APPENDIX F HIGHWAY SAFETY MANUAL ANALYSIS MEMORANDUM (FHU)

BOULDER VISION ZERO ACTION PLAN

Intersection Crash Analysis Report

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I. INTRODUCTION

Vision Zero describes the City of Boulder's goal to eliminate traffic-related fatalities and serious injuries. At its core, this goal is inspired by the belief that traffic collisions are preventable, and even one fatality is too many. To help achieve Vision Zero, Boulder has developed several iterations of Vision Zero Action Plans. The updated Boulder Vision Zero Action Plan seeks to identify and prioritize tangible safety improvements to the transportation network in the City of Boulder and provide a clear methodology for implementing improvements throughout the city.

Purpose and Need

Safety improvement recommendations for the updated Boulder Vision Zero Action Plan are based on analyses of the existing roadway network. First, systemic safety analysis was conducted throughout the city to identify risk factors related to fatal and serious injury crashes and locations where those risk factors are most prominent. Recommendations developed from the systemic analysis are often applicable to several locations based on site characteristics. Systemic recommendations can be seen as proactive or forward-looking since they do not rely on recent crash history to be warranted.

Second, intersection crash analyses were conducted at key locations within the city to assess the magnitude and nature of the safety problem within the project limits. Additionally, intersection crash analyses relate crash causality to several factors such as roadway geometrics, roadside features, traffic control devices, traffic operations, driver behavior, and vehicle type. Review of crash history may identify patterns that are not functions of risk factors present at the intersections. Recommendations developed from the crash analysis are typically site specific but can have applications outside of the study intersections.

This Intersection Crash Analysis Report summarizes the results of intersection crash analyses for the Boulder Vision Zero Action Plan.

Study Area

Through consultation with City of Boulders staff, 29 signalized intersections were chosen for crash analysis. Selected intersections often included at least one cross street on the Core Arterial Network (CAN), and typically had several risk factors from the systemic safety analysis. **Figure 1** displays the location of all 29 study intersections.

Table I lists all 29 study intersections, including the major street, minor street, and average annual daily traffic volume (AADT). Traffic volumes shown in the table are from 2017-2019.

#	Major Street	Minor Street	Major Street AADT (vpd)	Minor Street AADT (vpd)
Ι	28 th Street	Jay Road	29,200	14,500
2	Broadway	Iris Avenue	29,700	17,700
3	Iris Avenue	Folsom Street	27,400	12,100
4	Folsom Street	Valmont Road	16,800	12,700
5	28 th Street	Valmont Road	29,800	18,100
6	30 th Street	Valmont Road	24,400	21,900
7	Foothills Parkway	Valmont Road	56,900	23,400

Table I. Study Intersections

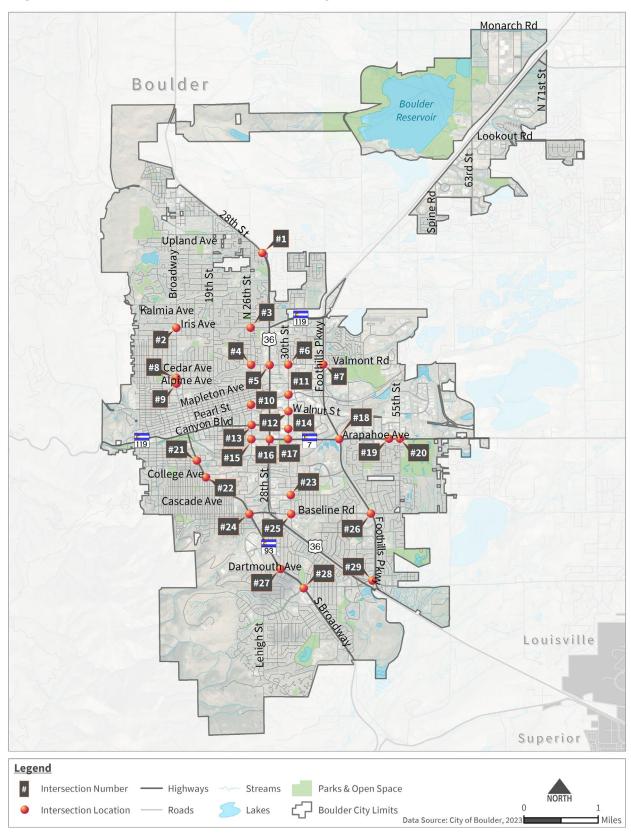


#	Major Street	Minor Street	Major Street AADT (vpd)	Minor Street AADT (vpd)
8	Broadway	Balsam Street	28,200	8,400
9	Broadway	Alpine Street	23,600	4,200
10	Folsom Street	Pearl Street	19,900	19,000
11	30 th Street	Pearl Street	31,000	25,200
12	30 th Street	Walnut Street	30,000	12,700
13	Canyon Boulevard	Folsom Street	26,500	20,500
14	30 th Street	Canyon Boulevard	25,700	6,900
15	Arapahoe Avenue	Folsom Street	27,300	18,200
16	Arapahoe Avenue	28 th Street	43,000	29,800
17	Arapahoe Avenue	30 th Street	33,500	26,000
18	Foothills Parkway	Arapahoe Avenue	61,300	42,300
19	Arapahoe Avenue	Conestoga Street	32,400	4,200
20	Arapahoe Avenue	55 th Street	34,700	25,100
21	Broadway	University Avenue	35,000	8,600
22	Broadway	College Avenue	37,100	3,400
23	30 th Street	Aurora Avenue	22,600	2,500
24	Broadway	Baseline Road	39,600	31,700
25	Baseline Road	30 th Street	29,500	22,200
26	Foothills Parkway	Baseline Road	48,300	27,000
27	Broadway	Dartmouth Street	36,400	2,400
28	Broadway	Table Mesa Drive	39,000	29,500
29	Table Mesa Drive	Foothills Parkway SB Off-Ramp	34,700	11,900

Table I. Study Intersections

Notes: AADT values shown were collected between 2017 and 2019









II. METHODOLOGY

The goal of this crash analysis process is to determine the magnitude of and nature of existing intersection safety problems using data-driven techniques and statistical analyses. Safety Performance Functions were used to evaluate the magnitude of safety problems. Pattern Recognition and Diagnostic techniques were used to assess the nature of safety problems.

Safety Performance Functions & Level of Service of Safety

The magnitude of existing intersection safety problems on highway segments was assessed using Safety Performance Functions (SPFs). The SPF reflects the relationship between traffic exposure, measured in average annual daily traffic (AADT), and crash frequency measured in crashes per year. The SPF models provide an estimate of the expected crash frequency and severity for a range of AADT among similar intersection types. Two kinds of SPFs were used: the first addresses the total crash frequency while the second only considers the frequency of crashes involving an injury or fatality (severe crashes). These SPFs aid in assessing the magnitude of existing intersection safety problems from the frequency and severity standpoint.

Development of SPFs leads to the conceptual formulation of the Level of Service of Safety (LOSS). The concept of level of service uses qualitative measures that characterize safety of a roadway segment in reference to its expected performance. If the level of safety predicted by the SPF represents an expectation of crash frequency at a specific level of AADT, selected percentiles within the frequency distribution can be stratified to represent specific levels of safety relative to the expectation of the SPF.

- LOSS I Below 20th Percentile
 - Indicates a low potential for crash reduction.
- LOSS II 20th Percentile to Mean
 - Indicates a low to moderate potential for crash reduction.
- LOSS III Mean to 80th Percentile
 - Indicates a moderate to high potential for crash reduction.
- LOSS IV Above 80th Percentile
 - Indicates a high potential for crash reductions.

LOSS boundaries are calibrated by computing the 20th and the 80th percentiles using the Gamma Distribution Probability Density Function. Gradual change in the degree of deviation of the LOSS boundary line from the fitted model mean reflects the observed increase of variability in crash frequency as AADT increases. This increase is consistent with a Gamma Distribution error structure.

LOSS reflects how the intersection is performing with respect to its expected crash frequency and severity at a specific level of AADT. It only provides a crash frequency and severity comparison with the expected norm. It does not provide any information related to the nature of the safety problem itself. If the safety problem is present, LOSS will only describe its magnitude from the frequency and severity standpoint.

Correcting for Regression to the Mean Bias

The average of several years of crash history of an intersection provides an estimate of what is likely to be observed in the future. The precision of this estimate, however, can be improved by correcting for the Regression to the Mean (RTM) bias. RTM phenomenon reflects the tendency for random event occurrences, such as crashes, to move toward the average during an experiment or over time. For instance, if an intersection exhibits unusually high or unusually low crash frequency in a particular year,



RTM bias recognizes that over the long run the true average is closer to the mean representing safety performance of similar intersections.

The existence of the RTM bias has been long recognized and is now effectively addressed by using the Empirical Bayes (EB) method. The EB method is based on combining the information contained in the known crash history with information regarding the safety of similar intersection types using the expected mean value and over-dispersion parameter associated with the SPF. EB corrected values of frequency and severity of crashes are used in the SPF analysis to assess the magnitude of the existing safety problems.

Direct Diagnostics

The crash history of study intersections was evaluated to identify patterns related to crash type, severity, direction of travel, road conditions, time of day and behavioral attributes. The distribution of crash types and causal factors from the crash history was compared to the distributions of data that was used in the formation of SPFs for similar intersection types. Using the binomial distribution, each crash type and factor was evaluated to determine if the frequency of occurrence at a study intersection was significantly greater than the average frequency observed at similar intersections. Any crash type or factor with at least five occurrences and exceeding the 95 percent confidence level of the binomial distribution is considered a diagnostic pattern.

Data Collection

Crash History

Crash history data was collected from the City of Boulder for all crashes at or related to the study intersections (generally all crashes within 250 feet of an intersection were included). At several study locations, crashes occurred at driveways to businesses or parking lots located near the primary intersection. Generally, these crashes were included in the intersection crash history if the occurred upstream of the intersection (involved traffic units approaching the intersection versus departing from the intersection).

Traffic Counts

Traffic counts from 2017-2019 were collected from the City of Boulder and were used to establish the expected crash frequency for SPFs. Turning movement counts and K-Factors were used to convert traffic counts from design hourly volume to AADT.

SPFs and Diagnostic Norms

The Vision Zero Suite software from DiExSys was used to develop SPF models and baseline values for diagnostic pattern analyses. This software collects crash history from several agencies in Colorado to develop a comprehensive database that can be used to calibrate SPF models and diagnostic norms for several different intersection types based on geometric configuration, geographic setting, and traffic control.



III. INTERSECTION ANALYSIS

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I. 28th St & Jay Rd

Classification: Urban 2-Lane Divided Signalized 4-Leg Intersection Major Street: 28th Street AADT: 29,200 vpd Minor Street: Jay Road AADT: 14,500 vpd 2015-2019 Crash History: 46 crashes (21 injury) LOSS: II (Total), III (Severe) Diagnostic Patterns: Injury, Broadside, Approach Turn

Both 28th Street and Jay Road are two-lane roads. Between 2015 and 2019, 46 total crashes were recorded at the 28th Street & Jay Road intersection. This is consistent with LOSS II conditions, indicating a low to moderate potential for crash reduction. Rear End crashes were most common (39%), followed by Approach Turn (33%) and Broadside (18%).

21 severe crashes were recorded at the intersection, consistent with LOSS III conditions, indicating a moderate to high potential for severe crash reduction. Severe crash types included Approach Turn (52%), Rear End (24%), and Broadside (14%).

Total crash frequency was highest from Noon – 3:00 PM (24%) and from 3:00 PM – 6:00 PM (26%). Severe crash frequency was highest from Noon – 3:00 PM (33%).

Injury Crashes

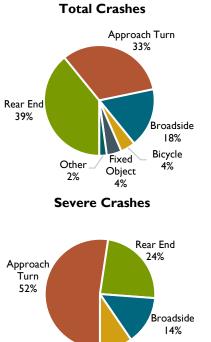
21 crashes occurred at the 28th Street & Jay Road intersection that resulted in injury. Approach Turn crashes were the most common Injury crash type (11 of 21). 7 of 21 Injury crashes occurred during Dawn/Dusk or Dark-Lighted conditions. Weather was not a factor in any of the Injury crashes. Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 7 of 21 Injury crashes.

Broadside Crashes

8 Broadside crashes occurred at the 28th Street & Jay Road intersection, including 3 that resulted in injury. Broadside crashes involved several different vehicle maneuvers:

- Northbound motorist ran red light and collided with westbound right-turning motorist
- Northbound motorist ran red light and collided with westbound motorist
- Northbound left-turning motorist ran red light and collided with westbound left-turning motorist
- Eastbound motorist ran red light and collided with southbound motorist
- Southbound motorist ran red light and collided with eastbound motorist (3 times)
- Southbound motorist ran red light and collided with westbound motorist





Bicycle

10%

Weather was not a contributing factor in any of the Broadside crashes. I of 8 Broadside crashes occurred during Dawn/Dusk conditions. 4 of 8 crashes occurred between 7:00 AM – 10:00 AM and 4 of 8 crashes occurred between 8:00 AM – 11:00 AM.

Approach Turn Crashes

15 Approach Turn crashes occurred at the 28th Street & Jay Road intersection, 11 of which resulted in injury. Crashes involved several approach directions/vehicle maneuvers:

- Southbound left-turning motorist, northbound motorist: 12 crashes (10 injury)
- Westbound left-turning motorist, eastbound motorist: 3 crashes (1 injury)

Approach Turn crashes were most common between 5:00 PM – 7:00 PM (6 of 15). Dark-Lighted, Dark-Unlighted or Dawn/Dusk conditions were present for 8 of 15 Approach Turn crashes. Weather was not a contributing factor in any of the Approach Turn crashes. Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 8 of 15 Approach Turn crashes.



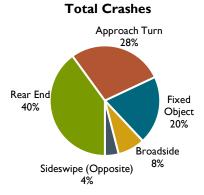
2. Broadway & Iris Ave

Classification: Urban 4-Lane Divided Signalized 3-Leg Intersection Major Street: Broadway AADT: 29,700 vpd Minor Street: Iris Street AADT: 17,700 vpd 2015-2019 Crash History: 25 crashes (10 injury) LOSS: II (Total), II (Severe) Diagnostic Patterns: Off Road, Approach Turn, Fixed Object

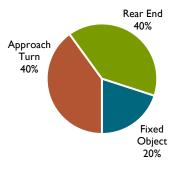
Broadway is a four-lane road, while Iris Street is a two-lane road. Between 2015 and 2019, 25 total crashes were recorded at the Broadway & Iris Street intersection. This is consistent with LOSS II conditions, indicating a low to moderate potential for crash reduction. Rear End crashes were most common (40%), followed by Approach Turn (28%) and Fixed Object (20%).

10 severe crashes were recorded at the intersection, consistent with LOSS I conditions, indicating a low to moderate potential for severe crash reduction. Severe crash types included Approach Turn (40%), Rear End (40%), and Fixed Object (20%).

Total crash frequency was highest from 3:00 PM - 6:00 PM (32%). Severe crash frequency was also highest from 3:00 PM - 6:00 PM (40%).



Severe Crashes



Off Road Crashes

5 Off Road crashes occurred at the Broadway & Iris Street intersection, 2 of which resulted in injury. Off Road crashes involved motorists driving in several different directions:

- Northbound right-turning motorist did not turn properly and collided with landscaping and traffic signal equipment in the northeast corner of the intersection
- Southbound left-turning motorist did not turn properly and collided with the south curb of Iris Street before bouncing back into the roadway and striking other vehicles
- Southbound left-turning motorist did not turn properly and collided with traffic signal equipment in the southeast corner of the intersection
- Westbound motorist collided with a fence on the west side of the intersection
- Westbound right-turning motorist slid on the icy roadway and collided with a curb and tree in the median north of the intersection

2 of 5 Off Road crashes occurred during Dark-Lighted conditions. I of 5 Off Road crashes occurred during inclement weather. Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 4 of 5 crashes.

Approach Turn Crashes

7 Approach Turn crashes occurred at the Broadway & Iris Street intersection, 4 of which resulted in injury. All 7 crashes involved southbound left-turning motorists and northbound motorists. Approach Turn crashes were most common between Noon – 5:00 PM (4 of 7); the remaining crashes occurred between 5:00 AM – 9:00 AM. Dark-Lighted or Dawn/Dusk conditions were present for 2 of 7 Approach Turn crashes. I of 7 crashes occurred during inclement weather. Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 2 of 7 Approach Turn crashes.



Fixed Object Crashes

5 Fixed Object crashes occurred at the Broadway & Iris Street intersection, 2 of which resulted in injury. All 5 Fixed Object crashes occurred Off-Road and are described in the preceding section.



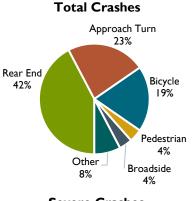
3. Iris Ave & Folsom St

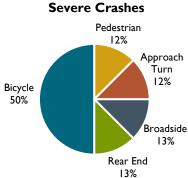
Classification: Urban 4-Lane Divided Signalized 4-Leg IntersectionMajor Street: Iris AvenueAADT: 27,400 vpdMinor Street: Folsom StreetAADT: 12,100 vpd2015-2019 Crash History: 26 crashes (8 injury)LOSS: I (Total), I (Severe)Diagnostic Patterns: Bicycle, Dark-Lighted

Iris Avenue is a four-lane road, while Folsom Street is a two-lane road. Between 2015 and 2019, 26 total crashes were recorded at the Iris Avenue & Folsom Street intersection. This is consistent with LOSS I conditions, indicating a low potential for crash reduction. Rear End crashes were most common (42%), followed by Approach Turn (23%) and Bicycle (19%).

8 severe crashes were recorded at the intersection, consistent with LOSS I conditions, indicating a low potential for severe crash reduction. Bicycle crashes were the most common severe crash type (50%).

Total crash frequency was highest from 3:00 PM - 6:00 PM (35%). Severe crash frequency was also highest from 3:00 PM - 6:00 PM (38%).





Bicycle Crashes

5 Bicycle crashes occurred at the Iris Avenue & Folsom Street intersection, 4 of which resulted in injury. Several different types of collisions were recorded:

- Northbound right-turning motorist collided with a westbound cyclist in the south crosswalk (3 times)
- Westbound left-turning motorist collided with eastbound cyclist (2 times)

Weather was not a factor in any of the Bicycle crashes. Dark-Lighted conditions were present for 2 of 5 Bicycle crashes. 3 of 5 crashes occurred between 4:00 PM – 7:00 PM.

Dark-Lighted Crashes

Dark-Lighted conditions were present for 9 crashes at the Iris Avenue & Folsom Street intersection, 2 of which resulted in injury. Several crash types occurred involving Dark-Lighted conditions, including Rear End (3 of 9), Approach Turn (2 of 9), and Bicycle (2 of 9). 5 of 9 crashes occurred between 5:00 PM – 8:00 PM, and 2 crashes occurred during inclement weather.



4. Folsom St & Valmont Rd

Classification: Urban 2-Lane Divided Signalized 4-Leg Intersection Major Street: Folsom Street Minor Street: Valmont Road 2015-2019 Crash History: 17 crashes (8 injury) LOSS: I (Total), II (Severe) Diagnostic Patterns: Injury

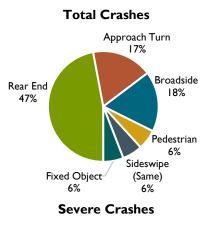
Folsom Street is a two-lane road. West of Folsom Street, Edgewood Drive is a two-lane road. East of Folsom Street, Valmont Road becomes a four-lane road. Between 2015 and 2019, 17 total crashes were recorded at the Folsom Street & Valmont Road intersection. This is consistent with LOSS I conditions, indicating a low potential for crash reduction. Rear End crashes were most common (47%), followed by Broadside (18%) and Approach Turn (17%).

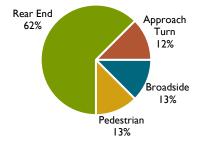
8 severe crashes were recorded at the intersection, consistent with LOSS II conditions, indicating a low to moderate potential for severe crash reduction. Rear End crashes were the most common severe crash type (62%).

Total crash frequency was highest from Noon – 3:00 PM (29%). Severe crash frequency was highest from 6:00 AM – 9:00 AM (25%), from Noon – 3:00 PM (25%), and from 6:00 PM – 9:00 PM (25%).

