

FINAL STATEMENT OF REASONS

1) The Update to the Initial Statement of Reasons

The department made the following amendments after the 45-day comment period. The amendments were made largely due to comments received during the 45-day comment period and after the October 10, 2017 Notice of Modification of Proposed Regulations. Necessity for the modified regulatory text are available in the statement of reasons provided during the 15-day comment periods for Notice of Modification of Proposed Regulations (“Notice of Modification” herein) issued on October 10, 2017 and November 30, 2017.

§ 227.00. Purpose.

Subdivision (c) was deleted.

§ 227.02. Definitions.

Subdivision (a) was amended to delete the reference to the vehicle being “operated or driven, without active physical control by a natural person sitting in the vehicle’s driver’s seat” and the phrase “monitoring the driving environment” was deleted and replaced with “supervising the autonomous technology’s performance of the dynamic driving task.”

Subdivision (b) was amended to delete the phrase “means any vehicle equipped with technology that has the capability of operating or driving the vehicle without the physical control or monitoring of a natural person, whether or not the technology is engaged, excluding vehicles equipped with one or more systems that enhance safety or provide driver assistance but are not capable of driving or operating the vehicle without the active physical control or monitoring of a natural person”. The subdivision was amended to add that an autonomous test vehicle is a vehicle that has been equipped with technology that is a combination of both hardware and software that, when engaged, performs the dynamic driving task, but requires a human test driver or a remote operator to continuously supervise the vehicle’s performance of the dynamic driving task.

Subdivision (b)(2) was amended to accurately cite the September 2016 name change for standard J3016.

Subdivision (b)(3) was amended to delete “agent” and add “designee.”

Subdivision (d) was amended to add “status of the vehicle when it is under the active physical control.”

Subdivision (i) was amended to add a definition for “minimal risk condition.”

Subdivision (l) was amended to specify that “personal information” is information that is not necessary for the safe of the operation of a vehicle that is collected by a manufacturer and can be linked to a specific vehicle, registered owner, lessee, or passenger using a vehicle for transportation purposes.

Subdivision (n) was amended to clarify that the remote operator can be a person not seated in the driver’s seat of the vehicle who is able to perform the dynamic driving task for the vehicle or cause it to achieve a minimal risk condition.

§ 227.22. Term of Permit.

Section 227.22 was amended to clarify that the renewal schedule for a testing permit will be every two years, as specified in subsection (a), and the fee will be paid on a biennial basis, as specified in subsection (b).

§ 227.30. Manufacturer’s Testing Permit Application.

Subdivision (b) has been amended to require that a manufacturer notify the department of any change to the manufacturer’s name or contact information within ten days of the change.

§ 227.32. Requirements for Autonomous Vehicle Test Drivers.

Subdivision (c) was amended to add that the autonomous vehicle test driver must obey all provisions of the Vehicle Code and local regulation applicable to the operation of motor vehicles whether the vehicle is in autonomous or conventional mode “except when necessary for the safety of the vehicle’s occupants and/or other road users.”

§227.38. Manufacturer’s Permit to Test Autonomous Vehicles that do not Require a Driver.

Subdivision (a) was amended to delete the requirement that manufacturers must notify local authorities “of the operational design domain of the vehicles to be tested and the testing had been coordinated with those local authorities” and “coordinate testing with the local authorities.” Subdivision (a) was amended to require a certification that “local authorities” as defined in Vehicle Code Section 385 have received written notification that includes: the vehicles’ operational design domain, identifies the roads where the vehicles will be tested, the date that testing will start, the days and times that testing will occur, the number and types of vehicles to be tested, and contact information for the manufacturer conducting the testing.

Subdivision (b) had been deleted. Subdivision (c) was renumbered to subdivision (b) in the November 30, 2017 Notice of Modification.

Subdivision (c) was amended in the October 10, 2017 Notice of Modification to clarify that the provisions of the section apply to “autonomous test vehicles.” Subdivision (c) was renumbered from subdivision (d) in the November 30, 2017 Notice of Modification.

Former subdivision (d) was renumbered to subdivision (c) in the November 30, 2017 Notice of Modification. Former subdivision (d) was amended in the October 10, 2017 Notice of Modification to require a certification that the vehicles permitted under this section are capable of operation without a driver and meet the SAE International’s description of a level 4 or level 5 vehicle.

Subdivision (e) was renumbered from subdivision (d) and amended to delete the phrase “and agrees to provide updates if those operational design domains change” in the October 10, 2017 Notice of Modification. Subdivision (e) was redesignated subdivision (d) in the November 30, 2017 Notice of Modification.

Subdivision (f) was renumbered subdivision (e) and amended to define a “first responder” as law enforcement, fire department, and emergency medical personnel in the October 10, 2017 Notice of

Modification. Subdivision (f) was redesignated as subdivision (e) in the November 30, 2017 Notice of Modification.

Subdivision (e)(1)(A) was amended to delete the requirement that the plan include information on verifying that the remote operator is a licensed driver and to require that the remote operator be available to assist law enforcement at all times that the vehicle is in operation.

Subdivision (e)(2) was amended to require that the law enforcement interaction plan must be updated as changes are necessary, but no less than on an annual basis.

Subdivision (e)(3) was amended to require that the plan be submitted electronically to the California Highway Patrol (CHP).

Subdivision (g) was renumbered to subdivision (f) in the October 10, 2017 Notice of Modification and was amended to delete the requirement that the remote operator complete the manufacturer's test driver training program and to add the requirement that the remote operator received sufficient training to enable him or her to safely execute the duties of the remote operator. Subdivision (g) was redesignated as subdivision (f) in the November 30, 2017 Notice of Modification.

Subdivision (h) was renumbered to subdivision (g) in the October 10, 2017 Notice of Modification and amended to delete the requirement manufacturers submit a copy of the safety assessment letter that has been submitted to NHTSA and to add that manufacturers that have publicly disclosed an assessment demonstrating their approach to achieving safety must provide a copy of that assessment to the department. Subdivision (h) was redesignated as subdivision (g) in the November 30, 2017 Notice of Modification.

Subdivision (i) was renumbered to subdivision (j) in the October 10, 2017 Notice of Modification and amended to delete the phrases "member of the public" and "concerning passengers is collected by the autonomous vehicle", and the phrase "that may be collected about the passenger and how it will be used" was added. Subdivision (j) was redesignated as subdivision (i) in the November 30, 2017 Notice of Modification.

Subdivision (k) was adopted in the October 10, 2017 Notice of Modification to require that a manufacturer notify the department of any change to the manufacturer's name or contact information within ten days of the change. Subdivision (k) was redesignated as subdivision (j) in the November 30, 2017 Notice of Modification.

Subdivision (l) was adopted in the October 10, 2017 Notice of Modification to require a manufacturer to submit a revised form OL 318 prior to implementing changes including making the vehicle capable of operating at a SAE International level that is different than and/or in addition to the level in the approved permit, making the vehicle capable of operating on a roadway type that is different than those on the approved permit, increasing the maximum speed of the vehicle by more than 15 miles per hour, or making the vehicle capable of operation in a geographic area that is different than and/or in addition to those on the approved permit. Subdivision (l) was redesignated as subdivision (k) in the November 30, 2017 Notice of Modification.

Subdivision (l) was originally proposed as subdivision (j) and then renumbered to subdivision (m) in the October 10, 2017 Notice of Modification. Subdivision (m) was redesignated as subdivision (l) in the November 30, 2017 Notice of Modification.

§ 227.40. Refusal of Autonomous Vehicle Testing Permit or Testing Permit Renewal.

Subdivision (c) has been added to specify that the department will provide a written notice of refusal to issue a permit in the format established in Government Code section 11504.

§ 227.42. Suspension or Revocation of Autonomous Vehicle Testing Permit.

After the close of the 15-day notice period the department discovered a typographical error in subdivision (a), incorrectly referencing Vehicle Code Section “38570.” The department has made the nonsubstantive correction changing that reference to “38750.”

The reference to a “Manufacturer’s Testing Permit” in subdivision (b) has been deleted and in (b)(4) the phrase “disclose to any passengers in its vehicles that are members of the public what personal information concerning those passengers is being collected by the autonomous vehicles,” has been replaced with “make the disclosures required by subdivision (i) of Section 227.38.”

Subdivision (c) was amended to specify that the department will provide a written notice of suspension or revocation and follow the procedures specified in Government Code section 11505.

§227.50. Reporting Disengagement of Autonomous Mode.

Subdivision (b) was amended to delete the requirement that disengagements be summarized for each month. Subdivision (b)(3)(B) requires that the annual report summarize the circumstances or testing conditions at the time of disengagements. The phrase “and whether the disengagement was the result of a planned test of the autonomous technology” has been removed from (b)(3)(B)(iii). Subdivision (b)(3)(B)(v), which also required the reporting “whether the disengagement was safety related or a planned test”, and (vi) which reporting the type of incident that was preempted by the transfer of control, were also deleted. The text of subdivision (b) (3)(B) (iv) was mistakenly duplicated in the November 30, 2017 Notice of Modification, this nonsubstantial grammatical error has been corrected in the Order to Adopt.

Subdivision (b)(3)(C) has been renumbered to (b)(4) and specifies that the annual report include the total number of miles each vehicle was tested in autonomous mode on public roads each month.

Subdivision (b)(3)(D) has been deleted.

Subdivision (c) was added to incorporate by reference the Annual Report of Autonomous Vehicle Disengagement Form OL 311R, which contains the reporting elements that are specified in subdivision (b)(3).

§227.54. Transfers of Interest or Title for an Autonomous Test Vehicle.

Subdivision (d) was added to allow a manufacturer to internally dismantle or dispose of a vehicle and its major component parts.

Article 3.8 – Deployment of Autonomous Vehicles

§228.00. Purpose

The section has been amended to add “or the manufacturer has received the appropriate exemption from the National Highway Traffic Safety Administration.”

Subdivision (c) which specified that Article 3.8 shall become effective 120 days after adoption by the department has been deleted because on October 12, 2017, the governor signed Senate Bill 145, which amended subdivision (f) of Vehicle Code Section 38750 to require the department to provide public notice when it adopts the autonomous vehicle regulations and prohibit the department from approving an application submitted pursuant to the regulations until 30 days after public notice of the adopted regulations is provided.

§228.02. Definitions

Subdivision (a) was amended to delete the requirement of recording autonomous technology sensor data for “at least 5 seconds after a collision or until the vehicle comes to a complete stop, whichever is later.”

Subdivision (b) was amended to delete the unnecessary phrase “whether or not the technology is engaged,” and to accurately cite the September 2016 name change for SAE standard J3016.

§228.06. Application for a Permit for Post-Testing Deployment of Autonomous Vehicles on Public Roads.

Subdivision (a) was amended to correct the mistaken numbering reference to Sections 227.30 and 227.38.

Subdivision (a)(2) was amended to delete the requirement that a manufacturer certify that the autonomous vehicles are designed to be incapable of operating in autonomous mode under the identified commonly occurring restricted conditions. The definition of operational design domain SAE J 3016 specifies that operational design domain includes the restricted conditions listed in this subdivision. This certification is necessary to address the public safety concern that the manufacturer has identified the restrictions on operational design domain and comply with the requirement in Vehicle Code section 38750 (c)(1) that the vehicle have a mechanism to disengage the autonomous technology

Subdivision (a)(3) was amended to add that a manufacturer shall describe the mechanism for safely disengaging out of autonomous mode when the vehicle experiences conditions outside of its operational design domain. The department provided for public comment a statement of reasons stating that the section was necessary to provide flexibility for different deployment models.

Subdivision (a)(6) was amended to delete the requirement that the autonomous technology data recorder capture and store autonomous technology sensor data “at least 5 seconds after, or until the vehicle comes to a complete stop after a collision, whichever is later.” The department provided for public comment a statement of reasons stating that the section is necessary to conform to the requirements of Vehicle Code section 38750(c)(1)(G)

Subdivision (a)(7) was amended to correct a minor grammatical error, the word “exception” has been replaced with “exemption.” Vehicle Code section 38750 subdivision (c)(1)(E) and (F) require that the

autonomous technology meet federal motor vehicle safety standards and do not make inoperative any federal motor vehicle safety standard. This certification is necessary because there are no federal motor vehicle safety standards for autonomous technology and a vehicle can only be operated on public roads if the manufacturer has received an approved exemption from NHTSA.

Subdivision (a)(9) was amended to delete “operation of motor vehicle” and add “performance of the dynamic driving task in the vehicle’s operational design domain.” Vehicle Code section 38750 (d) requires that the regulations include requirements which the department has determined are necessary to ensure the safe operation of autonomous vehicles on public roads. Existing traffic laws are intended to ensure that vehicles are operated safely, consequently this certification is necessary to meet the statutory obligation that the regulations include requirements that ensure the vehicles operate safely.

