Sunnyvale | alta PLANNING + DESIGN

Sunnyvale Active Transportation Plan

Sunnyvale BPAC
June 18, 2020

Agenda

1 – Active Transportation Plan Vision Statement

2 – Plan Timeline and BPAC Involvement

3 – Final Draft Plan Major Updates

4 – Next Step

5 – Recommendation to City Council

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Vision Statement

Vision Statement

Sunnyvale is a Complete Streets Community where residents and commuters have the choice to bicycle and walk to meet their transportation needs on a connected, comfortable, safe, and convenient network designed for all abilities and ages.

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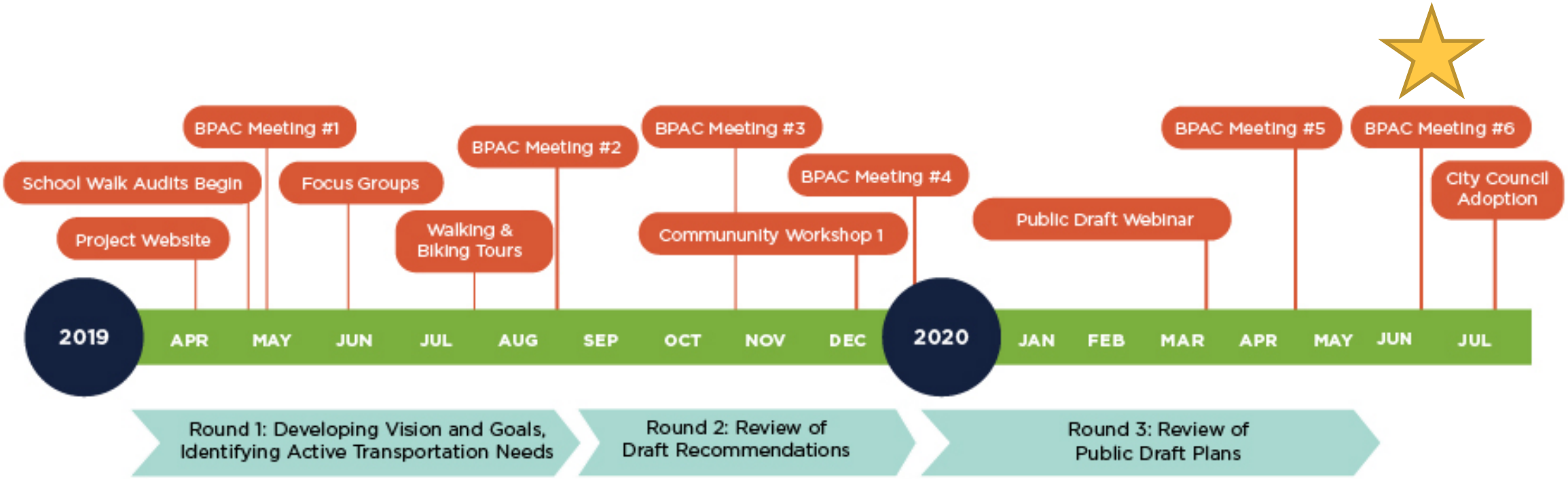
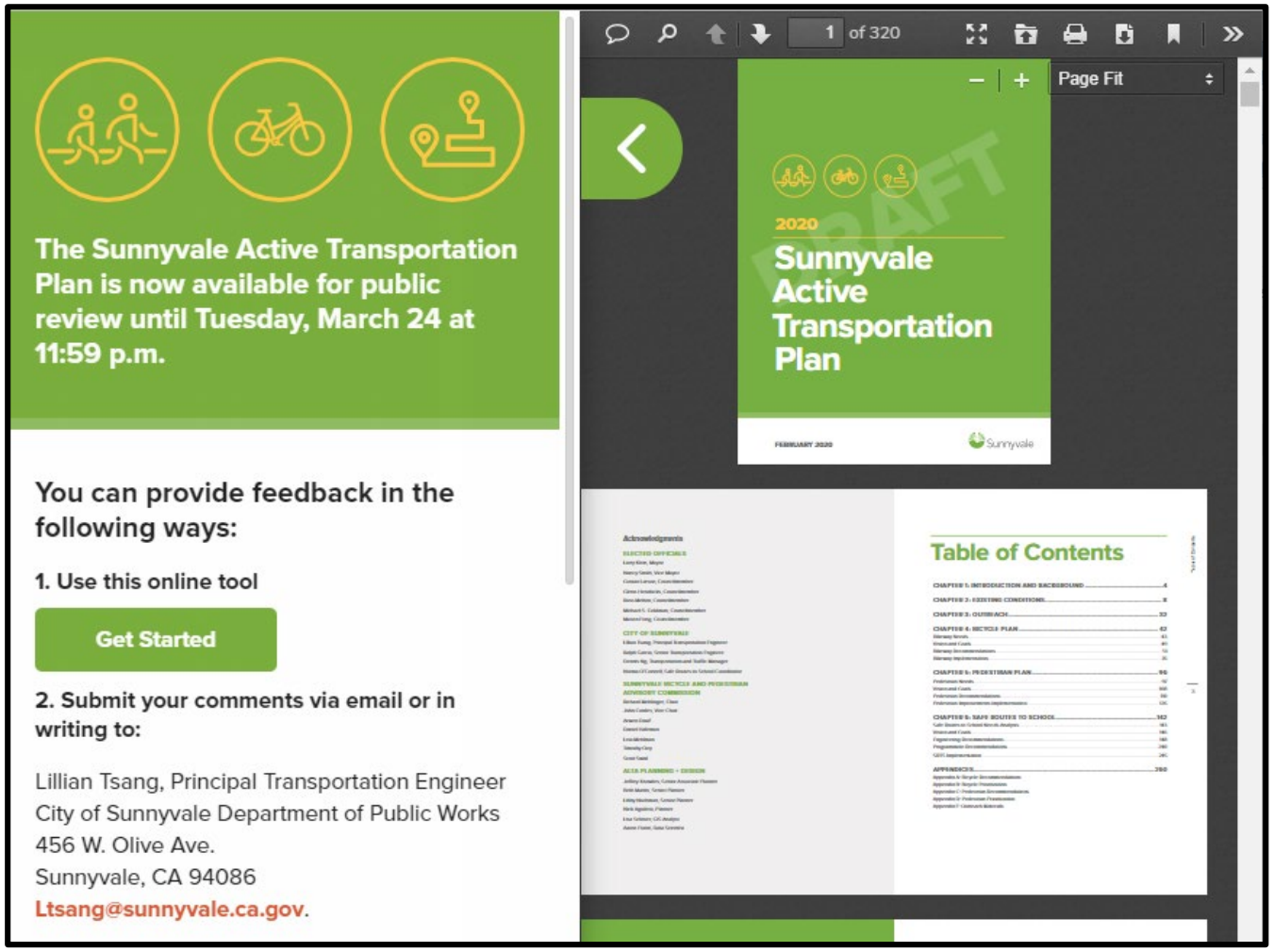
Plan Timeline

