CALIFORNIA AVE:

Concord and Glendale Intersections Pedestrian Safety Study

California Ave. From Glendale Dr. To Concord St.

August 2023

Kimley»Horn

Expect More. Experience Better.

Salt Lake City, UT

RECOMMENDATIONS REPORT

CALIFORNIA AVE PEDESTRIAN SAFETY STUDY

RECOMMENDATIONS REPORT

August 22, 2023

Prepared for:

Salt Lake City Transportation Division
349 South 200 East
Suite 150
Salt Lake City, Utah 84111
801-535-6630

Prepared by:

Kimley-Horn and Associates, Inc.
111 East Broadway
Suite 600
Salt Lake City, Utah 84111
Tel: 385-212-3176

093917005

EXECUTIVE SUMMARY

The Salt Lake City Transportation Division initiated a pedestrian focused safety assessment of California Ave from Glendale Dr to Concord St in Salt Lake City, Utah. This pedestrian safety assessment was performed in response to a resident request for Constituent Capital Improvement Program funds for a safety study focused on these two intersections. The purpose of the safety study was to document existing conditions, identify existing or potential pedestrian safety issues, and suggest countermeasures to mitigate those safety issues.

A total of 65 crashes were reported within the study area during the period from 2010 to 2021. There were no fatal injury crashes and one serious injury crash reported during this analysis period. Of the 65 crashes, 2 involved pedestrians and 2 involved bicycles. Most of the crashes resulted in possible injuries (32 crashes, 49.2%).

A field review was completed on May 23, 2023. The goal of the review was to document existing conditions, identify existing or potential pedestrian safety issues, and identify both short-term and long-term opportunities for safety improvement.

This report summarizes field review findings and includes three potential improvement scenarios that may be considered by Salt Lake City Transportation Division.

TABLE OF CONTENTS

List of Figures

List of Tables

List of Appendices

1. INTRODUCTION

The Salt Lake City Transportation Division initiated a pedestrian-focused safety assessment of California Ave from Glendale Dr to Concord St in Salt Lake City, Utah. The purpose of the assessment was to document existing conditions, identify existing or potential roadway or pedestrian safety issues, and identify potential improvement countermeasures. The study area is illustrated in **Figure 1**.

The pedestrian-focused safety assessment included traffic volume and speed data collection, field review, identification of potential safety deficiencies, improvement options, and planning-level estimate of probable cost.

1.1. Statutory Notice

23 U.S.C. § 409: US Code - Section 409: Discovery and admission as evidence of certain reports and surveys

Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway- highway crossings, pursuant to sections 130, 144, and 148 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.

1.2. Objectives

The objectives for the California Ave Pedestrian Safety Study are:

- Identify potential pedestrian safety issues from field review and crash data analysis.
- Prepare alternative concepts that can be implemented to improve pedestrian safety and comfort for people walking along or crossing California Ave.

Figure 1 – California Ave Study Area

2. GENERAL INFORMATION

This Pedestrian Safety Study was conducted for California Ave between Glendale Dr and Concord St, Salt Lake City, Utah.

The study area primarily consists of single-family residential, with a public library south of the Concord St and California Ave intersection, a church south of California Ave, an elementary school southwest of the California Ave and Glendale Dr intersection, small commercial west of the California Ave and Glendale Dr intersection, and two bus stops between both Glendale Dr and Concord St.

California Avenue consists of one travel lane in each direction (east-west) and a two-way center turn lane. The intersection of Glendale Dr and California Ave is signalized. The intersection of Concord St and California Ave is stop-controlled (Concord St). Glendale Dr/California Ave is a T-intersection. Concord Street/California Ave is a 4-legged intersection. The speed limit on California Ave is 35 MPH.

2.1. Traffic Data

Traffic data was collected in May 2023. The traffic data collection included: 24-hour daily traffic volume on California Ave, average vehicle speed on California Ave (24-Hour Period), vehicle classification on California Ave, and peak hour turning movement counts for California Ave/Concord St and California Ave/Glendale Dr intersections.

2.1.1. Existing Traffic Volumes

Weekday AM (7:00 am - 9:00 am) and weekday PM (4:00 pm - 6:00 pm) peak period turning movement count data was collected for the study area intersections on Tuesday, May 9, 2023:

- California Ave/Concord St
- California Ave/Glendale Dr

Peak hour traffic volumes at study area intersections are shown in **Figure 2.**

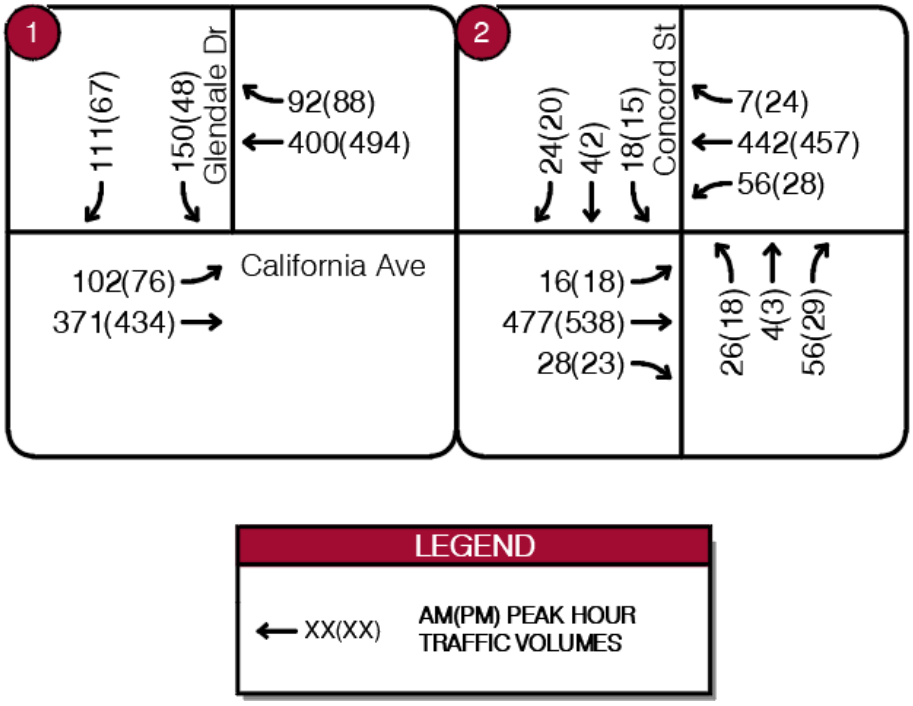
A 24-hour traffic count was collected. The daily traffic volume on California Avenue is 12,704 vehicles. UDOT annual average daily traffic (AADT) data for the study area is presented in **Table 1**.

Table 1 – Study Area Average Daily Traffic (ADT) Volume

Segment	AADT (2017)	AADT (2018)	AADT (2019)	AADT (2020)	AADT (2021)
Route 2290 from Mile Post 04.58 to Mile Post 05.745	10,083	10,184	10,367	9,258	10,036

The field counted data sheets are provided in **Appendix B**.

Speed data on California Ave was collected on Tuesday, May 9, 2023. From this dataset, the 85th Percentile speed for eastbound (EB) traffic is 33 MPH and for westbound (WB) traffic is 36 MPH. The field counted speed data sheets are provided in **Appendix C**.



1: California Ave/Glendale Dr, 2: California Ave/Concord St

Figure 2 – 2023 Existing Peak Hour Traffic Volumes

2.2. Crash Data Summary

Crash data were obtained from UDOT's crash database for the years 2010 through 2021. A total of 65 crashes were reported within the study area during that period with two of the crashes involving pedestrians and two crashes involving bicyclists. There were no fatal crashes reported during the analysis period. Pedestrian crashes, bicycle crashes, and total crashes by location are shown in **Figure 3, Figure 4**, and **Figure 5** respectively. Crash data are included in **Appendix F**.

Crashes by severity type for the study area are shown in **Table 2**.

Crashes by manner of collision for the study area are shown in **Table 3**. The most prominent crash types are angle crashes or front-to—rear.