Subdivision (a)(9)(B) was amended to clarify that the required updates to the location and mapping information should be related to the operation of the vehicle in its operational design domain and be consistent with changes in the physical environment. The operational design domain as defined in Section 227.02 (j) and SAE J3016 includes the locations where the autonomous system is designed to operate the vehicles. This certification is necessary to ensure public safety by requiring that the information necessary for vehicle operation is updated.

Subdivision (a)(9)(C) was amended to delete “shall not be responsible for ensuring that the vehicle is operated using the manufacturer’s most recent updates as specified in this section.” The subdivision was amended to require manufacturers to notify registered owners of the availability of updates and to provide instructions on how to access those updates. This certification is necessary to ensure safe operation of autonomous vehicles on public roads by requiring that manufacturers provide registered owners access to the updates that relate to the safe operation of the vehicles.

Subdivision (a)(10) was amended to delete the requirement that the vehicles have “self-diagnostic capabilities” for cybersecurity because cybersecurity measures should be allowed to go beyond just having self-diagnostic capabilities. Vehicle Code section 38750 (d) requires that the regulations include requirements which the department has determined are necessary to ensure the safe operation of autonomous vehicles on public roads. This certification helps to satisfy that statutory requirement by requiring assurances that manufacturers are taking measures to address cyber-security.

Subdivision (b)(1) requires manufacturers to certify that, if applicable to the level of autonomous technology and the method that the technology is being deployed, the vehicles have a communication link between the vehicle and a remote operator that allows two-way communication. Vehicle Code section 38750 requires that vehicles in which a person inside the vehicle is unable to take control if there is a failure of the autonomous technology must be capable of coming to a complete stop. The requirement in this subdivision is necessary to ensure that vehicles without manual controls are operated safely on public roads by allowing passengers to communicate with a remote operator to assist if there is a failure of the autonomous technology or other emergency.

Subdivision (b)(3) was amended to clarify that the manual controls are related to “completing the dynamic driving task.” As stated in Section 228.00, the National Traffic and Motor Vehicle Safety Act of 1969 vests the authority for specifying vehicle safety standards with the federal Department of Transportation. NHTSA holds the authority to develop safety standards and requires that manufacturers

certify that their vehicles meet those standards. The certification in this subdivision is necessary to remain consistent with the federal requirement that manufacturers certify the compliance of their vehicles.

Subdivision (c)(1) was amended to clarify that a consumer or end user education plan should only be provided when a manufacturer intends to sell or lease vehicles to persons other than the manufacturer. Vehicle Code section 38750 (d) requires that the regulations include requirements which the department has determined are necessary to ensure the safe operation of autonomous vehicles on public roads. The requirement in this subdivision is necessary to ensure that consumers receive adequate instruction on the safe operation of the vehicles.

Subdivision (c)(7) was amended to require the submission of a summary describing the testing of the autonomous technology including the number of miles vehicles were tested on public or private roads or tracks, the methods used to validate performance, and collisions involving autonomous test vehicles. The department provided a statement of reasons for public comment stating that the provision is necessary to ensure the manufacturer provides information to the department to substantiate the testing that was completed to support the manufacturers certification that it conducted testing.

Subdivision (d) was amended to delete the requirement that manufacturers submit a copy of the safety assessment letter that has been submitted to NHTSA. The subdivision has also been amended to require that manufacturers that have publicly disclosed an assessment of their approach to safety provide a copy to the department. This provision was amended in the first 15 day modification to the regulations. The regulation first required submission of the safety assessment but was amended to make submission voluntary. The necessity was to conform to the direction given by the National Highway Traffic Safety Administration, who determined it would not require submission of the voluntary safety assessment, but rather would encourage manufacturers to publically disclose how it addresses safety.

A non-substantive change has been made to subdivision (f). Legislation was approved after the close of public comment period that removed the 180-day requirement specified in Vehicle Code Section 38750 (e)(2) and amended Section 38750 (f) to require the department to post a notice of the adoption of the regulations on its web site and precludes the approval of an application until 30 days after the notice. The change is not regulatory, as the amended statute is very specific about the application approval time frames. The change is necessary to ensure that the regulations are complete and consistent with the amended statute.

§228.08. Review of Application.

This sections gives the department 30 days to review, gives the manufacturer 30 days to correct deficiencies, and allows for a pending application to expire within one year of notice of correction.

The provisions in this section are proposed for adoption because they have worked in other department programs. The review process is consistent with the department's Commercial Driver License application process, Clean Air Decals Application, Business Partner Automation Program, Motor Carrier Permit Program, and AV Testing.

The time frames for Motor Carrier and AV testing are actually 10 days but because of the large volume of documents that's required with the application process for driverless testing, the department determined that the 30 day review and correction time frames were more appropriate.

§228.10. Amendment of Application.

Subdivision (b) has been amended to delete “new” and clarify that an “amended” application must be submitted when there are changes involving: the addition of functionality that makes a vehicle capable of operating in a different SAE level; roadway types such that the vehicles will be capable of operating on roadways that are different from and/or additional to those specified for the approved permit; increasing the maximum speed of the vehicle by more than 15 miles per hour; making the vehicle capable of operating in geographic areas different than and/or in addition to those in the approved permit; and, removing commonly-occurring or restricted conditions that were identified on the permit.

Subdivision (c) has been amended to delete “material change” and “to the autonomous vehicle or autonomous technology” and clarify that a manufacturer shall not deploy vehicles with changes specified in Section 228.10 until the amended application has been approved by the department.

The department received comments at the public hearing arguing that there was not enough clarity as to when an amended application should be submitted. The department identified five serious areas where we needed to be made aware of changes. The modified statement of reasons explained that the change was necessary because commenters were concerned that the originally proposed version of the regulation did not provide sufficient specificity as to when an amended application would be required.

§228.14. Conditions Related to the Term of Permit.

Subdivision (b) has been deleted. Section 228.00 (b) provides that an “autonomous vehicle shall not be deployed on public roads in California except as permitted under Vehicle Code section 38750 and the regulations in this article.” Section 228.06 (a) provides that “an autonomous vehicle shall not be deployed on any public road in California until the manufacturer has submitted and the department has approved an Application for a Permit to Deploy Autonomous Vehicle on Public Streets....” Sections 228.00 and 228.06 already indicate that a manufacturer must have a valid permit issued by the department to deploy autonomous vehicles on public streets, making section 228.14 unnecessary.

§228.16. Refusal of an Application for a Permit to Deploy.

Subdivision (c) was added to specify that the department will provide a written notice of refusal to issue a permit in the format established in Government Code section 11504.

This process is also consist with several of the department's occupational licensing programs. Permittees are part of the occupational licensing program. Not only is this the process for autonomous vehicle testing in 227.36, this is also the process used in our Ignition Interlock program. Vehicle Code section 38750(c) prohibits operation of an AV unless each certification has been met. If, upon review of the application, the department determines that a required certification hasn't been met, the department

would refuse to issue the permit. **The necessity would be to ensure that the regulations clearly identify all the reasons for which an application would be refused.**

§228.18. Demand for Hearing on Refusal.

The demand for hearing on refusal process is consistent with the autonomous vehicles testing provisions adopted in Section 227.38. At the time the testing regulations were adopted, the department stated that the adoption was necessary to inform the manufacturers that there are administrative remedies when a testing permit is refused or not renewed by the department. The hearing process is also consistent with other hearing processes conducted for the department’s occupational licensing programs. This section provides an appeal process in the event that the department refuses to issue a testing permit.

§228.20. Suspension or Revocation of Permit.

Subdivision (a) was amended to specify that the department will provide a written notice of suspension or revocation in the format established in Government Code section 11505.

Subdivision (b)(4) was amended by adding the “National Highway Traffic Safety Administration determines that the” autonomous technology makes inoperative any federally required motor vehicle safety standard.

Subdivision (b)(5) was amended to clarify that an immediate suspension of a manufacturer’s Permit to Deploy will apply only to vehicles that are subject to an open NHTSA recall related to the vehicles’ autonomous technology.

Subdivision (c) was amended to clarify that upon suspension or revocation of a Permit to Deploy, a manufacturer must cease further deployments of affected autonomous vehicles with the affected autonomous technology feature enabled.

§228.24. Information Privacy.

Subdivision (a)(1) was amended to replace “occupants” with “passengers” and to add “personal” information and to require disclosure of “how the information will be used.”

Subdivision (b) was amended to require, if the information collected is not anonymized, written approval from a registered owner or lessee to collect personal information that is not necessary for the safe operation of the vehicle is required.

§228.28. Driver and Manufacturer Responsibility.

Former Section 228.28 has been deleted.

§228.30. Statements About Autonomous Technology.

Section 228.30 has been renumbered to Section 228.28.

2) Imposition of Mandate on Local Agencies or School Districts

The department’s regulatory action amending Sections 227.00, 227.02, 227.04, 227.12, 227.14, 227.16, 227.18, 227.20, 227.22, 227.24, 227.26, 227.28, 227.30, 227.32, 227.34, 227.36, 227.38, 227.42, 227.44, 227.46, 227.48, 227.50, and 227.52 in Article 3.7 and adopting Sections 228.00, 228.02, 228.04, 228.06, 228.08, 228.10, 228.12, 228.14, 228.16, 228.18, 228.20, 228.22, 228.24, 228.26, 228.28, and 228.30, in Article 3.8, Chapter 1, Division 1, of Title 13, does not impose any mandate on local agencies or school districts and imposes (1) no cost or savings to any state agency, (2) no cost to any local agency or school district that is required to be reimbursed under Part 7 (commencing with Section 17500) of Division 4 of the Government Code, (3) no other discretionary cost or savings to local agencies, and (4) no cost or savings in federal funding to the state. No studies or data were relied upon to make this determination.

3) Summary of Comments Received during the 45-day Comment Period and Department Response

The proposal was noticed on March 10, 2017, and made available to the public from March 10, 2017 through April 24, 2017. The department received 86 written comments during the 45-day comment period. On April 25, 2017, the department conducted a public hearing in Sacramento. The public hearing was attended by over 100 interested parties and the department heard oral comments from 28 individuals representing vehicle and technology manufacturers, transportation networks, local transportation agencies and private citizens.

The department received written comments from the following interested parties during the 45-day comment period:

1	Armand Feliciano	ACIC
2	Christopher Lee	Albus Insurance
3	Katherine Pettibone, Esq. James J. Whittle, Esq.	American Insurance Association
4	Anthony Tamborino	
5	Steve Kenner	Apple
6	Jonathan R. Weinberger	Auto Alliance
7	Tim Chang	Automobile Club of Southern California
8	Michael Weber, Esq.	AVTreatise
9	David S. Cunningham, Jr.	Black American Political Association of California
10	Shane Gusman	Broad & Gusman, LLP
11	Grayson Brulte	Brulte & Company
12	Julian Canete	California Asian Pacific Chamber of Commerce
13	Alisa Reinhardt	California New Car Dealers Association
14	Rylan Gervase	California Special Districts Association
15	Alice A. Huffman	California State Conference of the National Association for the Advancement of Colored People
16	Obaid Khan, P.E.	City of Dublin
17	Seleta J. Reynolds	City of Los Angeles – Department of Transportation
18	Mayor Darrell Steinberg	City of Sacramento – Office of the Mayor
19	Mike Talley	City of San Ramon – Traffic Engineering/Transportation Division
20	Joint Letter	Los Angeles Department of Transportation San Francisco Municipal Transportation Agency

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		San Francisco County Transportation Authority San Jose Department of Public Works Fresno Department of Public Works San Diego Transportation & Storm Water Department City of Oakland, Mayor Libby Schaaf Sacramento Department of Public Works Long Beach Department of Public Works City of San Buenaventura Santa Monica Planning & Community Development Department City of West Hollywood
21	Don Lefevé	Commercial Vehicle Training Association
22	Mark Scribner	Competitive Enterprises Institute
23	Concerned Citizen	
24	Jacqueline Serna, Esq.	Consumer Attorneys of California
25	Gary Shapiro	Consumer Technology Association
26	John Simpson	Consumer Watchdog
27	Rosemary Shahan	Consumers for Auto Reliability and Safety
28	Daniel Lamphear	
29	David Schnapf, Esq.	
30	Ewald Detjens	
31	Robert Ybarra	Fathers Against Drunk Driving
32	Wayne E. Bahr	Ford
33	Paul Hemmersbaugh	General Motors
34	George Najjar	
35	Paul Scullion	Global Automakers
36	Carlos Solorzano-Cuadra Martha Vaughn Randolph Olson-Gallegos Victor Reyes-Umana	Hispanic Chamber of Commerce of San Francisco
37	David Kidd, Ph.D.	Insurance Institute for Highway Safety
38	Jonathan Handel	
39	Jennifer Yeamans	Livermore Amador Valley Transit Authority
40	Robert Grant	Lyft
41	Mark E. Capron, PE	
42	Maryjane Gertz	
43	David Tait Thomas Zorn	Mercedes-Benz USA, LLC Volkswagen Group of America, Inc.
44	Richard Allen Williams	Minority Health Institute, Inc.
45	MM Traffic School	MM Traffic School
46	Linda Bailey Seleta Reynolds	National Association of City Transportation Officials
47	Kodi Jean Verhalen, P.E., Esq., F.NSPE	National Society of Professional Engineers
48	Paula Kutansky-Brown	NIO
49	Nynke Vellinga	

