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VEHICLE WEIGHT SAFETY STUDY REPORT TO THE LEGISLATURE

Pursuant to Assembly Bill 251
(Ward, Chapter 320, Statutes of 2023)
Government Code Section 14527.3

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I. INTRODUCTION

1. Vehicle Weight Safety Study Background

California relies on a complex transportation system to support its residents, businesses, and environment. Ensuring and enhancing the safety of all users of that system is a key priority of the State. In 2020, California demonstrated national leadership by being among the first states to formally adopt the Safe System Approach as the policy framework through which the State will aim to achieve zero fatalities and serious injuries by 2050. These goals are reinforced in the 2025 Joint Secretary's Policy on Road Safety issued by the California State Transportation Agency (CalSTA) and the California Health and Human Services Agency, the California Transportation Plan 2050, the Strategic Highway Safety Plan, the California Transportation Commission's (Commission) 2025-27 Strategic Plan, and the State Highway System Management Plan. Implementing these goals are a primary responsibility of the Commission, the California Department of Transportation (Caltrans), and the other state agencies housed within CalSTA.

Despite this commitment to enhancing safety, serious injuries and fatalities amongst vulnerable road users (i.e., those who walk and bike) continue to trend upwards over the past decade. In 2021, 1,158 pedestrians were struck and killed on California roads, accounting for 26% of all traffic deaths. In some communities, pedestrians account for half or more than half of all traffic deaths. According to the California Office of Traffic Safety (OTS), there were 177 bicyclist fatalities reported in the same year, representing a 32% increase from 134 in 2021.

To address these trends, the Joint Secretary's Policy on Road Safety establishes a goal to reduce the number of fatalities and serious injuries on California's public roads by 30% by 2035 and 0% by 2050 by emphasizing the Safe System Approach principles: death and serious injuries are unacceptable, humans make mistakes, humans are vulnerable, responsibility is shared, safety is proactive, and redundancy is essential. Maintaining momentum towards meeting this goal requires further embedding the Safe System Approach principles and practices into the work of California's state agencies.

In recent years, more attention has been given to the growing size of passenger motor vehicles. While manufacturers have consistently deployed technological advancements intended to protect vehicle occupants in a crash, growth in vehicle size and weight over time may increase the risk posed to vulnerable road users and persons outside of the vehicle. For example, heavier vehicles impact with greater force than smaller vehicles when all other factors are consistent, and design features that obscure the vision of the driver can make it harder to avoid a crash.

In response to these trends, the Commission in its 2022 Annual Report recommended the California State Legislature authorize a study on the implementation of a weight-based passenger vehicle fee to account for the disproportionate impacts of larger vehicles on vulnerable road user injuries and fatalities. This recommendation was intended to give the Legislature a basis to evaluate what risk growing vehicle size poses to vulnerable road users, and to help identify potential policy responses to mitigate that risk. The Legislature subsequently passed Assembly Bill (AB) 251 (Ward, Chapter 320, Statutes of 2023), the Vehicle Weight Safety Study (Study), which added California Government Code Section 14527.3 (Appendix A).

AB 251 requires the Commission to:

- Convene a task force, consisting of state agencies including the California Office of Traffic Safety (OTS) and the California Department of Motor Vehicles (DMV), local transportation agencies, safety advocates, and representatives from the automobile industry and prepare a report summarizing findings of the task force addressing the following topics:
  - An analysis of the relationship between passenger vehicle weight and vulnerable road user injuries and fatalities.
  - An analysis of the relationship between passenger vehicle weight and degradation of road infrastructure.
  - A discussion of how a passenger vehicle weight fee may change driver behavior.
  - A discussion of how any revenues generated by the imposition of a passenger vehicle weight fee could be directed to enhance road infrastructure that increases safety for pedestrians, bicyclists, and other vulnerable road users.
  - An analysis of the equity considerations relating to different population groups in the state, including persons of various demographic groups, persons residing in various regions of the state, persons with low incomes, and persons using a vehicle for commercial use versus personal use, and any appropriate adjustments for these considerations.
- Consider the differences between internal combustion engines and zero -emission passenger vehicle weight, while considering existing incentives and environmental goals to promote zero-emission vehicle adoption.
- Submit a report to the Legislature detailing the findings of the Study and any legislative recommendations.

2. Approach to the Vehicle Weight Safety Study

In response to the legislative requirements, the Commission developed a workplan (Figure 1) to guide the Study.

Figure 1: Major components or "Workplan" to develop the Vehicle Weight Safety Study Report to the Legislature

To inform the Vehicle Weight Safety Study Task Force (Task Force) process, the Commission contracted with the University of California (UC) Berkeley research team to study the topics identified by the legislative requirements. Results of the research were shared with the Task Force and are described further in Chapter 2. Task Force meetings took place from June 2025 through December 2025, consisting of five Bagley-Keene compliant public meetings that were approximately 2-3 hours each. The Task Force comprised 15 organizations including state agencies, local transportation agencies, safety advocates, and representatives from the automobile industry and labor industries. Feedback from Task Force members and the public during Task Force meetings were used to develop the Summary of Vehicle Weight Safety Study Task Force Findings (Summary of Task Force Findings). The Task Force process and key findings resulting from the Task Force meetings are described in Chapter 3.

The Summary of Task Force Findings, feedback from the EAC, as well as stakeholder engagement (see Chapter 4) were used to inform this draft report.

The draft report will be available for review and feedback during the following activities:

- Public comment period from March 2 – April 1, 2026.
- EAC Business Meeting on March 4, 2026.
- Draft report workshop on March 11, 2026.
- Commission meeting on March 19-20, 2026.

It is anticipated that a final report will be presented in Spring 2026 to the Commission for approval and subsequent transmittal to the Legislature. This draft report will be updated after the public comment period concludes.

3. Considerations for the California State Legislature

Government Code Section 14527.3 (e) requires that the Commission prepare and submit a report to the Legislature detailing the findings of the Study and any legislative recommendations. The legislative considerations outlined in this draft report in Chapter 5 are built upon the Task Force findings, academic research by UC Berkeley and feedback from the EAC, stakeholders, and the public. These legislative considerations are intended to be draft concepts and are subject to change based on input received

during the public comment period. The following summarizes the Commission's draft legislative considerations. Additional information regarding these legislative considerations is provided in Chapter 5 of this report.

The Commission does not recommend implementation of a passenger vehicle weight fee at this time. The Commission does not recommend a passenger vehicle weight fee because, while the research shows some correlation between growing passenger vehicle size and negative safety outcomes for vulnerable road users, it does not show a clear causal relationship between the two due to the difficulty in isolating vehicle weight from other factors in a collision with a vulnerable road user (such as speeding, roadway/weather conditions, distracted driving, and other road user behaviors), as well as other data limitations. The research also shows that a passenger vehicle fee is also unlikely to change consumer purchase behavior unless it were extremely large and that growing passenger vehicle weight is not expected to have a significant impact on roadway degradation.

However, the Commission has identified considerations for a potential fee, should the Legislature choose to implement one. While the Commission does not recommend a passenger vehicle fee, the Commission recommends funding to address safety for vulnerable road users in the broader context of the State's need for a sustainable funding mechanism for transportation infrastructure. The Commission's 2025 State and Local Transportation System Needs Assessment (Needs Assessment) identifies a funding shortfall of $215.7 billion over the next 10 years to adequately address California's transportation infrastructure needs. These needs include bicycle and pedestrian facilities; local streets and roads; highways, bridges, and culverts; capital and operational needs of transit, commuter rail, and intercity rail systems; and costs related to system resiliency. Developing a sustainable funding mechanism to comprehensively address this shortfall will allow for greater levels of investment in transportation infrastructure that enhances safety for users of all modes, including vulnerable road users, consistent with the Commission's previous recommendations to increase funding for active transportation infrastructure.

