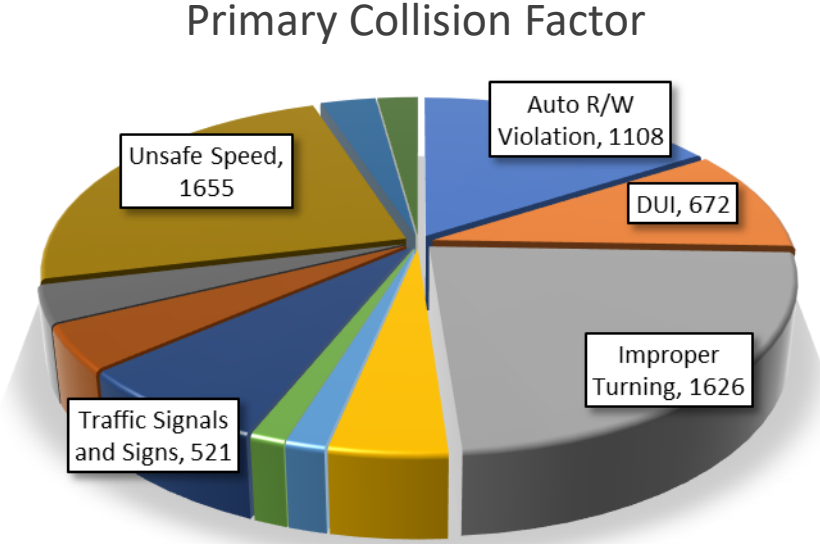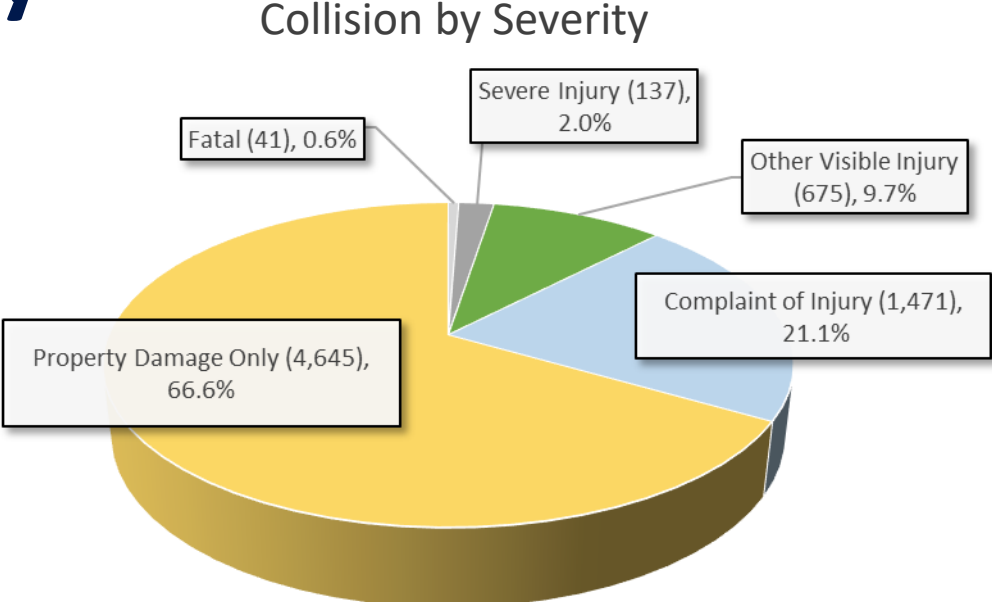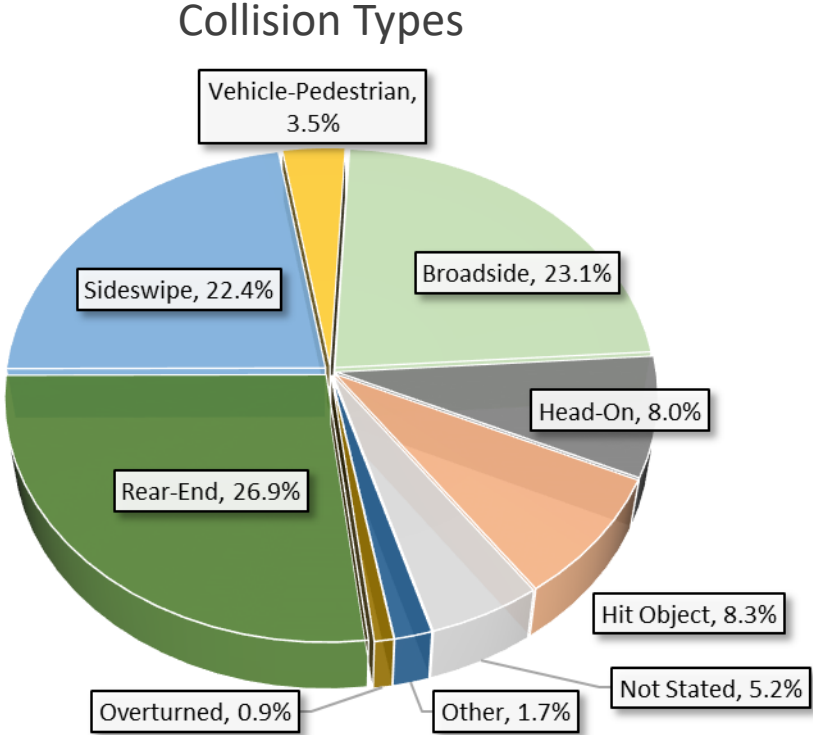# Garden Grove LRSP

➢ Overall Goal: Reduce Severe Injury/Fatal Collisions

➢ State requirement for Highway Safety Improvement Program (HSIP)

 ➢ **HSIP Call For Projects, Cycle 11 - April 2022 (unconfirmed) to August 2022**

 ➢ Active Transportation Program (ATP), Capital Improvements Program (CIP)

 ➢ More Competitive – Require a Higher Benefit-Cost Ratio (BCR**)**

➢ Analyze Safety Data
 ➢ Statewide Integrated Traffic Records System (SWITRS)