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50	Kerry N. Doi	Pacific Asian Consortium in Employment
51	Stephen Boyd	Peloton
52	Ross Buckley	Personal Insurance Federation of California
53	Peter W.	
54	Ian Adams Geoffrey A. Manne Marc Scribner Berin Szoka	R Street Institute International Center for Law & Economics Competitive Enterprise Institute TechFreedom
55	Ian Adams (Supplemental Comments)	R Street Institute
56	Damien Scott	Renovo.auto
57	Prof. Robert W. Peterson	Santa Clara University, School of Law
58	Gary Gallegos	San Diego Association of Governments
59	Ivar Satero	San Francisco International Airport
60	Edward Reiskin Tilly Chang	San Francisco Municipal Transportation Agency
61	Scott Jackson, Ph.D.	
62	Hon. David L. Strickland	Self-Driving Coalition for Safer Streets
63	Dr. Richard Pan	Senator, Sixth District
64	Peter Leroe-Munoz Paul Escobar	Silicon Valley Leadership Group
65	Shari Roeseler	Society for the Blind
66	David Grow	State Farm
67	Steve Kusmer	
68	Steven Ratti	
69	Laura Bennett Jarrell Cook Bethanne Cooley Amy Mmagu	TechNet CMTA California Manufacturers & Technology Association California Chamber of Commerce
70	Matthew L. Schwall, Ph.D.	Tesla
71	Tom Stricker Erik Kirkhorn	Toyota
72	Timothy Blubaugh	Truck & Engine Manufacturers Association
73	Tudor Patroi	
74	Anthony Levandowski	Uber
75	Jimmy O’Dea, Ph.D.	Union of Concerned Scientists
76	Doug Moore	United Domestic Workers of America, AFSCME Local 3930
77	Kevin Tamaki Stuart Waldman	Valley Industry and Commerce Association
78	Vincent Tamburrino	
79		Volkswagen
80	Katherine H. Yehl	Volvo
81	John Krafcik	Waymo

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82	Noah Budnick	Zendrive
83	Mark R. Rosekind, Ph.D.	Zoox, Inc.

The department heard oral comment from the following interested parties during the public hearing held on April 25, 2017:

C-1	Tom Maguire	Sustainable Streets Division San Francisco Municipal Transportation Agency
C-2	Roland Williams	Blackberry Corporation
C-3	Sherry Roeseler	Society for the Blind
C-4	Andre Welch	Automotive Safety Rulemaking and Policy Group Ford Motor Company
C-5	Kurt Augustine	Policy and Governmental Affairs Alliance of Automobile Manufacturers
C-6	Christopher Lee	Albus Insurance
C-7	Paul Scullion	Association of Global Automakers
C-8	David Strickland	Venable, LLP Self-Driving Coalition for Safer Streets
C-9	Paul Hemmersbaugh	General Motors Company
C-10	Ron Medford	Waymo
C-11	Melissa Immel	City of Beverly Hills
C-12	Ewald Detjens	
C-13	Alan Messer	
C-14	Julian Canete	California Asian Pacific Chamber of Commerce
C-15	Jennifer Cohen	Los Angeles Department of Transportation
C-16	Nick Swarup	
C-17	Matthew Burton	VER Technologies
C-18	Audry Durfor	City of San Jose Big Cities Department of Transportation Coalition in California
C-19	Katherine Pettibone	American Insurance Association
C-20	Timothy Burr	Lyft
C-21	Paul Escobar	Silicon Valley Leadership Group
C-22	Mike Garbedian	
C-23	Anges Davol	San Francisco International Airport
C-24	John Moreno	AAA of Northern California
C-25	Janice Li	San Francisco Bicycle Coalition
C-26	Stefan Seltz-Axmacher	Starsky Robotics
C-27	Ross Buckley	Personal Insurance Federation of California
C-28	Laura Bennett	TechNet
C-29	Rosemary Shahan	Consumer for Auto Reliability and Safety

<i>Public Comment</i>	<i>Department's Response</i>
<p>Makes reports (disengagement, collision reports) available to insurance companies and local governments. Reports can be made available on a website and can also be provided in a manner that protects personally identifiable information.</p>	<p>Collision reports are already available on the department's web site at: https://www.dmv.ca.gov/portal/dmv/detail/vr/autonomous/autonomousveh_01316+</p> <p>Disengagement reports are already available on the department's web site at: https://www.dmv.ca.gov/portal/dmv/detail/vr/autonomous/disengagement_report_2016</p>
Communication Link	
<i>Public Comment</i>	<i>Department's Response</i>
<p>Provide greater clarity as to what the department considers a valid communication link.</p>	<p>The department has not specified that a particular technology or method must be utilized for the two-way communication to give manufacturers the flexibility to innovate and determine the system of communication that works best with their autonomous vehicles.</p>
<p>Clarify that the communication link used to communicate with passengers may be achieved through a communication link with a device possessed by the passenger in the vehicle, like a smartphone, as an alternative to a communication link with the vehicle.</p>	<p>The department has not specified that a particular technology or method must be utilized for the two-way communication to give manufacturers the flexibility to innovate and determine the system of communication that works best with their autonomous vehicles.</p>
<p>Amend two-way communication link to specify 'if applicable' because privately owned vehicles, leased vehicles, or delivery vehicles without a human passenger should not be required to have a two-way</p>	<p>Section 228.06 (b)(1) has been modified to include "if applicable."</p>

communication link.	
If a remote operator is not required, why require a communication link?	Section 228.06 (b)(1) has been modified to include the phrase “if applicable” to address deployments where there is no remote operator.
Exclude confidential business information from being included in the description of how the manufacturer will monitor the communication link.	Section 227.38 (c)(1)(B) only requires that a manufacturer provide a description of how it will monitor a communication link, the section does not require a manufacturer to provide confidential business information.
Coordination with Local Jurisdictions – Section 227.38	
<i>Public Comment</i>	<i>Department’s Response</i>
Coordinating with hundreds of local governments creates an inefficient testing regime and unnecessary burden.	Section 227.38 no longer requires coordination with local authorities. Subdivision (a) has been revised to require that manufacturers provide a written notification to local authorities as defined in Vehicle Code section 385 (“the legislative body of every county or municipality having the authority to adopt local police regulations”) in the jurisdiction where the vehicles are to be tested.
This could create an unnecessary backlog and delay testing because manufacturers could need to determine hundreds of contacts across the state.	Section 227.38 involves the testing of vehicles that do not require a driver. The revised language only requires a notification to local authorities as defined in Vehicle Code section 385. A manufacturer should be able to easily determine the appropriate officials in the local jurisdiction where the vehicles are to be tested.
The proposed regulations do not provide sufficient clarity in terms of the expected level of coordination, and this has the potential to create significant uncertainty for testing.	Section 227.38 no longer requires coordination with local authorities.
Does not address how local authorities are required to respond	Section 227.38 no longer requires coordination with local authorities. The section only requires a notification to local authorities.

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<p>after receiving notice.</p>	
<p>Does not explain how the coordination with local authorities is supposed to be done, and it actually stops at only requiring the manufacturers to submit a copy of the notification. Unclear how local authorities would respond to written notice, timeline to respond, etc. Need additional steps.</p>	<p>Section 227.38 no longer requires coordination with local authorities. The section only requires a notification to local authorities. The decision on the approval for a permit to test lies with the department. The timeline for review of an application for testing is specified in section 227.20.</p>
<p>DMV should maintain a list of contact persons for local jurisdictions.</p>	<p>The contact person for a local authority can change over time, making such a list a constantly changing document. A manufacturer desiring to test in specific localities can easily determine the appropriate officials in the local jurisdiction where the vehicles are to be tested.</p>
<p>Cities should retain authority to designate where testing occurs.</p>	<p>Vehicle Code Section 38750 (c) provides that autonomous vehicles shall not be operated on public roads until a manufacturer applies to, and receives approval, from the department. Section 38750 (a)(3) defines “department” to mean the Department of Motor Vehicles. Pursuant to California law, the approval of an application to operate autonomous vehicles on public roads rests with the Department of Motor Vehicles.</p>
<p>Cities must retain authority to designate where and when testing and deployment can occur on their city streets. Regulations should be clarified to include consent.</p>	<p>Vehicle Code Section 38750 (c) provides that autonomous vehicles shall not be operated on public roads until a manufacturer applies to, and receives approval, from the department. Section 38750 (a)(3) defines “department” to mean the Department of Motor Vehicles. Pursuant to California law, the approval of an application to operate autonomous vehicles on public roads rests with the Department of Motor Vehicles.</p>
<p>Inadequately requires manufacturers to tell a municipality that it plans on testing but does not require the municipality to approve. Local authorities must be able to grant permission.</p>	<p>Vehicle Code Section 38750 (c) provides that autonomous vehicles shall not be operated on public roads until a manufacturer applies to, and receives approval, from the department. Section 38750 (a)(3) defines “department” to mean the Department of Motor Vehicles. Pursuant to California law, the approval of an application to operate autonomous vehicles on public roads rests with the Department of Motor Vehicles.</p>

<p>The notification process should be clarified to include consent.</p>	<p>Vehicle Code Section 38750 (c) provides that autonomous vehicles shall not be operated on public roads until a manufacturer applies to, and receives approval, from the department. Section 38750 (a)(3) defines “department” to mean the Department of Motor Vehicles. Pursuant to California law, the approval of an application to operate autonomous vehicles on public roads rests with the Department of Motor Vehicles.</p>
<p>Data Collection/Data Ownership/Privacy</p>	
<p><i>Public Comment</i></p>	<p><i>Department’s Response</i></p>
<p>There are appears to be no set requirement in the proposed regulation for what data is collected by autonomous vehicles.</p>	<p>Vehicle Code section 38750 (g) requires the capturing and storing of “autonomous technology sensor data for at least 30 seconds before a collision occurs.” Proposed regulation section 228.24 requires manufacturers disclose to drivers or occupants of autonomous vehicles the information that the vehicle collects that is not necessary for the safe operation of the vehicle.</p>
<p>California’s existing, robust data ownership and privacy policies would apply to autonomous vehicles and protect riders, while still allowing for the necessary data collection for autonomous technology. As such, we do not believe the final regulations need to address these issues.</p>	<p>California’s existing privacy laws address personal identifier information but do not address information that a motor vehicle may collect regarding the typical usage of a vehicle, including the times that a person operates a vehicle and the common places that a person travels to using that vehicle. Proposed regulation section 228.24 addresses the privacy that is not covered by existing law by requiring manufacturers to disclose to drivers or occupants of autonomous vehicles the information that the vehicle collects that is not necessary for the safe operation of the vehicle.</p>
<p>If the State wishes to ensure vehicles are basing their movements on accurate data, or if the State wishes to understand what went wrong in the case of a crash, the regulations should specify that companies provide the State with a copy of the data used by the self-driving automobile's algorithms (electronic maps, etc.).</p>	<p>Regulation section 228.06 requires that manufacturers certify that they will at least annually provide updates to the autonomous technology to ensure that the autonomous vehicle complies with any changes in the law relevant to the dynamic driving task and continually provide updates pertaining to location and mapping information used by the autonomous technology. The section also requires manufacturers certify that the vehicles contain a data recorder that captures autonomous technology sensor data at least 30 seconds prior to a collision. The collection of algorithms would require the submission of highly sensitive and confidential business information, which is unnecessary since manufacturers are providing the certifications required by Section 228.06.</p>
<p>Definitions in Article 3.7 – Section 227.02</p>	

