

# Hayward High Injury Network Phase 1 Study Evaluation Report

DRAFT

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# 1 Introduction

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The Hayward High Injury Network Phase 1 Study (“Study”) investigates safety improvements on three corridors: A Street, B Street, and Tennyson Road. These three streets were previously identified in the City of Hayward’s (“City”) 2023 Local Road Safety Plan (LRSP) as high priorities within the High Injury Network (HIN). The Study identifies and evaluates community-supported safety improvements on the three corridors and prepares conceptual plans and cost estimates that can be used to secure funding and advance detailed design at later project stages. This Study is the first of two phases by the City to improve safety conditions on its HIN.

## 1.1 Report Purpose

This report analyzes the potential effects on parking, traffic, and safety for proposed improvement alternatives on A Street, B Street, and Tennyson Road. The project team conducted a study of existing conditions, public outreach, and formal safety performance studies called Road Safety Audits to develop planned project alternatives and safety countermeasures. This report documents likely impacts on traffic flow, parking utilization, and safety in order to inform the selection of a preferred alternative and safety countermeasures.

The project team is sharing key findings from this report with the public through various outreach activities. After consultation with the public, a preferred alternative will be selected and preliminary engineering advanced, at which time analysis results will be updated.

## 1.2 Study Area

The Study Area encompasses three corridors:

- A Street from Hesperian Boulevard to Watkins Street/Lucky’s Driveway
- B Street from Martin Luther King Drive to Watkins Street/Lucky’s Driveway
- Tennyson Road from Hesperian Boulevard to Mission Boulevard

A Street and Tennyson Road serve as major east-west thoroughfares. All three corridors are adjacent to commercial and residential uses. A Street and B Street connect into downtown Hayward, which is undergoing similar HIN planning in a separate study. **Figure 1-1** illustrates the A Street and B Street Study Area, and **Figure 1-2** illustrates the Tennyson Road Study Area.

Figure 1-1: A and B Street Study Area Map

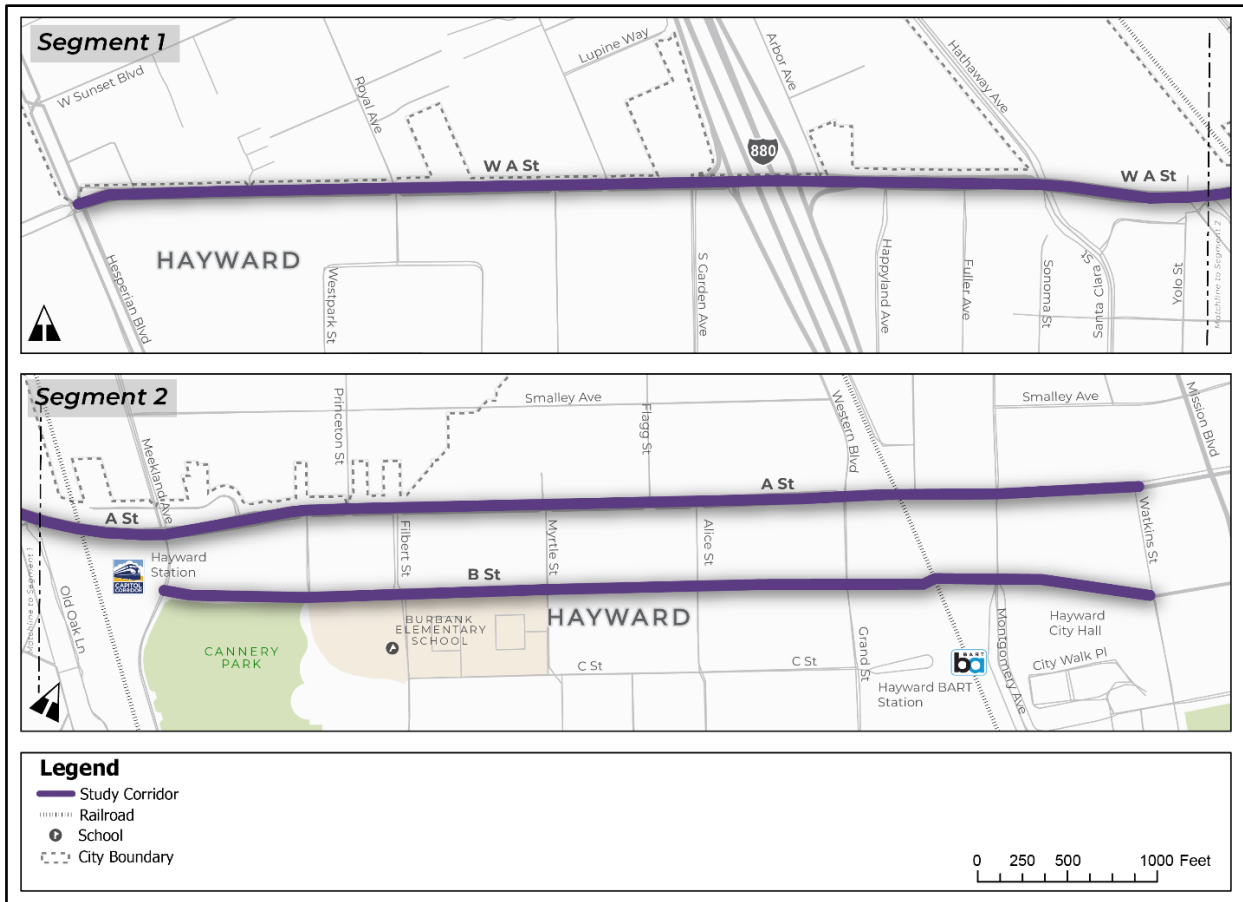
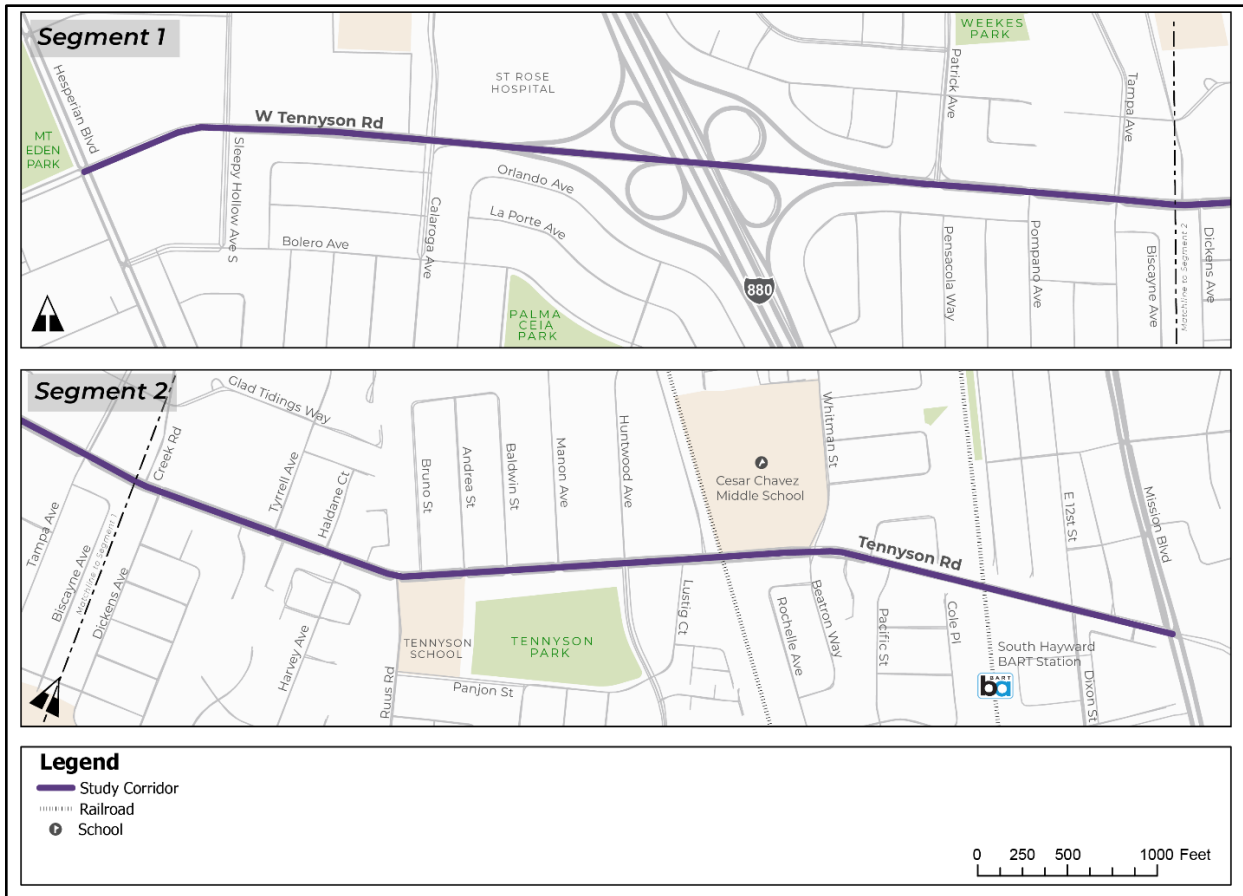


Figure 1-2: Tennyson Road Study Area Map



## 2 Analysis Methodology

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The data collection and analysis methodology are detailed below.

### 2.1 Speed Analysis

The City provided historical speed data for five locations within the Study Area:

- A Street between Myrtle Street and Flagg Street (2023)
- B Street between Filbert Street and Myrtle Street (2018)
- Tennyson Road between Sleepy Hollow Avenue and Calaroga Avenue (2024)
- Tennyson Road between Tampa Avenue and Tyrrell Avenue (2024)
- Tennyson Road between Whitman Street and Dixon Street (2024)

Metrics include average speed, the 85<sup>th</sup> percentile speed, the top speed, and the percentage of drivers found to be driving 10 miles per hour or more over the speed limit. Raw speed data is available in **Appendix A**.

### 2.2 Traffic Analysis

Highway Capacity Manual (HCM) methodologies were performed in Synchro 12 software to compare the Level of Service (LOS) and queue length between the existing conditions and proposed project conditions for each corridor. Existing and project conditions are described in more detail in each corridor's respective sections of this report.

#### 2.2.1 Existing Conditions

Traffic counts were collected on each study corridor for morning and afternoon peak periods: 7 AM to 9 AM and 4 PM to 6 PM. Data were collected on weekdays in March, April, September, and October of 2025. Raw traffic count data can be found in **Appendix B**. Traffic analysis determined the existing LOS for each Study intersection. Per the City's Transportation Impact Analysis Guidelines, projects should maintain a minimum vehicle LOS E at signalized intersections except when existing LOS is F and cannot feasibly be improved. No specific LOS metrics apply for unsignalized intersections, but average delay should not increase by more than five seconds for unsignalized intersections already at LOS F.

#### 2.2.2 Project Conditions

The project proposes operational and geometric changes for each corridor. Potential changes to signal operations, traffic control, and roadway geometry are evaluated in Synchro.

### 2.3 Parking Analysis

#### 2.3.1 Existing Conditions

The project team performed field observations to determine parking occupancy along each project street and adjacent side streets within 500 feet. Parking counts were collected on three weekdays (Tuesday through Thursday) and Saturday, in September and October of 2025. Data was collected hourly from 11 AM to 2PM, 5 PM to 8PM, and 2 AM to 3 AM. Raw parking count data can be found in **Appendix C**.

Parking inventories, or the number of available parking spaces on a street, were counted from stall markings or estimated where unmarked, assuming 20' for the average car length. The project team also

noted restrictions including parking prohibitions, spaces reserved for people with disabilities, short-term parking (less than or equal to 30 minutes), and permit parking.

To identify the peak daytime and nighttime parking hours for weekdays, parking occupancy was averaged across the three weekdays for each hour, and the hour with the highest average occupancy was chosen as the peak hour. Peak hours were determined for both daytime (11 AM to 2 PM, 5 PM to 8 PM) and nighttime periods (2 AM to 3 AM). The same process was used to determine weekend peak hour occupancy for the Saturday data. This analysis was performed separately for A/B Streets and Tennyson Road.

### 2.3.2 Project Conditions

For each corridor, project alternatives may include parking lane removal, parking-protected bike lanes, or spot removal of parking spaces to improve sight distance or modify bus stops. Cars parked in these spaces under existing conditions might be relocated to available parking spaces elsewhere on the corridor or on side streets. Estimates for parking diversion are detailed in the respective corridor analysis sections. For this analysis, "Nearby side streets" are assumed to be those within 500 feet of the impacted parking segment. Where cars may not find parking within 500 feet due to limited availability are noted on the parking diversion maps.

Many locations have off-street surface parking lots or residential driveways where cars may be parked if on-street spaces are removed. These alternatives are noted but not included in the quantitative analysis.

## 2.4 Safety Analysis

A safety analysis was conducted to assess the anticipated effects of the proposed safety countermeasures on each corridor. Using the Caltrans Local Road Safety Manual, the reduction of crashes was estimated by using the crash reduction factors (CRFs). To visualize which CRFs are relevant, the recommended safety countermeasures were overlaid with the collision analysis maps presented in the existing conditions analysis. This safety analysis was conducted for both intersection spot improvements and the corridor-wide project alternatives. Tables identifying the project alternative safety analysis, as well as safety analysis graphics can be found in the respective corridor analysis sections.

## 2.5 Signal Warrant Analysis

Traffic signal warrants were completed at three existing unsignalized locations per Chapter 4C of the California Manual on Uniform Traffic Control Devices (MUTCD) to assess whether the installation of a traffic signal is warranted. If one or more warrants are met, a traffic signal is justified and subject to further study. The MUTCD identifies nine different warrants, each of which were evaluated for this project:

- **Warrant #1 (Eight-Hour Vehicular Volume)** includes two conditions, if either condition is met, the warrant is satisfied:
  - **Condition A** is intended for locations where a large volume of intersecting traffic is the principal reason for a traffic control signal.
  - **Condition B** is intended for locations where Condition A is not satisfied and where the traffic volume on a major street is so heavy that a minor intersecting street suffers excessive delay or conflict when entering or crossing the major street.

- **Warrant #2 (Four-Hour Vehicular Volume)** is intended for locations where the volume of intersecting traffic is the principal reason for a traffic signal. This warrant is satisfied if each of any 4 hours of any average day meets the volume conditions.
- **Warrant #3 (Peak Hour)** is intended for locations where minor-street traffic experiences undue delay when entering or crossing the major street.
- **Warrant #4 (Pedestrian Volume)** is intended for locations where pedestrians experience excessive delay when crossing a major street due to traffic volumes on the major street.
- **Warrant #5 (School Crossing)** is intended for application where the fact that school children cross the major street is the principal reason to consider installing a traffic control signal.
- **Warrant #6 (Coordinated Signal System)** is intended for locations where a traffic signal is necessary to maintain progressive movement in a wider coordinated signal system.
- **Warrant #7 (Crash Experience)** is intended for locations where the severity and frequency of crashes are the principal reasons for a traffic signal.
- **Warrant #8 (Roadway Network)** is intended for locations where a traffic signal would encourage concentration and organization of traffic flow on a roadway network.
- **Warrant #9 (Intersection Near a Grade Crossing)** is intended for locations where none of the other eight traffic signal warrants are met, but the intersection's proximity to a grade crossing on an intersection approach controlled by a STOP or YIELD sign is the principal reason for a traffic signal.

## 3 A & B Street Analysis

### 3.1 Existing Conditions

#### 3.1.1 Speed Analysis

A Street has a posted speed limit of 30 miles per hour west of Grand Street/Western Boulevard and a posted speed limit of 25 miles per hour east of Grand Street/Western Boulevard. B Street has a speed limit of 25 miles per hour corridor-wide. Existing auto speeds are shown below in **Table 3-1**.

**Table 3-1: A and B Street Speed Analysis Results**

Street	Location	Speed Limit	Average Speed	85 <sup>th</sup> Percentile Speed	Top Speed	Percentage Speeding over 10 mph
<b>A Street</b>	Between Myrtle Street and Flagg Street	30 mph	36 mph	42 mph	70-75 mph	25%
<b>B Street</b>	Between Filbert Street and Myrtle Street	25 mph	27 mph	33 mph	45-49 mph	4%

The 85<sup>th</sup> percentile speed is a metric commonly used for the purposes of speed management, representing the speed that 15 percent of drivers exceed. For A Street the 85<sup>th</sup> percentile speed was 12 miles per hour over the speed limit. Twenty-five percent of drivers were found to be speeding between Myrtle and Flagg Street by over 10 miles per hour. The fastest speed recorded over the speed survey was 70-75 miles per hour. For B Street the 85<sup>th</sup> percentile speed was eight miles per hour over the speed limit, and four percent of drivers were found to be driving 10 miles per hour over the posted speed limit.

#### 3.1.2 Traffic Analysis

Each of the 10 study intersections operate at the City's LOS standard of E or better during AM and PM peak hours. The signalized intersection with the highest existing delay is Santa Clara Street/Hathaway Avenue which operates at a LOS D in both time periods.

The side-street stop-controlled intersection with the most delay is A Street and Happyland Avenue/McDonald's Driveway, which operates at LOS D, specifically for the left-turn movement from Happyland Avenue to A Street during the AM peak hour. All other movements at this intersection operate at LOS C or better during the AM and PM peak hours. Intersection level results are shown in **Table 3-2**. Detailed Synchro analysis sheets for A and B Street are included in **Appendix D**.

**Table 3-2: A and B Street Existing Traffic LOS**

SUMMARY OF INTERSECTION OPERATION EXISTING CONDITIONS						
Int. #	Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	A St and Hesperian Blvd	S	36.0	D	35.5	D
2	A St and Royal Ave	S	15.1	B	13.5	B
3	A St and Victory Dr	S	8.7	A	11.0	B
4	A St and S Garden Ave	SSSC	11.0	B	10.0	A
5	A St and Happyland Ave/McDonald's Dwy	SSSC	29.8	D	18	C
6	A St and Santa Clara St/Hathaway Ave	S	44.6	D	50.3	D
7	A St and Princeton St	S	15.7	B	10.7	B
8	A St and Filbert St	S	13.7	B	11.2	B
9	A St and Grand St/Western Blvd	S	31.3	C	43.7	D
10	A St and Montgomery Ave	S	18.4	B	16.8	B
11	B St and Grand St	S	20.9	C	16.4	B
12	B St and Montgomery Ave	SSSC	11.0	B	10.0	A
13	B St and Watkins St	S	15.8	B	16.0	B

**Notes:**  
- **Bold** values indicate intersections operating at an unacceptable Level of Service  
- Delay values for unsignalized intersections represent the average vehicle delay on the worst (highest delay) intersection approach.  
S = Signalized; SSSC = Side Street Stop Controlled

### 3.1.3 Parking Analysis

On A Street and B Street, the weekday daytime peak hour was 12 PM to 1 PM, and the weekend daytime peak hour was 11 AM to 12 PM. The weekday daytime peak hour had the highest parking occupancy of all hours with an occupancy of 79% on A Street and B Street, leaving 21% of available parking spaces unused. The nighttime peak hour for both the weekday and the weekend was 2 AM to 3 AM. Overall, parking utilization was higher during the daytime than the nighttime. **Table 3-3** summarizes parking utilization for all peak hours for A Street, B Street, and adjacent side streets.

**Table 3-3: A Street and B Street Existing Parking Utilization Summary**

On-Street Parking Location	Parking Inventory	Weekday Daytime Peak Hour Parking Occupancy (12PM-1PM)	Weekday Nighttime Peak Hour Parking Occupancy (2AM-3AM)	Weekend Daytime Peak Hour Parking Occupancy (11AM-12PM)	Weekend Nighttime Peak Hour Parking Occupancy (2AM-3AM)
A Street	89	72%	39%	64%	27%
B Street*	21	100%	48%	100%	33%
A Street and B Street Side Streets	184	75%	56%	60%	51%
Total	263	76%	50%	64%	43%

\*B Street parking data was collected between Montgomery Avenue and Watkins Street. No data was collected for B Street west of Montgomery Avenue as minimal parking impact is expected in that area.

**Figure 3-1** shows the existing parking inventory on A Street and B Street and adjacent side streets. On A Street, parking stalls are concentrated between Walnut Street and Grand Street/Western Boulevard, and Montgomery Ave and Watkins Street. There is no existing on-street parking on A Street west of Meekland Avenue. On-street parking exists on B Street west of Montgomery Avenue, but the project alternatives have minimal parking impact, so data were not collected. **Figure 3-2** shows the existing weekday parking occupancy in the A Street and B Street Study Area.

