

Road Safety

This chapter provides an overview of road safety in the City of Fontana and within the Inland Empire. The chapter includes an analysis of collision¹ data and outlines potential opportunities for improving the safety of the city's transportation network.

Methodology and Data Sources

This analysis is conducted using collision data representing collisions that occurred during the ten-year period between January 1, 2010 and December 31, 2019 in Fontana and uses the Inland Empire (Riverside and San Bernardino counties) as a comparison geography, using data retrieved from the Transportation Injury Mapping System (TIMS) (SafeTREC 2021). TIMS applies a methodology to clean and geocode data from California Statewide Integrated Traffic Records System (SWITRS), a database of police traffic records (California Highway Patrol 2021). Because the database uses police records, it only contains collisions for which police reports were filed and thus likely under-reports the true number of collisions in Fontana or the Inland Empire.

Collision Data Analysis

During this ten-year period, there were 7,199 collisions in the City of Fontana, which resulted in 149 deaths and 10,068 injuries. In the same period of time, there were 185,249 collisions in the Inland Empire, which resulted in 5,326 deaths and 265,340 injuries. Normalized by the average population over those 10 years, Fontana saw an average of 3.50 collisions per 1,000 residents per year, compared with the Inland Empire's average of 4.15 collisions per 1,000 residents per year. Overall, the collisions that occurred in Fontana were less severe (less likely to result in a fatality or severe injury). Figure 7.01 shows the distribution of collisions by severity.

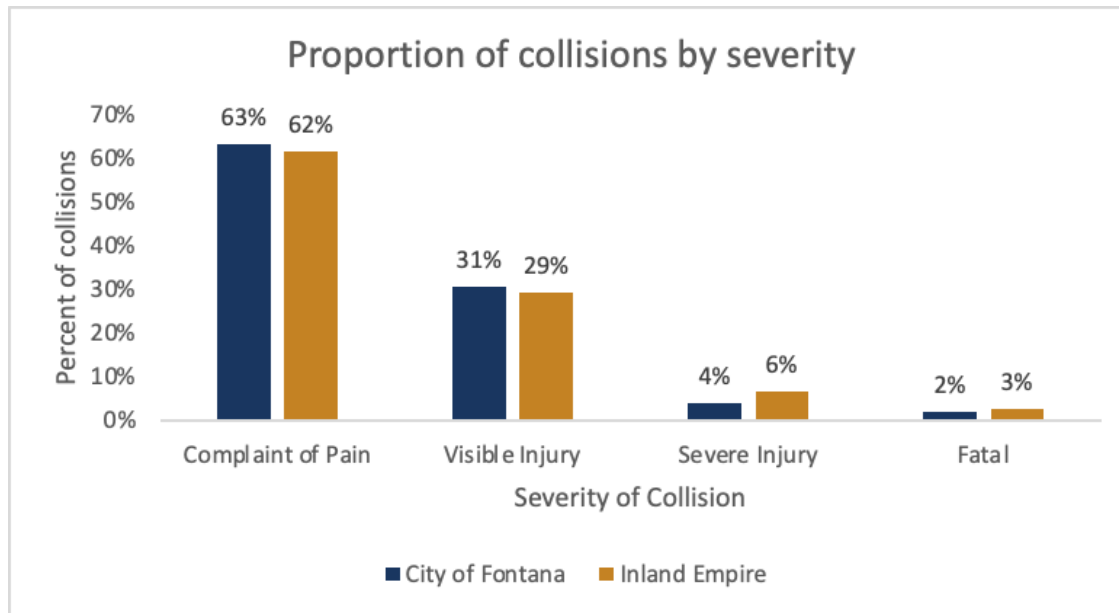
Modes Involved and Collision Severity

There were higher rates of collisions that involved trucks, pedestrians, and cyclists in Fontana when compared with in the Inland Empire. Figure 7.02 shows the proportion of collisions involving certain modes of transport for both geographies. Each difference is

¹ This report refers to collisions as such, and not as "accidents," which they are often colloquially referred to as. The field of traffic safety refers to them as such because "accident" implies that no one is at fault, when in reality that may not be the case.