<i>Public Comment</i>	<i>Department's Response</i>
<p>Define Public Roads to exclude airport roadways- Airport roadways are not "public roads". Suggest amending definition to include "Roadways on publicly owned airports are not 'public roads.' <i>Consistent with City of Oakland v. Burns 46 Cal.2d 401 (1956), a roadway within an airport owned and operated by a city in its proprietary capacity is a 'private road' and not a 'public road.'</i></p>	<p>The definition of "public road" in Section 227.02 (m) incorporates the definition of "highway" from Vehicle Code section 360, "offstreet public parking facility" as defined in Vehicle Code section 4000, and "street" from Vehicle Code section 590. As defined, the definition would exclude airport roadways and the suggested amendment is unnecessary.</p>
<p>Definition of Remote Operator- The proposed definition of remote operator and Section 227.38 of the regulations could further be clarified to specify what role the remote operator will have and if they are able to physically control or assist the vehicle when the technology does not work properly.</p>	<p>The definition of "remote operator" has been revised to clarify the role that a remote operator may have with respect to control of a vehicle. Section 227.02 (n) states that a remote operator "may also have the ability to perform the dynamic driving task for the vehicle or cause the vehicle to achieve a minimal risk condition. Renumbered subdivision (i) of Section 227.02 defines "minimal risk condition" to be a low-risk operating condition that an autonomous vehicle resorts to when the automated driving system fails. Proposed regulation section 227.38 further specifies that a driverless test vehicle be equipped with a link to allow two-way communication between the remote operator and any passengers.</p>
<p>Definition of 'remote operator' should be broadened and further support innovation. Suggest amending to: Remote operator— <u>testing</u>: a natural person designated by the</p>	<p>The definition of remote operator proposed by the department is consistent with the requirement in Vehicle Code section 38750 that for testing the operator is the person that engages the autonomous technology, the requirement that the vehicle be operated by an employee, contractor, or, designee of the manufacturer, and that the operator have the proper class of license for the type of vehicle being tested.</p>

<p><u>developer</u> who: possesses the proper class of license <u>training</u> for the type of test vehicle being operated; <u>may or may not be</u> inside the vehicle; engages and monitors the autonomous technology; and is able to communicate with occupants in the vehicle through a communications link.</p>	
<p>Definition of Remote Operator- Clarify definition to require that there should be some form of human intervention available for safety. 'Remote operator' does not require the remote operator to be able to take control of the AV tested on public roads. During early deployment phase, there should be some mechanism for human intervention to ensure the safety of both passengers and other roadway users.</p>	<p>The definition of "remote operator" has been revised to clarify the role that a remote operator may have with respect to control of a vehicle. Section 227.02 (n) states that a remote operator "may also have the ability to perform the dynamic driving task for the vehicle or cause the vehicle to achieve a minimal risk condition. Renumbered subdivision (i) of Section 227.02 defines "minimal risk condition" to be a low-risk operating condition that a resorts to when the automated driving system fails. Proposed regulation section 227.38 further specifies that a driverless test vehicle be equipped with a link to allow two-way communication between the remote operator and any passengers.</p>
<p>Correct use of 'autonomous vehicles' to 'autonomous test vehicles' – Replace 'autonomous vehicles' with 'autonomous test vehicles' in sections 227.02(m), 227.02(c), 227.38(b), 227.38(c),</p>	<p>The suggested corrections have been made to Sections 227.02 (c) and 227.38 (c), subdivision (b) of Section 227.38 has been deleted. The suggested change is unnecessary for Section 227.02 (m) because it is already clear that in the definition for "testing" the type of vehicle being tested is an autonomous test vehicle. Section 227.38 (e) deals with providing a law enforcement interaction plan when the manufacturer is conducting testing of driverless autonomous vehicles; since the section governs testing of driverless autonomous vehicles, adding the word "test" is unnecessary.</p>

and 227.38(e).	
Definitions in Article 3.8 – Section 228.02	
<i>Public Comment</i>	<i>Department’s Response</i>
<p>Definition of Deployment- Add a new definition to section 228.02 to clarify deployment as “deployment also includes the operating of autonomous vehicles outside of a testing program where transportation services are provided for purposes of delivering packages or animals.”</p>	<p>The suggested amendment is unnecessary because the proposed regulation already includes the broad statement that deployment includes “otherwise making commercially available outside of a testing program.” Due to the unique safety and regulatory considerations associated with commercial vehicles the department is initially focusing on the deployment of passenger vehicles. The delivery of packages is not contemplated as part of this rulemaking.</p>
<p>Definition of Passenger- Should be revised by striking “but does not engage the technology” from the second sentence. In many test vehicles, passengers will not have the ability to engage the vehicle’s autonomous technology in autonomous mode. It may eventually be, however, that passengers in some of the more advanced test vehicles and in deployed vehicles are able to engage the vehicle’s autonomous technology. For instance, merely turning on the vehicle and entering a destination effectively “engages” the autonomous</p>	<p>Subdivision (d) specifies that the definitions from section 227.02 also apply to Article 3.8. “Passenger” as defined in section 227.02 (k) “has no role in the operation of that vehicle when the autonomous technology is engaged.” The definition clarifies that a passenger “may summon a vehicle or input a destination, but does not engage the technology, monitor the vehicle, or drive or operate the vehicle.” For test purposes, the person that engages the technology is defined by Vehicle Code Section 38750 as an “operator”, consequently the definition of passenger must exclude the person that engages the technology.</p>

technology.	
Disengagement Reports – Section 227.50	
<i>Public Comment</i>	<i>Department’s Response</i>
Disengagement reports is a burden to manufacturers.	In May 2013, NHTSA issued “ <i>Preliminary Statement of Policy Concerning Automated Vehicles</i> ” which encouraged states to require manufacturers testing autonomous vehicles to submit data on instances when the vehicles had to transition out of the self-driving mode and the driver had to take control of the vehicle because of a system failure or limitations. As expressed by NHTSA, the collection of this information expands the body of data and supports research concerning autonomous vehicles. The requirement for disengagement reports was established in the department’s autonomous vehicle testing regulations that became effective in September 2014. Since then, the department has received disengagement reports from permitted manufacturers for testing years 2015 and 2016. The amended regulations provide a uniform format by which the data shall be submitted to the department, which should provide greater consistency and streamline the reporting process.
DMV should remove the burdens currently put on the autonomous vehicle industry of requiring disengagement reporting. The current disengagement reports have caused misleading public narratives in the media.	As expressed by NHTSA, the collection of this information expands the body of data and supports research concerning autonomous vehicles. The reports provide the department a greater understanding of the testing activities and enables the department to check whether the causes of disengagements that impact the safe operation of the vehicles as noted in those reports are being addressed by manufacturers. The amended regulations provide a uniform format by which the data shall be submitted to the department.
Reports of disengagements imposes an unnecessary paperwork burden on testers and question why the DMV needs the information.	As expressed by NHTSA, the collection of this information expands the body of data and supports research concerning autonomous vehicles. The reports also provide the department and the public with greater understanding of testing activities occurring in California and of the technology’s capabilities and limitations while it is in a developmental stage. The amended regulations provide a uniform format by which the data shall be submitted to the department.
As an alternative to disengagement reporting, the DMV may want to consider ways to have autonomous vehicle companies report things the vehicles did well or safely.	The focus of Vehicle Code Section 38750 is whether the vehicles operate safely on public roads. Getting information on disengagements provides a perspective on autonomous technology functions and capabilities that require further development and testing in order for the vehicles to operate safely.

<p>There are unintended consequences of the current disengagement reports (examples given); explore new safety metrics that more accurately represent safety metrics, challenge developers to propose and test new metrics and engage in industry safety, engineering and science organizations to create new approaches.</p>	<p>The department has been issuing testing permits since September 2014 and has received disengagement reports for testing years 2015 and 2016. These reports provide the department with greater understanding of testing activities occurring in California and of the technology’s capabilities and limitations while it is in a developmental stage. The department has not mandated any specific testing method. Manufacturers are required to identify the testing methods and metrics that are appropriate for the intended operational design domain of their vehicle.</p>
<p>Unclear what disengagement entails. Would be more appropriate for level 4 and 5 vehicles to enter a state of minimal risk rather than to disengage or deactivate.</p>	<p>Section 227.50 (a) clearly defines disengagement to mean “a deactivation of the autonomous mode when a failure of the autonomous technology is detected or when the safe operation of the vehicle requires the test driver to disengage the autonomous mode and take immediate manual control of the vehicle, of in the case of driverless vehicles, when the safety of the vehicle, the occupants of the vehicle, or the public requires that the autonomous technology be deactivated.” This reporting addresses disengagement situations that occur during testing, and requiring the vehicle to achieve a minimal risk condition may not be the appropriate response in a testing situation.</p>
<p>Request deleting the requirement identifying whether the disengagement was safety-related or a planned test. This will be a disincentive to plan test disengagements for fear that reporting a high number of disengagements, even if planned, would result in a negative perception and disproportionate scrutiny.</p>	<p>Section 227.50 (b)(3)(v) has been deleted. The proposed regulation no longer requires identifying whether the disengagement was safety related or a planned test.</p>
<p>Not clear if manufacturers are required to summarize</p>	<p>Subdivision (b)(3) has been amended to incorporate form OL 311R which includes a format for reporting a summary for each disengagement that that each test vehicle has experienced.</p>

<p>disengagements for all test vehicles in aggregate or for each test vehicle. We recommend that the DMV amend section 227.50.b.3. to “The annual report shall summarize disengagements for each permitted test vehicle for each month as follows:”</p>	
<p>A disengagement should be defined as an unexpected event or failure that requires the safety driver to take control of the vehicle in order to prevent a crash or traffic violation.</p>	<p>The definition already specifies that a disengagement is either a failure of the autonomous technology or when the safety of the vehicle, its occupants, or the public requires that the autonomous technology be deactivated. The definition broadly includes the events suggested by this comment.</p>
<p>A disengagement should not be reported for the following:</p> <ul style="list-style-type: none"> • Operational constraints where either the safety driver has been trained to disengage the system, or when the system detects the constraint and disengages automatically. For example, a system that requires the safety driver to navigate through a construction zone. • System errors or failures. For example, a software bug or sensor dropout that does not affect the safe operation of the 	<p>The purpose of obtaining disengagement reports is to ascertain the type of situations where autonomous technology is incapable of operating safely. If there are system constraints that prevent a vehicle from operating safely, such as the inability to operate in a construction zone, it is appropriate to include this type of disengagement events on the report. The proposed regulations do not require reporting of a planned transfer of control back to a test driver, such as at the end of test.</p>

<p>system.</p> <ul style="list-style-type: none"> • Discretionary decisions made by the safety driver. For example, when the safety driver perceives a vehicle is approaching too quickly and opts to disengage the system. • Any tests that are planned to result in a disengagement. • The end of a test or experiment. 	
<p>Disengagement reports should be made available to the public and filed with the department on a more frequent basis. Annual report of disengagements is too infrequent.</p>	<p>Commenters have suggested that compiling and submitting the reports can be a burdensome process. The department has balanced the concerns about the burden of preparing the reports with the benefits of the information provided in the reports and concluded that having the reports submitted annually strikes the appropriate balance.</p>
<p>Should require disengagement reports to be filed on a quarterly basis because of the rapidly changing state of autonomous vehicle technology.</p>	<p>Commenters have suggested that compiling and submitting the reports can be a burdensome process. The department has balanced the concerns about the burden of preparing the reports with the benefits of the information provided in the reports and concluded that having the reports submitted annually strikes the appropriate balance.</p>
<p>Disengagement data should be made available in a standardized electronic format such as Excel.</p>	<p>Subdivision (c) has been added to Section 227.50 to incorporate the standardized format for future Annual Reports of Autonomous Vehicle Disengagements. The department posts an electronic version of the reports on its website.</p>
<p>Driver Manufacturer Responsibilities 228.28</p>	
<p><i>Public Comment</i></p>	<p><i>Department's Response</i></p>
<p>Seems to favor fleet operations over personal ownership. Discourages any</p>	<p>Section 228.28 has been deleted.</p>

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<p>business model where the manufacturer relinquishes control over the vehicle...suggest section be revised to be more inclusive of different type of deployment and ownership models.</p>	
<p>Consider revising Section 228.28(b) to “Unless the driver bypasses, modifies or otherwise overrides the standard autonomous functionality, in which case the driver shall be responsible for any failure to adhere to applicable traffic laws.”</p>	<p>Section 228.28 has been deleted.</p>
<p>Because existing law reflects the best approach for allocating responsibility and protecting consumers, we recommend deleting § 228.28. In doing so, California would avoid restricting the development of AV business models in a way that would hamper consumers’ ability to obtain the many safety and economic benefits that AVs will provide.</p>	<p>Section 228.28 has been deleted.</p>
<p>Product Liability –Section 228.28</p>	
<p><i>Public Comment</i></p>	<p><i>Department’s Response</i></p>
<p>We support manufacturers being appropriately responsible for their</p>	<p>Section 228.28 has been deleted.</p>