Injury Crashes

8 crashes occurred at the Folsom Street & Valmont Road intersection that resulted in injury. Rear End crashes were the most common Injury crash type (5 of 8). Pedestrian (1 of 5), Broadside (1 of 5), and Approach Turn (1 of 5) Injury crashes were also recorded. 3 of 8 Injury crashes occurred during Dawn/Dusk or Dark-Lighted conditions. Only I Injury crash occurred in inclement weather. Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 3 of 8 Injury crashes.







5. 28th St & Valmont Rd

Classification: Urban 4-Lane Divided Signalized 4-Leg IntersectionMajor Street: 28th StreetAADT: 29,800 vpdMinor Street: Valmont RoadAADT: 18,100 vpd2015-2019 Crash History: 94 crashes (26 injury)LOSS: III (Total), III (Severe)Diagnostic Patterns: None

Both 28th Street and Valmont Road are four-lane roads. Between 2015 and 2019, 94 total crashes were recorded at the 28th Street & Valmont Road intersection. This is consistent with LOSS III conditions, indicating a moderate to high potential for crash reduction. Rear End crashes were most common (52%), followed by Approach Turn (20%).

26 severe crashes were recorded at the intersection, consistent with LOSS III conditions, indicating a moderate to high potential for severe crash reduction. Rear End crashes were the most common severe crash type (50%), followed by Approach Turn (23%).

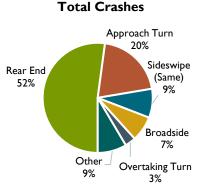
Total crash frequency was highest from Noon – 3:00 PM (25%) and from 3:00 PM – 6:00 PM (25%). Severe crash frequency was highest from 9:00 AM – Noon (32%) and from 3:00 PM – 6:00 PM (28%).

No crashes were identified as diagnostic patterns, however, 19

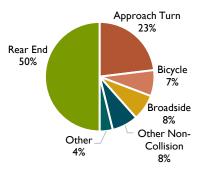
Approach Turn crashes occurred at the intersection (6 injury). Approach Turn crashes involved all approach directions/vehicle maneuvers:

- Southbound left-turning motorist, northbound motorist: 7 crashes (2 injury)
- Westbound left-turning motorist, eastbound motorist: 5 crashes (1 injury)
- Eastbound left-turning motorist, westbound motorist: 4 crashes (1 injury)
- Northbound left-turning motorist, southbound motorist: 3 crashes (1 injury)

Approach Turn crashes were most common between 9:00 AM - 3:00 PM (10 of 19). Dark-Lighted conditions were present for 6 of 19 Approach Turn crashes. 2 of 19 crashes occurred during inclement weather. Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 6 of 18 Approach Turn crashes.









6. 30th St & Valmont Rd

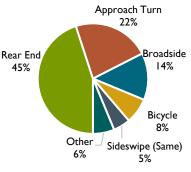
Classification: Urban 4-Lane Divided Signalized 4-Leg IntersectionMajor Street: 30th StreetAADT: 24,400 vpdMinor Street: Valmont RoadAADT: 21,900 vpd2015-2019 Crash History: 80 crashes (26 injury)LOSS: III (Total), III (Severe)Diagnostic Patterns: Approach Turn, Bicycle

Both 30th Street and Valmont Road are four-lane roads. Between 2015 and 2019, 80 total crashes were recorded at the 30th Street & Valmont Road intersection. This is consistent with LOSS III conditions, indicating a moderate to high potential for crash reduction. Rear End crashes were most common (45%), followed by Approach Turn (22%) and Broadside (14%).

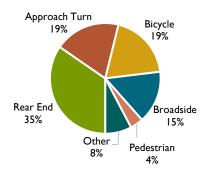
26 severe crashes were recorded at the intersection, consistent with LOSS III conditions, indicating a moderate to high potential for severe crash reduction. Rear End crashes were the most common severe crash type (35%) followed by Approach Turn (19%) and Bicycle (19%).

Total crash frequency was highest from Noon – 3:00 PM (31%). Severe crash frequency was highest from 9:00 AM – Noon (38%) and from Noon – 3:00 PM (35%).





Severe Crashes



Approach Turn Crashes

18 Approach Turn crashes occurred at the 30th Street & Valmont Road intersection, 5 of which resulted in injury. Crashes involved several approach directions/vehicle maneuvers:

- Northbound left-turning motorist, southbound motorist: 9 crashes (4 injury)
- Southbound left-turning motorist, northbound motorist: 5 crashes (1 injury)
- Eastbound left-turning motorist, westbound motorist: 2 crashes
- Westbound left-turning motorist, eastbound motorist: 2 crashes

Approach Turn crashes were most common between Noon – 6:00 PM (13 of 18). Dawn/Dusk or Dark-Lighted conditions were present for 4 of 18 Approach Turn crashes. Only 1 of 18 crashes occurred during inclement weather. Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 2 of 18 Approach Turn crashes.

Bicycle Crashes

6 Bicycle crashes occurred at the 30th Street & Valmont Road intersection, 5 of which resulted in injury. All 6 Bicycle crashes involved turning motorists:

- Westbound right-turning motorist collided with southbound cyclist in the east crosswalk
- Northbound right-turning motorist collided with westbound cyclist in the south crosswalk
- Westbound left-turning motorist collided with eastbound cyclist in the south crosswalk
- Eastbound right-turning motorist collided with westbound cyclist in the south crosswalk
- Southbound right-turning motorist collided with southbound cyclist in the bike lane (2 times)

I of 6 Bicycle crashes occurred in inclement weather. 5 of 6 crashes occurred during daylight hours.



7. Foothills Pkwy & Valmont Rd

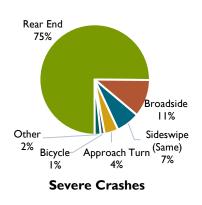
Classification: Urban 6-Lane Divided Signalized 4-Leg Intersection Major Street: Foothills Parkway Minor Street: Valmont Road 2015-2019 Crash History: 173 crashes (45 injury) LOSS: III (Total), IV (Severe) Diagnostic Patterns: Rear End, Dawn/Dusk, Snow/Sleet/Hail

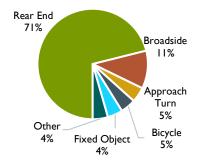
Foothills Parkway is a six-lane road, while Valmont Road is a four-lane road. Between 2015 and 2019, 173 total crashes were recorded at the Foothills Parkway & Valmont Road intersection. This is consistent with LOSS III conditions, indicating a moderate to high potential for crash reduction. Rear End crashes were most common (75%), followed by Broadside (11%).

45 severe crashes were recorded at the intersection, consistent with LOSS IV conditions, indicating a high potential for severe crash reduction. Rear End crashes were the most common severe crash type (71%) followed by Broadside (11%).

Total crash frequency was highest from 3:00 PM - 6:00 PM (30%). Severe crash frequency was also highest from 3:00 PM - 6:00 PM (27%).

Total Crashes





<u>Rear End</u>

130 Rear End crashes occurred at the Foothills Parkway & Valmont Road intersection, 32 of which resulted in injury. Crashes occurred on all intersection approaches:

- Northbound Foothills Parkway: 51 crashes (10 injury)
 - 28 crashes in the channelized right-turn lane
- Southbound Foothills Parkway: 28 crashes (5 injury)
 - 14 crashes in the channelized right-turn lane
- Westbound Arapahoe Avenue: 8 crashes (3 injury)
 - 4 crashes in the channelized right-turn lane
- Eastbound Arapahoe Avenue: 41 crashes (14 injury)
 - 39 crashes in the channelized right-turn lane

Rear End crashes were most common between 3:00 PM – 6:00 PM (40 of 130). Dark-Lighted, Dark-Unlighted, or Dawn/Dusk conditions were present for 27 of 130 Rear End crashes. 15 of 130 crashes occurred during inclement weather. Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 30 of 130 Rear End crashes.

<u>Dawn/Dusk</u>

13 crashes occurred at the Foothills Parkway & Valmont Road intersection during Dawn/Dusk conditions, 2 of which resulted in injury. Rear End crashes were the most common Dawn/Dusk crash type (10 of 13); the remaining crashes included Broadside (1 of 13), Approach Turn (1 of 13), and Bicycle (1 of 13). 10 of 13 Dawn/Dusk crashes occurred between 4:00 PM – 8:00 PM, while the remaining crashes occurred between 4:00 AM – 7:00 AM. Sun glare was not noted in any of the Dawn/Dusk crash reports.



Snow/Sleet/Hail

13 crashes occurred at the Foothills Parkway & Valmont Road intersection during Snow/Sleet/Hail, 3 of which resulted in injury. Rear End crashes were the most common Dawn/Dusk crash type (8 of 13); the remaining crashes included Broadside (3 of 13), Head On (1 of 13), and Fixed Object (1 of 13). 5 of 13 crashes occurred during Dark-Lighted, Dark-Unlighted, or Dawn/Dusk conditions. Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 2 of 13 Snow/Sleet/Hail crashes.



8. Broadway & Balsam St

Classification: Urban 4-Lane Divided Signalized 4-Leg Intersection Major Street: Broadway AADT: 28,200 vpd Minor Street: Balsam Street AADT: 8,400 vpd 2015-2019 Crash History: 30 crashes (6 injury) LOSS: I (Total), I (Severe) Diagnostic Patterns: Sideswipe (Same Direction), Dawn/Dusk

Broadway is a four-lane road, while Balsam Street is a two-lane road. Between 2015 and 2019, 30 total crashes were recorded at the Broadway & Balsam Street intersection. This is consistent with LOSS I conditions, indicating a low potential for crash reduction. Rear End crashes were most common (43%), followed by Broadside (20%) and Sideswipe (Same Direction) (17%).

6 severe crashes were recorded at the intersection, consistent with LOSS I conditions, indicating a low potential for severe crash reduction. Severe crash types included Rear End (50%), Pedestrian (33%), and Bicycle (17%).

Total crash frequency was highest from 6:00 PM – 9:00 PM (33%). Severe crash frequency was highest from 9:00 AM – Noon (33%) and from 6:00 PM – 9:00 PM (33%).

Sideswipe (Same Direction) Crashes

5 Sideswipe (Same Direction) crashes occurred at the Broadway & Balsam Street intersection, all of which were PDO. Crashes occurred in all approach directions:

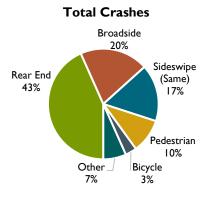
- Southbound Broadway: 2 crashes
- Northbound Broadway: I crash
- Eastbound Balsam Street: I crash
- Westbound Balsam Street: I crash

Dark-Lighted conditions were present for 1 of 5 Sideswipe (Same Direction) crashes. Weather was not a factor in any of the Sideswipe (Same Direction) crashes. Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 1 of 5 crashes. Drivers were making turning maneuvers in 3 of 5 Sideswipe (Same Direction) crashes, lane changing maneuvers in 2 of 5 crashes.

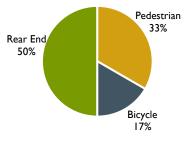
Dawn/Dusk Crashes

6 crashes occurred at the Broadway & Balsam Street intersection during Dawn/Dusk conditions, I of which resulted in injury. Rear End crashes were the most common Dawn/Dusk crash type (3 of 6); the remaining crashes included Broadside (2 of 5) and Approach Turn (I of 5). All 5 Dawn/Dusk crashes occurred 5:00 PM – 9:00 PM. Sun glare was not noted in any of the Dawn/Dusk crash reports.





Severe Crashes



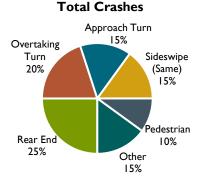
9. Broadway & Alpine St

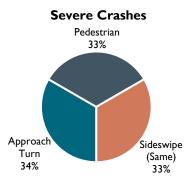
Classification: Urban 4-Lane Divided Signalized 4-Leg IntersectionMajor Street: BroadwayAADT: 23,600 vpdMinor Street: Alpine StreetAADT: 4,200 vpd2015-2019 Crash History: 20 crashes (3 injury)LOSS: II (Total), I (Severe)Diagnostic Patterns: None

Broadway is a four-lane road, while Alpine Street is a two-lane road. Between 2015 and 2019, 20 total crashes were recorded at the Broadway & Alpine Street intersection. This is consistent with LOSS II conditions, indicating a low to moderate potential for crash reduction. Rear End crashes were most common (25%), followed by Overtaking Turn (20%).

3 severe crashes were recorded at the intersection, consistent with LOSS I conditions, indicating a low potential for severe crash reduction. Severe crash types included Approach Turn, Pedestrian, and Sideswipe (Same Direction).

Total crash frequency was highest from 3:00 PM - 6:00 PM (35%). Severe crash frequency was also highest from 3:00 PM - 6:00 PM (67%).







10. Folsom St & Pearl St

Classification: Urban 4-Lane Divided Signalized 4-Leg IntersectionMajor Street: Folsom StreetAADT: 19,900 vpdMinor Street: Pearl StreetAADT: 19,000 vpd2015-2019 Crash History: 38 crashes (11 injury)LOSS: I (Total), II (Severe)Diagnostic Patterns: None

Both Folsom Street and Pearl Street are four-lane roads. Between 2015 and 2019, 38 total crashes were recorded at the Folsom Street & Pearl Street intersection. This is consistent with LOSS I conditions, indicating a low potential for crash reduction. Rear End crashes were most common (53%), followed by Broadside (16%).

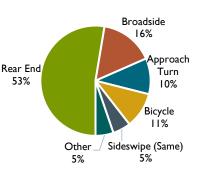
11 severe crashes were recorded at the intersection, consistent with LOSS II conditions, indicating a low to moderate potential for severe crash reduction. Rear End crashes were the most common severe crash type (46%).

Total crash frequency was highest from 3:00 PM - 6:00 PM (32%). Severe crash frequency was highest from Noon - 3:00 PM (45%).

No crashes were identified as diagnostic patterns, however, 5 Bicycle/Pedestrian crashes occurred at the intersection (2 injury). Several different types of collisions were recorded:

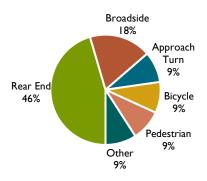
- Northbound right-turning motorist collided with a northbound cyclist in the bike lane
- Northbound left-turning motorist collided with a northbound left-turning cyclist in the travel lanes
- Southbound left-turning motorist collided with a northbound cyclist in the bike lane
- Northbound right-turning motorist collided with a northbound cyclist in the bike lane at a driveway just south of the intersection
- Southbound left-turning motorist collided with a northbound pedestrian in the east crosswalk

Dark-Unlighted conditions were present for 1 of 5 Bicycle/Pedestrian crashes. Inclement weather was not present in any of the crashes. Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 3 of 5 Bicycle/Pedestrian crashes.



Total Crashes







II.30th St & Pearl St

Classification: Urban 4-Lane Divided Signalized 4-Leg Intersection Major Street: 30th Street AADT: 31,000 vpd Minor Street: Pearl Street AADT: 25,200 vpd 2015-2019 Crash History: 94 crashes (24 injury) LOSS: II (Total), II (Severe) Diagnostic Patterns: Sideswipe (Same Direction), Approach Turn, Bicycle

Both 30th Street and Pearl Street are four-lane roads. Between 2015 and 2019, 94 total crashes were recorded at the 30th Street & Pearl Street intersection. This is consistent with LOSS II conditions, indicating a low to moderate potential for crash reduction. Rear End crashes were most common (31%), followed by Approach Turn (30%) and Sideswipe (Same Direction) (22%).

24 severe crashes were recorded at the intersection, consistent with LOSS II conditions, indicating a low to moderate potential for severe crash reduction. Rear End and Approach Turn crashes were the most common severe crash type (29% each), followed by Bicycle crashes (25%).

Total crash frequency was highest from 3:00 PM – 6:00 PM (27%). Severe crash frequency was highest from 6:00 PM – 9:00 PM (33%).

Sideswipe (Same Direction) Crashes

21 Sideswipe (Same Direction) crashes occurred at the 30th Street & Pearl Street intersection, 1 of which resulted in injury. Crashes occurred in all approach directions:

- Westbound Pearl Street: 12 crashes
- Eastbound Pearl Street: 3 crashes
- Southbound 30th Street: 2 crashes (1 injury)
- Northbound 30th Street: 2 crashes

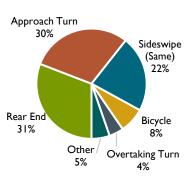
Dark-Lighted conditions were present for 4 of 21 Sideswipe (Same Direction) crashes. Inclement weather was present in 2 of 21 Sideswipe (Same Direction) crashes. Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 2 of 21 crashes. Drivers were making turning maneuvers in 8 of 21 Sideswipe (Same Direction) crashes, versus lane changing/passing maneuvers in 13 of 21 crashes.

Approach Turn Crashes

28 Approach Turn crashes occurred at the 30th Street & Pearl Street intersection, 7 of which resulted in injury. Crashes involved several approach directions/vehicle maneuvers:

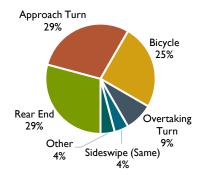
- Southbound left-turning motorist, northbound motorist: 10 crashes (2 injury)
- Northbound left-turning motorist, southbound motorist: 7 crashes (3 injury)
- Westbound left-turning motorist, eastbound motorist: 6 crashes
- Eastbound left-turning motorist, westbound motorist: 5 crashes (2 injury)





Total Crashes





Approach Turn crashes were most common between 5:00 PM – 10:00 PM (14 of 28). Dawn/Dusk or Dark-Lighted conditions were present for 10 of 28 Approach Turn crashes. 2 of 28 crashes occurred during inclement weather. Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 5 of 28 Approach Turn crashes.

Bicycle Crashes

7 Bicycle crashes occurred at the 30th Street & Pearl Street intersection, 6 of which resulted in injury. All 6 Bicycle crashes involved turning motorists:

- Northbound right-turning motorist collided with northbound cyclist in the bike lane
- Westbound left-turning motorist collided with westbound cyclist on the south crosswalk
- Eastbound right-turning motorist (from the through lane) collided with eastbound cyclist in the bike lane
- Northbound left-turning motorist collided with southbound cyclist in the bike lane
- Southbound right-turning motorist collided with southbound cyclist in the west crosswalk
- Eastbound right-turning motorist collided with southbound cyclist in the bike lane at the driveway access just north of the intersection (2 times)

2 of 7 Bicycle crashes occurred in inclement weather. 2 of 7 crashes occurred during Dark-Lighted conditions. Bicycle crashes were most common between 8:00 AM – 9:00 AM (3 of 7) and between 7:00 PM – 11:00 PM (3 of 7). Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 1 of 7 Bicycle crashes.



12.30th St & Walnut St

Classification: Urban 4-Lane Divided Signalized 4-Leg Intersection Major Street: 30th Street AADT: 30,000 vpd Minor Street: Walnut Street AADT: 12,700 vpd 2015-2019 Crash History: 46 crashes (10 injury) LOSS: II (Total), II (Severe) Diagnostic Patterns: None

30th Street is a four-lane road, while Walnut Street is a two-lane road. Between 2015 and 2019, 46 total crashes were recorded at the 30th Street & Walnut Street intersection. This is consistent with LOSS II conditions, indicating a low to moderate potential for crash reduction. Rear End crashes were most common (59%), followed by Approach Turn (20%) and Broadside (11%).

10 severe crashes were recorded at the intersection, consistent with LOSS II conditions, indicating a low to moderate potential for severe crash reduction. Broadside (40%) and Rear End (40%) crashes were the most common severe crash type.

Total crash frequency was highest from 3:00 PM - 6:00 PM (35%). Severe crash frequency was highest from Noon - 3:00 PM (50%).

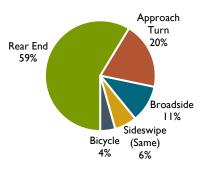
No crashes were identified as diagnostic patterns, however, 9

Approach Turn crashes occurred at the intersection (1 injury). 7 of 9 Approach Turn crashes involved southbound left-turning motorists and northbound through motorists.

