

BIKE LANES ON BROADWAY

Traffic Study



Source: Bike Lanes on Broadway Feasibility Study (2016)

JANUARY 2018

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1 INTRODUCTION

The City of Chula Vista (City) adopted their Bikeway Master Plan in 2011 and classified Broadway as a future Class III Bike Route. Broadway is a four-lane facility that runs north-south through the western part of the City and serves as an important commercial thoroughfare. Since the adoption of the Bikeway Master Plan, the City has added bike route signs and shared roadway bicycle markings (sharrows) and investigated the installation of bike lanes along Broadway. The City finalized the Bike Lanes on Broadway Feasibility Study in 2016, which recommended bike lanes along the corridor.

Per the recommendation of the feasibility study, the City is proposing to install bike lanes on Broadway from C Street to Main Street. The proposed project on Broadway would include the following:

- **From C Street to G Street:** Buffered bike lanes on each side of the street with a parking lane and single travel lane in each direction for most of the corridor;
 - To accommodate the buffered bike lanes, Broadway north of E Street to C Street and Broadway south of E Street to G Street will be reduced from two to one lane in each direction.
 - The northbound and southbound approach/exit lanes along Broadway at E Street will continue to operate with two travel lanes through the intersection. Within this segment, E Street is the only cross-street along Broadway that provides direct access to the Interstate 5 and trolley station. This section would still provide continuous on-street bike lanes through the intersection and the Broadway corridor.
 - **The signalized intersections on Broadway between C Street to G Street were chosen for analysis due to proposed road diet for this segment of the project.**
- **From G Street to L Street:** Bike lanes on each side of the street with two travel lanes and parking in each direction;
 - Broadway between G Street and L Street would maintain two travel lanes in each direction. Travel lanes would be reduced to 11' wide each to accommodate the bike lanes. **This segment was not included for traffic analysis because the number of lanes, intersection delay, and level of service would remain unchanged with the proposed project.** Existing traffic counts and LOS are included in **Appendix E**.
- **From L Street to Main Street:** Buffered bike lanes on each side of the street with two travel lanes and no on-street parking in each direction.
 - Broadway between L Street and Main Street would maintain two travel lanes in each direction. The inside travel lane would be reduced to 11' in each direction to accommodate the bike lanes. **This segment was not included for traffic analysis because the number of lanes, intersection delay, and level of service would remain unchanged with the proposed project.** Existing traffic counts and LOS are included in **Appendix E**.
 - The proposed project would remove on-street parking for this section. Per the 2016 Feasibility Study, approximately 275 curb parking spaces would be removed with the project. On-street parking is not evaluated under CEQA and therefore not included in this study.

The proposed project would not generate additional vehicular trips.

2 METHODOLOGY

The following section describes the methodology used to perform intersection capacity analysis.

2.1 STUDY AREA

The signalized intersections on Broadway between C Street to G Street was chosen for analysis due to proposed road diet for this segment of the project. The number of travel lanes would be reduced from two to one lane in each direction to accommodate the buffered bike lanes at the intersections except for E Street, which would maintain two lanes through the intersection. Broadway from G Street to Main Street would maintain two travel lanes in each direction and maintain its existing intersection capacity, therefore intersections along this section were not analyzed. The proposed six study intersections are presented in **Table 2-1**.

Table 2-1 Study Intersections (Existing Conditions)

Intersection	Traffic Control
1 Broadway & C St	Traffic Signal
2 Broadway & D St	Traffic Signal
3 Broadway & Flower St	Traffic Signal
4 Broadway & E St	Traffic Signal
5 Broadway & F St	Traffic Signal
6 Broadway & G St	Traffic Signal

2.2 ANALYSIS PROCESS

The analysis process includes evaluating intersection level of service at the study intersections for six peak hour; 7-8am, 8-9am, 11:30am-12:30pm, 12:30-1:30pm, 4-5pm, and 5-6pm. Delay and level of service for the intersections will be calculated using Synchro 9 traffic analysis software package.

2.2.1 ANALYSIS SOFTWARE

Intersection analysis was conducted using Synchro 9 software with 2010 Highway Capacity Manual (HCM) methodology. Existing peak-hour factors (PHF) were used for both baseline and with-project analysis scenarios.

2.2.2 SIGNALIZED INTERSECTIONS

The 2010 Highway Capacity Manual (HCM) published by the Transportation Research Board establishes a system whereby highway facilities are rated for their ability to process traffic volumes. The terminology "level of service" is used to provide a "qualitative" evaluation based on certain "quantitative" calculations, which are related to empirical values.

Level of service (LOS) for signalized intersections is defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and loss of travel time. Specifically, LOS criteria are stated in terms of the average control delay per vehicle for the peak 15-minute period within the hour

analyzed. The average control delay includes initial deceleration delay, queue move-up time, and final acceleration time in addition to the stop delay. The criteria for the various levels of service designations for signalized and unsignalized intersections are given in **Table 2-2**.

