VRU VULNERABILITY IN LOS ANGELES AND SAN BERNARDINO COUNTIES, CA

Vulnerable road users (VRUs), such as pedestrians and cyclists, are continually at risk on our roadways. In just one year from 2020 to 2021, fatal collisions involving VRUs increased a staggering 13% and accounted for approximately 20% of the 42,915 people killed in motor vehicle crashes.

In California, the most populous state in the US, VRUs also saw a slight increase in the number of fatalities. By analyzing past crash data from crash-prone areas, and incorporating critical variables like speed, road characteristics, and proximity to high-traffic areas like schools, shopping areas, and sports fields, Michelin Mobility Intelligence is able to rank the 14 cities at the highest risk for VRUs in **Los Angeles** and **San Bernardino counties**. The most risky are marked as red and the least risky are marked as green.

VULNERABLE ROAD USER FATALITIES IN TRAFFIC CRASHES (2009-2019)
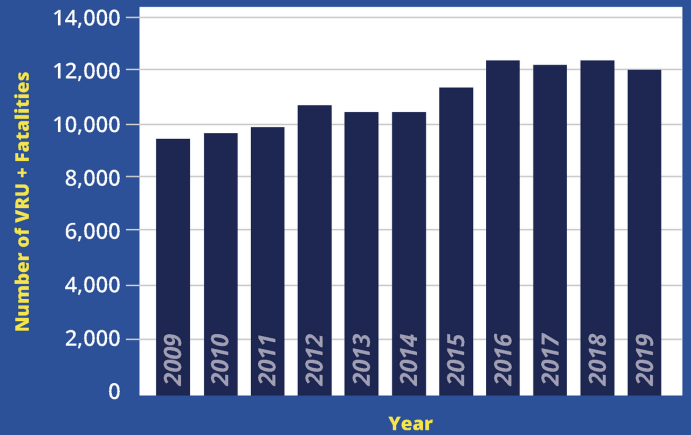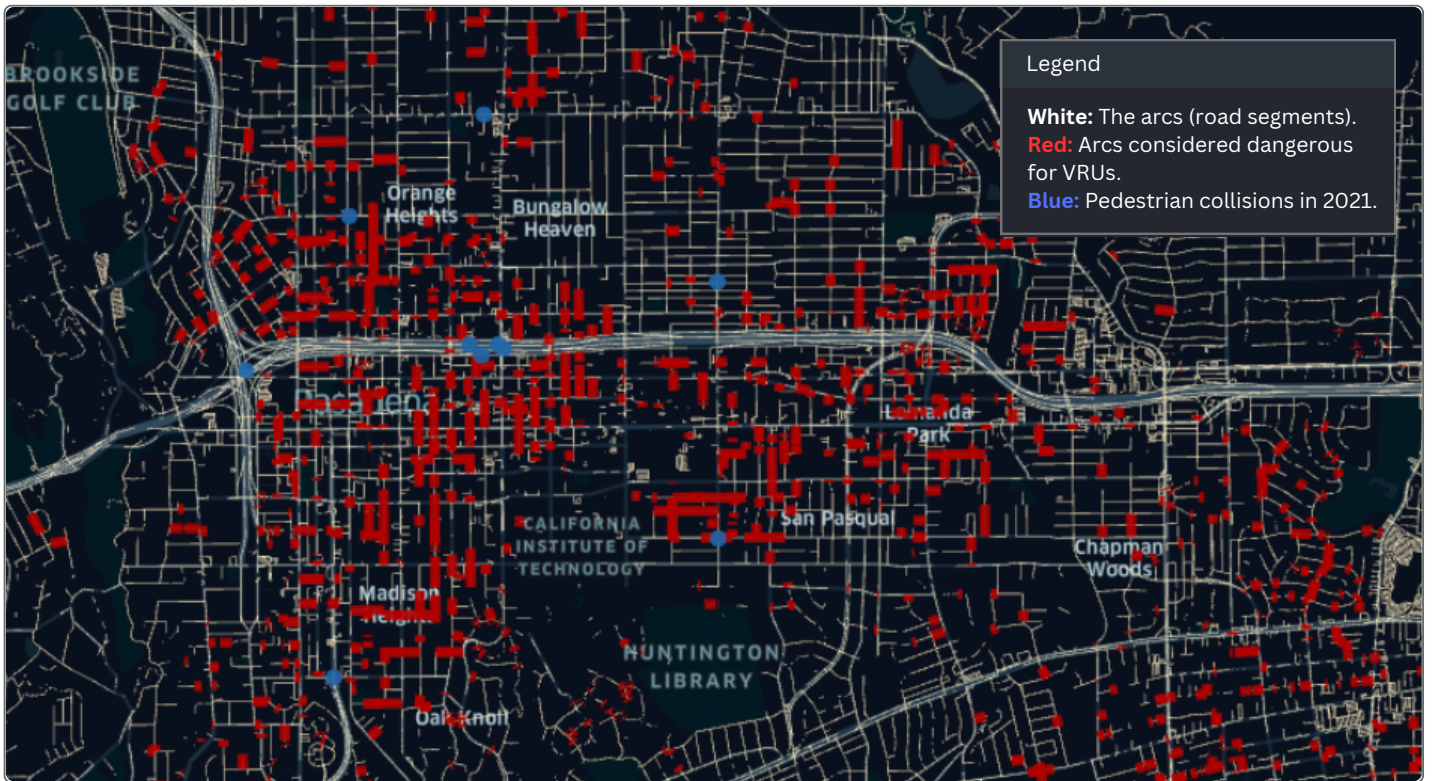