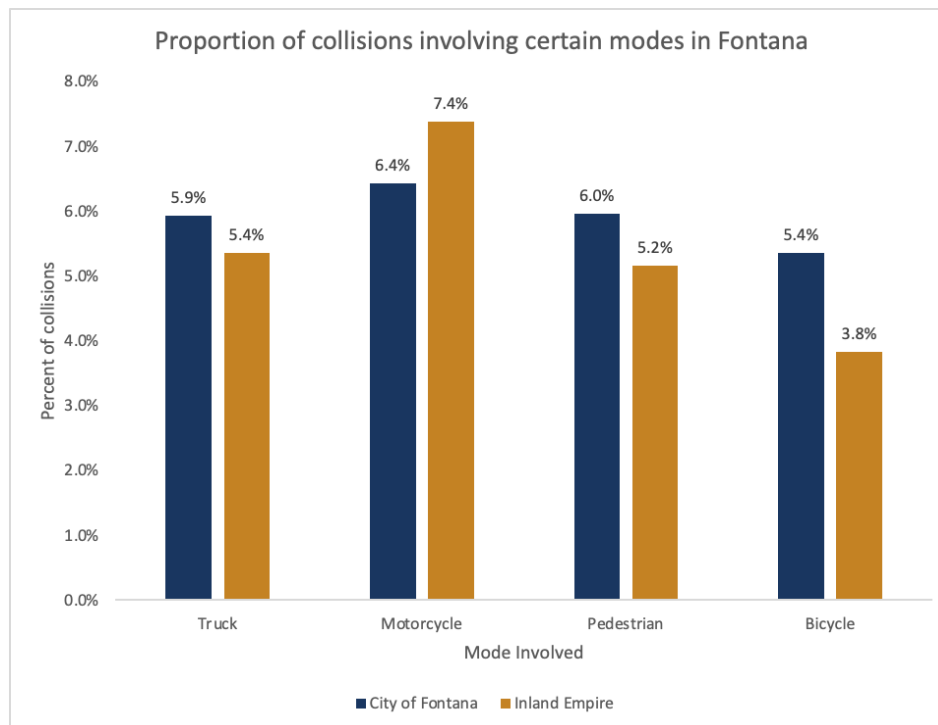
statistically significant at $p < 0.01$. Not only does heavy truck traffic increase the risk of collisions, but collisions with trucks involved are more likely to result in severe or fatal injuries (Chen et al. 2020).

Figure 7.01: Proportion of Collisions by Severity



Source: Author generated with TIMS data.