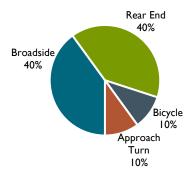
Additionally, 5 Broadside crashes occurred (4 injury). Broadside crashes involved several approach directions/vehicle maneuvers:

- Northbound motorist & westbound motorist (2 times)
- Southbound motorist & westbound motorist (2 times)
- Southbound motorist & eastbound motorist

Total Crashes



Severe Crashes





13. Canyon Blvd & Folsom St

Classification: Urban 4-Lane Divided Signalized 4-Leg Intersection Major Street: Canyon Boulevard Minor Street: Folsom Street 2015-2019 Crash History: 92 crashes (27 injury, 1 fatal) LOSS: III (Total), III (Severe) Diagnostic Patterns: Pedestrian, Sideswipe (Same Direction), Bicycle

Both Canyon Boulevard and Folsom Street are four-lane roads. Between 2015 and 2019, 92 total crashes were recorded at the Canyon Boulevard & Folsom Street intersection. This is consistent with LOSS III conditions, indicating a moderate to high potential for crash reduction. Rear End crashes were most common (49%), followed by Approach Turn (16%) and Sideswipe (Same Direction) (16%).

28 severe crashes were recorded at the intersection, consistent with LOSS III conditions, indicating a moderate to high potential for severe crash reduction. Rear End crashes were the most common severe crash type (32%) followed by Bicycle (25%) and Approach Turn (21%).

Total crash frequency was highest from 3:00 PM – 6:00 PM (32%). Severe crash frequency was also highest from 3:00 PM – 6:00 PM (32%).

<u>Fatal Crash</u>

One fatal crash occurred at the Canyon Boulevard & Folsom Street intersection. A southbound leftturning motorist collided with a northbound pedestrian in the east crosswalk. The southbound motorist had a flashing yellow left-turn arrow at the time of the crash, the status of the pedestrian signal was not noted. The crash occurred during daylight with no inclement weather. No driver contributing factors were cited.

<u>Pedestrian Crashes</u>

5 Pedestrian crashes occurred at the Canyon Boulevard & Folsom Street intersection, 2 of which resulted in injury, and one of which resulted in a fatality (discussed above). Several different types of collisions were recorded:

- Southbound left-turning motorist collided with northbound pedestrian in the east crosswalk (2 times)
- Northbound left-turning motorist collided with pedestrian standing in median
- Southbound right-turning motorist collided with southbound pedestrian in west crosswalk
- Eastbound left-turning motorist collided with eastbound pedestrian in north crosswalk

I of 5 Pedestrian crashes occurred in inclement weather. 4 of 5 crashes occurred during daylight hours.

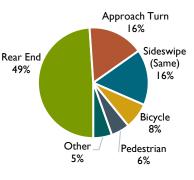
Sideswipe (Same Direction) Crashes

15 Sideswipe (Same Direction) crashes occurred at the Canyon Boulevard & Folsom Street intersection, 1 of which resulted in injury. Crashes occurred in all approach directions:

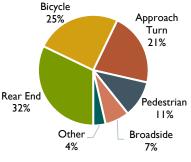
Eastbound Canyon Boulevard: 4 crashes (1 injury)







Severe Crashes



- Westbound Canyon Boulevard: 5 crashes
- Northbound Folsom Street: 3 crashes
- Southbound Folsom Street: 3 crashes

Sideswipe (Same Direction) crashes were most common between Noon – 6:00 PM (8 of 15). Dawn/Dusk, Dark-Unlighted, or Dark-Lighted conditions were present for 3 of 15 crashes. 2 of 15 crashes occurred during inclement weather. Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 4 of 15 crashes. Drivers were making turning maneuvers in 6 of 15 Sideswipe (Same Direction) crashes, versus passing/lane changing maneuvers in 9 of 15 crashes.

Bicycle Crashes

7 Bicycle crashes occurred at the Canyon Boulevard & Folsom Street intersection, all of which resulted in injury. Several different types of collisions were recorded:

- Westbound right-turning motorist collided with southbound cyclist in the east crosswalk
- Westbound right-turning motorist collided with westbound cyclist in the bike lane
- Westbound motorist collided with northbound cyclist in the east crosswalk
- Southbound left-turning motorist collided with northbound cyclist in the east crosswalk
- Southbound left-turning motorist collided with northbound cyclist in the bike lane
- Southbound left-turning motorist collided with southbound cyclist in the east crosswalk
- Northbound right-turning motorist collided with northbound cyclist in the bike lane

Weather was not a factor in any of the Bicycle crashes. Dawn/Dusk or Dark-Lighted conditions were present for 3 of 7 crashes.



14.30th St & Canyon Blvd

Classification: Urban 4-Lane Divided Signalized 4-Leg IntersectionMajor Street: 30th StreetAADT: 25,700 vpdMinor Street: Canyon BoulevardAADT: 6,900 vpd2015-2019 Crash History: 33 crashes (12 injury)LOSS: II (Total), III (Severe)Diagnostic Patterns: Approach Turn

30th Street is a four-lane road, while Canyon Boulevard is a two-lane road. Between 2015 and 2019, 33 total crashes were recorded at the 30th Street & Canyon Boulevard intersection. This is consistent with LOSS II conditions, indicating a low to moderate potential for crash reduction. Rear End crashes were most common (31%), followed by Approach Turn (30%) and Broadside (18%).

12 severe crashes were recorded at the intersection, consistent with LOSS III conditions, indicating a moderate to high potential for severe crash reduction. Rear End crashes were the most common severe crash type (59%) followed by Bicycle crashes (25%).

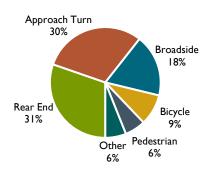
Total crash frequency was highest from 3:00 PM – 6:00 PM (33%). Severe crash frequency was highest from Noon – 3:00 PM (25%), from 3:00 PM – 6:00 PM (25%), and from 6:00 PM – 9:00 PM (25%).

Approach Turn Crashes

10 Approach Turn crashes occurred at the 30th Street & Canyon Boulevard intersection, 1 of which resulted in injury. Crashes involved several approach directions/vehicle maneuvers:

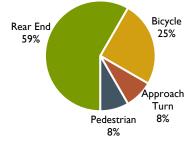
- Northbound left-turning motorist, southbound motorist: 6 crashes (1 injury)
- Southbound left-turning motorist, northbound motorist: 2 crashes
- Westbound left-turning motorist, eastbound motorist: 2 crashes

Approach Turn crashes were most common between 3:00 PM – 8:00 PM (7 of 10). Dark-Lighted conditions were present for 4 of 10 Approach Turn crashes. 3 of 10 crashes occurred during inclement weather. Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 4 of 10 Approach Turn crashes.



Total Crashes

Severe Crashes



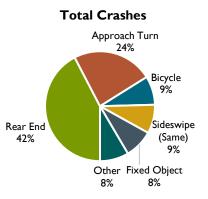


15. Arapahoe Ave & Folsom St

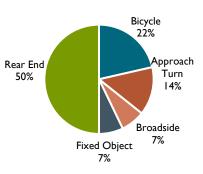
Classification: Urban 4-Lane Divided Signalized 4-Leg Intersection Major Street: Arapahoe Avenue Minor Street: Folsom Street 2015-2019 Crash History: 59 crashes (14 injury) LOSS: II (Total), II (Severe) Diagnostic Patterns: Off Road, Approach Turn, Bicycle, Fixed Object

Arapahoe Avenue is a four-lane road east of Folsom Street, but a twolane road west of Folsom Street. Folsom Street is a four-lane road north of Arapahoe Avenue, but a two-lane road south of Arapahoe Avenue. Between 2015 and 2019, 59 total crashes were recorded at the Arapahoe Avenue & Folsom Street intersection. This is consistent with LOSS II conditions, indicating a low to moderate potential for crash reduction. Rear End crashes were most common (42%), followed by Approach Turn (24%).

14 severe crashes were recorded at the intersection, consistent with LOSS II conditions, indicating a low to moderate potential for severe crash reduction. Rear End crashes were the most common severe crash type (50%) followed by Bicycle (21%) and Approach Turn (14%).



Severe Crashes



Total crash frequency was highest from 3:00 PM - 6:00 PM (37%) and from Noon - 3:00 PM (36%). Severe crash frequency was highest from Noon - 3:00 PM (43%).

Off Road Crashes

5 Off Road crashes occurred at the Arapahoe Avenue & Folsom Street intersection, 1 of which resulted in injury. Off Road crashes involved motorists driving in several different directions:

- Southbound left-turning motorist did not turn properly, causing adjacent southbound leftturning motorist to collide with the curb on the south side of the intersection
- Southbound left-turning motorist did not turn properly and collided with the median on the east side of the intersection
- Northbound motorist collided with the median and a tree on the south side of the intersection
- Westbound motorist attempted to avoid a rear end crash and collided with the median on the west side of the intersection
- Westbound motorist collided with the north curb and landscaping just west of the intersection

3 of 5 Off Road crashes occurred during Dark-Lighted conditions. Weather was not a factor in any of the Off Road crashes occurred during inclement weather. Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 2 of 5 crashes.

Approach Turn Crashes

14 Approach Turn crashes occurred at the Arapahoe Avenue & Folsom Street intersection, 2 of which resulted in injury. Crashes involved several approach directions/vehicle maneuvers:

- Westbound left-turning motorist, eastbound motorist: 7 crashes (1 injury)
- Eastbound left-turning motorist, westbound motorist: 6 crashes (1 injury)



Northbound left-turning motorist, southbound motorist: I crash

Approach Turn crashes were most common between 2:00 PM – 8:00 PM (9 of 14). Dark-Lighted conditions were present for 7 of 14 Approach Turn crashes. 2 of 14 crashes occurred during inclement weather. Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 4 of 14 Approach Turn crashes.

Bicycle Crashes

5 Bicycle crashes occurred at the Arapahoe Avenue & Folsom Street intersection, 3 of which resulted in injury. Several different types of collisions were recorded:

- Northbound right-turning motorist collided with westbound cyclist in the south crosswalk
- Eastbound right-turning motorist collided with westbound cyclist in the south crosswalk
- Southbound right-turning motorist collided with southbound cyclist in the bike lane
- Northbound right-turning motorist collided with westbound cyclist on the sidewalk at a driveway west of the intersection
- Southbound right-turning motorist collided with southbound cyclist in the bike lane at a driveway south of the intersection

Inclement weather was present in 1 of 5 Bicycle crashes. Dark-Lighted conditions were present for 2 of 5 crashes.

Fixed Object Crashes

5 Fixed Object crashes occurred at the Arapahoe Avenue & Folsom Street intersection, 1 of which resulted in injury. All 5 Fixed Object crashes occurred Off-Road and are described in the preceding section.



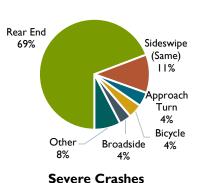
16. Arapahoe Ave & 28th St

Classification: Urban 6-Lane Divided Signalized 4-Leg IntersectionMajor Street: Arapahoe AvenueAADT: 43,000 vpdMinor Street: 28th StreetAADT: 29,800 vpd2015-2019 Crash History: 169 crashes (32 injury, 1 fatal)LOSS: IV (Total), III (Severe)Diagnostic Patterns: Rear End, Bicycle

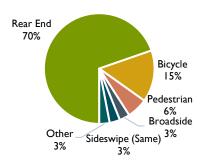
Both Arapahoe Avenue and 28th Street are six-lane roads. Between 2015 and 2019, 169 total crashes were recorded at the Arapahoe Avenue & 28th Street intersection. This is consistent with LOSS IV conditions, indicating a high potential for crash reduction. Rear End crashes were most common (69%), followed by Sideswipe (Same Direction) (11%).

33 severe crashes were recorded at the intersection, consistent with LOSS III conditions, indicating a moderate to high potential for severe crash reduction. Rear End crashes were the most common severe crash type (70%), followed by Bicycle (15%) and Pedestrian (6%).

Total crash frequency was highest from 3:00 PM - 6:00 PM (31%). Severe crash frequency was also highest from 3:00 PM - 6:00 PM (39%).



Total Crashes



Fatal Crash

One fatal crash occurred at the Arapahoe Avenue & 28th Street intersection. A northbound rightturning motorist (driving a truck) collided with a cyclist who was travelling northbound on the east sidewalk. The northbound motorist had a green light at the time of the crash, the pedestrian signal for the east crosswalk was counting down for the Flashing Don't Walk phase at the time of the crash. The cyclist collided with the trailer of the truck after the motorist had nearly completed their turning maneuver. The crash occurred during Dark-Lighted conditions with no inclement weather. No driver contributing factors were cited.

Rear End Crashes

117 Rear End crashes occurred at the Arapahoe Avenue & 28th Street intersection, 23 of which resulted in injury. Crashes occurred on all intersection approaches:

- Westbound Arapahoe Avenue: 41 crashes (8 injury)
 - 19 crashes in the channelized right-turn lane
- Northbound 28th Street: 32 crashes (7 injury)
- Southbound 28th Street: 22 crashes (5 injury)
- Eastbound Arapahoe Avenue: 21 crashes (3 injury)
 - 8 crashes in the channelized right-turn lane

Rear End crashes were most common between 3:00 PM - 6:00 PM (39 of 117). Dawn/Dusk or Dark-Lighted conditions were present for 14 of 117 Rear End crashes. 7 of 117 crashes occurred during inclement weather. Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 34 of 117 Rear End crashes.



Bicycle Crashes

7 Bicycle crashes occurred at the Arapahoe Avenue & 28th Street intersection, 4 of which resulted in injury, and one of which resulted in a fatality (discussed above). Several different types of collisions were recorded:

- Westbound right-turning motorist collided with southbound cyclist in the crosswalk of the northeast channelized right-turn lane
- Westbound right-turning motorist collided with northbound cyclist in the crosswalk of the northeast channelized right-turn lane
- Northbound right-turning motorist collided with northbound cyclist in the east crosswalk
- Northbound right-turning motorist collided with westbound cyclist in the south crosswalk (2 times)
- Eastbound right-turning motorist collided with southbound cyclist in the crosswalk of the southwest channelized right-turn lane
- Eastbound right-turning motorist collided with northbound cyclist in the crosswalk of the southwest channelized right-turn lane

Weather was not a factor in any of the Bicycle crashes. Dark-Lighted conditions were present for 2 of 7 crashes. 4 of 7 crashes occurred between 2:00 PM - 6:00 PM.



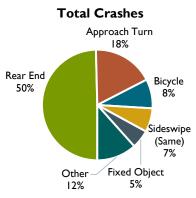
17. Arapahoe Ave & 30th St

Classification: Urban 6-Lane Divided Signalized 4-Leg IntersectionMajor Street: Arapahoe AvenueAADT: 33,500 vpdMinor Street: 30th StreetAADT: 26,000 vpd2015-2019 Crash History: 129 crashes (31 injury)LOSS: IV (Total), III (Severe)Diagnostic Patterns: Bicycle, Fixed Object, Dawn/Dusk, Dark-Unlighted

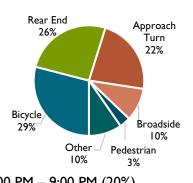
Arapahoe Avenue is a six-lane road, while 30th Street is a four-lane road. Between 2015 and 2019, 129 total crashes were recorded at the Arapahoe Avenue & 30th Street intersection. This is consistent with LOSS IV conditions, indicating a high potential for crash reduction. Rear End crashes were most common (50%), followed by Approach Turn (18%) and Bicycle (8%).

31 severe crashes were recorded at the intersection, consistent with LOSS III conditions, indicating a moderate to high potential for severe crash reduction. Bicycle crashes were the most common severe crash type (29%), followed by Rear End (26%) and Approach Turn (22%).

Total crash frequency was highest from Noon – 3:00 PM (24%) and $\frac{\text{Other}}{10\%}$ Pedest from 3:00 PM – 6:00 PM (25%). Severe crash frequency was highest from Noon – 3:00 PM (20%), from 3:00 PM – 6:00 PM (20%), and from 6:00 PM – 9:00 PM (20%).







Bicycle Crashes

II Bicycle crashes occurred at the Arapahoe Avenue & 30th Street intersection, 9 of which resulted in injury. Several different types of collisions were recorded:

- Westbound right-turning motorist collided with westbound cyclist in the crosswalk of the northeast channelized right-turn lane
- Object from an eastbound cyclist in the westbound lanes collided with westbound motorist
- Southbound right-turning motorist at driveway east of the intersection collided with eastbound cyclist on the north sidewalk
- Northbound cyclist crossing against the signal collided with westbound motorist (2 times)
- Westbound left-turning motorist collided with westbound cyclist in the south crosswalk (2 times)
- Southbound cyclist crossing against the signal collided with eastbound motorist
- Southbound right-turning motorist collided with eastbound cyclist in the north crosswalk
- Eastbound right-turning motorist at driveway north of the intersection collided with southbound cyclist
- Eastbound left-turning motorist collided with eastbound cyclist in the north crosswalk

Weather was not a factor in any of the Bicycle crashes. Dark-Lighted or Dark-Unlighted conditions were present for 6 of 11 crashes. 6 of 11 crashes occurred between 6:00 PM – Midnight.



Fixed Object Crashes

7 Fixed Object crashes occurred at the Arapahoe Avenue & 30th Street intersection, 1 of which resulted in injury. 4 crashes involved eastbound motorists; 3 crashes involved southbound motorists. 1 of 7 Fixed Object crashes occurred during Dark-Lighted conditions. 2 of 7 Fixed Object crashes occurred in inclement weather. Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 3 of 7 Fixed Object crashes.

Dawn/Dusk Crashes

8 crashes occurred at the Arapahoe Avenue & 30th Street intersection during Dawn/Dusk conditions, 3 of which resulted in injury. Rear End crashes were the most common Dawn/Dusk crash type (7 of 8); I Sideswipe (Same Direction) crash also occurred. 7 of 8 Dawn/Dusk crashes occurred in the afternoon/evening. Sun glare was not noted in any of the Dawn/Dusk crash reports.

Dark-Unlighted Crashes

Despite existing overhead lighting, 5 crashes occurred at the Arapahoe Avenue & 30th Street intersection during Dark-Unlighted conditions, 3 of which resulted in injury. Bicycle crashes were the most common Dark-Unlighted crash type (2 of 5), followed by Approach Turn (2 of 5) and Broadside (1 of 5). 3 of 5 Dark-Unlighted crashes involved southbound motorists attempting to make turning maneuvers.



18. Foothills Pkwy & Arapahoe Ave

Classification: Urban 6-Lane Divided Signalized 4-Leg Intersection Major Street: Foothills Parkway Minor Street: Arapahoe Avenue 2015-2019 Crash History: 231 crashes (61 injury, 1 fatal) LOSS: IV (Total), IV (Severe) Diagnostic Patterns: Off Road-Median, Rear End, Dark-Unlighted, Snow/Sleet/Hail, Driver Inexperience

Arapahoe Avenue is a six-lane road, while Foothills Parkway is a fivelane road (2 northbound lanes, 3 southbound lanes). Between 2015 and 2019, 231 total crashes were recorded at the Foothills Parkway & Arapahoe Avenue intersection. This is consistent with LOSS IV conditions, indicating a high potential for crash reduction. Rear End crashes were most common (68%), followed by Approach Turn (12%).

62 severe crashes were recorded at the intersection, consistent with LOSS IV conditions, indicating a high potential for severe crash reduction. Rear End crashes were the most common severe crash type (63%), followed by Approach Turn (18%).

Total crash frequency was highest 3:00 PM - 6:00 PM (25%). Severe crash frequency was highest from Noon – 3:00 PM (26%).

Fatal Crash

One fatal crash occurred at the Foothills Parkway & Arapahoe Avenue intersection. A westbound motorist rear ended two other motorists who were stopped at a red signal. The crash occurred during Dark-Lighted conditions with no inclement weather. Drug use was suspected in the crash record but not cited as a contributing factor.

Off Road-Median Crashes

7 Off Road-Median crashes occurred at the Foothills Parkway & Arapahoe Avenue intersection, all of which were PDO. Off Road-Median crashes involved motorists driving in several different directions:

- Northbound motorist crashed into the channelizing island on the southeast corner of the intersection (3 times)
- Southbound right-turning motorist did not turn properly and collided with the median on the west leg of the intersection (2 times)
- Northbound motorist collided with the median on the north leg of the intersection
- Eastbound motorist collided with the median on the east leg of the intersection

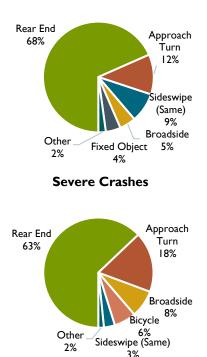
4 of 7 Off Road-Median crashes occurred during Dark-Lighted or Dawn/Dusk conditions. 4 of 7 Off Road-Median crashes occurred during inclement weather. Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 1 of 7 crashes.