Sunnyvale ATP Timeline – Plan Adoption



Draft Plan Comment Review



The Sunnyvale Active Transportation Plan is now available for public review until Tuesday, March 24 at 11:59 p.m.

You can provide feedback in the following ways:

1. Use this online tool

Get Started

2. Submit your comments via email or in writing to:

Lillian Tsang, Principal Transportation Engineer
City of Sunnyvale Department of Public Works
456 W. Olive Ave.
Sunnyvale, CA 94086
Ltsang@sunnyvale.ca.gov.

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Page Fit

2020
Sunnyvale Active Transportation Plan

DRAFT

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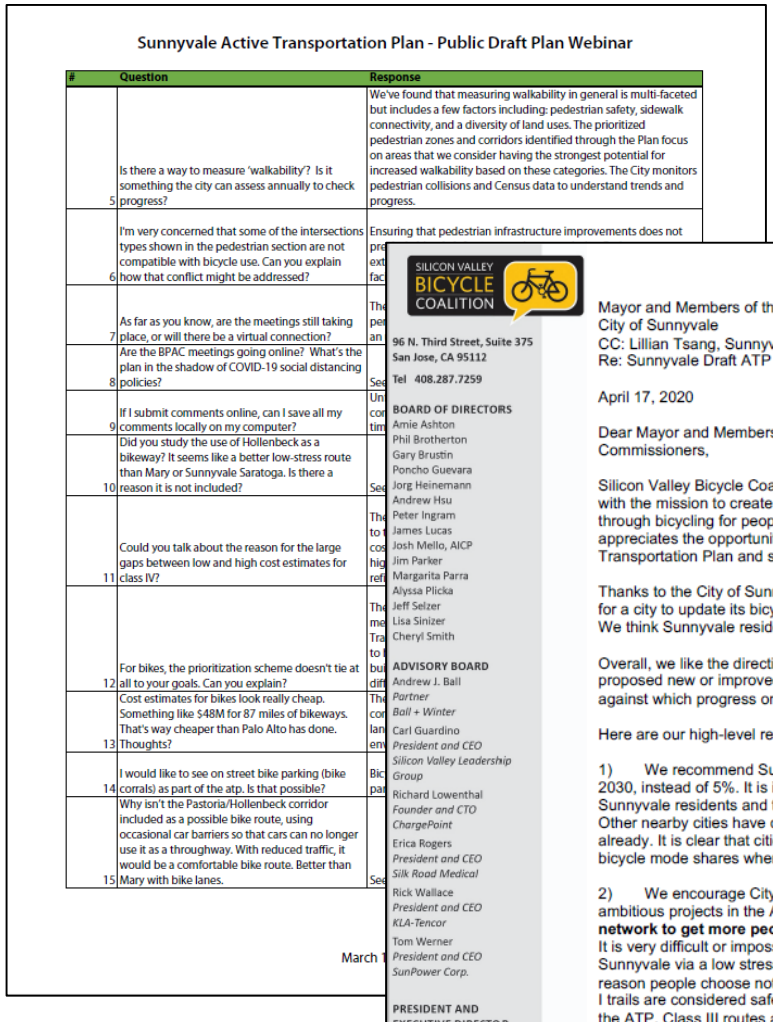

Sunnyvale Active Transportation Plan - Public Draft Plan Webinar

#	Question	Response
5	Is there a way to measure 'walkability'? Is it something the city can assess annually to check progress?	We've found that measuring walkability in general is multi-faceted but includes a few factors including: pedestrian safety, sidewalk connectivity, and a diversity of land uses. The prioritized pedestrian zones and corridors identified through the Plan focus on areas that we consider having the strongest potential for increased walkability based on these categories. The City monitors pedestrian collisions and Census data to understand trends and progress.
6	I'm very concerned that some of the intersections types shown in the pedestrian section are not compatible with bicycle use. Can you explain how that conflict might be addressed?	Ensuring that pedestrian infrastructure improvements does not
7	As far as you know, are the meetings still taking place, or will there be a virtual connection?	
8	Are the BPAC meetings going online? What's the plan in the shadow of COVID-19 social distancing policies?	
9	If I submit comments online, can I save all my comments locally on my computer?	
10	Did you study the use of Hollenbeck as a bikeway? It seems like a better low-stress route than Mary or Sunnyvale Saratoga. Is there a reason it is not included?	
11	Could you talk about the reason for the large gaps between low and high cost estimates for class IV?	
12	For bikes, the prioritization scheme doesn't tie at all to your goals. Can you explain?	
13	Cost estimates for bikes look really cheap. Something like $48M for 87 miles of bikeways. That's way cheaper than Palo Alto has done. Thoughts?	
14	I would like to see on street bike parking (bike corrals) as part of the atp. Is that possible?	
15	Why isn't the Pastoria/Hollenbeck corridor included as a possible bike route, using occasional car barriers so that cars can no longer use it as a throughway. With reduced traffic, it would be a comfortable bike route. Better than Mary with bike lanes.	