The Commission outlines options should the Legislature wish to consider establishing a voluntary motor vehicle nonoccupant safety rating for passenger vehicles. Such a program could provide additional information to potential consumers, helping to incentivize the purchase of safer passenger vehicles and supplementing technological advancements made by manufacturers intended to enhance occupant and nonoccupant safety.

II. ACADEMIC RESEARCH

1. Background

The Commission contracted with UC Berkeley to conduct academic research on the topics identified for study in AB 251, including:

- An analysis of the relationship between passenger vehicle weight and vulnerable road user injuries and fatalities.
- An analysis of the relationship between passenger vehicle weight and degradation of road infrastructure.
- A discussion of how a passenger vehicle weight fee may change driver behavior.
- A discussion of how any revenues generated by the imposition of a passenger vehicle weight fee could be directed to enhance road infrastructure that increases safety for pedestrians, bicyclists, and other vulnerable road users.
- An analysis of the equity considerations relating to different population groups in the state, including persons of various demographic groups, persons residing in various regions of the state, persons with low incomes, and persons using a vehicle for commercial use versus personal use, and any appropriate adjustments for these considerations.
- An analysis of the differences between internal combustion engines and zero emission passenger vehicle weight, while considering existing incentives and environmental goals to promote zero-emission vehicle adoption.

Results of the academic research were presented at Task Force meetings as the basis for the Task Force findings. The research process took place throughout calendar year 2024 and 2025, culminating in the Vehicle Weight Safety Study Academic Report (Academic Report), Appendix B. The research conducted by the UC Berkeley research team is separate from the legislative considerations provided in this draft report and does not reflect the independent views of the UC Berkeley research team.

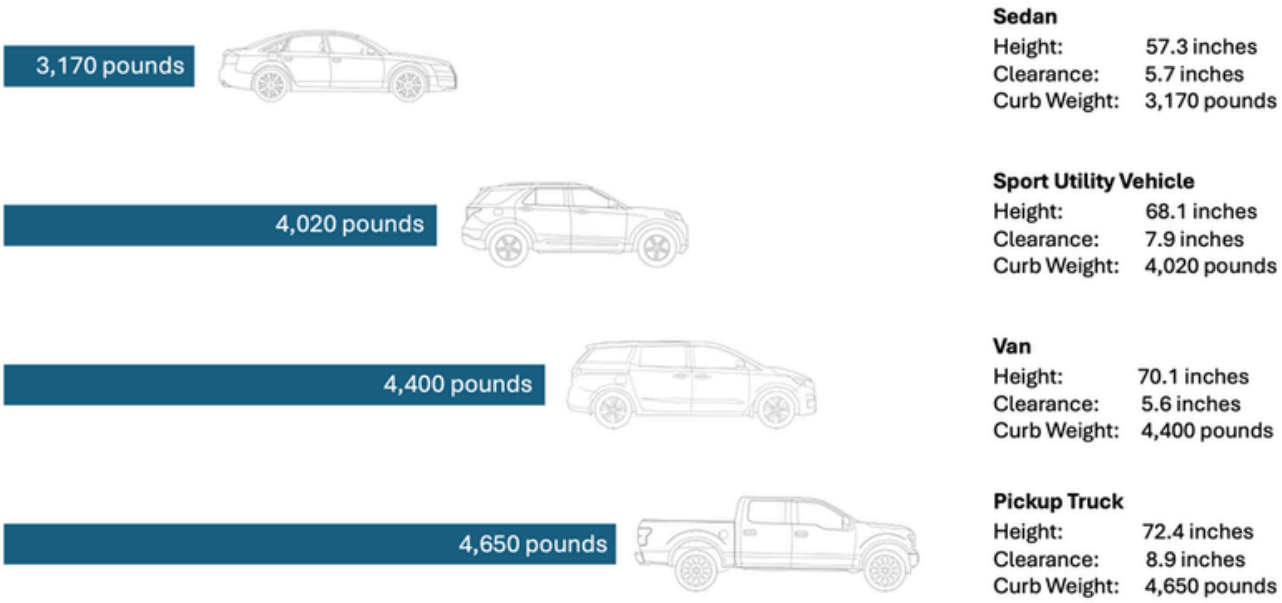
2. Summary of the Vehicle Weight Safety Study Academic Report

This section provides an overview of the key academic findings described in the Academic Report (Appendix B), organized by topic.

2.1. National and California Trends in Vehicle Size, Road Safety, and Passenger Vehicle Fleet

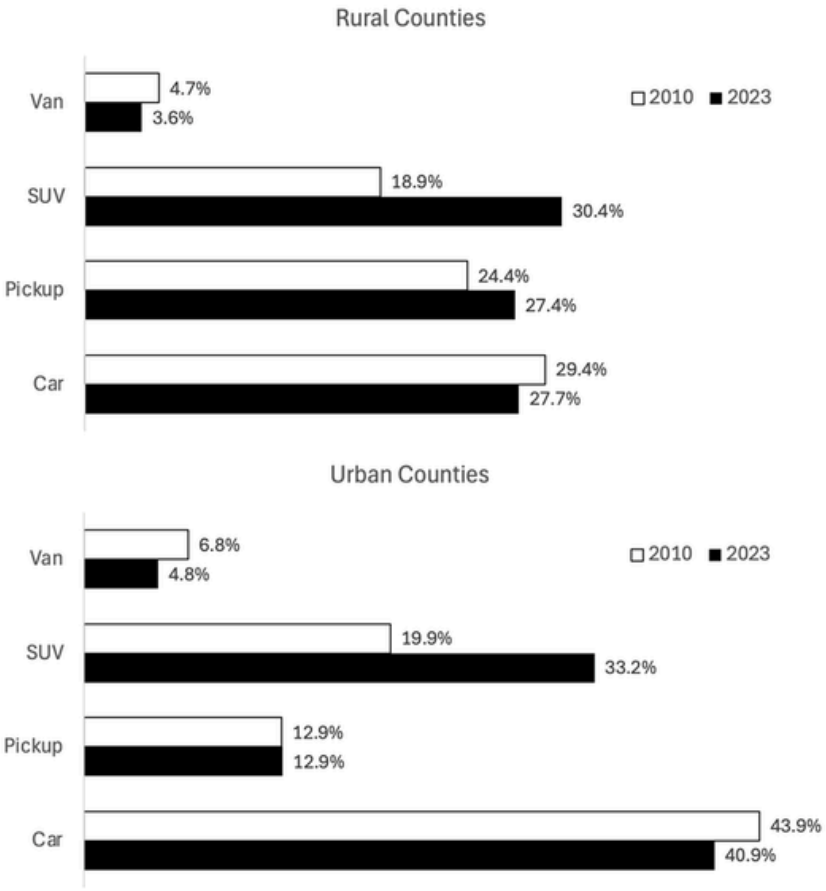
The composition of the American passenger vehicle fleet has shifted towards larger vehicles over the past 50 years. The Corporate Average Fuel Economy (CAFE) standards implemented in the late 1970s incentivized production of minivans, SUVs, and pickup trucks by setting lower fuel economy standards for larger vehicles than smaller passenger vehicles like sedans. The CAFE standards coincided with the beginning of rapid decline in the share of passenger cars (i.e., sedans and wagons) produced for sale in the United States. As a result, from 1980 to 2022, the share of vehicles produced for sale in the United States that were sedans or wagons declined from 83.5% to 26.5%. Figure 2 shows the passenger vehicle classes referenced in this Study and provides the average height, ground clearance, and curb weight for modern passenger vehicles in California (as of 2023).