 ➢ Five Years, 2016 – 2020, Only City Locations

➢ Determine Emphasis Areas

➢ Living Document – Updated Periodically, both Data, Potential/Planned Improvements and Vision

 ➢ Coordination with other City Departments

LRSP Working Group and Emphasis Areas

- **Engineering Staff, Police Department, Planning Commissioners (2), Traffic Commissioners (2)**

- **Top Severe Injury/Fatal Locations for Future Funding**

  - Recent Severe Injury/Fatal Collisions

  - Grant Funding, Fee Program, Capital Improvement Projects and Development Review

- **Emphasis Areas**

  - Top Ten Severe Injury/Fatal Locations

  - Overall Top 30 Collision Intersections

  - Pedestrians & Bicyclists

  - Speeding

Collisions by Type and Severity

Collision Types

- Vehicle-Pedestrian, 3.5%
- Broadside, 23.1%
- Sideswipe, 22.4%
- Head-On, 8.0%
- Rear-End, 26.9%
- Hit Object, 8.3%
- Overturned, 0.9%
- Other, 1.7%
- Not Stated, 5.2%

Collision by Severity

- Severe Injury (137), 2.0%
- Fatal (41), 0.6%
- Other Visible Injury (675), 9.7%
- Complaint of Injury (1,471), 21.1%
- Property Damage Only (4,645), 66.6%

Primary Collision Factor

- Auto R/W Violation, 1108
- Unsafe Speed, 1655
- DUI, 672
- Improper Turning, 1626
- Traffic Signals and Signs, 521

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Collisions by Severity per Year

Collision by Severity per Year

Year	Fatal	Severe Injury	Other Visible Injury	Complaint of Injury	Property Damage
2016	13	15	128	352	1,100
2017	8	26	115	359	1,038
2018	9	32	136	297	937
2019	5	28	185	269	896
2020	6	36	111	194	674
Total	41	137	675	1,471	4,645

Collisions by Severity per Year
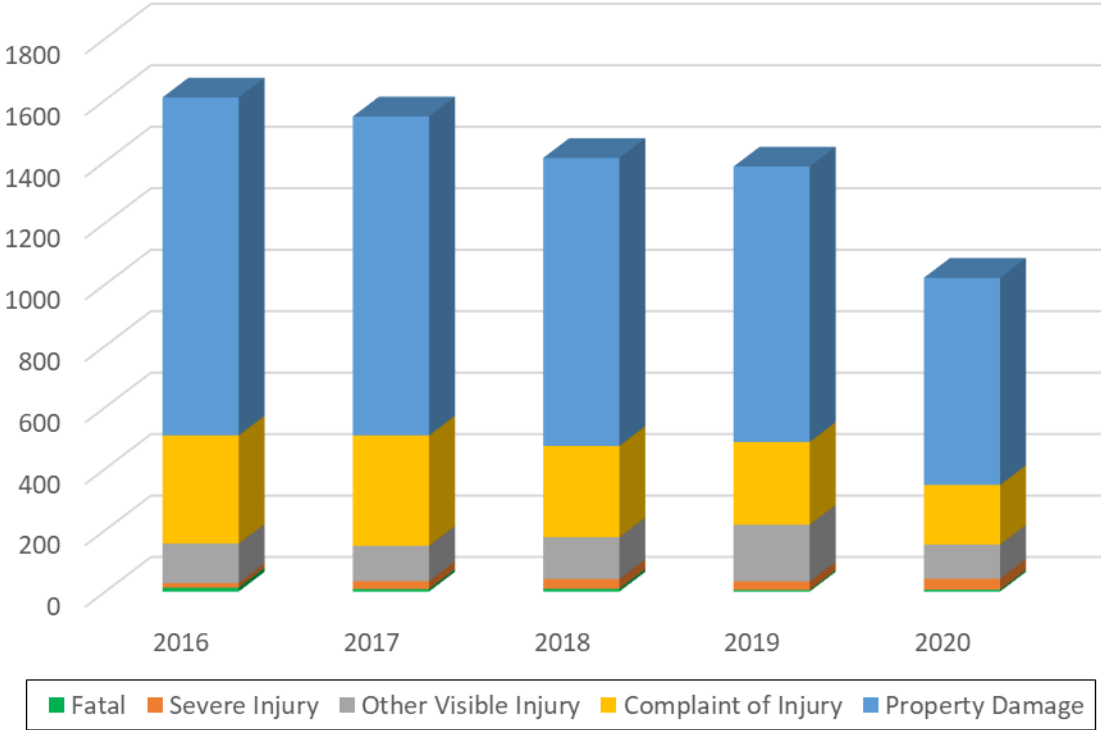
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Severe Injury & Fatal Collisions by Collision Type

Collision by Severity per Year

Year	Fatal	Severe Injury	Other Visible Injury	Complaint of Injury	Property Damage
2016	13	15	128	352	1,100
2017	8	26	115	359	1,038
2018	9	32	136	297	937
2019	5	28	185	269	896
2020	6	36	111	194	674
Total	41	137	675	1,471	4,645

Date Range Reported: 1/1/2016 - 12/31/2020

Total Collisions: 178

Collision Type

Broadside	59
Head-On	19
Hit Object	13
Not Stated	5
Other	10
Overturned	1
Rear-End	17
Sideswipe	8
Vehicle - Pedestrian	46
Total:	**178**

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Benefit-Cost Evaluation – Collision Injury Types