March

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http://bikesiliconvalley.org

Mayor and Members of the City Council
City of Sunnyvale
CC: Lillian Tsang, Sunnyvale BPAC
Re: Sunnyvale Draft ATP

April 17, 2020

Dear Mayor and Members of the Sunnyvale City Council, staff, BPAC Commissioners,

Silicon Valley Bicycle Coalition is a non-profit member-based organization with the mission to create a healthy, community, environment, and economy through bicycling for people in San Mateo and Santa Clara Counties. SVBC appreciates the opportunity to comment on Sunnyvale's Active Transportation Plan and share some higher-level comments.

Thanks to the City of Sunnyvale for taking on this ambitious update. It is rare for a city to update its bicycle, pedestrian, and SRTS plans simultaneously. We think Sunnyvale residents will benefit from the simultaneous update.

Overall, we like the direction and intent of the plan with over 80 miles of proposed new or improved bicycle infrastructure. It is great to see metrics against which progress on the plan's goals can be measured.

Here are our high-level recommendations:

1) We recommend Sunnyvale set a **10% bicycle mode share goal** by 2030, instead of 5%. It is important for the health, happiness and safety of Sunnyvale residents and the planet that Sunnyvale set a much higher target. Other nearby cities have demonstrated higher than 5% bicycle mode share already. It is clear that cities in the Bay Area can achieve much higher bicycle mode shares when they plan and work toward it.

2) We encourage City of Sunnyvale to include more and higher quality, ambitious projects in the ATP to create a **complete low stress bike network to get more people riding** more often for more reasons.
It is very difficult or impossible to get to many important locations in Sunnyvale via a low stress bike route today. Safety is the number one reason people choose not to bike. Class IV protected bike lanes and Class I trails are considered safer by people surveyed as listed on page 39 of the ATP. Class III routes and basic Class II bike lanes offer little protection or increased safety. We request that the plan include more planned miles of high-quality bike infrastructure. The current proposal of 85 miles of new or improved bike infrastructure is a great improvement over the current situation, but we consider it insufficient to cover a city as large as Sunnyvale with a complete low stress network. We recommend the plan

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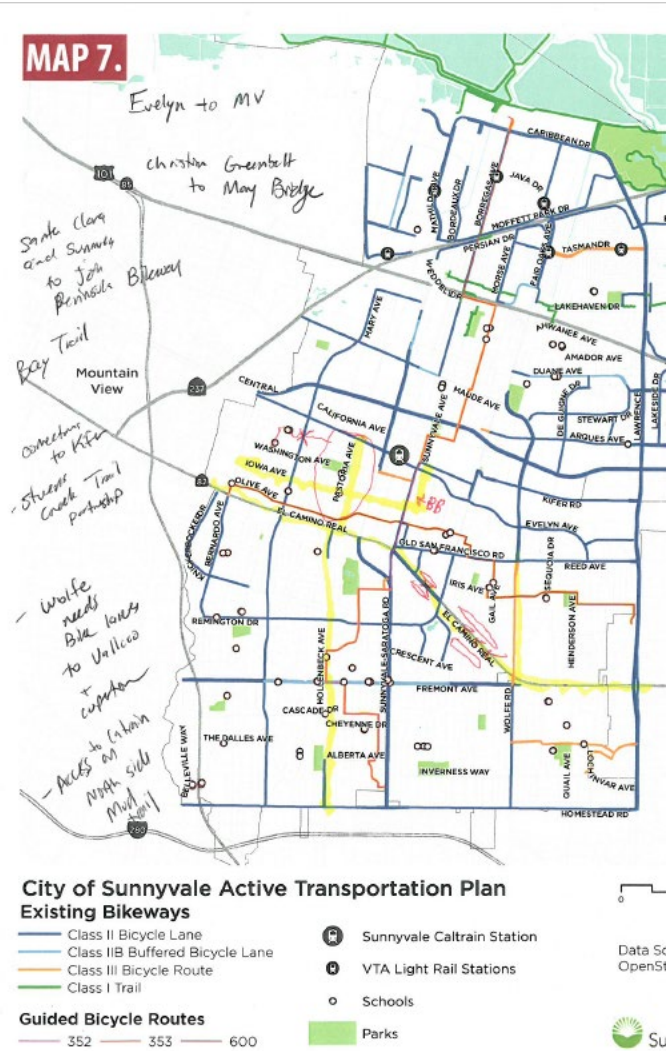
BPAC Involvement

BPAC Involvement

Crosstown Biking Tour

El Camino Real Walking Tour

Draft Recommendations Workshop



BPAC Study Session

Top BPAC Comments

From BPAC Meeting #5: Draft Plan Review

- Add measurable goals for Bicycle and Pedestrian Chapters
- Address the gaps in the Low Stress Bicycle Network
  - Maude Ave., Borregas Ave., Remington Dr., Sunnyvale Saratoga Rd., Hollenbeck Ave.
- Ensure the ATP and Vision Zero Plans are in sync
- Update Bicycle Mode Shift by 10% by 2030
- Provide assumptions for bikeway costs

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Final Draft Plan Major Updates