The City of Chula Vista does not explicitly communicate intersection standards for LOS, however, the City of Chula Vista General Plan reports that the acceptable LOS for Gateway Streets and Commercial Boulevards is LOS D. Broadway is classified as both a Gateway Street and Commercial Boulevard per section 5.5.6 in the Land Use and Transportation Element of the General Plan.

Table 2-2 Level of Service (LOS) Criteria for Intersections

LOS	Signalized (Control Delay) (sec/veh) ^(a)	Description
A	≤10.0	Operations with very low delay and most vehicles do not stop.
B	>10.0 and ≤20.0	Operations with good progression but with some restricted movement.
C	>20.0 and ≤35.0	Operations where a significant number of vehicles are stopping with some backup and light congestion.
D	>35.0 and ≤55.0	Operations where congestion is noticeable, longer delays occur, and many vehicles stop. The proportion of vehicles not stopping declines.
E	>55.0 and ≤80.0	Operations where there is significant delay, extensive queuing, and poor progression.
F	>80.0	Operations that are unacceptable to most drivers, when the arrival rates exceed the capacity of the intersection.
Source:		
(a)	2010 Highway Capacity Manual, Chapter 16, Page 2, Exhibit 16-2	
(b)	2010 Highway Capacity Manual, Chapter 17, Page 2, Exhibit 17-2	

3 EXISTING CONDITIONS

This section summarizes the existing roadway circulation network, peak-hour traffic volumes, and operations at the study intersections.

3.1 ROAD NETWORK

Broadway is a four-lane facility that runs north-south through the western part of the City. Per the Chula Vista Circulation Plan, Broadway is classified as a four-lane Gateway Street north of C Street, a four-lane Commercial Boulevard from C Street to L Street, and as a four-lane Major Street south of L Street. Interstate 5 (I-5) freeway ramps and trolley stations are located at E Street, H Street, and Palomar Street. Additional I-5 freeway ramps are located on J Street and Main Street. On-street parking is permitted on both sides of the street. The posted speed limit is 35 miles per hour. Broadway functions as a Class III (Bike Route) bicycle facility. **Figure 3-1** shows the existing geometrics at the study intersections.

3.2 TRAFFIC VOLUMES

Existing a.m. (7-9am), mid-day (11:30am-1:30pm), and p.m. (4-6pm) peak-hour turning movement counts were conducted by National Data and Surveying Services (NDS) at the study intersections on Thursday, October 26, 2017. **Figure 3-2** illustrates the Existing Condition traffic volumes for each of the six analysis periods. Traffic volume data from NDS is provide in **Appendix A**. Existing traffic signal timing sheets are included in **Appendix B**.

3.3 INTERSECTION ANALYSIS

The LOS analysis results for the study intersections under Existing Conditions is presented in **Table 3-1**. As shown in the table, all study intersections would operate at LOS D or better during all analysis periods. The Synchro intersection LOS analysis sheets are provided in **Appendix C**.

3.4 BICYCLE DATA AND COLLISIONS

The Bike Lanes on Broadway Feasibility Study (2016) obtained bicycle collision data for a 5-year period (2009-2013) from the Statewide Integrated Traffic Records Service (SWITRS). As reported in Section 3.9 of the study, 33 bicycle-related collisions in the five-year period were reported along the Broadway corridor. The primary collision factors are summarized below:

Percent	Primary Collision Factor
34%	Wrong Side of Road
21%	Improper Turning
15%	Automobile Right of Way
15%	Other Hazardous Violation
6%	Pedestrian Right of Way
6%	Traffic Signals and Signs
3%	Other Bicycle Violation

As part of the Feasibility Study, bicycle counts and bicyclist data was collected in 2015. The data revealed that 68% of observed bicyclists rode on the sidewalk; one of 32 cyclists riding in the traffic lane was observed riding in the wrong direction; and 40 out of 67 cyclists riding on the sidewalk were observed riding in the wrong direction. The Bicycle Collision and Bicycle Counts sections from the Feasibility Study are included in **Appendix D**.