Figure 2. Average Height, Ground Clearance, and Curb Weight by Vehicle Type in 2023 for the California Vehicle Fleet



From 2010-2023, the SUV share of registered vehicles in California rose from around 20% to nearly 35% (Figure 3). SUVs are the fastest growing vehicle type registered in California across urban and rural geographies, although sedans are still the most registered vehicle type in California. Concurrently, all passenger vehicle classes have continued to increase in size, weight and hood height (Figure 4, see page 10). This is due to various factors such as changes in safety features for vehicle occupants and thus a consumer preference for larger vehicles, and an aspect in existing federal CAFE standards that incentivize vehicle manufacturers to produce larger and heavier passenger vehicles.

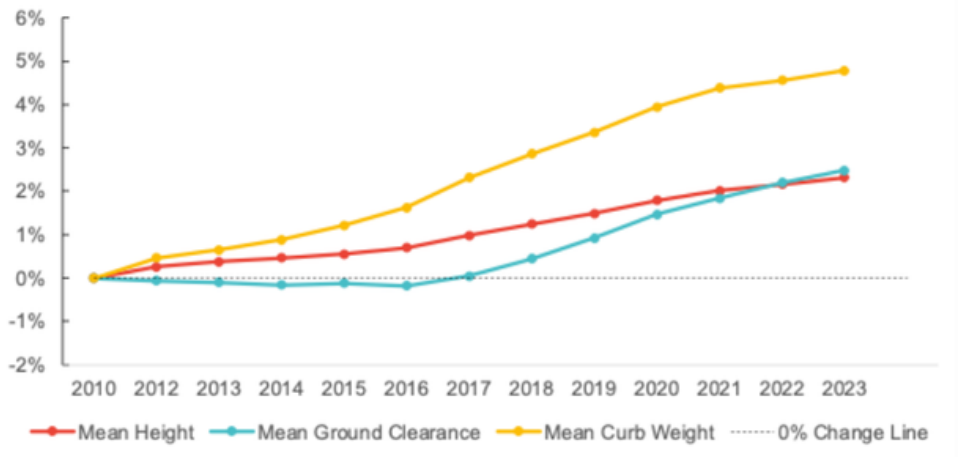
Figure 3. Passenger Vehicle Registrations for the California Vehicle Fleet Comparing Urban and Rural Geographies from 2010 and 2023



Larger vehicles are more dangerous in a collision to other road users, including smaller vehicles and vulnerable road users, as they transfer more kinetic energy in a crash, have larger blind spots, and have higher front ends. Prior research indicates that a 1,000-pound increase in vehicle weight increases the probability of fatality for the occupants of a struck vehicle by 40–60%. Higher front-end profiles and hood heights of modern trucks and SUVs strike pedestrians higher on the body, causing more severe injuries to the torso and head rather than the legs. Furthermore, these designs create larger blind zones, reducing driver visibility of pedestrians and children immediately in front of the vehicle.

Additionally, Americans hold on to their vehicles for around 12 years on average, possibly due to affordability issues and other factors. A delay in purchase of newer vehicles could also delay the adoption of improved safety features that could potentially reduce fatalities and serious injuries amongst vulnerable road users such as Advanced Driver Assistance Systems (ADAS). While ADAS can potentially mitigate increased safety risks, initial studies on their efficacy reveal mixed results.

Figure 4. Mean Height, Ground Clearance, and Curb Weight Change in the California Vehicle Fleet from 2010 - 2023



2.2. Trends in California Road User Injuries and Fatalities

Traffic fatalities are the top cause of death for Californians aged 5 to 24. From 2010 – 2022, approximately 17%, or 1,637 out of 9,594 traffic fatalities were vulnerable road users.

Pedestrian fatalities doubled between 2010 and 2022, and bicyclist fatalities reached a 25-year high (199 deaths and 1,257 serious injuries) although generally bicyclist fatalities remained relatively constant for the same period (2010-2022). Sedans, which are also the most registered vehicle type, are more commonly involved in pedestrian and bicyclist fatal or serious injury crashes in urban, suburban, and rural areas and in both disadvantaged and non-disadvantaged communities. Urban areas experience the highest proportion of pedestrian and bicyclist fatal and serious injury crashes. However, the share of pedestrian crashes involving an SUV is growing faster than all other vehicle types, suggesting that SUVs may surpass passenger vehicles as the most common vehicle to strike and seriously injure a pedestrian in the near future. Figures 5 and 6 show pedestrian and bicyclist fatality and serious injury crashes by passenger vehicle type from 2010 - 2022. Vulnerable road user crashes occurring in disadvantaged areas on a per capita basis are nearly two-times as frequent compared to non-disadvantaged areas across all vehicle types. When a young (under 15 years old) pedestrian or bicyclist is struck and seriously injured, the striking vehicle is more often an SUV than other vehicle types. This same trend is not seen for adults aged 65 or older. Furthermore, child pedestrians are 82% more likely to be killed if struck by an SUV versus a sedan.

Speed was the primary crash factor in 32% of fatalities in California in 2022, slightly higher than for the nation (29%), but evidence did not suggest that speed and vehicle type were correlated. Additionally, the higher the hood height, the higher the fatality risk for vulnerable road users. Compared to a low and sloped front-end vehicle (i.e. less than or equal to 30 inches), a blunt front-end hood height between 30-40 inches increased vulnerable road user fatality risk by 26%. Even taller vehicles (sloped or blunt front-end) greater than 40 inches high increases vulnerable road user fatality risk by approximately 44%.

Figure 5. Disaggregated change in number of pedestrian fatality or serious injury crashes by vehicle type compared to an index year of 2010, 2010 - 2022