Figure 3 – Pedestrian Crashes by Severity

Figure 4 – Bicycle Crashes by Severity

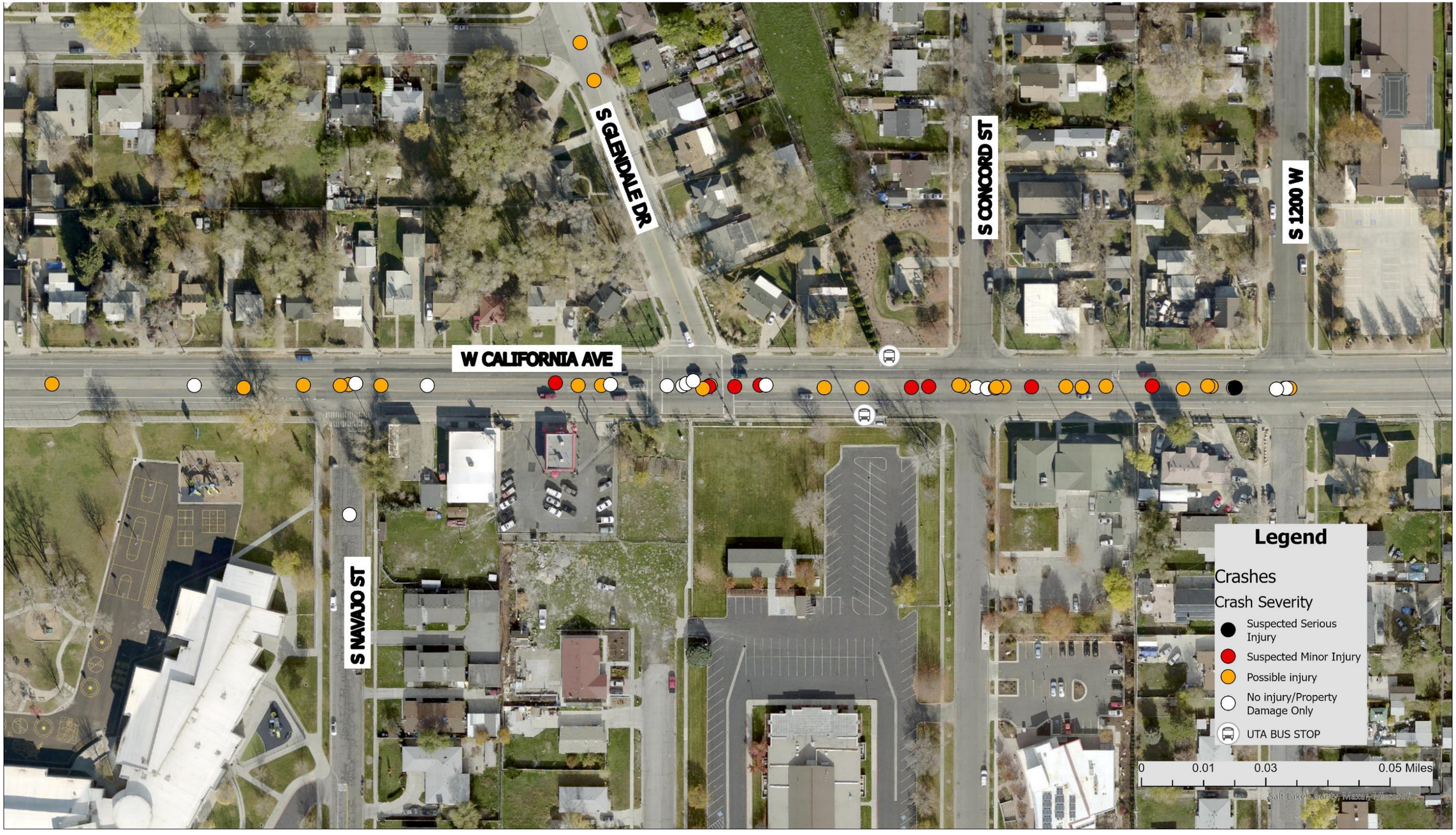


Figure 5 – Total Crashes On California Ave (2010-2021)

Table 2 – Crashes by Severity

Total Crash by Severity (2010-2021)					
Year	Fatal	Suspected Serious Injury	Suspected Minor Injury	Possible Injury	No Injury/PDO
2010	0	0	1	4	3
2011	0	0	0	2	1
2012	0	0	1	1	1
2013	0	0	1	1	1
2014	0	0	0	2	3
2015	0	0	0	2	0
2016	0	0	1	4	2
2017	0	0	2	4	1
2018	0	0	1	0	3
2019	0	0	1	3	2
2020	0	1	0	3	2
2021	0	0	2	6	3
Total	**0**	**1**	**10**	**32**	**22**

Table 3 – Crashes by Manner of Collision

Total Crashes by Manner of Collision (2010-2021)					
Year	Angle	Front to Rear	Not Applicable/Single Vehicle	Parked Vehicle	Sideswipe Same Direction
2010	2	3	1	2	0
2011	0	1	0	0	2
2012	1	2	0	0	0
2013	1	1	1	0	0
2014	2	0	2	0	1
2015	0	0	1	1	0
2016	4	1	2	0	0
2017	0	5	1	1	0
2018	3	0	1	0	0
2019	2	2	1	1	0
2020	2	2	1	0	1
2021	4	3	1	2	1
Total	**21**	**20**	**12**	**7**	**5**

2.3. Bus Stop Ridership Data

There are two bus stops located on California Ave: California Ave/Concord St (WB) and California Ave/ Concord St (EB). Both stops serve Route 513 and Route 9. Route 513 is "rush hour or limited" and runs twice in the morning and twice in the evening, with no weekend service. Route 9 runs every 15 minutes and includes weekend service.

Average weekday ridership, based on data available from UTA, at stops on California Avenue are displayed in **Table 5** and **Table 6**. Average weekend ridership data is included in **Appendix C.**

Table 4 – Daily Ridership, California Ave Bus Stops

Ridership, August 2022 Change Day		
Bus Stop	**On**	**Off**
California Ave / Concord St (WB)	13.30	43.44
California Ave / Concord St (EB)	48.56	16.93
Note: Approximately 4-month period between service changes		

Table 5 – Route 513 Average Daily Ridership (2017-2022)

Year	Daily Boardings
2017	132
2018	104
2019	100
2020	70
2021	66
2022	60

Table 6 – Route 9 Average Daily Ridership (2019-2022)

Year	Daily Boardings
2019	902
2020	888
2021	1068
2022	1429
Note: Route 9 alignment and service levels increased in August 2019	

2.4. Safe Routes to School

The two study area intersections (Glendale Dr/California Ave and Concord St/California Ave) are within Mountain View Elementary's school boundary and included in the *Safe Route* to *School.*

A school crossing guard is positioned at Glendale Dr during school arrival and dismissal periods. Other Safe Routes to School features include striped crosswalks on each approach, and a traffic signal. The Safe Routes to School map is included as **Appendix D.**

2.5. Previous Plans and Studies

2.5.1. One Glendale Plan (OGP)

The OGP seeks to improve active transportation in the Glendale neighborhood. The OGP commits to improving roadway safety (reduce speeding, improve street lighting) and to focus additional resources on pavement maintenance (including both roads and sidewalks). The plan identified that a traffic calming program would benefit the community.

California Ave is identified as a corridor where traffic speeds are of concern.

The OGP also seeks to advocate for safe routes to school by improving sidewalks in locations near schools, ensuring high visibility of crosswalks, and dedicating the installation of walking routes to schools.

2.5.2. Salt Lake City Pedestrian & Bicycle Master Plan

Salt Lake City's Pedestrian and Bicycle Master Plan provides a guiding framework, recommendations, and policies for the development of pedestrian and bicycle facilities and improvements, along with education, encouragement, and enforcement programs. The plan was passed by the City Council in 2015, updating the previous bicycle and pedestrian plan from 2004.

The plan states: "Every intersection in Salt Lake City should be designed for pedestrian safety and comfort, with pedestrian enhancements appropriate to traffic speed, traffic volume, pedestrian crossing distance, and other similar factors." The plan describes a palette of options that should be considered for crossing and intersections improvements:

- Crosswalks
- Crosswalk Flags
- Bulbouts
- Traffic Circles
- Median Refuge Islands
- Curb Ramps
- Transit Stop Amenities (shelters, benches)
- "LOOK" pavement markings
- Traffic Signal Improvements (pedestrian countdown timers, phasing)
- Leading Pedestrian Intervals
- Mid-Block Crossings: Flashing Beacons, HAWKs, Toucans

The plan introduces a network Neighborhood Byways. The plan takes:

> "quiet neighborhood streets and formalizes them into transportation corridors designed to crisscross the city and link to key destinations including neighborhood retail areas and corridors, parks, schools, and transit stations. Few changes are needed on the quiet streets themselves; the network is realized by providing for safe, often signalized crossings at the major barrier streets, and reducing traffic volumes to make walking safer and more enjoyable. "Neighborhood byways" is a term recognizing that these corridors create a network for both pedestrians and bicyclists."

The Pedestrian and Bicycle Master Plan recommends Neighborhood Byway crossing improvements at the Glendale and Concord intersections on California Ave.

3. FIELD OBSERVATIONS AND SUGGESTIONS

This section summarizes the field review observations and improvements suggestions for the study area. Observations and suggestions are provided for each study area intersection.

3.1. Field Review Schedule

A field review was performed on Tuesday, May 23, 2023. Observations were conducted from 7:30-8:30 AM, 2:30-3:30 PM, 4:30-5:30 PM, and 8:30-9:30 PM.

3.2. Glendale Dr/California Ave Intersection

3.2.1. Issue #1 – Low intersection lighting

The field review team observed low intersection lighting at crosswalks, particularly on the east leg of the crosswalk. See **Photograph 1**.

Suggestion: Upgrade traffic signal with new intersection lighting

Photograph 1 - Example of Low Lighting Levels at Intersection

3.2.2. Issue #2 – Weathered Crosswalk Push Button Signs

The field review team observed that some of the crosswalk push buttons need of refurbishment or replacement. See **Photograph 2**.

Suggestion: Upgrade traffic signal with new push buttons signs or replace/refurbish existing push button signs.

Photograph 2 – Example of Weathered Crosswalk Push Button Sign

3.2.3. Issue #3 – School Crossing Visibility

The Glendale Dr/California Ave intersection crosswalks are a designated school crossing. Existing crosswalks are standard ladder crosswalks. See **Photograph 3** and **Photograph 4**.

Suggestion: Improve existing ladder-style crosswalk pavement markings to high-visibility crosswalk pavement markings

Photograph 3 – Existing ladder-style crosswalk pavement markings

Photograph 4 – Example of Crosswalk Visibility at Night

3.2.4. Issue #4 – No Markings for a Shared Lane

Westbound California Ave includes a bike lane adjacent to on-street parking. As the lane approaches Glendale Drive, it transitions to a right turn lane for vehicles turning onto northbound Glendale Dr, presenting a potential conflict zone with people riding bicycles. See **Photograph 5**.

