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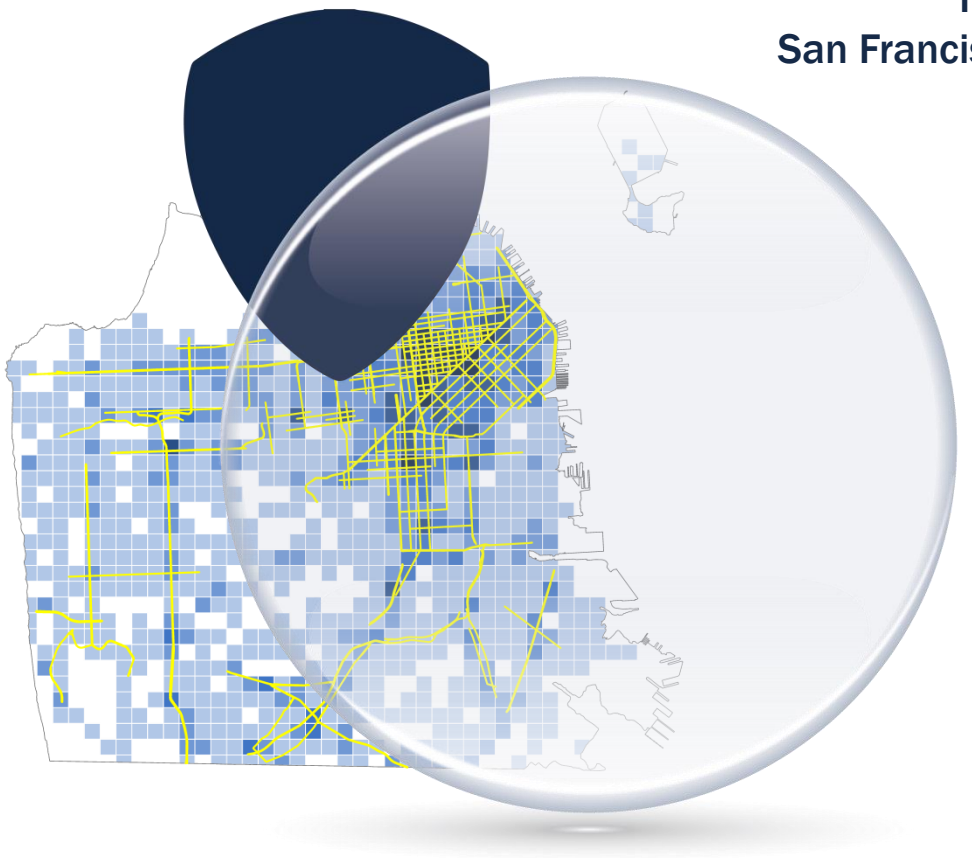
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Focus on Enforcement



Insights from research and analysis in support of San Francisco's Vision Zero plan to eliminate traffic deaths

Joe Lapka
Corina Monzón

3/14/2017

Presentation to the Vision Zero Taskforce

In support of VISION ZERO SF

Office of the Controller
City Services Auditor | City Performance

Recommendations:

1. The SFPD should seek out opportunities to extend its enforcement presence beyond the HIN so as to create the impression among the driving public that violations of the law, wherever they occur, will be detected. The selection of alternative sites should be data driven and should consider vulnerable populations at sites such as schools and senior centers. The online collision maps we have developed as a companion to this report can be used for such a purpose.

2. The SFPD should modify its Focus on the Five strategy so that it is better suited to the unique environment of each police district and allows for an appropriately varied response to the problem of traffic collisions. We recommend structuring the goal such that:
    a) each district is individually responsible for meeting its own district-based target; and

    a) the districts are jointly responsible for a department-wide goal (i.e., 100% of the districts should meet their target each month).

3. In implementing the recommendations of the Department of Justice, the SFPD should utilize the City's Vision Zero Action Strategy as a framework for working collaboratively with the community to understand traffic violence and jointly develop strategies to address it. As appropriate, the SFPD may additionally consider incorporating specific community concerns into its Focus on the Five goals.

4. The SFPD should develop and publicly report on measures related to procedural justice and social equity in traffic enforcement.

5. Consistent with our recommendations that the SFPD broaden the spatial extent of its traffic enforcement activities and the range of illegal behaviors on which it focuses, the SFPD should similarly ensure that the temporal scope of its operations is sufficient to deter illegal driving behaviors at all times throughout the day and over the course of a week.

