-way Class I or Class IV bicycle facility on the north side of Evelyn Avenue between Bernardo Avenue and the Caltrain Station.

Evelyn Avenue is a two-lane east-west arterial that extends from the city limits at Mountain View, passes by the Sunnyvale Caltrain Station, through the Sunnyvale downtown district, then continues to Reed Avenue. It is located immediately south of the Caltrain railroad tracks from the western city limits to downtown Sunnyvale. Between the western city limits and Florence Street, and between S. Wolfe Road and Reed Avenue, Evelyn Avenue has a posted speed limit of 35 miles per hour (mph). Through downtown Sunnyvale, Evelyn Avenue has a posted speed limit of 30 mph. Sidewalks are present along both sides of the roadway for most of the corridor, except for the segment between the western city limits and Florence Street, where sidewalk is only present on the south side of the street. Class II bike lanes are present for the entire corridor, and on-street parking is permitted along certain segments of the roadway. There is also a center two-way left turn lane or median island on Evelyn Avenue for almost the entire corridor.

In January 2017, Councilmember Klein (now Mayor Klein) proposed a similar Study Issue to evaluate the development of a Class I bicycle and Pedestrian Trail along Evelyn Avenue adjacent to the Caltrain railroad tracks, between Sunnyvale and Mountain View. This Study Issue (DPW 17-12) was co-sponsored by Vice Mayor Larsson (now Councilmember Larsson) and Councilmember Melton (now Vice Mayor Melton). Councilmember Klein discussed this as an opportunity to create a pedestrian and bike friendly connection between Downtown Sunnyvale and Downtown Mountain View and connect two Caltrain Stations. The final categorization in 2017 for this Study Issue was Priority C, meaning the study would only be absorbed in the current year (2017) if capacity presented itself; if not, it would carry forward for City Council consideration in the next Study Issue cycle.

This Study Issue was brought back to City Council for ranking at the 2018 Study Issues Workshop. The City Council voted 7-0 to drop this Study Issue for two reasons: 1. Staff was getting ready to begin the Bicycle Plan Update (currently known as the Active Transportation Plan), and bicycle improvements on Evelyn Avenue would be included in the evaluation; 2. BPAC had other bicycle improvement priorities in the city. As a result, this Study Issue was dropped at the 2018 Study Issues Workshop.

The City is currently in the development process of the Active Transportation Plan (ATP), which includes the Bicycle Plan, Pedestrian Safety and Circulation Plan, and the Safe Routes to School. The ATP will evaluate the bicycle and pedestrian needs along the Evelyn Avenue Corridor and provide recommendations on the types of bicycle and pedestrian facilities that best serve the corridor.

On the eastern end of the corridor, Evelyn Avenue connects to the Lawrence Station Area Plan (LSAP) area via Aster Avenue, and to Santa Clara via Reed Avenue. Both Aster Avenue and Reed Avenue are part of the Lawrence Station Area Plan area, where the City is currently reviewing the potential roadway configuration for the two streets to better serve the land uses in the LSAP. The recommendations provided in the LSAP will be coordinated and consistent with the ATP.

There are two other projects Sunnyvale is currently working on that are in close proximity of Evelyn Avenue:

- **Bernardo Avenue Pedestrian/Bicycle Undercrossing** - Sunnyvale and Mountain View are currently working on a joint project to evaluate the alignment of a pedestrian/bicycle undercrossing under the existing Caltrain railroad track and Central Expressway at Bernardo Avenue. The alignment of the undercrossing ramp on the south side of the railroad tracks would likely be parallel to Evelyn Avenue.
- **Caltrain Grade Separations at Sunnyvale Avenue and Mary Avenue** - Sunnyvale is currently conducting a feasibility study on grade separating the railroad tracks at Sunnyvale Avenue and Mary Avenue. Several alternatives are being evaluated, which includes depressing Evelyn Avenue at Mary Avenue.

The City of Mountain View developed the Mountain View Transit Center Master Plan in March 2018, where they plan to incorporate a two-way Class IV Cycle Track along the north side of Evelyn Avenue from the eastern end of the Mountain View Transit Center to the Stevens Creek Trail/State Route 85 by removing one westbound travel lane. Eastbound Evelyn Avenue will remain as a two-lane roadway with a Class II bike lane. Between the Stevens Creek Trail and the Mountain View/Sunnyvale City Limits, which is approximately one-mile in distance, the existing Class II bike lane on both sides of Evelyn Avenue would remain.