Suggestion: Install green pavement markings at intersection approach to Glendale Dr. indicating a bicycle/motor vehicle conflict zone.

Photograph 5 – Vehicle crossing bike lane to make a right turn onto Glendale Dr.

3.2.5. Issue #5 – Wide Right Turn Radius

The field review team observed large turning intersection turning radius. Vehicles tend to encroach into intersection when making a right turn on red. A large radius increases vehicle speeds when making a turn, potentially conflicting with pedestrians crossing California Ave. See **Photograph 6**.

Suggestion: Tighten right turn radius to shorten pedestrian crossing distance.

Photograph 6 – Wide Radius Right Turn Lane on Glendale Dr

3.2.6. Issue #6 – Ramps do not meet current ADA standards

Several of the intersection pedestrian ramps do not meet current ADA standards with land areas and truncated dome warning strips. Furthermore, the apex-style ramps tend to direct pedestrians into the center of the intersection rather perpendicular to the roadway. See **Photograph 7.**

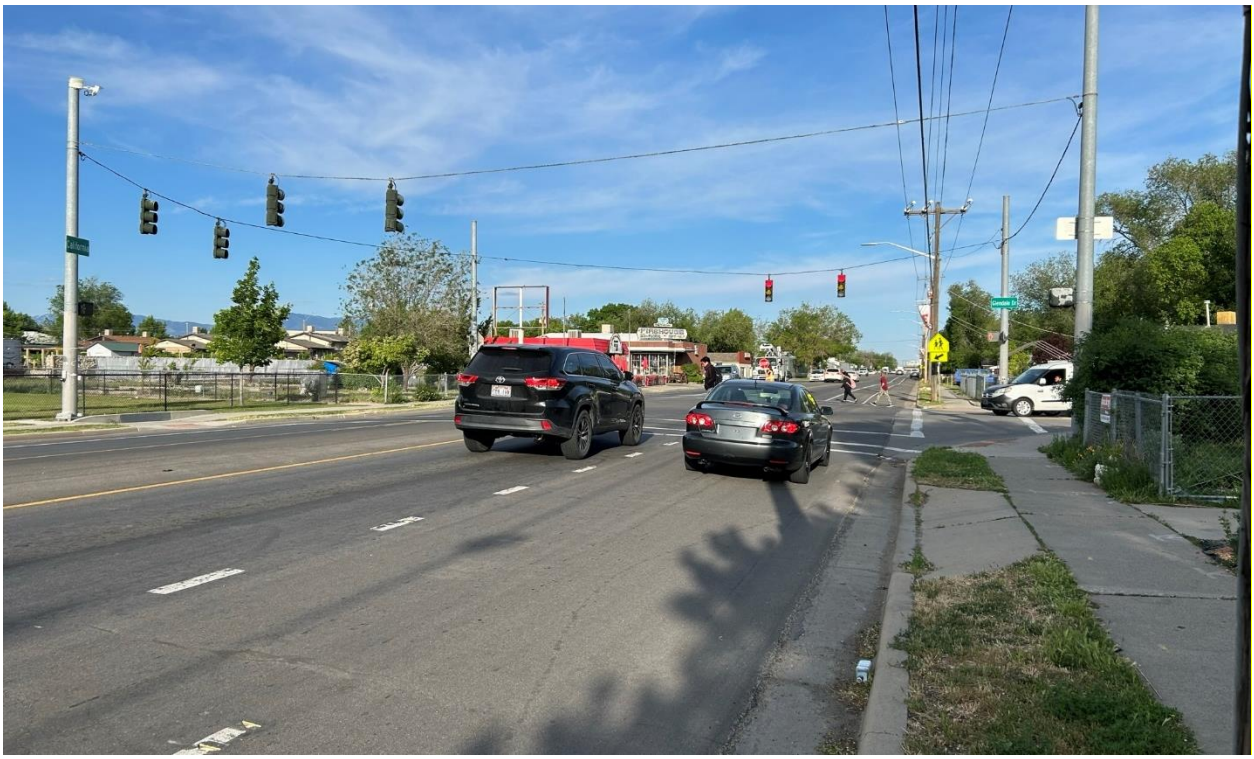
Suggestion: Improve pedestrian ramps to meet current ADA standards.

Photograph 7 – Pedestrian ramps do not meet current ADA standards

3.2.7. Issue #7 – Pedestrian and Vehicle Conflict

The field review team observed significant pedestrian activity, particularly on the south side of California Ave. During school arrival and dismissal periods, students cross from the south side of California Avenue to the north side of the road. These crossings coincide with southbound green on Glendale Dr introducing potential conflicts with pedestrians. See **Photograph 8**.

Suggestion: Shorten pedestrian crossing distance for pedestrians by installing bulbouts on each intersection corner. Consider raised center island to provide pedestrian refuge. Consider a Leading Pedestrian Interval or an all-red pedestrian phase when pedestrian push button activated accompanied by "No Right Turn on Red When Pedestrians Present" signs.



Photograph 8 – Pedestrians crossing California Avenue

3.3. Concord St / California Ave Intersection

3.3.1. Issue #1 – Right turn (Northwest corner) has a large radius

Large turning radius encourages vehicles to turn into bike lane. See *Photograph **9***.

Photograph 9 - Large intersection radius at Concord St.

Suggestion: Construct intersection bulb outs on each intersection corner. Geometry should consider snowplow and buses.

3.3.2. Issue #2 – Pedestrian ramps do not meet current ADA standards

Pedestrian ramps do not meet current ADA requirements (northwest, northeast, southeast corners). In addition, water ponding was observed on southwest corner of the intersection. See **Photograph 10**.

Suggestion: Improve pedestrian ramps to meet current ADA standards.

Photograph 10 – Water Pooling on Southwest Corner

3.3.3. Issue #3 – Pedestrians observed crossing California Ave at Concord St

Pedestrians were observed walking from the bus stop on the south side of California Ave to the north side of California Ave. There are no striped crosswalks at this intersection. See **Photograph 11**.

Suggestion: Construct intersection bulbouts to shorten crossing distance, construct marked crosswalk enhanced with a Rectangular Rapid Flashing Beacon, and a raised pedestrian refuge island.

Photograph 11 – Pedestrian Crossing California Ave

4. RECOMMENDED IMPROVEMENT CONCEPTS

Three improvement alternatives were prepared to address the issues and observations identified in the previous sections. The improvement alternatives are:

Alternative 1: Bulbouts/Bus Pullout

Alternative 2: Median Refuge Island at Glendale Dr.

Alternative 3: Median Refuge Island Glendale Dr to Concord St.

The improvements are summarized in **Figure 6,** and detailed in **Figure 7**, **Figure 8,** and **Figure 9.**

The alternatives successively include recommendations to improve pedestrian safety at each study intersection. Improvement elements are summarized in **Table 7**.

Table 7 – Improvements Alternatives Summary

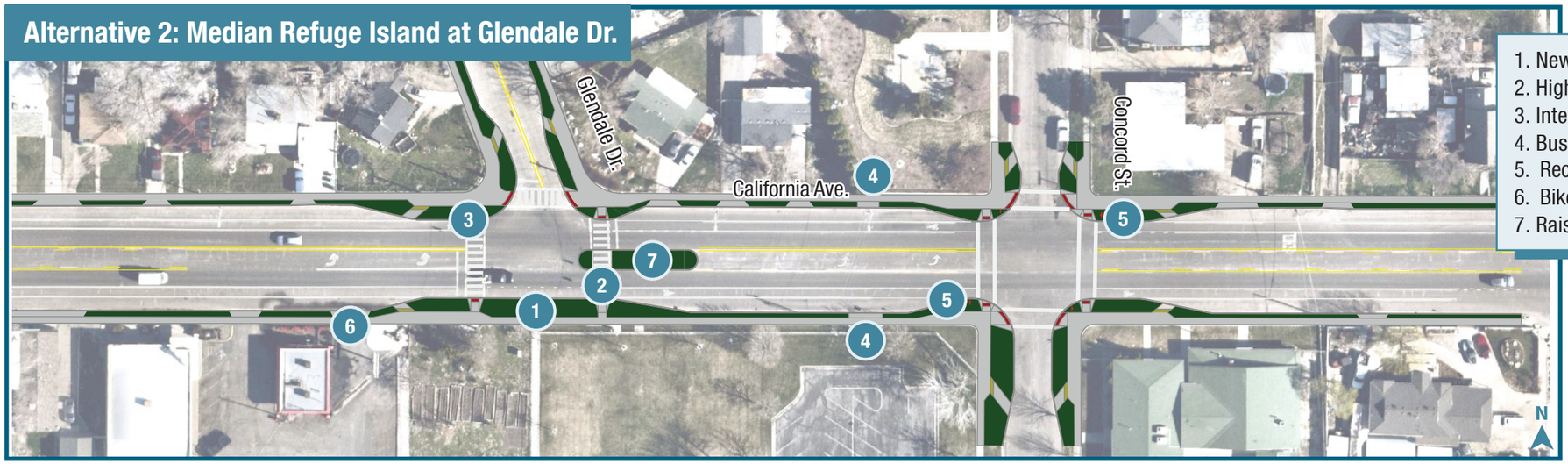
Improvement Element	Alt 1	Alt 2	Alt 3
1. New Traffic Signal (Improve Existing) with Lighting	X	X	X
2. High Visibility Crosswalks	X	X	X
3. Intersection Bulbouts with Directional Ramps	X	X	X
4. Bus Pad with Shelter	X	X	X
Bus pull-outs	X	X	
Bus in-line stops (no pull-outs)			X
5. Rectangular Rapid Flashing Beacon (RRFB)	X	X	X
6. Bike ramp access to wide sidewalk.	X	X	X
7. Raised Center Refuge Island		X	X
8. Wide Sidewalk (North and South Sides of California Ave)			X