6. The SFPD should consider the feasibility of measuring the level of effort it dedicates to traffic enforcement if it wishes to further explore the relationship between the level of policing and the rates of traffic collisions or violations in San Francisco.

7. In evaluating the Safe Speeds SF campaign, the City should not only evaluate its effectiveness in reducing average vehicle speeds and the number of speeding vehicles, but it should also evaluate its impact on the SFPD's resources and consider how sustainable the program is over the long term.

continued on next page…

Recommendations:

8. In light of scientific research which shows that effective traffic enforcement programs should be based on proactive rather than reactive measures, and given the proven efficacy of automated speed enforcement in preventing fatal and serious injury collisions, the City and County of San Francisco should continue to advance the use of automated speed enforcement as a tool for encouraging people to drive at safe speeds.

9. The SFPD should work quickly to implement its eCitation and eStops initiatives, which will enable officers to issue citations electronically and provide for the electronic collection of data on the race and ethnicity of those who are stopped. In implementing these initiatives, the SFPD should work with its Vision Zero partner agencies to ensure the new systems will support quality data analyses.

Introduction

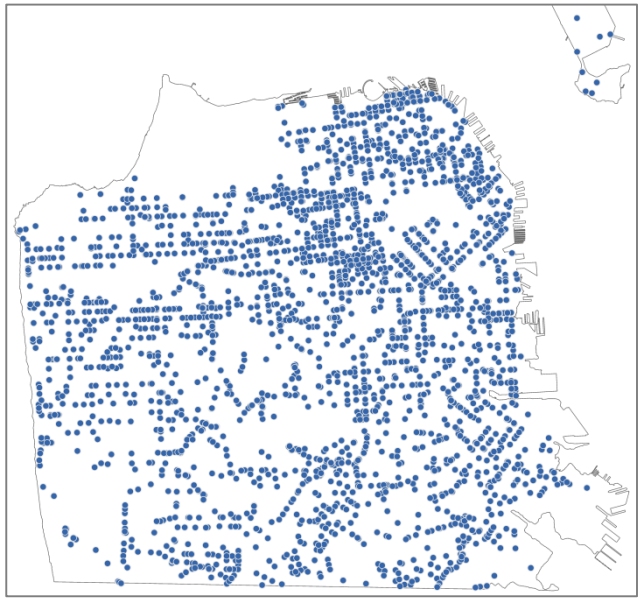
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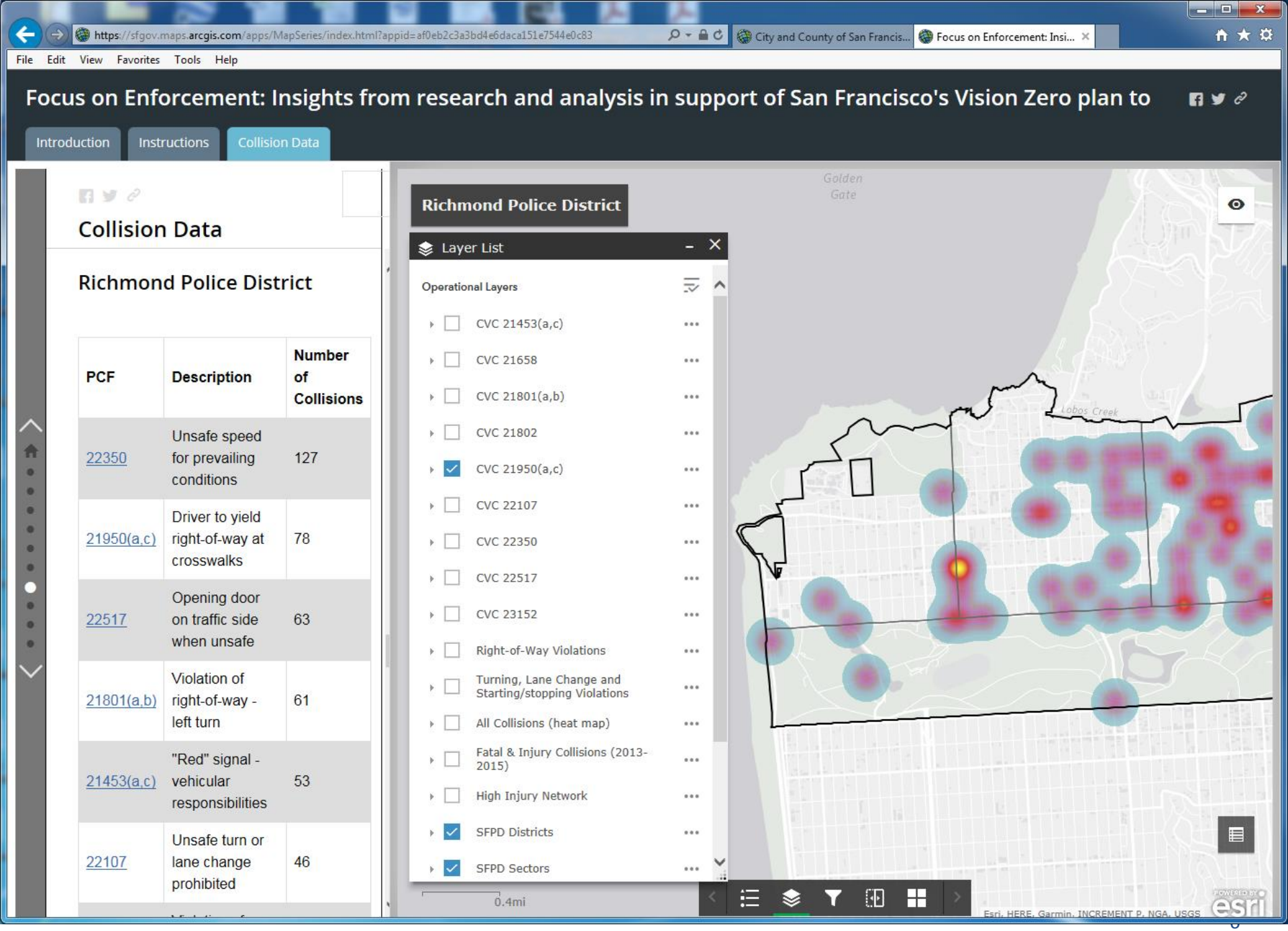
Distribution of Fatal & Injury Collisions (2013-2015)