<u>Rear End Crashes</u>

158 Rear End crashes occurred at the Foothills Parkway & Arapahoe Avenue intersection, 39 of which resulted in injury, and 1 of which resulted in a fatality (described above). Crashes occurred on all intersection approaches:







- Northbound Foothills Parkway: 63 crashes (16 injury)
 - 15 crashes in the channelized right-turn lane
- Southbound Foothills Parkway: 51 crashes (12 injury)
 - 6 crashes in the channelized right-turn lane
- Westbound Arapahoe Avenue: 23 crashes (8 injury, 1 fatal)
 - 7 crashes in the channelized right-turn lane
- Eastbound Arapahoe Avenue: 20 crashes (2 injury)
 - 7 crashes in the channelized right-turn lane

Rear End crashes were most common between 3:00 PM – 6:00 PM (41 of 158). Dark-Lighted, Dark-Unlighted, or Dawn/Dusk conditions were present for 24 of 158 Rear End crashes. 19 of 158 crashes occurred during inclement weather. Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 49 of 158 Rear End crashes.

Dark-Unlighted Crashes

5 Dark-Unlighted crashes occurred at the Foothills Parkway & Arapahoe Avenue intersection despite the presence of overhead lighting, all of which were PDO. 3 Dark-Unlighted crashes involved southbound motorists, 2 involved southbound motorists. Inclement weather was not present for any of the crashes. 3 Dark-Unlighted crashes involved motorists making right-turns.

Snow/Sleet/Hail Crashes

22 crashes occurred at the Foothills Parkway & Arapahoe Avenue intersection during Snow/Sleet/Hail conditions, 2 of which resulted in injury. Rear End crashes were most common (11 of 22), followed by Fixed Object (4 of 22) and Sideswipe (Same Direction) (4 of 22). Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 9 of 22 Snow/Sleet/Hail crashes.

Driver Inexperience Crashes

Driver Inexperience was cited as a contributing factor in 23 crashes, 4 of which resulted in injury. Rear End crashes were most common (15 of 23), followed by Sideswipe (Same Direction) (3 of 23). 5 of 23 crashes occurred during Dark-Lighted or Dawn/Dusk conditions. Inclement weather was present in 12 of 23 Driver Inexperience crashes.



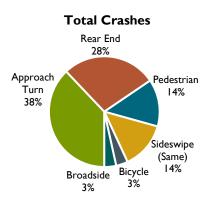
19. Arapahoe Ave & Conestoga St

Classification: Urban 6-Lane Divided Signalized 4-Leg IntersectionMajor Street: Arapahoe AvenueAADT: 32,400 vpdMinor Street: Conestoga StreetAADT: 4,200 vpd2015-2019 Crash History: 29 crashes (10 injury)LOSS: II (Total), II (Severe)Diagnostic Patterns: Approach Turn

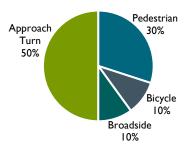
Arapahoe Avenue is a six-lane road. Conestoga Street is a two-lane road north of Arapahoe Avenue and a two-lane private driveway south of Arapahoe Avenue

Between 2015 and 2019, 29 total crashes were recorded at the Arapahoe Avenue & Conestoga Street intersection. This is consistent with LOSS II conditions, indicating a low to moderate potential for crash reduction. Approach Turn crashes were most common (38%), followed by Rear End (28%).

10 severe crashes were recorded at the intersection, consistent with LOSS II conditions, indicating a low to moderate potential for severe crash reduction. Approach Turn crashes were the most common severe crash type (50%), followed by Pedestrian (30%).



Severe Crashes



Total crash frequency was highest from Noon – 3:00 PM (29%) and from 3:00 PM – 6:00 PM (29%). Severe crash frequency was highest from 3:00 PM – 6:00 PM (40%).

Approach Turn Crashes

11 Approach Turn crashes occurred at the Arapahoe Avenue & Conestoga Street intersection, 5 of which resulted in injury. Crashes involved several approach directions/vehicle maneuvers:

- Westbound left-turning motorist, eastbound motorist: 8 crashes (4 injury)
- Eastbound left-turning motorist, westbound motorist: 3 crashes (1 injury)

Approach Turn crashes were most common between 5:00 PM – 8:00 PM (6 of 11). Dark-Lighted or Dawn/Dusk conditions were present for 3 of 11 Approach Turn crashes. 1 of 11 crashes occurred during inclement weather. Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 1 of 11 Approach Turn crashes.



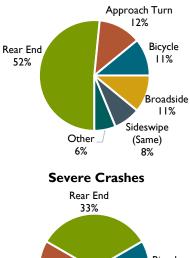
20. Arapahoe Ave & 55th St

Classification: Urban 6-Lane Divided Signalized 4-Leg IntersectionMajor Street: Arapahoe AvenueAADT: 34,700 vpdMinor Street: 55th StreetAADT: 25,100 vpd2015-2019 Crash History: 64 crashes (21 injury)LOSS: II (Total), II (Severe)Diagnostic Patterns: Bicycle, Dawn/Dusk

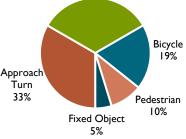
Arapahoe Avenue is a six-lane road. 55th Street is a four-lane road north of Arapahoe Avenue and a two-lane road south of Arapahoe Avenue. Between 2015 and 2019, 64 total crashes were recorded at the Arapahoe Avenue & 55th Street intersection. This is consistent with LOSS II conditions, indicating a low to moderate potential for crash reduction. Rear End crashes were most common (52%), followed by Approach Turn (12%) and Bicycle (11%).

21 severe crashes were recorded at the intersection, consistent with LOSS II conditions, indicating a low to moderate potential for severe crash reduction. Approach Turn crashes were the most common severe crash type (33%), followed by Rear End (33%) and Bicycle (19%).

Total crash frequency was highest from 3:00 PM – 6:00 PM (27%). Severe crash frequency was also highest from 3:00 PM – 6:00 PM (29%).



Total Crashes



Bicycle Crashes

7 Bicycle crashes occurred at the Arapahoe Avenue & 55th Street intersection, 4 of which resulted in injury. Several different types of collisions were recorded:

- Southbound right-turning motorist collided with eastbound cyclist in the north crosswalk (2 times)
- Eastbound right-turning motorist collided with a cyclist who was standing on the southwest corner of the intersection
- Northbound right-turning motorist collided with northbound cyclist in the bike lane
- Westbound right-turning motorist collided with eastbound cyclist in the north crosswalk
- Eastbound left-turning motorist collided with westbound cyclist in the north crosswalk
- Northbound right-turning motorist at driveway west of the intersection collided with westbound cyclist on the south sidewalk

Inclement weather was a factor in 2 of 7 Bicycle crashes. Dark-Lighted or Dark-Unlighted conditions were present for 2 of 7 crashes. 3 of 7 crashes occurred between 5:00 PM - 7:00 PM.

Dawn/Dusk Crashes

5 crashes occurred at the Arapahoe Avenue & 55th Street intersection during Dawn/Dusk conditions, 2 of which resulted in injury. Rear End crashes were the most common Dawn/Dusk crash type (4 of 5); the remaining crash was a Bicycle. 4 of 5 Dawn/Dusk crashes occurred in the afternoon/evening; the Bicycle crash occurred during the morning. Sun glare was not noted in any of the Dawn/Dusk crash reports.



21. Broadway & University Ave

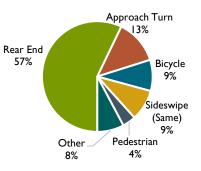
Classification: Urban 4-Lane Divided Signalized 4-Leg Intersection Major Street: Broadway AADT: 35,000 vpd Minor Street: University Avenue AADT: 8,600 vpd 2015-2019 Crash History: 77 crashes (26 injury) LOSS: III (Total), IV (Severe) Diagnostic Patterns: Bicycle

Broadway is a four-lane road, while University Avenue is a two-lane road. Between 2015 and 2019, 77 total crashes were recorded at the Broadway & University Avenue intersection. This is consistent with LOSS III conditions, indicating a moderate to high potential for crash reduction. Rear End crashes were most common (57%), followed by Approach Turn (13%).

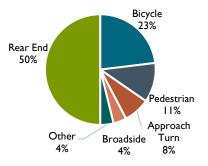
26 severe crashes were recorded at the intersection, consistent with LOSS IV conditions, indicating a high potential for severe crash reduction. Rear End crashes were the most common severe crash type (50%), followed by Bicycle (23%) and Pedestrian (11%).

Total crash frequency was highest from 3:00 PM - 6:00 PM (29%). Severe crash frequency was highest from Noon – 3:00 PM (27%) and from 3:00 PM - 6:00 PM (27%).





Severe Crashes



Bicycle Crashes

7 Bicycle crashes occurred at the Broadway & University Avenue intersection, 6 of which resulted in injury. Several different types of collisions were recorded:

- Westbound right-turning motorist collided with southbound cyclist in the east crosswalk
- Northbound motorist collided with eastbound cyclist in the south crosswalk who was crossing against the traffic signal
- Northbound right-turning motorist collided with northbound cyclist in the crosswalk of the southeast channelized right-turn lane (3 times)
- Northbound right-turning motorist collided with southbound cyclist in the crosswalk of the southeast channelized right-turn lane
- Eastbound motorist collided with westbound left-turning cyclist who was going towards the west sidewalk

Weather was not a factor in any of the Bicycle crashes. Dark-Lighted or Dark-Unlighted conditions were present for 1 of 7 crashes. All 7 Bicycle crashes occurred between 12:00 PM – 8:00 PM.



22. Broadway & College Ave

Classification: Urban 4-Lane Divided Signalized 4-Leg Intersection Major Street: Broadway Minor Street: College Avenue 2015-2019 Crash History: 18 crashes (1 fatal) LOSS: II (Total), I (Severe) Diagnostic Patterns: Sideswipe (Same Direction)

Broadway is a four-lane road, while College Avenue is a two-lane road. Between 2015 and 2019, 18 total crashes were recorded at the Broadway & College Avenue intersection. This is consistent with LOSS II conditions, indicating a low to moderate potential for crash reduction. Sideswipe (Same Direction) crashes were most common (50%).

I severe crash were recorded at the intersection, consistent with LOSS I conditions, indicating a low potential for severe crash reduction. The severe crash was a Fixed Object crash.

Total crash frequency was highest from 6:00 PM - 9:00 PM (28%). The Severe crash frequency was highest from Midnight – 3:00 AM (100%).

Fatal Crashes

One fatal crash occurred at the Broadway & College Avenue intersection. A southbound motorist left the roadway Off Right and struck several Fixed Objects including the west curb, a utility pole, and a concrete barrier for a staircase. The crash occurred during Dark-Lighted conditions with no inclement weather. Alcohol was cited in the crash record as a contributing factor.

Sideswipe (Same Direction)

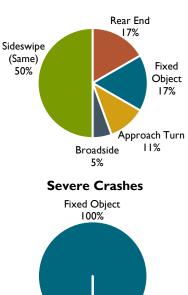
9 Sideswipe (Same Direction) crashes occurred at the Broadway & College Avenue intersection, all of which were PDO. Crashes occurred in all approach directions:

- Northbound Broadway: 7 crashes
- Southbound Broadway: 2 crashes

Dawn/Dusk, Dark-Unlighted, or Dark-Lighted conditions were present for 3 of 9 crashes. I of 9 crashes occurred during inclement weather. Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 5 of 9 crashes. Drivers were making passing/lane changing maneuvers in all 9 Sideswipe (Same Direction) crashes.







23.30th St & Aurora Ave

Classification: Urban 4-Lane Divided Signalized 4-Leg Intersection Major Street: 30th Street AADT: 22,600 vpd Minor Street: Aurora Avenue AADT: 2,500 vpd 2015-2019 Crash History: 27 crashes (10 injury) LOSS: III (Total), IV (Severe) Diagnostic Patterns: 3+ Vehicles, Sideswipe (Same Direction)

30th Street is a four-lane road while Aurora Avenue is a two-lane road. Between 2015 and 2019, 27 total crashes were recorded at the 30th Street & Aurora Avenue intersection. This is consistent with LOSS III conditions, indicating a moderate to high potential for crash reduction. Several different crash types were recorded, including Rear End (18%), followed by Sideswipe (Same Direction) (19%), Approach Turn (15%) and Bicycle (15%).

10 severe crashes were recorded at the intersection, consistent with LOSS IV conditions, indicating a high potential for severe crash reduction. Bicycle crashes were the most common severe crash type (40%), followed by Pedestrian (20%).

Total crash frequency was highest from 6:00 AM – 9:00 AM (22%) and from 3:00 PM – 6:00 PM (22%). Severe crash frequency was also highest from 6:00 AM – 9:00 AM (30%) and from 3:00 PM – 6:00 PM (30%).

3+ Vehicle Crashes

5 crashes occurred at the 30th Street & Aurora Avenue that involved three or more vehicles, one of which resulted in injury. 3+ Vehicle crash types included Rear End (2 of 5), Sideswipe (Opposite Direction) (1 of 5), Bicycle (1 of 5), and Parked Vehicle (1 of 5). 2 of 5 crashes with 3+ Vehicles occurred in Dark-Lighted or Dawn/Dusk conditions. 4 of 5 crashes with 3+ Vehicles occurred during inclement weather. Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 3 of 5 crashes.

Sideswipe (Same Direction) Crashes

5 Sideswipe (Same Direction) crashes occurred at the 30th Street & Aurora Avenue intersection, 1 of which resulted in injury. Crashes occurred in several approach directions:

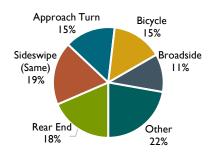
- Eastbound Aurora Avenue: I crash
- Northbound 30th Street: 2 crashes (1 injury)
- Southbound 30th Street: 2 crashes

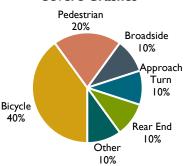
All 5 Sideswipe (Same Direction) crashes occurred during Daylight. More specifically, 3 of 5 crashes occurred between 3:00 PM – 7:00 PM. Inclement weather was not a contributing factor in any of the Sideswipe (Same Direction) crashes. Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 1 of 5 crashes. Drivers were making passing/lane changing maneuvers in 4 of 5 Sideswipe (Same Direction) crashes, versus leaving a parked position in 1 of 5 crashes.

Bike/Ped









Severe Crashes

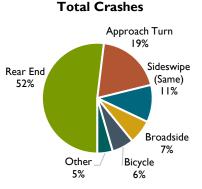
24. Broadway & Baseline Rd

Classification: Urban 6-Lane Divided Signalized 4-Leg Intersection Major Street: Broadway AADT: 39,600 vpd Minor Street: Baseline Road AADT: 31,700 vpd 2015-2019 Crash History: 156 crashes (42 injury) LOSS: IV (Total), IV (Severe) Diagnostic Patterns: Bicycle, Dawn/Dusk

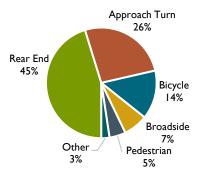
Broadway is a six-lane arterial, while Baseline Road is a four-lane road to the west and a two-lane road to the east. Between 2015 and 2019, 156 total crashes were recorded at the Broadway & Baseline Road intersection. This is consistent with LOSS IV conditions, indicating a high potential for crash reduction. Rear End crashes were most common (52%), followed by Approach Turn (19%) and Sideswipe (Same Direction) (11%).

42 severe crashes were recorded at the intersection, consistent with LOSS IV conditions, indicating a high potential for severe crash reduction. Rear Ends were the most common severe crash type (45%), followed by Approach Turn (26%) and Bicycle (14%).

Total crash frequency was highest from 3:00 PM - 6:00 PM (27%). Severe crash frequency was highest from Noon - 3:00 PM (24%) and from 3:00 PM - 6:00 PM (24%).



Severe Crashes



Bicycle Crashes

10 Bicycle crashes occurred at the Broadway & Baseline Road intersection, 6 of which resulted in injury. Several different types of collisions were recorded:

- Westbound right-turning motorist collided with westbound cyclist in the crosswalk of the northeast channelized right-turn lane
- Eastbound motorist collided with northbound cyclist in the east crosswalk
- Northbound right-turning motorist collided with northbound cyclist in the east crosswalk
- Eastbound right-turning motorist collided with westbound cyclist in the south crosswalk
- Eastbound motorist collided with northbound cyclist in the west crosswalk (2 times)
- Westbound left-turning motorist collided with eastbound cyclist in the intersection
- Southbound motorist collided with eastbound cyclist in the north crosswalk
- Eastbound left-turning motorist collided with eastbound cyclist in the north crosswalk
- Eastbound cyclist's wheel stuck in a pavement gap and overturned

Weather was not a factor in any of the Bicycle crashes. Of the recorded Bicycle crashes, 6 occurred during daylight hours. More specifically, 5 crashes occurred between 3:00 PM – 5:00 PM.

Dawn/Dusk Crashes

10 crashes occurred at the Broadway & Baseline Road intersection during Dawn/Dusk conditions, 3 of which resulted in injury. Rear End crashes were the most common Dawn/Dusk crash type (5 of 10), followed by Approach Turn (2 of 10) and Sideswipe (Same Direction) (2 of 10). All of the Dawn/Dusk



crashes occurred in the afternoon/evening. Sun glare was not noted in any of the Dawn/Dusk crash reports.



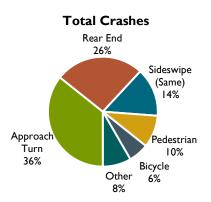
25. Baseline Rd & 30th St

Classification: Urban 4-Lane Divided Signalized 4-Leg Intersection Major Street: Baseline Road Minor Street: 30th Street 2015-2019 Crash History: 84 crashes (28 injury) LOSS: II (Total), III (Severe) Diagnostic Patterns: Pedestrian, Sideswipe (Same Direction), Approach Turn, Bicycle, Dark-Lighted, Rain

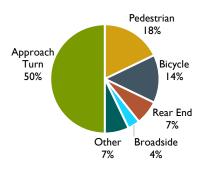
Baseline Road is a four-lane road. 30th Street is a four-lane road north of Baseline Road and a two-lane road south of Baseline Road. Between 2015 and 2019, 84 total crashes were recorded at the Baseline Road & 30th Street intersection. This is consistent with LOSS II conditions, indicating a low to moderate potential for crash reduction. Approach Turn crashes were most common (36%), followed by Rear End (26%) and Sideswipe (Same Direction) (14%).

28 severe crashes were recorded at the intersection, consistent with LOSS III conditions, indicating a moderate to high potential for severe crash reduction. Approach Turns were the most common severe crash type (50%), followed by Pedestrian (18%) and Bicycle (14%).

Total crash frequency was highest from 6:00 PM – 9:00 PM (23%). Severe crash frequency was highest from 9:00 AM – Noon (36%).



Severe Crashes



<u>Pedestrian Crashes</u>

8 Pedestrian crashes occurred at the Baseline Road & 30th Street intersection, 5 of which resulted in injury. Several different types of collisions were recorded:

- Southbound left-turning motorist collided with southbound pedestrian in the east crosswalk (2 times)
- Southbound left-turning motorist collided with northbound pedestrian in the east crosswalk
- Northbound right-turning motorist collided with northbound pedestrian in the east crosswalk
- Northbound right-turning motorist collided with westbound pedestrian in the south crosswalk
- Northbound left-turning motorist collided with northbound pedestrian in the west crosswalk
- Eastbound left-turning motorist collided with westbound pedestrian in the north crosswalk
- Eastbound left-turning motorist collided with eastbound pedestrian in the north crosswalk

2 of 5 Pedestrian crashes occurred in inclement weather. 3 of 5 crashes occurred during Dark-Lighted conditions.

Sideswipe (Same Direction) Crashes

12 Sideswipe (Same Direction) crashes occurred at the Baseline Road & 30th Street intersection, 1 of which resulted in injury. Crashes occurred in several approach directions:

- Eastbound Baseline Road: 6 crashes
- Southbound 30th Street: 3 crashes (1 injury)
- Northbound 30th Street: 2 crashes



• Westbound Baseline Road: I crash

2 of 12 Sideswipe (Same Direction) crashes occurred during Dark-Lighted conditions. Inclement weather was not a contributing factor in any of the Sideswipe (Same Direction) crashes. Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 2 of 12 crashes. Drivers were making passing/lane changing maneuvers in 6 of 12 Sideswipe (Same Direction) crashes, versus turning maneuvers in 6 of 12 crashes.