Figure 6 – Improvement Summary

Alternative 1:Bulbouts/Bus Pullout

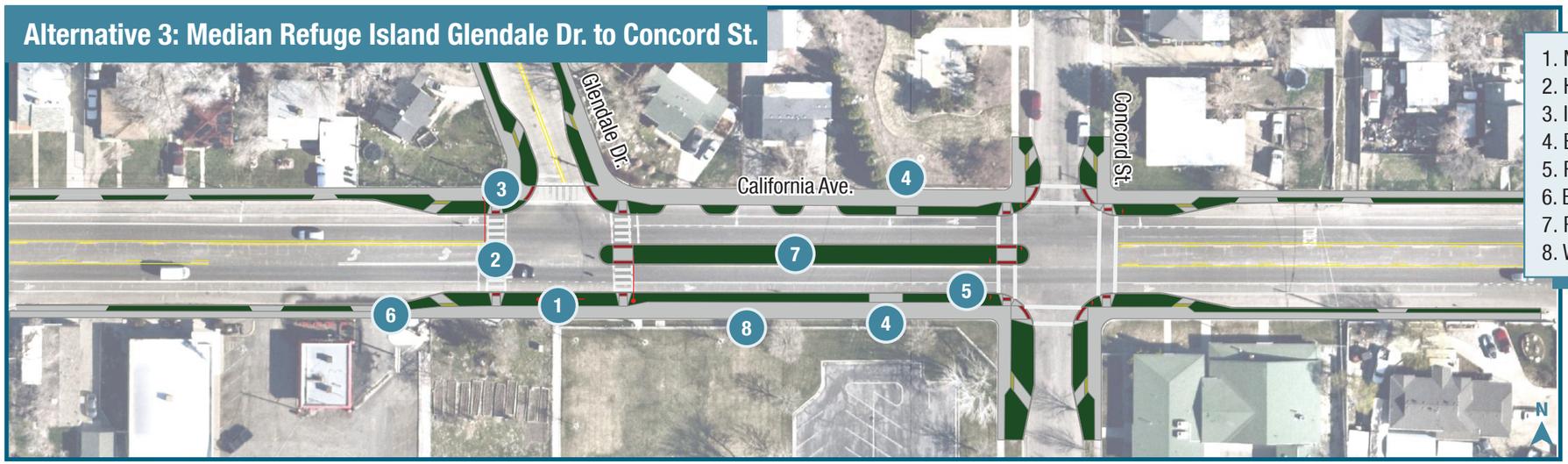
1. New Traffic Signal (Improve Existing) with Lighting
2. High Visibility Crosswalks
3. Intersection Bulbouts with Directional Ramps
4. Bus Pad with Shelter
5. Rectangular Rapid Flashing Beacon (RRFB)
6. Bike ramp access to or from sidewalk

Alternative 2: Median Refuge Island at Glendale Dr.



1. New Traffic Signal (Improve Existing) with Lighting
2. High Visibility Crosswalks
3. Intersection Bulbouts with Directional Ramps
4. Bus Pad with Shelter
5. Rectangular Rapid Flashing Beacon (RRFB)
6. Bike ramp access to or from sidewalk
7. Raised Center Refuge Island

Alternative 3: Median Refuge Island Glendale Dr. to Concord St.



1. New Traffic Signal (Improve Existing) with Lighting
2. High Visibility Crosswalks
3. Intersection Bulbouts with Directional Ramps
4. Bus Pad with Shelter with In-Line Stops
5. Rectangular Rapid Flashing Beacon (RRFB)
6. Bike ramp access to or from sidewalk
7. Raised Center Refuge Island
8. Wide Sidewalk (South and North Side)

SALT LAKE CITY

Figure 7 – Alternative 1: Bulbouts/Bus Pullout

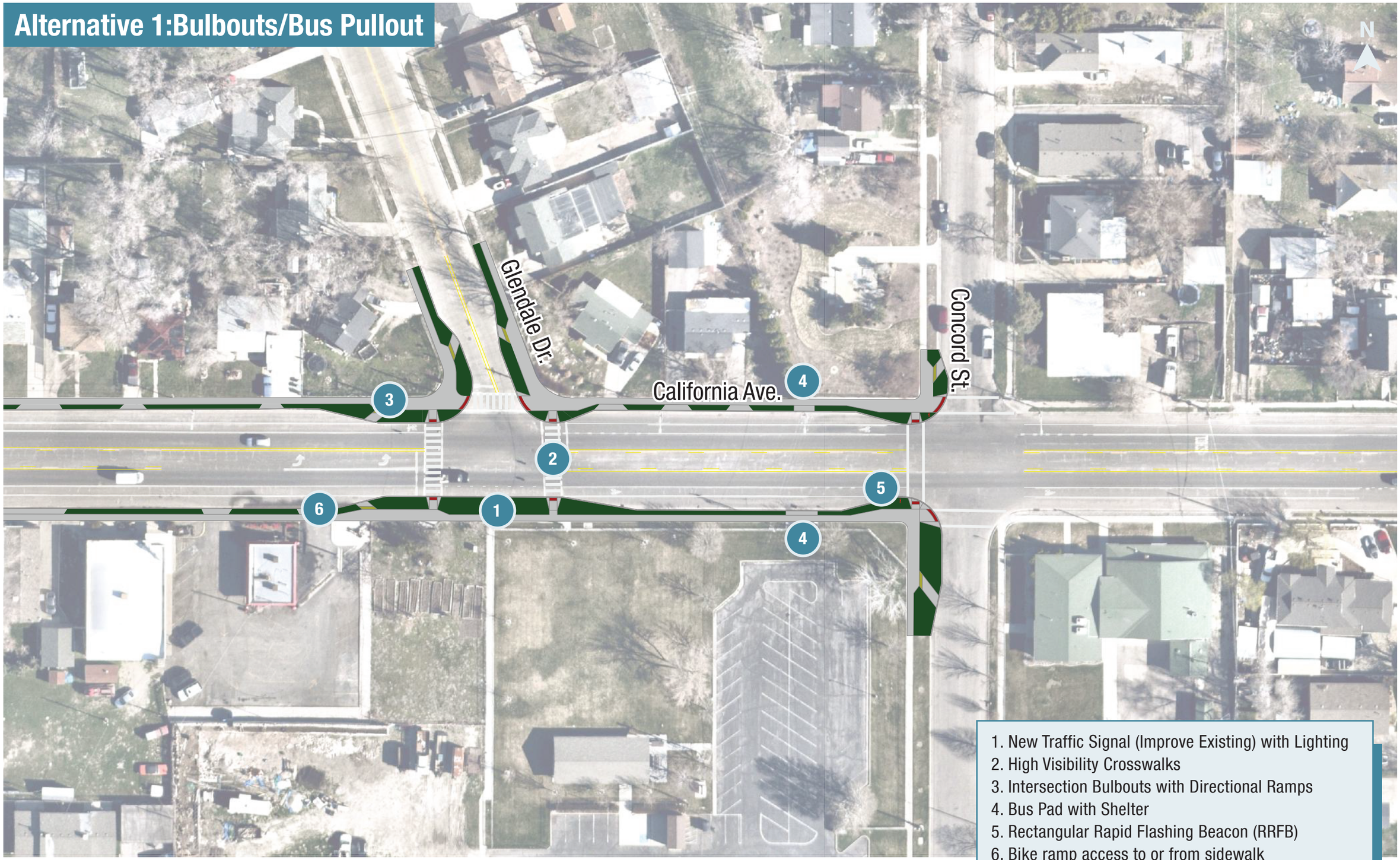


Figure 8 – Alternative 2: Wide Sidewalk and Median Refuge Island at Glendale Dr.