> Benefit-Cost Ratio (BCR) Collision Cost Total / Improvement Cost

California Injury Classification and Definition

Injury Type	Code	Definition	Collision Cost
Fatality	K	Death as a result of injury sustained in a collision or an injury resulting in death within 30 days of the collision. Note: The fetus of a pregnant female involved in a traffic collision will be documented as a fatal injury if the coroner attributes the death to the collision.	$ 1,460,000
Severe Injury	A	An injury other than a fatal injury which results in broken bones, dislocated or distorted limbs, severe lacerations, or unconsciousness at or when taken from the collision scene. It does not include minor lacerations.	$ 1,460,000
Visible Injury	B	This includes: bruises (discolored or swollen); places where the body has received a blow (black eyes and bloody noses); and abrasions (areas of the skin where the surface is roughened or blotchy by scratching or rubbing which includes skinned shins, knuckles, knees and elbows).	$ 126,500
Complaint of Pain	C	This classification could contain authentic internal or other non-visible injuries and fraudulent claims of injury. This includes: 1. Persons who seem dazed, confused or incoherent (unless such behavior can be attributed to intoxication, extreme age, illness or mental infirmities). 2. Persons who are limping but do not have visible injuries. 3. Any person who is known to have been unconscious as a result of the collision, although it appears he/she has recovered. 4. Persons who say they want to be listed as injured but do not appear to be so.	$ 71,900
Property Damage Only	O	Damage to personal property (car, house, etc.)	$ 11,800

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Severe Injury & Fatal Collisions, Top Ten Locations

> Top Ten Fatal and Severe Locations – No. 1 and No. 2

No.1 - Garden Grove Boulevard at Nelson Street

No.	Collision Typ	Severity	Direction	Time of Day	Party at Fault	Date	Notes/Recommendations
A	Veh-Ped	Severe	EBL/NBT	Dark	Auto EBL	11/15/2018	REC: Upgrade Traffic Signal for the following: Add protected lefft turn signal phasing for all movements, Additional EB/WB through vehicle head indications, Add dilemma zone detection
B	Veh-Ped	Severe	WBL/NBT	Daylight	Auto WBL	3/6/2019	
C	Veh-Ped	Severe	WBL/NBT	Dark	Auto WBL	10/31/2019	
D	Broadside	Severe	SBL/NBT	Daylight	Auto SBL	10/15/2020	
E	Veh-Bicycle	Fatal	NBL/NBT	Dusk-Dawn	Auto NBL	3/16/2021	

Severe Injury/Fatal Collisions

Notes: Other Predominant Non-Fatal-Severe Collisions

Rear End (7)	SB Thru	1		NB Left	1
	WB Thru	3	Broadside (8)	SB Left	1
	EB Thru	3		WB Left	2
				EB Left	2
				Other	2

No.2 - Garden Grove Boulevard at Newland Street

No.	Collision Typ	Severity	Direction	Time of Day	Party at Fault	Date	Notes/Recommendations
A	Head-On	Severe	SBL/WBT/NBO	Daylight	Auto SBL	3/23/2017	REC: Upgrade Traffic Signal for the following: Add WB protected left turn signal phasing, Additional EB/WB through vehicle head indications, Add dilemma zone detection, Right Turn Only for SB Adelle Street
B	Sideswipe	Severe	WBL/EBT	Dark	Auto WBL	6/25/2017	Note: 6/25/17 WBL - DUI
C	Broadside	Severe	WBL/EBT	Dark	Auto WBL	8/16/2018	
D	Broadside	Severe	SBL/EBT/NBO	Dark	Auto SBL	2/25/2020	SBL/EBT Collisions - Remove trees on west median for better corner sight distance

Severe Injury/Fatal Collisions

Notes: Other Predominant Non-Fatal-Severe Collisions

Sideswipe (6)	NB	1	NBR/NBR		Broadside	WBL/EBT(9)
	SB	1	SBR/NB Stopped			SBL/EBT (5)
	EB	2	EBR/EBO, EBR/EBT			
	Other	2	RTO/NB Stopped (2)			

Lampson Avenue at Haster Street - *City to Add Protected/Permissive Left Turn Phasing. Intersection was Removed from Evaluation*

A	Head-On	Severe	SBT/WBL/EBR	Dark	Auto SBT	2/24/2016	Removed from Evaluation
B	Not Stated	Fatal	EBT/SBT	Dark	Auto EBT	4/15/2016	
C	Veh-Ped	Fatal	EBL/EBT	Dark	Auto EBL	1/21/2017	

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Severe Injury & Fatal Collisions, Top Ten Locations

➤ Top Ten Fatal and Severe Locations – No. 3 and No. 4

No.3 - Westminster Avenue at Kerry Street

No.	Collision Typ	Severity	Direction	Time of Day	Party at Fault	Date	Notes/Recommendations
A	Veh-Ped	Severe	WBT/SBT/SBT/SBT	Daylight	Auto WBT	7/19/2018	REC: Upgrade Traffic Signal for the following: Add EB/WB protected left turn phasing, Additional EB/WB through vehicle head indications, Add dilemma zone detection
B	Rear-End	Fatal	WBT/WBO	Daylight	Auto WBT	9/2/2019	
C	Broadside	Severe	WBL/EBT	Dark	Auto WBL	2/2/2020	

Notes: Other Predominant Non-Fatal-Severe Collisions

Broadside (7)	NB Left	1	
	WB Left	4	
	Other	2	
Rear End (9)	WB	2	
	EB	7	

No.4 - Euclid Street at Chapman Avenue

No.	Collision Typ	Severity	Direction	Time of Day	Party at Fault	Date	Notes/Recommendations
A	Veh-Ped	Fatal	EBR/NA	Daylight	Auto EBR	6/2/2017	Note: Veh-Ped DUI REC: Upgrade Traffic Signal for the following: Add dilemma zone detection, Additional NB/SB through vehicle head indications.
B	Rear-End	Fatal	EBT/EBO/EBO	Daylight	Auto EBT	4/15/2020	
C	Broadside	Fatal	NBT/EBT	Daylight	Auto NBT	6/8/2021	

Notes: Other Predominant Non-Fatal-Severe Collisions

Rear End (17)	NB Thru	2	
	SB Thru	5	
	WB Thru	5	
	EB Thru	5	

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Severe Injury & Fatal Collisions, Vehicle-Pedestrian Collisions