<u>Approach Turn Crashes</u>

30 Approach Turn crashes occurred at the Baseline Road & 30th Street intersection, 14 of which resulted in injury. Crashes involved several approach directions/vehicle maneuvers:

- Eastbound left-turning motorist, westbound motorist: 17 crashes (10 injury)
- Northbound left-turning motorist, southbound motorist: 9 crashes (3 injury)
- Westbound left-turning motorist, eastbound motorist: 3 crashes (1 injury)
- Southbound left-turning motorist, northbound motorist: I crash

Approach Turn crashes were most common between 6:00 PM – 11:00 PM (15 of 30). Dark-Lighted or Dawn/Dusk conditions were present for 18 of 30 Approach Turn crashes. 3 of 30 crashes occurred during inclement weather. Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 5 of 30 Approach Turn crashes.

Bicycle Crashes

5 Bicycle crashes occurred at the Baseline Road & 30th Street intersection, 4 of which resulted in injury. Several different types of collisions were recorded:

- Southbound left-turning motorist collided with northbound cyclist in the east crosswalk
- Northbound right-turning motorist collided with westbound cyclist in the south crosswalk (2 times)
- Northbound left-turning motorist collided with southbound cyclist in the west crosswalk
- Eastbound left-turning motorist collided with eastbound cyclist in the north crosswalk

Inclement weather was cited in 2 of 5 Bicycle crashes. Of the recorded Bicycle crashes, 3 occurred during daylight hours. More specifically, 3 crashes occurred between 11:00 AM – 2:00 PM and 2 crashes occurred between 10:00 PM – Midnight.

Dark-Lighted Crashes

Dark-Lighted conditions were present for 28 crashes at the Baseline Road & 30th Street intersection, 6 of which resulted in injury. Several crash types occurred involving Dark-Lighted conditions, including Approach Turn (16 of 28), Rear End (5 of 28), and Pedestrian (3 of 28). 24 of 28 crashes occurred between 6:00 PM – Midnight, and 6 crashes occurred during inclement weather.

<u>Rain Crashes</u>

Active Rain events were present for 7 crashes at the Baseline Road & 30th Street intersection, 2 of which resulted in injury. Several crash types occurred involving Rainy weather, including Approach Turn (2 of 7), Rear End (2 of 7), Bicycle (2 of 7), and Pedestrian (1 of 7). 5 of 7 crashes occurred during Dark-Lighted conditions.



26. Foothills Pkwy & Baseline Rd

Classification: Urban 4-Lane Divided Signalized 4-Leg Intersection Major Street: Foothills Parkway Minor Street: Baseline Road 2015-2019 Crash History: 102 crashes (16 injury) LOSS: IV (Total), IV (Severe) Diagnostic Patterns: Off Road-Right, Rear End, Driver Unfamiliar with Area

Foothills Parkway and Baseline Road are both four-lane arterials. Between 2015 and 2019, 102 total crashes were recorded at the Foothills Parkway & Baseline Road intersection. This is consistent with LOSS IV conditions, indicating a high potential for crash reduction. Rear End crashes were most common (67%), followed by Sideswipe (Same Direction) (11%).

16 severe crashes were recorded at the intersection, consistent with LOSS IV conditions, indicating a high potential for severe crash reduction. Rear Ends were the most common severe crash type (57%), followed by Broadside (19%).

Total crash frequency was highest from 9:00 AM – Noon (25%) and from Noon – 3:00 PM (23%). Severe crash frequency was highest from 9:00 AM – Noon (31%) and from Noon – 3:00 PM (25%).

Off Road-Right Crashes

5 Off-Road Right crashes occurred at the Foothills Parkway & Baseline Road intersection, all of which were Fixed Object crashes. 3 crashes involved southbound motorists, and 2 crashes involved northbound motorists. Snow/Sleet/Hail was a contributing factor in 2 of the crashes. Dark-Lighted conditions were present in 2 of the crashes.

Rear End Crashes

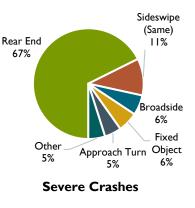
69 Rear End crashes occurred at the Foothills Parkway & Baseline Road intersection, 9 of which resulted in injury. Crashes occurred in all approach directions:

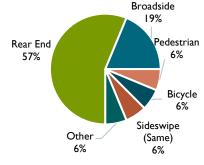
- Northbound Foothills Parkway: 33 crashes (4 injury)
 - 13 crashes in the channelized right-turn lane
- Southbound Foothills Parkway: 15 crashes (1 injury)
 - 2 crashes in the channelized right-turn lane
- Eastbound Baseline Road: 12 crashes (1 injury)
 - 4 crashes in the channelized right-turn lane
- Westbound Baseline Road: 9 crashes (2 injury)
 - I crash in the channelized right-turn lane

Rear End crashes were most common between 9:00 AM – Noon (19 of 69) and between Noon – 3:00 PM (17 of 69). Dawn/Dusk or Dark-Lighted conditions were present for 9 of 69 Rear End crashes. 4 of 69 crashes occurred during inclement weather. Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 16 of 69 Rear End crashes.









Driver Unfamiliar with Area Crashes

Driver Unfamiliarity was cited as a contributing factor in 5 crashes at the Foothills Parkway & Baseline Road intersection, though none resulted in injury. Several crash types occurred involving unfamiliar drivers, including Rear End (2 of 5), Approach Turn (1 of 5), Overtaking Turn (1 of 5), and Sideswipe (Same Direction) (1 of 5). Dark-Lighted conditions were present for 2 crashes, and 1 crash occurred during inclement weather.



27. Broadway & Dartmouth St

Classification: Urban 6-Lane Divided Signalized 4-Leg Intersection Major Street: Broadway AADT: 36,400 vpd Minor Street: Dartmouth Avenue AADT: 2,400 vpd 2015-2019 Crash History: 26 crashes (9 injury) LOSS: II (Total), II (Severe) Diagnostic Patterns: Broadside

Broadway is a six-lane road, while Dartmouth Street is a two-lane road. Between 2015 and 2019, 26 total crashes were recorded at the Broadway & Dartmouth Street intersection. This is consistent with LOSS II conditions, indicating a low to moderate potential for crash reduction. Rear End crashes were most common (35%), followed by Broadside (23%) and Approach Turn (15%).

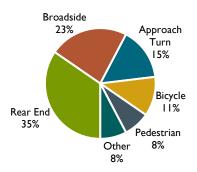
9 severe crashes were recorded at the intersection, consistent with LOSS II conditions, indicating a low to moderate potential for severe crash reduction. Broadside crashes were the most common severe crash type (34%), followed by Approach Turn (22%) and Pedestrian (22%).

Total crash frequency was highest from Noon – 3:00 PM (35%). Severe crash frequency was also highest from Noon – 3:00 PM (44%).

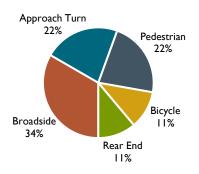
Broadside Crashes

6 Broadside crashes were recorded at the Broadway & Dartmouth Street intersection, 3 of which resulted in injury. 4 crashes involved southbound motorists running the red light and striking an eastbound motorist; 2 crashes involved northbound motorists running the red light and striking a westbound motorist. I of 6 crashes occurred during inclement weather. All 6 Broadside crashes occurred during daylight hours. More specifically, 4 of 6 crashes occurred between Noon – 2:00 PM and 2 of 6 crashes occurred between 8:00 AM – 11:00 AM.

Total Crashes



Severe Crashes





28. Broadway & Table Mesa Dr

Classification: Urban 4-Lane Divided Signalized 4-Leg Intersection Major Street: Broadway Minor Street: Table Mesa Drive 2015-2019 Crash History: 139 crashes (42 injury) LOSS: III (Total), IV (Severe) Diagnostic Patterns: Sideswipe (Same Direction), Bicycle

Broadway and Table Mesa Drive are both four-lane arterials at this intersection. Between 2015 and 2019, 139 total crashes were recorded at the Broadway & Table Mesa Drive intersection. This is consistent with LOSS III conditions, indicating a moderate to high potential for crash reduction. Rear End crashes were most common (54%), followed by Sideswipe (Same Direction) (16%) and Approach Turn (9%).

42 severe crashes were recorded at the intersection, consistent with LOSS IV conditions, indicating a high potential for severe crash reduction. Rear Ends were the most common severe crash type (48%), followed by Approach Turn (12%) and Broadside (12%).

Total crash frequency was highest from Noon – 3:00 PM (26%) and from 3:00 PM – 6:00 PM (24%). Similarly, Severe crash frequency was also highest from Noon – 3:00 PM (24%) and from 3:00 PM – 6:00 PM (24%).

Sideswipe (Same Direction) Crashes

23 Sideswipe (Same Direction) crashes occurred at the Broadway & Table Mesa Drive intersection, I of which resulted in injury. Crashes occurred in all approach directions:

- Westbound Table Mesa Drive: 7 crashes
- Southbound Broadway: 6 crashes
- Northbound Broadway: 5 crashes
- Eastbound Table Mesa Drive: 5 crashes (1 injury)

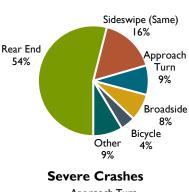
Sideswipe (Same Direction) crashes were most common between Noon – 6:00 PM (11 of 23). Dawn/Dusk or Dark-Lighted conditions were present for 3 of 23 Sideswipe (Same Direction) crashes. 3 of 23 crashes occurred during inclement weather. Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 5 of 23 crashes. Drivers were making turning maneuvers in 9 of 23 Sideswipe (Same Direction) crashes, versus passing/lane changing maneuvers in 14 of 23 crashes.

Bicycle Crashes

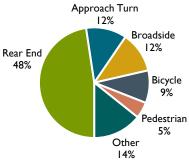
6 Bicycle crashes occurred at the Broadway & Table Mesa Drive intersection, 4 of which resulted in injury. All 6 Bicycle crashes involved right-turning motorists:

- Westbound right-turning motorist collided with southbound cyclist in the crosswalk of the northeast channelized right-turn lane
- Northbound right-turning motorist collided with northbound cyclist in the east crosswalk
- Northbound right-turning motorist collided with southbound cyclist in the east crosswalk (2 times)





Total Crashes



 Southbound motorist collided with southbound cyclist in the crosswalk of the northwest channelized right-turn lane (2 times)

Weather was not a factor in any of the Bicycle crashes. Of the recorded Bicycle crashes, 5 occurred during daylight hours. More specifically, 5 of 6 crashes occurred between 3:00 PM - 7:00 PM.



Rear End

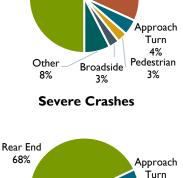
73%

29. Table Mesa Dr & Foothills Pkwy Southbound Off-Ramp

Classification: Urban 4-Lane Divided Signalized 4-Leg Ramp Intersection Major Street: Table Mesa Drive Minor Street: Foothills Parkway SB Off-Ramp AADT: 34,700 vpd 2015-2019 Crash History: 66 crashes (25 injury) LOSS: III (Total), IV (Severe) Diagnostic Patterns: Injury, Rear End

Table Mesa Drive is a four-lane road, while the Foothills Parkway ramp is a two-lane facility. Between 2015 and 2019, 66 total crashes were recorded at the Table Mesa Drive & Foothills Parkway Southbound Off-Ramp intersection. This is consistent with LOSS III conditions, indicating a moderate to high potential for crash reduction. Rear End crashes were most common (73%), followed by Sideswipe (Same Direction) (9%).

25 severe crashes were recorded at the intersection, consistent with LOSS IV conditions, indicating a high potential for severe crash reduction. Rear Ends were the most common severe crash type (68%), followed by Approach Turn (12%) and Broadside (8%).

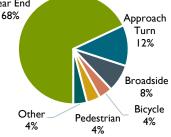


Total Crashes

Sideswipe

(Same)

9%



Total crash frequency was highest from 3:00 PM - 6:00 PM (35%). Severe crash frequency was highest from 9:00 AM - Noon (32%) and from 3:00 PM - 6:00 PM (32%).

Injury Crashes

25 crashes occurred at the Table Mesa Drive & Foothills Parkway Southbound Off-Ramp intersection that resulted in injury. Rear End crashes were the most common Injury crash type (17 of 25). 5 of 25 Injury crashes occurred during Dawn/Dusk or Dark-Lighted conditions. Only 1 Injury crash occurred in inclement weather. Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 6 of 25 Injury crashes.

<u>Rear End Crashes</u>

48 Rear End crashes occurred at the Table Mesa Drive & Foothills Parkway Southbound Off-Ramp intersection, 17 of which resulted in injury. Crashes occurred on several intersection approaches:

- Southbound Foothills Parkway: 27 crashes (9 injury)
 - 21 crashes in the channelized right-turn lane
- Westbound Table Mesa Drive: 15 crashes (4 injury)
- Eastbound Table Mesa Drive: 6 crashes (4 injury)

Rear End crashes were most common between 3:00 PM - 6:00 PM (17 of 48) and between 9:00 AM - Noon (13 of 48). Dawn/Dusk or Dark-Lighted conditions were present for 7 of 48 Rear End crashes. 3 of 48 crashes occurred during inclement weather. Driver contributing factors (such as distraction, fatigue, inexperience, etc.) were cited in 10 of 48 Rear End crashes.



IV. SUMMARY

Table 2 displays a summary of crash history for each intersection that was evaluated in this report. The summary table includes 2015-2019 crash history aggregated by crash severity, LOSS for total and severe crashes, and all patterns that were identified through the direct diagnostic procedure.

#	Intersection	20	15-2019 C	rash Hist	ory	LC	oss	Dia maatia Battamaa
#	Intersection	PDO	INJ	FAT	Total	Total	Severe	Diagnostic Patterns
I	28 th St & Jay Road	25	21	0	46	II	111	Injury Broadside Approach Turn
2	Broadway & Iris Ave	15	10	0	25	11	П	Off Road Approach Turn Fixed Object
3	Iris Ave & Folsom St	18	8	0	26	I	I	Bicycle Dark-Lighted
4	Folsom St & Valmont Rd	9	8	0	17	I	II	Injury
5	28 th St & Valmont Rd	68	26	0	94	ш	ш	None
6	30 th St & Valmont Rd	54	26	0	80	Ш	Ш	Approach Turn Bicycle
7	Foothills Pkwy & Valmont Rd	128	45	0	173	111	IV	Rear End Dawn/Dusk Snow/Sleet/Hail
8	Broadway & Balsam St	24	6	0	30	I	I	Sideswipe (Same) Dawn/Dusk
9	Broadway & Alpine St	17	3	0	20	II	I	None
10	Folsom St & Pearl St	27	11	0	38	I	11	None
11	30 th St & Pearl St	70	24	0	94	II	П	Sideswipe (Same) Approach Turn Bicycle
12	30 th St & Walnut St	36	10	0	46	II	11	None
13	Canyon Blvd & Folsom St	64	27	I	92	ш		Pedestrian Sideswipe (Same) Bicycle
14	30 th St & Canyon Blvd	21	12	0	33	II	11	Approach Turn
15	Arapahoe Ave & Folsom St	45	14	0	59	II	II	Off Road Approach Turn Bicycle Fixed Object

Table 2. Summary of Intersection Crash Histories



ш	•	20	5-2019 C	rash Hist	ory	LC	SS	
#	Intersection	PDO	INJ	FAT	Total	Total	Severe	Diagnostic Patterns
16	Arapahoe Ave & 28 th St	136	32	I	169	IV	Ш	Rear End Bicycle
17	Arapahoe Ave & 30 th St	98	31	0	129	IV	111	Bicycle Fixed Object Dawn/Dusk Dark Unlighted
18	Foothills Pkwy & Arapahoe Ave	169	61	I	231	IV	IV	Off Road Median Rear End Dark Unlighted Snow/Sleet/Hail Driver Inexperience
19	Arapahoe Ave & Conestoga Ave	19	10	0	29	Ш	Ш	Approach Turn
20	Arapahoe Ave & 55 th St	43	21	0	64	Ш	II	Bicycle Dawn/Dusk
21	Broadway & University Ave	51	26	0	77	Ш	IV	Bicycle
22	Broadway & College Ave	17	0	I	18	Ш	I	Sideswipe (Same)
23	30 th St & Aurora Ave	17	10	0	27	Ш	IV	3+ Vehicle Crash Sideswipe (Same
24	Broadway & Baseline Rd	114	42	0	156	IV	IV	Bicycle Dawn/Dusk
25	Baseline Rd & 30 th St	56	28	0	84	II	111	Pedestrian Sideswipe (Same) Approach Turn Bicycle Dark-Lighted Rain
26	Foothills Pkwy & Baseline Rd	86	16	0	102	IV	IV	Off Road Right Rear End Driver Unfamiliarity
27	Broadway & Dartmouth Rd	17	9	0	26	Ш	II	Broadside
28	Broadway & Table Mesa Dr	97	42	0	139	Ш	IV	Sideswipe (Same) Bicycle
29	Table Mesa Dr & Foothills Pkwy SB Off-Ramp	41	25	0	66	111	IV	Injury Rear End

Table 2. Summary of Intersection Crash Histories



APPENDIX A. INTERSECTION CRASH ANALYSIS WORKSHEETS





				28th Stre	et & J	ay Ro	oad		
Classifica	ation:	Urba	an 2-Lane	Divided Signalized 4-L	eg Intersec	tion	Top 5 Crash Type	es (Tota	ul)
Major Sti	reet:		28th	Street	AADT:	29,200	Crash Type	#	%
Minor St	reet:		Jay	Road	AADT:	14,500	Rear End	18	39.1%
2015	5-2019 C	rash His	tory	Level of Ser	vice of Sa	fety	Approach Turn	15	32.6%
PDO	Injury	Fatality	Total	Total	Sev	ere	Broadside	8	17.4%
25	21	0	46	Ш	II		Bicycle	2	4.3%
25	21	U	-0	"		1	Fixed Object	2	4.3%
		Safety	Perform	ance Functions			Top 5 Crash Type	s (Seve	re)
			Το	tal SPF			Crash Type	#	%
		‰ ─── Mea			Observed	l (EB)	Approach Turn	11	52.4%
18.00				···			Rear End	5	23.8%
16.00							Broadside	3	14.3%
(ear)							Bicycle	2	9.5%
es/ye									
Crash Frequency (crashes/year) 00. 00. 00. 00. 00. 00 00. 00 00 00 00				11.97			Diagnostic Pa		
) 10.00 강				9 .38				#	Prob.
00.8 neu							INJ Broadaida	21	99.3%
6.00							Broadside	8	99.2% 99.6%
4.00							Approach Turn	15	77.0/0
Ū 2.00									
0.00									
0.00 24,0	000	26,000	28,000	30,000	32,000	34,000			
		Μ	lajor Stree	t AADT (veh/day)					
			Se	vere SPF					
	20%	6 — Mea	ın <u>—</u> 80	% –O– Expected	Observed	I (EB)			
6.00									
(ear)				4.34					
Crash Frequency (crashes/year) 00. 00. 00. 00. 00. 00. 00. 00. 00. 00.				0					
crash				4.17					
ੁੱ ਨੂੰ 3.00									
duer									
ق ۲ 2.00									
rash									
ບັ 1.00									
0.00									
24,0	000	26,000	28,000		32,000	34,000			
		M	lajor Stree	t AADT (veh/day)					