A sizeable fraction of fatal and injury collisions occur outside of the Vision Zero HIN. The City's goal of eliminating traffic fatalities by 2024 requires enforcement strategies that deter illegal and unsafe driving behaviors not only on the 12% of city streets that make up the HIN but everywhere throughout the City.

Road Segment	Collision Severity			
	Fatal	***Severe Injury***	***Non-severe Injury***	***All Fatal & Injury***
High Injury Network	60% 56	64% 386	61% 5,129	61% 5,571
Non-High Injury Network	**39%** 37	**35%** 209	**38%** 3,247	**38%** 3,493
Unknown	1% 1	1% 4	1% 64	1% 69
	100% 94	100% 599	100% 8,440	100% 9,133



● Collisions not on the HIN



http://sfcontroller.org/collisiondata

Recommendations:

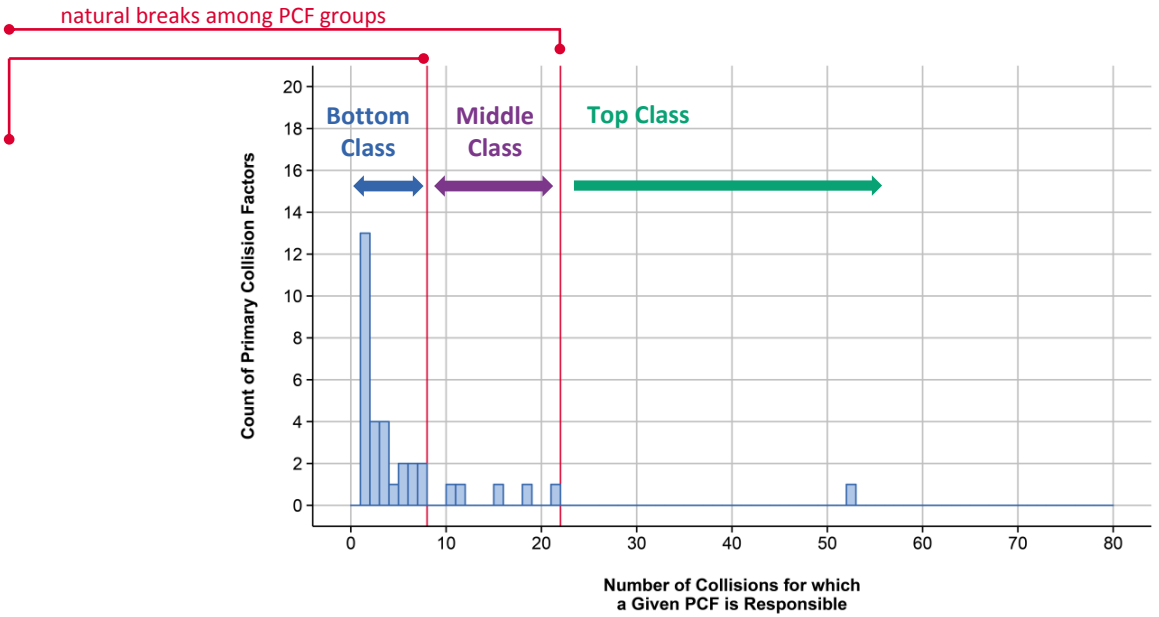
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Methodology for Identifying Priority Behaviors in each District