Since Evelyn Avenue is identified as a Cross-County Bicycle Corridor in the Santa Clara Valley Transportation Authority (VTA) Countywide Bicycle Plan (May 2018) that connects neighboring cities, it should be evaluated to determine the most appropriate bicycle facilities that are similar to the bike improvements along the corridor.

What are the key elements of the Study?

The Study will include a review of existing bicycle usage and future forecasted usage on Evelyn

Avenue. It will also evaluate the most appropriate bicycle facilities for each segment of Evelyn Avenue based on roadway widths and travel patterns, and to be consistent with the Complete Streets policy and the recently adopted Vision Zero Plan. The Study will evaluate the feasibility of installing a two-way Class I Multi-Use path on the north side of the roadway between Bernardo Avenue and the Sunnyvale Caltrain Station. This will include the coordination with Caltrain to determine right-of-way constraints. The Study will perform an on-street parking study to determine the existing on-street parking usage and whether on-street parking could be removed. In addition, the Study will evaluate the feasibility of removing the two-way center turn lane and the potential operation impacts to the corridor. The Study will also alternatively study whether a Class IV Bikeway can be constructed along the same stretch in lieu of a Class I facility. The Study will also evaluate other bicycle improvements for locations with right-of-way constraints as well as improvements at the intersections along the corridor. In addition, the Study will evaluate how the proposed Bernardo Avenue undercrossing and the Grade Separations at Sunnyvale and Mary Avenues will interact with the bicycle and pedestrian facilities on Evelyn Avenue. Lastly, the Study will include public outreach to businesses and residents along the Evelyn Avenue Corridor and gather feedback on the preferred bicycle facilities on this corridor. The City will coordinate with the City of Mountain View to determine the feasibility of providing a continuous Class I or Class IV two-way facilities on the north side of Evelyn Avenue at the Sunnyvale/Mountain View city limits.

Estimated years to complete study: 2 years

FISCAL IMPACT

Cost to Conduct Study

Level of staff effort required (opportunity cost):	Major
Funding Required for Non-Budgeted Costs:	\$ 350,000
Funding Source:	Will seek budget supplement

The cost associated with this Study would be for consultant services to perform the Study as listed under the Key Elements of the Study. City staff will work with the consultant throughout the process in the development of parking study, the recommended improvements, as well as the public outreach efforts.

Cost to Implement Study Results

Unknown. Study would include assessment of potential costs, including capital and operating, as well as revenue/savings for recommended improvements that are within the public right-of-way.

EXPECTED CITY COUNCIL, BOARD OR COMMISSION PARTICIPATION

Council-Approved Work Plan: Yes

Council Study Session: Yes

Reviewed by Boards/Commissions: Bicycle and Pedestrian Advisory Commission

STAFF RECOMMENDATION

Defer. This issue merits discussion at a future Study Issues Workshop.

The City is currently developing its Active Transportation Plan (ATP), which includes updating the City's Bicycle Master Plan. The ATP plan will evaluate the existing bicycle network, and provide recommendations for new bicycle infrastructure or improvements to existing bicycle facilities and prioritization of the projects for implementation. Therefore, this study issue should be deferred until

the ATP has been adopted, when we can consider this in relation to the recommended overall bicycle network.

Prepared by: Lillian Tsang, Principal Transportation Engineer

Reviewed by: Dennis Ng, Transportation and Traffic Manager

Reviewed by: Chip Taylor, Director, Public Works

Reviewed by: Teri Silva, Assistant City Manager

Approved by: Kent Steffens, City Manager



City of Sunnyvale

Agenda Item

20-0141

Agenda Date: 2/27/2020

2020 COUNCIL STUDY ISSUE

NUMBER

DPW 20-06

TITLE Create Safer Streets by Narrowing Travel Lanes

BACKGROUND

Lead Department: Public Works

Support Departments: Office of the City Manager
Office of the City Attorney

Sponsor(s): Bicycle and Pedestrian Advisory Commission

History: 1 year ago: N/A
2 years ago: N/A

SCOPE OF THE STUDY

What precipitated this Study?