Figure 3-1: A Street and B Street Existing Parking Inventory

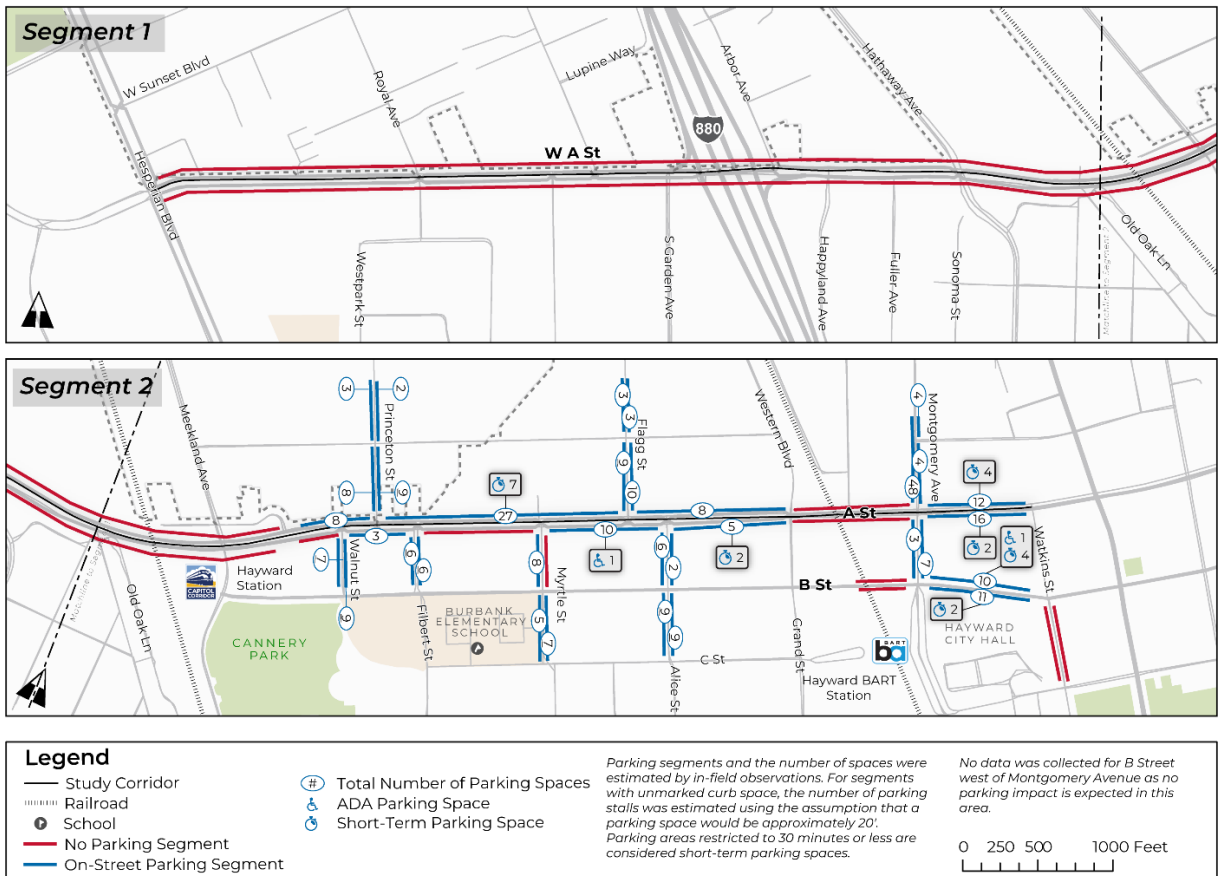
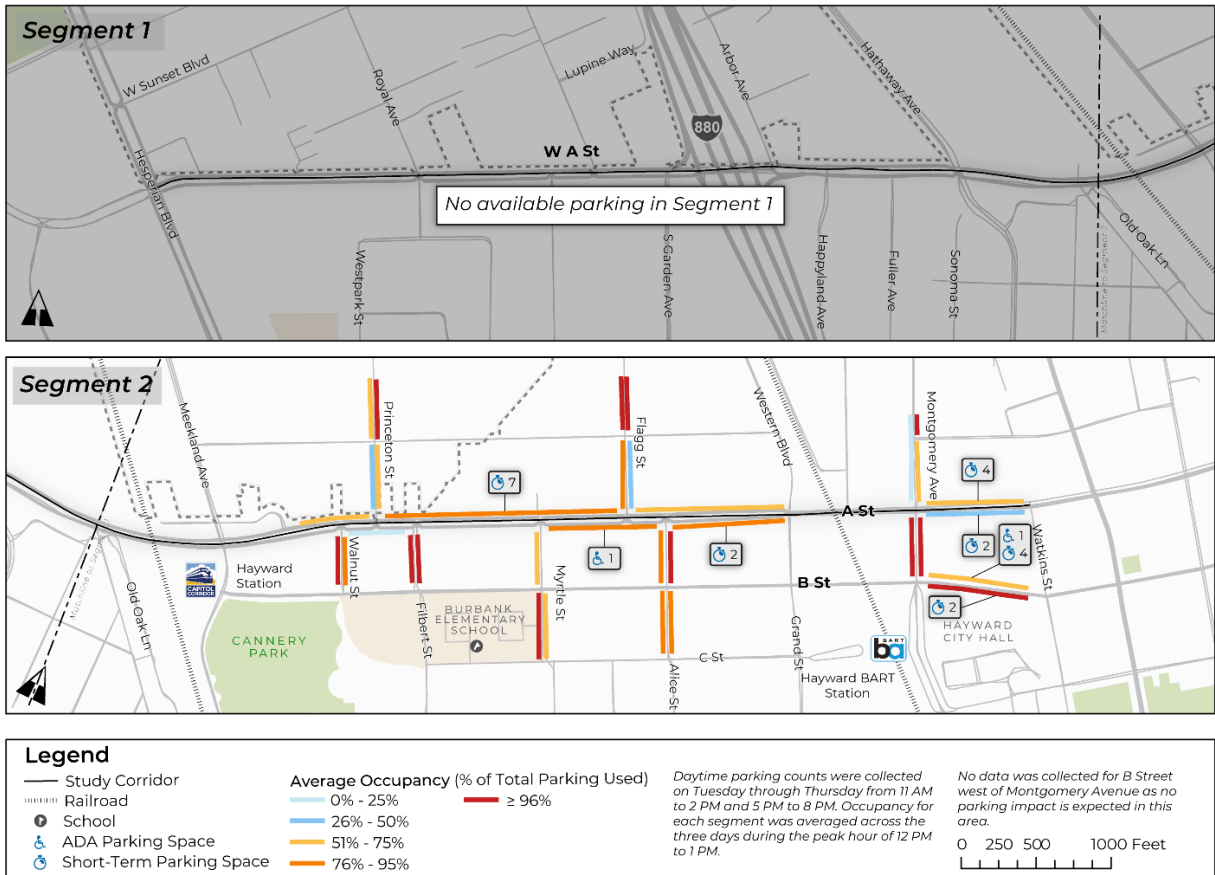


Figure 3-2: A Street and B Street Existing Weekday Daytime Peak Parking Utilization



During the weekday daytime peak hour, there are only two segments on Study Area streets with parking utilization that is considered at capacity (above 95% utilization): A Street between Alice Street and Grand Street (south side) and B Street between Montgomery Avenue and Watkins Street (south side). All other Study Area segments have available capacity during the weekday daytime peak hour. See **Appendix E** for all parking figures for A and B Street.

### 3.1.4 Signal Warrant Analysis

The two intersections with uncontrolled pedestrian crossings across A Street were analyzed for signal warrants. If the signal warrants are met, a traffic signal may be indicated to enhance the crossing for pedestrians.

**Table 3-4** summarizes the signal warrant analysis results for the intersection of A Street and Myrtle Street. As shown in the table, no warrants were satisfied, meaning that a traffic signal is not justified for this location. Full signal warrant worksheets are included in **Appendix F**.

**Table 3-4: A Street and Myrtle Street Traffic Signal Warrant Summary**

Signal Warrant		Carmel Valley Road and Valley Greens Drive
<b>Warrant #1 (8-hour Vehicular Volume)</b>	Condition A	Not Satisfied
	Condition B	Not Satisfied
<b>Warrant #2 (4-hour Vehicular Volume)</b>		Not Satisfied
<b>Warrant #3 (Peak Hour)</b>		Not Satisfied
<b>Warrant #4 (Pedestrian Volume)</b>		Not Satisfied
<b>Warrant #5 (School Crossing)</b>		Not Satisfied
<b>Warrant #6 (Coordinate Signal System)</b>		Not Satisfied
<b>Warrant #7 (Crash Experience)</b>		Not Satisfied
<b>Warrant #8 (Roadway Network)</b>		Not Satisfied
<b>Warrant #9 (Intersection Near a Grade Crossing)</b>		Not Satisfied

**Table 3-5** summarizes the signal warrant analysis results for the intersection of A Street and Flagg Street. As shown in the table, no warrants were satisfied, meaning that a traffic signal is not justified for this location.

**Table 3-5: A Street and Flagg Street Traffic Signal Warrant Summary**

Signal Warrant		Carmel Valley Road and Valley Greens Drive
<b>Warrant #1 (8-hour Vehicular Volume)</b>	Condition A	Not Satisfied
	Condition B	Not Satisfied
<b>Warrant #2 (4-hour Vehicular Volume)</b>		Not Satisfied
<b>Warrant #3 (Peak Hour)</b>		Not Satisfied
<b>Warrant #4 (Pedestrian Volume)</b>		Not Satisfied
<b>Warrant #5 (School Crossing)</b>		Not Satisfied
<b>Warrant #6 (Coordinate Signal System)</b>		Not Satisfied
<b>Warrant #7 (Crash Experience)</b>		Not Satisfied
<b>Warrant #8 (Roadway Network)</b>		Not Satisfied
<b>Warrant #9 (Intersection Near a Grade Crossing)</b>		Not Satisfied

## 3.2 Project Alternatives

After completing the existing conditions analysis, the first round of outreach, and the road safety audits, project alternatives and safety countermeasures were identified for each of the three project corridors. Potential alternatives are characterized as “Base Corridor Enhancements Alternative”, “Connected Corridor Alternative”, or “Reimagined Corridor Alternative.” Detailed concepts illustrating proposed cross sections and safety countermeasure locations on A Street and B Street can be found in **Appendix G**.

The East Bay Greenway Multimodal Project is a long-term effort to provide a continuous high-quality walking and bicycling route between Lake Merritt and South Hayward. The project proposes a two-way cycle track on the south side of B Street between Montgomery Street and Grand Street. This aligns with the Reimagined Corridor Alternative.

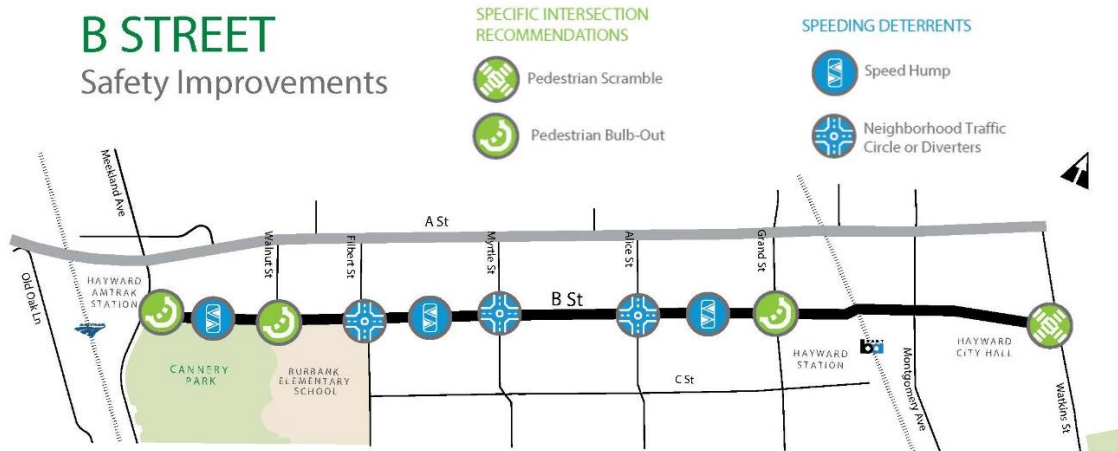
### 3.2.1 Base Corridor Enhancements Alternative

In this alternative, the existing roadway configuration is maintained with improvements consisting of spot improvements only, such as pedestrian bulb-outs, protected traffic signal phasing, and rectangular rapid flashing beacons (RRFBs). An overview of the spot improvement locations for A Street can be seen in **Figure 3-3** and for B Street in **Figure 3-4**. Other corridor wide recommendations such as pedestrian scale lighting, high-visibility crosswalks, and advance stop bars are not included in these graphics.

**Figure 3-3: A Street Spot Improvement Locations**



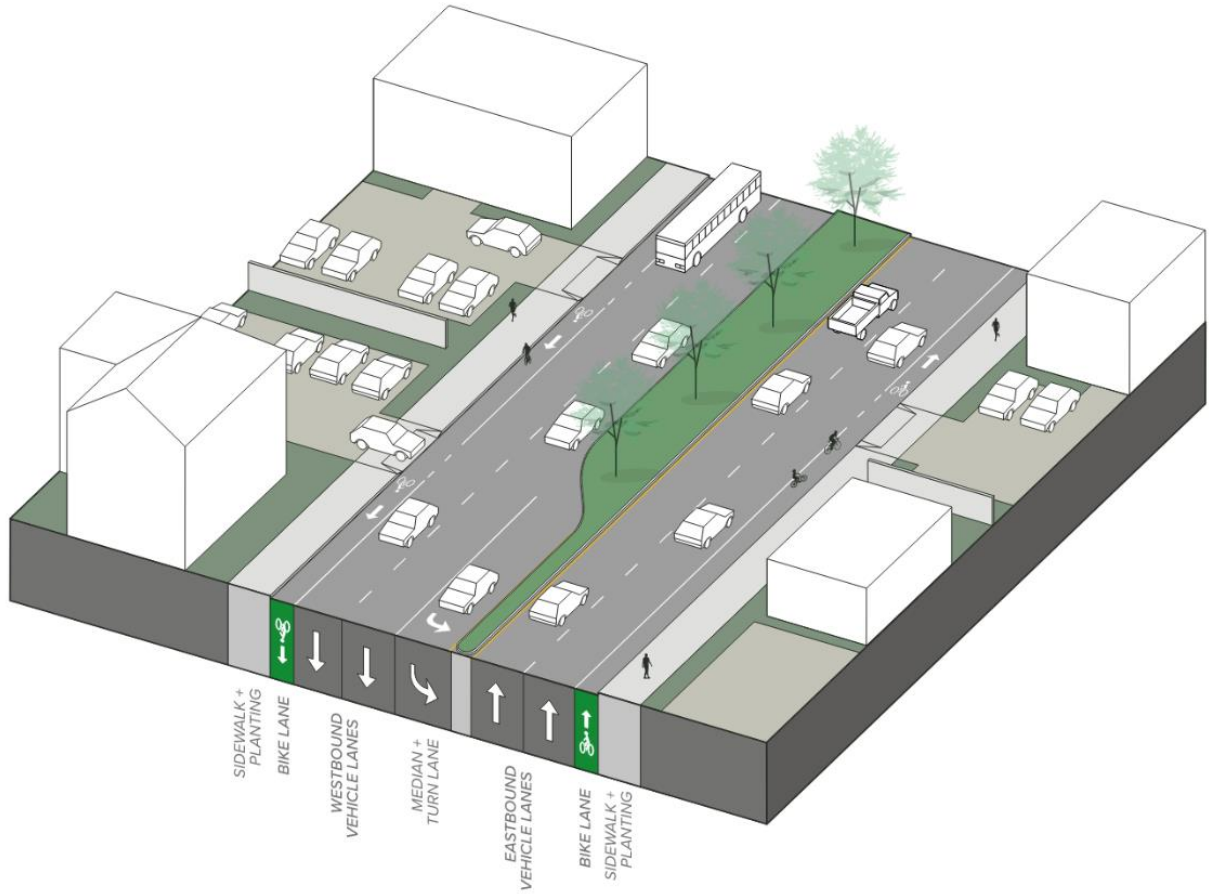
Figure 3-4: B Street Spot Improvement Locations



3.2.1.1.1 A Street West of Meekland Avenue

West of Meekland Avenue, A Street primarily has two travel lanes in both directions and a center median that opens into a turning lane at intersection approaches. There are also Class II bike lanes. A typical cross section for this segment is shown in **Figure 3-5**.

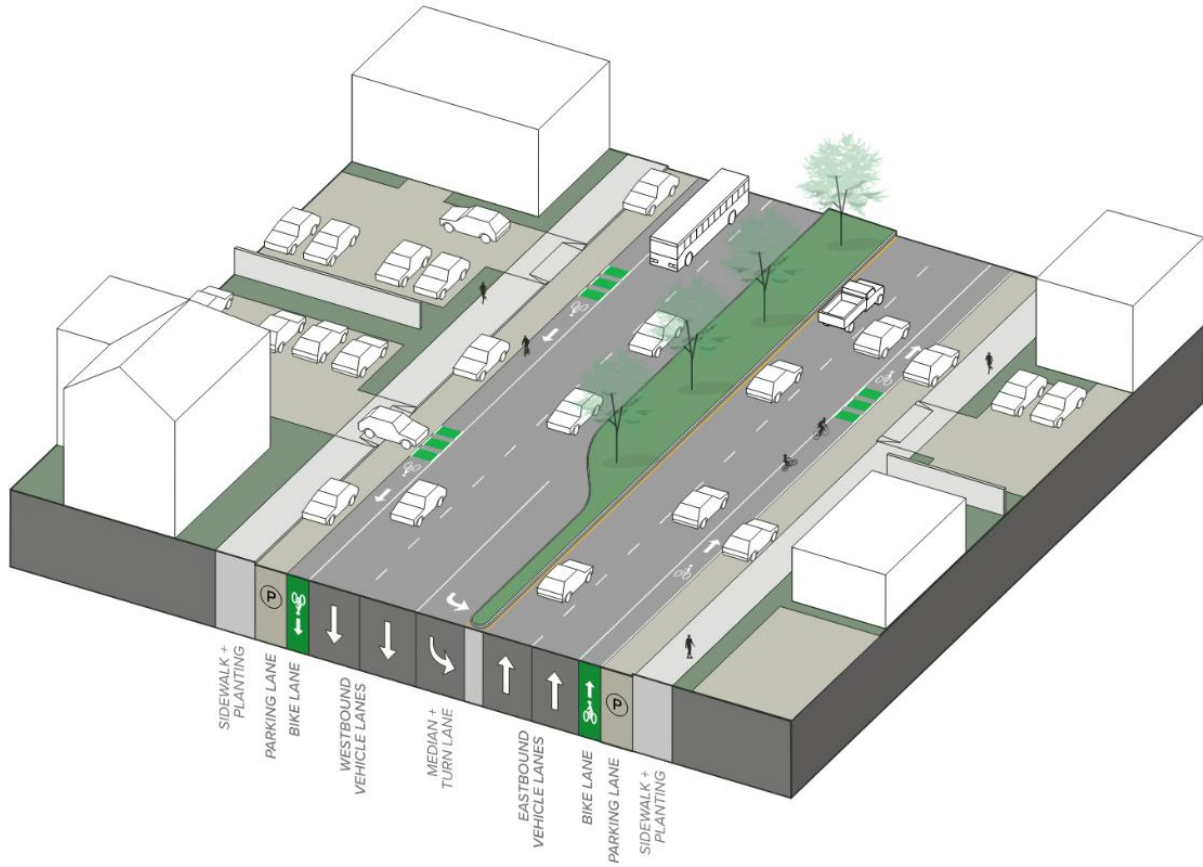
**Figure 3-5: A Street West of Meekland Avenue Existing Conditions/Base Corridor Enhancements Alternative Cross-Section**



3.2.1.1.2 A Street East of Meekland Avenue

East of Meekland Avenue, A Street typically has two travel lanes in both directions, a center median that opens to a turning lane at intersection approaches, and on-street parking. A Street has Class II bike lanes between Meekland Avenue and Montgomery Avenue, and no bike facilities east of Montgomery Avenue. A typical cross-section for this segment of A Street is shown in **Figure 3-6**.

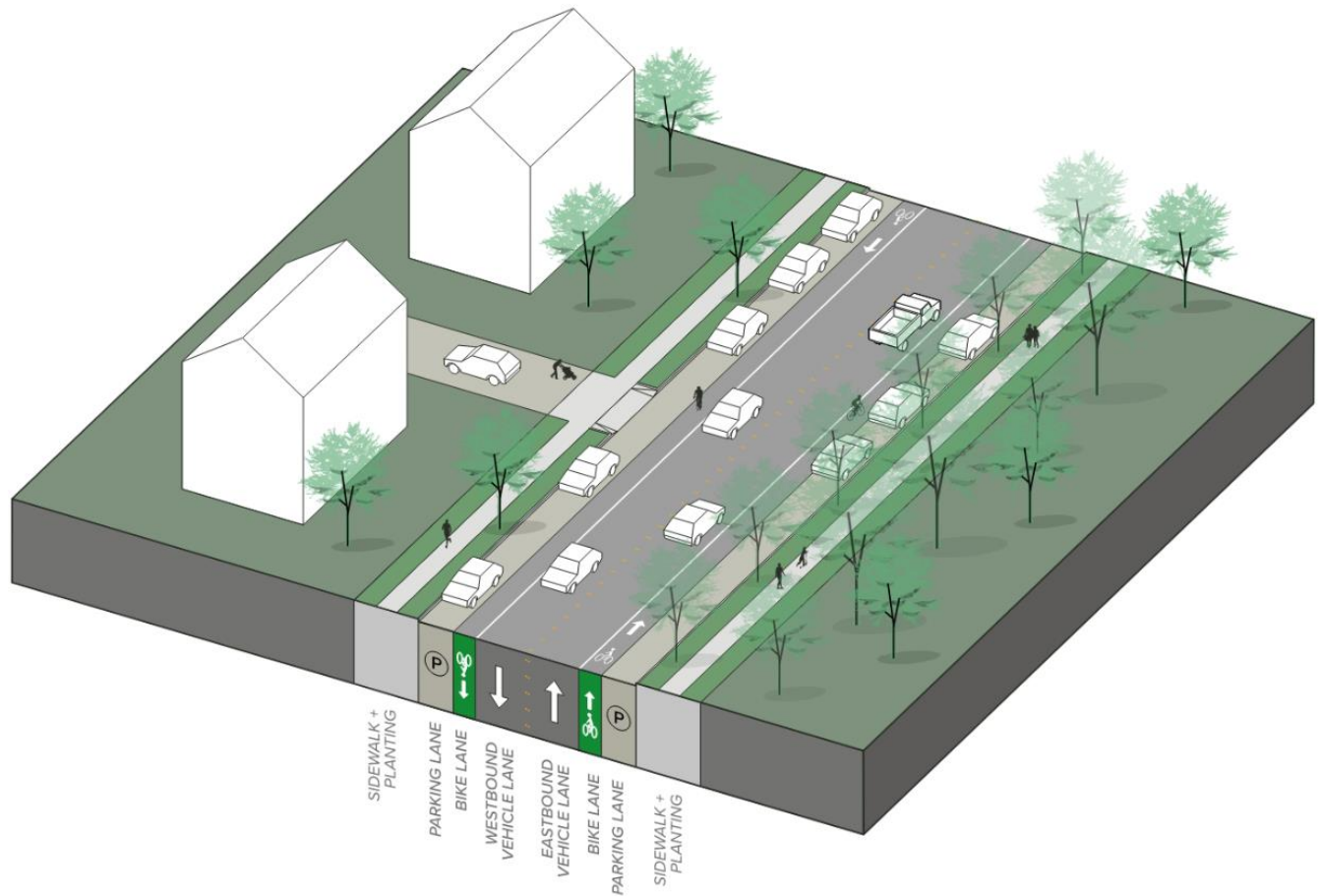
**Figure 3-6: A Street East of Meekland Avenue Existing Conditions/Base Corridor Enhancements Alternative Cross-Section**



3.2.1.1.3 B Street West of Montgomery Avenue

B Street west of Montgomery Avenue typically has one travel lane in either direction, Class II bike lanes west of Grand Street/Western Boulevard, and parking lanes on both sides of the corridor. A typical cross-section of this segment is shown in **Figure 3-7**.