Bicycle and Pedestrian Performance Goals

Bicycle-related

Goal	Baseline	Source
Achieve the League of American Bicyclists Bicycle Friendly Silver status by 2030.	Bronze status	League of American Bicyclists
Increase commuter bicycling mode share from 1.5% in 2017 to 5% in 2030 and continue to work toward increasing bicycling mode share in the next 10 years	1.50%	American Community Survey, U.S. Census Bureau
Reduce traffic fatalities and serious injuries by 50% by 2029	61 pedestrian and bicycle related fatality and serious injuries (2014-2018)	Sunnyvale Vision Zero Plan (2019), Sunnyvale Collision Database

Pedestrian-related

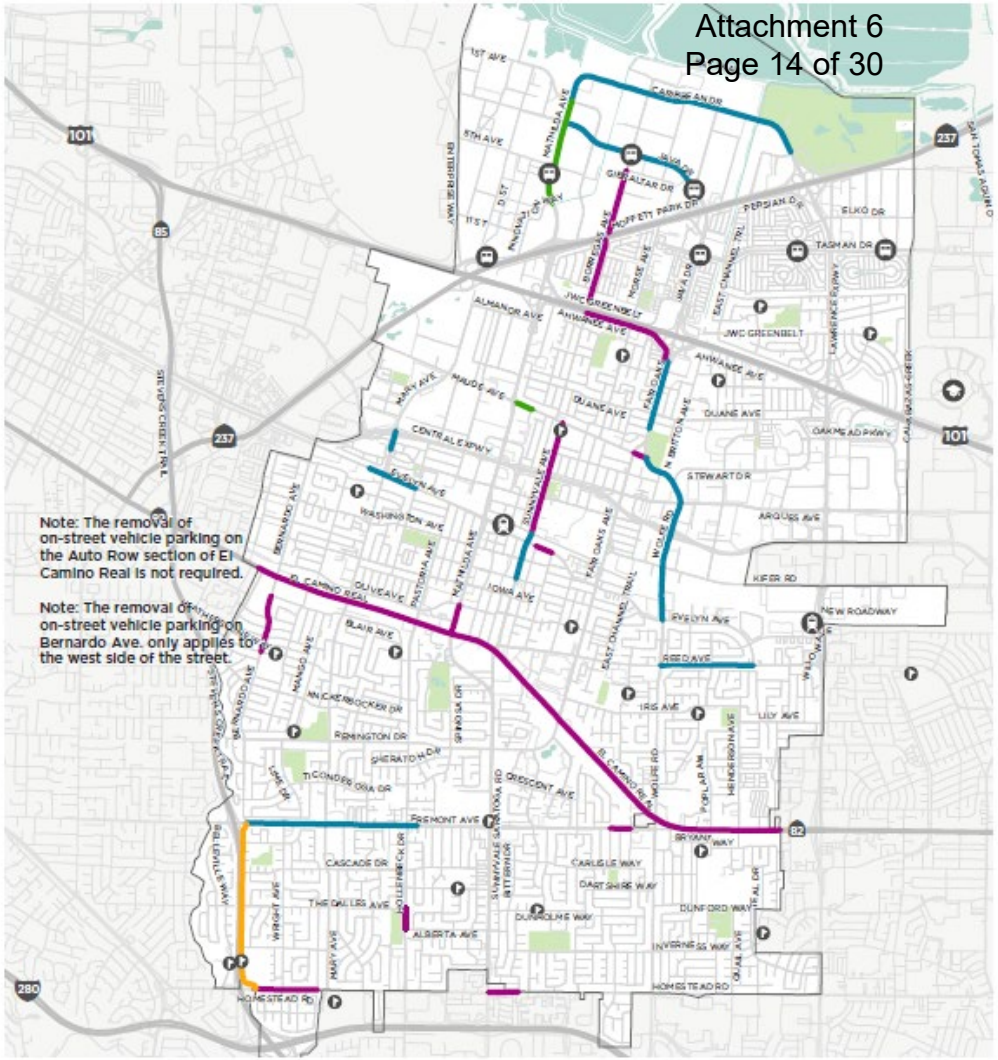
Goal	Baseline	Source
Reduce traffic fatalities and serious injuries by 50% by 2029	61 pedestrian and bicycle related fatality and serious injuries (2014-2018)	Sunnyvale Vision Zero Plan (2019)

Re-Examined Existing Bicycle Gaps

Street	Extents	Public Draft Recommendation	Final Draft Recommendation
Borregas Ave.	Hwy 101 and SR 237	Existing Class II (No Change)	**Upgrade to Class II Buffered Bicycle Lane**
Maude Ave.	Mathilda Ave and Sunnyvale Ave.	No recommendation (Gap)	**Class II Buffered Bicycle Lane (will require right-of-way)**
Remington Dr.	Bernardo Ave. and Old San Francisco Rd.	Existing Class II (No Change)	**Upgrade to Class II Buffered Bicycle Lane**

Bicycle Facility Future Design Considerations

- Roadway Reallocation (Road Diet)
- On Street Vehicle Removal
- One-Way Roadway Conversion
- Right-of-way Acquisition



Map 17. Future Design Considerations
Roadway Needs for Bicycle Recommendations

Integrated Sunnyvale GSI Plan

Cost Estimates

Planning-level cost estimates were developed for many of the infrastructure improvements recommended in the school improvement plans. The estimates are based on the design and construction costs for comparable projects in nearby jurisdictions. Additionally, estimated program costs were developed through consultation with program service providers. Program costs assume hiring a contractor to implement the activities and do not reflect City or school staff time. A list of cost estimates is shown in Table 25.

These estimates do not include maintenance and operations costs. The City will have to budget funding for annual maintenance and electricity costs, as well as replacement costs every 6-15 years.