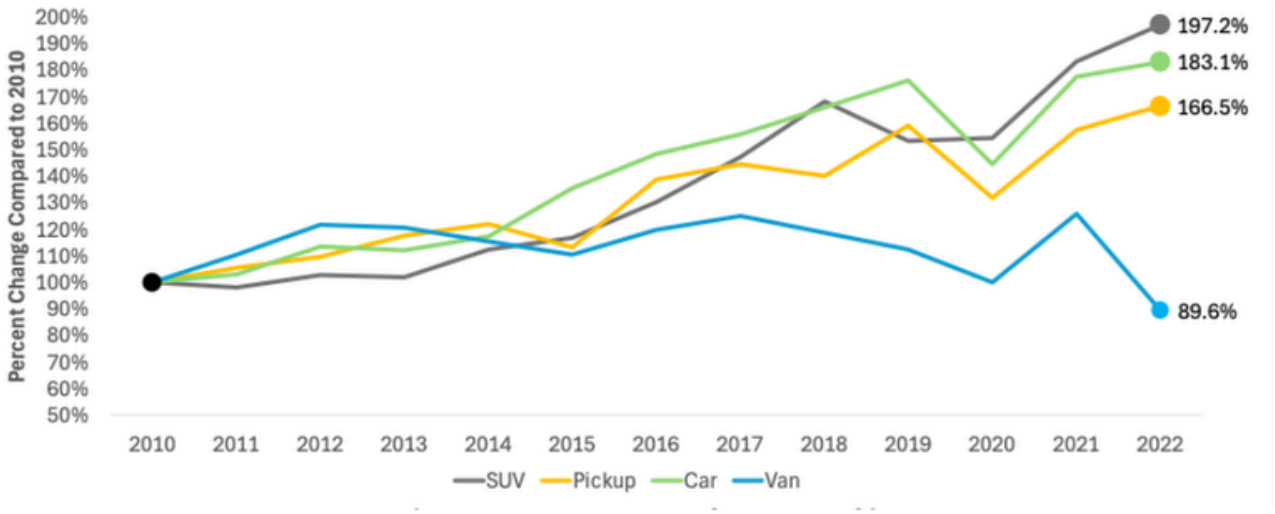
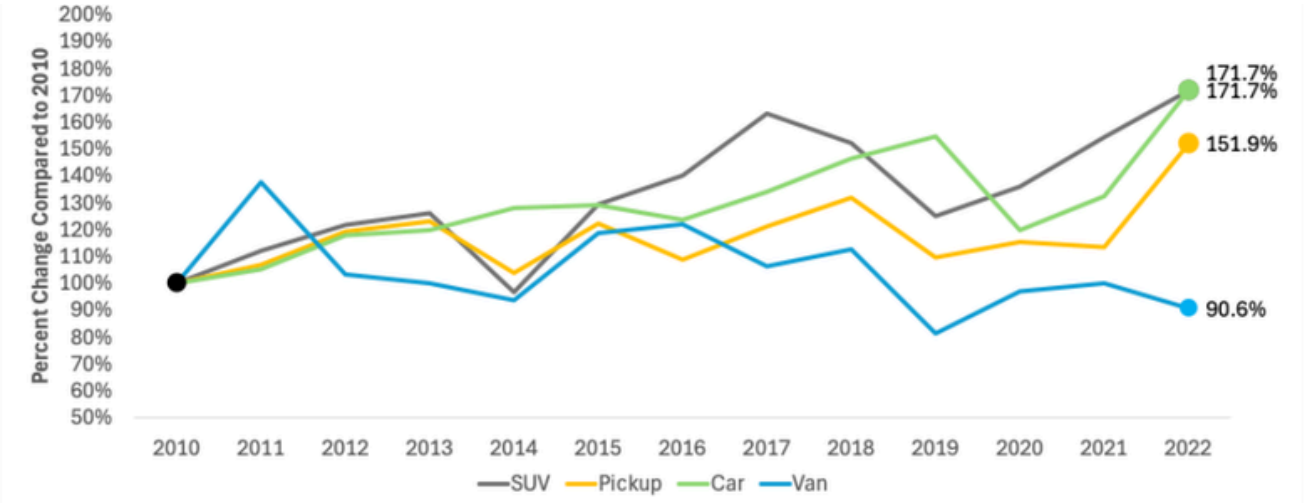


Figure 6. Disaggregated change in number of bicyclist fatalities or serious injuries by vehicle type, 2010 - 2022



2.3. Landscape of Policy Solutions

The Safe System Approach (Figure 7) identifies several factors for roadway safety. Due to federal preemption of regulations regarding vehicle design, the policies available at the state level to improve road user safety through shifts in the vehicle fleet are limited. As such, federal action would be needed to mandate changes in vehicle design. States have the authority to regulate and enforce how vehicles are purchased, maintained, and operated by individuals (e.g., wearing seatbelts, smog checks, speed limits). State transportation authorities can also collect taxes, tolls, and fees for revenue generation and fund state roadway and transportation infrastructure.

Figure 7. Safe System Approach model from the California Strategic Highway Safety Plan

Historically, the focus of Federal Motor Vehicle Safety Standards (FMVSS) has been on improving the safety of vehicle occupants as opposed to persons outside the vehicle. In contrast, countries similar to the United States require vehicle testing for pedestrian collision outcomes such as the European New Car Assessment Programme. However, the automotive industry has taken steps to advance safety, prior to being mandated to do so by federal regulation. For example, automakers have advanced integration of optional vehicle safety features such as automatic emergency braking (AEB) preceding the introduction of National Highway Traffic Safety Administration (NHTSA) regulations requiring that AEB be standard in all new passenger vehicles and light trucks (10,000 pounds or less) by September 1, 2029. More recently, NHTSA's New Car Assessment Program (NCAP) was expected to be updated to consider motor vehicle crashworthiness for pedestrians starting in 2026, but the program implementation has been delayed.

Vehicle design regulations may increase or decrease the equity of vehicle safety. On the one hand, regulations are arguably more equitable than fee-based mechanisms because they can apply to all vehicles, improving safety for the entire fleet with no ability to pay to opt out (e.g., paying a vehicle weight fee to own a larger vehicle). On the other hand, regulations typically only target new vehicle sales and may result in disparities in who is able to benefit from them. Regulations that improve safety would only be experienced by those who own newer vehicles or, in the case of pedestrian safety improvements, those who live in areas where new vehicles are purchased. Likewise, blanket regulations (e.g., a requirement that all vehicles be under 6,000 pounds) could generate potential disparities across professions and urban-rural divides, where vehicle ownership patterns differ with regard to vehicle size.

2.4. Types of Weight Fee Mechanisms

Fee-based policy mechanisms to address passenger vehicle weight include registration fees and sales taxes. These mechanisms are used to generate revenue for funding public goods and services, such as infrastructure improvements or active mobility programs, and they can also influence consumer behavior. Other potential fee-based policy mechanisms exist and could be used to impose a cost on heavier vehicles, including weight-based road user charges, parking fees, tolls, and cordon pricing, but there are no similar programs in the U.S. that have been implemented on the basis of vehicle weight.

Weight-Based Annual Registration Fees

The California DMV collects annual fees at the time of registration of a passenger vehicle. The specific registration fee amount is dependent on the vehicle's classification, age, value, and location. California does not collect weight-based fees for most passenger vehicles, such as sedans, minivans, and SUVs. Pickup trucks are classified as commercial vehicles and are subject to the weight-based fee schedule for commercial vehicles. California also collects weight-based fees for commercially registered electric vehicles, including smaller passenger vehicles like sedans. Revenue collected from California's fees paid at registration are distributed to various government entities and this distribution can change from year to year.

As every vehicle owned and operated in the state needs to be registered annually, it may be possible to incorporate a weight-based registration fee in California using the existing registration system.

Across the US, there is significant variability in how vehicle registration fees are assessed for passenger vehicles (see Figure 8). As of 2024, 25 states and the District of Columbia have vehicle registration fees tied to the vehicle's weight or size. These policies vary greatly in how weight is classified and the relative costs of fees.

Figure 8. States with Weight-based Fees for Passenger Vehicles, 2024

Weight-Based Sales Taxes

When a vehicle is purchased from a dealership in California, the buyer pays a one-time point-of-sale tax on the car. When vehicles are purchased from out of state or from private parties, individuals pay a use tax when they register the vehicle to their name. In California, the base vehicle sales tax (and use tax) is 7.5% of the value of the vehicle. Local governments have the option to charge up to 2.5% additional tax on the sale. California had the highest statewide sales tax rate in 2025, at 7.25%. California's sales tax is a uniform tax on the total purchase price of the vehicle, but other states determine tax rates based on vehicle characteristics. California could consider differentially taxing vehicles based on their weight at the point of purchase for sales in California and upon import for vehicles purchased outside of California and imported into the state.

2.5. Weight Fees and Consumer Behavior Response

Due to implementation constraints for some of the vehicle weight fee mechanisms discussed above, UC Berkeley research team academic report (Appendix B) analyzed potential consumer behavior response for two weight-based fee responses: for heavier new vehicles at point of purchase and annual registration fees based on weight (and/or body type). Results and models used to conduct this analysis are purely hypothetical.