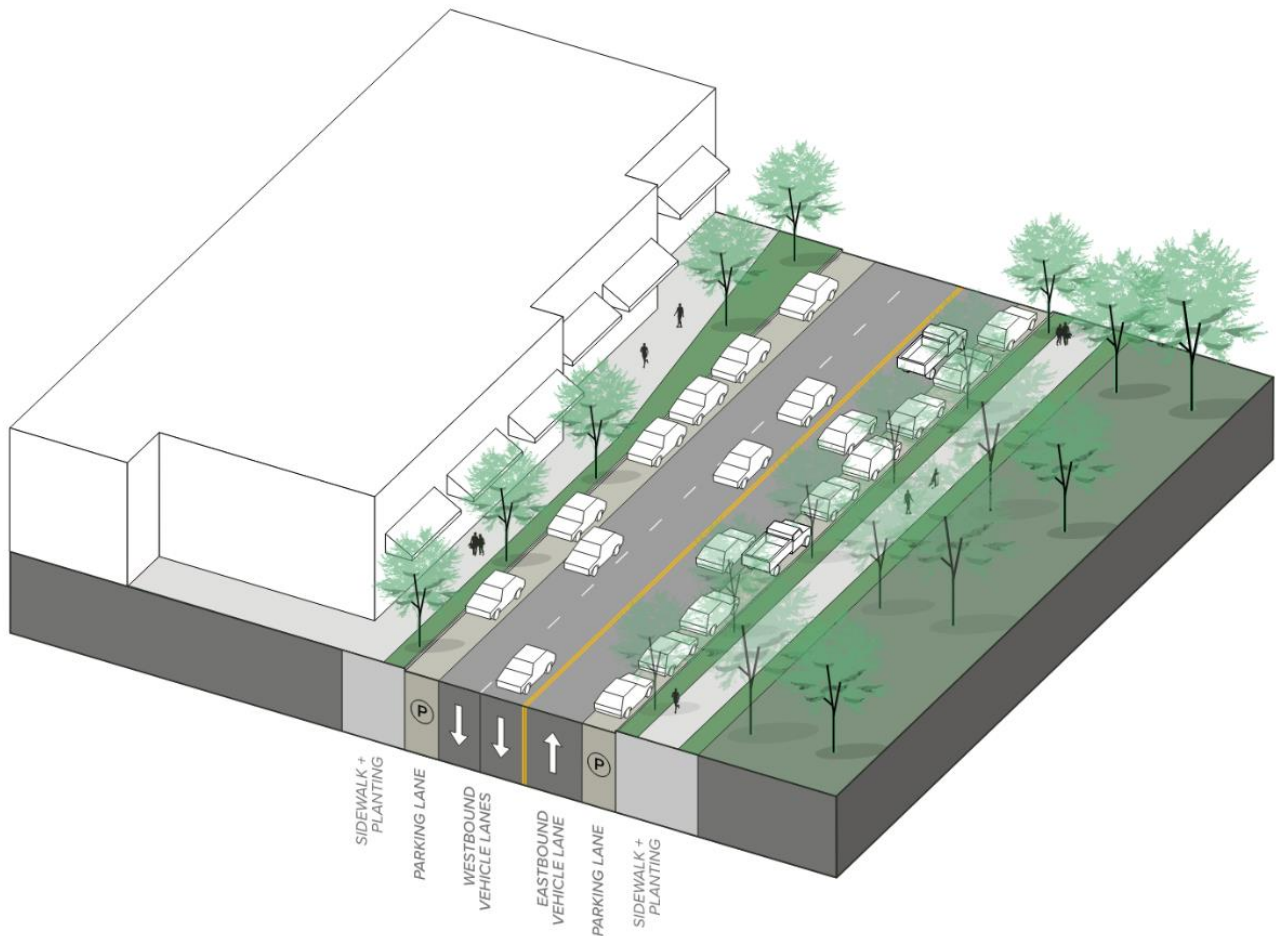
**Figure 3-7: B Street West of Montgomery Avenue Existing Conditions/Base Corridor Enhancements Alternative Cross-Section**



### 3.2.1.1.4 B Street East of Montgomery Avenue

East of Montgomery Avenue, B Street has one travel lane in the eastbound direction, two travel lanes in the westbound direction, and parking lanes on both sides. No bike facilities are present for this segment of B Street. A typical section for B Street east of Montgomery Avenue is shown in **Figure 3-8**.

**Figure 3-8: B Street East of Montgomery Avenue Existing Conditions/Base Corridor Enhancements Alternative Cross-Section**



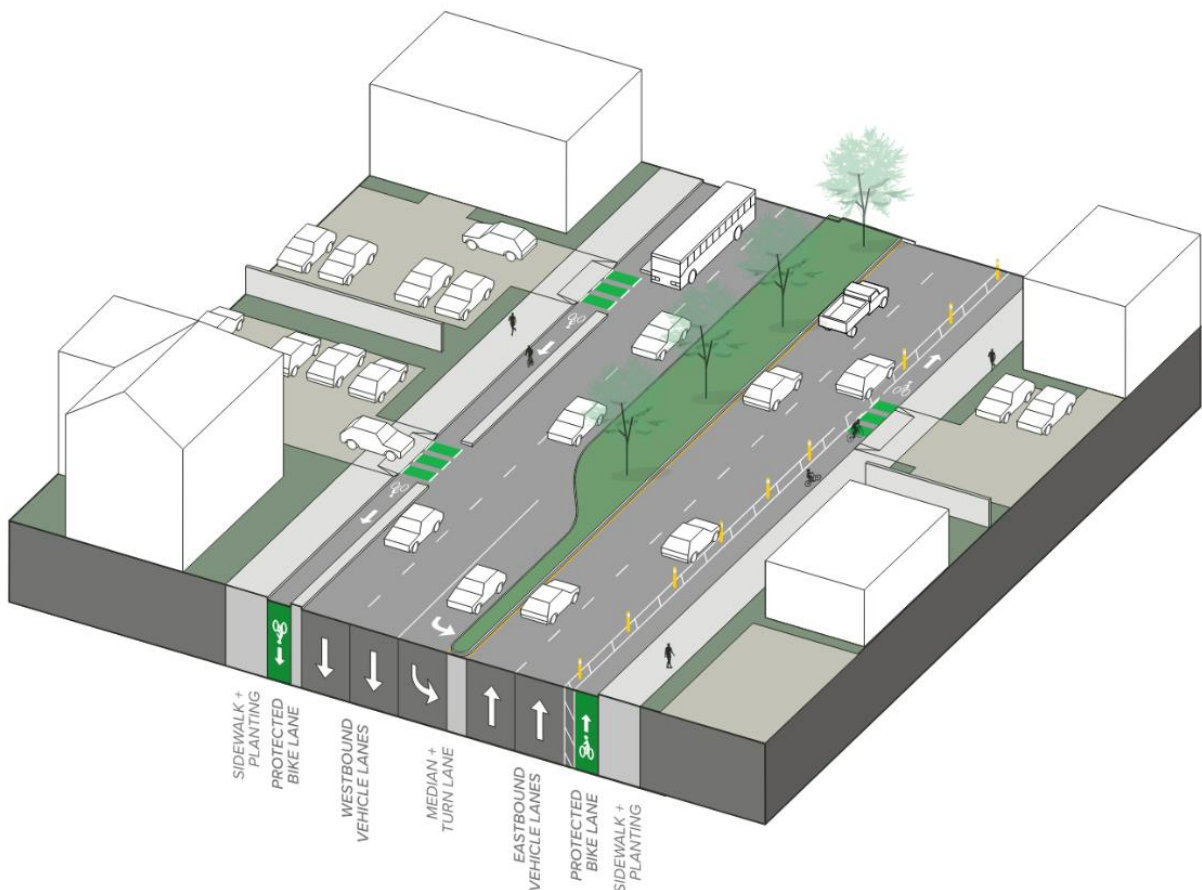
### 3.2.2 Connected Corridor Alternative

In this alternative, travel lanes would be narrowed, and parking lane or travel lane removal would be recommended in key areas. These recommendations allow for continuous bike facilities on A Street and B Street. Existing Class II bike lanes are upgraded to Class IIB buffered bike lanes, Class IV separated bike lanes, or Class IV parking-protected bike lanes. In segments without existing bike lanes, new Class II bike lanes are provided. Spot improvements noted in the Base Corridor Enhancements Alternative are included for this alternative as well, with an additional option to assess neighborhood traffic circles or diverters on B Street.

#### 3.2.2.1.1 A Street West of Meekland Avenue

West of Meekland Avenue, travel lanes would be narrowed to upgrade Class II bike lanes to Class IV separated bike lanes. Bike facility separation can consist of flex posts, concrete curbs, or another form of vertical separation. **Figure 3-9** shows a typical section for A Street west of Meekland Avenue, with flex posts shown on the south side of the street and concrete curbs on the north side of the street.

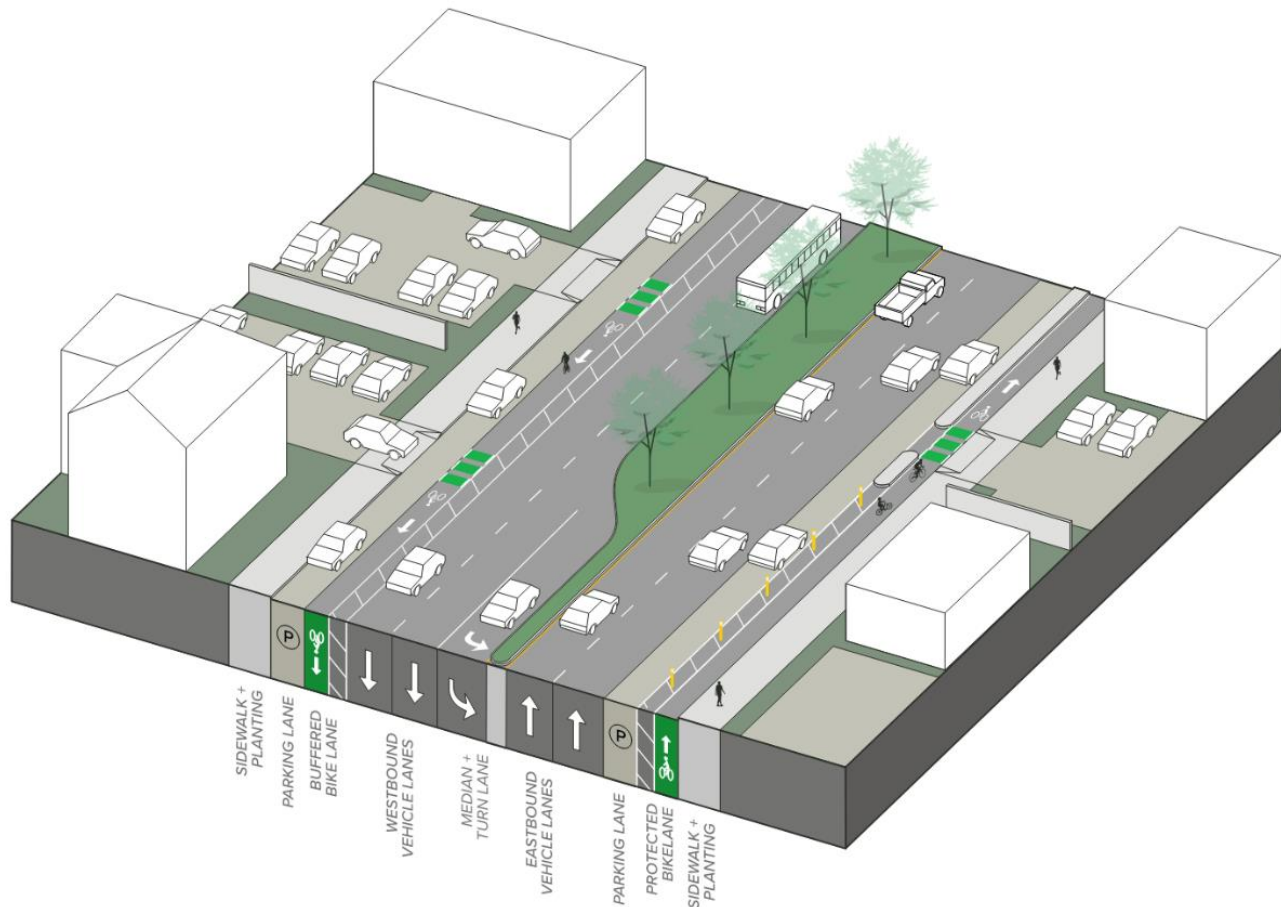
**Figure 3-9: A Street West of Meekland Avenue Connected Corridor Alternative Cross-Section**



### 3.2.2.1.2 A Street East of Meekland Avenue

Between Meekland Avenue and Montgomery Avenue, travel lanes would be narrowed to upgrade the eastbound Class II bike lane to a Class IV parking-protected bike lane and the westbound Class II bike lane will be upgraded to a Class IIB buffered bike lane. East of Montgomery Avenue, travel lanes are narrowed and parking is removed from the south side of the corridor to provide new Class II bike lanes on both sides of the corridor. A typical section for A Street east of Meekland Avenue is shown in **Figure 3-10**.

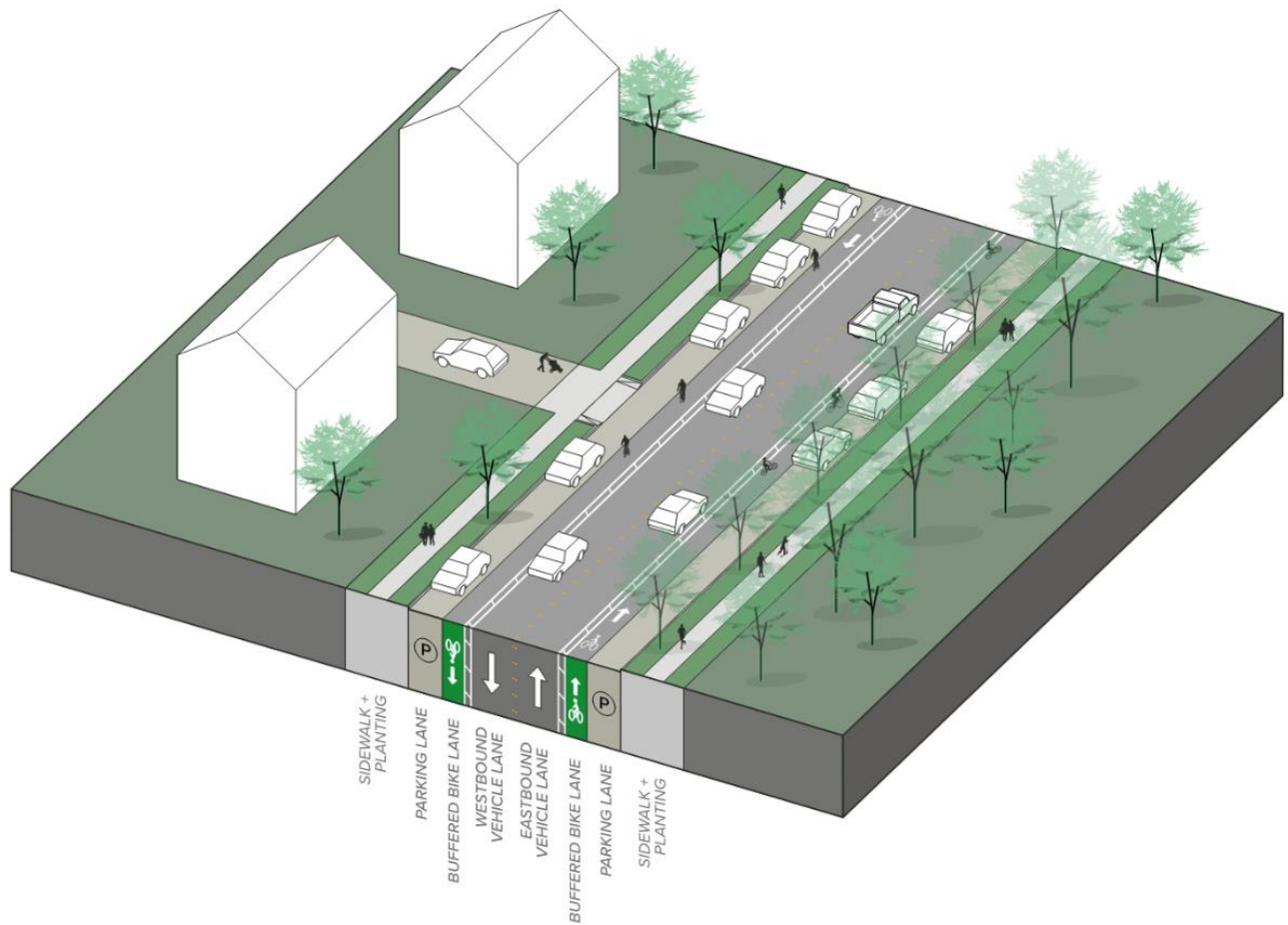
**Figure 3-10: A Street East of Meekland Avenue Connected Corridor Alternative Cross-Section**



3.2.2.1.3 B Street West of Montgomery Avenue

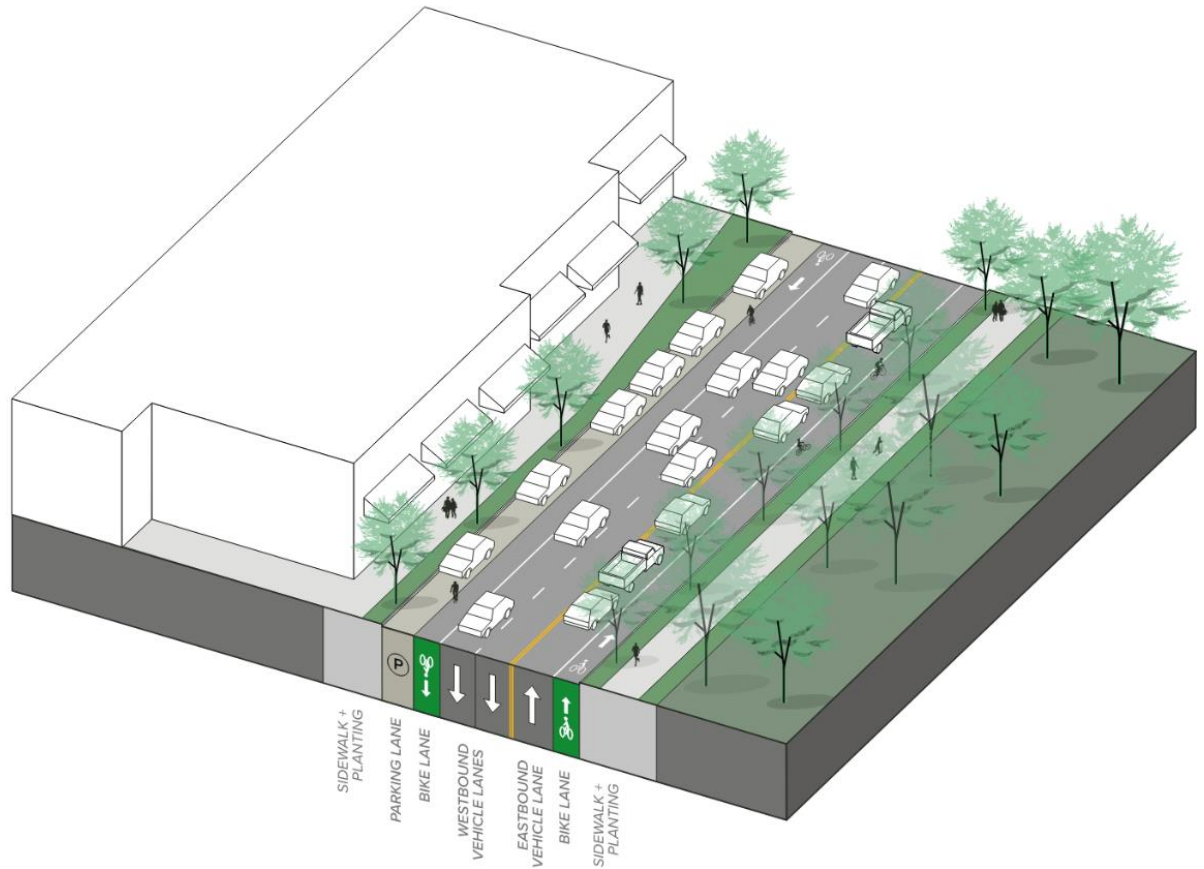
On B Street west of Montgomery Avenue, travel lanes would be narrowed to upgrade the Class II bike lanes to Class IIB buffered bike lanes in both directions. Where there are no existing bike lanes between Grand Street and Montgomery Avenue, travel lanes would be narrowed to provide Class II bike lanes and a two way left turn lane. A typical section for B Street west of Montgomery Avenue is shown in **Figure 3-11**.

*Figure 3-11: B Street West of Montgomery Avenue Connected Corridor Alternative Cross-Section*



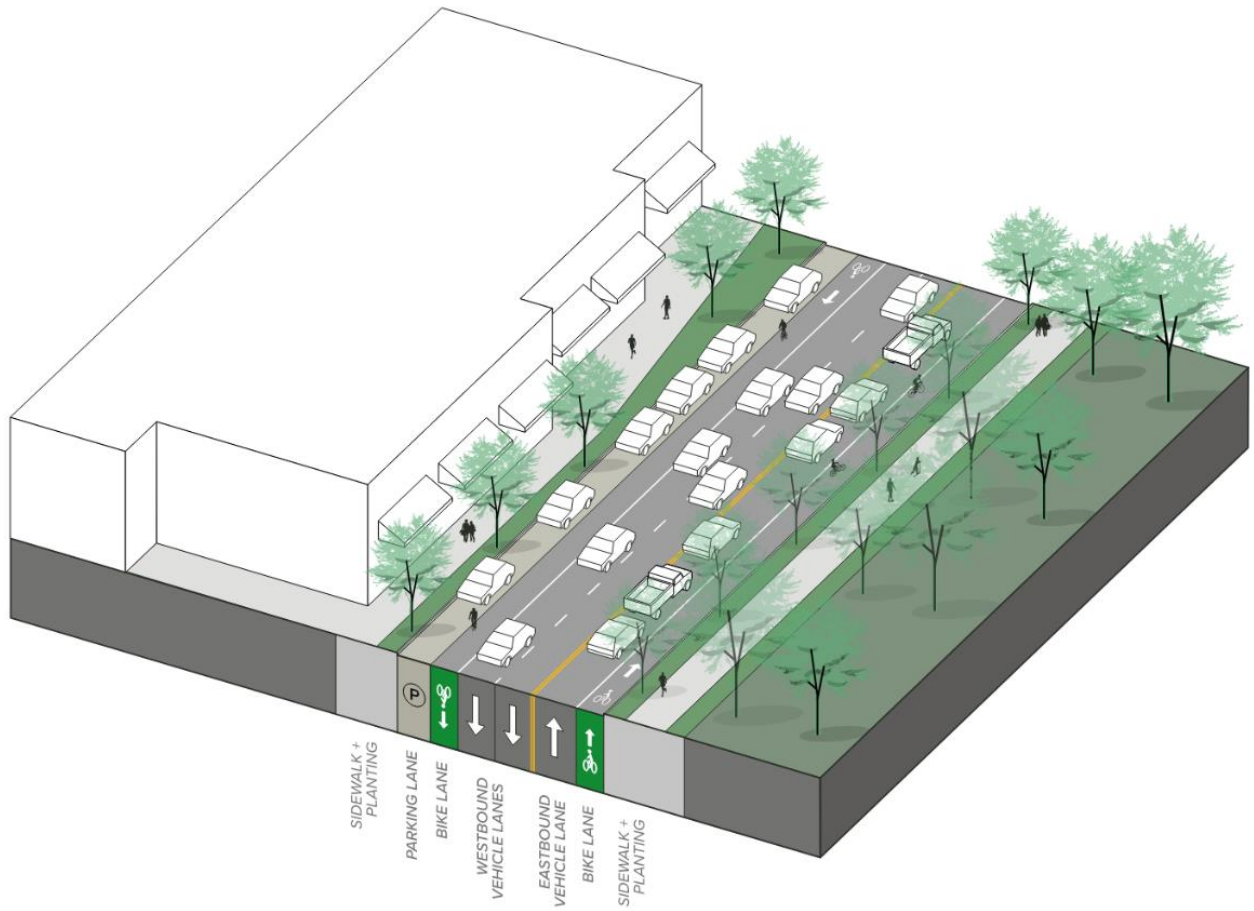
3.2.2.1.4 B Street East of Montgomery Avenue

East of Montgomery Avenue, the Connected Corridor Alternative, shown in **Figure 3-12: B Street East of Montgomery Avenue Connected Corridor Alternative Cross-Section**



, would remove the parking lane on the south side of the corridor to provide Class II bike lanes on both sides of the corridor.