Figure 7.02: Proportion of Collisions Involving Certain Modes

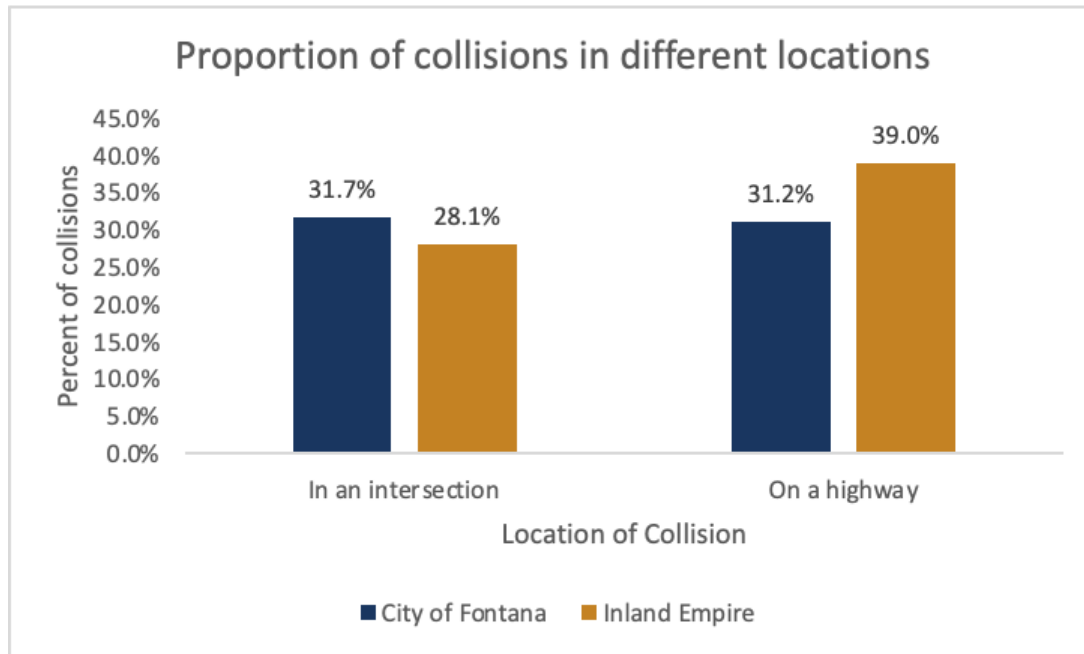


Source: Author generated with TIMS data.

Location of Collisions

Fontana had higher rates of collisions occurring at intersections than on highways, compared to the Inland Empire; Figure 7.03 shows the proportion of collisions occurring in each location. Both differences are statistically significant at $p < 0.001$. While the roads considered “highways” are technically the State of California’s Right of Way, intersections on local roads are under the jurisdiction of the City.

Figure 7.03: Proportion of Collisions at Different Locations on the Road Network



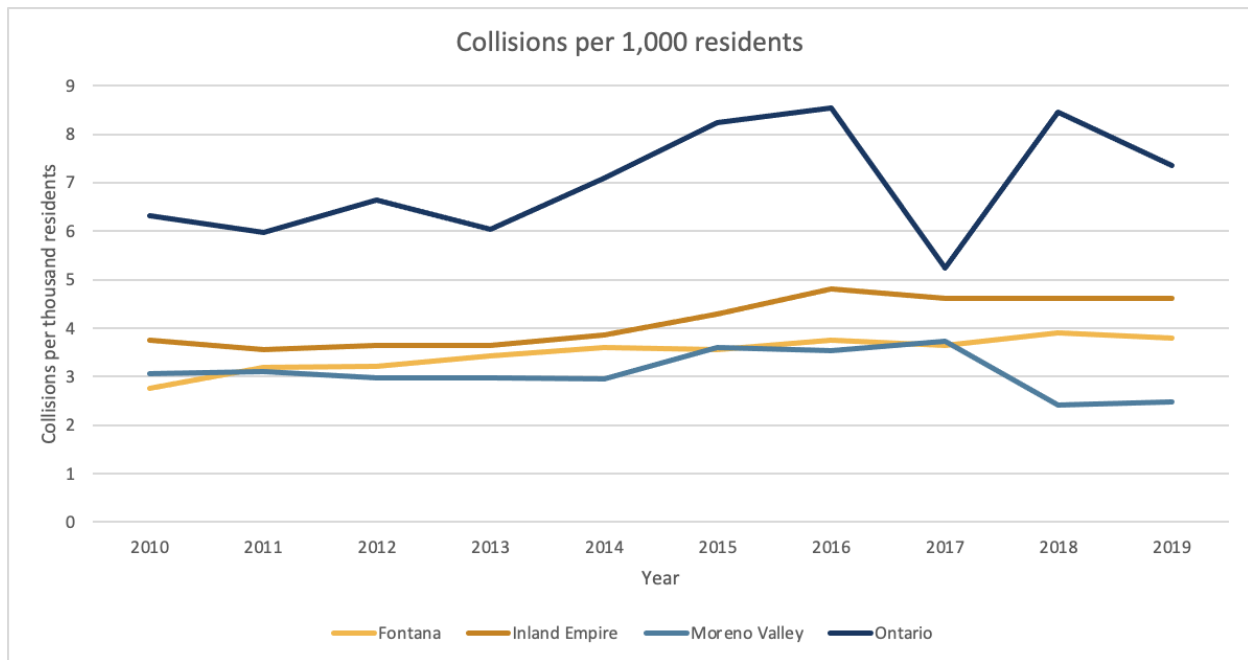
Source: Author generated with TIMS data.