The Bicycle and Pedestrian Advisory Commission requested the City evaluate a narrowed 10' vehicular lane standard in an effort to create safer streets. This study would evaluate whether reducing the City's standard lane widths to 10' is: 1) feasible and 2) would create safer streets.

There are two potential benefits to reducing the standard dimension for lane widths on City maintained roadways to 10 feet. First, it is expected that vehicle speeds will be lowered if travel lane widths are narrowed. The 2010 Highway Capacity Manual (HCM) shows that there is a direct correlation between free flow speed and lane widths with wider lanes leading to higher free flow speeds. It is assumed that narrowing lanes to 10 feet will lead to lower travel speeds and safer streets. The second benefit to narrowing lanes is that the additional roadway width could be reallocated to incorporating complete street designs that would benefit bicyclists and pedestrians. Some examples of reallocating roadway widths from vehicular travel lanes to other uses may include installing a sidewalk or pedestrian path where one does not exist, installing bicycle lanes where bicycle lanes do not exist, or installing a painted buffer or physically separated bicycle lane where there are existing bicycle lanes.

What are the key elements of the Study?

The Study will include several components to fully evaluate the need for a City policy to reduce lane widths to 10 feet as a design standard. First, the Study will evaluate the design criteria used by the City and compare them to industry guidelines. Then the Study will determine the impact that reducing lane widths to 10 feet will have on the turning capability of large vehicles such as fire trucks, buses, and semi-trailers. The Study will include the effect of narrowing lanes on arterials will have on travel speeds, capacity, and traffic diversion to other roadways with less capacity. Also, the Study will include a safety analysis with a review of collisions to determine the effect lane widths will have on various types of streets and users, including motorcyclists, bicyclists, and motorized scooters. In

addition, the Study will review policies neighboring jurisdictions have on narrower lane widths to determine the effect on safety and how the excess roadway width was used for other purposes. Based on the result of the Study, a recommendation will be made on whether there is a need to set a policy to change the standard lane width to 10 feet and how to allocate the excess roadway width for other purposes such as pedestrian paths, bike lanes, or bicycle separation. Lastly, a public outreach component will be included as part of the study.

Estimated years to complete study: 2 years

FISCAL IMPACT

Cost to Conduct Study

Level of staff effort required (opportunity cost):	Moderate
Funding Required for Non-Budgeted Costs:	\$ 200,000
Funding Source:	Will seek budget supplement

The cost associated with this Study would be for consultant services to perform the study as listed under the Key Elements of the Study. City staff will work with the consultant throughout the project process including the analysis and the development of recommendations, as well as the public outreach efforts.

Cost to Implement Study Results

Unknown. Study would include assessment of potential costs, including capital and operating, as well as revenue/savings for recommended improvements.

EXPECTED CITY COUNCIL, BOARD OR COMMISSION PARTICIPATION

Council-Approved Work Plan: Yes

Council Study Session: Yes

Reviewed by Boards/Commissions: Bicycle and Pedestrian Advisory Commission

STAFF RECOMMENDATION

Drop. This policy issue does not merit discussion at a Study Issues Workshop.

City staff uses numerous federal, state, and local resources as a guide in roadway design. Additionally, staff references guidance materials from various transportation organizations in the development of roadway designs. For example, *A Policy on Geometric Design of Highways and Streets*, 7th edition (2018) by the American Association of State Highway and Transportation Officials states the following in the "Local Roads and Streets" chapter:

Lanes for moving traffic preferably should be 10 to 11 feet wide, and in industrial areas they should be 12 feet wide. Where the available or attainable width of right-of-way imposes severe limitations, 9-foot lanes can be used in residential areas, and 11-foot lanes can be used in industrial areas. Added turning lanes where used at intersections should be at least 9 feet wide, and desirably 10 to 12 feet wide, depending on percentage of trucks.

Apart from these resources, City staff uses plans and policies adopted by the City to incorporate the associated roadway requirements into proposed roadway designs.

As a practice, City staff develops a comprehensive roadway design based on these professional documents and other design considerations such as roadway type, design speed, number of lanes, bike lanes, parking lanes, private driveway access, public transit routes, emergency vehicle routes, truck routes, intersection turning movements, roadway alignment, school locations, land uses, and median locations. Therefore, developing a policy mandating that all travel lanes shall be 10 feet in width is not practical.