Primary Collision Factor by Degree of Injury

08-Jul-21

Primary Collision Factor	Total Collisions Count	Total Collisions %	Fatal Count	Fatal %	Severe Injury Count	Severe Injury %	Other Visible Injury Count	Other Visible Injury %
Pedestrian Violation	27	58.70%	9	56.25%	18	60.00%		
Ped R/W Violation	7	15.22%	2	12.50%	5	16.67%		
Driving Under Influence	3	6.52%	1	6.25%	2	6.67%		
Unknown	3	6.52%	2	12.50%	1	3.33%		
Improper Turning	2	4.35%	1	6.25%	1	3.33%		
Improper Passing	1	2.17%			1	3.33%		
Other Than Driver or Ped	1	2.17%			1	3.33%		
Traffic Signals and Signs	1	2.17%			1	3.33%		
Unsafe Speed	1	2.17%	1	6.25%				
Total:	46		16		30			

Date Range Reported: 1/1/2016 - 12/31/2020

Total Collisions: 178

Collision Type

Broadside	59
Head-On	19
Hit Object	13
Not Stated	5
Other	10
Overturned	1
Rear-End	17
Sideswipe	8
Vehicle - Pedestrian	46
Total:	178

AGA Engineers, Inc.

Severe Injury & Fatal Collisions, Vehicle-Pedestrian Collisions

No.	Location	Total	Fatal	Primary Collision Factor
1	Acacia Pkwy - Main St	1		Improper Turning
2	Brookhurst St - 13th St	2	X (1)	- Unknown - Pedestrian Violation
3	Brookhurst St - Bixby Ave	2	X	Pedestrian Violation
4	Brookhurst St - Chapman Ave	1		Ped R/W Violation
5	Brookhust St - Garden Grove Blvd	1		Pedestrian Violation
6	Brookhurst St - Jennrich Ave	1		Pedestrian Violation
7	Brookhurst St - Route 22	1		Pedestrian Violation
8	Chapman Ave - Bayport St	1		Pedestrian Violation
9	Chapman Ave - Euclid St	1	X	DUI
10	Chapman Ave - Santa Rosalia St	1		Pedestrian Violation
11	Chapman Ave - Somerset Pl	2	X (1)	- Pedestrian Violation - Pedestrian Violation (Impairment)
12	Dale St - Stanford Ave	1	X	Unsafe Speed
13	Euclid St - Garden Grove Blvd	1	X	Pedestrian Violation
14	Euclid St - Stanford Ave	1	X	Pedestrian Violation
15	Faye Ave - Chapman Ave	1		Pedestrian Violation
16	Garden Grove Blvd - Benton St	1	X	Pedestrian Violation
17	Garden Grove Blvd - Century Blvd	1		Ped R/W Violation
18	Garden Grove Blvd - Jefferson St	1		Pedestrian Violation
19	Garden Grove Blvd - Monroe St	1		Pedestrian Violation
20	Garden Grove Blvd - Nelson St	3		- Ped R/W Violation (2) - Pedestrian Violation (1)

No.	Location	Total	Fatal	Primary Collision Factor
21	Gilbert St - Arlene Ave	1		Pedestrian Violation
22	Gilbert St - Maureen Dr	1		Pedestrian Violation
23	Haster St - Lampson Ave	1	X	Pedestrian Violation
24	Hazard Ave - Michael St	1		DUI
25	Katella Ave - Magnolia St	1		Ped R/W Violation
26	Lampson Ave - Brookhurst St	1		Pedestrian Violation
27	Lampson Ave - Haster St	1	X	Ped R/W Violation
28	Lampson Ave - Valley View St	1	X	Unknown
29	Larson Ave - Coast St	1		DUI
30	Magnolia St - Mays Ave	1	X	Ped R/W Violation
31	Magnolia St - Rosana Ave	1		Pedestrian Violation
32	Manley St - Huntley Ave	1		Pedestrian Violation
33	Marty Ln - Lewis St	1		Unknown
34	Newland St - Garden Grove Blvd	1		Pedestrian Violation
35	Parkway Dr - Parkside Ln	1		Other Than Driver or Ped
36	Trask Ave - Donegal Dr	1	X	Pedestrian Violation
37	Westminster Ave - Brookhurst St	1	X	Improper Turning
38	Westminister Ave - Euclid St	1		Pedestrian Violation
39	Westminster Ave - Flower St	1	X	Pedestrian Violation
40	Westminster Ave - Kerry St	1		Traffic Signals and Signs
41	Westminster - Roxey Dr	1		Improper Passing

Other Injury (non-severe injury/fatal) - 80

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Bicycle Involved Collisions

Primary Collision Factor by Degree of Injury

Primary Collision Factor	Total Collisions Count	%	Fatal Count	%	Severe Injury Count	%	Other Visible Injury Count	%	Complaint of Pain Count	%	Property Damage Only Count	%
Wrong Side of Road	91	36.11%	2	33.33%	1	7.14%	30	36.59%	40	38.83%	18	38.30%
Improper Turning	40	15.87%	2	33.33%	4	28.57%	11	13.41%	14	13.59%	9	19.15%
Auto R/W Violation	39	15.48%	1	16.67%	2	14.29%	11	13.41%	20	19.42%	5	10.64%
Traffic Signals and Signs	23	9.13%			1	7.14%	9	10.98%	7	6.80%	6	12.77%
Unknown	15	5.95%	1	16.67%	1	7.14%	3	3.66%	7	6.80%	3	6.38%
Ped R/W Violation	14	5.56%					5	6.10%	7	6.80%	2	4.26%
Unsafe Speed	8	3.17%					4	4.88%	2	1.94%	2	4.26%
Other Hazardous Movem	5	1.98%			2	14.29%	2	2.44%	1	0.97%		
Driving Under Influence	4	1.59%			2	14.29%	2	2.44%				
Lights	4	1.59%					2	2.44%	2	1.94%		
Pedestrian Violation	3	1.19%			1	7.14%			1	0.97%	1	2.13%
Other Than Driver or Ped	2	0.79%							2	1.94%		
Improper Passing	1	0.40%									1	2.13%
Other	1	0.40%					1	1.22%				
Other Improper Driving	1	0.40%					1	1.22%				
Unsafe Lane Change	1	0.40%					1	1.22%				
Total:	252		6		14		82		103		47	

Streets with Bicycle Collisions Greater than Five

Street	No. of Collisions
Garden Grove Blvd	29
Chapman Ave	26
Euclid St	19
Brookhurst St	18
Magnolia St	17
Lampson Ave	13
Westminster Ave	13
Harbor Blvd	12
Trask Ave	9
Dale St	6
Katella Ave	6
Newland St	6
Orangewood Ave	6
Gilbert St	5
Hazard Ave	5
Knott St	5

AGA Engineers, Inc.