Conceptually, a sufficiently high fee may cause consumers to change their purchase behavior. A weight-based fee on the purchase of heavier vehicles could reduce consumer demand for heavier weight vehicles across all fuel types (see Table 1). Fees could generate substantial revenue, but that revenue could be significantly less if there is a strong consumer response (i.e., reduction in purchase of heavier vehicles) to a fee and if there are any exemptions or discounts (i.e. based on income, profession, disability, for electric vehicles, etc.). A weight-based registration fee similar to other states (e.g., Texas, Maryland, others) would be unlikely to shift consumer demand for heavier passenger vehicles since the fee amount is too low to elicit a strong consumer response.

Consumer Response – New Vehicle Purchase Fees

Under a theoretical scenario using a rate of $5 per pound on the portion of vehicle weight exceeding 3,800 pounds (the approximate mean weight of all vehicles registered in 2024), about 60% of new car buyers in 2024 would have a weight fee. The mean fee for those paying it in 2024 would be 7% of the purchase price ($3,871 corresponding to an average Manufacturer's Suggested Retail Price (MSRP) of $55,600), and the maximum fee would be 20% of the purchase price ($19,500). The highest fee ($19,500) would be for premium electric heavy pickups with an average 2024 MSRP of $100,000.

Table 1. Change (in Percentage) of Vehicle Classes and Electric Vehicle (EV) Fuel Types Purchased in Response to Passenger Vehicle Weight Fees for All Vehicles at Point-of-Sale (Purchase Fee) compared to Annual Vehicle Registration (Annual Fee)

Change by Class	Purchase Fee	Annual Fee
Compact	+3	+0.5
Heavy	-7.7	-7
Large	-13.1	-2.2
Midsize	+2.7	+0.4
Minivan	-7.9	-1
Sport	+8.3	+0.9
Std	-10.7	-2.8
Subcompact	-8.6	+1.1
Change for EV Fuel Types	**Purchase Fee**	**Annual Fee**
electric	-2.3	-0.4
plug-in hybrid	-4.3	-1

Under this theoretical fee scenario, the purchase fee would lead to a small shift in the distribution of weights of all vehicles on the road. By 2040 the number of large SUVs would drop 17%, and the number of heavy and standard pickup trucks would decline 10.5%.

The purchase fee would generate substantial fee revenue. Annual fee revenues could reach $3.17 billion in 2024, and $4.59 billion in 2040. For reference, California's total state revenues were about $240 billion in 2024. This purchase fee example also predicts 2.3% fewer electric vehicles and 4.3% fewer plug-in hybrid vehicles in 2040. However, exempting both electric vehicles and plug-in hybrids could lead to a 2.7% increase in electric vehicles and a 2.5% increase in plug-in hybrid vehicles. Predicted 2040 revenues could drop from $4.6 billion a year to $1.8 billion a year if electric vehicles were exempted and to $1.3 billion a year if both electric vehicles and plug-in hybrids were exempted. Either exemption would result in no change in the overall weight distribution in this scenario.

Consumer Response – New Annual Registration Fees

Under a theoretical scenario using a rate of $0.10 per pound on the portion of vehicle weight exceeding 3,800 pounds, about 40% of all registered vehicles in 2024 would have no weight fee. The mean annual fee for those paying it would be $77, and the maximum fee would be $390. These fees would be higher than Florida's but lower than Washington DC. California's current annual car registration fees range from around $200 to over $800 for a new car and depend on factors like vehicle value, type, age, and city/county of residence.

Under this theoretical fee scenario, these annual fees would lead to almost no change in the distribution of vehicle weights. In 2040 mean weight would decline 0.26%, the number of large SUV would drop 4%, and the number of heavy and standard pickup trucks would decline 3%. However, these fees would generate substantial fee revenue, potentially reaching $850 million in 2024 ($78 million if only applied to vehicles with a model year 2024 and newer) and $1.45 billion in 2040 ($1.2 billion if only applied to vehicles with a model year 2024 and newer).

2.6. Passenger Vehicle Weight and Road Degradation

Research since the 1950s and 1960s has consistently shown that axle loads and configurations, not gross vehicle weights, are what cause road degradation. Therefore, road degradation today is overwhelmingly caused by heavy commercial vehicles, not passenger vehicles. The relative impact of a vehicle on a roadway compared to the impact of a different vehicle is modeled using the "4th Power Law" shown below:

$$Damaging\ effect\ of\ an\ axle\ load = \left(\frac{Load}{Reference\ Load}\right)^4$$

Even the heaviest electric passenger vehicles or large personal pickups cause a negligible fraction (approximately 0.1%) of the damage caused by a fully loaded commercial freight truck. All passenger vehicles, including all fuel types (internal combustion engine, electric, other) are excluded from consideration in Caltrans' pavement damage calculations due to their negligible roadway damage compared with heavy commercial vehicles. It is anticipated that marginal increases in passenger vehicle weight would not significantly increase roadway damage.

III. TASK FORCE

1. Background

AB 251 requires the Task Force convened by the Commission to "consist of state agencies, including the California OTS and the California DMV, local transportation agencies, safety advocates, and representatives from the automobile industry." The Commission approved the Task Force membership in December 2024 (Table 2, below), which included 15 members representing experts in the field of transportation and industries and people impacted by the scope of AB 251 across California.

Table 2. Task Force Membership Organization	Type
California Department of Motor Vehicles	State Agency
California Highway Patrol	State Agency
California Office of Traffic Safety	State Agency
California City Transportation Initiative	Local Agency Consortium
California State Association of Counties	Local Agency Consortium
Alliance for Automotive Innovation	Automotive Industry
American Automobile Association (AAA)	Automotive Industry
California New Car Dealers Association	Automotive Industry
Active San Gabriel Valley	Road User Safety Organization
American Association of Retired Persons (AARP)	Road User Safety Organization
National Federation of the Blind of California	Road User Safety Organization
Streets for All	Road User Safety Organization
Safe Streets Research, Inc.	Research Organization
California Farm Bureau	Business/Labor Organization
United Contractors	Business/Labor Organization

In total, five Task Force meetings were held between June and November 2025. compliant with the Bagley-Keene Open Meeting Act.

Generally, Task Force meetings followed a similar format, consisting of the following agenda items:

- Summary of feedback from Task Force members from the previous meeting for additional feedback and comment. Feedback from previous meetings was also taken into consideration to expand upon the topics of discussion during future Task Force meetings.
- Presentation from the UC Berkeley research team on findings from the academic research.
- Presentation of key takeaways from the research presentation and questions regarding the legislative requirements to solicit feedback from Task Force members and the public

The meeting schedule, topics discussed, and legislative requirements covered at each Task Force meeting are included in Table 3 below.

Table 3. Topics and Legislative Requirements Covered during Task Force Meetings

Task Force Meeting	Agenda Topic(s)	Legislative Requirement(s)
Jun 13, 2025	Task Force Kick-Off	Government Code Section 14527.3, subsections (a) and (b)
Jul 16, 2025	Trends in Vehicle Fleet and Road User Injuries and Fatalities	Government Code Section 14527.3, subsections (c)(1), (c)(5) and (d)
Sep 9, 2025	Introduction to Potential Policy Solutions and Road Degradation	Government Code Section 14527.3, subsections (c)(2), (c)(5) and (d)
Oct 29, 2025	Potential Policy Solutions: Vehicle Weight Fee and Consumer Behavior Response	Government Code Section 14527.3, subsections (c)(3), (c)(4), (c)(5) and (d)
Nov 13, 2025	Task Force Wrap-Up	Government Code Section 14527.3, subsections (c) and (d)

2. Task Force Findings

The Task Force findings were derived from the academic research presented during Task Force meetings, with feedback and additional perspectives offered by Task Force members and the public. Feedback received from Task Force members and the public included a range of perspectives and additional questions for further consideration. Any

feedback received by Task Force members outside of the scope of the legislation was also captured and provided in Chapter 3 of Appendix C, Summary of Vehicle Weight Safety Study Task Force Findings.