In addition, the City is currently developing its Active Transportation Plan (ATP), and as part of the ATP, the plan will establish visions, goals, policies and actions for the Bicycle Master Plan, Pedestrian Master Plan and Safe Routes to School Plan. One of the proposed actions for the Bicycle Master Plan is to evaluate opportunities to narrow lanes to the City's current standard of 11-foot lanes, or to 10-foot lanes under unique circumstances, to create or expand bicycle facilities. Given this action will be proposed in the ATP to achieve the goals and policies, a study issue to evaluate whether a policy should be in placed is not warranted.

Prepared by: Ralph Garcia, Senior Transportation Engineer
Reviewed by: Dennis Ng, Transportation and Traffic Manager
Reviewed by: Chip Taylor, Director, Public Works
Reviewed by: Teri Silva, Assistant City Manager
Approved by: Kent Steffens, City Manager



City of Sunnyvale

Agenda Item

20-0142

Agenda Date: 2/27/2020

2020 COUNCIL STUDY ISSUE

NUMBER

DPW 20-07

TITLE Personal Transportation Vehicles (PTV) Usage on City Streets, Sidewalks and Bike Lanes

BACKGROUND

Lead Department: Public Works

Support Departments: Office of the City Manager
Office of the City Attorney

Sponsor(s): Bicycle and Pedestrian Advisory Commission

History: 1 year ago: Deferred
2 years ago: N/A

SCOPE OF THE STUDY

What precipitated this Study?

Personal Transportation vehicles (PTV) such as bicycles, scooters, segways, skateboards, and roller blades, both manual and motor propelled, are increasing in popularity as an alternative transportation mode. The Sunnyvale Municipal Code currently identifies where a person can ride a bicycle; however, it does not provide a clear explanation on where a person can operate a PTV. The California Vehicle Code (CVC) has some regulations relating to PTV, but it is not comprehensive. Moreover, the CVC allows local jurisdictions to adopt additional regulations. There are potential safety issues related to the sharing of sidewalks and roadways with PTV, vehicles, and pedestrians, which need to be addressed through modifications of the Sunnyvale Municipal Code.

What are the key elements of the Study?

The Study will include a review of various types of manual and motor propelled PTV. Based on federal, state and City regulations and policies, the Study will provide policy recommendations to regulate the use of these devices within the City right of way (i.e., sidewalk, roadway, bike lanes, etc.). The recommendations would also include safety equipment requirements, travel speed limits, and age limits for use of PTV.

Estimated years to complete study: 2 years

FISCAL IMPACT

Cost to Conduct Study

Level of staff effort required (opportunity cost):	Major
Funding Required for Non-Budgeted Costs:	\$100,000
Funding Source:	Will seek budget supplement

The cost associated with this Study will be for consultant services to gather and evaluate the existing and future data on PTV, perform research and analysis on various PTV mobility options, review data from other jurisdictions, and lead the public and stakeholders outreach effort. City staff will work with the consultant to review existing policies, design guidelines and standards, recommend changes to existing usage and operation standards, and propose new regulations, guidelines and standards if necessary.

Cost to Implement Study Results

Unknown. Study would include assessment of potential costs, including capital and operating costs.

EXPECTED CITY COUNCIL, BOARD OR COMMISSION PARTICIPATION

Council-Approved Work Plan: No

Council Study Session: No

Reviewed by Boards/Commissions: Bicycle and Pedestrian Advisory Commission

STAFF RECOMMENDATION

Drop. This policy issue does not merit discussion at a future Study Issues Workshop.

The City launched a Dockless Bikeshare Pilot Program in December 2018, which included electric bikes. However, the service provider terminated the operation in Sunnyvale in March 2019. Given the short duration of the pilot program, the City did not have significant data to evaluate the usage of dockless bikes and the potential issues associated with the use of dockless and motorized bikes.

Although there was no significant data obtained from the Dockless Bikeshare Pilot Program, CVC Section 21235, amended by Assembly Bill No. 2989 in September 2018, and CVC Section 21280 et. seq. defines and regulates the operation of motorized scooters and electric personal assistive mobility devices (which includes segways) on streets and sidewalks. CVC Section 21235 states that an operator of a motorized scooter shall not operate a motorized scooter on a highway with a speed limit in excess of 25 miles per hour unless the motorized scooter is operated within a Class II or Class IV bikeway; operate a motorized scooter without a valid driver's license or instruction permit; operate a motorized scooter upon a sidewalk, except as may be necessary to enter or leave adjacent property; or leave a motorized scooter lying on its side on any sidewalk, or park a motorized scooter on a sidewalk in any other position, so that there is not an adequate path for pedestrian traffic. These regulations are currently adequate to govern the operation of PTVs on City streets and sidewalks; however, the CVC allows cities to adopt additional local regulations.