The roads in Fontana and the Inland Empire are frequently congested, and data suggest that collision rates in congested traffic states are up to 5 times higher than collision rates in free-flow traffic (Yeo, Jang, and Skabardonis 2010), even though collisions at slower speeds on congested roads may be less deadly. Although the City of Fontana is limited in its response to traffic congestion, it is important to understand the factors that affect the frequency of traffic collisions in order to understand what countermeasures they can take to make the roads safer.

While there are many factors involved in a collision, a safe systems approach builds in a buffer for human error. Drivers under the influence of alcohol or drugs have a higher rate of being involved in severe and fatal collisions (NHTSA 2021), and a safe systems approach to road safety can reduce the chances of such collisions from happening in the first place,

and minimize their severity when these collisions do occur. In Fontana over the analysis period, 10.5% of collisions (757 collisions) involved alcohol, compared with 11.6% (21,544 collisions) in the Inland Empire. While Fontana does have a smaller rate of collisions involving alcohol than the region, the vast majority of collisions do not involve alcohol, therefore infrastructure improvements could and should be implemented to prevent the collisions from occurring.

Figure 7.04: Collisions in Fontana, Moreno Valley, Ontario, and the Inland Empire Normalized by Population



Source: Author generated with TIMS data.

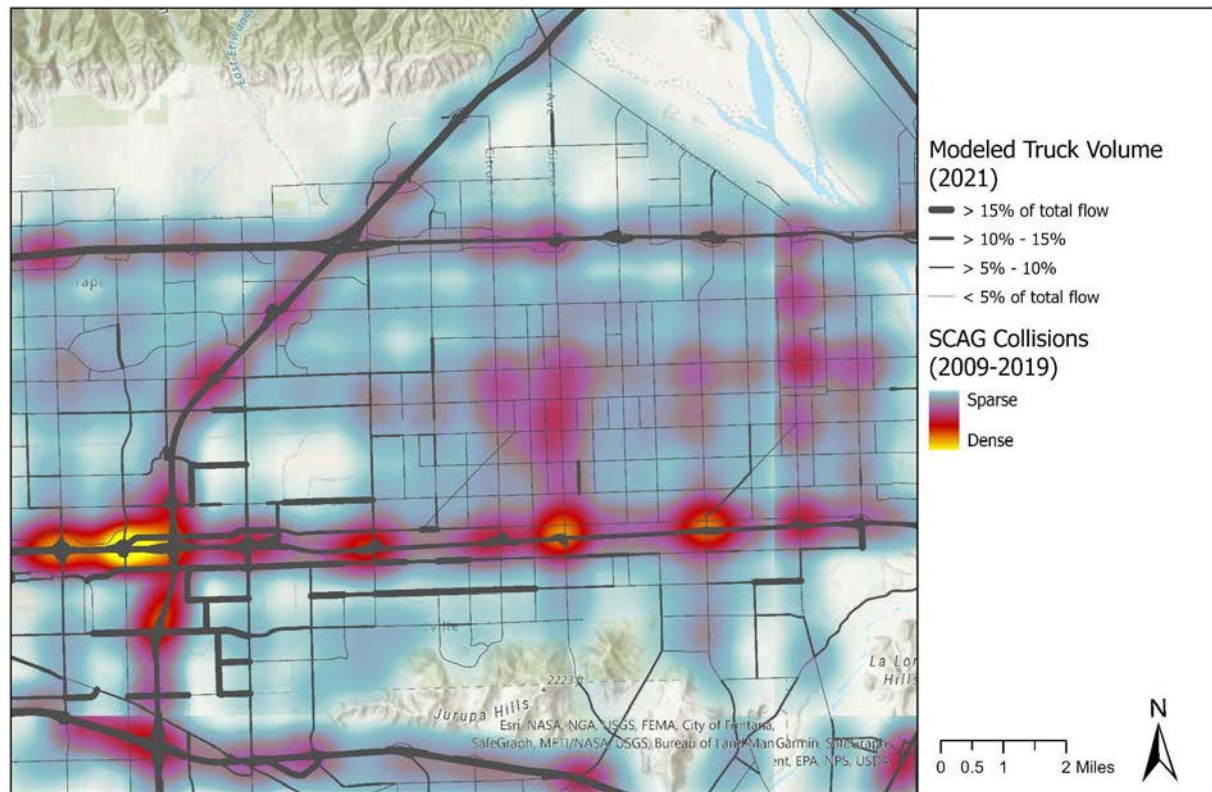
Future Data Needs

Collisions in Fontana were also compared with those in the Inland Empire, Moreno Valley, and Ontario; two similar, nearby cities. Figure 7.04 shows that when normalized by population, Fontana is seeing fewer collisions within their jurisdiction. Although this is a good baseline, there is a need for more detailed road safety metrics, such as comparing collisions against counts of vehicular and non-automotive traffic. While the City did have vehicular traffic counts for certain streets, there were only 35 roads in the network with Average Daily Traffic (ADT) counts from the past five years. There is, therefore, an opportunity for the City to collect more robust traffic counts. In addition to collecting ADT, the City can collect up-to-date data on peak hour traffic, 85th percentile speed, and traffic counts across modes to monitor traffic safety throughout its road network.