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<p>products, however, we believe this is addressed for autonomous vehicle in current tort law and need not be addressed or included in this regulatory proceeding.</p>	
<p>Liability for damage and bodily injury arising from accidents would be better addressed through the courts and in the Legislature.</p>	<p>Section 228.28 has been deleted.</p>
<p>Opposes attempts to shift legal liability onto customers when they are not in control of the vehicle. Questions whether DMV has authority to engage in rulemaking regarding legal liability.</p>	<p>Section 228.28 has been deleted.</p>
<p>Delete section 228.28. California already has well developed laws governing product liability and negligence. This provision would disrupt the existing legal framework to should properly allocate responsibility and protect consumers.</p>	<p>Section 228.28 has been deleted.</p>
<p>Ensure automakers are protected from liability regarding third party modification.</p>	<p>Section 228.28 has been deleted.</p>
<p>Recommend clarifying that a court with</p>	<p>Section 228.28 has been deleted.</p>

jurisdiction should make the determination if the test vehicle is at-fault in the collision.	
Unduly impacts the determination of liability for damage and bodily injury arising from collisions with AV.	Section 228.28 has been deleted.
DMV does not have the statutory authority to determine what liability laws should apply to these scenarios.	Section 228.28 has been deleted.
Reporting Collisions – Section 227.48	
<i>Public Comment</i>	<i>Department’s Response</i>
Section 227.48 should be amended to require any technical data and video associated with a crash should be provided to the department and posted on the website.	Technical data raises the concerns with respect disclosing trade secret and confidential business information and is thus not required by the department. The accident reports required by the department are modeled in the format of the public accident reports used by law enforcement agencies.
Consumer/End User Education Plan – Section 228.06	
<i>Public Comment</i>	<i>Department’s Response</i>
Consider requiring the education plan to provide an explanation for how subsequent purchasers can determine the current capabilities, ODD, or software version <i>in effect at the time of purchase</i> .	Subdivision (c)(1)(C) requires manufacturers to submit to the department an explanation of how end users will receive an education plan that covers the operational design domain of the vehicle and includes the identification of restrictions on the technology, how to engage and disengage the technology, how to determine the technology is engaged, and the operator and manufacturer’s responsibilities with respect to the operation of the vehicle. This materials should be available to subsequent purchasers. Subdivision (a)(9) also requires a certification that the manufacturer will notify registered owners of the availability of, and how to access, updates to the technology for law changes and mapping and location information.
Sales personnel at auto dealerships are not equipped to describe the vehicle features and provide training.	Manufacturers are required to provide to the department an explanation of how end users will receive an education on the operation of the autonomous vehicles. If a manufacturer’s plan is to have its dealership network provide training to consumers the manufacturer will provide an explanation of that plan in its submission to the department.

<p>Consumer or end-user Education plans should be deployed to the public via new car dealers.</p>	<p>Manufacturers are developing and deploying the technology and creating an education plan on the technology that they have developed. If manufacturers desire to have the consumer education conducted by their dealer network, manufactures can explain how that will occur in their submission to the department.</p>
<p>Law Enforcement Interaction Plan – Section 227.38(e)</p>	
<p><i>Public Comment</i></p>	<p><i>Department’s Response</i></p>
<p>The law enforcement interaction plan is too rigid and overly-prescriptive.</p>	<p>Comments on prior drafts of the regulations and at the public workshop conducted in October 2016 indicated that the department had not provided sufficient guidance on what needed to be in the interaction plan. The department consulted with law enforcement agencies on what should be in the interaction plan. Subdivision (e) contains the elements deemed necessary by law enforcement agencies.</p>
<p>Law enforcement plans should be updated on a quarterly basis</p>	<p>Subdivision (e)(2) requires a regular review or the plans and updated as changes are needed, but no less that on an annual basis. This gives manufacturers the flexibility to make updates as they become necessary without having to wait for a specific due date. Requiring quarterly updates may mean that manufacturers would be obligated to make updates even when they are not necessary.</p>
<p>Law enforcement plan should include:</p> <ul style="list-style-type: none"> • AV data recordings must be immediately made available to local law enforcement • Remote operator must be immediately available to engage in a post collision conversation with law enforcement • A live person must be available 24/7 to provide technical assistance to law enforcement • The 	<p>The department consulted with law enforcement agencies on what should be in the interaction plan. Subdivision (e) contains the elements deemed necessary by law enforcement agencies.</p> <p>The proposed regulation cannot alter or amend existing law. Vehicle Code Section 9951 provides that a device installed in a vehicle that records data for the purpose of retrieval after an accident cannot be accessed by anyone other than the owner of a vehicle except: in response to a court order, for the purpose of improving vehicle safety, or as necessary for servicing or repairing a vehicle.</p> <p>Subdivision (e)(1)(A) has been amended to require that the remote operator be available at all times the vehicle is in operation.</p> <p>The comment does not provide any authority to support the suggestion that the regulations require a manufacturer to release a local jurisdiction from liability when a vehicle needs to be moved to clear a roadway.</p>

<p>owner/manufacturer shall release the local jurisdiction from any liability in the event that the local jurisdiction needs to move the vehicle to clear the roadway.</p>	
<p>Manufacturers should submit their interaction plans and updates to local law enforcement in addition to the CHP. Disengagements and collisions occur on local streets and local police departments must have the most updated information.</p>	<p>Local law enforcement agencies will have a mechanism to obtain the law enforcement interaction plans. Subdivision (e)(4) requires manufacturers to provide local law enforcement agencies with the internet web site address where the law enforcement interaction plan may be accessed. Subdivision (e)(2) requires that the plan be reviewed on a regular basis and updated as needed.</p>
<p>Event Data Recorder</p>	
<p><i>Public Comment</i></p>	<p><i>Department's Response</i></p>
<p>Data should be stored in accordance with the recommendations that will be issued by the SAE EDR Task force.</p>	<p>The requirement that manufacturers certify to the department that the vehicles are equipped with a mechanism to capture and store sensor data for 30 seconds before a collision is established in Vehicle Code Section 38750 (c)(1)(G). The department cannot amend this statutory requirement by regulation. As the SAE EDR Task force has not issued any recommendations at this time, it is not possible to include its recommendations in the regulation.</p>
<p>Wait on over-specifying EDR requirements until the SAE EDR task force has had a chance to sort out the special case for ADS-engaged crash reconstruction purposes.</p>	<p>Vehicle Code Section 38750 subdivision (c)(1) states that an autonomous vehicle shall not be operated on public roads until a manufacturer submits an application to the department and the application is approved by the department pursuant to the regulations adopted by the department. Subdivision (c)(1)(G) states that the application must include a certification that the vehicles are equipped with a mechanism to capture and store sensor data for 30 seconds before a collision. The department cannot amend this statutory requirement by regulation. As the SAE EDR Task force has not issued any recommendations at this time, it is not possible to include its recommendations in the regulation.</p>
<p>Requirements for event data recorder go beyond those found in</p>	<p>The requirement that manufacturers certify to the department that the vehicles include a mechanism to capture and store sensor data prior to a crash is established in Vehicle Code Section 38750 (c)(1)(G). The department cannot amend this statutory</p>

<p>the NHTSA regulations and improperly impose automated vehicle design requirements.</p>	<p>requirement by regulation.</p>
<p>Premature to go beyond the statutory requirement until the industry and standard-setting organizations are able to evaluate what standards are appropriate.</p>	<p>The comment is related to the language in the proposed text requiring the capture of data “at least 5 seconds after, or until the vehicle comes to a complete stop.” This language has been deleted from the proposed regulation.</p>
<p>Replace ‘all vehicle functions that are controlled by the autonomous technology’ with ‘sufficient for crash reconstruction purposes’ this will clarify the type of data to retain and is consistent with the intent of the draft language.</p>	<p>This proposed amendment is not consistent with and attempts to narrow the requirements of Vehicle Code Section 38750 (c)(1)(G) that the device “capture and store the autonomous technology sensor data for at least 30 seconds before a collision occurs.”</p>
<p>Requiring a commercially available tool assumes a level of standardization for autonomous vehicle technology that is not likely to exist for years. State is getting ahead of the technology and creating an impossible to achieve mandate.</p>	<p>Vehicle Code Section 38750 (c)(1)(G) requires that the data be stored in a read-only format “until extracted from the mechanism by an external device capable of downloading and storing the data.” Federal requirements for event data recorders specify that the data must be retrievable using a commercially available tool. The requirement in the proposal is consistent with federal requirements. A manufacturer is free to design the tool for extracting the data as long as that tool is made available commercially.</p>
<p>Statute only requires that the vehicle have a mechanism to store data before a collision occurs, not after, and data must be capable of</p>	<p>Vehicle Code Section 38750 (c)(1)(G) requires that the data be stored in a read-only format “until extracted from the mechanism by an external device capable of downloading and storing the data.” Federal requirements for event data recorders specify that the data must be retrievable using a commercially available tool. The requirement in the proposal is consistent with federal requirements. A manufacturer is free to design the tool for extracting the data as long as that tool is made available</p>

<p>being extracted by any “external device,” not a “commercially available” tool. The flexibility in the legislature’s data recording requirement is better suited to a rapidly evolving autonomous vehicle industry, and adding more data recording requirements does not contribute to the safe performance of the vehicle.</p>	<p>commercially.</p>
<p>Extend retention of collision data from 3 to 5 years. 5-year retention would meet fairness objectives by ensuring data remains available to potential litigants.</p>	<p>Vehicle Code Section 38750 (c)(1)(G) requires that the data be retained for three years after a collision. The department cannot by regulation amend a requirement of the statute.</p>
<p>Suggest extending the required timeframe to 90 seconds prior to a collision to better capture weather and other factors that may not be available 30 seconds prior to the collision.</p>	<p>Vehicle Code Section 38750 (c)(1)(G) requires that the device “capture and store the autonomous technology sensor data for at least 30 seconds before a collision occurs.” The department has been advised that 30 seconds of data is a large amount of data and presents challenges to design a system that can capture that amount of data. The department’s proposal is consistent with the requirement of Vehicle Code Section 38750.</p>
<p>Regulations should require the data recorder to be retained and accessible for at least as long as the current statute of limitations for personal and property liability in California.</p>	<p>Vehicle Code Section 38750 (c)(1)(G) requires that the data be retained for three years after a collision. The department’s proposal is consistent with the requirement of Vehicle Code Section 38750. The department cannot by regulation amend a requirement of the statute.</p>

<p>The proposed regulation requires that driverless automobiles have an “autonomous technology data recorder,” but stops short of outlining the necessary data. In our view, all driverless automobiles should, at a minimum, capture data related to speed, steering, braking, and objects detected by sensors or video cameras.</p>	<p>The requirement that manufacturers certify to the department that the vehicles include a mechanism to capture and store autonomous technology sensor data prior to a crash is established in Vehicle Code Section 38750 (c)(1)(G). The proposed language already clearly requires the retention of data related to the autonomous technology that controls the operation of a vehicle.</p>
<p>Financial Responsibility – Section</p>	
<p><i>Public Comment</i></p>	<p><i>Department’s Response</i></p>
<p>Five million dollar financial responsibility is inadequate.</p>	<p>Vehicle Code Section 38750 (c)(3) requires a certification that the manufacturer will maintain financial responsibility in an amount of five million dollars. The department cannot by regulation amend a requirement of the statute.</p>
<p>What is the reason behind the amount of five million dollars covered by an instrument of insurance, surety bond, or self-insurance (section 227.004 (c))? Why not, for instance, 3 million dollars?</p>	<p>Vehicle Code Section 38750 (c)(3) requires a certification that the manufacturer will maintain financial responsibility in an amount of five million dollars.</p>
<p>Suggestion that DMV address increased financial responsibility requirements. As written, it implies that a Level 2 or Level 3 permit require the same financial requirements as Level 4 permit. Therefore, it implies that the underlying the risk is the same.</p>	<p>Vehicle Code Section 38750 (c)(3) requires a certification that the manufacturer will maintain financial responsibility in an amount of five million dollars. The proof of financial responsibility requirements in the proposed regulations are consistent with the requirements of Vehicle Code Section 38750.</p>

<p>If the DMV agrees that the insurance requirements for the manufacturer scale to the size and class of fleet, then both OL 319, Autonomous Vehicle Tester (AVT) Program Application For Certificate Of Self-Insurance and OL 319A, Autonomous Vehicle Deployment Permit Application For Certificate of Self-Insurance (PDF) should be updated. Currently they have a checkmark to indicate whether the manufacturer has more than 25 vehicles. This is a dangerous suggestion that \$5,000,000 of self-insurance is sufficient for 25 vehicles.</p>	<p>Vehicle Code Section 38750 (c)(3) requires a certification that the manufacturer will maintain financial responsibility in an amount of five million dollars. Proposed Sections 227.42 (a)(1) and 228.20 (a)(1) specify that a manufacturer’s testing permit or permit to deploy may be suspended or revoked if it fails to maintain financial responsibility in the amount required by Vehicle Code Section 38750.</p>
<p>Upon review of two separate policies of already permitted autonomous vehicle manufacturers, our legal counsel found that the instrument of insurance does not have insurance policy language covering the autonomous test vehicles in the declaration page or endorsement page.</p>	<p>Vehicle Code Section 38750 (c)(3) requires a certification that the manufacturer will maintain financial responsibility in an amount of five million dollars. The proof of financial responsibility requirements in the proposed regulations are consistent with the requirements of Vehicle Code Section 38750.</p>
<p>Without proper definition and insurance policy language, unscrupulous</p>	<p>Vehicle Code Section 38750 (c)(3) requires a certification that the manufacturer will maintain financial responsibility in an amount of five million dollars. The proof of financial responsibility requirements in the proposed regulations are consistent with the requirements of Vehicle Code Section 38750.</p>

