Berkeley SafeTREC
SAFE TRANSPORTATION RESEARCH AND EDUCATION CENTER

OTS CALIFORNIA OFFICE OF TRAFFIC SAFETY

Commercial vehicles, fatigue, parking, and safety

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For commercial drivers, operator fatigue and parking in undesignated areas can result in dangerous collisions.[1] Exacerbating this issue is a lack of freight truck parking, making it difficult for truck operators to find a safe spot when in need of rest. For bicyclists and pedestrians, loading and unloading commercial vehicles in downtowns also present hazards.[2] Increasing the availability of legal truck parking could improve safety for all road users.

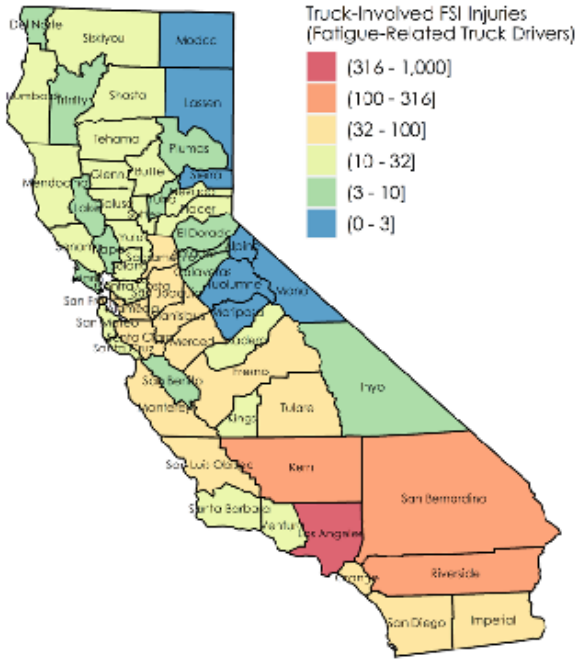
Background

The National Institute for Occupational Safety and Health (NIOSH motor vehicle crashes to be the leading cause of workplace fatalities.[3] A study from UC Berkeley looked specifically at commercial truck-involved, fatigue-related crashes on the I-5 in California. Each rest area adjacent to the corridor is estimated to have an average parking space deficiency of twenty spaces.[4] The University of Washington studied commercial vehicle conflicts with bicycles and pedestrians. They observed that truck drivers will park near the businesses they serve to load and unload regardless of the availability of legal parking and these activities often present conflicts with other users.[2,5]

Strict definition of fatigue-related crash
The primary collision factor was "fell asleep" or driver was reported as being fatigued. [1]

Expanded definition of fatigue-related crash
When the party was at fault, was not drunk nor speeding, experienced no vehicle defect, and either ran off the road, crossed into an opposing lane or struck another vehicle/fixed object between the hours of 2 a.m. and 6 a.m. or 2 p.m . and 4 p.m.[1]

Truck-Involved Fatal and Serious Injuries (FSI) in California, 2014-2018



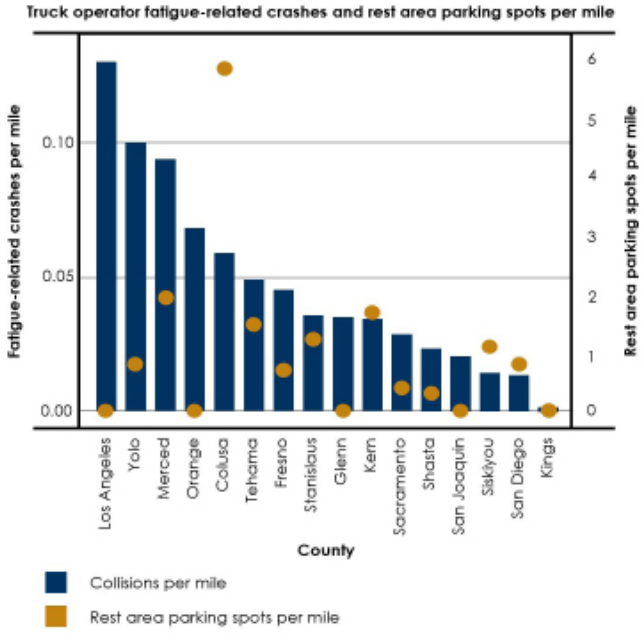
County	FSI_Injuries
Los Angeles	360
San Bernardino	204
Riverside	182
Kern	131
Fresno	89
Merced	77
San Joaquin	76
San Diego	73
Orange	68
Alameda	64
Tulare	56
Santa Clara	49
Sacramento	47
Imperial	38
San Luis Obispo	36
Stanislaus	36
San Francisco	35
Monterey	34
Kings	30
Ventura	30
Contra Costa	29
Madera	27
Shasta	26
Yolo	25
Placer	22
Sonoma	22
San Mateo	21
Mendocino	18
Santa Barbara	16

County	FSI_Injuries
Siskiyou	16
Nevada	15
Solano	15
Butte	13
Glenn	12
Sutter	12
Tehama	12
Colusa	11
Humboldt	11
Santa Cruz	11
Amador	10
Napa	10
Yuba	10
Del Norte	9
Calaveras	8
Inyo	8
El Dorado	7
Plumas	7
Lake	6
Marin	6
San Benito	6
Trinity	5
Mariposa	3
Modoc	3
Mono	3
Tuolumne	3
Lassen	2
Alpine	1
Sierra	1

Source: SWITRS 2014 - 2018 (Provisional 2018)

NOTE: California average truck-involved FSIs (2014-2018) = 37.2.

From 2015 to 2018 there were thirty-six fatigue related truck crashes on the I-5 freeway in California. The crashes on I-5 resulted in forty-nine reported injuries and six fatalities.



Los Angeles County had the only fatalities, highest number of fatigue-related collisions, lowest parking availability, and highest freight volumes. In contrast, San Joaquin County had one of the highest freight volumes, only one reported fatigue-related collision, and one of the highest truck parking to mile ratios. Kern County had the greatest parking supply in total per mile and only two reported collisions. However, this negative correlation is not statistically significant due, in part, to a small sample size.[8]

Vulnerable road users

Loading and unloading commercial vehicles present unique conflicts for vehicle operators, pedestrians, and bicyclists. Through interviews with bicyclists, researchers found that illegally parked trucks were the most serious perceived problem.[2] Unlike legally parked trucks, illegally parked trucks, particularly those parked in a bike lane, require cyclists to maneuver into traffic. This increases exposure and risk. There is little space allocated for vehicle operators to engage in loading and unloading activities, resulting in operators extending ramps, handling equipment, maneuvering goods, and walking in traffic lanes, pedestrian pathways, and bicycling infrastructure.[5] Implementing an operative envelope could help reduce conflicts and result in safer conditions for all road users and commercial vehicles.

Commercial drivers are mandated to only drive eleven hours after ten consecutive off-duty hours, but parking or amenities are not guaranteed.[6] Some studies suggest that drivers lose significant time and money just looking for parking. There has been an effort to develop crowd-sourced apps that provide truck operators with forecasted and dynamic parking availability data, but they do not yet manage parking demand nor guarantee a driver a spot.[7] In downtown areas, ensuring that loading zones meet the needs of delivery drivers will help reduce illegal parking and improve conditions for vulnerable road users.

Conclusion

Not having access to truck parking and addressing fatigue risk management presents a public health and traffic safety hazard for all road users, especially those most vulnerable like pedestrians and bicyclists.

"Corporate fleet safety management practices like driver training, fatigue risk management, in-vehicle monitoring systems (IVMSs), and strong mobile phone policies can reduce the number and severity of motor vehicle crashes."[3]

References

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