Bicycle Involved Collisions

Streets with Bicycle Collisions Greater than Five

| Street	No. of Collisions
Garden Grove Blvd	29
Chapman Ave	26
Euclid St	19
Brookhurst St	18
Magnolia St	17
Lampson Ave	13
Westminster Ave	13
Harbor Blvd	12
Trask Ave	9
Dale St	6
Katella Ave	6
Newland St	6
Orangewood Ave	6
Gilbert St	5
Hazard Ave	5
Knott St	5

Bicycle Collisions - Primary Collision Factory (PCF)

Location	Auto R/W Violation	Driving Under Influence	Improper Passing	Improper Turning	Lights	Other	Other Hazardous Movement	Other Improper Driving	Other Than Driver or Ped	Ped R/W Violation	Pedestrian Violation	Traffic Signals and Signs	Unknown	Unsafe Lane Change	Unsafe Speed	Wrong Side of Road	Total
Garden Grove Blvd - 8Th St				1													1
Garden Grove Blvd - Benton St				1												1	2
Garden Grove Blvd - Brookhurst St				1													1
Garden Grove Blvd - Casa Linda Ln (E)				1													1
Garden Grove Blvd - Casa Linda Ln (W)																	1
Garden Grove Blvd - Century Blvd															1		1
Garden Grove Blvd - Civic Center Dr										1							1
Garden Grove Blvd - Dale St																	1
Garden Grove Blvd - Euclid St				1													1
Garden Grove Blvd - Galway St (W)															1		1
Garden Grove Blvd - Garden Grove Bl 13522														1			1
Garden Grove Blvd - Gilbert St															1		1
Garden Grove Blvd - Harbor Blvd				1													1
Garden Grove Blvd - Haster St													1		1		2
Garden Grove Blvd - Kerry St										1							1
Garden Grove Blvd - Knott St											1						1
Garden Grove Blvd - Lemonwood Ln																	1
Garden Grove Blvd - Magnolia St															1		1
Garden Grove Blvd - Nelson St															1		1
Garden Grove Blvd - Nutwood St															1		1
Garden Grove Blvd - Rainbow St																	1
Garden Grove Blvd - Shackelford Ln																	1
Garden Grove Blvd - Siemon Ave																	1
Garden Grove Blvd - Taft St															1		1
Garden Grove Blvd - Village Center Dr														1			1
Garden Grove Blvd - Village Rd													1				1
Garden Grove Blvd - Yockey St																1	1

Collisions due to Unsafe Speeds

Collisions due to Unsafe Speeds per Year
Five Year Total - 1,655

Year	Collisions
2016	377
2017	374
2018	339
2019	311
2020	254
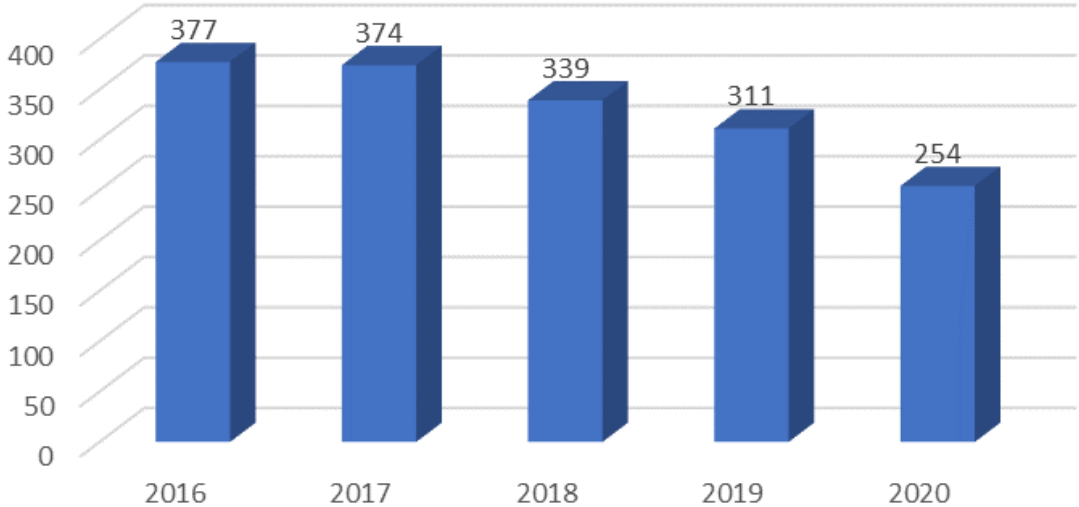
Streets with Five or More Collisions due to Unsafe Speed

Street	Total Collisions (5 Years)
Brookhurst St	188
Garden Grove Blvd	170
Euclid St	142
Chapman Ave	139
Harbor Blvd	91
Trask Ave	89
Magnolia St	88
Lampson Ave	61
Westminster Ave	55
Valley View St	51
Haster St	41
Gilbert St	28
West St	28
Orangewood Ave	26
Knott Ave	23
Western Ave	19
9th St	18
Dale St	18
Hazard Ave	17
Beach Blvd	15
Newhope St	15
Stanford Ave	13
Fairview St	12
Katella Ave	12
Clinton St	11
Buaro St	9
Taft St	9
Springdale St	7
Central Ave	6
Ward St	6
Woodbury Rd	6
McFadden Ave	5
Nutwood St	5
Paloma Ave	5