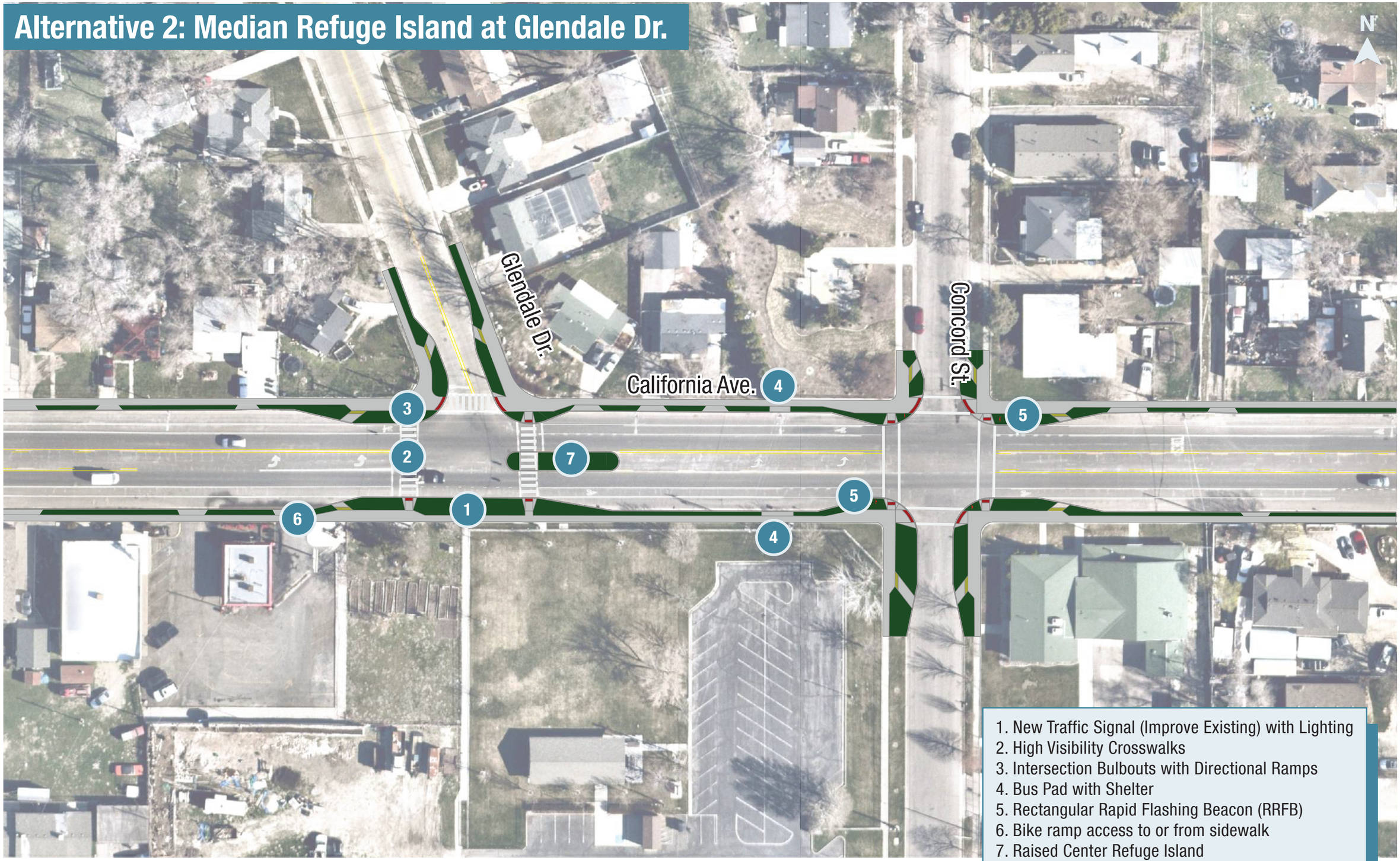
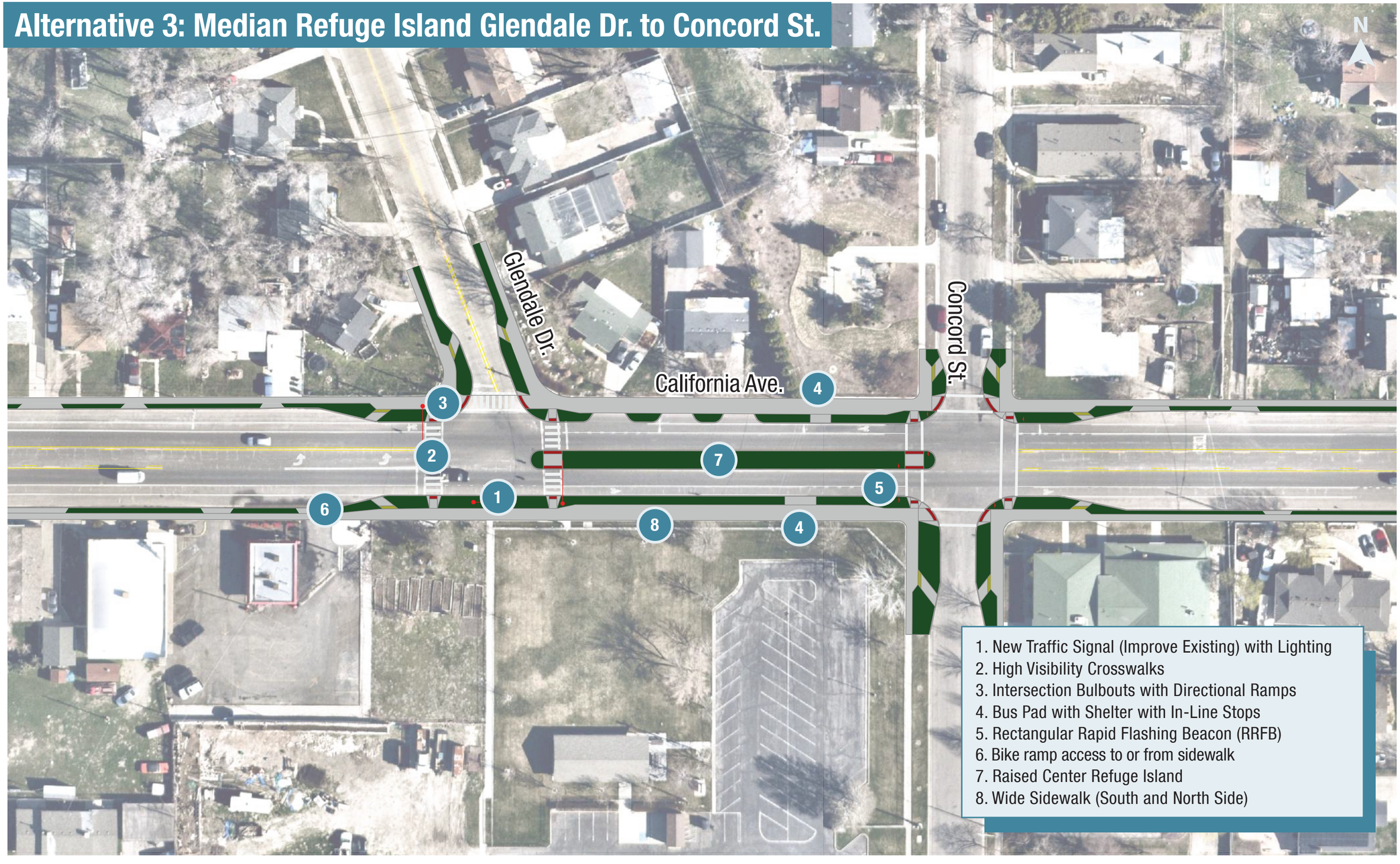


Figure 9 – Alternative 3: Median Refuge Island Glendale Dr. to Concord St.

Alternative 3: Median Refuge Island Glendale Dr. to Concord St.



1. New Traffic Signal (Improve Existing) with Lighting
2. High Visibility Crosswalks
3. Intersection Bulbouts with Directional Ramps
4. Bus Pad with Shelter with In-Line Stops
5. Rectangular Rapid Flashing Beacon (RRFB)
6. Bike ramp access to or from sidewalk
7. Raised Center Refuge Island
8. Wide Sidewalk (South and North Side)

APPENDIX A

TRAFFIC COUNT DATA

All Traffic Data Services, LLC

www.alltrafficdata.net

Site Code: 3
California Ave E.O Glendale Dr

EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/09/23	2	54	8	1	0	0	0	0	0	0	0	0	0	65
01:00	1	34	1	0	0	0	0	0	0	0	0	0	0	36
02:00	0	16	3	0	0	0	0	0	0	0	0	0	0	19
03:00	0	26	4	0	0	0	0	0	0	0	0	0	0	30
04:00	1	42	5	0	0	1	0	0	0	0	0	0	0	49
05:00	0	83	20	2	1	2	**1**	0	0	0	0	0	0	109
06:00	2	164	40	4	6	0	0	0	0	0	0	0	0	216
07:00	2	281	60	4	8	**9**	0	0	0	0	0	0	0	364
08:00	**3**	**358**	**94**	6	6	6	0	0	0	0	0	0	0	**473**
09:00	0	230	76	3	**9**	2	0	0	**1**	0	0	0	0	321
10:00	2	235	78	8	6	3	0	0	0	0	0	0	0	332
11:00	2	272	70	**11**	9	1	0	0	0	0	0	0	0	365
12 PM	3	300	66	**7**	10	1	0	0	0	0	0	0	0	387
13:00	2	311	64	7	15	**3**	0	0	0	**1**	0	0	0	403
14:00	2	352	**71**	7	**25**	0	0	0	**1**	0	0	0	0	458
15:00	3	**468**	67	6	4	2	0	0	0	0	0	0	0	**550**
16:00	**8**	401	66	3	1	1	**1**	0	0	0	0	0	0	481
17:00	5	411	47	1	4	0	0	0	0	0	0	0	0	468
18:00	4	317	44	3	3	0	0	0	0	1	0	0	0	372
19:00	5	280	31	2	2	0	0	0	0	0	0	0	0	320
20:00	1	208	25	1	1	0	0	0	0	0	0	0	0	236
21:00	1	153	17	2	5	1	0	0	0	0	0	0	0	179
22:00	4	115	9	2	1	1	0	0	0	0	0	0	0	132
23:00	0	65	11	2	1	1	0	0	0	0	0	0	0	80
Day Total	53	5176	977	82	117	34	2	0	2	2	0	0	0	6445
Percent	0.8%	80.3%	15.2%	1.3%	1.8%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	08:00	08:00	11:00	09:00	07:00	05:00		09:00					08:00
Vol.	3	358	94	11	9	9	1		1					473
PM Peak	16:00	15:00	14:00	12:00	14:00	13:00	16:00		14:00	13:00				15:00
Vol.	8	468	71	7	25	3	1		1	1				550
Grand Total	53	5176	977	82	117	34	2	0	2	2	0	0	0	6445
Percent	0.8%	80.3%	15.2%	1.3%	1.8%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	