<p>insurance brokers can simply sell a standard general liability policy of \$5,000,000 without telling the carrier. The carrier is then legally liable for risks not defined in the policy form and can deny coverage to cover autonomous test vehicles in a similar manner that transport network company vehicles have been denied upon accident and discovery.</p>	
<p>The DMV may inadvertently approve Manufacturer's Testing Permit with invalid evidence of financial responsibility through standard form General Liability coverages.</p>	<p>Vehicle Code Section 38750 (c)(3) requires a certification that the manufacturer will maintain financial responsibility in an amount of five million dollars. The proof of financial responsibility requirements in the proposed regulations are consistent with the requirements of Vehicle Code Section 38750.</p>
<p>The insurance policy should include an endorsement that specifically addresses autonomous test vehicles.</p>	<p>Vehicle Code Section 38750 (c)(3) requires a certification that the manufacturer will maintain financial responsibility in an amount of five million dollars. The proof of financial responsibility requirements in the proposed regulations are consistent with the requirements of Vehicle Code Section 38750.</p>
<p>The insurance requirements for the manufacturer should scale to the size and class of fleet.</p>	<p>Vehicle Code Section 38750 (c)(3) requires a certification that the manufacturer will maintain financial responsibility in an amount of five million dollars. The proof of financial responsibility requirements in the proposed regulations are consistent with the requirements of Vehicle Code Section 38750.</p>
<p>The regulation should be amended to require providing a maximum vehicle count per \$5,000,000 of financial responsibility. For example, \$5,000,000 of</p>	<p>Vehicle Code Section 38750 (c)(3) requires a certification that the manufacturer will maintain financial responsibility in an amount of five million dollars. The proof of financial responsibility requirements in the proposed regulations are consistent with the requirements of Vehicle Code Section 38750.</p>

financial responsibility for every n-number of vehicles.	
The \$5,000,000 coverage needs to apply to the specific class of vehicle. A potential loss from a 25 semi-truck fleet is far larger than 25 private passenger fleet.	Vehicle Code Section 38750 (c)(3) requires a certification that the manufacturer will maintain financial responsibility in an amount of five million dollars. Proposed Sections 227.42 (a)(1) and 228.20 (a)(1) specify that a manufacturer’s testing permit or permit to deploy may be suspended or revoked if it fails to maintain financial responsibility in the amount required by Vehicle Code Section 38750.
The proposal is unclear as to what insurance is required for self-insurance or what limit applies. We recommend the DMV clearly specify the type of insurance required under the regulations to be consistent with the enabling statute, SB 1298.	Vehicle Code Section 38750 (c)(3) requires a certification that the manufacturer will maintain financial responsibility in an amount of five million dollars. The proof of financial responsibility requirements in the proposed regulations are consistent with the requirements of Vehicle Code Section 38750.
Questions whether 5 million dollar FR is sufficient in the public deployment phase when the number of AVs and fleets will proliferate.	Vehicle Code Section 38750 (c)(3) requires a certification that the manufacturer will maintain financial responsibility in an amount of five million dollars. The department cannot by regulation amend a requirement of the statute.
Excluded Vehicles	
<i>Public Comment</i>	<i>Department’s Response</i>
Provide a process for manufacturers to apply for an exemption to test certain excluded vehicles.	Due to the unique safety and regulatory considerations associated with commercial vehicles, the department is initially focusing on testing of passenger vehicles. Regulations governing the testing of vehicles that are excluded in Section 227.36 will be the subject of a separate regulatory proposal.
Suggests removal of the restrictions on using autonomous test vehicles to provide	Vehicle Code Section 35750 (d)(2) specifies that the testing regulations may include requirements that the department concludes are necessary to ensure the safe operation of autonomous vehicles on public roads. The department believes that members of the public that volunteer to participate in the testing of autonomous technology should not

<p>rides for compensation when the manufacturer is operating the vehicle and uses a driver that meets the testing regime’s requirements. As long as manufacturers comply with other applicable state laws, including for hire rules, and paying riders are provided ample notification that they will be transported in an autonomous test vehicle, there is no reason to deny those riders the opportunity to travel in an autonomous test vehicle and provide honest feedback to the manufacturer.</p>	<p>be charged a fee to participate in that testing to ensure that the testing is motivated by safety and not motivated by an interest in making money.</p>
<p>Questions the underlying rationale supporting this “fee” limitation for the purposes of driver-controlled testing and its incorporation into the definition of “passenger” for the purposes of driver-controlled testing.</p>	<p>Vehicle Code Section 35750 (d)(2) specifies that the testing regulations may include requirements that the department concludes are necessary to ensure the safe operation of autonomous vehicles on public roads. The department believes that members of the public that volunteer to participate in the testing of autonomous technology should not be charged a fee to participate in testing to ensure that the testing is motivated by safety and not motivated by an interest in making money.</p>
<p>Manufacturers should be able to test commercial vehicles</p>	<p>Due to the unique safety and regulatory considerations associated with commercial vehicles, regulations governing the testing of vehicles that are excluded in Section 227.36 will be the subject of a separate regulatory proposal.</p>
<p>When will the regulations be expanded to include heavy-duty trucks?</p>	<p>Due to the unique safety and regulatory considerations associated with commercial vehicles, regulations governing the testing of vehicles that are excluded in Section 227.36 will be the subject of a separate regulatory proposal.</p>
<p>Requests the removal</p>	<p>Due to the unique safety and regulatory considerations associated with commercial</p>

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<p>the 10,000 gross vehicle weight prohibition because it amounts to an indefinite statewide ban on any testing or deployment of heavy AVs.</p>	<p>vehicles, regulations governing the testing of vehicles that are excluded in Section 227.36 will be the subject of a separate regulatory proposal.</p>
<p>Collaborate with the federal transportation agencies on ways to develop regulations that would allow for the testing of automated commercial and transit vehicles.</p>	<p>Due to the unique safety and regulatory considerations associated with commercial vehicles, regulations governing the testing of vehicles that are excluded in Section 227.36 will be the subject of a separate regulatory proposal.</p>
<p>Suggests the removal of Subsection 227.28(a)(4) to allow for the testing of medium and heavy duty vehicle fleets.</p>	<p>Due to the unique safety and regulatory considerations associated with commercial vehicles, regulations governing the testing of vehicles that are excluded in Section 227.36 will be the subject of a separate regulatory proposal.</p>
<p>Suggests the removal of §227.28(a)(4) for development vehicles used only for testing. This paragraph may restrict both the design and equipment that can be used in test vehicles to further develop autonomous technologies.</p>	<p>Due to the unique safety and regulatory considerations associated with commercial vehicles, regulations governing the testing of vehicles that are excluded in Section 227.36 will be the subject of a separate regulatory proposal.</p>
<p>Because of ridesharing, ride hailing or package delivery services, the exclusion of vehicles exceeding 10,000 pound Gross Vehicle Weight inhibits the potential opportunities that driverless vehicles</p>	<p>Due to the unique safety and regulatory considerations associated with commercial vehicles, regulations governing the testing of vehicles that are excluded in Section 227.36 will be the subject of a separate regulatory proposal.</p>

<p>may provide.</p>	
<p>Information Privacy – Section 228.24</p>	
<p><i>Public Comment</i></p>	<p><i>Department’s Response</i></p>
<p>The section prohibits companies from denying use of an autonomous vehicle to people who refuse to agree to reasonable privacy terms and conditions. This approach is unprecedented in any technology industry and unnecessary in view of California’s robust existing privacy protections, as well as those afforded under the enforcement authority of the Federal Trade Commission. adding this additional layer of requirements is unnecessary, confusing and put simply, unworkable. We recommend deletion of this section.</p>	<p>The concerns in this comment are unwarranted. A manufacturer can either provide a written disclosure of the personal information collected by the vehicle that is not necessary for the safe operation of the vehicle, or anonymize that information. While subdivision (c) provides that a manufacturer cannot deny the use of a vehicle because a person has not provided written approval to use their personal information, pursuant to subdivision (b), the manufacturer could still allow the person the use the vehicle while obtaining information that is anonymized.</p> <p>The concerns about how this section could be applied in a fleet setting are also unwarranted. In a such a setting a manufacturer could simply anonymize information related to vehicle users and avoid the requirement to obtain written approval. The regulations clearly provide alternatives to address the commenter’s concerns.</p>
<p>These sections could be tailored to the sale of personally-owned AVs. Unclear how this sections would apply in a fleet model of deployment in which vehicle occupants change regularly and quickly.</p>	<p>In a fleet setting, a manufacturer can either provide a written disclosure to passengers or anonymize information related to vehicle users. The regulations do not specify how this written disclosure is provided, which leaves flexibility for the manufacturer to determine the disclosure method that is most appropriate for their deployment model. Alternatively, a manufacturer could simply anonymize information related to vehicle users.</p>
<p>This section is too vague and operationally challenging; appears to require ‘notice’ to one</p>	<p>The concerns in this comment are unwarranted. A manufacturer can either provide a written disclosure of the personal information collected by the vehicle that is not necessary for the safe operation of the vehicle, or anonymize that information. While subdivision (c) provides that a manufacturer cannot deny the use of a vehicle because a</p>

<p>set of people and ‘approval’ by another group of people. Lacks clarity as to how the requirements would be applied to remote operators.</p>	<p>person has not provided written approval to use their personal information, pursuant to subdivision (b), the manufacturer could still allow the person the use the vehicle while obtaining information that is anonymized.</p>
<p>Privacy disclosures should happen at the dealership.</p>	<p>This suggestion works under the regulations in certain situations. However, this comment does not take into account that not all autonomous vehicle users will be purchasers of vehicles and not all autonomous vehicle purchases will be conducted at dealerships.</p>
<p>Material Changes – Section 228.10</p>	
<p><i>Public Comment</i></p>	<p><i>Department’s Response</i></p>
<p>Autonomous vehicle technology will continue to evolve. Material improvements should be able to be made to vehicles quickly, and should not be delayed by an extra application and review process as is currently proposed.</p>	<p>The section has been amended to require the submission of an amended application when there are changes that include; operation at a different SAE level than in the approved application, operation on different roadway type than in the approved application, increasing the maximum speed of the vehicles by more than 15 mile per hour, operation in additional geographic levels in addition to those in the approved permit, and removing commonly occurring restrictions. The department is requiring amendment in these limited circumstances because they represent a major change in the operational design domain that was included on a previously approved permit. The submission of an amended application would not restrict the use of the vehicles as previously approved. Moreover the department’s review of the amended application will fall under the time frames established in Section 228.08.</p>
<p>This section could have safety implications. Delay in implementation of critical safety updates could place consumers at risk.</p>	<p>The language of the section has been amended to clearly specify the situations under which an amended application must be submitted. The requirements in the amended proposal do not include safety critical updates.</p>
<p>Updating material change requirement will make it harder to improve the capability or safety of a vehicle.</p>	<p>The comment does not explain why having an application subject to the time frames specified in Section 228.08 would make it harder to improve safety.</p>
<p>Section 228.10- Disagree with having to submit a new application prior to implementing material</p>	<p>The section has been amended to require the submission of an amended application when certain specified changes have been made. The DMV has a statutory obligation to include requirements in the regulations that assures the department that the vehicles will operate safely on public streets. The department is not dictating any specific design or performance characteristic, but is merely requiring an amended application</p>