Figure 3-12: B Street East of Montgomery Avenue Connected Corridor Alternative Cross-Section



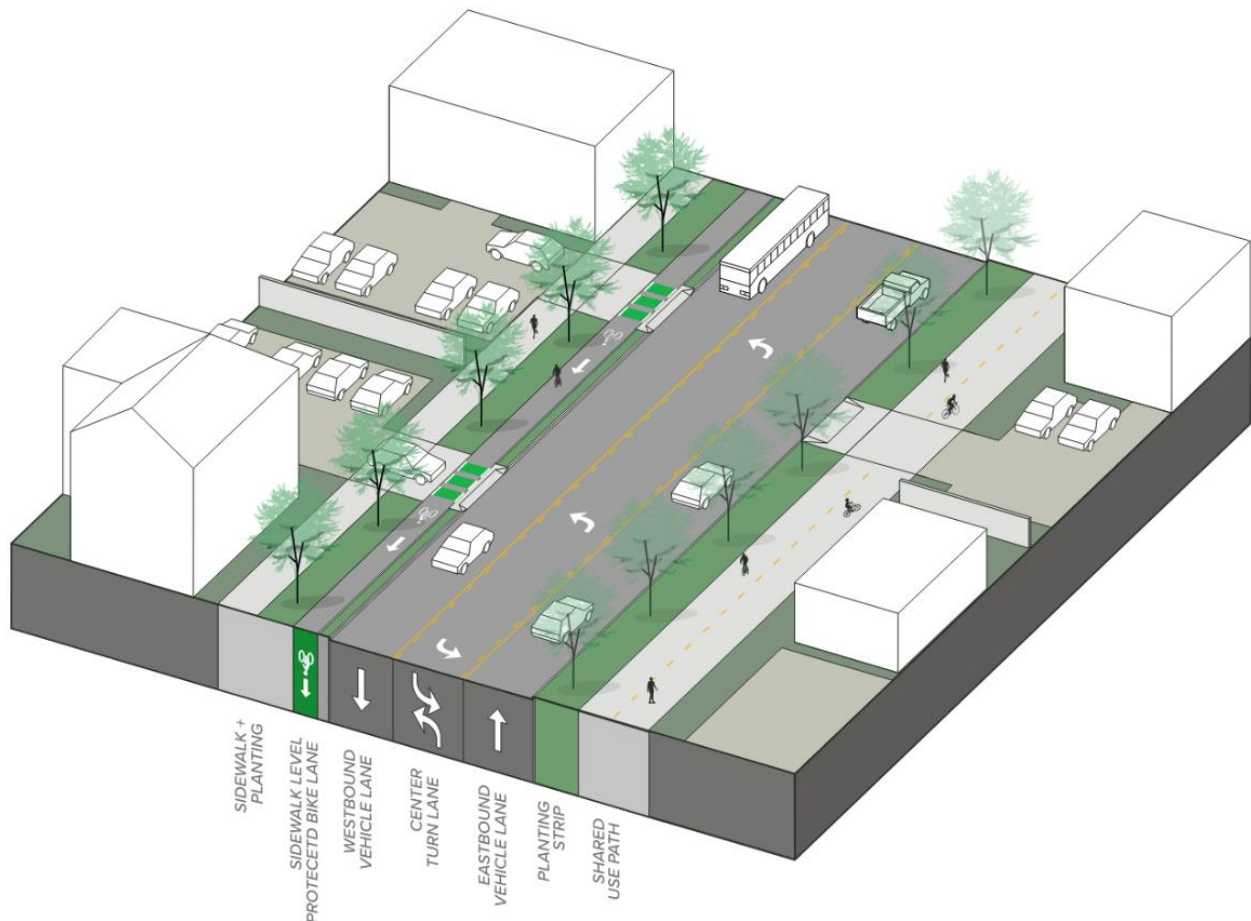
### 3.2.3 Reimagined Corridor Alternative

In this alternative, larger geometric changes are recommended, including a road diet and/or large segments of parking removal. For A Street, the Reimagined Corridor Alternative includes two options, either providing sidewalk level Class IV separated bike lanes or Class I shared use paths on both sides of the street. These alternatives would separate people biking from vehicles both horizontally and vertically, greatly increasing safety for all road users. However, this alternative may reduce traffic or parking capacity and carries a higher construction cost. This alternative also includes all spot improvements noted in the Base Corridor Enhancements Alternative and allows for protected intersections where feasible.

#### 3.2.3.1.1 A Street West of Meekland Avenue

For A Street west of Meekland Avenue, a road diet would remove a travel lane in both directions and provide a center two-way left turn lane. Existing Class II bike lanes would be upgraded to either sidewalk level Class IV separated bike lanes or Class I shared-use paths in both directions. The Class IV facilities are shown on the north side of **Figure 3-13**, and the Class I shared up paths are shown on the south side of the street for visual purposes only.

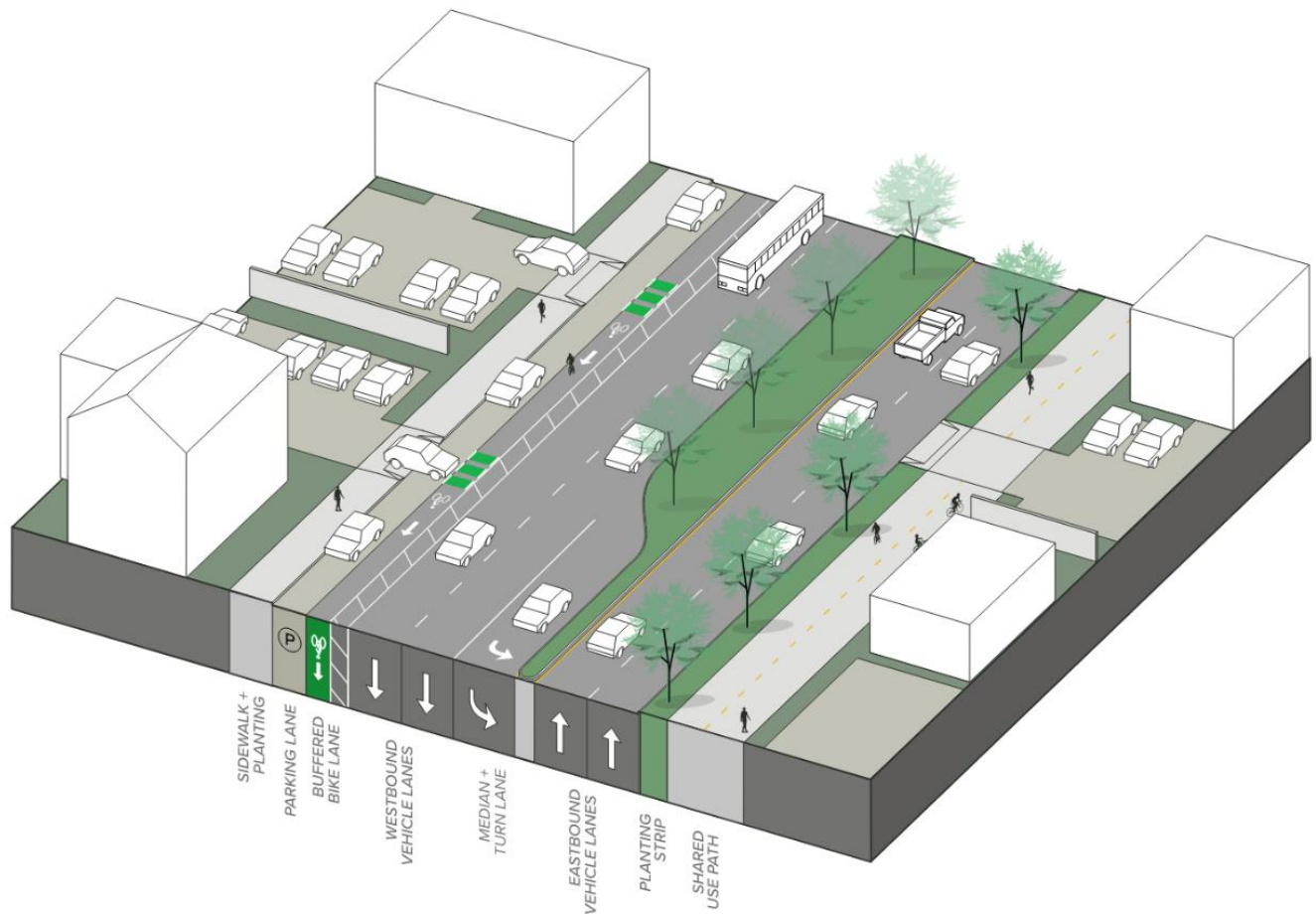
**Figure 3-13: A Street West of Meekland Avenue Reimagined Corridor Alternative Cross-Section**



### 3.2.3.1.2 A Street East of Meekland Avenue

East of Meekland Avenue, this alternative would remove parking on the south side of the corridor and narrow travel lanes to provide either a sidewalk level Class IV separated bike lane or a bidirectional Class I shared use path on the south side of the street. In the westbound direction the existing Class II bike lanes would be upgraded to either a Class IIB buffered bike lane or a Class I shared use path. Where Class II facilities don't currently exist east of Montgomery Avenue, a sidewalk level Class IV separated bike lane or a Class I shared use path would be provided on both sides of the street. For illustration purposes, **Figure 3-14** shows the Class IIB facility on the north side of the street, the Class I facility on the south side of the street.

**Figure 3-14: A Street East of Meekland Avenue Reimagined Corridor Alternative Cross-Section**



### 3.2.3.1.3 B Street between Martin Luther King Drive and Myrtle Street

This alternative would narrow travel lanes to implement a two-way Class IV cycle track on the south side of the corridor, as shown in **Figure 3-15**. This cycle track would run from Martin Luther King Drive to Myrtle Street and transition to either B Street Connected Corridor Alternative east of Myrtle Street.

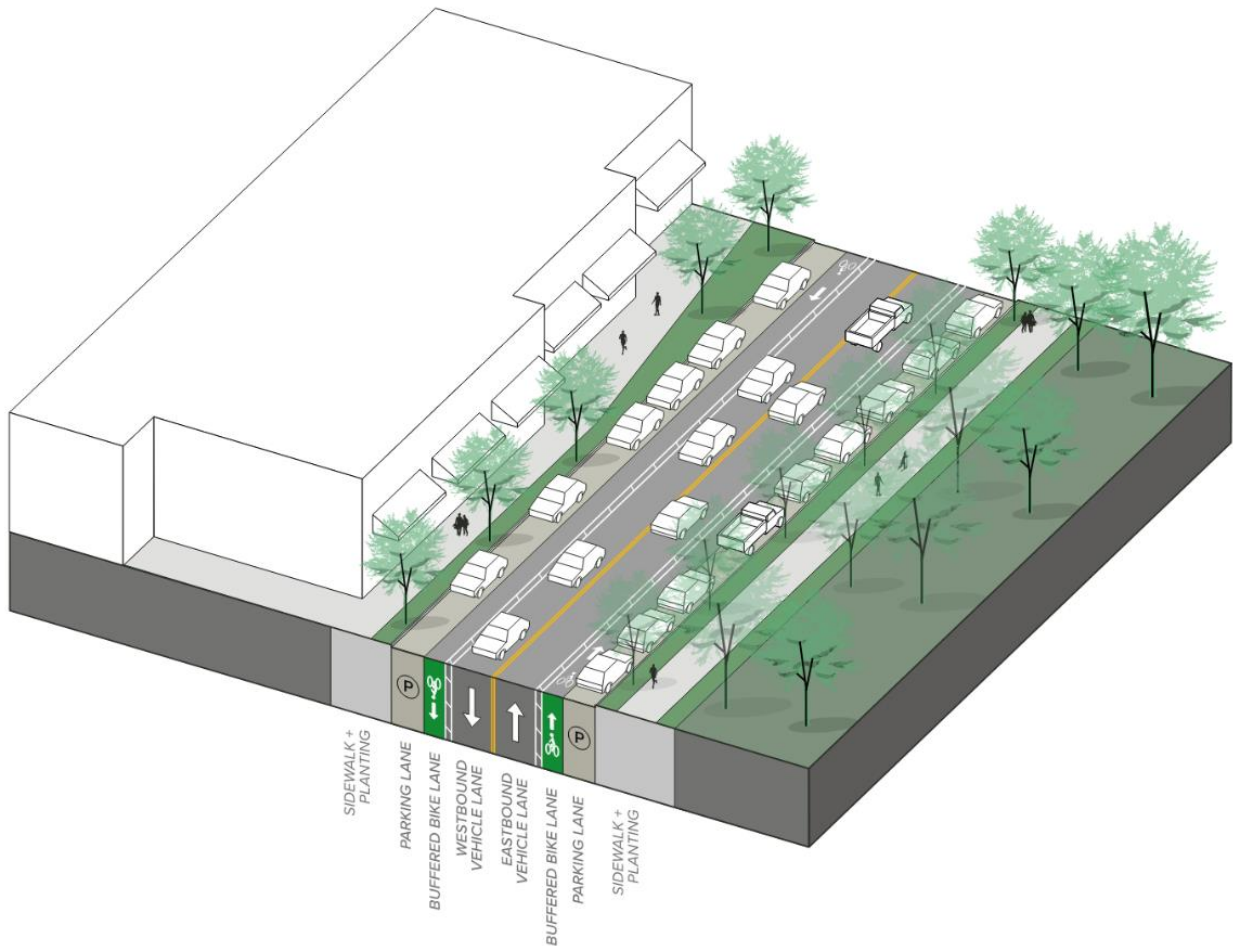
*Figure 3-15: B Street West of Montgomery Avenue Reimagined Corridor Cross-Section*



### 3.2.3.1.4 B Street East of Montgomery Avenue

East of Montgomery Avenue, the Reimagined Corridor Alternative, shown in , would remove the westbound travel lane to provide Class II buffered bike lane on both sides of the corridor.

**Figure 3-16: B Street East of Montgomery Avenue Reimagined Corridor Alternative Cross-Section**



## 3.3 Analysis Findings

### 3.3.1 Traffic

One traffic model was built to reflect both the Base Corridor Enhancements and Connected Corridor Alternatives, as the two alternatives have no operational or lane assignment differences. The Reimagined Corridor Alternative was modeled separately and includes a road diet and protected intersection improvements.

Traffic analysis finds that all 10 signalized intersections operate at a LOS E or better for both A and B Streets for each alternative, remaining within the City's LOS standard. Additionally, in all project alternatives, the three side-street stop-controlled intersections operate at a LOS D or better. Traffic analysis results for the AM peak hour are shown in **Figure 3-17** and for the PM peak hour in **Figure 3-18**. The Synchro worksheets for the A and B Street traffic analysis results can be found in **Appendix D**.

**Figure 3-17: A Street and B Street Project Alternatives Traffic Analysis Summary (AM Peak Hour)**

SUMMARY OF INTERSECTION OPERATION PROJECT ALTERNATIVES (AM)								
Int. #	Intersection	Traffic Control	Base Corridor Enhancements		Connected Corridor		Reimagined Corridor	
			Delay	LOS	Delay	LOS	Delay	LOS
1	A St and Hesperian Blvd	S	36.0	D	36.0	D	33.8	C
2	A St and Royal Ave	S	15.1	B	25.8	C	29.4	C
3	A St and Victory Dr	S	8.7	A	12.5	B	13.4	B
4	A St and S Garden Ave	SSSC	11.0	B	11.4	B	28.6	D
5	A St and Happyland Ave/McDonald's Dwy	SSSC	29.8	D	11.0	B	13.0	B
6	A St and Santa Clara St/Hathaway Ave	S	44.6	D	52.0	D	48.3	D
7	A St and Princeton St	S	15.7	B	16.9	B	19.0	B
8	A St and Filbert St	S	13.7	B	17.3	B	16.1	B
9	A St and Grand St/Western Blvd	S	31.3	C	42.0	D	43.8	D
10	A St and Montgomery Ave	S	18.4	B	26.9	C	36.8	D
11	B St and Grand St	S	20.9	C	20.6	C	20.6	C
12	B St and Montgomery Ave	SSSC	11.0	B	11.3	B	11.9	B
13	B St and Watkins St	S	15.8	B	34.9	C	34.9	C

**Notes:**

- **Bold** values indicate intersections operating at an unacceptable Level of Service
- Delay values for unsignalized intersections represent the average vehicle delay on the worst (highest delay) intersection approach.

S = Signalized; SSSC = Side Street Stop Controlled

**Figure 3-18: A Street and B Street Project Alternatives Traffic Analysis Summary (PM Peak Hour)**

SUMMARY OF INTERSECTION OPERATION PROJECT ALTERNATIVES (PM)								
Int. #	Intersection	Traffic Control	Base Corridor Enhancements		Connected Corridor		Reimagined Corridor	
			Delay	LOS	Delay	LOS	Delay	LOS
1	A St and Hesperian Blvd	S	35.5	D	36.4	D	34.7	C
2	A St and Royal Ave	S	13.5	B	20.3	C	28.8	C
3	A St and Victory Dr	S	11.0	B	18.8	B	23.4	C
4	A St and S Garden Ave	SSSC	10.0	A	10.5	B	30.3	D
5	A St and Happyland Ave/McDonald's Dwy	SSSC	18.0	C	10.8	B	12.5	B
6	A St and Santa Clara St/Hathaway Ave	S	50.3	D	66.3	E	54.9	D
7	A St and Princeton St	S	10.7	B	15.6	B	10.8	B
8	A St and Filbert St	S	11.2	B	8.3	A	11.0	B
9	A St and Grand St/Western Blvd	S	43.7	D	53.6	D	68.7	E
10	A St and Montgomery Ave	S	16.8	B	29.8	C	29.4	C
11	B St and Grand St	S	16.4	B	16.2	B	16.2	B
12	B St and Montgomery Ave	SSSC	10.0	A	10.2	B	10.6	B
13	B St and Watkins St	S	16.0	B	36.5	D	36.5	D

**Notes:**

- **Bold** values indicate intersections operating at an unacceptable Level of Service
- Delay values for unsignalized intersections represent the average vehicle delay on the worst (highest delay) intersection approach.

S = Signalized; SSSC = Side Street Stop Controlled

In the Base Corridor Enhancements and Connected Corridor Alternatives, there is a nominal increase in delay at most signalized intersections due to the inclusion of intersection spot improvements such as leading pedestrian intervals (LPI), additional turning movement control, and other operational changes. For these alternatives, one intersection would drop from an LOS D to LOS E: the intersection of A Street and Santa Clara Street/Hathaway Avenue during the PM peak hour. At this intersection, the proposal to signalize the yield-controlled slip lanes increases delay from 50 seconds under existing conditions to 66 seconds in the project alternatives.

In the Reimagined Corridor Alternative, there is increased delay at most signalized intersections, associated with the road diet implemented between Hesperian Boulevard and Santa Clara Street/Hathaway Avenue, and between Grand Street/Western Boulevard and Watkins Street, as well as additional intersection improvements such as protected intersections. For this alternative, one intersection would drop from LOS D to LOS E: A Street and Grand Street/Western Boulevard during the PM peak hour. With this alternative, the northbound and southbound movements would be split-phased to allow for each approach to have protected left-turn movements. This change increases delay from 44 seconds to 69 seconds. Also the LOS at A Street and Santa Clara Street/Hathaway Avenue would improve from LOS E in the Base Corridor Enhancements and Connected Corridor Alternatives to LOS D in the Reimagined

Corridor Alternative. Though the alternative would remove a travel lane in each direction west of the intersection, the additional roadway space facilitates the addition of a dual eastbound left turn lane, mirroring the westbound approach, allowing for increased capacity for that high volume movement.

The LOS at A Street and Happyland Avenue improves from LOS D to LOS B in the AM peak hour in all project alternatives. This improved LOS is associated with the restriction of the left-turn movements out of Happyland Avenue.

### 3.3.2 Parking

A parking diversion analysis was performed for each alternative where parking removal is proposed. While this analysis focuses on parking removal to facilitate corridor-wide alternatives, additional parking removal is likely needed to implement the spot improvements and comply with current laws and safety best practices, such as Assembly Bill 413, which requires daylighting in front of crosswalks. Parking change quantities will be refined after conceptual design.

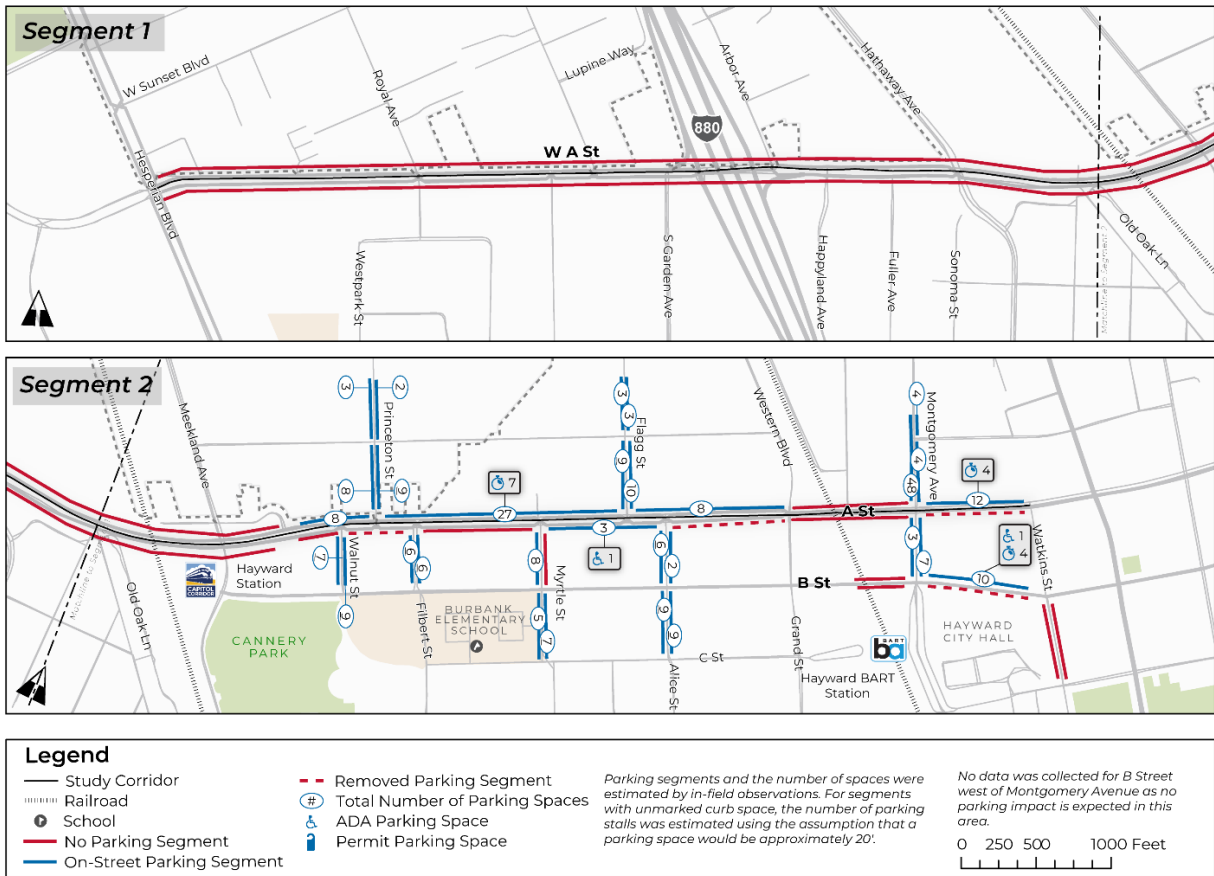
#### 3.3.2.1.1 Existing Conditions/Base Corridor Enhancements Alternative

Parking impact is expected to be limited to spot locations for daylighting, bus stop modifications, and other safety improvements. No larger-scale parking modifications are anticipated.