Jenks natural breaks optimization

PCF	Description	Count
22350	Unsafe speed for prevailing conditions	52
22107	Unsafe turn or lane change prohibited	21
21950(a,c)	Driver to yield right-of-way at crosswalks	18
23152	Driving under the influence of alcohol or drug	15
21453(a,c)	"Red" signal - vehicular responsibilities	12
22450(a)	Failure to stop at STOP sign	10
21801(a,b)	Violation of right-of-way - left turn	7
21955	Crossing between controlled intersections (Jaywalking)	7
21658(a,b)	Lane straddling/failure to use specified lanes	6
21802(a,b)	Violation of right-of-way - entering through highway	6
21954(a)	Pedestrians must yield right-of-way outside of crosswalks	5
22106	Unsafe starting or backing on highway	5
21453(d)	"Red" signal - pedestrian responsibilities	4
21456(a,b)	Pedestrian violation of "Walk" or "Wait" signals	3
21650	Failure to keep to right side of road	3



Results of PCF Clustering Analysis

(2013-2015; fatal and injury collisions excluding those with only a complaint of pain)

		District										Count
PCF	Description	Bayview	Central	Ingleside	Mission	Northern	Park	Richmond	Southern	Taraval	Tenderloin	
22350	Unsafe speed for prevailing conditions	x	x	x	x	x	x	x	x	x	x	10
21950(a,c)	Driver to yield right-of-way at crosswalks	x	x	x	x	x	x	x	x	x	x	10
21453(a,c)	"Red" signal - vehicular responsibilities	x	x	x	x	x	x	x	x	x	x	10
22107	Unsafe turn or lane change prohibited	x	x	x	x	x	x	x	x	x	x	10
23152	Driving under the influence of alcohol or drug	x	x	x	x	x		x	x	x		8
21801(a,b)	Violation of right-of-way - left turn		x	x	x	x		x	x	x		7
22517	Opening door on traffic side when unsafe		x		x	x		x	x		x	6
21658(a,b)	Lane straddling/failure to use specified lanes		x				x	x	x	x	x	6
21955	Crossing between controlled intersections (Jaywalking)		x		x		x		x		x	5
21954(a)	Pedestrians must yield right-of-way outside of crosswalks		x		x				x	x	x	5
22450(a)	Failure to stop at STOP sign	x		x		x				x		4
22106	Unsafe starting or backing on highway		x				x				x	3
21703	Following too closely prohibited						x			x		2
21802(a,b)	Violation of right-of-way - entering through highway							x		x		2
21453(d)	"Red" signal - pedestrian responsibilities					x					x	2
21950(b)	Pedestrian right-of-way at crosswalks regulated		x								x	2
21456(a,b)	Pedestrian violation of "Walk" or "Wait" signals										x	1
22101(d)	Violating special traffic control markers								x			1
	Count	6	12	7	9	9	8	9	11	11	12	

Recommended Collision Factors and Vehicle Code Violations for Focused Enforcement