All Traffic Data Services, LLC

www.alltrafficdata.net

Site Code: 3
California Ave E.O Glendale Dr

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/09/23	1	37	15	2	3	0	0	0	0	0	0	0	0	58
01:00	0	19	7	0	2	0	0	0	0	0	0	0	0	28
02:00	0	20	10	2	2	0	0	0	0	0	0	0	0	34
03:00	0	20	9	1	0	0	0	0	0	0	0	0	0	30
04:00	0	41	9	2	3	0	1	0	0	0	0	0	0	56
05:00	1	83	32	3	4	0	0	0	0	0	0	0	0	123
06:00	0	141	58	1	14	0	1	0	0	0	0	0	0	215
07:00	3	**290**	60	**12**	21	**4**	**6**	0	1	**2**	0	0	0	**399**
08:00	1	244	64	10	12	2	0	0	0	0	0	0	0	333
09:00	3	186	61	12	19	1	1	0	**3**	0	0	0	**1**	287
10:00	**4**	204	69	6	19	1	0	0	2	0	0	0	0	305
11:00	3	204	**70**	7	**24**	3	1	**1**	1	0	0	0	0	314
12 PM	4	253	77	**11**	**23**	**6**	0	0	**1**	0	0	0	0	375
13:00	4	245	74	5	23	2	**1**	0	0	**1**	0	0	0	355
14:00	6	307	47	3	11	1	0	0	0	0	0	0	0	375
15:00	**9**	373	74	6	10	2	1	0	0	0	0	0	0	475
16:00	7	368	91	4	9	3	1	0	1	0	0	0	0	484
17:00	1	**455**	**94**	3	20	1	0	0	0	0	0	0	0	**574**
18:00	3	305	69	3	21	1	1	0	0	0	0	0	0	403
19:00	1	229	50	3	10	1	0	0	0	0	0	0	0	294
20:00	2	217	63	2	8	0	0	0	1	0	0	0	0	293
21:00	0	172	43	3	2	0	0	0	0	0	0	0	0	220
22:00	0	124	24	2	5	0	0	0	0	0	0	0	0	155
23:00	1	57	11	3	2	0	0	0	0	0	0	0	0	74
Day Total	54	4594	1181	106	267	28	14	1	10	3	0	0	1	6259
Percent	0.9%	73.4%	18.9%	1.7%	4.3%	0.4%	0.2%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	
AM Peak	10:00	07:00	11:00	07:00	11:00	07:00	07:00	11:00	09:00	07:00			09:00	07:00
Vol.	4	290	70	12	24	4	6	1	3	2			1	399
PM Peak	15:00	17:00	17:00	12:00	12:00	12:00	13:00		12:00	13:00				17:00
Vol.	9	455	94	11	23	6	1		1	1				574
Grand Total	54	4594	1181	106	267	28	14	1	10	3	0	0	1	6259
Percent	0.9%	73.4%	18.9%	1.7%	4.3%	0.4%	0.2%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	

All Traffic Data Services, LLC

www.alltrafficdata.net

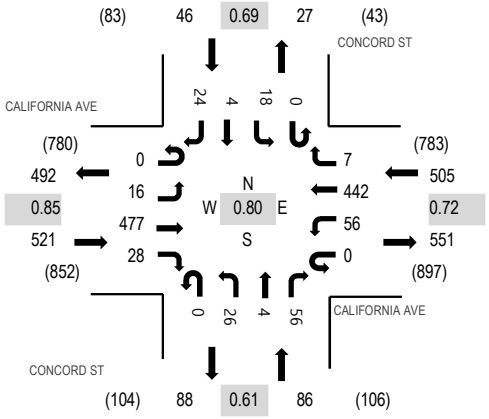
Site Code: 3
California Ave E.O Glendale Dr

Start Time	09-May-23 Tue	EB	WB							Total
12:00 AM		65	58							123
01:00		36	28							64
02:00		19	34							53
03:00		30	30							60
04:00		49	56							105
05:00		109	123							232
06:00		216	215							431
07:00		364	**399**							763
08:00		**473**	333							**806**
09:00		321	287							608
10:00		332	305							637
11:00		365	314							679
12:00 PM		387	375							762
01:00		403	355							758
02:00		458	375							833
03:00		**550**	475							1025
04:00		481	484							965
05:00		468	**574**							**1042**
06:00		372	403							775
07:00		320	294							614
08:00		236	293							529
09:00		179	220							399
10:00		132	155							287
11:00		80	74							154
Total		6445	6259							12704
Percent		50.7%	49.3%							
AM Peak	-	08:00	07:00	-	-	-	-	-	-	08:00
Vol.	-	473	399	-	-	-	-	-	-	806
PM Peak	-	15:00	17:00	-	-	-	-	-	-	17:00
Vol.	-	550	574	-	-	-	-	-	-	1042
Grand Total		6445	6259							12704
Percent		50.7%	49.3%							
ADT		ADT 12,704		AADT 12,704						

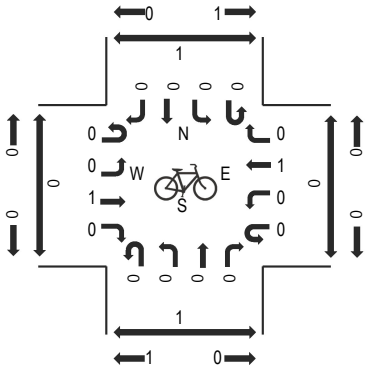
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 1 CONCORD ST & CALIFORNIA AVE AM
Date: Tuesday, May 9, 2023
Peak Hour: 07:30 AM - 08:30 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

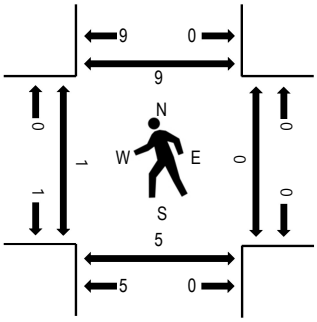
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

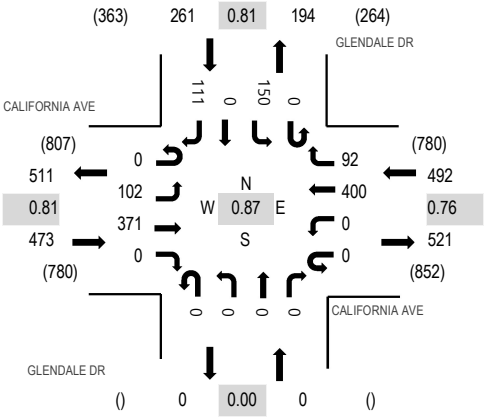
Traffic Counts - Motorized Vehicles

Interval Start Time	CALIFORNIA AVE Eastbound				CALIFORNIA AVE Westbound				CONCORD ST Northbound				CONCORD ST Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	1	69	1	0	2	52	2	0	0	1	2	0	4	0	7	141	917	0	0	0	0
7:15 AM	0	3	59	1	0	3	67	1	0	1	0	6	0	4	0	2	147	1,079	0	0	0	1
7:30 AM	0	4	98	2	0	17	121	0	0	3	1	9	0	3	0	8	266	1,158	0	0	0	1
7:45 AM	0	4	120	10	0	30	144	2	0	8	3	25	0	6	2	9	363	1,090	0	0	0	3
8:00 AM	0	6	135	13	0	8	97	1	0	14	0	18	0	4	2	5	303	907	0	0	0	5
8:15 AM	0	2	124	3	0	1	80	4	0	1	0	4	0	5	0	2	226		1	0	5	0
8:30 AM	0	2	106	1	0	1	69	3	0	4	0	0	0	8	0	4	198		0	0	30	0
8:45 AM	0	2	81	5	0	2	75	1	0	3	0	3	0	4	0	4	180		0	0	2	1
Count Total	0	24	792	36	0	64	705	14	0	34	5	67	0	38	4	41	1,824		1	0	37	11
Peak Hour	0	16	477	28	0	56	442	7	0	26	4	56	0	18	4	24	1,158		1	0	5	9

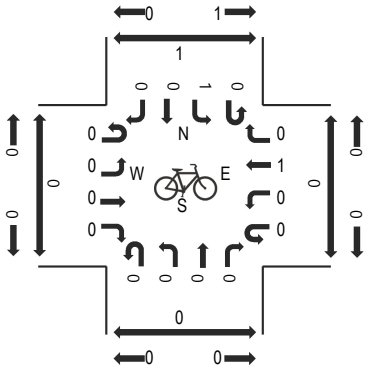
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 2 GLENDALE DR & CALIFORNIA AVE AM
Date: Tuesday, May 9, 2023
Peak Hour: 07:30 AM - 08:30 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

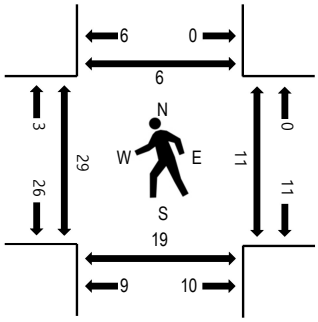
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