For any of the roadway design recommendations (not including parking restrictions), the City will evaluate opportunities for including green stormwater infrastructure as part of the overall implementation. The GSI Plan identifies preliminary planning level typical costs of $276,000-$539,000 per acre for green streets. Specific costs need to be evaluated on a project-by-project basis and, therefore, are not included in the estimates provided in Table 25.

Table 25. Cost Estimates

Acronyms EA Each LF Linear Foot LS Lump Sum

			Construction		Design (15%)	
Improvement	Notes	Unit	Low	High	Low	High
ROADWAY DESIGN						
Curb Extension / Modify Skewed Intersection	Per corner. No utility relocations. Assumed 30 percent contingency for storm drainage relocation to include green stormwater infrastructure included in cost. Cost depends on size of intersection, drainage requirements and whether regrading of intersection is required.	EA	$65,000	$390,000	$9,750	$58,500
Curb Radius Reduction	Per corner. No utility relocations. Assumed 30 percent contingency for storm drainage relocation to include green stormwater infrastructure included in cost. Cost depends on size of intersection, drainage requirements and whether regrading of intersection is required.	EA	$65,000	$390,000	$9,750	$58,500
Parking Restrictions	Red paint at curb	LF	$5	$20	$1	$3
Right-Turn Slip Lane Removal(s)	No utility relocations. Assumed 30 percent contingency for storm drainage relocation to include green stormwater infrastructure included in cost.	EA	$65,000	$390,000	$9,750	$58,500
Protected Intersection	Per intersection. No utility relocations. Assumed 30 percent contingency for storm drainage relocation to include green stormwater infrastructure included in cost. Cost depends on size of intersection, drainage requirements and whether regrading of intersection is required.	EA	$520,000	3,000,000	$78,000	$585,000

GREEN STORMWATER INFRASTRUCTURE PLAN

Sunnyvale

September 2019

Recommendations

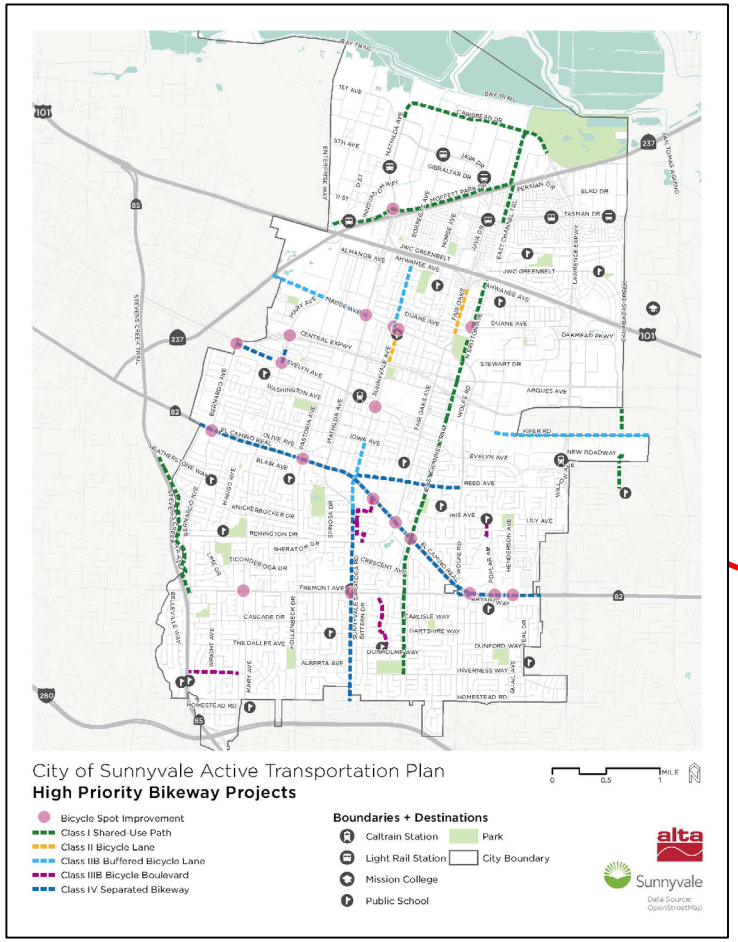
Bicycle Facilities by Type

Table 6. Existing and Proposed Bikeway Mileage Totals

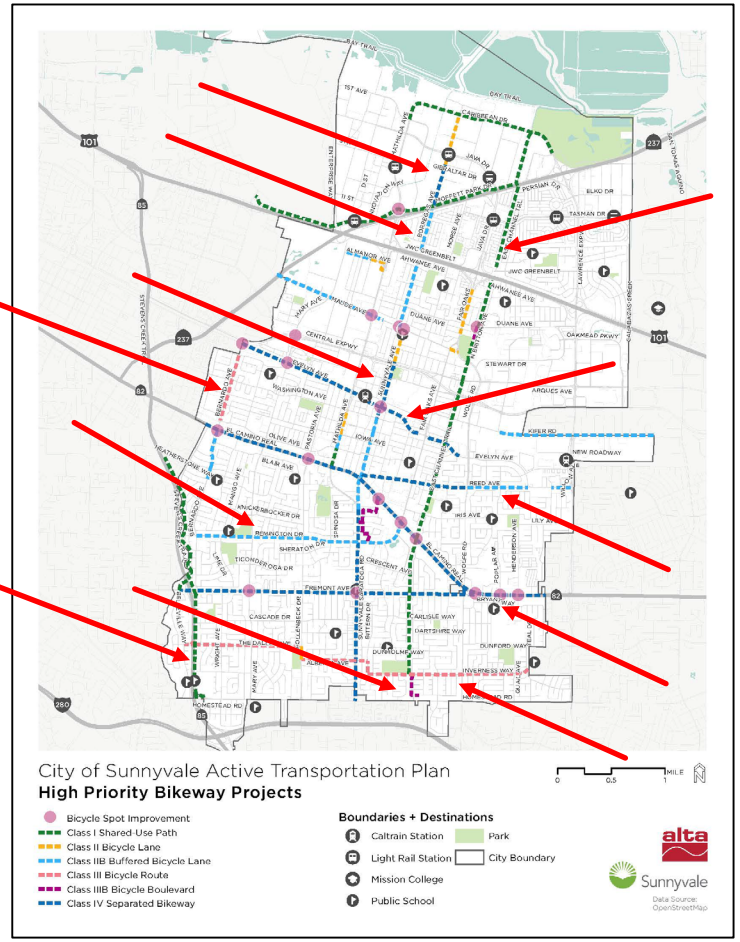
Facility Type	Existing	Proposed	Full Build Out
Class I	18.0	19.7	37.7
Class II	54.5	7.1	43.4
Class IIB	4.4	9.9	12.5
Class III	12.6	12.7	21.6
Class IIIB	0.0	22.2	22.2
Class IV	0.4	17.3	17.7
TOTAL	**89.9**	**88.9**	**155.1**