The Task Force findings intended to capture the breadth of the Task Force's discussion on the various topics presented; they do not imply consensus or agreement on all topics and are intended to demonstrate where Task Force members' perspectives differ.

A summary of the key Task Force findings for each topic area is described below, with further detail provided in Appendix C.

1. Key Findings: California Vehicle Fleet Trends

1.1 The weight of new passenger vehicles manufactured since the 1980s has continued to increase.

1.2 Over the next decade, SUVs are expected to overtake sedans as the most registered type of vehicle in California. SUVs are the fastest growing vehicle type registered in both rural and urban counties.

1.3 While SUVs are smaller than they were in the past, the average SUVs are 27% heavier, 19% taller and have 42% higher ground clearance than the average sedan.

1.4 Half of U.S. States have a weight-based fee for passenger vehicles for various purposes. California charges a weight fee for all commercial vehicles, which includes all pickup trucks (regardless of whether a pickup truck is registered for personal or commercial use).

1.5 The average size (curb weight, height, ground clearance) of registered pickup trucks is growing faster than any other vehicle type. The average pickup truck registered in California is 47% heavier, 26% taller, and has 59% higher ground clearance than the average sedan.

1.6 Pickup trucks are 50% more prevalent in rural counties than urban counties.

1.7 Vehicle owners in the United States are holding on to their vehicles longer (12.6 years in 2024 v. 10.4 years in 2008) lengthening the time of the adoption of new vehicles with more safety features.

1.8 Hybrid and electric vehicles are heavier than standard internal combustion engine vehicles, with electric vehicles being the heaviest of the three. Their share of registrations is small but increasing, with hybrids making up 6.5% of registrations and electric vehicles making up 5% of registrations.

2. Key Findings: California Injury and Fatality Trends

2.1 (a) Vehicle collisions resulting in fatalities and serious injuries of vulnerable road users have increased.

2.1 (b) Vehicle registrations in California show that vehicles purchased are increasingly heavier, taller, and higher.

2.1 (c) Sedans, SUVs, and pickups are all more frequently involved in crashes resulting in fatalities and serious injuries to pedestrians and bicyclists in both urban and rural areas. SUVs are the fastest growing vehicle type involved in crashes (197% ped, 171% bike) followed by sedans (183% ped, 171% bike) and pickup trucks (166% ped, 152% bike) (2010 – 2022).

2.1 (d) However, UC Berkeley's research only shows correlation between these factors, not causation. Vehicle weight could not be isolated amongst other factors that may have influenced a collision with a vulnerable road user.

- This is due to the challenge of isolating vehicle weight from other factors (i.e., speed, vehicle features such as curb height, other factors redacted or not captured from crash reports, and more) involved in crashes, as well as other data limitations.

2.2 In both urban and rural areas, the majority of pedestrian and bicyclist fatalities and serious injuries are caused by sedans, which are the most registered vehicle type in California.

2.3 When controlling for population, pedestrian fatalities and serious injuries are more common in urban than rural areas.

2.4 When controlling for population, bicyclist fatalities and serious injuries are more common in urban than rural areas.

2.5 Fatalities for pedestrians have increased 71% since 2010.

2.6 Fatalities for bicyclists have remained steady since 2010.

2.7 Serious injuries for pedestrians have increased 44% since 2010.

2.8 Serious injuries for bicyclists have increased 20% since 2010.

2.9 Children pedestrians are 82% more likely to be killed if struck by a SUV versus a sedan.

2.10 When adjusting for population, pedestrian fatalities and serious injuries in disadvantaged areas are approximately 50% higher for all vehicle types.

2.11 Vehicle collisions involving pedestrians are more likely to occur at night and outside of intersections.

3. Key Findings: Potential Regulatory Responses

3.1 The federal government regulates how vehicles are designed (e.g., the inclusion of turn signals, airbags, and automatic emergency braking) and leads the testing and rating of the safety of new passenger vehicles on the market.

3.2 States can regulate how vehicles are maintained and operated by individuals (e.g., wearing a seatbelt, Smog Checks, and speed limits) where not preempted by federal law or regulation.

3.3 In the United States, motor vehicle safety is regulated by Federal Motor Vehicle Safety Standards. Historically, the focus of these standards have been on improving safety advancements have tended to focus on the safety of vehicle occupants as opposed to those outside the vehicle. This regulatory context has evolved recently, with the Biden Administration identifying the safety of those outside the vehicle as a priority for testing.

3.4 Other similar countries require vehicle testing for pedestrian collision outcomes.

4. Key Findings: Potential Built Environment Responses

4.1 The Safe System Approach aims to eliminate fatal and serious injuries for all road users by accommodating for human mistakes, taking a proactive approach to identifying and addressing risks and promoting shared responsibility for road safety. The Safe System Approach creates redundant layers of protection by strengthening all elements of the system, including: all road users act in a safe manner, vehicles are designed and regulated to minimize crashes and harm for all road users, speeds are managed so impact forces experienced by road users are not beyond their physical tolerances, infrastructure and roadway design prioritizes safety for all road users, and expediency of post-crash care.

4.2 As part of the Safe System Approach, effective roadway design and infrastructure that prioritizes safety for all (e.g., roadway lighting, crosswalk enhancements, traffic calming measures, and separated bicyclist and pedestrian infrastructure) are associated with significant reductions in the risk and severity of crashes involving vulnerable road users.

4.3 The primary barriers to implementing infrastructure improvements that improve safety for vulnerable road users include: limited funding availability, implementing projects at scale, and jurisdictional challenges.

4.4 Improvements to the built environment may result in and reveal inequities such as:

- Funding for local improvements is dependent largely upon the local tax base and regional formulaic funds, therefore improvements are more likely to occur in more affluent areas. However, improvements are also needed in low-income, rural, or areas where deaths, injuries, and worse health outcomes are more common due to the poor condition of the built environment.
- Investment in the built environment in less affluent areas could potentially accelerate gentrification and displacement.

5. Key Findings: Vehicle Weight and Road Degradation

5.1 Passenger vehicles and smaller pickup trucks, including battery electric and fuel cell vehicles, have a very minor effect on pavement damage and rehabilitation costs - so much so that they are excluded from consideration from pavement damage calculations.

5.2 Road degradation changes exponentially (to the 4th power) with axle load. Compared to the 20,000 pound maximum legal single axle load (California), a 2,000 pound axle causes 0.01% of the damage, which is the approximate axle load distribution of both typical internal combustion engine and zero emission vehicles, a 5,000 pound axle causes 0.39% of the damage, which is the approximate axel load distribution of a heavier pickup truck and zero emission vehicle, a 10,000 pound load causes 6.25% of the damage, and a 25,000 pound load (not legal in California) causes 244% of the damage.

5.3 Incremental increases in passenger vehicle weight are not anticipated to have a significant impact on road degradation.

6. Key Findings: Potential Weight-Based Fee Responses

6.1 Local and regional government bodies are responsible for managing local roads and the built environment in which their road users interact and can contribute to local infrastructure improvements through local taxes and other funding sources.