Bike Lanes on Broadway

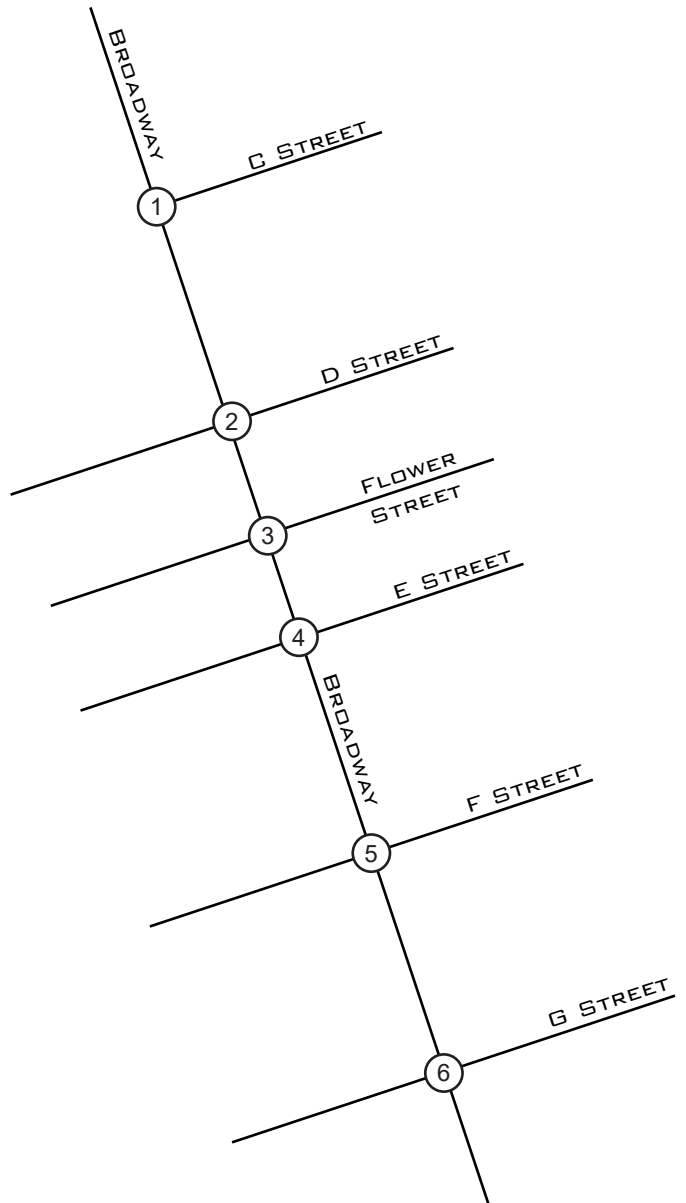
Broadway & C Street	Broadway & D St	Broadway & Flower St	Broadway & E St
Broadway & F St	Broadway & G St		

Legend:

- ⊗ Signalized
- o Right-turn overlap



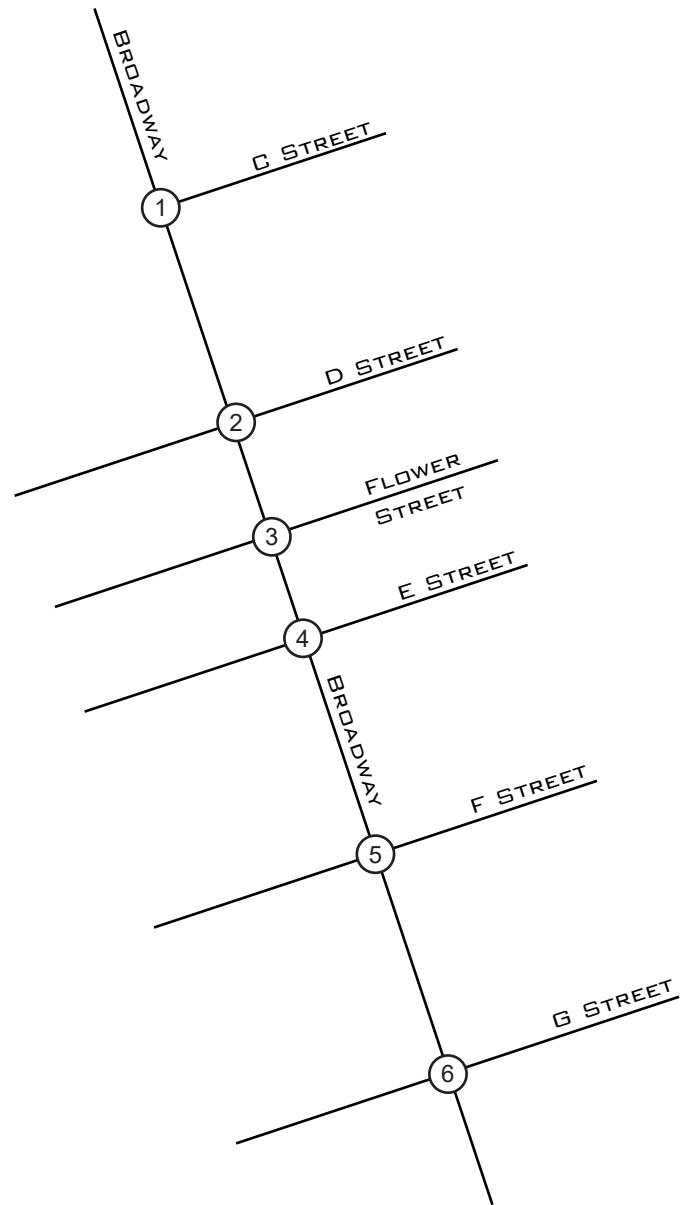
NOT TO SCALE



Bike Lanes on Broadway

<p>1</p> <p>↔ 266 / 297 ↔ 19 / 30</p> <p>Broadway</p> <p>↔ 176 / 138</p> <p>↔ 84 / 90</p> <p>C St</p> <p>↔ 1156 / 757 ↔ 171 / 82</p>	<p>2</p> <p>↔ 58 / 23 ↔ 339 / 340 ↔ 15 / 18</p> <p>Broadway</p> <p>↔ 61 / 53 ↔ 102 / 10 ↔ 29 / 28</p> <p>D St</p> <p>↔ 69 / 35 ↔ 55 / 6 ↔ 89 / 31</p> <p>↔ 30 / 13 ↔ 1079 / 620 ↔ 35 / 29</p>	<p>3</p> <p>↔ 35 / 22 ↔ 388 / 371 ↔ 18 / 13</p> <p>Broadway</p> <p>↔ 34 / 30 ↔ 74 / 6 ↔ 28 / 20</p> <p>Flower St</p> <p>↔ 79 / 6 ↔ 84 / 10 ↔ 147 / 69</p> <p>↔ 141 / 42 ↔ 1001 / 696 ↔ 27 / 31</p>	<p>4</p> <p>↔ 218 / 191 ↔ 264 / 240 ↔ 39 / 35</p> <p>Broadway</p> <p>↔ 101 / 86 ↔ 351 / 280 ↔ 25 / 33</p> <p>E St</p> <p>↔ 305 / 223 ↔ 256 / 318 ↔ 81 / 98</p> <p>↔ 181 / 115 ↔ 784 / 477 ↔ 50 / 55</p>
<p>5</p> <p>↔ 37 / 26 ↔ 321 / 307 ↔ 35 / 35</p> <p>Broadway</p> <p>↔ 33 / 50 ↔ 121 / 82 ↔ 67 / 52</p> <p>F St</p> <p>↔ 73 / 35 ↔ 85 / 90 ↔ 116 / 92</p> <p>↔ 94 / 62 ↔ 811 / 567 ↔ 64 / 64</p>	<p>6</p> <p>↔ 41 / 53 ↔ 401 / 343 ↔ 82 / 33</p> <p>Broadway</p> <p>↔ 57 / 43 ↔ 51 / 40 ↔ 61 / 58</p> <p>G St</p> <p>↔ 83 / 67 ↔ 57 / 22 ↔ 99 / 52</p> <p>↔ 38 / 35 ↔ 820 / 572 ↔ 62 / 26</p>		

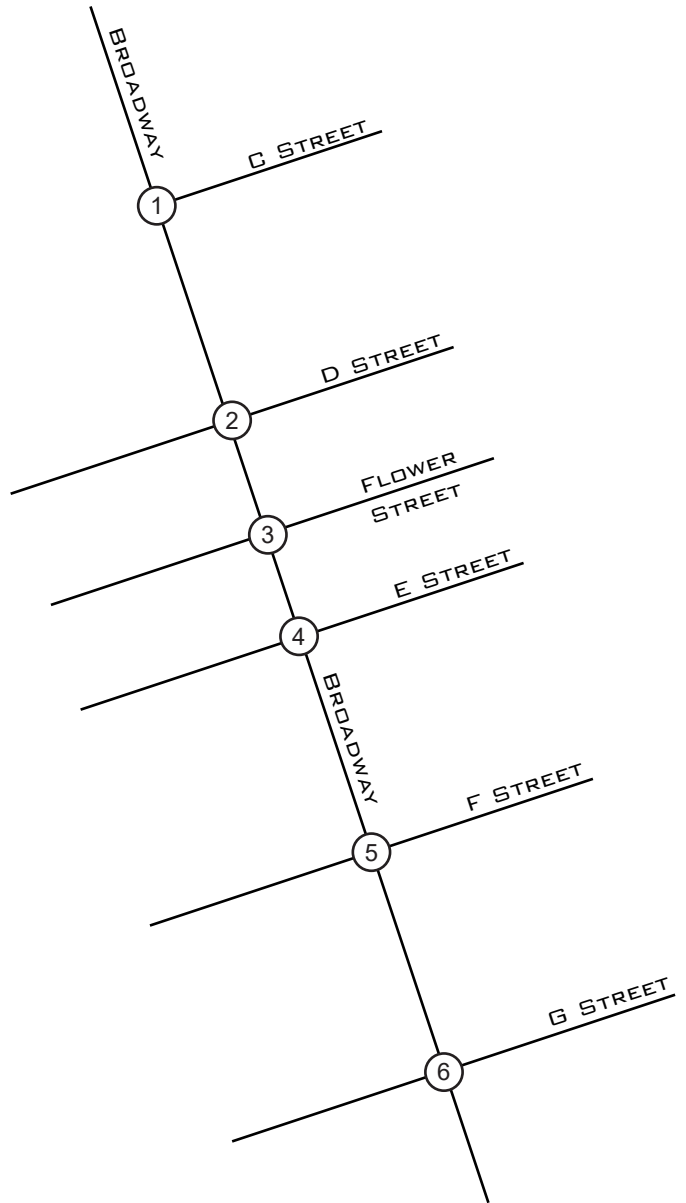
Legend
X / Y = 7 AM / 8 AM HOUR TURNING VOLUMES