Bicycle Prioritization

Consolidated individual segments into corridors/networks for prioritization



Public Draft



Final Draft

Bicycle Projects Prioritization

Results

Table 8. Project Prioritization

High Priority	
Spot	25 projects
Bikeways	24 projects
Medium Priority	
Spot	32 projects
Bikeways	35 projects
Low Priority	
Spot	19 projects
Bikeways	26 projects

- High priority projects might take longer to implement
  - Right-of-way constraint
  - Cost
  - Coordination with other agencies
- May result in projects being completed or funded out of the priority order

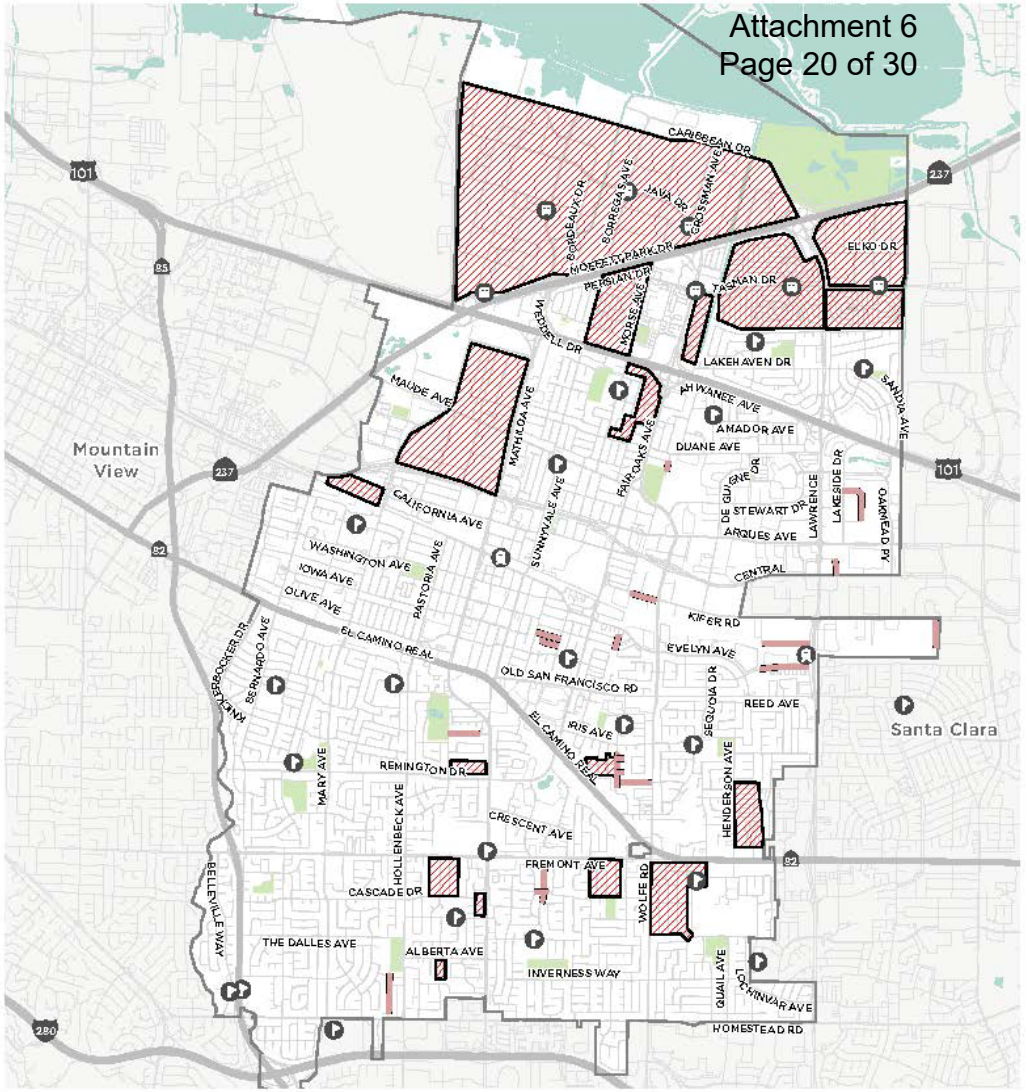
Bikeway Cost Assumptions

Low cost includes quick-build options.