6.2 According to UC Berkeley, weight-based passenger vehicle fees could be conceptualized through the following policy mechanisms:

- Passenger vehicle registration fees
- Passenger vehicle sales taxes
- Tolls
- Road usage charges
- Parking fees

6.3 If it were implemented, a weight-based passenger vehicle fee could be imposed as part of annual vehicle registration or to vehicle sales at the point-of-purchase.

6.4 Depending on the design of the fee, it could apply uniformly across all vehicles or assign differential fee amounts based on a variety of factors (e.g. class, weight, fuel type).

6.5 Fee exemptions could include professional occupation, income, fuel type, and other factors for the purposes of ensuring that a fee (if implemented) would be equitable and be in alignment with state priorities. However, further research could clarify how a weight-based passenger vehicle fee could adversely impact other user groups and other statewide goals not considered here.

6.6 Weight-based toll fees may be challenging to implement when compared to vehicle registration fee or a point-of-sale fee. This is due to federal limitations restricting the development and operation of toll facilities and the allowable expenditures of toll revenues. Currently no states impose weight-based toll fees.

6.7 A road usage charge developed to replace the state fuel excise tax could include considerations such as passenger vehicle weight, if such a program were implemented.

6.8 To address the decrease in available parking due to the increase in average vehicle size and safety risks to vulnerable road users on local roads, local governments could enact weight-based parking fees (at the discretion of the local agency). Several U.S. cities either restrict parking permits to smaller vehicles or have implemented weight-based vehicle sticker fees.

6.9 There are potential equity impacts and positive and negative trade-offs associated with imposing a weight-based fee on heavier passenger vehicles. Positive outcomes could include incentivizing lighter weight vehicles and generating funding for improvements to infrastructure for vulnerable road users. Negative outcomes could include an increase in price for motor vehicles, particularly those that are heavier and may be required for larger families, for certain professions, or those with disabilities that cannot purchase a smaller, lighter weight vehicle.

6.10 Other states impose vehicle weight fees using various fee structures, weight classifications, and other variables (such as fuel type) to determine the fee amount.

6.11 In California, revenues from passenger vehicle registration fees are currently distributed to state agencies and local governments for the administration and operation of California's transportation system and to fund transportation infrastructure improvements.

7. Key Findings: Consumer Behavior Response

7.1 Modeling potential passenger vehicle weight fees suggests that the change in passenger vehicle purchase behavior would be dependent on the amount of the fee.

7.2 Revenue generated by the fee would also depend on the amount of the fee.

7.3 Depending on which vehicles are subject to a fee, there may be trade-offs between state priorities. Exemptions for certain vehicles could result in less revenue than uniform fees.

7.4 If heavier vehicles become more expensive to purchase and/or operate, people may be encouraged to switch to lighter ones.

7.5 If fees only apply to new vehicles, then people may switch to used vehicles and/or keep their existing vehicles longer. This may change used car prices.

7.6 Vehicles are expensive and last a long time, so consumers may take many years to respond to new fees.

7.7 If a weight-based passenger vehicle fee were imposed, consumer choice may be impacted by the higher fees and consumers may be less willing to purchase heavier vehicles. This could result in less revenue than predicted, but a larger reduction in the weight of vehicles on the road.

7.8 A lower fee would likely have a less significant impact on purchase behavior and generate less revenue.

7.9 With a one-time vehicle weight fee for all new passenger vehicles above 3,800 pounds set between 0% and 20% of the purchase price of a new vehicle, on a sliding scale by weight, modeling suggests the following outcomes by 2040:

- Heaviest 10% of vehicle weights would decline 2.5%
- Mean weight of all vehicles on the road would decline 1.2%
- Number of large SUVs would decline by 17%
- Number of heavy and standard pickup trucks would decline by 10.5%
- Annual revenues of $4.6 billion
- Number of electric vehicles would decline by 2.3%
- Number of plug-in hybrid vehicles would decline by 4.3%
- Exempting electric vehicles and plug-in hybrid vehicles in this scenario would result in increased numbers of those vehicle types, offsetting the projected decline in average passenger vehicle weight and also substantially reducing projected annual revenues
- The expected one-time cost to the consumer would be $3,871 on average (based on the average MSRP of $55,600 for a passenger vehicle in 2024), with the maximum fee of $19,500 for the heaviest and most expensive passenger vehicle

Note: the DynaSim model uses current 2024 model year data only and results do not reflect actual outcomes. The information presented here is for illustrative purposes only and is not a specific policy proposal for consideration.

7.10 With an annual vehicle weight fee for all registered passenger vehicles above 3,800 pounds set at $.10/pound. (the approximate mean weight of all vehicles registered in 2024), modeling suggests the following outcomes by 2040:

- Mean weight of all vehicles on the road would decline 0.26%
- Number of large SUVs would decline by 4%
- Number of heavy and standard pickup trucks would decline by 3%
- Annual revenues of $1.45 billion
- Number of electric vehicles would decline by 0.4%
- Number of plug-in hybrid vehicles would decline by 1%
- On an annual basis, the expected mean cost to the consumer would be $77, with a maximum fee of $390 for the heaviest and most expensive passenger vehicle

Note: the DynaSim model uses current 2024 model year data only and results do not reflect actual outcomes. The information presented here is for illustrative purposes only and is not a specific policy proposal for consideration.

7.11 While the two models cannot be directly compared, they suggest that consumers would have a stronger reaction to one-time point-of-sale fees for new vehicle purchases when compared to annual fees due to the perception that future costs (such as annual fees) may change and therefore are perceived as uncertain (hyperbolic discounting theory).

IV. ENGAGEMENT AND FEEDBACK

1.Overview

In addition to the Task Force, the Commission engaged the Interagency Transportation Equity Advisory Committee (EAC), various stakeholder groups, and the public throughout the course of the study. Feedback received shaped the Task Force findings and the draft legislative considerations in this report. Table 4 on the next page provides a summary of public engagement that occurred at meetings of the Commission, the EAC, and at workshops.

2. Public Engagement and Feedback

Stakeholders and members of the public were invited to participate and provide input during Task Force meetings, Commission and EAC meetings, and during the draft report public comment period and draft report workshop.

Commission staff sought feedback on the Summary of Task Force Findings from the Commission, the EAC's Transportation Planning and Program Guidance Subcommittee, and the public during a presentation on December 12, 2025.

Preliminary feedback from EAC members included:

- Ensure a potential weight fee consider those with lower incomes, disabilities, or those otherwise unable to afford the fee.
- Consider the design of larger vehicles and how that design influences roadway safety.
- Further discuss the nuances in the fatality and serious injury trends of vulnerable road users.
- Further explore the feasibility of establishing a passenger vehicle pedestrian safety rating, which has already been established in other similar countries.
- Further identify how other states are assessing passenger vehicle weight fees.
- Identify whether the causes of collisions may differ geographically (i.e., urban and rural areas) and whether there may be different solutions depending on location.
- Further consider roadway design and traffic enforcement.
- Further consider schools and safe routes to schools efforts.
- Consider how to prevent consumers attempting to circumvent California state fees by purchasing heavier passenger vehicles (i.e., pickup trucks and SUVs) out of state.