Bike Lanes on Broadway

<p>1</p> <p>491 / 509 49 / 62</p> <p>Broadway</p> <p>117 / 119 136 / 142</p> <p>C St</p> <p>532 / 500 129 / 132</p>	<p>2</p> <p>31 / 61 549 / 521 17 / 17</p> <p>Broadway</p> <p>45 / 32 14 / 47 21 / 25</p> <p>D St</p> <p>39 / 36 9 / 8 43 / 42</p> <p>31 / 39 569 / 555 28 / 26</p>	<p>3</p> <p>19 / 28 579 / 548 19 / 20</p> <p>Broadway</p> <p>20 / 24 9 / 24 26 / 34</p> <p>Flower St</p> <p>22 / 11 5 / 5 70 / 57</p> <p>55 / 140 594 / 581 32 / 35</p>	<p>4</p> <p>208 / 214 404 / 375 62 / 57</p> <p>Broadway</p> <p>69 / 70 317 / 280 63 / 87</p> <p>E St</p> <p>197 / 228 318 / 331 177 / 170</p> <p>169 / 178 410 / 467 61 / 78</p>
<p>5</p> <p>55 / 43 564 / 562 34 / 42</p> <p>Broadway</p> <p>55 / 60 107 / 87 91 / 91</p> <p>F St</p> <p>47 / 57 76 / 91 139 / 102</p> <p>73 / 71 548 / 632 65 / 84</p>	<p>6</p> <p>61 / 61 628 / 630 35 / 37</p> <p>Broadway</p> <p>38 / 48 32 / 36 46 / 32</p> <p>G St</p> <p>76 / 54 29 / 33 69 / 64</p> <p>34 / 41 586 / 678 45 / 47</p>		

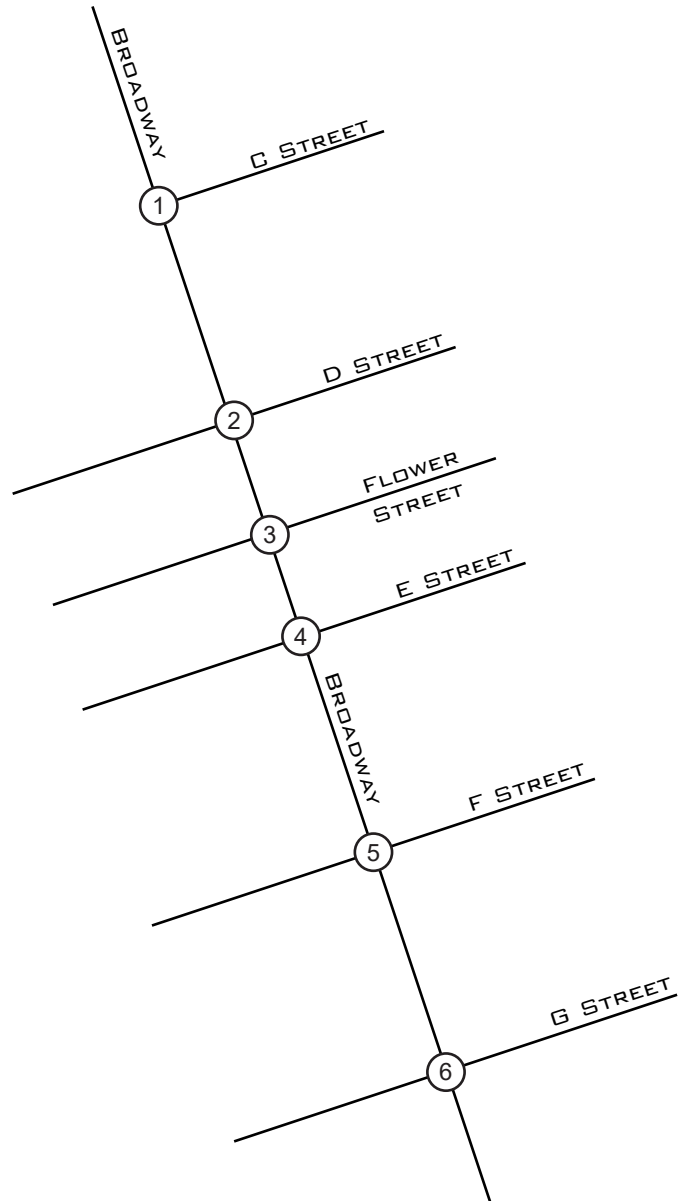
Legend
X / Y = 1130 AM / 1230 PM HOUR
TURNING VOLUMES