			District								
	PCF	Description	Bayview	Central	Ingleside	Mission	Northern	Park	Richmond	Southern	Taraval	Tenderloin
●	22350	Unsafe speed for prevailing conditions	x	x	x	x	x	x	x	x	x	x
●	21950(a,c)	Driver to yield right-of-way at crosswalks	x	x	x	x	x	x	x	x	x	x
●	21453(a,c)	"Red" signal - vehicular responsibilities	x	x	x	x	x	x	x	x	x	x
	22107	Unsafe turn or lane change prohibited	x	x	x	x	x	x	x	x	x	x
	23152	Driving under the influence of alcohol or drug	x	x	x	x	x	x	x	x	x	x
●	21801(a,b)	Violation of right-of-way - left turn		x	x	x	x		x	x	x	
	22517	Opening door on traffic side when unsafe		x		x	x		x	x		x
	21658(a,b)	Lane straddling/failure to use specified lanes		x				x	x	x	x	x
●	22450(a)	Failure to stop at STOP sign	x		x		x				x	
	22106	Unsafe starting or backing on highway		x				x				x
	21703	Following too closely prohibited						x			x	
	21802(a,b)	Violation of right-of-way - entering through highway							x		x	
	22101(d)	Violating special traffic control markers								x		
	23123(a)	Driving while using a wireless telephone not configured for hands-free use	x	x	x	x	x	x	x	x	x	x
	23123.5(a)	Driving while using a wireless device to send, read, or write text communication unless the device is used in a hands-free and voice-operated manner	x	x	x	x	x	x	x	x	x	x
		Count	8	11	9	9	10	10	11	11	12	10

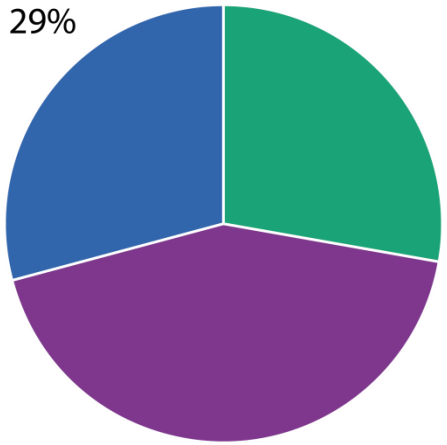
● Current Focus on the Five Factors

x Factors resulting from the clustering analysis

x Expanded factors

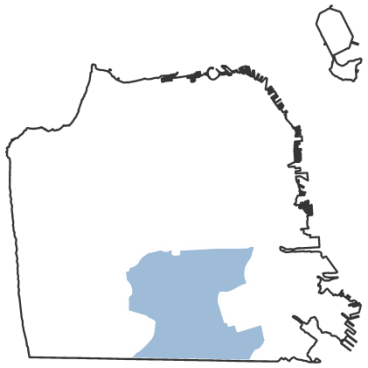
Distribution of the Primary Collision Factors in the Ingleside District

The top two classes of collision factors[1] account for 71% of collisions with known primary factors[2,3]



28% — 28% - Unsafe speed for prevailing conditions [CVC § 22350]

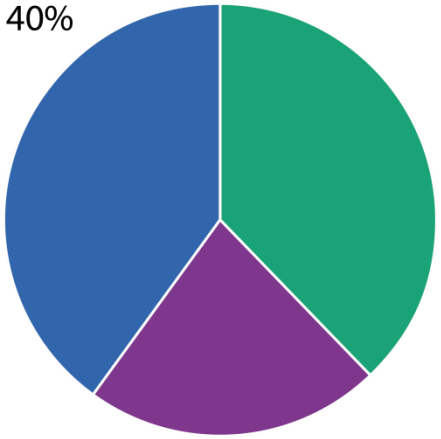
43% —
- 12% - Driver to yield right-of-way at crosswalks [CVC § 21950(a,c)]
- 7% - "Red" signal - vehicular responsibilities [CVC § 21453(a,c)]
- 6% - Violation of right-of-way - left turn [CVC § 21801(a,b)]
- 6% - Unsafe turn or lane change prohibited [CVC § 22107]
- 6% - Driving under the influence of alcohol or drug [CVC § 23152]
- 5% - Failure to stop at a STOP sign [CVC § 22450(a)]



Notes:
1. Excluding pedestrian violations of the California Vehicle Code
2. Excluding complaint of pain cases
3. Some totals may be slightly off due to rounding

Distribution of the Primary Collision Factors in the Central District

The top two classes of collision factors[1] account for 60% of collisions with known primary factors[2,3]



17% - Driver to yield right-of-way at crosswalks [CVC § 21950(a,c)]

12% - Unsafe speed for prevailing conditions [CVC § 22350]