To inform this draft report, Commission staff continues to solicit feedback from stakeholders. In recognition of the importance of ensuring safe access to schools, and the vulnerability of small children to the risks of growing size of passenger vehicles, this

Table 4. Commission and EAC Meetings and Public Workshops

Study Milestone	Date	Event	Topic
Task Force Process	December 5-6, 2024	Commission meeting	Task Force membership approved
	June 26-27, 2025	Commission meeting	Task Force meeting update
	Sep 5, 2025	EAC business meeting	Task Force meeting interagency updates
	Oct 15, 2025	EAC business meeting	Task Force meeting interagency update
	Dec 3, 2025	EAC business meeting	Update on the Task Force Findings and upcoming Commission presentation
	December 4-5, 2025	Commission meeting	Presentation on the Task Force Findings
	Dec 12, 2025	Transportation Planning and Program Guidance Subcommittee of the EAC	Presentation on the Task Force Findings
Draft Report Development	March 2 – April 1, 2026	Public comment period	Public comment period on the draft report to the Legislature
	Mar 4, 2026	EAC business meeting	Presentation of the draft report to the Legislature
	Mar 11, 2026	Draft report public workshop	Presentation of the draft report to the Legislature
	March 19-20, 2026	Commission meeting	Presentation of the draft report to the Legislature
Final Report Approval for Submission to Legislature	May 14-15, 2026 (Tentative)	Commission meeting	Presentation of the final report to the Legislature for Commission adoption and submittal to the Legislature

outreach includes staff from K-12 school districts and regional agencies that work on safe routes to schools efforts. This outreach is intended to identify challenges students and their families face while getting to and from school alongside heavier and larger passenger vehicles, as well as barriers to addressing those issues. Those interviewed are representative of the geographic, racial, ethnic, and socio-economic diversity across the state, including rural, suburban, and urban areas, coastal, northern inland, and valley geographies, and marginalized and farming communities.

Ultimately, those interviewed indicated that improvements to infrastructure would address their priority concerns, including:

- Need for safer, more adequate infrastructure for students to walk and bike safely to and from school due to funding challenges and challenges implementing consistent infrastructure across multiple jurisdictions
- Speeding vehicles
- Distracted driving
- Electric bike safety

When asked whether heavier (or larger) passenger vehicles were an issue for children getting to/from school, they indicated that very large commercial vehicles were of concern, citing incidents resulting in fatalities and serious injuries of students. Additionally, passenger vehicle size was of concern, to the extent that drivers might have difficulty seeing children walking and biking, particularly at congested drop-off and pick-up locations where multiple vehicles might be double-parked.

A summary of the draft report workshop and feedback received from both the workshop and the public comment period will be included in the final report.

V. DRAFT LEGISLATIVE CONSIDERATIONS

1. Overview

Ensuring and enhancing the safety of California's transportation system through the Safe System Approach is a key goal of the Commission and other state agencies. Trends in the safety outcomes of vulnerable road users indicate a growing problem that necessitates a comprehensive policy response to address. The Vehicle Weight Safety Study Task Force reviewed a range of potential policy responses to enhance safety for vulnerable road users, including fee mechanisms, regulations, and improvements to the built environment. The Task Force also identified trade-offs for these potential responses. The following legislative considerations are built upon the Task Force Findings, academic research by the UC Berkeley research team, and feedback from Commission meetings, EAC members, stakeholders, and the public. These legislative considerations offered by the Commission do not necessarily imply concurrence of any individual Task Force member. Legislative considerations will be finalized based on input received during the public comment process.

2.Vehicle Weight Safety Study Legislative Considerations

<u>Weight-Based Fee for Passenger Vehicles</u>

As noted in Chapter 2, UC Berkeley's research shows clear parallel trends in both 1) growing vehicle weight and size and 2) increasing numbers of fatalities and serious injuries of vulnerable road users. Larger and heavier vehicles also transfer more kinetic energy in collisions and impact vulnerable road users with greater force. Although the research shows some correlation between these two trends, it does not show a clear causal relationship between growing vehicle size and weight as the primary contributor to negative safety outcomes for vulnerable road users. This is due to the difficulty in isolating vehicle weight from other factors in a collision with a vulnerable road user (such as speeding, roadway/weather conditions, distracted driving, and other road user behaviors), as well as other data limitations. The research also shows that growing passenger vehicle weight is not expected to have a significant impact on roadway degradation. A passenger vehicle fee is also unlikely to change consumer purchase behavior unless it were extremely large.

While the Commission does not recommend that the Legislature consider implementation of a passenger vehicle weight fee due to the results of the research described above, should the Legislature still wish to take action to address these trends by imposing a passenger vehicle weight fee, it should consider:

- Calibrating the fee amount to differences in vehicle weight, while balancing against undue cost burdens for vehicle owners and administrative feasibility and cost.
  - While providing discounts or exemptions based on factors such as income or disability status may be challenging from an administrative perspective, the Legislature could consider leveraging existing Department of Motor Vehicles programs and processes to provide equity-based relief to vehicle owners (for example, using vehicle value or disabled person license plates as a factor in determining the fee amount).
- Reinvesting revenues from the fee in existing programs that enhance roadway safety to provide benefits to all users, and vulnerable road users in particular, using the Safe System approach.
  - For example, revenues could be used to augment the Active Transportation Program, which provides benefits to all roadway users by reducing conflict points between cars and bicyclists/pedestrians, and funds infrastructure and non-infrastructure projects and Safe Routes to Schools improvements. Revenues could also augment existing programs focused on behavioral factors, such as awareness campaigns, advertising, and education around the relative risk of larger vehicles.
- Applying the fee annually at vehicle registration to minimize administrative costs.
- Setting a fee amount that accounts for engine type, to avoid disincentivizing adoption of zero-emission vehicles (e.g. battery electric and fuel cell vehicles), which tend to be heavier than internal combustion equivalents.
- Considering a fee in the broader context of the State's need for a sustainable funding mechanism for transportation infrastructure, as described in the Commission's 2025 State and Local Transportation System Needs Assessment (Needs Assessment).
  - The Needs Assessment identifies a funding shortfall of $215.7 billion over the next 10 years to adequately address California's transportation infrastructure needs, including bicycle and pedestrian facilities; local streets and roads; highways, bridges, and culverts; capital and operational needs of transit, commuter rail, and intercity rail systems; and costs related to system resiliency. Developing a sustainable funding mechanism to comprehensively address this shortfall will allow for greater levels of investment in transportation infrastructure that enhances safety for users of all modes, including vulnerable road users.

Motor Vehicle Nonoccupant Safety

As noted in Chapter 3, motor vehicle safety is regulated by the National Highway Traffic Safety Administration through Federal Motor Vehicle Safety Standards (FMVSS). The federal government leads the testing and rating of the safety of new passenger vehicles on the market through NHTSA. These federal standards preempt regulation of the same areas by states. Historically, the focus of federal standards has been on improving safety of vehicle occupants as opposed to persons outside the vehicle. In contrast, countries similar to the United States require vehicle testing for pedestrian collision outcomes, such as the European New Car Assessment Programme. In addition to safety features mandated by FMVSS, the automotive industry has advanced integration of optional vehicle safety features such as automatic emergency braking ahead of federal standards. Continued innovations by the automotive industry may influence future federal standards by establishing an industry standard for motor vehicle nonoccupant safety. A nonoccupant safety rating could further promote consumer awareness and adoption of newer vehicles with these safety features.

To provide more complete information to consumers about safety impacts to persons outside of a motor vehicle, the Legislature should consider establishing a voluntary motor vehicle safety rating program specific to vehicles sold in California that considers safety outcomes for occupants and nonoccupants, including vulnerable road users. This program could be administered through partnerships with private industry and the non-profit sector to ensure a vested interest in the success of the program. Such a program would only apply to passenger vehicles with the intent of providing better information regarding safety features in passenger vehicles to potential buyers. Although administrative costs to implement such a program are unknown at this time, such a program should include appropriate incentives for manufacturers to choose to participate on a voluntary basis.

APPENDICES

Appendices for the Draft Report will be provided separately on the Commission's Vehicle Weight Safety Study webpage.

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