<p>changes...” It’s not appropriate for DMV to arbitrate specific design and performance characteristics of these systems.</p>	<p>when there have been specific changes that impact the application that was previously approved by the department.</p>
<p>Operational Design Domain (ODD)</p>	
<p><i>Public Comment</i></p>	<p><i>Department’s Response</i></p>
<p>Consider including language that would permit ODD deviations for safety-related reasons.</p>	<p>Section 228.06 (a)(3) has been amended to require that an application for deployment include a description of how the vehicle is designed to act when it deviates outside of its ODD.</p>
<p>Would those updates require a modification fee?</p>	<p>Section 228.10 (b) has been amended to require the submission of an amended application when there are changes that: make the vehicles capable of operating at an SAE level different from the levels in the approved application, make the vehicles capable of operation on a different roadway type than in the approved application, increases the maximum speed of the vehicles by more than 15 mile per hour, allows operation in additional geographic levels in addition to those in the approved permit, and removing commonly occurring restrictions.</p>
<p>Define what types of ODD changes would require reporting updates.</p>	<p>The type of changes that would require an amended application have been specified in the amendment to Section 228.10 (b).</p>
<p>Does not appear to require the manufacturer to certify that the vehicle is capable of safely coming to a complete stop when the vehicle suddenly finds itself outside of its ODD and the driver is unable or does not take manual control of the vehicle. Oversight that can compromise public safety.</p>	<p>Amended Section 228.06 (a)(3) requires a description of how the vehicles are designed to react when outside of the ODD or when they encounter commonly-occurring or restricted conditions. The reactions can include transition to a driver or to a minimal risk condition, moving the vehicle from the lanes of travel and activation that will allow continued operation until the vehicle can come to a complete stop. Subdivision (c)(2) also clearly requires a description of how a vehicle will come to a complete stop when there is a failure of the autonomous technology that would endanger safety.</p>
<p>The DMV should clarify its language to allow manufacturers to</p>	<p>Section 228.06(a)(3) has been amended to clarify that manufacturers must describe how the vehicle will react in response to ODD and condition restrictions and specifies what those reactions can include.</p>

<p>meet ODD and restriction condition requirements in more than one way. Limited changes could more clearly give effect to this intent.</p>	
<p>Revise section to allow manufacturers to meet ODD restrictions in more than one way; example – manufacturers pursuing fleet operations can control when, how, where and under what conditions a vehicle is deployed.</p>	<p>Section 228.06(a)(3) has been amended to clarify that manufacturers must describe how the vehicle will react in response to ODD and condition restrictions and specifies what those reactions can include.</p>
<p>One of the ODDs should be an ‘urban, multimodal environment’ and the definition of this ODD should refer to the National Association of City Transportation Officials Urban Street Design Guide and the Transit Street Design Guide.</p>	<p>In an effort to use terminology that is common in the automobile manufacturing industry, the department has attempted to define terms consistent with the definitions commonly used by auto manufactures and the Society of Automotive Engineers (SAE). The term “roadway type” is intended to cover all types of roadways without having to create an extensive list of the different types of roadways.</p>
<p>Expand upon the definition of ODD by providing a specific reference to the FHAs Manual on Uniform Traffic Control Devices to aid manufacturers understanding of additional domain constraints and the standardized traffic control elements that must be interpreted</p>	<p>In an effort to use terminology that is common in the automobile manufacturing industry, the department has attempted to define terms consistent with the definitions commonly used by auto manufactures and the Society of Automotive Engineers (SAE).</p>

<p>under the Dynamic Driving Task.</p>	
<p>DMV should consider implementing uniform safety standards for situations in which the vehicle may be forced outside of the ODD.</p>	<p>Amended Section 228.06 (a)(3) requires a description of how the vehicles are designed to react when outside of the ODD or when they encounter commonly-occurring or restricted conditions. The reactions can include transition to a driver or to a minimal risk condition, moving the vehicle from the lanes of travel and activation that will allow continued operation until the vehicle can come to a complete stop.</p>
<p>Amend section 227.38(d) to require updates only when the operational design domains significantly changes.</p>	<p>Subdivision (l) has been added to Section 227.38 to require updates when there are changes that include; operation at a different SAE level than in the approved application, operation on different roadway type than in the approved application, switching from low speed vehicles as defined in Vehicle Code Section 385.5 to vehicles that are not low speed, operation in additional geographic levels in addition to those in the approved permit, and removing commonly occurring restrictions.</p>
<p>There may be necessary and legitimate deviations from strict road rules compliance...urge DMV to grant itself discretion to grant case-by-case exceptions to address such situations in a streamlined way if and when they arise.</p>	<p>Section 228.06(a)(9) has been amended to require a certification that the autonomous technology is designed to perform the dynamic driving task in compliance with the law except when necessary to enhance the safety of the vehicle’s occupants and/or other road users.</p>
<p>The ODD must differentiate between limited access and non-limited access streets.</p>	<p>Manufacturers are required to describe to the department all of the roadway types that are included in the operational design domain.</p>
<p>Section 227.42 Local authorities need to be aware of each vehicle ODD and needs a process that would allow for the ability to know and inform the DMV if an AV is found operating outside its ODD.</p>	<p>The comment is probably directed to Section 227.38. Subdivision (a) has been revised to require that manufacturers provide a written notification to local authorities as defined in Vehicle Code section 385 (“the legislative body of every county or municipality having the authority to adopt local police regulations”) in the jurisdiction where the vehicles are to be tested. The notification must include the ODD. Existing departmental procedures will provide a mechanism for local authorities to provide the department with any information or concerns regarding testing that is occurring in their jurisdictions.</p>
<p>Reporting Safety Defects – Section 228.12</p>	

<i>Public Comment</i>	<i>Department's Response</i>
Federal rules are already sufficient for reporting safety defects. State should develop a coordination mechanism with federal authorities to ensure they receive proper and sufficient notice.	The comment suggests that the State develop a coordination mechanism with the Federal government to receive notice of safety report submitted to Federal authorities. However, since the department is permitting the manufacturer to operate their vehicles on public roads it is appropriate for the department to receive a copy of any report directly from the manufacturer.
Overlaps processes already in place by the federal government...DMV should not establish itself as a regulator on issued pertaining to the design and performance of vehicles.	The department is permitting the manufacturer to operate their vehicles on public roads it is appropriate for the department to receive a copy of any report directly from the manufacturer.
Certifications	
<i>Public Comment</i>	<i>Department's Response</i>
Section 228.06(a)(10) – the regulations should rely on performance benchmarks and require those benchmarks to be achieved and documented by a third party.	Subdivision (a)(10) has been renumbered to (a)(11). The comment provides no guidance on how the department would establish those benchmarks or identify the third party that would be capable of documenting compliance with those benchmarks. This suggestion would require the department to assume the role of NHTSA in establishing the safety benchmarks for vehicles.
Section 228.06 – DMV should require manufacturers to resubmit vehicle safety assessments if they trigger a pre-specified safety threshold dataset. >X disengagements per mile.	In September 2017, NHTSA released <i>Automated Driving Systems 2.0: A Vision for Safety</i> which clearly states that the safety self-assessment is voluntary and is not required to be submitted to NHTSA. Amended subdivision (d) requires manufacturers to provide a copy of the safety self-assessments that they have publicly disclosed.
Section 227.18 – Regulations should specify performance	The comment provides no guidance on how the department would establish those benchmarks or identify the third party that would be capable of documenting compliance with those benchmarks. This suggestion would require the department to

<p>benchmarks that are achieved in a controlled test environment and reviewed by a third party prior to deployment.</p>	<p>assume the role of NHTSA in establishing the safety benchmarks for vehicles.</p>
<p>Relying on self-certification from manufacturers is insufficient. Manufacturers should be required to submit annual safety assessments with documentation that the “digital driver” complies with all safety criteria set by the California DMV.</p>	<p>In September 2017, NHTSA released <i>Automated Driving Systems 2.0: A Vision for Safety</i> which clearly states that the safety self-assessment is voluntary and is not required to be submitted to NHTSA. Amended subdivision (d) requires manufacturers to provide a copy of the safety self-assessments that they have publicly disclosed.</p>
<p>Vehicle/Technology Updates</p>	
<p><i>Public Comment</i></p>	<p><i>Department’s Response</i></p>
<p>Section 228.06 – Is it the best approach to put the legal onus on vehicle owners for safety-critical updates that a manufacturer could easily make over the air.</p>	<p>Section 228.06 requires manufacturers to certify that they will notify registered owners of the availability, and how to access, updates to the autonomous technology as needed to comply with changes to California Vehicle Code, location, or mapping information. Once a vehicle has been relinquished to the custody of an end user, manufacturers may not have the ability to implement those updates without the involvement of the end user. The regulations allow for over the air updates, but do not mandate the mechanism through which these updates are applied to a specific vehicle.</p>
<p>The manufacturer should be responsible for ensuring that safety-critical updates are applied to automated driving systems and prohibit the use of automated driving systems that are out-of-date.</p>	<p>Section 228.06 requires manufacturers to certify that they will notify registered owners of the availability, and how to access, updates to the autonomous technology as needed to comply with changes to California Vehicle Code, location, or mapping information. Once a vehicle has been relinquished to the custody of an end user, manufacturers may not have the ability to implement those updates without the involvement of the end user. The regulations allow for over the air updates, but do not mandate the mechanism through which these updates are applied to a specific vehicle.</p>
<p>Owners should be responsible for applying non-safety</p>	<p>Section 228.06 requires manufacturers to certify that they will notify registered owners of the availability, and how to access, updates to the autonomous technology as needed to comply with changes to California Vehicle Code, location, or mapping information.</p>

<p>critical updates (e.g., convenience features). In an application to the DMV for post-test deployment, the manufacturer should describe its process for delivering safety-critical updates to vehicle owners and how the use of outdated automated driving systems will be prevented.</p>	<p>The regulations do not mandate the mechanism through which a specific vehicle's technology will be updated.</p>
<p>Transfer of Autonomous Vehicles – Section 227.54</p>	
<p><i>Public Comment</i></p>	<p><i>Department's Response</i></p>
<p>DMV should not prohibit the sale of a production, non-autonomous vehicle on the basis of previous use as an autonomous test vehicle. Consider adding: <u>(d) At the point of sale, transfer, or disposal, the manufacturer's vehicle is equipped with hardware and software that are equivalent to hardware and software the manufacturer equipped on motor vehicles sold to the general public.</u></p>	<p>The department is concerned that non-autonomous vehicles that have been retrofitted with autonomous technology may not be safe for use by the general public. The department does not agree with this suggested amendment.</p>
<p>Manufacturers should be allowed to dispose of test vehicles without endangering their intellectual property. Manufacturers would rather dismantle the vehicle themselves to protect proprietary information. The</p>	<p>Section 227.54 (d) has been amended to state that a manufacturer disposing of a vehicle that has obtained a Nonrepairable Vehicle Certificate may internally dismantle or dispose of the vehicle and its major component parts.</p>

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<p>regulation should be amended to account for both of these options without allowing unauthorized test vehicles on the road by eliminating the requirement that ownership of the vehicle is transferred to an auto dismantler.</p>	
<p>Training Program – Section 227.38(f)(1)</p>	
<p><i>Public Comment</i></p>	<p><i>Department’s Response</i></p>
<p>Consider revising § 227.38(f)(1): Instruction on the automated driving system technology being tested, including how to respond to <u>anticipated</u> emergency situations and hazardous driving scenarios <u>that could be</u> experienced by the vehicle or the vehicle’s occupants.</p>	<p>The subdivision has been revised to include “that could be.” The department did not include the word “anticipated” in the amended language because it is already covered by adding “that could be,” which implies possible or anticipated situations.</p>
<p>Test Driver Requirements – Section 227.32(c)</p>	
<p><i>Public Comment</i></p>	<p><i>Department’s Response</i></p>
<p>Consider revising § 227.32(c): The autonomous vehicle test driver shall obey all provisions of the Vehicle Code and local regulation applicable to the operation of motor vehicles whether the vehicle is in autonomous mode or conventional mode, <u>except when necessary for the safety of the</u></p>	<p>The amended text of this subdivision includes the suggested amendment.</p>

<p>vehicle’s occupants and/or other road users.</p>	
<p>Term of Permit 228.14</p>	
<p><i>Public Comment</i></p>	<p><i>Department’s Response</i></p>
<p>“Deploy” means both the sale/lease of an automated vehicle and the operation of such vehicle by the public. In light of this definition, the DMV has not adequately considered the practical implications of the conditions related to the term of a permit that have been proposed. For example, if an autonomous vehicle were sold to a member of the public for private use, it is not clear what would happen if the manufacturer’s permit were subsequently revoked or suspended. Would the customer be prevented from operating the automated vehicle on public roads irrespective of whether the autonomous technology were engaged or not? If so, how would the Department expect this issue to be addressed?</p>	<p>Existing California law, at Vehicle Code Section 11700, provides in relevant part that no person “shall act as a... manufacturer... without first having been issued a license as required in Section 11701...” Vehicle Code Section 11701 states, in relevant part, “Every manufacturer... of vehicles of a type subject to registration... shall make an application to the department for a license containing a general distinguishing number.” There are numerous provisions in existing California law, including Vehicle Code Section 11705, that allows the department to suspend or revoke the license issued to a vehicle manufacturer by the department. Section 228.14 is consistent with the provisions of existing California law that specify that the license of a vehicle manufacturer may be suspended or revoked. Section 228.20 further clarifies that upon suspension or revocation of a permit a manufacturer must cease all further deployments of autonomous vehicles with the affected autonomous features enabled until the manufacturer has corrected any deficiencies. This will allow the continued use of the vehicles with the autonomous technology feature disabled by the manufacturer.</p>
<p>Suspension Revocation Testing – Section 227.42(b)(4)</p>	
<p><i>Public Comment</i></p>	<p><i>Department’s Response</i></p>
<p>Consider revising § 227.42(b)(4): The manufacturer fails to disclose <u>make a</u></p>	<p>Subdivision (b)(4) has been amended as follows: “The manufacturer fails to make the disclosures required by subdivision (i) of Section 227.38,” which states “the manufacturer shall disclose to any passenger in the vehicle that is not an employee, contractor, or designee of the manufacturer what personal information, if any, that may</p>