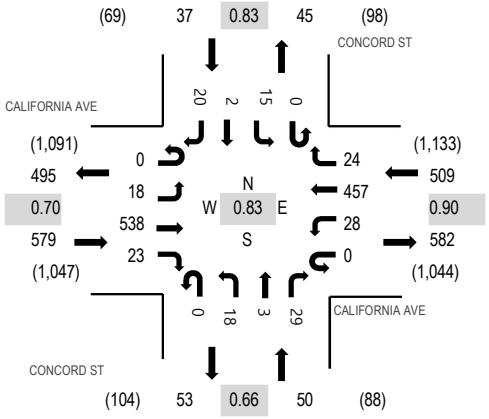
Traffic Counts - Motorized Vehicles

Interval Start Time	CALIFORNIA AVE Eastbound				CALIFORNIA AVE Westbound				GLENDALE DR Northbound				GLENDALE DR Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	6	53	0	0	0	57	2	0	0	0	0	0	18	0	9	145	915	0	0	0	0
7:15 AM	0	10	48	0	0	0	63	7	0	0	0	0	0	15	0	5	148	1,118	1	0	1	0
7:30 AM	0	11	83	0	0	0	123	9	0	0	0	0	0	21	0	22	269	1,226	8	4	8	0
7:45 AM	0	28	85	0	0	0	127	34	0	0	0	0	0	49	0	30	353	1,170	17	5	7	6
8:00 AM	0	42	109	0	0	0	84	32	0	0	0	0	0	45	0	36	348	1,008	2	1	1	0
8:15 AM	0	21	94	0	0	0	66	17	0	0	0	0	0	35	0	23	256		2	1	3	0
8:30 AM	0	15	95	0	0	0	65	12	0	0	0	0	0	14	0	12	213		0	0	29	0
8:45 AM	0	8	72	0	0	0	72	10	0	0	0	0	0	16	0	13	191		2	0	2	0
Count Total	0	141	639	0	0	0	657	123	0	0	0	0	0	213	0	150	1,923		32	11	51	6
Peak Hour	0	102	371	0	0	0	400	92	0	0	0	0	0	150	0	111	1,226		29	11	19	6

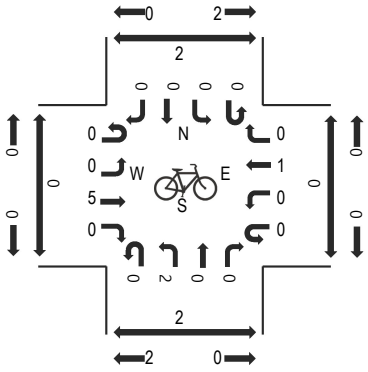
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 1 CONCORD ST & CALIFORNIA AVE PM
Date: Tuesday, May 9, 2023
Peak Hour: 04:00 PM - 05:00 PM
Peak 15-Minutes: 04:00 PM - 04:15 PM

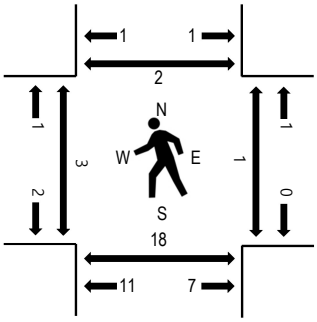
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

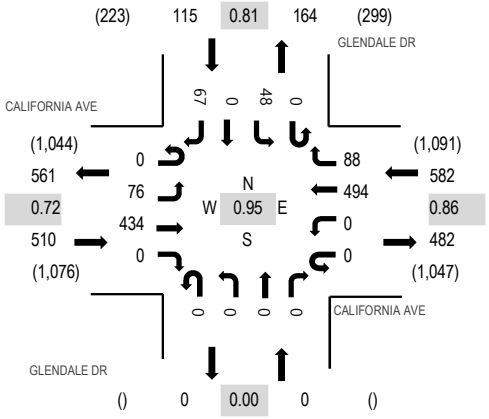
Traffic Counts - Motorized Vehicles

Interval Start Time	CALIFORNIA AVE Eastbound				CALIFORNIA AVE Westbound				CONCORD ST Northbound				CONCORD ST Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	6	189	13	0	8	105	8	0	6	2	11	0	2	0	6	356	1,175	0	0	2	2
4:15 PM	0	4	116	2	0	10	123	6	0	3	0	6	0	7	0	1	278	1,107	1	0	4	0
4:30 PM	0	4	117	4	0	4	112	1	0	5	1	3	0	3	1	5	260	1,137	1	0	6	0
4:45 PM	0	4	116	4	0	6	117	9	0	4	0	9	0	3	1	8	281	1,168	1	1	6	0
5:00 PM	0	7	121	5	0	8	123	5	0	2	0	9	0	2	2	4	288	1,162	0	0	3	0
5:15 PM	0	9	115	3	0	17	143	4	0	3	0	3	0	7	0	4	308		0	0	2	5
5:30 PM	0	8	85	5	0	5	164	5	0	7	1	5	0	3	0	3	291		4	0	1	0
5:45 PM	0	4	103	3	0	3	137	10	0	2	0	6	0	3	0	4	275		0	1	0	2
Count Total	0	46	962	39	0	61	1,024	48	0	32	4	52	0	30	4	35	2,337		7	2	24	9
Peak Hour	0	18	538	23	0	28	457	24	0	18	3	29	0	15	2	20	1,175		3	1	18	2

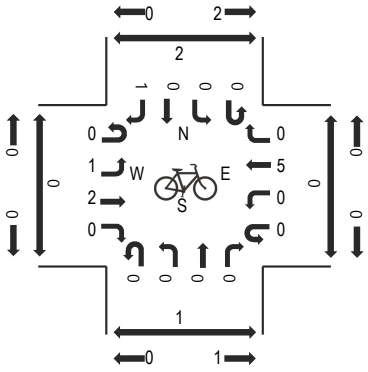
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 2 GLENDALE DR & CALIFORNIA AVE PM
Date: Tuesday, May 9, 2023
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

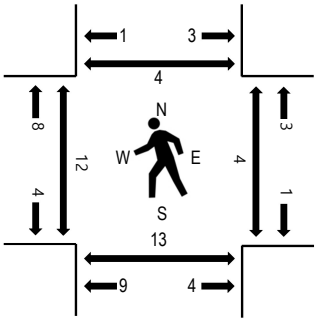
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	CALIFORNIA AVE Eastbound				CALIFORNIA AVE Westbound				GLENDALE DR Northbound				GLENDALE DR Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	14	190	0	0	0	103	14	0	0	0	0	0	18	0	19	358	1,188	10	1	6	2
4:15 PM	0	14	113	0	0	0	112	15	0	0	0	0	0	9	0	11	274	1,128	2	1	3	0
4:30 PM	0	14	109	0	0	0	96	26	0	0	0	0	0	16	0	10	271	1,162	4	2	5	0
4:45 PM	0	18	114	0	0	0	110	19	0	0	0	0	0	10	0	14	285	1,207	3	3	6	0
5:00 PM	0	17	120	0	0	0	106	23	0	0	0	0	0	13	0	19	298	1,202	4	1	1	3
5:15 PM	0	19	116	0	0	0	122	28	0	0	0	0	0	11	0	12	308		5	0	5	1
5:30 PM	0	22	84	0	0	0	156	18	0	0	0	0	0	14	0	22	316		0	0	1	0
5:45 PM	0	17	95	0	0	0	122	21	0	0	0	0	0	15	0	10	280		0	0	2	0
Count Total	0	135	941	0	0	0	927	164	0	0	0	0	0	106	0	117	2,390		28	8	29	6
Peak Hour	0	76	434	0	0	0	494	88	0	0	0	0	0	48	0	67	1,207		12	4	13	4