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Overall Top 30 Intersections (1-15)

City of Garden Grove

Traffic Engineering Department

Intersection Collision Type Summary

3/31/21

Number of Collisions for the Top 30 Locations

From 1/1/2016 to 12/31/2020

Rank	Intersection	Rear End	Head On	Side Swipe	Broad Side	Hit Obj.	Over Turn	Veh Ped	Other	Not Stated	Total Collisions
1	West St at Garden Grove Blvd	6	3	5	35	4	0	0	0	8	61
2	Fairview St at Garden Grove Blvd	16	3	20	15	1	1	0	0	3	59
3	Brookhurst St at Chapman Ave	21	2	11	8	7	1	2	0	3	55
4	Harbor Blvd at Trask Ave	18	4	14	9	4	0	1	1	3	54
5	Euclid St at Trask Ave	21	4	10	12	3	0	0	1	2	53
6	Brookhurst St at Trask Ave	30	2	6	2	2	0	1	1	6	50
7	Euclid St at Chapman Ave	18	1	8	9	3	0	2	1	7	49
8	Euclid St at Garden Grove Blvd	15	2	15	6	2	1	2	0	5	48
9	Magnolia St at Garden Grove Blvd	17	2	8	11	3	0	2	2	2	47
10	Newhope St at Trask Ave	8	11	4	17	1	0	0	0	5	46
11	Garden Grove Blvd at Brookhurst St	21	2	12	3	2	0	2	0	1	43
12	Westminster Ave at Brookhurst St	19	0	8	4	3	0	5	1	2	42
13	Magnolia St at Trask Ave	22	0	8	6	2	0	0	1	2	41
14	Magnolia St at Orangewood Ave	8	3	4	18	2	0	3	0	2	40
15	Garden Grove Blvd at Haster St	8	5	10	5	4	0	1	0	3	36

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Overall Top 30 Intersections (16-30)

Number of Collisions for the Top 30 Locations

From 1/1/2016 to 12/31/2020

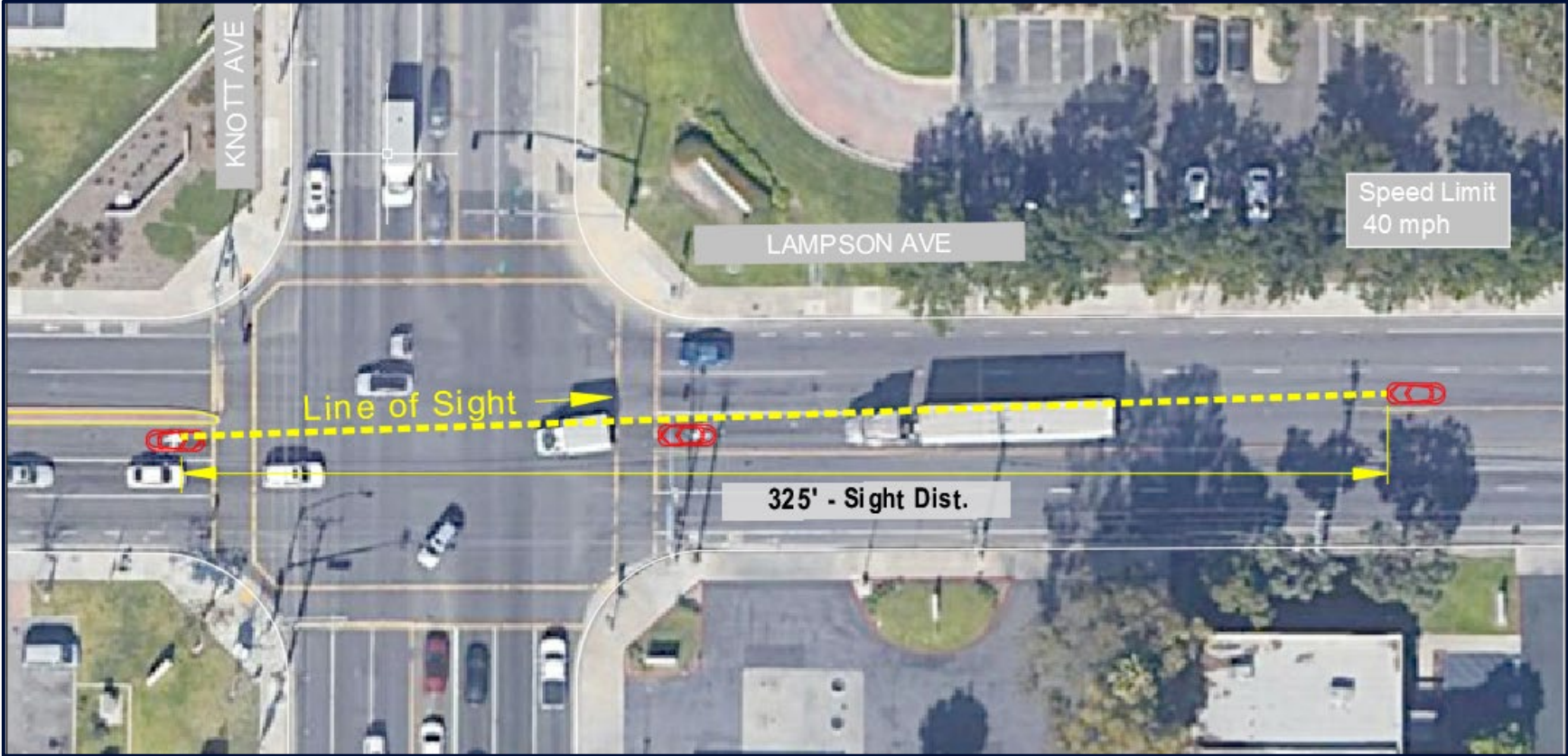| Rank	Intersection	Rear End	Head On	Side Swipe	Broad Side	Hit Obj.	Over Turn	Veh Ped	Other	Not Stated	Total Collisions
16	Beach Blvd at Garden Grove Blvd	13	1	7	3	2	0	4	0	5	35
17	Harbor Blvd at Garden Grove Blvd	4	1	5	12	6	1	3	0	3	35
18	Chapman Ave at West St	7	8	4	14	1	0	0	0	0	34
19	Westminster Blvd at Bushard St	4	3	4	16	1	0	3	0	3	34
20	Newland St at Garden Grove Blvd	1	2	7	20	0	0	2	1	0	33
21	Chapman Ave at 9th St	9	4	3	11	0	1	0	0	3	31
22	Chapman Ave at Magnolia St	15	0	3	6	3	1	0	0	3	31
23	Lampson Ave at Knott St	7	4	4	14	1	0	1	0	0	31
24	Chapman Ave at Gilbert St	13	1	3	11	0	0	0	0	2	30
25	Haster St at Lampson Ave	6	4	3	10	0	0	3	0	4	30
26	Westminster Ave at Euclid St	15	0	6	3	1	0	2	1	2	30
27	Harbor Blvd at Chapman Ave	10	2	6	6	2	0	2	0	1	29
28	Garden Grove Blvd at Nelson St	7	3	1	9	1	1	4	0	2	28
29	Haster St at Chapman Ave	17	1	2	7	0	0	0	0	1	28
30	Taft St at Trask Ave	6	3	1	12	1	0	0	0	4	27
	Total for Each Type	382	81	202	314	62	7	45	10	87	1190
	Percent of Total	32.10%	6.81%	16.97%	26.39%	5.21%	0.59%	3.78%	0.84%	7.31%	100.00%