Also seen in Figure 7.04 is that the rate of collisions in Fontana is increasing over time, even when accounting for population growth. Although Ontario sees the highest rates of per capita collisions, they have started to address road safety issues and were recently awarded a \$470,000 grant from the California Office of Traffic Safety (City of Ontario 2021). The City of Moreno Valley also acknowledged that traffic safety is an issue and created a [Traffic Safety Commission](#) to both evaluate traffic safety improvements and educate the public (Moreno Valley n.d.). **The City should instate a Traffic Safety Commission to monitor traffic safety and determine where traffic safety investment should be directed (Recommendation 7.02).** This Traffic Safety Commission should also be tasked with securing funding to be used for infrastructure improvements.

Figure 7.05 shows a heat map of where the collisions occurred, along with the Southern California Association of Government's truck forecast model. There are hot spots near the on- and off-ramps of freeways, and on the local streets. Sierra Boulevard is one of the local streets with the highest number of collisions, goes through the center of downtown Fontana, and is a truck route. **Consider the collision history of the road network when designing the truck priority network (Recommendation 7.03).** The following local streets saw the highest number of collisions during the ten-year period:

- Sierra (659)
- Foothill (430)
- Citrus (396)
- Cherry (306)
- Valley (276)
- Baseline (270)
- Arrow (207)
- Juniper (165)
- Jurupa (159)
- Merrill (153)
- Slover (147)
- Beech (111)
- Alder (110)
- Mango (107)
- San Bernardino (103)
- Randall (103)
- Cypress (80)
- Miller (78)
- Palmetto (73)
- Locust (68)

Figure 7.05: Heat Map of Collisions in Fontana and Neighboring Cities

Source: Author generated with TIMS data.

Although we were interested in spatially analyzing traffic collisions with respect to the current bicycle network and city recommended truck routes, the city does not maintain a database with these shapefiles. **The City should actively maintain an open data portal database with documents and files to support their planning initiatives (Recommendation 7.04).** Open data portals can increase constituent participation and data transparency with the public (Lněnička and Nikiforova 2021). Although the city does technically maintain an [open data portal](#), there is limited data included on it, and the available data is not well documented. The [City of Oakland](#) has an exemplary Open Data Portal, with over 700 files available to the public. The nearby city of [Rancho Cucamonga](#) has almost 200 files available on their Open Data Portal, including planning-related data like bike lanes and truck routes, and also valuable information for the public like infrastructure work order requests, fire-hazard maps, and street sweeping schedules.