2015-2019 Crash History Level of Service of Safety Approach Turn 7 28.0 PDO Injury Faality Total Severe Fixed Object 5 200 15 10 0 25 II II Broadside 2 8.05 Safety Performance Functions Total SPF Crash Type # 4.00 2.00					Broadway	& Iri	s Str	eet		
Minor Street: Iris Street AADT: 17,700 Rear End 10 400 2015-2019 Crash History Level of Service of Safety Approach Turn 7 28.0 PDO Injury Faality Total Severe Fixed Object 5 20.0 I5 I0 0 25 II II Fixed Object 5 20.0 Safety Performance Functions Total SPF Total SPF Total Approach Turn 4 40.0 2.00 -20% Mean 80% Expected Observed (B) Rear End 4 40.0 8.00 5.42 -0 Observed (B) Fixed Object 2 20.0 9000 27,000 29,000 31,000 33,000 35,000 75.6 75.9 98.4 100 -20% Mean 80% -Expected Observed (B) Fixed Object 5 98.4 100 -2.0% Mean 80% -Expected Observed (B) - - <th>Classifie</th> <th>cation:</th> <th>Urb</th> <th>an 4-Lane I</th> <th>Divided Signalized 3-L</th> <th>eg Intersec</th> <th>tion</th> <th>Top 5 Crash Typ</th> <th>es (Tota</th> <th>il)</th>	Classifie	cation:	Urb	an 4-Lane I	Divided Signalized 3-L	eg Intersec	tion	Top 5 Crash Typ	es (Tota	il)
2015-2019 Crash History Level of Service of Safety Approach Turn 7 28.0 PDO Injury Fatality Total Severe Fixed Object 5 20.0 15 10 0 25 II II II Broadside 2 8.05 Safety Performance Functions Total SPF 200% Mean 80% 0 Expected Observed (EB) Fixed Object 2 20.0 10.00 2.00 7.56 Object 2 20.0 1 40.0 6.00 5.42 Object 5 98.4 5 97.9 2.00 2.00 27.000 29.000 31.000 33.000 35.000 35.000 5 98.4 0.00 27.000 29.000 31.000 33.000 35.000 1 1 1 0.00 27.000 29.000 31.000 33.000 35.000 1 1 1 0.	Major S	Street:		Broa	dway	AADT:	29,700	Crash Type	#	%
PDO Injury Faality Total Severe Fixed Object 5 20.0 15 10 0 25 II II II Broadside 2 8.00 Safety Performance Functions Total SPF 2000 -2000 -Mean 80% 0 Expected O Observed (EB) Approach Turn 4 400 10.0 0 27,00 23,000 31,000 33,000 35,000 16 400 Object Patterns Category # % 0.00 27,000 23,000 31,000 33,000 35,000 36 5 92,900 1.00 23,000 23,000 33,000 35,000 10 10 10 10 1.00 22,000 27,000 23,000 31,000 33,000 35,000 10 10 10 1.00 2,000 2,000 2,000 2,000 2,000	Minor S	Street:		Iris S	itreet	AADT:	17,700	Rear End	10	40.0%
15 10 0 2.5 II II Broadside 2 8.00 Safety Performance Functions Total SPF 200 Mean 80% Expected Observed (Eb) Crash Type # % 10.00 8.00 6.00 5.42 Observed (Eb) Diagnostic Patterns 0.00 27,000 27,000 31,000 33,000 35,000 Approach Turn 7 96.40 Severe SPF 200 Mean 80% C Expected Observed (Eb) Fixed Object 2 96.40 Severe SPF 20% Mean 80% C Expected Observed (Eb) Major Street AADT (welvday) Severe SPF 20% Mean 80% C Expected Observed (Eb) 100 33,000 33,000 35,000 10 10 10 Severe SPF 20% Mean 30% 2.30 35,000 10 10 10 100 <th< td=""><td>20</td><td>15-2019 C</td><td>Crash His</td><td>tory</td><td>Level of Serv</td><td>vice of Sa</td><td>fety</td><td>Approach Turn</td><td>7</td><td>28.0%</td></th<>	20	15-2019 C	Crash His	tory	Level of Serv	vice of Sa	fety	Approach Turn	7	28.0%
15 10 0 25 II II Safety Performance Functions Total SPF 200% Mean 80% Expected Observed (EB) 10.00 5.40 97.9 4.00 5.42 0 Diagnostic Patterns Category # Proi Of Road 5 97.9 Approach Turn 7 96.44 Fixed Object 5 98.49 Off Road 5 97.9 Approach Turn 7 96.44 Fixed Object 5 98.49 Output Category 10 10 Output 10 2.39 0 <	PDO	Injury	Fatality	Total	Total	Sev	ere	Fixed Object	5	20.0%
Safety Performance Functions Total SPF Total SPF Total SPF 20% Mean 0 Expected Observed (EB) Fixed Object 2 20 4.00 5.42 0 5.42 0 Fixed Object 5 98.4 2.00 27,000 27,000 31,000 33,000 35,000 35,000 7 96.4 0.00 25,000 27,000 29,000 31,000 33,000 35,000 7 96.4 0.00 25,000 27,000 29,000 31,000 33,000 35,000 7 96.4 0.00 25,000 27,000 29,000 31,000 33,000 35,000 7 96.4 1.00 2.30 2.30 0 5.40 7 7 1.00 2.30 2.30 0 35,000 1 1 1 1.00 2.30 2.30 0 1 1 1 1 1.00 2.30 <td< td=""><td>15</td><td>10</td><td>0</td><td>25</td><td>п</td><td></td><td> </td><td>Broadside</td><td>2</td><td>8.0%</td></td<>	15	10	0	25	п			Broadside	2	8.0%
Total SPF Crash Type # % 20% Mean 80% © Expected © Observed (EB) Rear End 4 40.0 8.00 6.00 0 5.42 0 10.00 10.00 5.42 0 10.00 <td>15</td> <td>10</td> <td>v</td> <td>25</td> <td></td> <td>I</td> <td></td> <td>Sideswipe (Opposite)</td> <td>I</td> <td>4.0%</td>	15	10	v	25		I		Sideswipe (Opposite)	I	4.0%
Iotal SPF Approach Turn 4 400 20% Mean 80% © Expected © Observed (EB) 10.00 6.00 7.56 2 2.00 4.00 5.42 0 0 5.42 2.00 2.00 5.42 0 0 0.00 25,000 27,000 29,000 31,000 33,000 35,000 3.00 2.00 0 0 0 0 0 0 0.00 27,000 29,000 31,000 33,000 35,000 0 0 0 1000 27,000 29,000 31,000 33,000 35,000 0 0 0 2.00 2.00 2.39 0 0 0 0 0 0 0 2.00 2.00 2.00 31,000 33,000 35,000 0 0 0 0 0 0.00 2.00 2.00 31,000 33,000 10			Safety	Perform	ance Functions			Top 5 Crash Type	s (Seve	re)
20% Mean 80% © Expected © Observed (EB) Rear End 4 40.00 10.00 6.00 7.56 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1				Το	tal SPF			Crash Type	#	%
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10.00 8.00 7.56 Diagnostic Patterns 6.00 5.42 Off Road 5 97.9 4.00 5 5.42 Off Road 5 97.9 4.00 0 5.42 Off Road 5 97.9 4.00 0 2.00 27,000 29,000 31,000 33,000 35,000 0.00 25,000 27,000 29,000 31,000 33,000 35,000 Severe SPF 200 0 0.05 of 2.39 0 0 0 3.00 3.00 2.39 0 0 0 0 3.00 2.39 0 0 0 0 0 3.00 2.300 27,000 29,000 31,000 33,000 35,000 1.00 2.39 0 0 0 0 0 0 0.00 2.000 27,000 29,000 31,000 33,000 35,000 0 0 0 0.00 0 0 0 0 0 0	12.00							Rear End	4	40.0%
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25,000 27,000 29,000 31,000 33,000 35,000 Major Street AADT (veh/day) Severe SPF -20% Mean 80% O Expected O Observed (EB) 4.00 3.00 2.00 2.00 2.00 0.00 0.00 2.00 0.00 0.00 2.00 0.00 0.00 2.00 0.00										
Major Street AADT (veh/day) Severe SPF Image: Construct of the second of the seco			27.000	29.000	31.000	33.000	35.000			
20% Mean 80% - Expected • Observed (EB) 4.00 3.50 3.50 2.50 2.50 0	_	-,				,				
20% Mean 80% - Expected • Observed (EB) 4.00 3.50 3.50 2.50 2.50 0				So	VORO SPE					
4.00 3.50 3.00		200	2/N			Oheen				
3.50 3.00 2.50 2.50 0.50 0.50 0.50 2.00 2.00 2.00 0.50 0.50 0.50 0.50 2.00 2.00 0.50 0.50 0.50 0.50 2.00 0.50	4.00			an — 80		Observed	і (EB)			
1.50 2.43 0.00 2.39 0.00 2.00 0.50 0.00 25,000 27,000 29,000 31,000 33,000 35,000										
0.50 0.00 25,000 27,000 29,000 31,000 33,000 35,000	3.50 ar)									
0.50 0.00 25,000 27,000 29,000 31,000 33,000 35,000	9.00 ye									
0.50 0.00 25,000 27,000 29,000 31,000 33,000 35,000	ashe 5.20									
0.50 0.00 25,000 27,000 29,000 31,000 33,000 35,000	cr (cr				2.39					
0.50 0.00 25,000 27,000 29,000 31,000 33,000 35,000	5 2.00 Ien					-				
0.50 0.00 25,000 27,000 29,000 31,000 33,000 35,000	nbə 1.50									
0.50 0.00 25,000 27,000 29,000 31,000 33,000 35,000	ഥ 등 1.00									
0.00 25,000 27,000 29,000 31,000 33,000 35,000	C a									
25,000 27,000 29,000 31,000 33,000 35,000										
			27 000	20 000	31,000	33 000	35 000			
Major Street AADT (veh/day)	2	3,000				53,000	33,000			



			Iri	s Avenue a	& Fols	om	Street		
Classifica	ation:	Urba	an 4-Lane I	Divided Signalized 4-I	_eg Intersec	tion	Top 5 Crash T	ype <u>s (Tota</u>	ul)
Major St	reet:			venue	AADT:	27,400	Crash Type	#	%
Minor St			Folsom	Street	AADT:	12,100	Rear End	11	42.3%
201	5-2019 C	crash His	tory	Level of Ser	vice of Sa	fety	Approach Turn	6	23.1%
PDO	Injury	Fatality	Total	Total	Seve	ere	Bicycle	5	19.2%
10	0	0	24				Pedestrian	I	3.8%
18	8	0	26	1	I		Broadside	I	3.8%
		Safety	Perform	ance Functions			Top 5 Crash Ty	pes (Seve	re)
			To	tal SPF			Crash Type	#	%
	200	″ ─── Mea			Observed		Bicycle	4	50.0%
20.00	20/	• Intea			Observed		Pedestrian	I	12.5%
18.00							Approach Turn	I	12.5%
							Broadside	I	12.5%
							Rear End	I	12.5%
Crash Frequency (crashes/year) 000 000 000 000 000 000 000 000 000 00							Diagnostic	Patterns	
U2) 12.00				12.12			Category	#	Prob.
euc (Bicycle	5	100.0%
00.8 g		_		5.93			Dark Lighted	9	95.5%
표 6.00 등				•					
4.00									
2.00									
0.00 18,	,000 20,00	Μ	lajor Stree Sev	26,000 28,000 30,0 t AADT (veh/day) vere SPF	·				
6.00	20%	% —— Mea	ın —— 80	% —O— Expected (Observed	I (EB)			
year) 00'5									
ashes/									
<u>ා</u> රු 3.00		-		3.60					
Crash Frequency (crashes/year) 00. 00. 00. 00. 00. 00. 00. 00. 00. 00.				0 2.06					
00.1 Crash									
0.00 18,	,000 20,00	0 22,000	24,000	26,000 28,000 30,0	000 32,000	34,000			



							nt Road		
Classifica		Urba		Divided Signalized 4	-		Top 5 Crash T		-
1ajor St				Street	AADT:	16,800	Crash Type	#	%
linor St				nt Road	AADT:	12,700	Rear End	8	47.1%
201	5-2019 C	rash Hist	tory	Level of Se	ervice of Sa	fety	Approach Turn	3	17.6%
PDO	Injury	Fatality	Total	Total	Seve	ere	Broadside	3	17.6%
9	8	0	17	1	I		Pedestrian	I	5.9%
/	0	U	17	•	1		Sideswipe (Same)	I	5.9%
		Safety	Perform	ance Functions	s		Top 5 Crash Ty	pes (Seve	re)
			Tot	tal SPF			Crash Type	#	%
	200	/ M					Rear End	5	62.5%
16.00	20%	6 — Mea	un — 80	% O Expected	• Observed	(EB)	Approach Turn	I	12.5%
							Broadside	I	12.5%
14.00							Pedestrian	I.	12.5%
12.00									
10.00							Diagnostic	Patterns	
12.00 10.00 8.00 4.00				9.38			Category	#	Prob
8.00				,			Injury	8	96.4%
6.00									
				3.83					
4.00				0					
2.00									
0.00									
	,000	14,000 M	16,000 lajor Stree	18,000 t AADT (veh/day)	20,000	22,000			
	200	/ M		vere SPF					
5.00	20%	% —— Mea	in — 80	% –O– Expected	• Observed	(EB)			
4.50									
100 x/xear									
Shes 3.20					-				
3.00				3.09					
<u> 2.50</u>				2.08					
anb: 2.00				0					
면 - 1.50									
- 1.50									
1.30 1.00									
00.1 Crash									
0.50									



			28	th Street	& Valı	mont	t Road		
lassifica	tion:	Urb	an 4-Lane	Divided Signalized 4	-Leg Intersec	tion	Top 5 Crash Ty	pes (Tota	al)
lajor Str	reet:		28th	Street	AADT:	29,800	Crash Type	#	%
linor Sti	reet:		Valmo	nt Road	AADT:	18,100	Rear End	49	52.1%
2015	5-2019 C	rash His	tory	Level of Se	rvice of Sa	fety	Approach Turn	19	20.2%
PDO	Injury	Fatality	Total	Total	Sev	ere	Sideswipe (Same)	8	8.5%
68	26	0	94	Ш	I		Broadside	7	7.4%
00	20	U	74			I	Overtaking Turn	3	3.2%
		Safety	Perform	nance Functions			Top 5 Crash Typ	oes (Seve	re)
			Το	tal SPF			Crash Type	#	%
	20%	á —— Mei			• Observe		Rear End	13	50.0%
25.00 r	207		aii —— 80			- (LD)	Approach Turn	6	23.1%
							Bicycle	2	7.7%
तु 20.00				18.68			Broadside	2	7.7%
20.00 15.00 10.00 5.00				•			Other Non-Collision	2	7.7%
				0			Diagnostic P	Patterns	
15.00				15.87			Category	#	Prob
)									
F 10.00									
5.00									
0.00									
24,0	000 26		2 8,000 1aior Stree	30,000 32,000 et AADT (veh/day)	34,000	36,000			
			·						
	<u> </u>	á —— Me		vere SPF	• Observe	1 (EB)			
7.00				•					
ر 6.00									
/yea				5.21					
9.00 shes									
52 4.00				4.51					
Ъ									
ianba									
Crash Frequency (crashes/year) 00.7 00.7 00.7 00.9 00.9 00.9 00.9 00.9									
U 1.00									
0.00									



			301	th Street	& Valı	nont	Road		
lassifica	tion:	Urbar	n 4-Lane D	Divided Signalized 4-	Leg Intersec	tion	Top 5 Crash Ty	ypes (Tota	ul)
lajor Sti	reet:		30th S	Street	AADT:	24,400	Crash Type	#	%
linor Sti	reet:		Valmon	t Road	AADT:	21,900	Rear End	36	45.0%
2015	5-2019 C	rash Hist	ory	Level of Ser	vice of Sa	fety	Approach Turn	18	22.5%
PDO	Injury	Fatality	Total	Total	Sev	ere	Broadside	11	13.8%
54	26	0	80	Ш		1	Bicycle	6	7.5%
JT	20	v	00				Sideswipe (Same)	4	5.0%
		Safety P	Perform	ance Functions			Top 5 Crash Ty	pes (Sevei	re)
			Tot	al SPF			Crash Type	#	%
		a Mean			 Observed 	l (FB)	Rear End	9	34.6%
25.00	20/						Approach Turn	5	19.2%
							Bicycle	5	19.2%
₹ 20.00							Broadside	4	15.4%
20.00 15.00 10.00 5.00							Pedestrian	I	3.8%
15.00				0 16.04			Diagnostic l	Patterns	
15.00	_			15.33			Category	#	Prot
							Approach Turn	18	95.39
<u>}</u> 10.00	_						Bicycle	6	99.9 %
5.00									
0.00 l					20.000				
18,0	JUU 20			24,000 26,000 AADT (veh/day)	28,000	30,000			
			•	,					
				vere SPF					
7.00 r	<u> </u>	G — Mean	80	% – O – Expected	 Observed 	I (EB)			
7.00									
<u>_</u> 6.00									
/yea	_			5 .20					
shes/									
면 기 4.00				4.42					
ancy and									
ianba									
Crash Frequency (crashes/year) 00.7 00.7 00.7 00.7 00.7 00.7 00.7 00.7									
N I									
l a									
U 1.00									
0.00 0.00		0,000 22	,000 2	24,000 26,000	28,000	30,000			



assifica	tion:	Urba	an 6-Lane	Divided Signalized 4-	Leg Intersec	tion	Top 5 Crash 1	ypes (Tota	ul)
ijor Sti	reet:		Foothills	Parkway	AADT:	56,900	Crash Type	#	%
nor St	reet:		Valmo	nt Road	AADT:	23,400	Rear End	130	75.I
2015	5-2019 C	rash His	tory	Level of Ser	vice of Sa	fety	Broadside	19	11.0
PDO	Injury	Fatality	Total	Total	Sev	ere	Sideswipe (Same)	12	6. 9 %
28	45	0	173	Ш	IN	/	Approach Turn	7	4.0%
120	Ъ	U	175			/	Bicycle	2	1.2%
		Safety	Perform	nance Functions			Top 5 Crash T	ypes (Sevei	re)
			Το	tal SPF			Crash Type	#	%
		á —— Mea			 Observed 	I (FR)	Rear End	32	71.1
40.00	207						Broadside	5	11.1
35.00				34.33			Approach Turn	2	4.49
35.00	-			0			Bicycle	2	4.49
30.00							Fixed Object	2	4.4
25.00				0			Diagnostic	Patterns	
				25.26			Category	#	Pro
20.00							Rear End	130	100.0
15.00							Dawn/Dusk	13	97.4
10.00							Snow/Sleet/Hail	13	97.6
5.00									
0.00									
50,0	000 52,0			0 0 58,000 60,00 et AADT (veh/day)	0 62,000	64,000			
			•						
				vere SPF					
10.00	<u> </u>	6 — Mea	an — 80	0% –O– Expected	• Observed	I (EB)			
				8.70					
9.00				0					
8.00	-								
7.00									
6.00				5.74					
5.00									
4.00									
3.00									
2.00									
1.00									



				Br	oadway &	Balsa	.m A	venue		
Clas	ssifica	tion:	Urba	n 4-Lane I	Divided Signalized 4-I	eg Intersec	tion	Top 5 Crash Ty	pes (Tota	ul)
1ajo	or Str	reet:		Broa	dway	AADT:	28,200	Crash Type	#	%
1in	or Sti	reet:		Balsam	Avenue	AADT:	8,400	Rear End	13	43.3%
	2015	5-2019 C	Crash Hist	ory	Level of Ser	vice of S a	fety	Broadside	6	20.0%
PE	00	Injury	Fatality	Total	Total	Sev	ere	Sideswipe (Same)	5	16.7%
ົງ	24	6	0	30				Pedestrian	3	10.0%
2	.т	0	U	30	I			Bicycle	I	3.3%
			Safety F	Perform	ance Functions			Top 5 Crash Typ	bes (Sever	re)
				To	tal SPF			Crash Type	#	%
		205	% —— Mear			Observer	1 (FB)	Rear End	3	50.0%
I	6.00 _Г	207						Pedestrian	2	33.3%
	4.00							Bicycle	I	16.7%
	4.00									
es/ye	2.00	-								
Crasn Frequency (crasnes/year) – –	0.00				0 10 10			Diagnostic F	atterns	
	8.00	-			10.10			Category	#	Prob.
Tenc	8.00							Sideswipe (Same)	5	95.7%
requ	6.00				6.55			Dawn/Dusk	6	100.0%
	4.00									
5	2.00									
	2.00									
	0.00 L 22,0)00 2 [,]			28,000 30,000 t AADT (veh/day)	32,000	34,000			
		200	/ M		vere SPF					
	5.00 r	20;		1 80)% —O— Expected (Observed] (ЕВ)			
	4.50									
	4.00									
es/y€	3.50	-								
rash	3.00									
<u>ر</u>	2.50	-			3.01					
ienc	2.00									
<u> </u>					0 1.68					
Frequ	1 50	_								
ash Frequ	1.50									
Crash Free	1.00									
Ū										