Bikeway Type	Cost Estimate Per Mile Low	Cost Estimate Per Mile High	Mileage	Cost Estimate Low	Cost Estimate High
Class I Shared-Use Path	$700,000	$1,500,000	19.7	$13,790,000	$29,550,000
Class II Bicycle Lane	$132,000	$387,000	7.1	$937,200	$2,747,700
Class IIB Buffered Bike Lane	$172,000	$420,000	9.9	$1,702,800	$4,158,000
Class III Bicycle Route	$15,400	$25,700	12.7	$195,580	$326,390
Class IIIB Bicycle Boulevard	$75,000	$1,020,000	22.2	$1,665,000	$22,644,000
Class IV Separated Bikeway	$300,000	$2,313,000	17.3	$5,190,000	$40,014,900
Total			**88.9**	**$23,480,580**	**$99,440,990**

Pedestrian Connectivity – Existing Sidewalk Gaps

- On Properties previously annexed from the County
  - Neighborhoods did not want City amenities
  - Form an assessment district to pay for the sidewalk & utilities or as properties redevelop



Map 3. Pedestrian Connectivity

Missing Sidewalks
- Missing Sidewalk
- Areas with Missing Sidewalks or Sidewalk Gaps

Boundaries + Destinations
- Public School
- Caltrain Station
- VTA Light Rail Station
- Park
- City Boundary

Pedestrian Project Prioritization

Results

Table 21. Project Prioritization

High Priority	
Spot	40 projects
Medium Priority	
Spot	120 projects
Low Priority	
Spot	24 projects

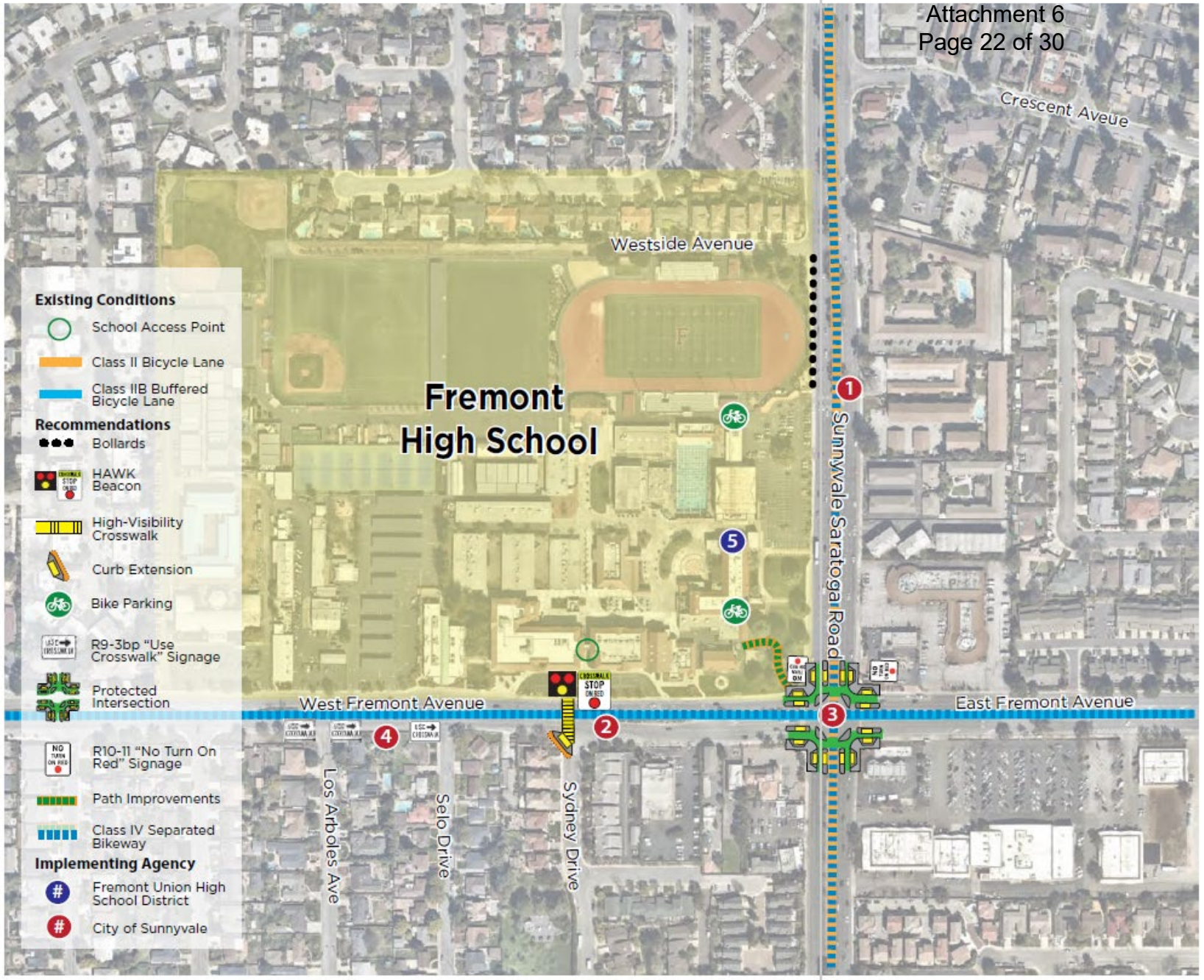
- High priority projects might take longer to implement
  - Right-of-way constraint
  - Cost
  - Coordination with other agencies
- May result in projects being completed or funded out of the priority order

SRTS Changes

Fremont High School

Sunnyvale Saratoga Rd. and W. Fremont Ave.