Prepared by: Ralph Garcia, Senior Transportation Engineer, Public Works

Reviewed by: Chip Taylor, Director, Public Works

Reviewed by: Teri Silva, Assistant City Manager

Approved by: Kent Steffens, City Manager



City of Sunnyvale

Agenda Item

20-0094

Agenda Date: 1/16/2020

REPORT TO BICYCLE AND PEDESTRIAN ADVISORY COMMISSION

SUBJECT

Report and Discussion of Recent Santa Clara Valley Transportation Authority (VTA) Bicycle and Pedestrian Advisory Committee (BPAC) Meeting

Dave Simons, Santa Clara Valley Transportation Authority (VTA) Bicycle and Pedestrian Advisory Committee (BPAC) Representative, provides updates on recent VTA BPAC meeting.



City of Sunnyvale

Agenda Item

20-0095

Agenda Date: 1/16/2020

REPORT TO BICYCLE AND PEDESTRIAN ADVISORY COMMISSION

SUBJECT

Draft Bicycle and Pedestrian Advisory Commission 2020 Annual Work Plan

Draft 2020 Master Work Plan

Bicycle and Pedestrian Advisory Commission

Annual Calendar

Approved by BPAC on November 21, 2019

Scheduled for Council review and approval on February 4, 2020

MEETING DATE	AGENDA ITEM/ISSUE
January 16	<ul style="list-style-type: none"> • Ranking of 2020 Study Issues • Safe Routes to School Coordinator Update (Presentation)
February 20	<ul style="list-style-type: none"> • Discussion of Utility Bill Concepts • Discussion of TDA Funding
March 19	<ul style="list-style-type: none"> • Utility Bill Concept Designs • TDA Funding Recommendation • Active Transportation Plan • Annual Slurry Seal List (Information item) • Council Ranking of Study Issues (Information item)
April 16	<ul style="list-style-type: none"> •
May 21	<ul style="list-style-type: none"> • Review Recommended Budget • Annual reporting on collisions involving pedestrians and cyclists (Presentation)
June 18	<ul style="list-style-type: none"> • Recognition of Service • Utility Bill Stuffer Update (Information item)
July 16	<ul style="list-style-type: none"> • Selection of Chair and Vice Chair
August 20	<ul style="list-style-type: none"> •
September 17	<ul style="list-style-type: none"> •
October 15	<ul style="list-style-type: none"> • Final month to Propose Study Issues • Vision Zero Plan Progress Update (Presentation)
November 19	<ul style="list-style-type: none"> • Approve 2021 Master Work Plan • Climate Action Plan Progress Update (Presentation)
December 17	<ul style="list-style-type: none"> • Final month to Approve 2021 Master Work Plan • Final month for Annual Review of Code of Ethics and Conduct for Elected and Appointed Officials

Additional items yet to be scheduled:

- Bernardo Avenue Bicycle/Pedestrian Undercrossing

- Bicycle Friendly Community Designation Application
- Caltrain Grade Separation (Mary Avenue and Sunnyvale Avenue crossings)
- City of Santa Clara Bicycle Master Plan Update impact on Lawrence Station Area (commissioner-led presentation)
- Downtown Specific Plan Amendments
- East Sunnyvale Area Transportation Improvements
- El Camino Real Specific Plan
- Fair Oaks Avenue Bike Lanes and Streetscape – Phase 2
- Homestead Road Full-time Bike Lane Study
- Java Drive Road Diet
- Lawrence Station Area Plan - Sense of Place Plan
- Lawrence Station Area Bicycle Facilities Project
- Mary Avenue Freeway Overcrossing
- Maude Avenue Bike Improvement Project
- Measure B Funding – Education & Encouragement Category
- Moffett Park Green Link
- Moffett Park Specific Plan Update (Study Session)
- Peery Park Area Transportation Improvements
- Roadway Safety Plan
- Stevens Creek Trail Extension Project
- Note:
 - Study Issues may be proposed at any meeting throughout the year
 - Study Issues presentation dates will be added following approval by Council