Traffic Safety and Community Engagement

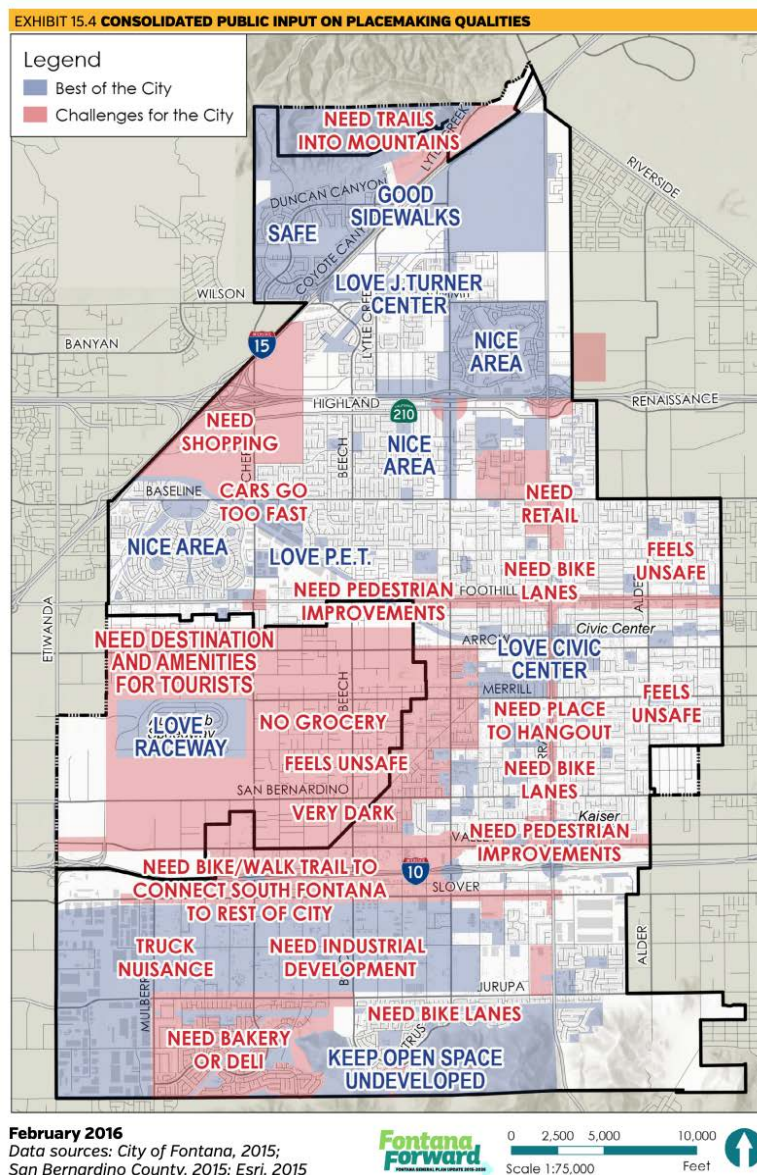
Fontana Residents have expressed a desire for safer roads. Chapter 15 of the 2015 [City of Fontana General Plan](#) includes the results of a public opinion survey on land-use planning initiatives. Many of the priorities the community identified were related to transportation and traffic safety investments. 87% of respondents said they view it as a priority to “make it easier and safer to walk to local destinations.” 87% of respondents said it was a priority to “redevelop and revitalize Foothill Boulevard and Valley Boulevard,” two streets with a high number of collisions. Between 2010 and 2019, there were 278 collisions on Valley Boulevard that resulted in 389 injuries and 4 deaths (one pedestrian, one motorcyclist, and two drivers); during the same period there were 430 collisions on Foothill Boulevard that resulted in 607 injuries and 22 deaths (eight pedestrians, two cyclists, and 12 drivers). 74% of respondents said that “creat[ing] a safe network of bike routes” was a priority.

The General Plan also includes a community-made map that identifies “best of” and “challenges for” the City of Fontana; this map is shown in Figure 7.06. Although some of the comments refer to the unincorporated area of San Bernardino County, many comments directly refer to City land. Fontana residents identify multiple areas that they feel need bike lanes and pedestrian improvements, in addition to areas where “cars go too fast,” and where “trucks [are a] nuisance.” Residents also identify a lack of bicycle and pedestrian facilities that connect the Southern portion of the city to the rest of the city. Two areas within the city’s jurisdiction were identified as “feel[ing] unsafe,” and while this may not be directly related to traffic safety, infrastructure improvements like additional street lighting could help mitigate these feelings.