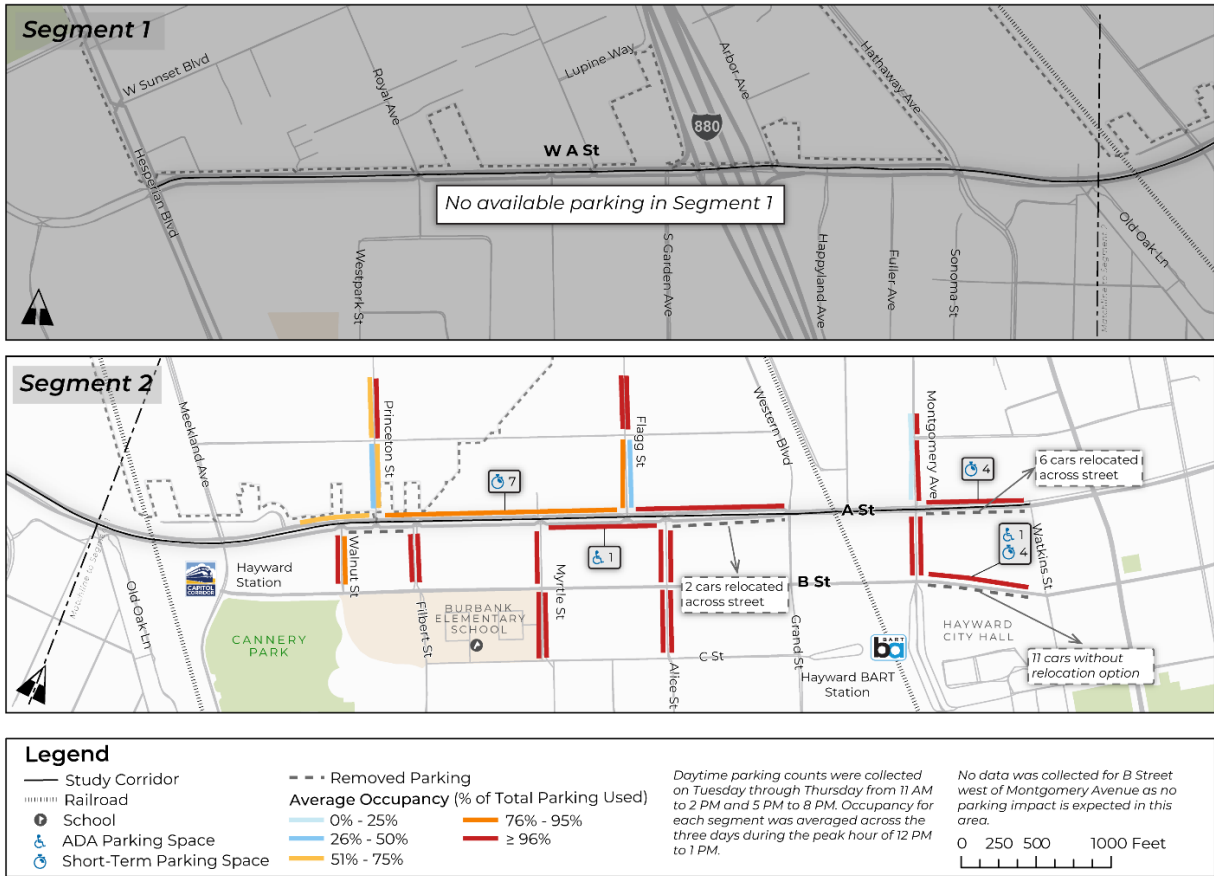
#### 3.3.2.1.2 Connected Corridor Alternative – Parking Removal on Both A Street and B Street

In this alternative, parking-protected bike lanes would be implemented on the south side of A Street between Meekland Avenue and Grand Street, and parking would be removed on the south side of A Street between Montgomery Ave and Watkins Street, totaling 29 spaces. While the parking-protected bike lanes would preserve some parking in that segment, the number of available spaces will decrease due to increased sight distance setbacks near driveways with parking-protected bike lanes. Within the 29 removed parking spaces, the current demand is 10 cars during the weekday peak daytime period. For each peak period, all 10 cars could be relocated to available side-street parking, however, up to eight cars may need to be relocated to parking spaces across the street. This alternative also included parking removal on the south side of B Street between Montgomery Avenue and Watkins Street, representing the loss of an additional 11 spaces. Within that area of removal, 21 vehicles currently park during the weekday daytime peak hour and would need to relocate. Due to nearby on-street parking being at capacity, and a lack of nearby side street parking, the 11 relocated vehicles on B Street would not have readily available parking nearby or on side streets. Excluding these 11 cars, the weekday daytime peak hour parking occupancy would increase to 93% on A Street, B Street remains at 100%, and adjacent side streets have an occupancy of 95%. Additionally, eight cars would need to park across the street from their existing parking space. **Figure 3-19** shows the parking inventory for this alternative, and **Figure 3-20** shows the parking occupancy with relocated vehicles. A small number of additional parking spaces may be removed for daylighting, bus stop modifications, and other safety improvements.

Figure 3-19: A Street and B Street Connected Corridor Alternative – Parking Inventory



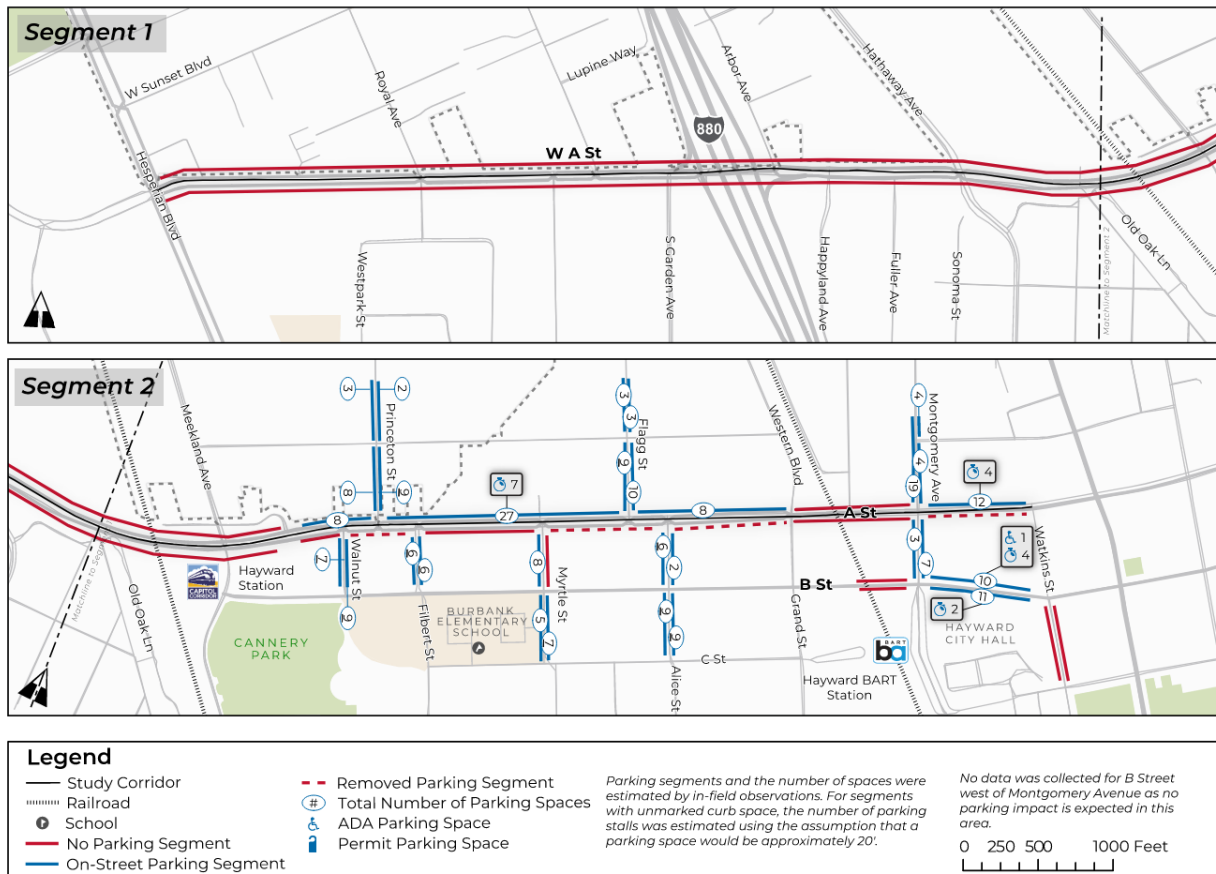
**Figure 3-20: A Street and B Street Connected Corridor Alternative – Weekday Daytime Peak Parking Occupancy**



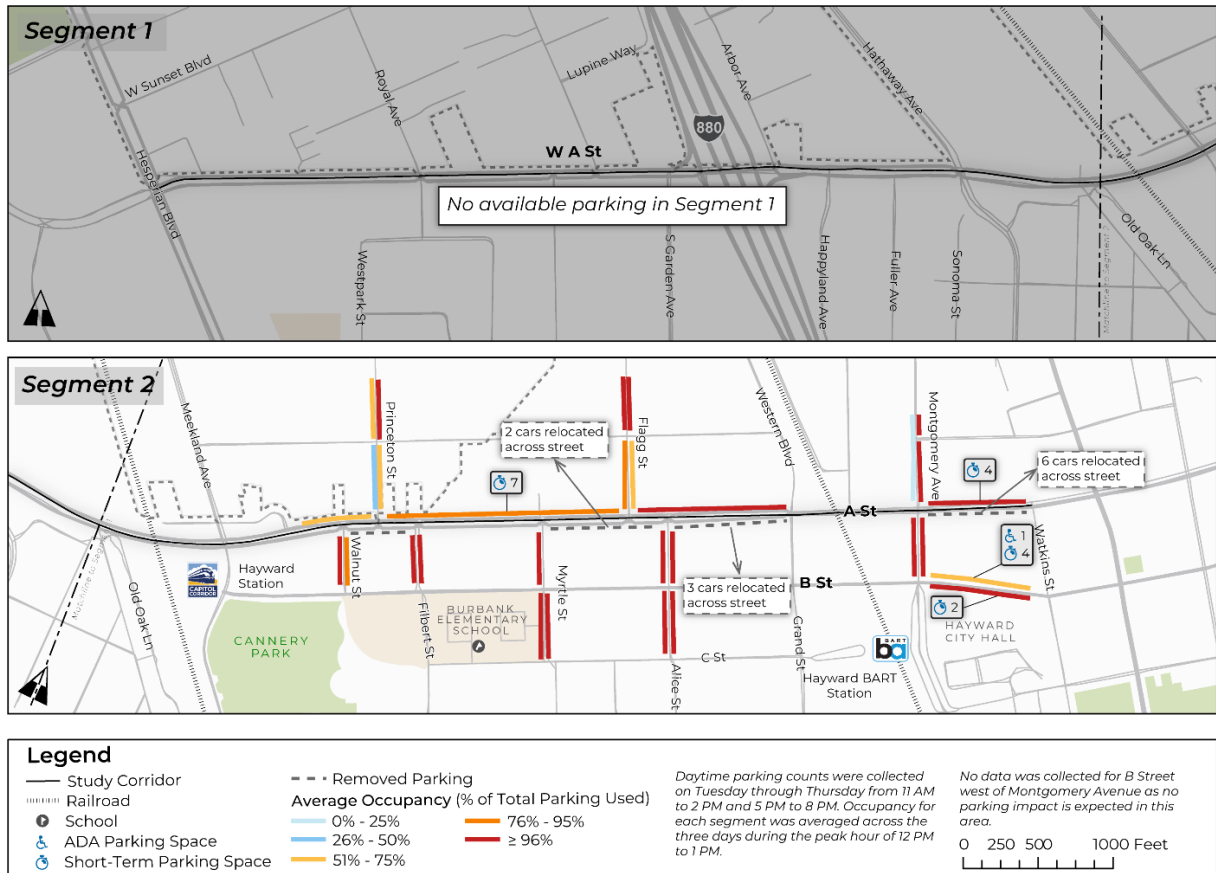
3.3.2.1.3 Reimagined Corridor Alternatives – Parking Removal on A Street Only

In the Reimagined Corridor Alternative, parking would be removed on the south side of A Street between Meekland Avenue and Watkins Street, totaling 32 parking spaces. Eleven currently parked vehicles would likely need to park across the street to find an available nearby parking space. The occupancy during the weekday daytime peak hour would be 96% on A Street as well as on adjacent side streets. The parking inventory for this alternative is shown in **Figure 3-21**, and the weekday daytime peak parking occupancy is shown in **Figure 3-22**.

**Figure 3-21: A Street Reimagined Corridor Alternative – Parking Inventory**



**Figure 3-22: A Street Reimagined Corridor Alternative – Weekday Daytime Peak Parking Occupancy**



**3.3.2.1.4 A and B Street Parking Summary Tables**

**Table 4-6** summarizes the parking inventory of A Street and adjacent side streets within 500 feet of the study corridors for each alternative. The table also notes the quantity of parking spaces removed in each project alternative, as well as the estimated number of cars relocated to new parking spaces. Additionally, **Table 4-7** summarizes the weekday daytime peak parking occupancy of A Street for each project alternative. This does not assume concurrent parking removal on B Street. This occupancy notes the conditions after parking is removed and any cars have been relocated to side streets where available. Both tables identify where parked cars would have no nearby available side street location to park.

**Table 4-6: Parking Inventory and Impacts by A Street Alternative**

On-Street Parking Location	Weekday Daytime Peak Parking Hour			
	Existing Parking Inventory	Existing Conditions/ Base Corridor Enhancements Alternative	Connected Corridor Alternative	Reimagined Corridor Alternative
Parking Inventory	273	273	242	239
Number of Spaces Removed	-	0	31	34
Number of Existing Parked Cars Impacted	-	0	10	11

**Table 4-7: Weekday Daytime Peak Parking Occupancy by A Street Alternative**

On-Street Parking Location	Weekday Daytime Peak Parking Occupancy			
	Existing Parking Inventory	Existing Conditions/ Base Corridor Enhancements Alternative	Connected Corridor Alternative	Reimagined Corridor Alternative
A Street	89	72%	93%	96%
A Street and B Street Side Streets	188	75%	80%	81%
Total	273	74%	83%	85%

Given the proximity of A Street and B Street, the parking impacts of improvements on B Street are being considered in conjunction with the modifications to A Street. **Table 4-8** shows the combined parking inventory of A Street and B Street for alternatives where parking removal occurs on B Street, and **Table 4-9** summarizes the weekday daytime peak parking occupancy of these alternatives.

**Table 4-8: Combined Parking Inventory by A Street and B Street Alternative**

On-Street Parking Location	Weekday Daytime Peak Parking Occupancy			
	Existing Parking Inventory	Existing Conditions/ Base Corridor Enhancements Alternative	Connected Corridor Alternative	Reimagined Corridor Alternative
Parking Inventory	294	294	252	260
Number of Spaces Removed	-	0	42	34
Number of Existing Parked Cars Impacted	-	0	21*	32

\*Up to 11 diverted vehicles would not have a nearby available parking space to relocate to.

**Table 4-9: Combined Weekday Daytime Peak Parking Occupancy by A Street and B Street Alternative**

On-Street Parking Location	Weekday Daytime Peak Parking Occupancy			
	Existing Parking Inventory	Existing Conditions/ Base Corridor Enhancements Alternative	Connected Corridor Alternative (A and B St Parking Removal)	Reimagined Corridor Alternative (A Street Parking Removal Only)
A Street	89	72%	93%*	96%
B Street	21	100%	100%	100%
A Street and B Street Side Streets	184	75%	80%*	81%
Total	294	76%	85%*	86%

\*Up to 11 diverted vehicles would not have a nearby and available parking space to relocate to.

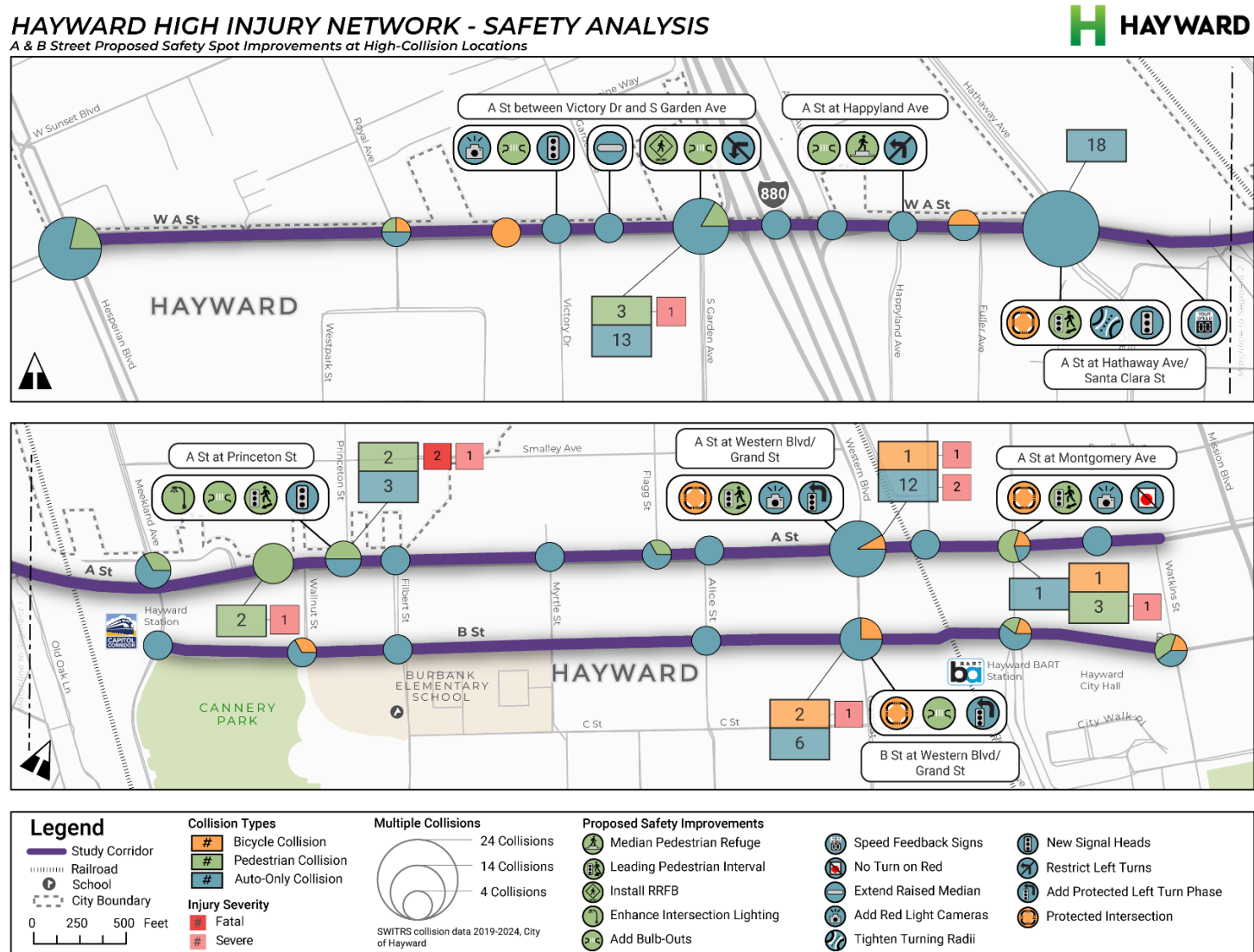
### 3.3.3 Safety Analysis

#### 3.3.3.1.1 A Street

A safety analysis was conducted for project alternatives and spot improvements on A Street. Each of the proposed intersection spot improvements were mapped over the previously created collision graphic to visualize where safety improvements are in relation to the historically high collision areas. This safety analysis graphic represents safety improvements proposed at the highest collision locations between A and B Street. This visualization is shown in **Figure 3-23**. As shown in the figure, spot safety improvements are proposed at nearly all locations with a history of multiple bicycle and pedestrian-involved collisions, in addition to the corridor-wide safety improvements.

Additionally, an analysis of each of the spot improvements proposed on A Street was conducted using the California Local Road Safety Manual (LRSM). For each intersection, improvements are identified and their corresponding crash reduction factors (CRFs) are included where applicable to the LRSM. These additional safety sheets are included in **Appendix H**.

Figure 3-23: A and B Street Proposed Safety Spot Improvements at High-Collision Locations



For the analysis of the project alternatives, a description of the safety improvements, benefits, and challenges for each alternative is provided for each of the two segments of A Street in **Table 3-10** and **Table 3-11**.