City of Sunnyvale

Agenda Item

20-0096

Agenda Date: 1/16/2020

REPORT TO BICYCLE AND PEDESTRIAN ADVISORY COMMISSION

SUBJECT

Active Items List - January 2020

Bicycle and Pedestrian Advisory Commission

Active Items List

Item #	Item	PR	Due Date (Approx)	Status	Last Updated
1	Utility Bill Insert	Tsang	Annual	The 2020 Utility Bill Insert is tentatively scheduled to be mailed out with the Utility Bill in July/August 2020. Discussion of the Utility Bill Concepts will take place at the February and March BPAC meetings.	1/20/2020
2	Bike to Work Day	Tsang	Annual	Bike to Work Day will take place on Thursday May 14, 2020. Sunnyvale plans to host two Energizer Stations.	1/20/2020
3	Bernardo Caltrain Under-crossing	Garcia	TBD	Sunnyvale and Mountain View are collaborating on a revised scope of work with the project consultant. The project team will identify feasible design alternatives that would fit within the constrained right-of-way.	12/19/2019
4	Maude Avenue Bike Lanes	Racca-Johnson	TBD	City Council awarded the construction contract on March 5, 2019. . Construction is anticipated to begin later part of January or early February, 2020, while the contractor accommodates the long lead time for the traffic signal pole. Once construction begins, the project is estimated to take 5 to 6 months to complete.	12/19/2019
5	Caltrain Grade Separation Feasibility Study	Tsang	TBD	The City is currently refining concept designs and undertaking preliminary traffic analysis related to grade separation at both Mary and Sunnyvale Avenues. Additional community meetings are planned for spring 2020.	12/19/2019
6	Stevens Creek Trail	Ng	TBD	At the November 12, 2019 City Council meeting, the Council has authorize a local match of \$600,000 for the VTA Measure B Bicycle and Pedestrian Competitive Grant Program for the Stevens Creek Trail Extension Project. Sunnyvale will partner with Mountain View in the application of the grant; the proposed project would be for the design of the Stevens Creek Trail extension from the Dales/Heatherstone bike-pedestrian overcrossing to West Remington Drive.	11/21/2019
7	East-West Channel Trail	Ng	Annual	SCVWD anticipates the flood control project will begin in summer 2020, and it will be completed by December 2022. City will not be able to begin on trail projects until after SCVWD is done with the flood control project.	9/19/2019
8	Homestead Road Bike Lanes Study	Ng	2020	City Council has approved budget to prepare the feasibility study of installing fulltime bike lanes on Homestead Road for FY19/20.	8/15/2019
9	Road Overlay, Slurry, Reconstruction & Chip Schedule	T. Pineda	Annual	List was submitted in March 2019 BPAC meeting agenda packet.	4/18/2019



City of Sunnyvale

Agenda Item

20-0097

Agenda Date: 1/16/2020

REPORT TO BICYCLE AND PEDESTRIAN ADVISORY COMMISSION

SUBJECT

Research on Intersection Bikeway Design



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OregonBikeLaw.com.

Want bikeways for everyone? Nix the mixing, new research says

Posted by [Jonathan Maus \(Publisher/Editor\)](#) on December 19th, 2019 at 2:45 pm



This protected intersection in Salt Lake City, Utah was rated comfortable by the largest number of respondents.
(Photo: TREC at PSU Researchers)

With protected bike lanes all the rage in Portland and throughout the U.S., a big question remains: What about intersections? After all, protection on the blockface doesn't mean much when you come face-to-face with a drivers' car at the intersection.

New research [released](#) today from the Transportation Research and Education Center (TREC) at Portland State University set out to learn more about that question. What they found is that there are really only two types of bikeway designs that most people feel comfortable using, and they both include almost total separation from drivers.

The research team of Chris Monsere, Nathan McNeil and Yi Wang of Portland State University, along with Rebecca Sanders, Robert Burchfield (formerly PBOT's head traffic engineer where he oversaw installation of Portland's first-ever protected bike lane on SW Broadway) and William Schultheiss of Toole Design Group south to quantify the relative comfort level of a variety of bikeway design types among a variety of people.



One of the lead researchers, Christopher Monsere, Ph.D.