				В	oad	way &	Alpi	ne Av	venue		
Clas	ssifica	ation:	Urba	n 4-Lane I	Divided S	Signalized 4-L	.eg Intersec	tion	Top 5 Crash Ty	pes (Tota	l)
Maj	or St	reet:		Broa	dway		AADT:	23,600	Crash Type	#	%
Min	or St	reet:		Alpine	Avenue		AADT:	4,200	Rear End	5	25.0%
	2015	5-2019 C	rash Hist	tory	Le	vel of Serv	vice of Sa	lfety	Overtaking Turn	4	20.0%
P	DO	Injury	Fatality	Total	-	Total	Sev	ere	Approach Turn	3	15.0%
	7	3	0	20		п			Sideswipe (Same)	3	15.0%
		5	U	20					Pedestrian	2	10.0%
			Safety	Perform	ance F	unctions			Top 5 Crash Typ	es (Sever	re)
				Tot	al SP	F			Crash Type	#	%
			á —— Mea			• Expected	Observed	1 (FB)	Approach Turn	I	33.3%
I	0.00								Pedestrian	I	33.3%
	9.00								Sideswipe (Same)	I	33.3%
ear)	8.00										
es/ye	7.00										
sh	6.00								Diagnostic P		
ц (c	5.00				6.05				Category	#	Prob.
nenc	4.00) ^{4.48}						
Freq	3.00										
ash I											
ບັ	2.00										
	1.00										
	0.00 8,0	000 20),000 2 2	2,000	24,000	26,000	28,000	30,000			
			Μ	ajor Stree	: AADT	(veh/day)					
				Se	vere S	PF					
		<u> </u>	6 — Mea				Observed	1 (FB)			
	3.00	207									
ear)	2.50				_						
es/y∈											
rash	2.00										
c) (c	1.50				1.80						
nen											
Freq	1.00				0 1.06						
Crash Frequency (crashes/year)											
ບັ	0.50										
	0.00										
		000 20			24,000	26,000	28,000	30,000			
			М	ajor Stree	AADT	(veh/day)					



			Fol	som Stree	et & P	earl	Street		
Classifica	ation:	Urba	n 4-Lane I	Divided Signalized 4-L	.eg Intersec	tion	Top 5 Crash Typ	es (Tota	ul)
Major St	reet:		Folsom	Street	AADT:	19,900	Crash Type	#	%
Minor St	reet:		Pearl	Street	AADT:	19,000	Rear End	20	52.6%
2015	5-2019 C	rash Hist	ory	Level of Serv	ervice of Safety		Broadside	6	15.8%
PDO	Injury	Fatality	Total	Total	Seve	ere	Approach Turn	4	10.5%
27	П	0	38		I		Bicycle	4	10.5%
21		U	50				Sideswipe (Same)	2	5.3%
		Safety I	Perform	ance Functions			Top 5 Crash Type	es (Sever	re)
			Tot	tal SPF			Crash Type	#	%
	20%	Mea			Observed	(FB)	Rear End	5	45.5%
20.00						()	Broadside	2	18.2%
18.00							Approach Turn	I	9.1%
00.81 (j							Bicycle	I	9.1%
Crash Frequency (crashes/year) 00.9 00.0 00.71 00.91 00.0 00 00 00 00 00 00							Pedestrian	I	9.1%
12.00		1		0			Diagnostic Pa	itterns	
<u>ල</u> ව 10.00				12.38			Category	#	Prob.
buence 8.00									
req.				8.13					
ash Fr									
Ŭ I									
2.00									
0.00 4,0	000 16			20,000 22,000 t AADT (veh/day)	24,000	26,000			
	2.00			vere SPF					
6.00	20%	Mean	n — 80	% –O– Expected	Observed	(EB)			
<u> </u>									
es/yea									
(crashe				3.68					
3.00				O ^{2.57}					
Crash Frequency (crashes/year) 00 00 00 00 00 00 00 00 00 00 00 00 00									
00'I Crash									
0.00									
14,0	000 16			20,000 22,000 t AADT (veh/day)	24,000	26,000			
			•						



assifica	ation:	Urba	n 4-Lane D	vivided Signalized 4-	Leg Intersec	tion	Top 5 Crash T	ypes (Tota	al)
ajor St	reet:		30th S	treet	AADT:	31,000	Crash Type	#	%
nor St	reet:		Pearl S	treet	AADT:	25,200	Rear End	29	30.9
201	5-2019 C	rash Hist	tory	Level of Ser	vice of Sa	fety	Approach Turn	28	29.8
PDO	Injury	Fatality	Total	Total	Sev	ere	Sideswipe (Same)	21	22.3
70	24	0	94	Ш	I		Bicycle	7	7.4%
/0	27	v	74		I		Overtaking Turn	4	4.3%
		Safety	Performa	ance Functions			Top 5 Crash T	ypes (Seve	re)
			Tot	al SPF			Crash Type	#	%
		a			 Observed 	(FB)	Rear End	7	29.2
30.00	207						Approach Turn	7	29.2
							Bicycle	6	25.0
25.00							Overtaking Turn	2	8.39
	-			19.30			Sideswipe (Same)	I	4.25
20.00				O 18.90			Diagnostic		
15.00				10.70			Category	#	Pro
10.00							Sideswipe (Same)	21	100.0
10.00							Approach Turn	28	100.0
							Bicycle	7	100.0
25.00 20.00 15.00 10.00 5.00									
0.00 24,	000 26,0	00 28,00	0 30,000	32,000 34,000	0 36,000	38,000			
		М	ajor Street	AADT (veh/day)					
			Sev	ere SPF					
	<u> </u>	a <u>m</u> Mea			• Observed	(EB)			
8.00				· · · · · · · · · · · · · · · · · · ·					
7.00	-								
7.00				5.23					
7.00 6.00				6 4.96					
7.00 6.00 5.00									
7.00 6.00 5.00						1			
7.00 6.00 5.00 4.00									
7.00 6.00 5.00 7 4.00									
7.00 6.00 5.00 4.00 3.00 2.00									
6.00 5.00 4.00 3.00									



assifica	ation:	Urba	an 4-Lane	Divided Signalized 4-L	eg Intersec	tion	Top 5 Crash T	ype <u>s (Tot</u> a	al)
ajor St	reet:		30th	Street	AADT:	30,000	Crash Type	#	%
inor St	reet:		Walnu	t Street	AADT:	12,700	Rear End	27	58.7%
201	5-2019 C	rash His	tory	Level of Ser	vice of Sa	fety	Approach Turn	9	19.69
PDO	Injury	Fatality	Total	Total	Seve	ere	Broadside	5	10.99
36	10	0	46	Ш	I		Sideswipe (Same)	3	6.5%
20	10	U	-0	п			Bicycle	2	4.3%
		Safety	Perform	ance Functions			Top 5 Crash T	ypes (Seve	re)
			Το	tal SPF			Crash Type	#	%
		6 — Mea			Observed	(FR)	Broadside	4	40.0
20.00	207						Rear End	4	40.0
18.00							Bicycle	I	10.0
							Approach Turn	I	10.0
16.00 14.00 12.00 10.00 6.00 4.00									
12.00				13.20			Diagnostic		_
10.00							Category	#	Prol
8.00				9.63					
. 8.00									
6.00									
2.00 0.00									
24,		M	Se	30,000 32,000 It AADT (veh/day) Vere SPF	34,000	36,000			
6.00	20%	₀ — I*iea	in ——80	0% —O— Expected (Observed	(EB)			
5.00									
4.00				3.84					
с р				2.42					
3.00				•					
3.00 2.00									
3.00									



assifica	tion:	Urba	an 4-Lane	Divided Sig	gnalized 4-	Leg Intersec	tion	Top 5 Crash T	ypes (Tota	ul)
ajor Sti	reet:		Canyon	Boulevard		AADT:	26,500	Crash Type	#	%
inor St	reet:		Folson	n Street		AADT:	20,500	Rear End	45	48.9
2015	5-2019 C	rash His	tory	Lev	el of Ser	vice of Sa	fety	Approach Turn	15	16.3
PDO	Injury	Fatality	Total	Т	otal	Sev	ere	Sideswipe (Same)	15	16.3
64	27	1	92		II	I		Bicycle	7	7.6%
т	21	I	12				1	Pedestrian	5	5.4%
		Safety	Perform	nance Fu	nctions			Top 5 Crash T	ypes (Seve	re)
			Το	tal SPF	=			Crash Type	#	%
		6 — Mea	-			Observed	1 (FB)	Rear End	9	32.I
25.00	207		00	U				Bicycle	7	25.0
								Approach Turn	6	21.4
20.00				18.29				Pedestrian	3	10.7
	_			0 18.29		_		Broadside	2	7.19
20.00				15.67				Diagnostic		
	-			15.07				Category	#	Pro
10.00								Pedestrian	5	99.3
10.00								Sideswipe (Same)	15	99.4
F 00								Bicycle	7	100.0
5.00										
0.00 20,0	000 22,0	000 24,00	00 26,00	0 28,00	0 30,000	32,000	34,000			
		М	lajor Stree	et AADT (v	veh/day)					
			Se	vere Sl	PF					
	<u> </u>	6 — Mea		0% E		Observed	1 (EB)			
7.00					•					
4.00										
- 6.00				5 .55						
5.00										
4.00				4.49						
,										
3.00										
2.00										
4.00 2.00 3.00 2.00 4.00 4.00 4.00 4.00 4.00 4.00 4										
⁵ I.00										



			30th	Street &		on Be	oulevard		
Classifie	cation:	Urba	n 4-Lane D	Divided Signalized	4-Leg Interse	ction	Top 5 Crash Type	es (Tota	ul)
Major S	Street:		30th S	treet	AADT:	25,700	Crash Type	#	%
Minor S	Street:		Canyon B	oulevard	AADT:	6,900	Rear End	10	30.3%
20	15-2019 C	Crash Hist	ory	Level of Se	ervice of S	afety	Approach Turn	10	30.3%
PDO	Injury	Fatality	Total	Total	Sev	vere	Broadside	6	18.2%
21	12	0	33	Ш		11	Bicycle	3	9.1%
21	12	v	55			11	Pedestrian	2	6.1%
		Safety F	Perform	ance Function	s		Top 5 Crash Type	s (Seve	re)
			Tot	al SPF			Crash Type	#	%
	209	% Mear			Observe	d (EB)	Rear End	7	58.3%
14.00						- ()	Bicycle	3	25.0%
							Approach Turn	I	8.3%
0.21 ear							Pedestrian	1	8.3%
Crash Frequency (crashes/year) 00.9 00.01 00.01 00.01 00.01 00.01 00.01 00.01 00.01 00.01 00.01 00.01 00.01 00.01 00.01 00.01 00.01 00.01 00.01									
rash				0			Diagnostic Pa		
ර <u>ර</u> 8.00 ර				8.51 6.96			Category	#	Prob.
0.00 neu							Approach Turn	10	98.9%
Freq									
4.00									
ບັ 2.00									
0.00 2		2,000 24	,000 2	26,000 28,000	30,000	32,000			
		Ma	ajor Street	AADT (veh/day)					
			Sev	vere SPF					
	<u> </u>	% —— Mear		% – O – Expected	O Observe	d (FB)			
4.00			1 00.						
3.50									
er)									
^{الل} ہ 3.00				2.58					
2.50				2.57					
Crash Frequency (crashes/year) 00.1 0.7 00.5 00 00 00 00 00 00 00 00 00 00 00 00 00									
nenc									
ਸਿਰ ਸੂਰ ਸੂਰ 1.50	-								
ash F ash F									
ບັ 0.50									
0.00 2		2,000 24	,000 2	26,000 28,000	30,000	32,000			
		Ma	ajor Street	AADT (veh/day)					



		4	Arapa	hoe Aven	ue & F	olsc	om Street		
lassifica	ation:	Urba	ın 4-Lane I	Divided Signalized 4-	Leg Intersecti	on	Top 5 Crash T	ypes (Tota	al)
lajor St	reet:		Arapaho	e Avenue	AADT:	27,300	Crash Type	#	%
linor St	reet:		Folsom	n Street	AADT:	18,200	Rear End	25	42.4%
2015	5-2019 C	rash His	tory	Level of Sei	rvice of Saf	ety	Approach Turn	14	23.7%
PDO	Injury	Fatality	Total	Total	Sever	e	Bicycle	5	8.5%
45	14	0	59	Ш	П		Sideswipe (Same)	5	8.5%
τJ	17	U	57		11		Fixed Object	5	8.5%
		Safety	Perform	ance Functions			Top 5 Crash T	ypes (Seve	re)
			To	tal SPF			Crash Type	#	%
		/Maa			• Observed	(ED)	Rear End	7	50.0
25.00	207	6 — Mea	<u></u> 80	% O Expected	• Observed		Bicycle	3	21.4
-							Approach Turn	2	14.3
20.00							Broadside	I	7.19
20.00							Fixed Object	I	7.19
							Diagnostic	Patterns	
15.00				15.02			Category	#	Pro
				0 12.13			Off Road	5	96.3
10.00							Approach Turn	14	95.8
20.00 15.00 10.00 5.00							Bicycle	5	99.9
5.00							Fixed Object	5	97.0
0.00									
20,	000 22,0			0 28,000 30,00 t AADT (veh/day)	0 32,000	34,000			
			Sev	vere SPF					
	<u> </u>	6 — Mea	.n <u> </u>	% – O – Expected	• Observed	(EB)			
7.00									
ر 6.00									
/yea									
Crash Frequency (crashes/year) 00. 5 00. 5 0000000000									
4.00				4.34					
Suc A				3 .14					
anba									
2.00									
rasi									
1.00 (
0.00									
	000 22,0	00 24,00	0 26,00	0 28,000 30,00	0 32,000	34,000			



			Ara	oahoe Ave	nue &	28t	h Street		
assifica	tion:	Urb	an 6-L ane	Divided Signalized 4-I	Leg Intersec	tion	Top 5 Crash Ty	vpes (Tota	ul)
ajor Str	eet:		Arapaho	e Avenue	AADT:	43,000	Crash Type	#	%
nor Str	reet:		28th	Street	AADT:	29,800	Rear End	117	69.2%
2015	-2019 C	rash His	tory	Level of Ser	vice of Sa	fety	Sideswipe (Same)	19	11.2%
PDO	Injury	Fatality	Total	Total	Seve	ere	Approach Turn	7	4.1%
136	32	1	169	IV	11	1	Bicycle	7	4.1%
150	52	•				•	Broadside	6	3.6%
		Safety	Perform	nance Functions			Top 5 Crash Ty	pes (Sevei	
			Το	tal SPF			Crash Type	#	%
	20%	s —— Mea			Observed	I (EB)	Rear End	23	69.7%
40.00 r				F			Bicycle	5	15.2%
35.00				33.42			Pedestrian	2	6.1%
				0 33.12			Broadside	1	3.0%
30.00							Sideswipe (Same)	I	3.0%
30.00 25.00 20.00 15.00 10.00							Diagnostic F		
20.00				22.26			Category	#	Prob
20.00							Rear End	117	100.0%
15.00							Bicycle	7	98.4%
10.00									
5.00									
5.00									
0.00 ^L 36,0	000 38,0			00 44,000 46,000 et AADT (veh/day)) 48,000	50,000			
	<u> </u>	G Mea		vere SPF	• Observed	I (EB)			
9.00									
8.00									
7.00				6 .54					
6.00									
5.00				5.37					
4.00									
3.00									
2 2 00									
7.00 6.00 5.00 4.00 3.00 2.00									
2.00 1.00 0.00									



assifica	tion:	Urb	an 6-Lane	Divided Signalized 4-	Leg Intersection	Top 5 Crash	Гуреs (Tota	al)
ajor St	reet:		Arapaho	e Avenue	AADT: 33,5	00 Crash Type	#	%
inor St	reet:		30th	Street	AADT: 26,0	00 Rear End	64	49.6%
2015	5-2019 C	rash His	story	Level of Ser	vice of Safety	Approach Turn	23	17.8%
PDO	Injury	Fatality	Total	Total	Severe	Bicycle	11	8.5%
98	31	0	129	IV	Ш	Sideswipe (Same)	9	7.0%
70	21	U	127	IV		Fixed Object	7	5.4%
		Safety	Perform	nance Functions		Top 5 Crash T	ypes (Seve	re)
			Το	tal SPF		Crash Type	#	%
	209		an <u></u> 80		• Observed (EB)	Bicycle	9	29.09
30.00	207					Rear End	8	25.8
				25.46		Approach Turn	7	22.6
25.00				0		Broadside	3	9.7%
•						Pedestrian	I	3.2%
20.00						Diagnostic	Patterns	
25.00 20.00 15.00 - 5.00				17.37		Category	#	Pro
15.00						Bicycle	11	100.0
- 10.00						Fixed Object	7	96.1
						Dawn/Dusk	8	95.2
5.00						Dark Unlighted	5	99.9
0.00 26,	000 28,0	00 30,0	00 32,00	0 34,000 36,00	0 38,000 40,0	000		
20,	20,0			et AADT (veh/day)	5,000 40,0			
			- Ea	VOVO SPE				
	2.00	<i>,</i>		vere SPF				
7.00	20%	6 — Me	an — 80	0% —O— Expected	• Observed (EB)			
				6.07				
6.00				0				
) 								
asne				0				
4.00				4.56				
5 3.00								
2.00								
L a								
1.00 (



	tion:	Urba	ın 6-Lane D	Divided Signalized 4-	Leg Intersection	Top 5 Crash T	Types (Tota	ul)
ajor Sti	reet:		Foothills	Parkway	AADT: 61,300	Crash Type	#	%
inor St	reet:		Arapahoe	e Avenue	AADT: 42,300	Rear End	158	68.4
2015	5-2019 C	rash Hist	tory	Level of Ser	vice of Safety	Approach Turn	27	11.7
PDO	Injury	Fatality	Total	Total	Severe	Sideswipe (Same)	20	8.7%
169	61		231	IV	IV	Broadside	11	4.8%
107	01	•	231	IV	I V	Fixed Object	10	4.3%
		Safety	Perform	ance Functions		Top 5 Crash T	ypes (Seve	re)
			Tot	al SPF		Crash Type	#	%
	20%	Mea			 Observed (EB) 	Rear End	39	62.9
50.00	20/6					Approach Turn	11	17.7
45.00				45.85		Broadside	5	8. 13
						Bicycle	4	6.5
40.00 35.00 30.00 25.00 20.00 15.00						Sideswipe (Same)	2	3.2
30.00						Diagnostic	Patterns	
30.00				31.75		Category	#	Pro
25.00						Off Median	7	100.
20.00						Rear End	158	100.
15.00						Dark Unlighted	5	99.4
10.00						Snow/Sleet/Hail	22	100.
5.00						Inexperience	23	99.2
0.00 54,0	000 56,0	00 58,00	0 60,00	0 62,000 64,00	0 66,000 68,000			
			Sev	AADT (veh/day) vere SPF % -O-Expected	• Observed (EB)			
14.00	20%							
14.00	20%			0				
	20%			0				
12.00								
12.00 10.00 8.00 6.00	20%			O 11.92				
12.00 10.00 8.00	20%							



ssifica	tion:	Urba	in 6-Lane [Divided Signalized	4-Leg Intersed	tion	Top 5 Crash T	ype <u>s (Tot</u> a	al)
jor Stı	reet:		Arapaho	e Avenue	AADT:	32,400	Crash Type	#	%
or St	reet:		Conesto	ga Street	AADT:	4,200	Approach Turn	11	37.9
2015	5-2019 C	rash Hist	tory	Level of Se	ervice of Sa	fety	Rear End	8	27.6
DO	Injury	Fatality	Total	Total	Sev	ere	Pedestrian	4	13.8
19	10	0	29	П	I	1	Sideswipe (Same)	4	13.8
. /	10	0	27				Bicycle	I	3.49
		Safety	Perform	ance Function	S		Top 5 Crash T	ypes (Seve	re)
			Tot	tal SPF			Crash Type	#	%
		Mea			• Observe	(FR)	Approach Turn	5	50.0
16.00 I	20/8				• Observed		Pedestrian	3	30.0
							Bicycle	I	10.0
4.00							Broadside	I	10.0
2.00									
10.00	-						Diagnostic	Patterns	
				8.93			Category	#	Pro
8.00	-			6.12			Approach Turn	H	99.8
6.00				0					
4.00	_								
2.00									
0.00					24 000				
26,0	000 28			32,000 34,000 t AADT (veh/day)	36,000	38,000			
			•						
				vere SPF					
4 50	<u> </u>	Mea	.n <u> </u>	% – O Expected	• Observe	1 (EB)			
4.50									
4.00									
3.50 3.00 2.50 2.00 1.50 1.00									
3.00				2.45					
2.50				2.65					
2.00				O _{2.27}					
1.50									
1.00									
0.50									
I									