The unincorporated area outside of the City jurisdiction still impacts the residents of Fontana. Many Fontana residents drive through this area, and the land sits within the Sphere of Influence of the City. Just as the Kaiser Steel Mill and the Speedway are associated with Fontana due to their intertwined history with the City, the areas where the community reported “feel[ing] unsafe” and that are “very dark” are associated with the city. Though it is not in the jurisdiction of the City, the City should work with county officials to improve the safety conditions of the roads in this area, to the benefit of its residents and its own image.

Although this map was created in 2016 and there has been considerable investment in bicycle and pedestrian infrastructure since this feedback was received, it represents the sentiment of former and current Fontana residents. **The City should collect ongoing community input in order to identify locations in the city where Fontana residents feel unsafe and where traffic safety investment should be directed (Recommendation 7.05).** The city should also work with residents to understand what aspects of safety the community values and feels is most important to address.

Figure 7.06: “Consolidated Public Input on Placemaking Qualities” Map from Fontana General Plan



Source: Fontana General Plan

Strategies and Funding Sources

This section details recommendations and strategies to improve road safety in the city of Fontana and identifies potential funding sources that can be used to help implement these road safety improvements.

Recommendation 7.01: The city should work with Caltrans to improve the safety of roads that are in Caltrans Right of Way

Though the city does not have jurisdiction over state highways, the City should make sure that Caltrans is aware that their roads see high rates of collisions. Furthermore, there are a multitude of examples of local jurisdictions working with Caltrans to improve traffic safety on roads in Caltrans right of way. In 2020, the City of Claremont implemented traffic calming measures on Foothill Blvd (Route 66) with their [Foothill Blvd Master Plan Improvements Project](#). There is an opportunity for the City to work with Caltrans, make sure they know about the high rates of collisions on certain roads, and create a plan to improve road safety on these roads to reduce local collisions.

Recommendation 7.02: The City should instate a Traffic Safety Commission to monitor traffic safety and determine where traffic safety investment should be directed

Following in Moreno Valley's footsteps, Fontana should create a Traffic Safety Commission tasked with securing funding and directing said funding to traffic safety improvements. This commission should talk with officials in neighboring cities to learn about the work they do to improve traffic safety and learn about how they secure funding for their traffic safety projects, like the grant Ontario received (see page 7.5).

Recommendation 7.03: Consider the collision history of the road network when designing the truck priority network

As mentioned above, collisions involving trucks are more likely to be severe, so the city should consider high-injury corridors when designing truck priority routes. The city should also consider whether they want to remove Sierra Blvd from the priority truck network since it is a high-injury corridor and runs through the center of downtown.

Recommendation 7.06: Improve the existing street network to calm traffic in particularly dangerous locations

It is clear that there are "hot-spots" of particularly dangerous streets on the street network in the City. The City can implement traffic calming measures to improve road safety. While

some road safety measures require capital investment, like lane narrowing or infrastructure-based improvements like speed humps, others like signal retiming to encourage slower speeds are low-cost and quick-turnaround solutions. In 2020, Alta Planning, along with the California Bicycle Association published a [report detailing “Quick Build” solutions for safer streets](#). These “quick build” projects implement inexpensive materials that can be installed quickly, like posts, planters, and striping, that are meant to be installed for a trial period. Because they are temporary, the City can adjust or remove elements based on constituent feedback. The National Association of City Transportation Officials (NACTO) details various [Speed Reduction Mechanisms](#) which offer a variety of local safety improvements the City can implement (NACTO 2021). NACTO publishes a variety of “best practices” guides that can be used when designing street improvements (NACTO 2021). Investment in infrastructure improvements also will help to create more job opportunities to employ local residents.

Recommendation 7.07: Partner with religious and faith-based institutions to help fight homelessness

When talking with local stakeholders, the team learned that many pedestrian collisions in the city involve unhoused residents of Fontana crossing the streets late at night. Faith-based institutions that are interested in tackling issues of homelessness in the City may be good partners in decreasing the number of pedestrian-related fatalities and collisions that are related to homelessness.