Overall Top 30 Intersections - Assessment

No.	Intersection	Primary Collision Type	Total Number of Collisions	Collision by Movement	Total	2016 Day	2016 Night	2016 Total	2017 Day	2017 Night	2017 Total	2018 Day	2018 Night	2018 Total	2019 Day	2019 Night	2019 Total	2020 Day	2020 Night	2020 Total	Red #, includes one DUI collision / Notes/Recommendations
1	West St at Garden Grove Blvd	Broadside	37	NB Left	9	1	1	2		1	1	3	0	3		1	1	1	1	2	NBL collisions most likely are EBL collisions. E/W PPLT - Heavy EBL volume. Potential negative offset between E/W left turns due to raised median. Potential Improvement - Add E/W Prot only left turn phasing, All-Red timing, video/radar detection, and additional EBT/WBT signal veh indication. Improve operations by removing the E-Leg Crosswalk. An evaluation on the traffic signal operation was provided to City staff. A pedestrian evaluation would need to be conducted before consideration of the crosswalk removal .
				EB Left	19	1	1	2		4	4			0	4	8	12	1		1	
				Other	8			0			0			0			0			0	
2	Brookhurst St at Chapman Ave	Rear End	21	NB Thru	7		1	1			0	2		2	3		3		1	1	Potential Improvement - Add video/radar detection all directions
				SB Thru	5			0			0			0			0			0	
				WB Thru	7		1	1	2	1	3		1	1	1		1		1	1	
				EB Thru	2			0			0			0			0			0	
3	Harbor Blvd at Trask Ave	Rear End	18	NB Thru	5			0			0			0			0			0	Potential Improvement - Add video/radar detection all directions, Add 2nd NBT veh indication
				SB Thru	4			0			0			0			0			0	
				WB Thru	5			0			0			0			0			0	
				EB Thru	4			0			0			0			0			0	
		Sideswipe	14	NB	6	1		1	1	1	2	1		1	1		1	1		1	Collision for NB: NB Chg lanes/NBT, NBR/NBR, NBR/SBT, NBR/NBT, NBL/SBR, NBR/NBL, NBR/NBT. Potential Improvement - Improve/add signage on Harbor Blvd for NB motorists for directions to SR-22 Fwy EB on-ramp
				SB	2			0			0			0			0			0	
				WB	2			0			0			0			0			0	
				EB	4			0			0			0			0			0	
4	Euclid St at Trask Ave	Read End	21	NB Thru	8		1	1	3		3	1		1		1	1	2		2	Potential Improvement - Add video/radar detection all directions
				SB Thru	2			0			0			0			0			0	
				WB Thru	4			0			0			0			0			0	
				EB Thru	7	2		2	2		2			0	2		2	1		1	
5	Brookhurst St at Trask Ave	Rear End	30	NB Thru	11	1	1	2	2	1	3	1		1	3		3	2		2	N/S Rear End Collisions: Check advance detection zone. Potential Improvement - Add video/radar detection all directions, add 3rd NBT/SBT veh indication (may need upgraded pole or move SNS to signal pole)
				SB Thru	14		1	1	3	2	5	2	4	6		2	2			0	
				WB Thru	2			0			0			0			0			0	
				EB Thru	3			0			0			0			0			0	

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LRSP – Other Recommendations

- ➢ **Engineering**

  - ➢ Proactive measures to prevent additional collisions

    - ➢ Sample: Knott Avenue/Lampson Avenue: Line of Sight for Eastbound Left Turn

LRSP – Other Recommendations

- ➢ **Engineering**

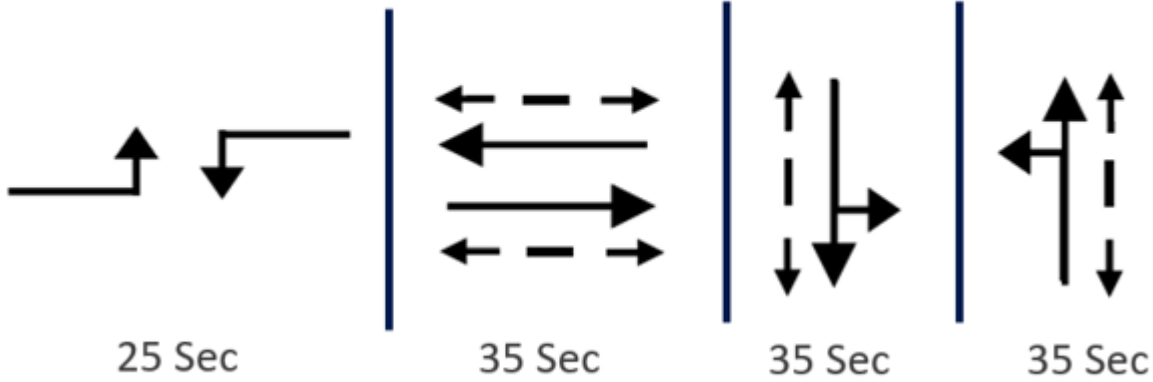 - ➢ Proactive measures to prevent additional collisions