Bike Lanes on Broadway

<p>1</p> <p>864 / 860 119 / 98 Broadway</p> <p>100 / 92 180 / 161 C St</p> <p>540 / 583 131 / 112</p>	<p>2</p> <p>51 / 60 850 / 843 40 / 37 Broadway</p> <p>46 / 33 24 / 14 34 / 39 D St</p> <p>43 / 36 13 / 27 48 / 49</p> <p>20 / 30 616 / 598 54 / 48</p>	<p>3</p> <p>31 / 29 873 / 874 40 / 42 Broadway</p> <p>27 / 29 12 / 26 39 / 39 Flower St</p> <p>26 / 39 20 / 40 80 / 113</p> <p>105 / 126 649 / 608 62 / 71</p>	<p>4</p> <p>286 / 316 597 / 600 105 / 98 Broadway</p> <p>81 / 85 325 / 345 97 / 96 E St</p> <p>267 / 258 502 / 515 259 / 269</p> <p>176 / 175 455 / 451 69 / 80</p>
<p>5</p> <p>40 / 66 817 / 841 74 / 53 Broadway</p> <p>57 / 65 102 / 111 97 / 87 F St</p> <p>57 / 50 164 / 181 214 / 229</p> <p>84 / 85 563 / 558 65 / 70</p>	<p>6</p> <p>99 / 115 940 / 946 62 / 86 Broadway</p> <p>47 / 42 50 / 64 47 / 46 G St</p> <p>61 / 61 42 / 56 66 / 84</p> <p>57 / 73 641 / 635 45 / 66</p>		

Legend
X / Y = 4 PM / 5 PM HOUR TURNING VOLUMES



Bike Lanes on Broadway

INTERSECTION		AM BASELINE			MID-DAY BASELINE			PM BASELINE		
		HOUR	DELAY (a)	LOS (b)	HOUR	DELAY (a)	LOS (b)	HOUR	DELAY (a)	LOS (b)
1	Broadway & C St	700	12.2	B	1130	9.4	A	1600	11.2	B
		800	11.0	B	1230	9.4	A	1700	10.5	B
2	Broadway & D St	700	13.0	B	1130	10.5	B	1600	11.3	B
		800	8.9	A	1230	11.6	B	1700	10.8	B
3	Broadway & Flower St	700	17.5	B	1130	9.1	A	1600	7.7	A
		800	7.7	A	1230	8.1	A	1700	9.9	A
4	Broadway & E St	700	50.2	D	1130	38.0	D	1600	44.6	D
		800	37.6	D	1230	39.3	D	1700	44.0	D
5	Broadway & F St	700	19.9	B	1130	20.0	C	1600	22.7	C
		800	18.9	B	1230	19.1	B	1700	23.2	C
6	Broadway & G St	700	14.8	B	1130	12.9	B	1600	12.2	B
		800	15.2	B	1230	11.7	B	1700	13.0	B

Notes:
 (a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle.
 (b) LOS calculations are based on the methodology outlined in the *2010 Highway Capacity Manual* and performed using Synchro 9.

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4 EXISTING WITH PROJECT CONDITIONS

This section provides a description of existing conditions with the addition of the proposed Bike Lanes on Broadway Project.

4.1 WITH PROJECT GEOMETRICS

As part of the proposed project, Broadway between C Street and G Street would be reduced from two through lanes to one through lane in each direction except for E Street, which would maintain two lanes through the intersection. The proposed intersection geometrics are illustrated in **Figure 4-1**.

4.2 INTERSECTION ANALYSIS

The LOS analysis results for the study intersections under Existing Conditions with and without project are presented in **Table 4-1**. As shown in the table, all study intersections would operate at LOS D or better during all analysis periods. The Synchro intersection LOS analysis sheets are provided in **Appendix C**.

4.3 BICYCLE SAFETY

As reported in the Bike Lanes on Broadway Feasibility Study and summarized in Section 3.4, 33 bicycle-related collisions were reported for a five-year period between 2009 and 2013. The Feasibility Study asserts that riding on the wrong side of the road, the primary reported collision factor (34%), would “potentially [indicate] a need for ... clarification of where cyclists should be riding along the corridor. The Feasibility Study also states that two collisions involved pedestrian right of way, “potentially indicating the bicyclist was riding on the sidewalk due to discomfort mixing with traffic.” The Study’s bicycle count data further reveals that most bicyclists (68%) ride on the sidewalk and ride in the wrong direction (41 out of 99 observed bicyclists).

Per the American Association of State Highway and Transportation Officials (AASHTO) Guide of Development of Bicycle Facilities (2012), “Bike lanes ... encourage bicyclists to ride on the roadway in a position where they are more likely to be seen by motorists entering or exiting the roadway than they would be if riding on sidewalks. Properly designed bike lanes encourage bicyclists to operate in a manner consistent with the legal and effective operation of all vehicles.”