(Screen grab from TREC video)

NOTE: BikePortland is currently in winter vacation mode. Post frequency and other features will return to normal on Thursday, January 9th.

Portland's community-supported independent media outlet devoted to cycling and low-car life since 2005.

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Latest Headlines

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Becky Jo's Carfree Life: Gear Me Up

Comment of the Week: From Jason Meggs, Idaho Stop law researcher

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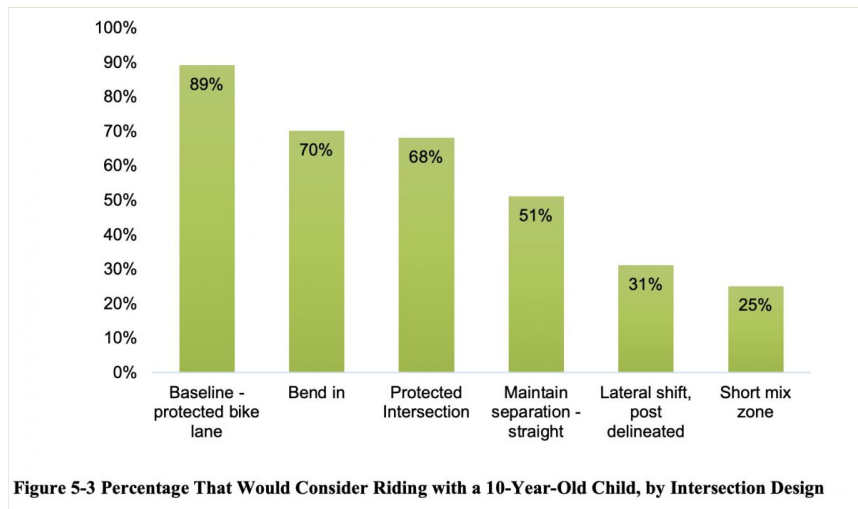


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Instead of crash data, they showed subjects helmet-mounted videos of bike lanes and asked, on a scale of 1 to 5, how comfortable they'd feel riding on it and whether or not they'd consider riding on it with a 10-year old child. A total of 277 people watched the clips during surveys taken in urban and suburban locations in Oregon, Minnesota, and Maryland. Researchers gleaned a total of 7,166 ratings from the surveys.

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Five intersection types located in Seattle, Denver and Portland were studied: a separated bicycle traffic signal phase; a “bend-in” design that shifts the bike lane in toward other lanes; a “bend-out” design (a.k.a. protected intersection) that shifts the bike lane away from other traffic; a straight path that stays separated right up to the intersection; a “lateral shift” design that swaps the bike lane with other lanes and moves riders across the path of drivers; and a “mixing zone” design that terminates the bike lane and throws riders into the mix with turning drivers.

The findings show that comfort ratings plunge in places where bicycle riders are forced to mix with drivers prior to an intersection. If cities want to attract “interested but concerned” riders, researchers recommend only two of the designs: a separated bike signal phase or a protected intersection. “If you really want a bike network that’s comfortable for all ages and abilities,” said Chris Monsere from his office at PSU this morning, “It’s really just those two.”

Rivelo, Breadwinner Cafe, and Norther Cycles are all closing

90 comments
Ryan Yesterday

The Monday Roundup: Portland's 'War on Cars', Strava stats, car economy costs, and more

78 comments
Ryan Yesterday

Becky Jo's Carfree Life: Gear Me Up

62 comments
David Hampsten Yesterday

Universal Cycles will close Portland retail location and move to Beaverton

43 comments
Wayne Yesterday

NW Portland is now a Slow Zone. Here's how your neighborhood can be one too

21 comments
I wear many hats Yesterday
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Upcoming Events

THU 09 Thursday Night Ride (TNR)

January 9 at 7:00 pm -
Salmon Street Fountain

SAT 11 Sorella Forte Women's Club Ride

January 11 at 9:00 am -
River City Bicycles

SAT 11 Endless Summer Saturdays

January 11 at 9:00 am -
Green Bridge Coffee

SUN 12 Salvage Sunday at the CCC

January 12 at 12:00 pm -
Community Cycling Center

SUN 12 Zoobomb

January 12 at 8:30 pm -
Zoobomb Pyle, SW 13th Ave & W Burnside

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Job Listings

Job: E-bike delivery – Dominos Pizza

Job: Shipping Specialist – Velotech, Inc.