*Source: FARS 1980-2018 Final File, 2019 ARF. *Excludes other/unknown non-occupants.*

SAFETY INSIGHTS ON SOUTHERN CA'S MOST DANGEROUS COUNTIES

First, let's look at the overall rankings for the riskiest cities in Los Angeles and San Bernardino counties for VRUs. The two most dangerous areas are East Los Angeles and the city of San Bernardino. Let's take a look at the algorithm's results for an area in **North Los Angeles**.

Legend

White: The arcs (road segments).
Red: Arcs considered dangerous for VRUs.
Blue: Pedestrian collisions in 2021.

The algorithm has indicated this area at high risk for VRU collisions, with a risk class of 4 on a scale from 1 to 5. Let's analyze this zone in a little more detail:

SPEEDING AND HARSH ACCELERATION

HARSH BRAKING
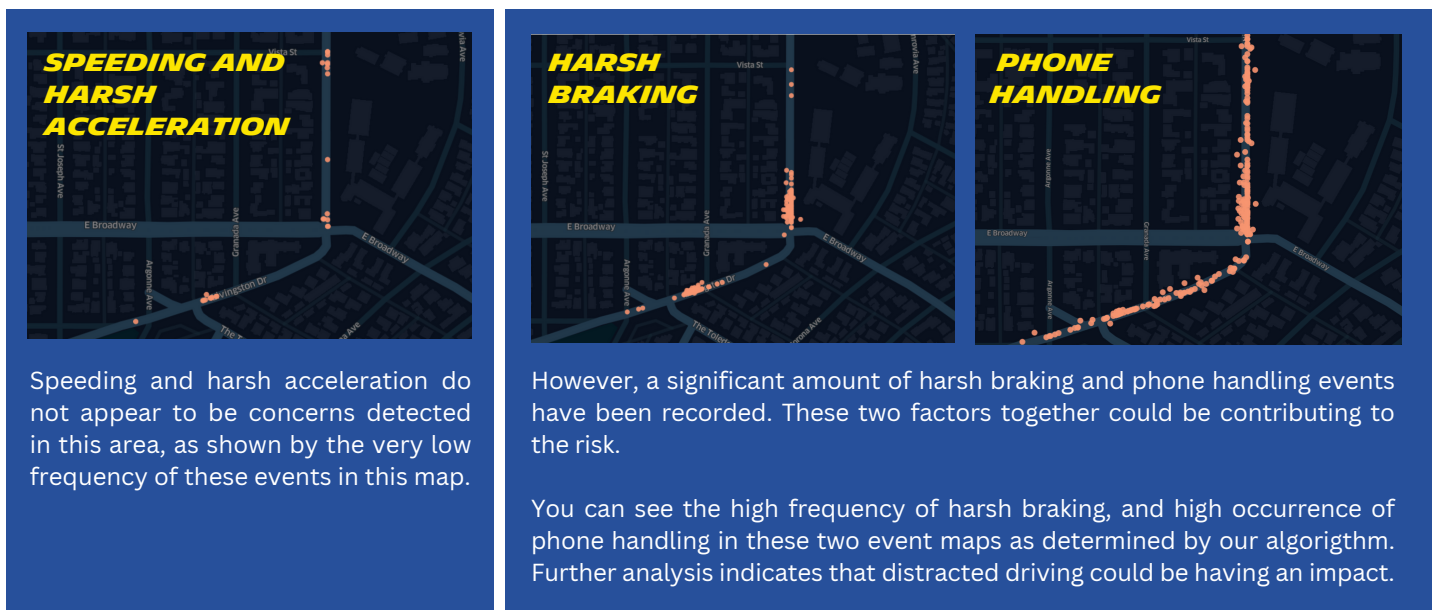
PHONE HANDLING

Speeding and harsh acceleration do not appear to be concerns detected in this area, as shown by the very low frequency of these events in this map.