**Table 3-10: A Street Project Alternative Safety Analysis (Hesperian Boulevard to Meekland Avenue)**

Alt.	Description	Benefits	Challenges
Base Corridor Enhancements Alternative	<ul style="list-style-type: none"> <li>Existing roadway configuration with spot improvements only, such as curb bulb-outs, protected traffic signal phasing, and RRFBs.</li> </ul>	<ul style="list-style-type: none"> <li>Quicker implementation</li> <li>Improved intersection safety for vehicles, pedestrians, and people biking</li> </ul>	<ul style="list-style-type: none"> <li>No protection or separation for people biking and bike lanes remain fairly narrow (~5 feet)</li> <li>Minimal effect on vehicle speeds</li> </ul>
Connected Corridor Alternative	<ul style="list-style-type: none"> <li>Narrow travel lanes</li> <li>Includes same intersection spot improvements noted in the Base Corridor Enhancements Alternative</li> <li>Upgrade bike lanes to Class IV protected bike lanes. Bike lane protection can either be plastic flex post for lower costs, or raised concrete islands for increased safety</li> </ul>	<ul style="list-style-type: none"> <li>Quicker implementation</li> <li>Improved intersection safety for vehicles, pedestrians, and people biking</li> <li>Separates people biking from vehicle traffic horizontally and vertically</li> <li>Increases separation between pedestrians and vehicle traffic</li> <li>Narrows travel lanes for increased traffic calming</li> <li>Installing a separated bike lane has a crash reduction of 45% for bicycle and pedestrian crashes</li> </ul>	<ul style="list-style-type: none"> <li>Bicycle facilities remain fairly narrow (~5 feet) and maintain conflict points at intersections</li> </ul>

Alt.	Description	Benefits	Challenges
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Reimagined Corridor (Sidewalk-Level Protected Bike Lanes)</p>	<ul style="list-style-type: none"> <li>Road diet removes one travel lane in each direction</li> <li>Includes same intersection spot improvements as the Base Corridor Enhancements Alternative as well as allows for protected intersections</li> <li>Upgrade bike lanes to Class IV sidewalk level protected bike lanes</li> </ul>	<ul style="list-style-type: none"> <li>Improved intersection safety for vehicles, pedestrians, and people biking</li> <li>Separates people biking from vehicle traffic horizontally and vertically</li> <li>Further increases separation between pedestrians and vehicle traffic with planting strip</li> <li>Reducing curb to curb roadway width has inherent traffic calming effect on vehicle speeds</li> <li>Protected intersection improvements allow for reduced conflict points for people biking and vehicle traffic</li> <li>Installing a separated bike lane has a crash reduction of 45% for bicycle and pedestrian crashes</li> <li>Implementing a road diet and adding a TWLTL has a crash reduction of 35% for all crashes</li> </ul>	<ul style="list-style-type: none"> <li>Longer term to implementation</li> </ul>

Alt.	Description	Benefits	Challenges
Reimagined Corridor (Class I Shared Use Paths)	<ul style="list-style-type: none"> <li>Road diet removes one travel lane in each direction</li> <li>Includes same intersection spot improvements as the Base Corridor Enhancements Alternative as well as allows for protected intersections</li> <li>Upgrade bike lanes to Class I shared-use paths in both directions</li> </ul>	<ul style="list-style-type: none"> <li>Improved intersection safety for vehicles, pedestrians, and people biking</li> <li>Separates people biking and pedestrians from vehicle traffic with planting strip</li> <li>Further increases separation between pedestrians and vehicle traffic</li> <li>Reducing curb to curb roadway width has inherent traffic calming effect on vehicle speeds</li> <li>Protected intersection improvements allow for reduced conflict points for people biking and vehicle traffic</li> <li>Provides two-way bicycle paths on both sides, increasing connectivity</li> <li>Installing a separated bike lane has a crash reduction of 45% for bicycle and pedestrian crashes</li> <li>Implementing a road diet and adding a TWLTL has a crash reduction of 35% for all crashes</li> </ul>	<ul style="list-style-type: none"> <li>Longer term to implementation</li> <li>Increased conflict between pedestrians and people biking</li> </ul>

**Table 3-11: A Street Project Alternative Safety Analysis (Meekland Avenue to Watkins Street)**

Alt.	Description	Benefits	Challenges
Base Corridor Enhancements	<ul style="list-style-type: none"> <li>Existing roadway configuration with spot improvements only, such as curb bulb-outs, protected traffic signal phasing, and RRFBs.</li> </ul>	<ul style="list-style-type: none"> <li>Quicker implementation</li> <li>Improved intersection safety for vehicles, pedestrians, and people biking</li> </ul>	<ul style="list-style-type: none"> <li>Gap in bicycle lanes remains east of Montgomery Avenue</li> <li>No protection or separation for people biking</li> <li>Conflict remains between parking vehicles and people biking</li> <li>Minimal effect on vehicle speeds</li> </ul>
Connected Corridor Alternative	<ul style="list-style-type: none"> <li>Narrow travel lanes</li> <li>Includes same intersection spot improvements noted in Base Corridor Enhancements Alternative</li> <li>Upgrade bike lane on the south side of the street to Class IV parking protected bike lane. Bike lane protection can either be plastic flex post for lower costs, or raised concrete islands for increased safety/</li> <li>Upgrade the bike lane on the north side of the street to Class IIB buffered bike lane</li> </ul>	<ul style="list-style-type: none"> <li>Improved intersection safety for vehicles, pedestrians, and people biking</li> <li>Quicker implementation</li> <li>Continuous bike facility on A Street</li> <li>Separates people biking from vehicle traffic</li> <li>Increases separation between pedestrians and vehicle traffic</li> <li>Bike lanes are relatively spacious (~6.5 feet)</li> <li>Parking protected bike lane reduces conflicts between people biking and vehicles</li> <li>Narrows travel lanes for increased traffic calming</li> <li>Maintains current travel lane configuration</li> <li>Installing a separated bike lane has a crash reduction of 45% for bicycle and pedestrian crashes</li> </ul>	<ul style="list-style-type: none"> <li>Bicycle facilities maintain conflict points at intersections</li> <li>Conflict between car parking and people biking remains on the north side of the street</li> <li>No protection for bike lane on the north side of the street</li> </ul>

Alt.	Description	Benefits	Challenges
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Reimagined Corridor (Sidewalk-Level Protected Bike Lanes)</p>	<ul style="list-style-type: none"> <li>• Parking lane removal on the south side of the corridor</li> <li>• Includes same intersection spot improvements as Base Corridor Enhancements Alternative as well as allows additional separation between people biking and vehicles at intersections</li> <li>• Upgrade bike lane on the south side of the street to sidewalk level Class IV separated bike lane</li> <li>• Separated bike lane includes planting strip between people biking and vehicle traffic</li> <li>• Upgrade bike lane on the north side of the street to Class IIB buffered bike lane</li> </ul>	<ul style="list-style-type: none"> <li>• Improved intersection safety for vehicles, pedestrians, and people biking</li> <li>• Separates people biking from vehicle traffic horizontally and vertically on the south side of the street</li> <li>• Further increases separation between pedestrians and vehicle traffic</li> <li>• Landscape protection in between non-motorized and vehicle traffic</li> <li>• Continuous bike facility on A Street</li> <li>• Reducing curb to curb roadway width has inherent traffic calming effect on vehicle speeds</li> <li>• Reduced conflict between people biking and vehicles at intersections</li> <li>• Installing a separated bike lane has a crash reduction of 45% for bicycle and pedestrian crashes</li> <li>• Implementing a road diet and adding a TWLTL has a crash reduction of 35% for all crashes</li> </ul>	<ul style="list-style-type: none"> <li>• Conflict between car parking and people biking remains on the north side of the street</li> <li>• No protection for bike lane on the north side of the street</li> <li>• Longer term implementation</li> </ul>

Alt.	Description	Benefits	Challenges
Reimagined Corridor (Class I Shared Use Paths)	<ul style="list-style-type: none"> <li>• Parking lane removal on the south side of the corridor</li> <li>• Includes same intersection spot improvements as Base Corridor Enhancements Alternative as well as allows additional separation between people biking and vehicles at intersections</li> <li>• Upgrade bike lanes to Class I shared-use paths in both directions</li> </ul>	<ul style="list-style-type: none"> <li>• Improved intersection safety for vehicles, pedestrians, and people biking</li> <li>• Separates people biking and pedestrians from vehicle traffic horizontally and vertically with planting strip</li> <li>• Protection for bike lanes on both sides of the street</li> <li>• Continuous bike facility on A Street</li> <li>• No conflict between parking vehicles and people biking</li> <li>• Reducing curb to curb roadway width has inherent traffic calming effect on vehicle speeds</li> <li>• Reduced conflict points for people biking and vehicle traffic at intersections</li> <li>• Provides two-way bicycle paths on both sides, increasing connectivity</li> <li>• Installing a separated bike lane has a crash reduction of 45% for bicycle and pedestrian crashes</li> </ul>	<ul style="list-style-type: none"> <li>• Longer term implementation</li> <li>• Increased conflict between pedestrians and people biking</li> </ul>

3.3.3.1.2 B Street

The B Street project alternative safety analysis is provided in **Table 3-12** and **Table 3-13**. An additional analysis with crash reduction factors for spot improvements on B Street is included in **Appendix H**.

**Table 3-12: B Street Project Alternative Safety Analysis (Martin Luther King Drive to Montgomery Avenue)**

Alt.	Description	Benefits	Challenges
Base Corridor Enhancements Alternative	<ul style="list-style-type: none"> <li>Existing roadway configuration with spot improvements only, such as traffic circles, speed humps, and curb bulb outs</li> </ul>	<ul style="list-style-type: none"> <li>Quicker implementation</li> <li>Improved intersection safety for vehicles, pedestrians, and people biking</li> </ul>	<ul style="list-style-type: none"> <li>No protection or separation for people biking</li> <li>Conflict remains between parking vehicles and people biking</li> </ul>
Connected Corridor Alternative	<ul style="list-style-type: none"> <li>Narrow travel lanes</li> <li>Includes same intersection spot improvements noted in Base Corridor Enhancements Alternative as well as includes the option to assess the feasibility of diverters</li> <li>Upgrade bike lanes to Class IIB buffered bike lanes</li> </ul>	<ul style="list-style-type: none"> <li>Quicker implementation</li> <li>Improved intersection safety for vehicles, pedestrians, and people biking</li> <li>Increases separation between non-motorized and vehicle traffic</li> <li>Narrows travel lanes for increased traffic calming</li> </ul>	<ul style="list-style-type: none"> <li>No protection for people biking</li> <li>Bike lane width narrows with the addition of buffer space (~5 feet)</li> <li>Conflict remains between parking vehicles and people biking</li> </ul>

Alt.	Description	Benefits	Challenges
Reimagined Corridor Alternative	<ul style="list-style-type: none"> <li>Narrow travel lanes</li> <li>Includes same intersection spot improvements noted in Base Corridor Enhancements Alternative as well as includes the option to assess the feasibility of diverters</li> <li>Upgrade bike lanes to a two-way, sidewalk level Class IV cycle track on the south side of the street</li> <li>Separates the cycle track from vehicles with planting strip</li> </ul>	<ul style="list-style-type: none"> <li>Improved intersection safety for vehicles, pedestrians, and people biking</li> <li>Separates people biking from vehicle traffic horizontally and vertically</li> <li>Further increases separation between pedestrians and vehicle traffic on the south side of the street</li> <li>Landscape protection in between non-motorized and vehicle traffic</li> <li>Removes conflict between people biking and parking vehicles</li> <li>Reducing curb to curb roadway width has inherent traffic calming effect on vehicle speeds</li> <li>Installing a separated bike lane has a crash reduction of 45% for bicycle and pedestrian crashes</li> </ul>	<ul style="list-style-type: none"> <li>Narrow bike facilities (5' in either direction)</li> <li>No bike connection on the north side of the street</li> <li>Bikes must cross street to stay on facility at Myrtle Street</li> <li>Longer term implementation</li> </ul>

*Table 3-13: B Street Project Alternative Safety Analysis (Montgomery Avenue to Watkins Street)*

Alt.	Description	Benefits	Challenges
Base Corridor Enhancements	<ul style="list-style-type: none"> <li>Existing roadway configuration with spot improvements only, such as a pedestrian scramble and curb bulb outs</li> </ul>	<ul style="list-style-type: none"> <li>Quicker implementation</li> <li>Improved intersection safety for vehicles, pedestrians, and people biking</li> </ul>	<ul style="list-style-type: none"> <li>No bicycle lanes present</li> <li>Conflict remains between parking vehicles and people biking</li> </ul>

Alt.	Description	Benefits	Challenges
Connected Corridor Alternative	<ul style="list-style-type: none"> <li>Removes parking lane on the south side of the street</li> <li>Includes same intersection spot improvements noted in Base Corridor Enhancements Alternative</li> <li>Add Class II bike lanes</li> </ul>	<ul style="list-style-type: none"> <li>Quicker implementation</li> <li>Improved intersection safety for vehicles, pedestrians, and people biking</li> <li>Continuous bike facility connection on B Street</li> <li>Increases separation between non-motorized and vehicle traffic</li> <li>Narrows travel lanes for increased traffic calming</li> </ul>	<ul style="list-style-type: none"> <li>No protection or buffered separation for bike lanes</li> <li>Bike lane width is relatively narrow (~5 feet)</li> <li>Conflict exists between parking vehicles and people biking on north side</li> </ul>
Reimagined Corridor Alternative	<ul style="list-style-type: none"> <li>Removes second westbound travel lane</li> <li>Includes same intersection spot improvements noted in Base Corridor Enhancements Alternative</li> <li>Add Class IIB buffered bike lanes</li> </ul>	<ul style="list-style-type: none"> <li>Quicker implementation</li> <li>Improved intersection safety for vehicles, pedestrians, and people biking</li> <li>Continuous bike facility connection on B Street</li> <li>Increases separation between non-motorized and vehicle traffic</li> <li>Narrows travel lanes for increased traffic calming</li> </ul>	<ul style="list-style-type: none"> <li>No protection for people biking</li> <li>Bike lane width is relatively narrow (~5 feet)</li> <li>Conflict exists between parking vehicles and people biking</li> </ul>

## 4 Tennyson Road

### 4.1 Existing Conditions

#### 4.1.1 Speed Analysis

Tennyson Road has a posted speed limit of 35 miles per hour west of Ruus Road, and 25 miles per hour between Ruus Road and Mission Boulevard. Existing auto speeds are shown below in **Table 4-1**.

**Table 4-1: Tennyson Road Speed Analysis Results**

Location	Speed Limit	Average Speed	85 <sup>th</sup> Percentile Speed	Top Speed	Percentage Speeding over 10 mph
<b>Between Sleepy Hollow Avenue and Calaroga Avenue</b>	35 mph	33 mph	40 mph	75-80 mph	4%
<b>Between Tampa Avenue and Tyrell Avenue</b>	35 mph	32 mph	38 mph	75-80 mph	2%
<b>Between Whitman Street and Dixon Street</b>	25 mph	41 mph	46 mph	75-80 mph	90%

For the two westernmost segments on Tennyson Road, the 85<sup>th</sup> percentile speeds were found to be within five miles per hour of the speed limit. However, for the eastern segment, despite the posted speed limit being lower, the average and 85<sup>th</sup> percentile speeds were substantially higher. The average speed was 16 miles per hour over the posted speed limit and 90% of all vehicles recorded during the study were found to be speeding by over 10 miles per hour. The highest speed recorded on Tennyson Road was between 75 and 80 miles per hour and was observed at each of the three study locations.

#### 4.1.2 Traffic Analysis

Each of the 10 study intersections operate at the City's LOS standard of E or better during both the AM and PM peak hours. The signalized intersection with the highest existing delay is Tennyson Road and Calaroga Avenue which operates at a LOS E in the AM peak hour and a LOS D in the PM peak hour. Notably for the westbound left turning movement it is estimated that the 50<sup>th</sup> and 95<sup>th</sup> percentile queues exceed the storage capacity. The 50<sup>th</sup> percentile queue reflects the average queue length during the peak hour, and the 95<sup>th</sup> percentile queue represents a queue length that is only exceeded five percent of the time during the peak hour. Intersection level results are shown in **Table 4-2**. Synchro analysis sheets are included for Tennyson Road in **Appendix I**.

**Table 4-2: Tennyson Road Existing Traffic LOS**

SUMMARY OF INTERSECTION OPERATION EXISTING CONDITIONS						
Int. #	Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	Tennyson Rd and Hesperian Blvd	S	48.5	D	47.4	D
2	Tennyson Rd and Calaroga Ave	S	60.0	E	50.8	D
3	Tennyson Rd and Patrick Ave	S	37.3	D	25.8	C
4	Tennyson Rd and Tampa Ave	S	31.6	C	28.2	C
5	Tennyson Rd and Ruus Rd	S	27.5	C	28.0	C
6	Tennyson Rd and Baldwin St	SSSC	13.0	B	13.9	B
7	Tennyson Rd and Huntwood Ave	S	37.3	D	36.4	D
8	Tennyson Rd and Whitman St	S	37.5	D	28.9	C
9	Tennyson Rd and 12th St/Dixon St	S	29.2	C	34.7	C
10	Tennyson Rd and Mission Blvd	S	32.7	C	32.9	C

**Notes:**  
- **Bold** values indicate intersections operating at an unacceptable Level of Service  
- Delay values for unsignalized intersections represent the average vehicle delay on the worst (highest delay) intersection approach.  
S = Signalized; SSSC = Side Street Stop Controlled

#### 4.1.3 Parking Analysis

On Tennyson Road, the weekday daytime peak hour was 6 PM to 7 PM, and the weekend daytime peak hour was 7 PM to 8 PM. The highest parking utilization recorded on Tennyson Road occurred during the weekday daytime peak hour with 30% of all available spaces occupied; however, when including side streets, the highest utilization recorded within the study area occurred during the weekday nighttime peak hour, with 63% of all corridor and side street parking utilized. Parking utilization of adjacent side streets was significantly higher than the parking utilization on Tennyson Road for all peak hours. **Table 4-3** summarizes the parking utilization on Tennyson Road and adjacent side streets for all peak hours.

**Table 4-3: Tennyson Road Existing Parking Utilization**

On-Street Parking Location	Parking Inventory	Weekday Daytime Peak Hour Parking Occupancy (6PM- 7PM)	Weekday Nighttime Peak Hour Parking Occupancy (2AM-3 AM)	Weekend Daytime Peak Hour Parking Occupancy (7PM-8PM)	Weekend Nighttime Peak Hour Parking Occupancy (2AM-3AM)
Tennyson Road	264	30%	28%	26%	23%
Tennyson Road Side Streets	611	68%	79%	71%	71%
Total	875	57%	63%	57%	56%

**Figure 4-1** shows the existing parking inventory on Tennyson Road and side streets within 500 feet of the corridor. Tennyson Road has 264 total parking spaces, including ADA parking spaces, permitted parking spaces, and short-term parking spaces. No on-street parking is available on the corridor between Calaroga Avenue and Harvey Avenue except on the south side between Pompano Avenue and Tampa Avenue. The segments on the corridor with the greatest number of spaces are adjacent to Tennyson Park, Cesar Chavez Middle School, and the South Hayward BART Station. Parking figures for all time periods can be found for A and B Street in **Appendix J**.

Figure 4-1: Tennyson Road Existing Parking Inventory

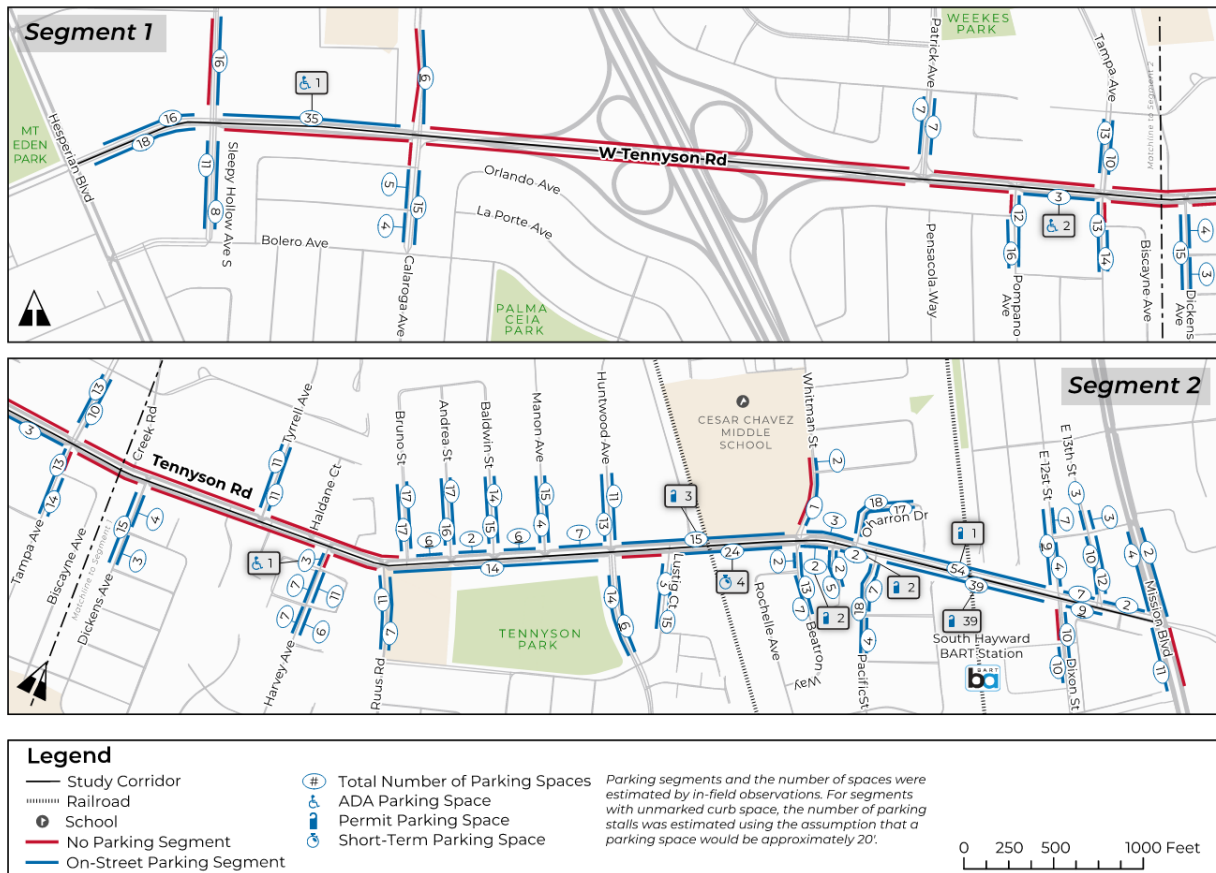
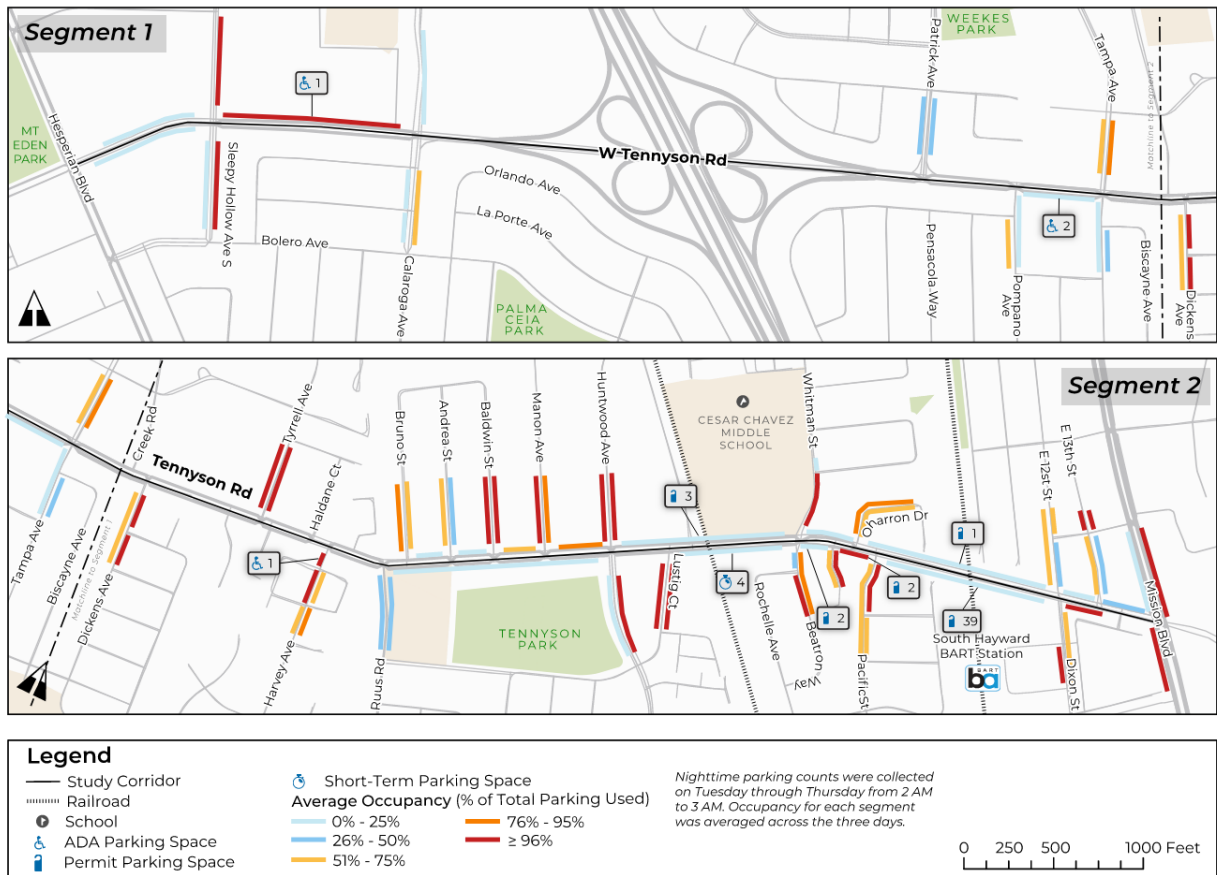


Figure 4-2 shows the existing weekday nighttime peak parking utilization along Tennyson Road and adjacent side streets, as that hour has the highest collective parking utilization inclusive of both Tennyson Road and adjacent side streets. Between Ruus Road and Mission Boulevard, most segments have occupancies of 50% or less. In general, parking utilization is higher on adjacent side streets, like between Ruus Road and Huntwood Avenue where most side street parking utilization exceeds 51%.