:6-	4	11.1			1	4 ¹	Ton F Creek T		al) ——
assifica		Urba		Divided Signalized 4	-		Top 5 Crash T		-
ajor Sti inor Sti			•	e Avenue Street	AADT: AADT:	34,700 25,100	Crash Type	#	% 51.6%
	5-2019 C	rach His		Level of Se			Rear End	33 8	12.5%
PDO	Injury	Fatality	Total	Total	Seve	-	Approach Turn Bicycle	° 7	12.57
FDO	nijury	Fatally	TOLAT	TOLAI	360	ere	Broadside	7	10.97
43	21	0	64	II	1		Sideswipe (Same)	5	7.8%
		Safety	Perform	ance Function	s		Top 5 Crash T		
		Curcey					Crash Type	/pes (eere #	%
			Tot	tal SPF			Approach Turn	7	33.32
	<u> </u>	Mea	an <u></u> 80	% O Expected	• Observed	I (EB)	Rear End	7	33.39
30.00							Bicycle	4	19.05
25.00							Pedestrian	2	9.5%
							Fixed Object	I	4.8%
20.00	-						Diagnostic	Patterns	
				17.7			Category	#	Pro
15.00	-						Bicycle	7	100.0
				0 13.05			Dawn/Dusk	5	97.1
10.00									
25.00 20.00 15.00 10.00									
0.00									
28,0	000 30,0			0 36,000 38,0 t AADT (veh/day)	00 40,000	42,000			
		Γ.	·	· · · · · · · · · · · · · · · · · · ·					
				vere SPF					
	<u> </u>	Mea	an <u> 80</u>	% –O– Expected	• Observed	I (EB)			
8.00									
7.00									
6.00									
5.00									
ט.נ ק ר				4.60					
4.00				4.36					
3.00									
00.0 00.0 00.0 00.0 00.0 00.0 00.0 00.									
<u>, 1.00</u>									
1.00									
0.00									



			Bro	adway & L	Jniver	sity	Avenue		
Classifica	tion:	Urba	an 4-Lane [Divided Signalized 4-I	Leg Intersec	tion	Top 5 Crash Type	s (Tota	l)
Major Sti	reet:		Broa	dway	AADT:	35,000	Crash Type	#	%
Minor St	reet:		Universit	y Avenue	AADT:	8,600	Rear End	44	57.1%
2015	5-2019 C	rash His	tory	Level of Ser	vice of Sa	fety	Approach Turn	10	13.0%
PDO	Injury	Fatality	Total	Total	Sev	ere	Bicycle	7	9.1%
F 1	27	0	77		N	,	Sideswipe (Same)	7	9.1%
51	26	0	77	III	IV		Pedestrian	3	3.9%
		Safety	Perform	ance Functions			Top 5 Crash Types	s (Sever	·e)
			Tot	tal SPF			Crash Type	#	%
		k —— Mea				(FR)	Rear End	13	50.0%
ا 18.00	207				Cobserved		Bicycle	6	23.1%
16.00				15.18			Pedestrian	3	11.5%
_				0			Approach Turn	2	7.7%
14.00 ss/yea							Broadside	I	3.8%
Crash Frequency (crashes/year) 00.9 00.0 00.71 00.9 00.9 00.71				11.77			Diagnostic Pat	terns	
00.01 (C							Category	#	Prob.
00.8 gen							Bicycle	7	100.0%
edi									
4.00									
-									
2.00									
0.00 28,0	000 30,0		1ajor Stree	0 36,000 38,000 t AADT (veh/day) vere SPF	40,000	42,000			
6.00	<u> </u>	6 —— Mea	an <u> </u>	% -O- Expected	Observed	(EB)			
ar.)				4.99					
shes/ye 4.00									
(cra				-0					
3.00				3.33					
Crash Frequency (crashes/year) 00. 00. 00. 00. 00. 00. 00. 00. 00. 00.									
Crash									
ບັ 1.00									
0.00									
28,0	000 30,0			0 36,000 38,000 t AADT (veh/day)	40,000	42,000			
		I		(((((((da))					



			E	Broadway	& Col	lege	Ave		
Classifica	tion:	Urba	an 4-Lane I	Divided Signalized 3-I	Leg Intersec	tion	Top 5 Crash Ty	vpes (Tota	al)
Major Sti	reet:		Broa	dway	AADT:	37,100	Crash Type	#	%
Minor St	reet:		Colleg	ge Ave	AADT:	3,400	Sideswipe (Same)	9	50.0%
2015	-2019 C	rash His	tory	Level of Ser	vice of Sa	lfety	Rear End	3	16.7%
PDO	Injury	Fatality	Total	Total	Sev	ere	Fixed Object	3	16.7%
17	0		10				Approach Turn	2	11.1%
17	0	I	18	II			Broadside	I	5.6%
		Safety	Perform	ance Functions			Top 5 Crash Ty	pes (Seve	re)
			То	tal SPF			Crash Type	#	%
	209	/M.			Ohaamaa		Fixed Object	I	100.0%
8.00 r	207	6 — Mea	an — 80)% O Expected (Observe	ц (ЕВ)			
					_				
آ 7.00									
6.00									
ashes 00.5				5.26			Diagnostic I	Patterns	
(cra							Category	#	Prob.
Crash Frequency (crashes/year) 007 008 009 009 009 009 009				0 4.00	_		Sideswipe (Same)	9	100.0%
anba 3.00									
노 ·도 2.00									
Cras									
1.00									
0.00 32,0	000	34,000 M		38,000 t AADT (veh/day) vere SPF	40,000	42,000			
2.50	20%	6 —— Mea	an — 80	% —O— Expected	Observe	1 (EB)			
s/year) 00:7					-				
y (crashe				1.47					
Crash Frequency (crashes/year) 000 001 007 007 007 007 007 007 007 007				0.90	-				
Crash									
0.00									
32,0	000	34,000	36,000	38,000	40,000	42,000			
		۲	lajor Stree	t AADT (veh/day)					



			301	th Str	eet 8	k Aur	ora /	Avenue		
Classifica	tion:	Urba	an 4-Lane	Divided Sig	nalized 4-I	_eg Interse	ection	Top 5 Crash Ty	pes (Tota	ul)
Major Str	lajor Street:			Street		AADT:	22,600	Crash Type	#	%
Minor Str	linor Street: Aurora Aven					AADT:	2,500	Rear End	5	18.5%
2015	-2019 C	Crash His	tory	Leve	el of Ser	vice of S	afety	Sideswipe (Same)	5	18.5%
PDO	Injury	Fatality	Total	Тс	otal	Se	vere	Approach Turn	4	14.8%
17	10	0	27	I	u –		V	Bicycle	4	14.8%
17	10	U	27	•			v	Broadside	3	11.1%
		Safety	Perforn	nance Fu	nctions			Top 5 Crash Typ	es (Sevei	re)
			То	tal SPF	:			Crash Type	#	%
	209	% —— Mea				Observe	ed (FB)	Bicycle	4	40.0%
7.00	207				pected	O Observe		Pedestrian	2	20.0%
								Broadside	I	10.0%
00.6 ar								Approach Turn	I	10.0%
ss/ye				5.39				Rear End	I	10.0%
Crash Frequency (crashes/year) 007 007 007 007 007 007 007 007 007 00								Diagnostic P	atterns	
<u>)</u> 4.00				4.33				Category	#	Prob.
() 3.00								3+ Vehicle Crash	5	98.5%
nbə.								Sideswipe (Same)	5	97.4%
년 및 2.00										
0.1 O										
1.00										
0.00										
16,0	000 18,0			00 24,000 et AADT (v		28,000	30,000			
			·	· ·	.,					
			Se	vere SF	PF					
	20%	% — Mea	an <u>8</u>	0% Ex	pected	Observe	ed (EB)			
2.50										
-										
76ar 76ar				I.93						
shes										
(Cras										
ncy				1.23						
1.00				1.23						
Fre										
Crash Frequency (crashes/year) 007 008 009 007										
0										
0.00										
16,0	000 18,0					28,000	30,000			
		M	lajor Stree	et AADT (v	eh/day)					



			В	roadwa	ay 8	k Base	eline	Road		
Classifica	ation:	Urba	an 6-Lane E	Divided Signali	zed 4-l	Leg Intersed	tion	Top 5 Crash Typ	es (Tota	ul)
Major St	reet:		Broad	lway		AADT:	39,600	Crash Type	#	%
Minor St	reet:		Baseline	e Road		AADT:	31,700	Rear End	81	51.9%
201	5-2019 C	rash His	tory	Level o	of Ser	vice of Sa	ıfety	Approach Turn	30	19.2%
PDO	Injury	Fatality	Total	Total		Sev	ere	Sideswipe (Same)	17	10.9%
114	42	0		D.7		n		Broadside	П	7.1%
114	42	0	156	IV		ſ	V	Bicycle	10	6.4%
		Safety	Perform	ance Funct	ions			Top 5 Crash Type	es (Sevei	re)
			Tat	al SPF				Crash Type	#	%
	2.00	/ M						Rear End	19	45.2%
35.00	20%		an — 80	% O Expec	ted	Observe	d (ER)	Approach Turn	11	26.2%
20.00				30.86				Bicycle	6	14.3%
<mark>م 30.00 م</mark>			(Broadside	3	7.1%
a /s, 25.00								Pedestrian	2	4.8%
ashe								Diagnostic Pa	itterns	
Crash Frequency (crashes/year) 00.01 00.02 00.05				21.25				Category	#	Prob.
Couer 15.00								Bicycle	10	100.0%
nba.								Dawn/Dusk	10	97.1%
ഥ 년 10.00										
U 5.00										
5.00										
0.00 34,	000 30		lajor Street	AADT (veh/	, 000 day)	44,000	46,000			
				ere SPF						
0.00	<u> </u>	6 — Mea	an <u>-</u> 80	% — O — Expec	ted (Observe	d (EB)			
9.00				8.09						
8.00										
8,/yea الم										
00.6 ISHee										
CL2) 5.00				5.24						
Crash Frequency (crashes/year) 00 00 00 00 00 00 00 00 00										
anba. 3.00										
년 -										
1.00										
0.00										
34,	000 30			10,000 42 AADT (veh/	,000 dav)	44,000	46,000			
		Γ.			uay)					



lassification: Urban 4-Lane Divided Signalized 4-Leg Intersection						tion	Top 5 Crash Types (Total)			
ajor St	reet:		Baselin	e Road	AADT:	29,500	Crash Type	#	%	
inor S t	reet:		30th 3	Street	AADT:	22,200	Approach Turn	30	35.7	
2015	5-2019 C	crash Hist	tory	Level of Ser	vice of Sa	fety	Rear End	22	26.2	
PDO	Injury	Fatality	Total	Total	Seve	ere	Sideswipe (Same)	12	14.3	
56	28	0	84	Ш	П	1	Pedestrian	8	9.5%	
50	20	U	от	п	11	1	Bicycle	5	6.0%	
		Safety I	Perform	ance Functions			Top 5 Crash T	ypes (Seve	re)	
			To	tal SPF			Crash Type	#	%	
	209	6 — Mea	_		Observed	(FR)	Approach Turn	14	50.0	
30.00	207				O D S C V C		Pedestrian	5	17.9	
							Bicycle	4	14.3	
25.00							Rear End	2	7.15	
25.00 20.00 15.00 5.00							Broadside	I	3.65	
20.00				17.52			Diagnostic	Patterns		
				O 16.93			Category	#	Pro	
15.00							Pedestrian	8	100.0	
10.00							Sideswipe (Same)	12	97.0	
							Approach Turn	30	100.	
5.00							Bicycle	5	99.5	
							Dark Lighted	28	99.4	
0.00	000 24,0	00 26,00	0 28,00	0 30,000 32,000	34,000	36,000	Rain	7	98.1	
		М		t AADT (veh/day) /ere SPF						
8.00		& —— Mea	n <u> </u>	% –O– Expected (Observed	I (EB)				
7.00										
6.00				O 5.61						
5.00										
ر ج 4.00 ج				4.88						
(1931123)201) (1931123)201) 5.00 4.00 3.00 2.00										
⊑ ≅ 2.00										



ssification: Urban 4-Lane Divided Signalized 4-Leg Intersection						Top 5 Crash T	ypes <u>(</u> Tota	s (Total)	
lajor Street:		Foothills Parkway			AADT: 48,300	Crash Type	# %		
nor St	reet:		Baselin	e Road	AADT: 27,000	Rear End	69	67.6	
2015	5-2019 C	rash Hist	tory	Level of Ser	vice of Safety	Sideswipe (Same)	11	10.8	
DO	Injury	Fatality	Total	Total	Severe	Broadside	6	5.9	
86	16	0	102	IV	IV	Fixed Object	6	5.9	
00	10	v	102	IV	1 *	Approach Turn	5	4.9	
		Safety	Perform	ance Functions		Top 5 Crash Ty	vpes (Seve	re)	
			Tot	tal SPF		Crash Type	#	%	
		á —— Mea			Observed (EB)	Rear End	9	56.3	
20.00	207			•		Broadside	3	18.8	
18.00				0 18.83		Pedestrian	I	6.3	
16.00						Bicycle	I	6.3	
14.00						Sideswipe (Same)	I	6.3	
12.00						Diagnostic	Patterns		
10.00						Category	#	Pro	
8.00	-					Off Right	5	99.	
	_			7.37		Rear End	69	99.4	
6.00	_					Unfamiliar w/ Area	5	95.2	
4.00									
2.00									
42,	000 44	М	ajor Stree Sev	48,000 50,000 t AADT (veh/day) /ere SPF %	52,000 54,000 Observed (EB)				
3.50									
3.00				0 2.98					
2.50									
, 2.00									
•	_			1.75					
1.50				1.7.5					
2.50 2.00 1.50									
0.50									



			Broa	idway & D	artmo	outh	Avenue		
Classification: Urban 6-Lan			an 6-Lane I	Divided Signalized 4-L	.eg Intersec	tion	Top 5 Crash Types (Total)		
Major Sti	reet:		Broa	dway	AADT:	36,400	Crash Type	#	%
1 inor Sti	reet:		Dartmou	th Avenue	AADT:	2,400	Rear End	9	34.6%
2015	5-2019 C	rash His	tory	Level of Serv	vice of Sa	fety	Broadside	6	23.1%
PDO	Injury	Fatality	Total	Total	Seve	ere	Approach Turn	4	15.4%
17	9	0	26	Ш	I		Bicycle	3	11.5%
17	-	U	20	"			Pedestrian	2	7.7%
		Safety	Perform	ance Functions			Top 5 Crash Ty	pes (Sever	·e)
			To	tal SPF			Crash Type	#	%
		s — Mea			Observed	(FB)	Broadside	3	33.3%
۱4.00 _ا	20/						Approach Turn	2	22.2%
							Pedestrian	2	22.2%
_ 12.00							Bicycle	I	11.1%
ກ ໂຊັ 10.00							Rear End	I	11.1%
							Diagnostic	Patterns	
8.00				7.95			Category	#	Prob.
() 6.00				5.51			Broadside	6	97.8%
ה לופי שלו				0					
4.00									
2.00									
2.00									
ا _{0.00} 30,0	000 32	2,000 3	4,000	36,000 38,000	40,000	42,000			
		۲	1ajor Stree	t AADT (veh/day)					
				vere SPF					
4.00 _[20%	G — Mea	an — 80	% –O–Expected	Observed	(EB)			
3.50									
s/year									
ashe 5.20				2.37					
ਹੁ ਨੂ 2.00	_			0 2.07					
uanba									
Crash Frequency (crashes/year) 001 00 00 00 00 00 00 00 00 00 00 00 00									
0.50									
ا 0.00 ا 30,0	000 32	2,000 3	4,000	36,000 38,000	40,000	42,000			
		٢	1ajor Stree	t AADT (veh/day)					



			Bro	adway &	Table	Mes	a Drive		
lassificat	tion:	Urba	an 4-Lane	Divided Signalized	4-Leg Intersed	tion	Top 5 Crash T	ypes (Tota	al)
ajor Street: Broad			ldway	AADT:	39,000	Crash Type	#	%	
inor Str	eet:		Table M	esa Drive	AADT:	29,500	Rear End	75	54.0%
2015	-2019 C	rash His	tory	Level of S	ervice of Sa	lfety	Sideswipe (Same)	23	16.5%
PDO	Injury	Fatality	Total	Total	Sev	ere	Approach Turn	12	8.6%
97	42	0	139	Ш	Г		Broadside	11	7.9%
//	72	U	137			*	Bicycle	6	4.3%
		Safety	Perform	nance Function	IS		Top 5 Crash Ty	pes (Seve	re)
			Το	tal SPF			Crash Type	#	%
		á —— Mea			 Observe 	1 (EB)	Rear End	20	47.6%
40.00 r					2 2000.10	(/	Approach Turn	5	11.9%
35.00							Broadside	5	11.9%
<u> </u>							Bicycle	4	9.5%
30.00	-			2 7.68			Pedestrian	2	4.8%
30.00 25.00 20.00 15.00 10.00				-0			Diagnostic		
20.00	•			24.15			Category	#	Pro
							Sideswipe (Same)	23	99.7
15.00							Bicycle	6	99.8
10.00									
5.00									
0.00 L 32,0	00 34,0		lajor Stree	10 40,000 42, ht AADT (veh/day) vere SPF		46,000			
	<u> </u>	6 —— Mea			• Observe	d (EB)			
9.00				8.21					
8.00									
7.00									
Crash Frequency (crashes/year) 00.9 00.9 00.9 00.9 00.9 00.0 00.9 00.0 00.0 00.0 00.0 00.0 00.0 00.0 00.0 00.0 00.0 00.0 00.0 00.0 00.0 00.0 00 00.0 00 00.0 00				0					
CLas 5.00				6.01					
4.00									
a 4.00	-								
9.3.00									
2.00									
1.00									
0.00									
32,0	00 34,0			0 0 40,000 42, 0 et AADT (veh/day)		46,000			



Table Mesa Drive & Foothills Parkway SB Off-Ramp

assifica	tion:	Urban 4	4-Lane Div	ided Signalized 4-Leg	Ramp Inter	section	Top 5 Crash Typ	es (Tota	ul)
ajor Sti	reet:	Table Mesa Drive				34,700	Crash Type	#	%
inor St	reet:	Foothills Parkway SB Off-Ramp			AADT:	11,900	Rear End	48	72.7%
2015	-2019 C	rash His	tory	Level of Serv	vice of Sa	fety	Sideswipe (Same)	6	9.1%
PDO	Injury	Fatality	Total	Total	Sev	ere	Approach Turn	3	4.5%
41	25	0		ш	N	,	Pedestrian	2	3.0%
41	25	0	66	III	Ŋ	/	Broadside	2	3.0%
		Safety	Perform	nance Functions			Top 5 Crash Type	es (Sevei	re)
			То	tal SPF			Crash Type	#	%
	20%	/M.			Oheen		Rear End	17	68.0
20.00	20%		an — 80	0% O Expected C	Observed	і (ЕВ)	Approach Turn	3	12.0
18.00							Broadside	2	8.0%
							Bicycle	I.	4.0%
10.00							Pedestrian	I	4.0%
14.00				0 13.18			Diagnostic Pa	itterns	
16.00 14.00 12.00 10.00 . 8.00 6.00 4.00				12.10			Category	#	Pro
10.00							INJ	25	96.9
8.00							Rear End	48	100.0
6.00									
4.00									
2.00									
0.00									
6.00	20%		Se	et AADT (veh/day) vere SPF 0% Expected	Observed	i (EB)			
5.00				4.80					
4.00									
(192/192/192/192/192/192/192/192/192/192/				3.08					
2.00									
5 I.00									
0.00 28,0	000 30,0			00 36,000 38,000 et AADT (veh/day)	40,000	42,000			