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- Huntco Site Furnishings
- Icicle Tricycles
- Portland Design Works
- Wind-Blox

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- BicycleAttorney.com
- Charley Gee P.C. Portland Personal Injury Lawyer
- Champion Charter Bus
- Forum Law Group LLC – Bicycle Law
- Law Office of Chad Stavley, PC
- Portland Charter Bus Company
- Scrubjay
- Thomas, Coon, Newton & Frost

Tech

- Contributed Systems
- Grouptrail
- Ride Report
- Ride With GPS

Fun

- The Lumberyard Bike Park

Organizations

- Community Cycling Center
- Travel Oregon
- TriMet

BikePortland on Twitter

Portland has a few bike signal intersections (NE Lloyd and Interstate at Peace Park, N Rosa Parks and I-5) and just one protected intersection (and it's very new and in a relatively hidden location (NW 20th and Vaughn) without much traffic).

Unsurprisingly the intersections with the lowest comfort ratings were mixing zones and lateral shifts — where bicycle riders are forced to share space with other vehicle users. Mixing zones are a popular treatment at the Portland Bureau of Transportation. They just installed one on N Denver Avenue at Lombard (see photo at right).



New bike lane on N Denver Ave. (Don't do this if you want novice/new people to cycle.)
(Photo © J. Maus/BikePortland)

Here's the clip of a lateral shift design that got the lowest ratings:

Clip6



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And here's the clip of the protected intersection (in Salt Lake City, Utah) that was rated most comfortable:

Clip23



Job: Purchasing Specialist – Velotech, Inc.

Job: Development Director – Adventure Cycling Association

Job: Experienced Frontend Web Developer – Ride with GPS

Job: Digital Marketing and Content Copywriter – Ride with GPS

[*View more jobs](#)

Subscriber Posts

Hearts, Minds, and thighs: A Gorge Pedal recap

-- A J Zelada

Just a reminder – don't buy black market parts

-- mh

Bicycling Hidden Gems In Bellingham

-- maallyn

PBOT News

Safety improvements at the intersection of U.S. Highway 30, NW Vaughn Street and NW 23rd Avenue begin today

PBOT News: Upcoming speed bump construction on Tillamook Neighborhood Greenway

\$6M project brings new neighborhood greenway, pedestrian signals, sidewalks and curb ramps to East Portland and SE Division

PBOT News: Introducing Safer Outer Stark Project

Learn about improvements coming to the NE 60th Avenue and Halsey area at open house

Tweets by @BikePortland

[BikePortland](#) @BikePortland

Becky Jo's Carfree Life: We Have Hourly Rates [bikeportland.org/2020/01/07/bec...](#)

>> Our latest from @beckyjopdx involves Zipcar and a mysterious box of condoms.



11h

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Job: E-bike delivery - Dominos Pizza

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When asked the question about biking with a 10-year old, the straight protected bike lane (not at an intersection, used as a control) rated the highest with 89% of respondents saying they'd ride it with a child. Second place on the comfort rankings was a bend-in design from Denver, Colorado with 70% of respondents saying it would be comfortable. The later shift and mixing zone designs — both prevalent in Portland — were ranked as comfortable by only 31% and 25% of respondents, respectively.

There's some data in the study that shows protected intersections result in more interactions between bicycle and car users — but is still considered comfortable because of the visibility and slow speeds the design encourages.

Another interesting aspect of this study is that researchers broke down results based on different rider typologies so you can see how “interested but concerned” riders’ views differ from “bike-inclined” (non-riders), or “strong and fearless”.

Table 7-4 Estimated Percentage Comfortable for Each Design, Interested But Concerned							
Comfort Score	Mixing zone	Lateral Shift	Bend in	Maintain separation	Signal	Bend out / Protected Intersection	
Turn visible	32%	30%	46%	51%	65%	71%	
Interaction	26%	24%	33%	25%		60%	
By right-turning volumes	50	32%	30%	45%	50%	65%	70%
	100	32%	30%	45%	49%	65%	70%
	150	31%	29%	45%	49%	65%	69%
	200	31%	29%	44%	48%	65%	68%
	250	31%	29%	44%	48%	65%	67%

Learn more about the research and find all the downloads you need at trec.pdx.edu.

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