Figure 4-2: Tennyson Road Existing Weekday Nighttime Parking Occupancy



#### 4.1.4 Signal Warrant Analysis

The intersection at Tennyson Road and Baldwin Street was identified as a high-priority, high injury network intersection in the City’s 2023 LRSP. A traffic signal warrant was conducted to assess the feasibility of a traffic signal as a safety countermeasure for the intersection and uncontrolled pedestrian crossing.

**Table 4-4** summarizes this signal warrant analysis. As shown in the table, no warrants were satisfied, meaning that a traffic signal is not justified for this location. Full signal warrant worksheets for Tennyson Road are included in **Appendix K**.

Table 4-4: Tennyson Road and Baldwin Street Traffic Signal Warrant Summary

Signal Warrant		Carmel Valley Road and Valley Greens Drive
<b>Warrant #1 (8-hour Vehicular Volume)</b>	Condition A	Not Satisfied
	Condition B	Not Satisfied
<b>Warrant #2 (4-hour Vehicular Volume)</b>		Not Satisfied
<b>Warrant #3 (Peak Hour)</b>		Not Satisfied

<b>Warrant #4 (Pedestrian Volume)</b>	Not Satisfied
<b>Warrant #5 (School Crossing)</b>	Not Satisfied
<b>Warrant #6 (Coordinate Signal System)</b>	Not Satisfied
<b>Warrant #7 (Crash Experience)</b>	Not Satisfied
<b>Warrant #8 (Roadway Network)</b>	Not Satisfied
<b>Warrant #9 (Intersection Near a Grade Crossing)</b>	Not Satisfied

## 4.2 Project Alternatives

Like A and B Street, project alternatives and safety countermeasures were identified for Tennyson Road based on the existing conditions analysis, public outreach, and the Road Safety Audits. Detailed concepts illustrating proposed cross sections and safety countermeasures for each of the Tennyson Road alternatives can be found in **Appendix L**.

Tennyson Road between Whitman Street and Dixon Street/E. 12<sup>th</sup> Street is also included in the East Bay Greenway Multimodal Project, which currently proposes a two-way cycle track on the south side of the street and a one-way protected bike lane on the north side of the street, consistent with the Reimagined Corridor Alternative.

### 4.2.1 Base Corridor Enhancements Alternative

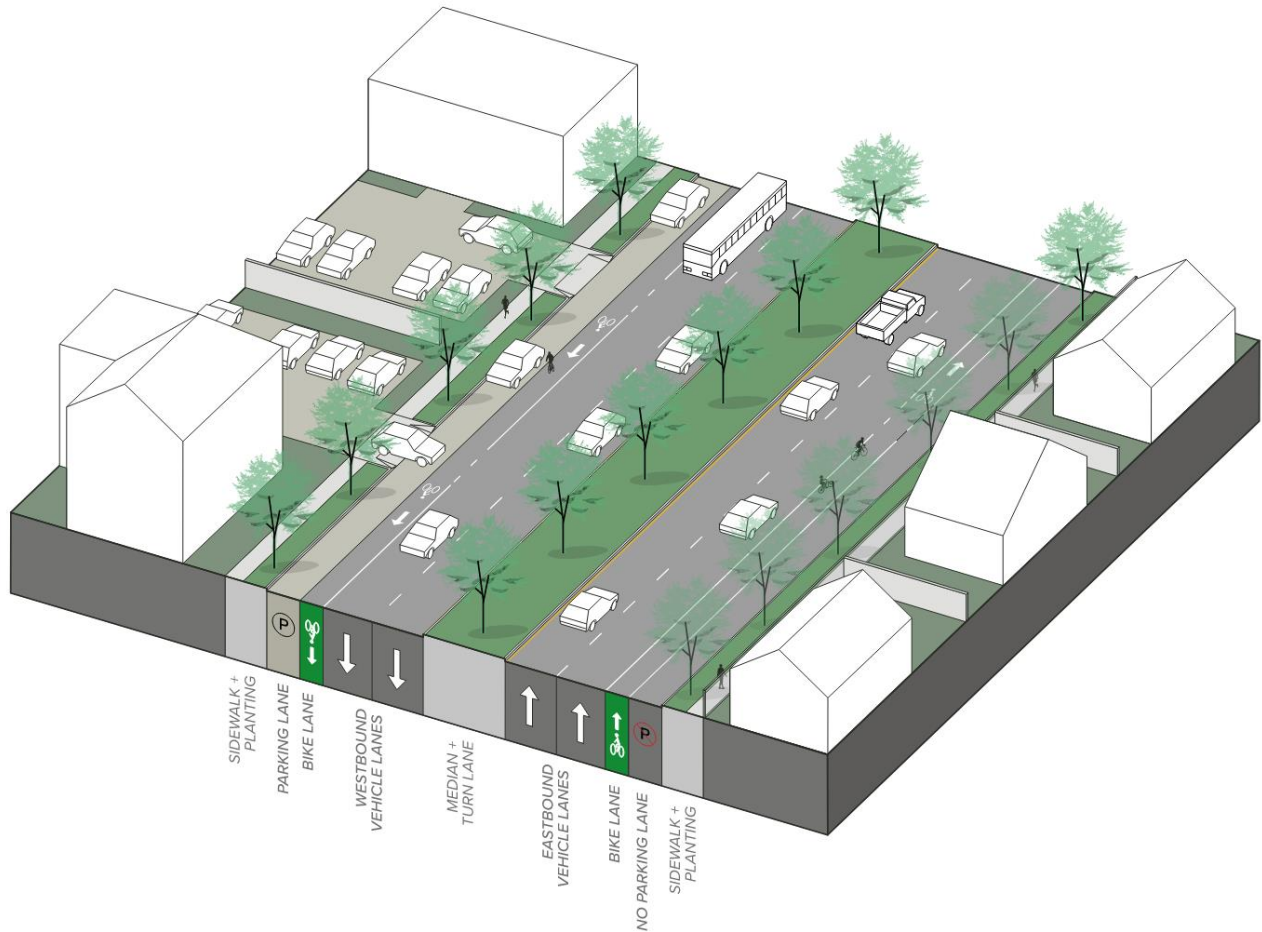
In this alternative, the existing roadway configuration would be maintained, with improvements consisting of spot improvements such as pedestrian bulb-outs, protected traffic signal phasing, and rectangular rapid flashing beacons (RRFBs). An overview of the spot improvements for Tennyson Road can be seen in **Figure 4-3**. Other corridor wide recommendations, such as pedestrian scale lighting, high-visibility crosswalks, and advance stop bars, are not included in these graphics.

**Figure 4-3: Tennyson Road Spot Improvement Locations**



Tennyson Road has two travel lanes, a Class II bike lane between Hesperian Boulevard and Calaroga Avenue and between Patrick Street and E 12<sup>th</sup> Street/Dixon Street, and a curb lane where parking may or may not be permitted in both directions, as shown in **Figure 4-4**.

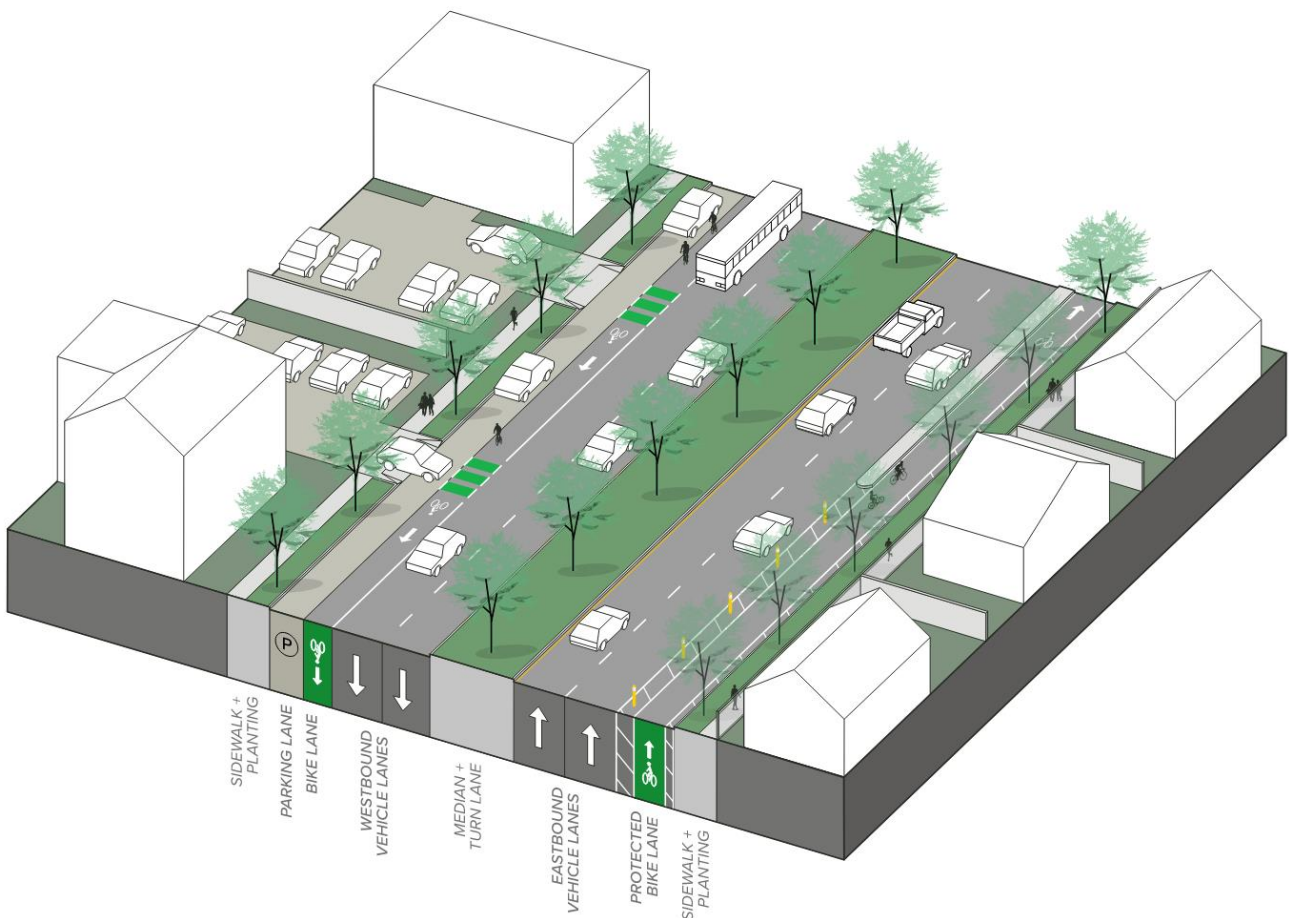
*Figure 4-4: Tennyson Road Existing Conditions/Base Corridor Enhancements Alternative Cross-Section*



### 4.2.2 Connected Corridor Alternative

This alternative, represented in **Figure 4-5**, would narrow travel lanes and include parking removal between Whitman Street and E 12<sup>th</sup> Street/Dixon Street to widen the Class II bike lane on the north side of the street, upgrade to a Class IV separated bike lane on the south side of the street west of Whitman Street, and upgrade to a two way Class IV cycle track between Whitman Street and E 12<sup>th</sup> Street/Dixon Street. Protection for the separated bike lane can consist of plastic flex posts, a raised concrete curb, or other vertical separation. Where no bike lanes exist, this alternative narrows lanes to add them. This alternative includes the intersection spot improvements noted in the Base Corridor Enhancements Alternative.

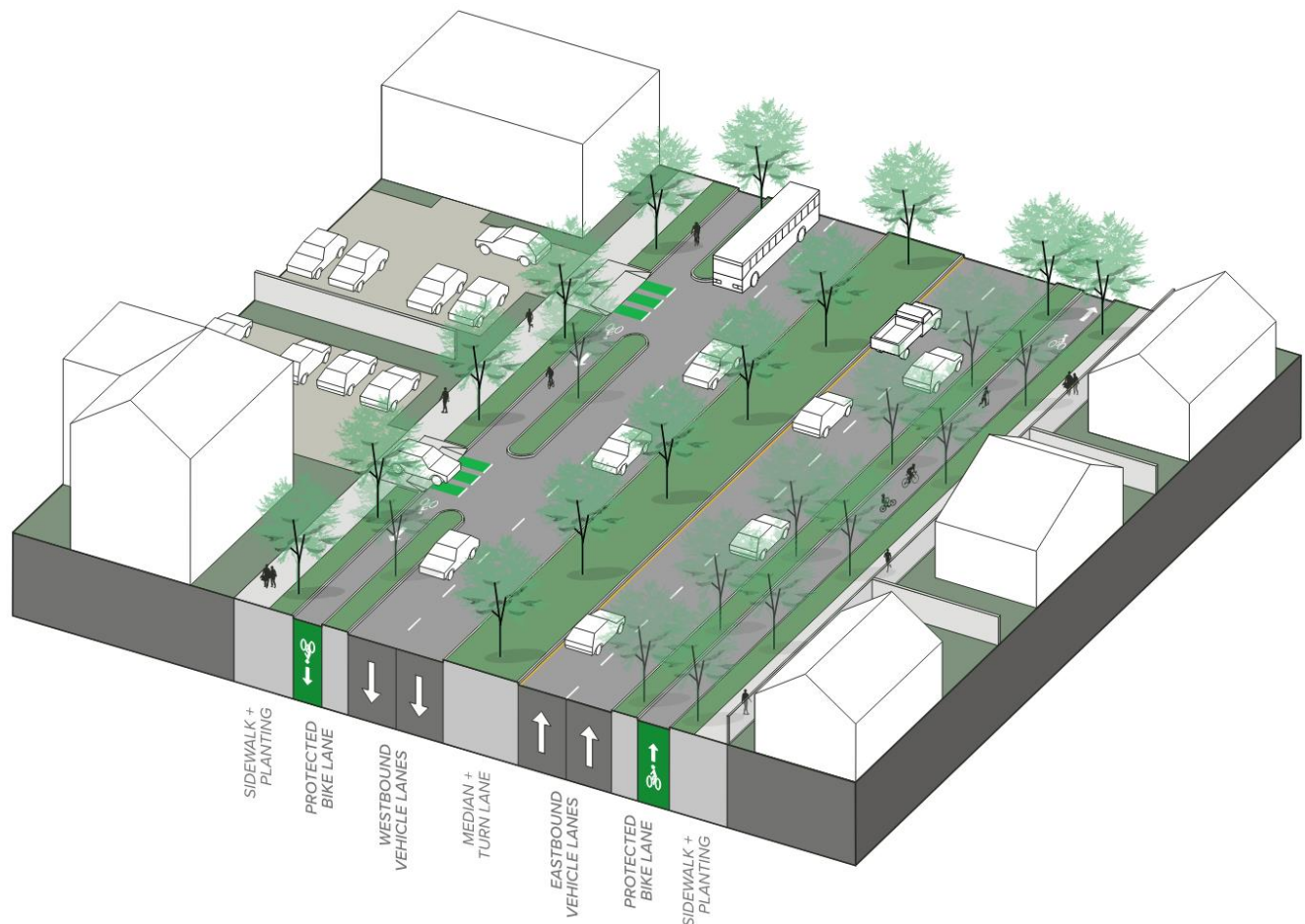
**Figure 4-5: Tennyson Road Connected Corridor Alternative Cross-Section**



### 4.2.3 Reimagined Corridor Alternative

In this alternative, on-street parking would be removed on both sides of the street between Hesperian Boulevard and Ruus Road and between E 12<sup>th</sup> Street and Mission Boulevard, and on the south side between Huntwood Avenue and E 12<sup>th</sup> Street. Travel lanes and medians are narrowed to upgrade Class II bike lanes to Class IV separated bike lanes west of Whitman Street, and a two-way Class IV cycle track between Whitman Street and E 12<sup>th</sup> Street/Dixon Street. An eastbound travel lane is also removed between E 12<sup>th</sup> Street and Mission Boulevard to provide improved bicycle facilities. In addition to the spot improvements noted in the Base Corridor Enhancements Alternative, this alternative includes the implementation of protected intersections. The Reimagined Corridor Alternative is shown in **Figure 4-6**.

**Figure 4-6: Tennyson Road Reimagined Corridor Alternative Cross-Section**



## 4.3 Analysis Findings

### 4.3.1 Traffic

One traffic model was built to reflect both the Base Corridor Enhancements and Connected Corridor Alternatives as the two alternatives have no operational or lane assignment differences. The Reimagined Corridor Alternative was modeled separately and includes protected intersection improvements and other capacity reductions.

Traffic analysis finds that all 10 study intersections operate at a LOS D or better with each alternative, an improvement from the existing conditions where Tennyson Road and Calaroga Avenue operates at a LOS E. Traffic analysis results for the AM peak hour are shown in **Figure 4-7** and for the PM peak hour in **Figure 4-8**.

**Figure 4-7: Tennyson Road Project Alternative Traffic Analysis Results (AM Peak Hour)**

SUMMARY OF INTERSECTION OPERATION PROJECT ALTERNATIVES (AM)								
Int. #	Intersection	Traffic Control	Base Corridor Enhancements		Connected Corridor		Reimagined Corridor	
			Delay	LOS	Delay	LOS	Delay	LOS
1	Tennyson Rd and Hesperian Blvd	S	48.5	D	48.7	D	48.7	D
2	Tennyson Rd and Calaroga Ave	S	60.0	E	47.9	D	50.8	D
3	Tennyson Rd and Patrick Ave	S	37.3	D	37.3	D	54.7	D
4	Tennyson Rd and Tampa Ave	S	31.6	C	31.6	C	31.7	C
5	Tennyson Rd and Ruus Rd	S	27.5	C	28.2	C	28.5	C
6	Tennyson Rd and Baldwin St	SSSC	13.0	B	9.6	A	9.6	A
7	Tennyson Rd and Huntwood Ave	S	37.3	D	49.5	D	47.2	D
8	Tennyson Rd and Whitman St	S	37.5	D	38.4	D	46.1	D
9	Tennyson Rd and 12th St/Dixon St	S	29.2	C	31.5	C	31.1	C
10	Tennyson Rd and Mission Blvd	S	32.7	C	40.2	D	41.6	D

**Notes:**

- **Bold** values indicate intersections operating at an unacceptable Level of Service
- Delay values for unsignalized intersections represent the average vehicle delay on the worst (highest delay) intersection approach.

S = Signalized; SSSC = Side Street Stop Controlled

**Figure 4-8: Tennyson Road Project Alternative Traffic Analysis Results (PM Peak Hour)**

SUMMARY OF INTERSECTION OPERATION PROJECT ALTERNATIVES (PM)								
Int. #	Intersection	Traffic Control	Base Corridor Enhancements		Connected Corridor		Reimagined Corridor	
			Delay	LOS	Delay	LOS	Delay	LOS
1	Tennyson Rd and Hesperian Blvd	S	47.4	D	47.7	D	47.7	D
2	Tennyson Rd and Calaroga Ave	S	50.8	D	46.6	D	47.7	D
3	Tennyson Rd and Patrick Ave	S	25.8	C	25.8	C	31.8	C
4	Tennyson Rd and Tampa Ave	S	28.2	C	28.2	C	28.4	C
5	Tennyson Rd and Ruus Rd	S	28.0	C	30.2	C	32.3	C
6	Tennyson Rd and Baldwin St	SSSC	13.9	B	10.0	A	10.0	A
7	Tennyson Rd and Huntwood Ave	S	36.4	D	44.7	D	45.1	D
8	Tennyson Rd and Whitman St	S	28.9	C	27.9	C	38.8	D
9	Tennyson Rd and 12th St/Dixon St	S	34.7	C	32.8	C	32.7	C
10	Tennyson Rd and Mission Blvd	S	32.9	C	38.7	D	39.8	D

**Notes:**

- **Bold** values indicate intersections operating at an unacceptable Level of Service
- Delay values for unsignalized intersections represent the average vehicle delay on the worst (highest delay) intersection approach.

S = Signalized; SSSC = Side Street Stop Controlled

In each of the three alternatives, delay marginally increases at most signalized intersections due to the inclusion of intersection spot improvements. Tennyson Road and Calaroga Avenue would see decreased delay and improved LOS due to signal phasing changes. Each Build alternative proposes to change the existing northbound through-right lane into a through only movement with a right-turn overlap phase. In addition to providing significant safety benefits by eliminating the dual right-turn threat to pedestrians and people biking, this is a more efficient intersection operation. This change does require restricting westbound U-turns.

The LOS at Tennyson and Baldwin Street improves from B to A in both project alternatives due to the restriction of the left turn movements from Baldwin Street.

#### 4.3.2 Parking

A parking diversion analysis was performed for each alternative where parking removal is proposed. While this analysis focuses on parking removal to facilitate corridor-wide alternatives, additional parking removal is likely needed to implement the spot improvements and comply with current laws and safety best practices, such as Assembly Bill 413, which requires daylighting in front of crosswalks. Parking change quantities will be refined after conceptual design.

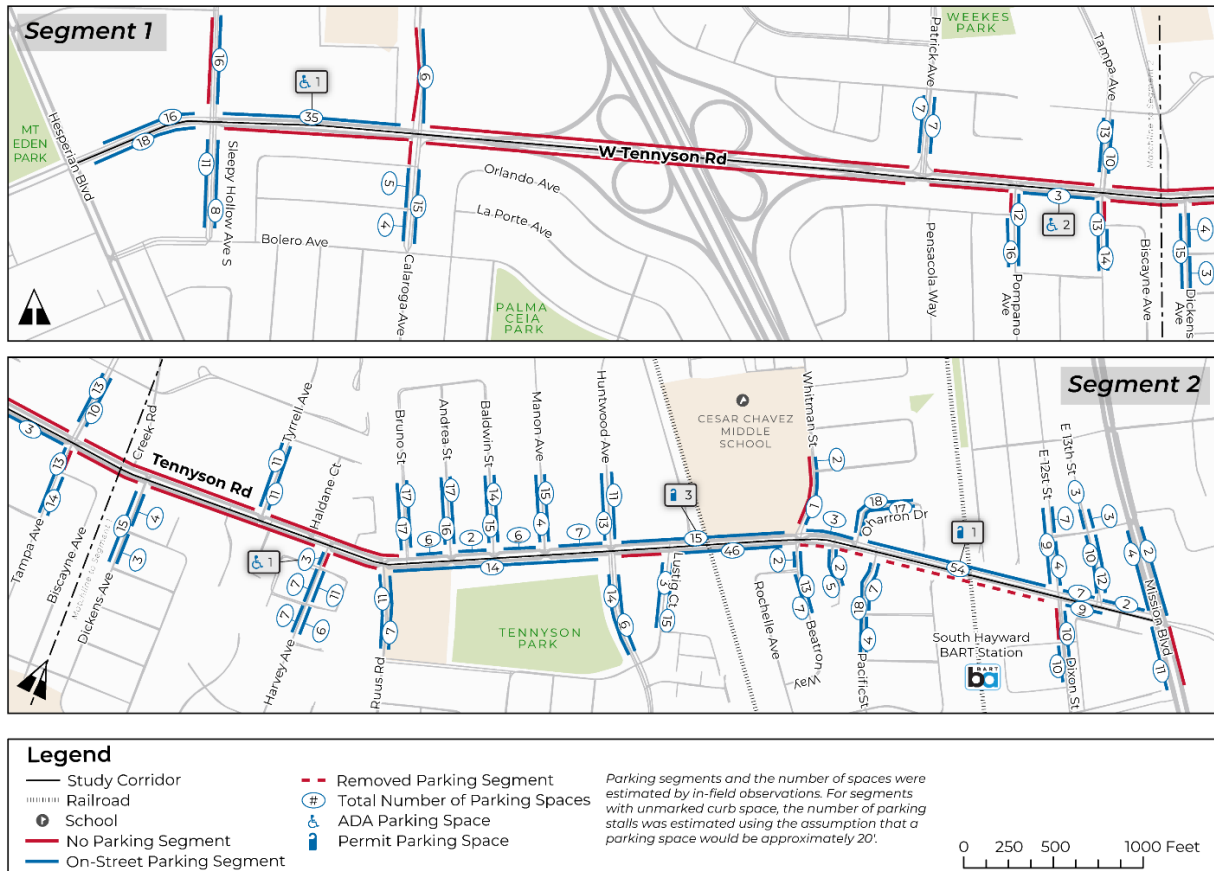
4.3.2.1.1 Base Corridor Enhancements Alternative

Parking impact would be limited to spot locations for daylighting, bus stop modifications, and other safety improvements. No larger-scale parking modifications are anticipated.