9% - "Red" signal - vehicular responsibilities [CVC § 21453(a,c)]

5% - Unsafe turn or lane change prohibited [CVC § 22107]

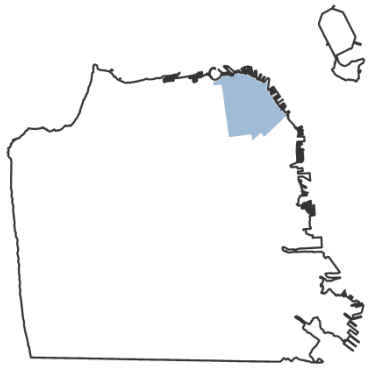
4% - Opening door on traffic side when unsafe [CVC § 22517]

4% - Lane straddling/failure to use specified lanes [CVC § 21658(a,b)]

3% - Violation of right-of-way - left turn [CVC § 21801(a,b)]

3% - Driving under the influence of alcohol or drug [CVC § 23152]

2% - Unsafe starting or backing on highway [CVC § 22106]



Notes:
1. Excluding pedestrian violations of the California Vehicle Code
2. Excluding complaint of pain cases
3. Some totals may be slightly off due to rounding

General Groups of Dangerous Behaviors

1. Speeding and Speed-related Violations

- CVC §21703 – Following too closely prohibited
- CVC §22350 – Unsafe speed for prevailing conditions

2. Right-of-Way Violations

- CVC §21453(a,c) – "Red" signal – vehicular responsibilities
- CVC §21950(a,c) – Driver to yield right-of-way at crosswalks
- CVC §21801(a,b) – Violation of right-of-way – left turn
- CVC §21802(a,b) – Violation of right-of-way – entering through highway
- CVC §22450(a) – Failure to stop at a STOP sign

3. Impaired & Distracted Driving

- CVC §23152 – Driving under the influence of alcohol or drug
- CVC §23123(a) – Driving while using a wireless telephone not configured for hands-free use
- CVC §23123.5(a) – Driving while using a wireless device to send, read, or write text communication unless the device is used in a hands-free and voice-operated manner

4. Turning, Lane Change and Stopping/Starting Violations

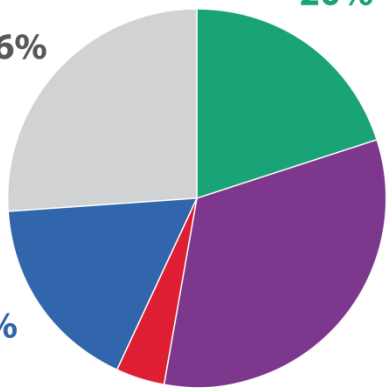
- CVC §22107 – Unsafe turn or lane change prohibited
- CVC §21658(a,b) – Lane straddling/failure to use specified lanes
- CVC §22101(d) – Violating special traffic control markers
- CVC §22517 – Opening door on traffic side when unsafe
- CVC §22106 – Unsafe starting or backing on highway

5. Community Priorities

1-2 additional district-specific factors based on community input

Distribution of the Primary Collision Factors Recommended for Focused Enforcement

The thirteen collision factors we are recommending for focused enforcement collectively account for approximately 74% of collisions with known primary factors



Speeding and Speed-related Violations

- 18% - Unsafe speed for prevailing conditions [CVC § 22350]
- 2% - Following too closely prohibited [CVC § 21703]

Right-of-Way Violations

- 13% - Driver to yield right-of-way at crosswalks [CVC § 21950(a,c)]
- 9% - "Red" signal - vehicular responsibilities [CVC § 21453(a,c)]
- 6% - Violation of right-of-way - left turn [CVC § 21801(a,b)]
- 3% - Failure to stop at a STOP sign [CVC § 22450(a)]
- 2% - Violation of right-of-way - entering through highway [CVC § 21802(a,b)]

Impaired & Distracted Driving

- 4% - Driving under the influence of alcohol or drug [CVC § 23152]

Turning, Lane Change and Stopping/Starting Violations

- 8% - Unsafe turn or lane change prohibited [CVC § 22107]
- 3% - Opening door on traffic side when unsafe [CVC § 22517]
- 3% - Lane straddling/failure to use specified lanes [CVC § 21658(a,b)]
- 2% - Unsafe starting or backing on highway [CVC § 22106]
- 1% - Violating special traffic control markers [CVC § 22101(d)]

For More Information

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