The proposed project would install bike lanes on both sides of Broadway from C Street to Main Street, which would provide dedicated space for each roadway user (vehicles, bicyclists, pedestrians). By providing a facility that encourages bicyclists to ride on the roadway and operate in a manner consistent with legal and effective operation of all vehicles, the project aims to reduce the factors associated with bicycle-related traffic collisions (wrong side of the road and pedestrian right of way) to provide a safer roadway for all users.

Bike Lanes on Broadway

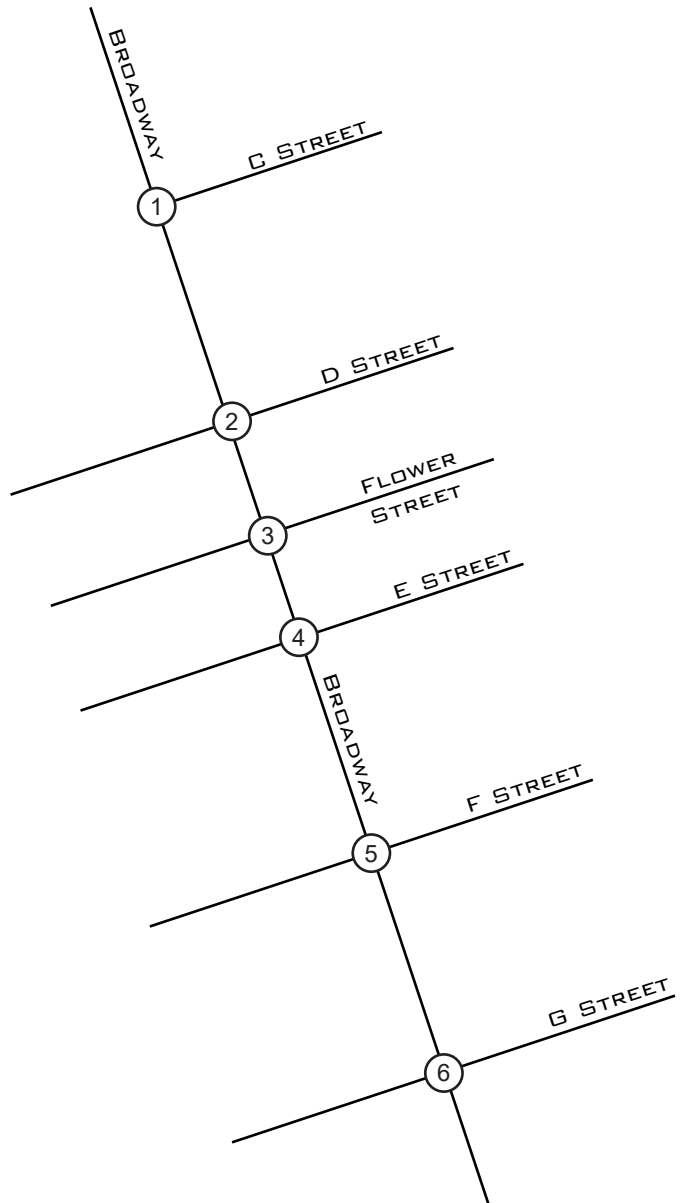
Broadway & C Street	Broadway & D St	Broadway & Flower St	Broadway & E St
Broadway & F St	Broadway & G St		

Legend:

- ⊗ Signalized
- Right-turn overlap



NOT TO SCALE



Bike Lanes on Broadway

INTERSECTION	HOUR	AM BASELINE		AM WITH PROJECT		HOUR	MID-DAY BASELINE		MID-DAY WITH PROJECT		HOUR	PM BASELINE		PM WITH PROJECT	
		DELAY (a)	LOS (b)	DELAY (a)	LOS (b)		DELAY (a)	LOS (b)	DELAY (a)	LOS (b)		DELAY (a)	LOS (b)	DELAY (a)	LOS (b)
1 Broadway & C St	700	12.2	B	27.5	C	1130	9.4	A	10.9	B	1600	11.2	B	13.4	B
	800	11.0	B	15.8	B	1230	9.4	A	10.7	B	1700	10.5	B	12.6	B
2 Broadway & D St	700	13.0	B	27.7	C	1130	10.5	B	11.4	B	1600	11.3	B	13.4	B
	800	8.9	A	9.6	A	1230	11.6	B	12.2	B	1700	10.8	B	13.2	B
3 Broadway & Flower St	700	17.5	B	49.5	D	1130	9.1	A	10.0	B	1600	7.7	A	9.5	A
	800	7.7	A	9.2	A	1230	8.1	A	9.0	A	1700	9.9	A	11.6	B
4 Broadway & E St	700	50.2	D	52.7	D	1130	38.0	D	39.8	D	1600	44.6	D	51.8	D
	800	37.6	D	39.0	D	1230	39.3	D	41.3	D	1700	44.0	D	52.2	D
5 Broadway & F St	700	19.9	B	25.0	C	1130	20.0	C	22.0	C	1600	22.7	C	29.6	C
	800	18.9	B	21.2	C	1230	19.1	B	21.5	C	1700	23.2	C	33.6	C
6 Broadway & G St	700	14.8	B	14.7	B	1130	12.9	B	12.7	B	1600	12.2	B	11.8	B
	800	15.2	B	15.1	B	1230	11.7	B	11.5	B	1700	13.0	B	12.4	B

Notes:
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle.
(b) LOS calculations are based on the methodology outlined in the 2010 Highway Capacity Manual and performed using Synchro 9.