- Draft Plan
  - Partially Protected Intersection
- Final Plan
  - Fully Protected Intersection (see icon #3)



Safe Routes to School Implementation Packages

Table 26: COST PRIORITIZATION

Improvement	Qty.	Unit	Unit Cost Low	Unit Cost High	Construction Total Low	Construction Total High	Design (15%) Design Low	Design (15%) Design High
COST PRIORITIZATION - LOW COST IMPROVEMENTS AT ALL SCHOOLS								
High Visibility Crosswalk (assumes 40 foot crosswalk length)	6720	LF	$15	$25	$100,800	$168,000	$15,120.00	$25,200.00
Red Curb Paint	600	LF	$5	$20	$3,000	$12,000	$450.00	$1,800.00
Signage	27	EA	$375	$500	$10,125	$13,500	$1,518.75	$2,025.00
Striping	1152	LF	$8	$20	$9,216	$23,040	$1,382.40	$3,456.00
Vegetation (varies by project, costs unknown)	-	SF	-	-	-	-		
Total					**$123,141**	**$216,540**	**$18,471.15**	**$32,481.00**

Safe Routes to School Implementation Packages

Table 26: EQUITY PRIORITIZATION

Improvement	Qty.	Unit	Unit Cost Low	Unit Cost High	Construction Total Low	Construction Total High	Design (15%) Design Low	Design (15%) Design High
EQUITY PRIORITIZATION - IMPROVEMENTS AT BRALY ELEMENTARY AND COLUMBIA MIDDLE								
Curb extension	20	EA	$65,000	$390,000	$1,300,000	$7,800,000	$195,000.00	$1,170,000.00
Speed feedback sign	2	EA	$14,000	$25,000	$28,000	$50,000	$4,200.00	$7,500.00
Curb ramp	3	EA	$4,550	$13,000	$13,650	$39,000	$2,047.50	$5,850.00
Move curb	1	EA	$65,000	$390,000	$65,000	$390,000	$9,750.00	$58,500.00
Total					**$1,406,650**	**$8,279,000**	**$210,997.50**	**$1,241,850.00**

Safe Routes to School Implementation Packages

Table 26: SAFETY PRIORITIZATION

Improvement	Qty.	Unit	Construction				Design (15%)	
			Unit Cost Low	Unit Cost High	Total Low	Total High	Design Low	Design High
SAFETY PRIORITIZATION - IMPROVEMENTS AT PETERSON MIDDLE AND HOMESTEAD HIGH								
Curb extension	8	EA	$65,000	$390,000	$520,000	$3,120,000	$78,000.00	$468,000.00
HAWK	1	EA	$500,000	$800,000	$500,000	$800,000	$75,000.00	$120,000.00
Signal changes	1	EA	$2,500	$1,000,000	$2,500	$1,000,000	$375.00	$150,000.00
Curb ramp	3	EA	$4,550	$13,000	$13,650	$39,000	$2,047.50	$5,850.00
Protected intersection	1	EA	$520,000	$3,000,000	$520,000	$3,000,000	$78,000.00	$450,000.00
Total					**$1,556,150**	**$7,959,000**	**$233,422.50**	**$1,193,850.00**

Bicycle Facility Design Guidelines

APPENDIX F

Design Guidelines

Protected Intersection

A protected intersection, or "Bend Out" uses a collection of intersection design elements to maximize user comfort within the intersection and promote a high rate of motorists yielding to people bicycling. The protected intersection is typically used to facilitate safe, comfortable transitions of Class IV Bikeways at major intersections, but can be used with other bikeway types as necessary. The design maintains a physical separation within the intersection to define the turning paths of motor vehicles, slow vehicle turning speed, and offer a comfortable place for people bicycling to wait at a red signal.

Typical Use

- Streets with separated bikeways protected by wide buffer or on-street parking.
- Where two separated bikeways intersect and two-stage left-turn movements can be provided for bicycle riders.
- Helps reduce conflicts between right-turning motorists and bicycle riders by reducing turning speeds and providing a forward stop bar for bicycles.
- Where it is desirable to create a curb extension at intersections to reduce pedestrian crossing distance.

Design Features

(A) Setback bicycle crossing of 19.5 feet allows for one passenger car to queue while yielding. Smaller setback distance is possible in slow-speed, space constrained conditions.

(B) Corner island with a 15-20 foot corner radius slows motor vehicle speeds. Larger radius designs may be possible when paired with a deeper setback or a protected signal phase, or small mountable aprons. Two-stage turning boxes are provided for queuing bicyclists adjacent to corner islands.

(C) Use intersection crossing markings.

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Protected intersections feature a corner safety island and intersection crossing markings.

Protected intersections incorporate queuing areas for two-stage left turns.

Further Considerations

- Pedestrian marked crosswalks may need to be further set back from intersections in order to fit a two-stage turning queue box (minimum 6.5 feet wide).
- Wayfinding and directional signage should be provided to help bicycle riders navigate through the intersection.
- Colored pavement may be used within the corner refuge area to clarify use by people bicycling and discourage use by people walking or driving.
- Intersection approaches with high volumes of right turning vehicles may provide a dedicated right turn only lane paired with a protected signal phase. Protected signal phasing may allow different design dimensions than are described here.

Materials and Maintenance

- Green conflict striping (if used) will also generally require higher maintenance due to vehicle wear.
- Bikeways should be maintained so that there are no pot holes, cracks, uneven surfaces or debris.
- Bikeways protected by concrete islands or other permanent physical separation, can be swept by street sweeper vehicles with narrow widths.
- Access points along the facility should be provided for street sweeper vehicles to enter/exit the separated bikeway.

Approximate Cost

The cost of protected intersection elements vary depending on materials used and degree of implementation desired. Typical costs range from $750,000 to $1,500,000 for basic elements that do not require full intersection reconstruction.

- Complete reconstruction costs comparable to a full intersection.
- Retrofit implementation may be possible at lower costs if existing curbs and drainage are maintained. Inexpensive materials can used, such as paint, concrete planters, and bollards.

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Next Steps

Next Steps

- **Active Transportation Plan**
  - Overall guidance for future bicycle/pedestrian/SRTS improvements
- **Future Specific/Area Plans and Developments**
  - ATP will serve as the guidance
  - Individual Plan/Development will take a closer look at additional potential bicycle and pedestrian improvements within the study area

Sunnyvale

Recommendation to City Council

Thank you
for your
contributions!