Recommendation 7.08: Leverage the city’s Safe Routes to School partnership to create “safer streets and encourage more students to walk and bike to and from school

The city currently partners with Safe Routes to School and has “Suggested Routes to School for each school in the City. However, the City can do more to leverage the Safe Routes to School toolkit to encourage students to walk and bike to school. The [toolkit](#) already includes activities for keeping families engaged, incorporating community partners and incentivizing students to walk to school, like “Monthly or Weekly Walk & Roll Days,” “Bike Rodeos,” or “Safety Assemblies” (City of Fontana 2017). The toolkit also details a list of funding sources on pages 49-50, and these should be utilized to help finance infrastructure improvements.

Recommendation 7.09: Create a Local Roadway Safety Plan using state funding

Caltrans offers cycles of grants to help fund the development of Local Roadway Safety Plans (LRSP), to provide “a framework for organizing stakeholders to identify, analyze, and

prioritize roadway safety improvements on local and rural roads. The process of developing an LRSP can be tailored to local protocols, needs, and issues” (California n.d.). In October 2021, Caltrans closed their most recent application cycle, but there may be opportunities for funding these plans in the future. We recommend that the City remain aware of this funding stream, should Caltrans open up their call for applications.

Recommendation 7.10: Stay up to date on the latest “best practices” of road safety

As mentioned in Recommendation 7.3, NACTO publishes best practices for roadway design. Additionally, Build Back Better, which passed in the US House of Representatives in November 2021, includes funding for road safety initiatives. Section 110006 allocates funding to “develop recommendations and best practices to help States collect and use traffic safety enforcement data to promote equity and reduce traffic-related fatalities and injuries” (US House of Representatives 2011). As funding is allocated, best practices will be compiled; these practices should be followed when updating local roadway design.

Recommendation 7.11: Commit to Vision Zero goals and pledge to eliminate all serious and fatal injuries on the road via a systems approach

To address concerns of road safety, transportation planners have been rethinking how traffic safety is implemented. The traditional approach has been to focus on changing driver behavior, where specific and general deterrence through enforcement is meant to reduce unsafe actions by increasing the perceived costs and decreasing perceived benefits of committing offenses. Despite improvements in safety technology, policy, and enforcement, Fontana continues to have unsafe roads. To establish itself as a leader within the Inland Empire, the City of Fontana should commit to [Vision Zero](#) goals and pledge to eliminate all serious and fatal injuries on the road via a systems approach, detailed below.

The goal of a transportation system is not just to provide efficient mobility but to ensure access to equitable, sustainable, and safe mobility. We must move towards a safe system which eliminates injuries and fatalities. The Vision Zero approach recognizes that road users make mistakes, and we must build in safety buffers so mistakes do not cost someone’s life (Belin, Tillgren, and Vedung 2012; Tingvall and Haworth 1999). Examples of these safety infrastructure buffers are those listed above for calming traffic like lane narrowing, speed bumps, smaller radii around corners, and those detailed in the NACTO best practices and the quick build guide described above. Vision Zero is an ethical imperative for all road safety measures that says one death on the road is too many. It is not just a long-term goal, but a paradigm shift, reframing safety from a conversation about preventing collisions to preventing injury, death, and the trauma associated with loss.

Vision Zero is also a multi-disciplinary approach to road safety. This idea is captured in the five E's that are traditionally used to describe Vision Zero: Evaluation, Engineering, Education, Encouragement, and Enforcement. This cross-cutting, systems approach is how Oslo, Norway has drastically improved road safety over the last two decades. After committing to Vision Zero in 1999 they dropped to only 1 death and 33 serious injuries in 2019 (Hartmann and Abel 2020). Political and public buy-in was the key element for these road safety improvements. Oslo not only made top-down changes to road design standards that prioritized slower and pedestrian-friendly streets (including establishing a car-free city center) but also received community support in educating vulnerable road users about the changes and encouraging mode shifts to reduce car traffic. Engineering is the priority in Vision Zero, and it shows in Norway where street improvements have created a safer environment without relying on forcing drivers to change behaviors.

Many cities in California have committed to Vision Zero Goals. In addition to larger cities, like Los Angeles, San Jose, San Francisco, and San Diego, smaller cities like Alameda, Santa Barbara, San Luis Obispo, and La Mesa have already committed to Vision Zero (Vision Zero Network 2021).

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