However, a significant amount of harsh braking and phone handling events have been recorded. These two factors together could be contributing to the risk.

You can see the high frequency of harsh braking, and high occurrence of phone handling in these two event maps as determined by our algorigthm. Further analysis indicates that distracted driving could be having an impact.

Let's look more closely at one of these areas. On **East Livingston Drive,** close to Livingston Drive Park, both drivers and VRUs need to pay close attention to their movements. This zone has been clearly identified as risky for VRUs, rated highly on our 1 (least risky) to 5 (most risky) as a level 4.

From the information we know, we have evidence that the area:

- Is in the proximity of a park
- Has many parking areas with high pedestrian traffic
- Involves a specific intersection
- Lacks a pedestrian crossing to parking areas
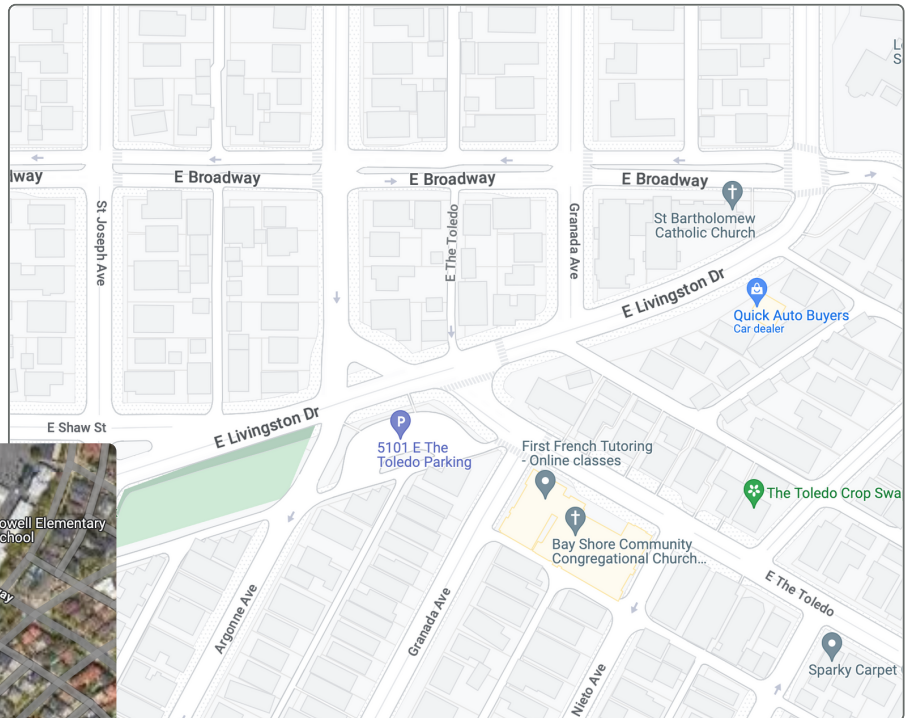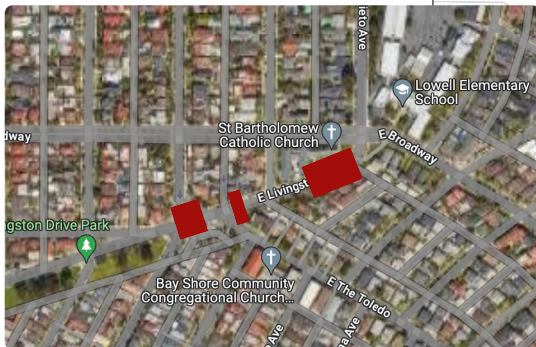
Thanks to Michelin Mobility Intelligence's insight, data, and algorithms, we can analyze large geographical areas – from multiple counties to entire states – to identify risk to VRU based on driving behaviors and it can bring new information like braking and phone handling events into consideration. This would allow us act proactively before crashes happen, working towards reaching Vision Zero.