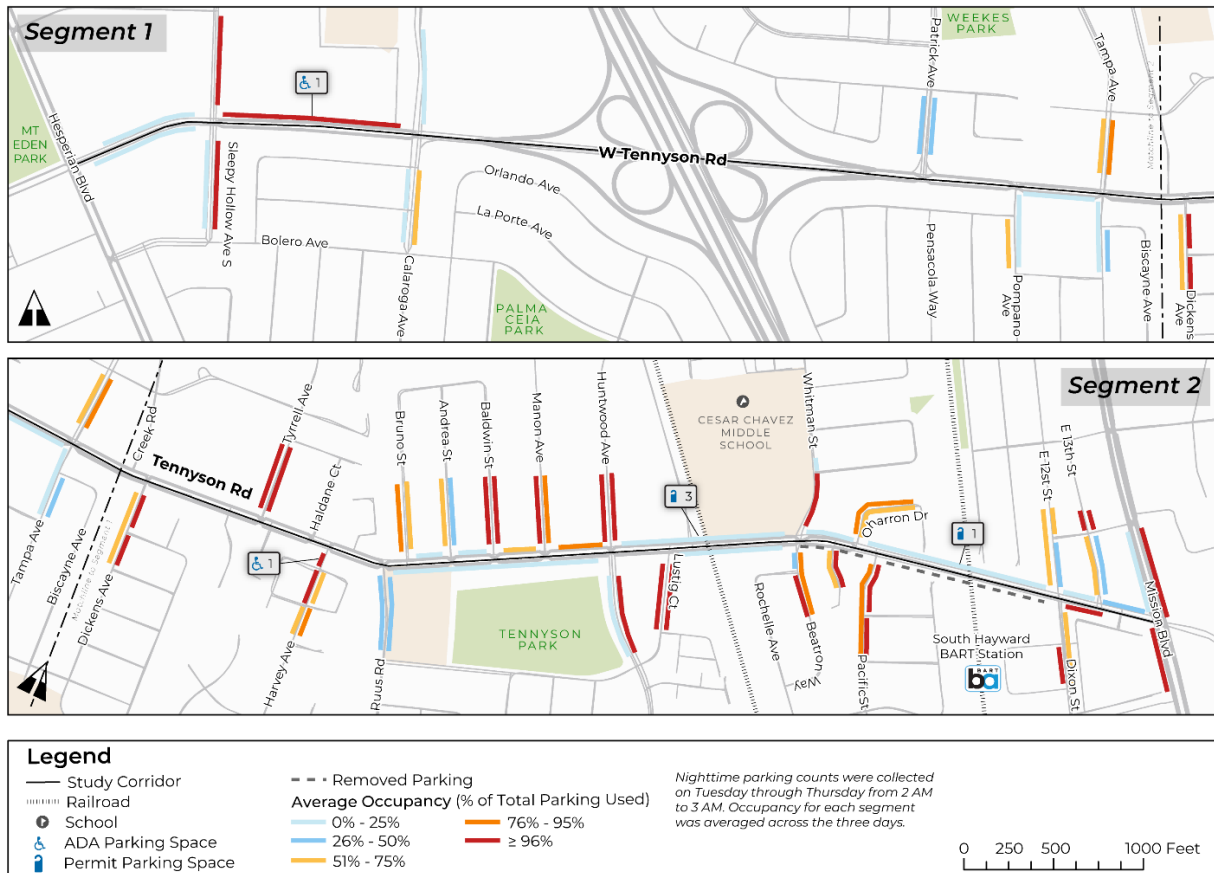
4.3.2.1.2 Connected Corridor Alternative

Parking removal is proposed on the south side of Tennyson Road between Whitman Street and E 12<sup>th</sup> Street/Dixon Street. A total of 43 parking spaces would be removed. Within that segment the observed current demand of seven cars would need to be relocated to nearby parking spaces during the weekday peak nighttime period. In all peak hour periods, parking would be available on adjacent side streets. After parking removal, the weekday nighttime peak hour parking occupancy is 30% on Tennyson Road, and 80% on adjacent side streets. The parking inventory for this alternative is shown in **Figure 4-9**, and the weekday nighttime peak parking occupancy after parking relocation is shown in **Figure 4-10**. Additional parking impact is anticipated in other segments, not shown, for basic safety improvements such as daylighting and bus stop modifications.

Figure 4-9: Tennyson Road Connected Corridor Alternative Parking Inventory



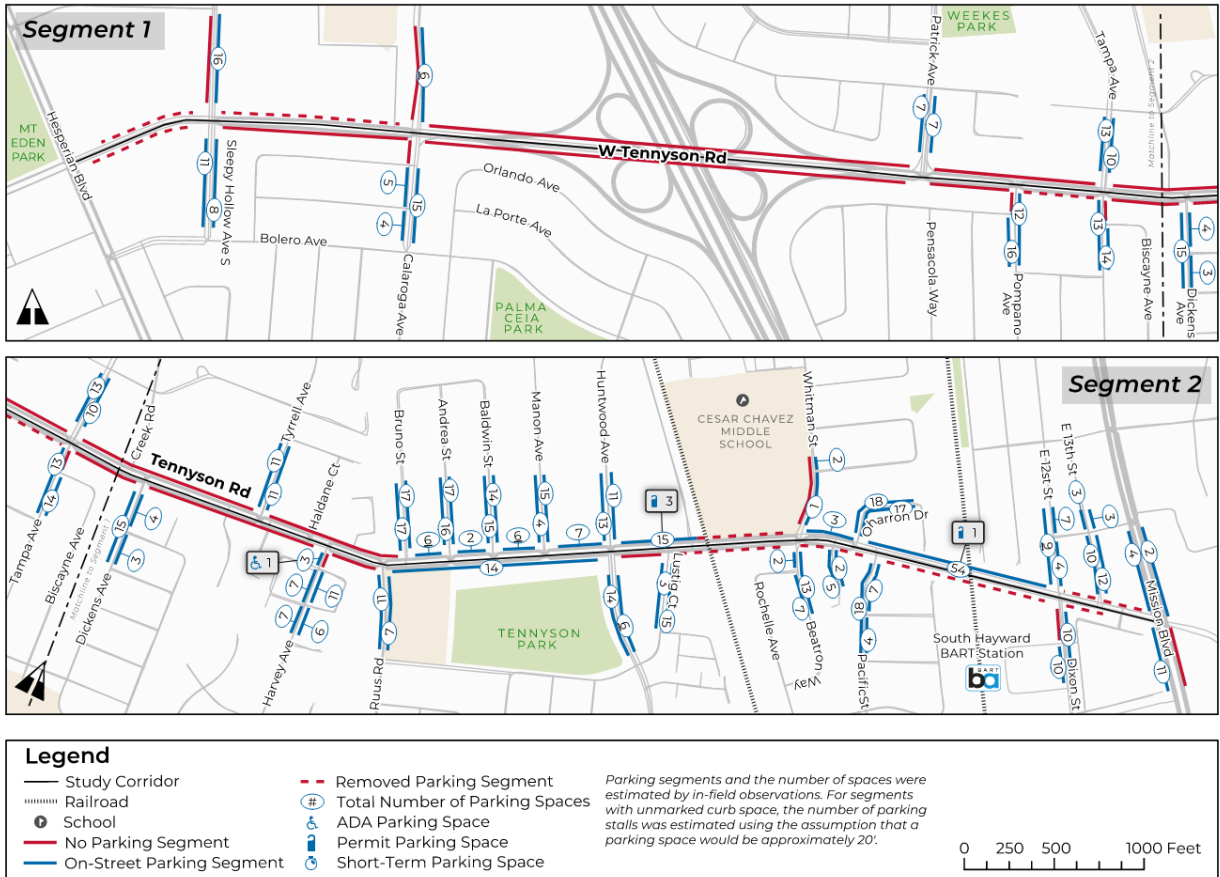
**Figure 4-10: Tennyson Road Connected Corridor Alternative Weekday Nighttime Peak Parking Occupancy**



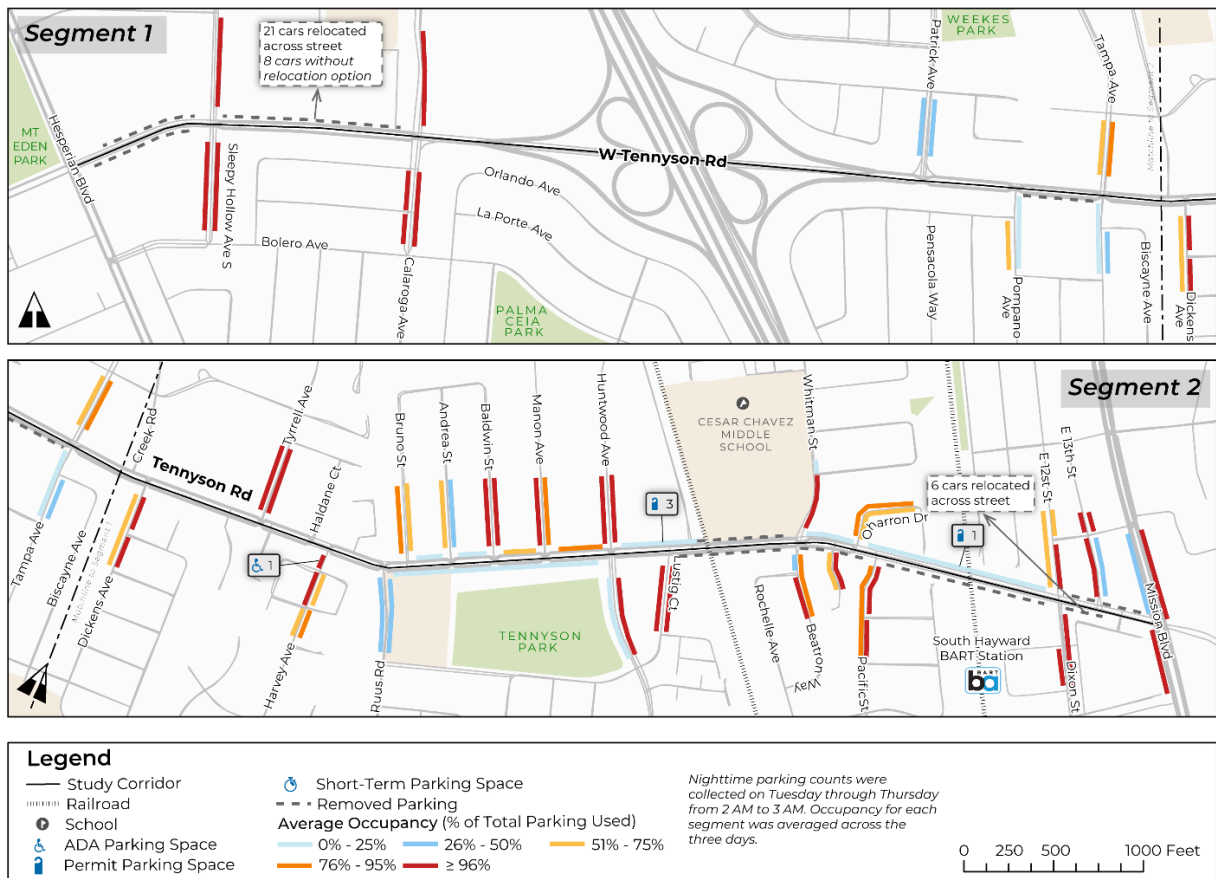
**4.3.2.1.3 Reimagined Corridor Alternative**

This alternative would remove parking on Tennyson Road from Hesperian Boulevard to Ruus Road, on the south side of Tennyson Road between Whitman Street and E 12<sup>th</sup> Street/Dixon Street, and on both sides of Tennyson Road between E 12<sup>th</sup> Street/Dixon Street and Mission Boulevard, totaling 158 parking spaces. Within those areas, an average of 52 cars would need to be relocated to other parking spaces. Due to nearby street parking being at capacity, it is expected that eight of the 52 relocated cars could not be relocated to a nearby available parking space. An additional 27 relocated cars would need to park across the corridor from their existing parking space. Discounting the eight vehicles that are without nearby and available parking, the occupancy during the weekday nighttime peak hour would be 21% on Tennyson Road and 86% on adjacent side streets. In this alternative, the parking occupancy on Tennyson Road would decrease because many of the cars currently parked along Tennyson Road would instead find parking on nearby side streets. This is seen in the 7% increase in occupancy of nearby side streets between existing and the Reimagined Corridor Alternative. **Figure 4-11** shows the parking inventory for this alternative, and **Figure 4-12** shows the weekday nighttime peak parking occupancy after relocation. Additional parking impact is anticipated in other segments, not shown, for daylighting, bus stop modifications, and other safety improvements.

Figure 4-11: Tennyson Road Reimagined Corridor Alternative Parking Inventory



**Figure 4-12: Tennyson Road Reimagined Corridor Alternative Weekday Nighttime Peak Parking Occupancy**



4.3.2.1.4 Tennyson Road Parking Summary Tables

**Table 4-5** notes the quantity of parking spaces removed in each project alternative and the estimated number of cars needing to be relocated to new parking spaces. It identifies where parked cars would have no nearby available side street location to park. **Table 4-6** summarizes the weekday nighttime peak parking occupancy on Tennyson Road and adjacent side streets as a result of parking removal associated with the alternatives.

**Table 4-5: Parking Inventory by Tennyson Road Alternative**

On-Street Parking Location	Weekday Nighttime Peak Parking Occupancy			
	Existing Parking Inventory	Existing Conditions/ Base Corridor Enhancements Alternative	Connected Corridor Alternative	Reimagined Corridor Alternative
Parking Inventory	875	875	832	717
Number of Spaces Removed	-	0	43	158
Number of Existing Parked Cars Impacted	-	0	7	52*

\*Up to 8 diverted vehicles did not have a nearby and available parking space to relocate to.

**Table 4-6: Weekend Nighttime Peak Parking Occupancy by Tennyson Road Alternative**

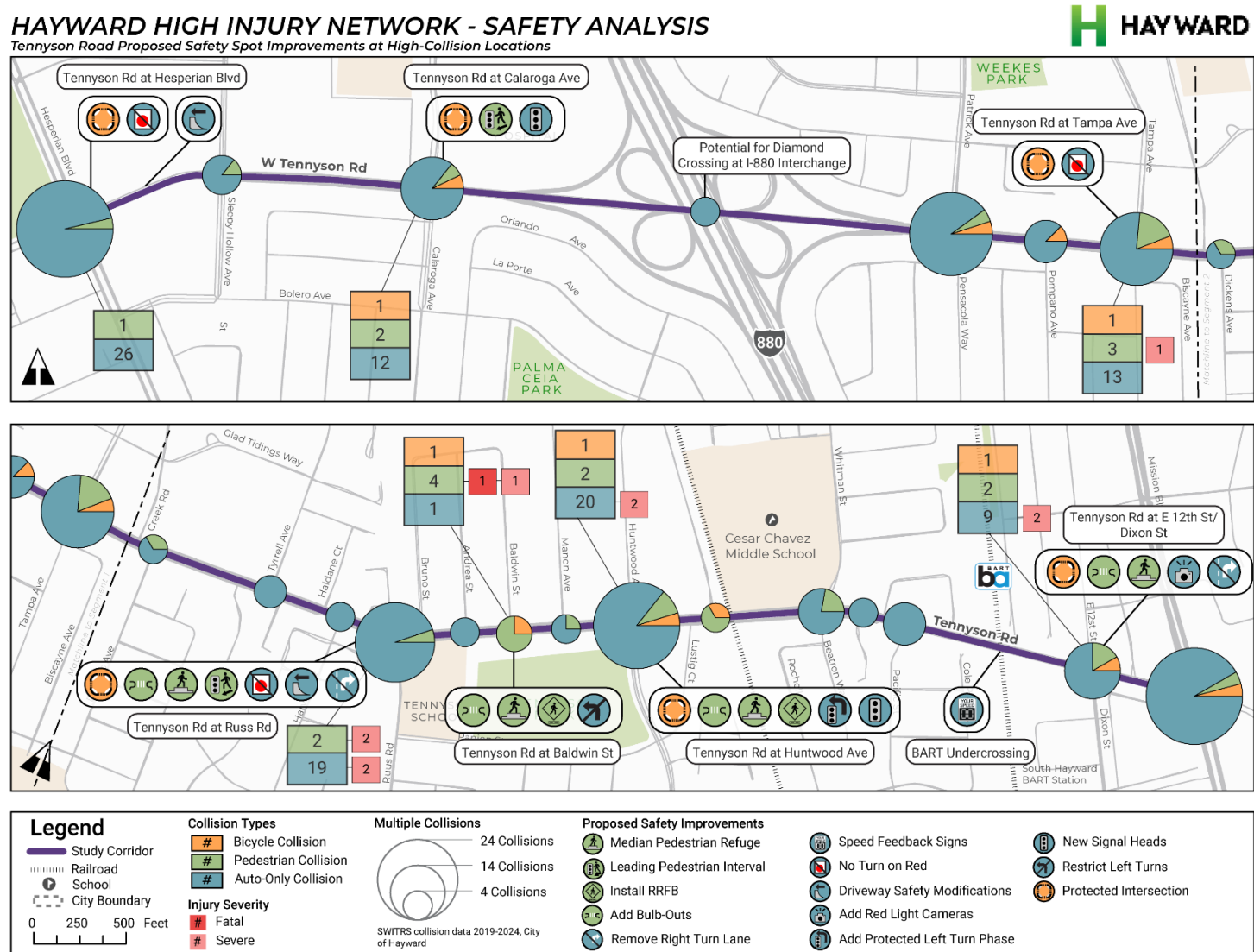
On-Street Parking Location	Weekday Nighttime Peak Parking Occupancy			
	Existing Parking Inventory	Existing Conditions/ Base Corridor Enhancements Alternative	Connected Corridor Alternative	Reimagined Corridor Alternative
Tennyson Road	264	28%	30%	21%*
Tennyson Road Side Streets	611	79%	80%	86%*
Total	875	63%	67%	76%*

\*Up to 8 diverted vehicles did not have a nearby and available parking space to relocate to.

### 4.3.3 Safety Analysis

A safety analysis was conducted for each of the proposed project alternatives and spot improvements for Tennyson Road. Each of the intersection spot improvements proposed were mapped over the previously created collision graphic to visualize where safety improvements are being proposed in relation to the historically high collision areas. This safety analysis graphic represents safety improvements proposed at the highest collision locations on Tennyson Road. This visualization is shown in **Figure 4-13**. As shown in the figure, spot safety improvements are proposed at nearly all locations with a history of multiple bicycle and pedestrian-involved collisions, in addition to the corridor-wide safety improvements. Additionally, an analysis of each of the spot improvements using the California Local Road Safety Manual (LRSM) is included in **Appendix H** for Tennyson Road.

Figure 4-13: Tennyson Road Proposed Safety Spot Improvements at High-Collision Locations



For the analysis of the project alternatives, descriptions of the safety improvements, benefits, and challenges for each project alternative are provided in **Table 4-7**.

**Table 4-7: Tennyson Road Project Alternative Safety Analysis**

Alt.	Description	Benefits	Challenges
Base Corridor Enhancements	<ul style="list-style-type: none"> <li>Existing roadway configuration with spot improvements only, such as curb bulb-outs, protected traffic signal phasing, and RRFBs.</li> </ul>	<ul style="list-style-type: none"> <li>Quicker implementation</li> <li>Intersection safety improvements for vehicles, pedestrians, and people biking</li> </ul>	<ul style="list-style-type: none"> <li>Gap in bike lanes on corridor still exists</li> <li>Minimal impacts to reduce vehicle speeds or separate bicycles and autos</li> </ul>
Connected Corridor Alternative	<ul style="list-style-type: none"> <li>Narrow travel lanes</li> <li>Upgrades existing Class II bike lanes to Class IV separated bike lanes or Class IV two-way cycle tracks on the south side of the street</li> <li>Bike lane protection can either be plastic flex post for lower costs, or raised concrete islands for increased safety</li> <li>Widens existing bike lane on the north side of the street</li> <li>Adds Class II bike lanes where no bike lane facilities exist</li> <li>Includes same intersection spot improvements noted in the Base Corridor Enhancements Alternative</li> </ul>	<ul style="list-style-type: none"> <li>Quicker implementation</li> <li>Continuous bike facility on Tennyson Road</li> <li>Separates people biking from vehicle traffic horizontally and vertically from vehicle traffic where possible</li> <li>Increases separation between pedestrians and vehicle traffic</li> <li>Narrows travel lanes for increased traffic calming</li> <li>Installing a separated bike lane (south side) has a crash reduction of 45% for bicycle and pedestrian crashes</li> </ul>	<ul style="list-style-type: none"> <li>Bicycle facilities remain fairly narrow and maintains conflict points at intersections</li> </ul>

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Reimagined Corridor Alternative</p>	<ul style="list-style-type: none"> <li>• Removes parking lanes on both sides of the street between Hesperian Boulevard and Ruus Road and E 12<sup>th</sup> Street and Mission Boulevard, and on the south side of the street between Huntwood Avenue and E 12<sup>th</sup> Street</li> <li>• Narrows center median</li> <li>• Upgrades bike lanes to Class IV separated cycle tracks</li> <li>• Separates people biking from vehicle traffic with landscape strips</li> <li>• Includes same intersection spot improvements noted in the Base Corridor Enhancements Alternative as well as allows for protected intersection improvements</li> </ul>	<ul style="list-style-type: none"> <li>• Separates people biking from vehicle traffic horizontally and vertically with concrete protection</li> <li>• Further increases separation between pedestrians and vehicle traffic</li> <li>• Continuous bike facility on Tennyson Road</li> <li>• Protected intersection improvements allow for reduced conflict points for people biking and vehicle traffic</li> <li>• Reducing curb to curb roadway width has inherent traffic calming effect on vehicle speeds</li> <li>• Installing a separated bike lane has a crash reduction of 45% for bicycle and pedestrian crashes</li> </ul>	<ul style="list-style-type: none"> <li>• Longer term implementation</li> </ul>
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