APPENDIX B

TRAFFIC SPEED DATA

All Traffic Data Services, LLC

www.alltrafficdata.net

Site Code: 3

California Ave E.O Glendale Dr

EB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
05/09/23	1	4	4	16	28	12	0	0	0	0	0	0	0	0	65	26-35	44
01:00	0	1	6	11	13	3	1	**1**	0	0	0	0	0	0	36	26-35	24
02:00	0	1	2	4	11	0	1	0	0	0	0	0	0	0	19	26-35	15
03:00	0	3	5	4	10	6	2	0	0	0	0	0	0	0	30	30-39	16
04:00	0	1	8	12	18	8	2	0	0	0	0	0	0	0	49	26-35	30
05:00	0	2	13	39	32	18	**5**	0	0	0	0	0	0	0	109	26-35	71
06:00	0	3	42	58	88	25	0	0	0	0	0	0	0	0	216	26-35	146
07:00	2	**25**	154	130	41	11	1	0	0	0	0	0	0	0	364	21-30	284
08:00	**7**	16	**161**	**192**	84	12	0	0	**1**	0	0	0	0	0	**473**	21-30	353
09:00	0	1	61	114	114	30	1	0	0	0	0	0	0	0	321	26-35	228
10:00	1	15	58	98	134	23	1	1	1	0	0	0	0	0	332	26-35	232
11:00	0	4	66	101	**159**	**33**	1	1	0	0	0	0	0	0	365	26-35	260
12 PM	2	**28**	70	136	132	18	1	0	0	0	0	0	0	0	387	26-35	268
13:00	2	19	67	138	144	**33**	0	0	0	0	0	0	0	0	403	26-35	282
14:00	4	17	121	162	125	22	**5**	**2**	0	0	0	0	0	0	458	26-35	287
15:00	**6**	16	**154**	**233**	121	19	1	0	0	0	0	0	0	0	**550**	21-30	387
16:00	3	17	76	180	**171**	30	2	2	0	0	0	0	0	0	481	26-35	351
17:00	2	10	87	189	149	28	1	0	0	0	**2**	0	0	0	468	26-35	338
18:00	2	15	78	137	109	30	0	1	0	0	0	0	0	0	372	26-35	246
19:00	2	16	66	108	98	27	2	1	0	0	0	0	0	0	320	26-35	206
20:00	2	9	41	84	82	18	0	0	0	0	0	0	0	0	236	26-35	166
21:00	1	6	22	49	84	16	1	0	0	0	0	0	0	0	179	26-35	133
22:00	0	2	25	36	58	10	0	0	0	**1**	0	0	0	0	132	26-35	94
23:00	0	1	6	27	29	15	2	0	0	0	0	0	0	0	80	26-35	56
Total	37	232	1393	2258	2034	447	30	9	2	1	2	0	0	0	6445		
Percent	0.6%	3.6%	21.6%	35.0%	31.6%	6.9%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	07:00	08:00	08:00	11:00	11:00	05:00	01:00	08:00						08:00		
Vol.	7	25	161	192	159	33	5	1	1						473		
PM Peak	15:00	12:00	15:00	15:00	16:00	13:00	14:00	14:00		22:00	17:00				15:00		
Vol.	6	28	154	233	171	33	5	2		1	2				550		
Total	37	232	1393	2258	2034	447	30	9	2	1	2	0	0	0	6445		
Percent	0.6%	3.6%	21.6%	35.0%	31.6%	6.9%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

	15th Percentile :	22 MPH
	50th Percentile :	28 MPH
	85th Percentile :	33 MPH
	95th Percentile :	36 MPH

Stats		
	10 MPH Pace Speed :	26-35 MPH
	Number in Pace :	4292
	Percent in Pace :	66.6%
	Number of Vehicles > 35 MPH :	491
	Percent of Vehicles > 35 MPH :	7.6%
	Mean Speed(Average) :	29 MPH

All Traffic Data Services, LLC

www.alltrafficdata.net

Site Code: 3

California Ave E.O Glendale Dr

WB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
05/09/23	0	2	8	12	11	16	5	4	0	0	0	0	0	0	58	31-40	27
01:00	0	2	3	4	8	7	3	0	**1**	0	0	0	0	0	28	31-40	15
02:00	0	0	4	4	5	11	7	0	1	**1**	**1**	0	0	0	34	35-44	18
03:00	0	1	2	3	4	16	2	1	0	0	0	0	0	**1**	30	31-40	20
04:00	0	1	7	6	10	15	8	**8**	0	1	0	0	0	0	56	31-40	25
05:00	1	6	18	13	24	39	18	3	0	1	0	0	0	0	123	31-40	63
06:00	8	16	30	24	46	54	**30**	6	1	0	0	0	0	0	215	31-40	100
07:00	**126**	**109**	70	47	27	11	7	2	0	0	0	0	0	0	**399**	16-25	179
08:00	26	40	**78**	**84**	53	29	19	3	1	0	0	0	0	0	333	21-30	162
09:00	19	39	67	64	51	37	10	0	0	0	0	0	0	0	287	21-30	131
10:00	23	54	53	68	60	31	12	4	0	0	0	0	0	0	305	26-35	128
11:00	15	31	51	57	**87**	**55**	13	5	0	0	0	0	0	0	314	26-35	144
12 PM	36	58	57	65	88	47	**18**	**4**	2	0	0	0	0	0	375	26-35	153
13:00	21	58	55	82	66	56	14	1	2	0	0	0	0	0	355	26-35	148
14:00	70	**109**	61	49	57	24	3	2	0	0	0	0	0	0	375	16-25	170
15:00	**71**	82	**115**	93	59	40	11	3	0	0	0	0	0	**1**	475	21-30	208
16:00	64	78	80	**109**	95	40	17	1	0	0	0	0	0	0	484	26-35	204
17:00	50	86	108	103	**154**	**58**	11	3	1	0	0	0	0	0	**574**	26-35	257
18:00	35	65	86	68	87	45	10	4	**3**	0	0	0	0	0	403	26-35	155
19:00	14	23	56	66	77	44	10	3	0	**1**	0	0	0	0	294	26-35	143
20:00	11	21	45	76	80	40	15	3	1	0	0	**1**	0	0	293	26-35	156
21:00	3	13	31	49	61	45	13	2	3	0	0	0	0	0	220	26-35	110
22:00	0	6	14	34	50	34	13	4	0	0	0	0	0	0	155	26-35	84
23:00	2	4	3	16	16	22	9	2	0	0	0	0	0	0	74	31-40	38
Total	595	904	1102	1196	1276	816	278	68	16	4	1	1	0	2	6259		
Percent	9.5%	14.4%	17.6%	19.1%	20.4%	13.0%	4.4%	1.1%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	07:00	08:00	08:00	11:00	11:00	06:00	04:00	01:00	02:00	02:00			03:00	07:00		
Vol.	126	109	78	84	87	55	30	8	1	1	1			1	399		
PM Peak	15:00	14:00	15:00	16:00	17:00	17:00	12:00	12:00	18:00	19:00		20:00		15:00	17:00		
Vol.	71	109	115	109	154	58	18	4	3	1		1		1	574		
Total	595	904	1102	1196	1276	816	278	68	16	4	1	1	0	2	6259		
Percent	9.5%	14.4%	17.6%	19.1%	20.4%	13.0%	4.4%	1.1%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%			

	15th Percentile :	16 MPH
	50th Percentile :	27 MPH
	85th Percentile :	36 MPH
	95th Percentile :	40 MPH
Stats	10 MPH Pace Speed :	26-35 MPH
	Number in Pace :	2472
	Percent in Pace :	39.5%
	Number of Vehicles > 35 MPH :	1186
	Percent of Vehicles > 35 MPH :	18.9%
	Mean Speed(Average) :	27 MPH

APPENDIX C

WEEKEND BUS STOP RIDERSHIP DATA

Route 9: Average Weekend Ridership Counts (2017-2022)		
Year	**Average Boardings (Sunday)**	**Average Boardings (Saturday)**
2019	326	747
2020	344	597
2021	403	701
2022	413	752

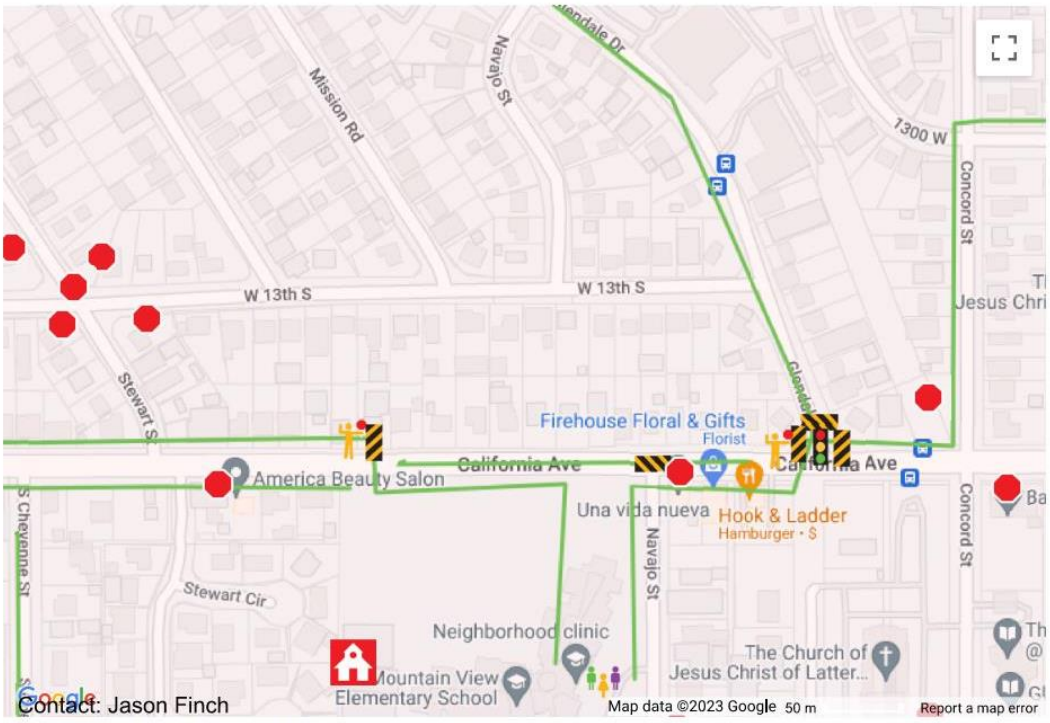
APPENDIX D

SAFE ROUTES TO SCHOOL

saferoutes UTAH

School	School Bus Loading	Student Drop-Off/Pickup
Hazard/Footnote	Crossing Guard	Traffic Signal
Yield Sign	Stop Sign	Crosswalk Vertical
Crosswalk Horizontal	Boundary	Safe Route

Mountain View Elementary School Map | 1380 So. Navajo Street, Salt lake City 84104



Contact: Jason Finch