    - ➢ Sample: Knott Avenue/Lampson Avenue: Line of Sight for Eastbound Left Turn

LRSP – Other Recommendations

➢ **Engineering – Operational Improvements (Low Cost)**

  ➢ Proactive measures to prevent additional collisions

    ➢ Garden Grove Blvd at West St

Split Timing by Movement
130 Second Cycle Length

25 Sec   35 Sec   35 Sec   35 Sec

LRSP – Other Recommendations

➢ **Engineering – Operational Improvements (Low Cost)**

    ➢ Proactive measures to prevent additional collisions

        ➢ Garden Grove Blvd at West St:

            REMOVE EAST-LEG CROSSWALK

Split Timing by Movement
130 Second Cycle Length

30 Sec
+20%

50 Sec
+42%

35 Sec

15 Sec

Reduced from 35 sec

West St

Garden Grove Blvd

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21
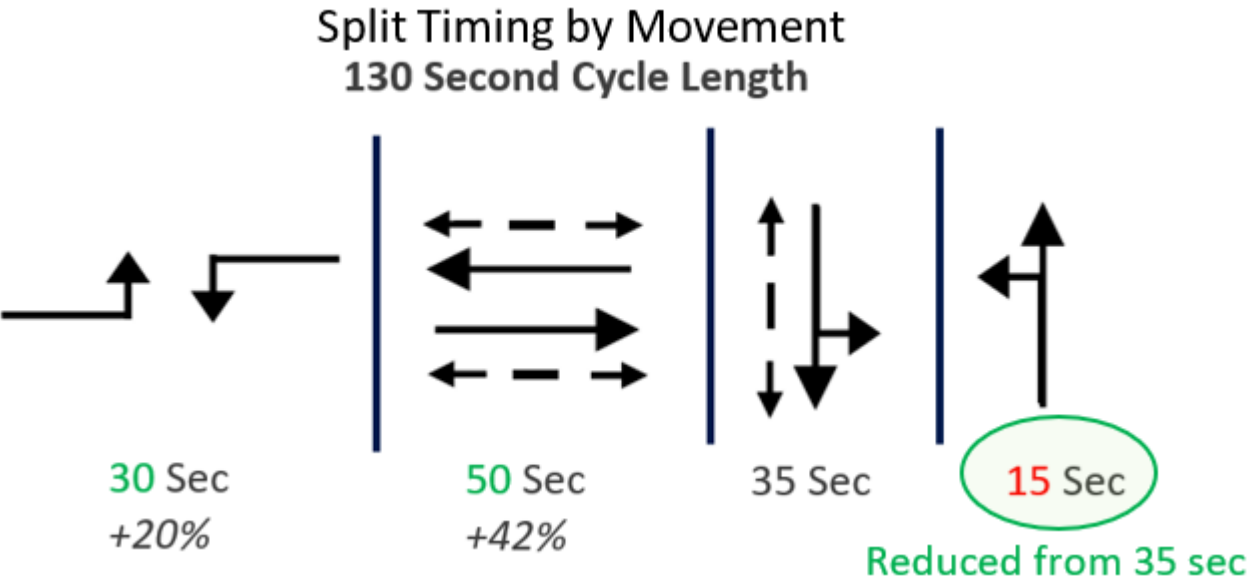
LRSP Report - Education

- **Education**
  - What is the best way to provide information to the public?
    - Fewer people watching television and local news
    - City website, local and social media outlets, utility bills, City publication/flyer, Community Centers
      - Existing City social media outlets: Facebook, Twitter, Instagram, NextDoor and YouTube
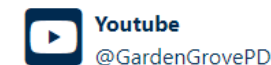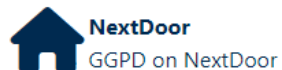   - Other social media applications and/or platforms (Whats App, WeChat, Reddit, TikTok, Discord, Snapchat, LinkedIn, etc.)

G City of Garden Grove

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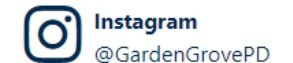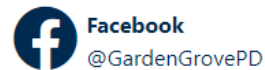
News

Free Sand Bags for Residents

During the rainy season, the City of Garden Grove, in conjunction with Orange County Fire Authority, provides up to 10 free sandbags to residents.

Fire stations provide sand and bags to be filled by the residents. Residents are asked to bring their own shovels. Residents are responsible for transporting as well as disposing of filled sandbags. Proof of residency is required.

Sandbags are provided at the following fire station locations:

Police Department Social Media

Facebook
@GardenGrovePD

Twitter
@GardenGrovePD

Instagram
@GardenGrovePD

NextDoor
GGPD on NextDoor

Youtube
@GardenGrovePD

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LRSP Report - Enforcement

- **Enforcement**

  - **Collisions**: Prioritize patrol and presence at high collision locations. Continuation with City staff on areas of concern ("hot spots").

  - **Pedestrians**: Increase citations for jaywalking

  - **Bicyclists**: Warn bicyclists that are riding on the wrong side of the roadway

  - **Speeding**: Increase the frequency and presence of patrols in high-speed areas. Evaluate speeding citation dismissals. Coordinate with City staff, court officials/Judges to resolve common dismissal patterns.

  - Utilize police department citizen volunteers to increase visibility/presence

Next Steps

- Additional Collision Data and Continued Efforts on the BCR Analysis

- Draft Report

- Living Document

    - Update collision data

    - Adjust Emphasis Areas based on changes from collisions, traffic patterns and/or development.

    - Changes to funding criteria.

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