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5 CEQA ENVIRONMENTAL DETERMINATION

a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?

No Impact: The proposed project would reduce the number of vehicle travel lanes between C Street and G Street to provide a bike lane. The project would not generate vehicular traffic.

b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

Less Than Significant Impact: The study area would continue to operate at acceptable LOS with the implementation of the proposed project.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

No Impact: The nearest airport to the project site is Brown Field Municipal Airport, approximately 7 miles southeast of the project. Users of the proposed project would not rely on air transportation or result in a change in air traffic patterns. No air traffic impacts are expected with the project.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less Than Significant Impact: The proposed project would restripe the Broadway corridor to incorporate bike lanes in each direction. For much of the section between C Street and G Street, a road diet would be implemented to reduce the number of travel lanes from two to one lane with a buffered bike lane in each direction. Bike lanes delineate space for bicyclists to ride on the roadway and buffered bike lanes provide additional space in between the vehicle and bicycle travel lanes. Per the American Association of State Highway and Transportation Officials (AASHTO) Guide of Development of Bicycle Facilities (2012), "Bike lanes ... encourage bicyclists to ride on the roadway in a position where they are more likely to be seen by motorists entering or exiting the roadway than they would be if riding on sidewalks. Properly designed bike lanes encourage bicyclists to operate in a manner consistent with the legal and effective operation of all vehicles."

Additionally, the curbs are not being modified as part of the project, so pedestrian waiting areas, crossing locations, and distances are not affected. Transitions, tapers, merge areas, and other road design elements will be designed to meet established standards. The project would not modify the horizontal or vertical alignment of the existing roadway.

e) Result in inadequate emergency access?

No Impact: The proposed project would maintain existing street widths and eliminate parking south of L Street, therefore maintaining or increasing the usable roadway. The project is not expected to interfere with or result in any inadequate emergency access.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

No Impact: Broadway currently does not provide any bicycle facilities and the proposed project would restripe Broadway to provide bike lanes or buffered bike lanes along the corridor. The new bicycle facilities would be consistent with the Chula Vista Urban Core Specific Plan. Further, the bicycle facilities support the “Walk+Bike” program created by the City of Chula Vista Recreation Department. The design of this project is based on the recommended concepts from the Bike Lanes on Broadway Feasibility Study (2016), published by the City of Chula Vista.

g) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

No Impact: The proposed project would not conflict with any known plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. The new bicycle facilities would be consistent with the Chula Vista Urban Core Specific Plan.

h) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Less Than Significant with Mitigation Incorporated: The proposed project would reduce the number of travel lanes along Broadway from two lanes in each direction to one lane in each direction, resulting in the intersection of Broadway and E Street to operate at LOS E or F for three different analysis periods. The proposed mitigation would allow two lanes of traffic and a bicycle lane in each direction on Broadway, resulting in the intersection to operate at acceptable LOS for all analysis periods.

6 CONCLUSION

The proposed Bike Lanes on Broadway project would install bike lanes along Broadway from C Street to Main Street across the City of Chula Vista. The northern section of the project between C Street and G Street would incorporate buffered bike lanes and a road diet for much of this segment, reducing the number of travel lanes from two lanes to one lane in each direction. The E Street intersection would maintain two lanes of travel in each direction, and maintain a bike lane. The six intersections along the study area segment were analyzed and found to operate at acceptable LOS with the proposed project. The remaining intersections along the project corridor would maintain the same number of vehicular travel lanes and therefore was not included for analysis.

As reported in the Bike Lanes on Broadway Feasibility Study, 33 bicycle-related collisions were reported for a five-year period between 2009 and 2013. The Feasibility Study asserts that riding on the wrong side of the road, the primary reported collision factor, would “potentially [indicate] a need for ... clarification of where cyclists should be riding along the corridor. The Feasibility Study also states that two collisions involved pedestrian right of way, “potentially indicating the bicyclist was riding on the sidewalk due to discomfort mixing with traffic.” Additionally, the Study’s bicycle count data reveals that most bicyclists (68%) ride on the sidewalk and ride in the wrong direction (41 out of 99 observed bicyclists).

The proposed bike lanes would provide dedicated space for each roadway user (vehicles, bicyclists, pedestrians). By providing a facility that encourages bicyclists to ride on the roadway and operate in a manner consistent with legal and effective operation of all vehicles, the project aims to reduce the factors associated with bicycle-related traffic collisions (wrong side of the road and pedestrian right of way) to provide a safer roadway for all users.