<p>disclosure available to any passengers in its vehicles that are members of the public regarding what, if any, personal information concerning those passengers is being collected by the autonomous vehicles.</p>	<p>be collected about the passenger and how it will be used.” These revisions address the concerns raise by this comment.</p>
Suspension/Revocations	
<i>Public Comment</i>	<i>Department’s Response</i>
<p>Should be provisions for suspension/revocation when AVs have a poor safety record and there should be temporary suspension when accidents occur at an unacceptable rate.</p>	<p>The regulations take into account that some collisions may be caused by other road users and may not warrant suspension of a permit. Additionally, the National Highway Traffic Safety Administration retains the authority to order a recall of vehicles that pose an unreasonable risk to safety. The regulations also provide DMV with the ability to suspend or revoke a testing or deployment permit when the operation of the vehicles present a risk to public safety.</p>
<p>Initially, any accident should result in a suspension until the accident has been investigated and regulators are adequately assured that problems have been addressed.</p>	<p>The regulations take into account that some collisions will occur that are not the fault of the autonomous vehicle and may not warrant suspension of a permit.</p>
Safety (General)	
<i>Public Comment</i>	<i>Department’s Response</i>
<p>Require self-driving cars to have manual controls so that humans can take control when the car is about to cause an accident or when it is hacked.</p>	<p>Vehicle Code Section 38750 contemplates that vehicles may not have a driver sitting in the driver’s seat and that a vehicle may not have manual controls (Veh. Code Sec. 38750 (a)(4) “An operator of an autonomous vehicle is the person who is seated in the driver’s seat, or if there is no person in the driver’s seat, causes the autonomous technology to engage.” Subdivision (e)(2) also contemplates that manufacturer will apply to deploy vehicles that are capable of operation without a driver.) Further, for any vehicle that is not equipped with manual controls, regulations section 228.06 requires a manufacturer to certify that the vehicle meets Federal Motor Vehicle Safety Standards (FMVSS) or provide evidence of a NHTSA exemption.</p>
<p>Section 227.38 fails to</p>	<p>Subdivision (d) of Section 227.38 requires manufacturers to certify that the vehicles</p>

<p>require the self-driving technology that will be tested without a driver has been shown to operate reasonably safe. The manufacturer should be required to file a disengagement report covering at least one year of testing the technology with a backup human driver.</p>	<p>are capable of operating without a person inside the vehicle. The filing of a disengagement report covering one year may not be an appropriate metric for determining safety. One manufacturer could test a vehicle only a few miles on road during the one year period, while a second manufacturer could test its vehicles hundreds of thousands of miles and both manufacturers could have different disengagement experiences. The arbitrary one year period would not provide an accurate depiction of the safety on one manufacturer’s vehicles over another manufacturer’s vehicles.</p>
<p>Federal Rules (General)</p>	
<p><i>Public Comment</i></p>	<p><i>Department’s Response</i></p>
<p>Anchoring California’s autonomous vehicle policy to federal policies that don’t even exist cannot possibly provide adequate protection for the public.</p>	<p>The proposed regulations meet the requirements of Vehicle Code Section 38750 and includes what the department has determined is necessary to ensure that the vehicles are operated safely on California’s roads. This includes certifications that a vehicle meets or does not make inoperative existing FMVSS and is designed to operate safely on public roads by complying with traffic rules and regulations. The manufacturer must also provide a summary of test methods used to validate the performance of the vehicles and certify that the manufacturer is satisfied, based on the results of that testing, that the vehicles are safe for deployment on public roads.</p>
<p>Wait to adopt Article 3.8 until the federal government acts or sets safety standards</p>	<p>Vehicle Code Section 38750 does not contemplate that the department will wait until the federal government sets autonomous technology safety standards. The department is relying on certifications that vehicles meet existing vehicle safety standards and certifications that the vehicles will operate safely on public roads by complying with traffic rules and regulations. The manufacturer must also provide a summary of test methods used to validate the performance of the vehicles and certify that the manufacturer is satisfied, based on the results of that testing, that the vehicles are safe for deployment on public roads.</p>
<p>Suspension/Revocation</p>	
<p><i>Public Comment</i></p>	<p><i>Department’s Response</i></p>
<p>Section 228.20(c) does not allow for vehicles to be modified by permanently disabling the autonomous technology that is subject to the revocation or suspension. Regulations should allow manufacturers to cease deployment of the affected</p>	<p>The subsection has been amended to clarify that when the permit is suspended or revoked the manufacturer shall cease further deployment of the vehicles with the autonomous technology feature enabled. This will allow the continued use of the vehicles with the autonomous technology disabled by the manufacturer.</p>

<p>autonomous technology feature rather than the entire vehicle.</p>	
<p>It is inappropriate for the DMV to require a “permit” as a prerequisite to either sell or operate an automated vehicle in the state. Additionally, the “catchall” in this section is very problematic. Subsection (b) states that a permit can be denied “[f]or any act or omission of the manufacturer or one of its agents, employees, contractors, or designees which the department determines creates a safety risk to the public.” There is no standard by which the DMV would determine whether any act or omission creates a safety risk to the public.</p>	<p>Vehicle Code Section 38750 requires the submission of an application to the department and approval of that application by the department. The department has determined that the approval will be accompanied by a permit. This determination is consistent with other provisions of existing law that require manufacturers to be licensed by the department, including at Vehicle Code Section 11700 which provides in relevant part that no person “shall act as a... manufacturer... without first having been issued a license as required in Section 11701...” Vehicle Code Section 11701 states, in relevant part, “Every manufacturer... of vehicles of a type subject to registration... shall make an application to the department for a license containing a general distinguishing number.”</p> <p>Section 227.40 (b) which specifies the one of the grounds for suspension of a permit to test, does not include the language quoted in this comment. That subdivision mentions “an unreasonable risk to the public” which is a term very familiar to the automotive industry because it is the basis by which NHTSA can order a vehicle recall.</p>
<p>“any act or omission of the manuf. Or one of its agents...which the department finds makes the conduct of autonomous vehicle testing...an unreasonable risk to the public...”, gives the department too broad authority to make independent determinations concerning the</p>	<p>The proposed regulations meet the requirements of Vehicle Code Section 38750 and includes what the department has determined is necessary to ensure that the vehicles are operated safely on California’s roads. “An unreasonable risk to the public” is a term very familiar to the automotive industry because it is the basis by which NHTSA can order a vehicle recall. The regulations also provide DMV with the ability to suspend or revoke a testing or deployment permit when the operation of the vehicles present a risk to public safety.</p>

performance and design of vehicles.	
Safety Assessment Letter	
<i>Public Comment</i>	<i>Department's Response</i>
Section 228.06(a)(6) – Department should change the word ‘exception’ to the proper term used by NHTSA ‘exemption’.	Subdivision (a)(6) has been renumbered to (a)(7) and the department has amended the language as suggested in this comment.
Section 228.06(c)(6) – clarify its expectations by use of the word ‘responsibilities’ given that current NHTSA policy is voluntary.	This comment is mistaken – a manufacturer’s responsibility to register with NHTSA as a manufacturer is not voluntary. The comment confuses the submission of the safety assessment letter – which many commenters have asserted is voluntary, with the requirement to register with NHTSA and a manufacturer.
Expand the safety assessment letter requirement to include NHTSA’s letter as evidence of NHTSA’s approval.	In September 2017 NHTSA released a new Automated Vehicles policy which replaces NHTSA’s prior policy. The new NHTSA policy clearly states that NHTSA will not require the filing of voluntary safety self-assessments and NHTSA will not be approving those voluntary safety self-assessments. The regulations have been revised to require the submission of a copy of the safety self-assessment if a manufacturer follows NHTSA’s suggestion and publishes the assessment.
Strengthen rules to make submission of the safety assessment letter mandatory.	In September 2017 NHTSA released a new Automated Vehicles policy which replaces NHTSA’s prior policy. The new NHTSA policy clearly states that NHTSA will not require the filing of voluntary safety self-assessments and NHTSA will not be approving those voluntary safety self-assessments. The regulations have been revised to require the submission of a copy of the safety self-assessment if a manufacturer follows NHTSA’s suggestion and publishes the assessment.
Information in the Safety Assessment Letter may contain confidential business information. DMV should be explicit and protect confidential business information by stating that the information contained in the submissions should not be released under PRA.	The regulations have been revised to require the submission of a copy of the safety self-assessment if a manufacturer follows NHTSA’s suggestion and publishes the assessment. Whether the assessment published by the manufacturer contains confidential business information is up to the manufacturer. As the department is only requiring submission of what the manufacturer has made public the department does not need to take steps to protect the manufacturer’s confidential business information.

Performance Standards/NHTSA	
<i>Public Comment</i>	<i>Department's Response</i>
The proposed regulations impose design and performance criteria and would inappropriately seek to codify aspects already being considered by NHTSA in its Federal Policy guidance. If NHTSA determines whether there is an unreasonable risk to safety in these areas, they have authority to order a recall.	The regulations comply with the requirements of Vehicle Code Section 38750 and include requirements that the department has determined are necessary to ensure that the vehicles operate safely. To the extent the regulations require certifications to motor vehicle safety standards, the certification is to the standards established by NHTSA. The Federal Policy Guidance referred to in this comment has been revised and the regulations have also been revised to require the submission of a copy of the safety self-assessment if a manufacturer follows NHTSA's suggestion and publishes the assessment.

4) Summary of Comments Received during the 15-day Comment Period and Department Response

After receiving and reviewing comments received during the 45-day comment period, the department determined it necessary to amend the regulations. The department conducted a 15-day comment period that began on October 11, 2017 and ended on October 25, 2017. The Notice of Modifications of Proposed Regulations, specifically stated, “Any interested person may submit written comments ***regarding the changes to the proposed text.***” (Emphasis added.) During that time, the department received comments from 35 interested parties. Many of those comments were not regarding changes to the proposed text. Government Code Section 11346.8(c) specifies that the department is only required to respond to comments received regarding the changed text.

The following individuals provided written comment on the modified regulatory text.

Paula Kutansky-Brown	NIO
Grayson Brulte	Brulte & Company
David Kidd, Ph.D.	Insurance Institute for Highway Safety
Gary Shapiro/Jamie Boone	Consumer Technology Association
Robert Grant	Lyft
Katherine Yehl	Volvo
Shane Gusman	Gusman & Broad
Thomas Karol	National Association of Mutual Insurance Companies
Jacqueline Serna	Consumer Attorneys of California
Shaun Kildare	Advocates for Highway and Auto Safety
Professor Robert W. Peterson	Santa Clara University, School of Law

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Russ Brooks	Transportation for America
Ross Buckley	Personal Insurance Federation of California
John Krafcik	Waymo
Paul Hemmersbaugh	General Motors
Amitai Bin-Nun, Ph.D./ Erik Danko	Securing America's Future Energy
Paul Scullion	Global Automakers
Edward D. Reiskin/ Tilly Chang	San Francisco Municipal Transportation Agency
Jonathan Weinberger	Auto Alliance
David Ferguson	Nuro, Inc.
Jason K. Levine	Center for Auto Safety
Armand Feliciano	ACIC/AIA
Nicole Barranco	Volkswagen Group of America
Alisa Reinhardt	California New Car Dealers Association
David Grow	State Farm
Al Prescott	Tesla
Peter Leroe-Munoz/ Paul Escobar	Silicon Valley Leadership Group
Jarrell Cook	California Manufacturers & Technology Association
John Simpson*	Consumer Watchdog
Laura Bennett Jarrell Cook Bethanne Cooley Mike Cunningham	TechNet California Manufacturers & Technology Association CTIA Bay Area Council
Matthew Burton	Uber
Rosemary Shahan	Consumers for Auto Reliability and Safety
Jennifer Cohen	City of Los Angeles Department of Transportation City of San Jose Department of Transportation City of Oakland Department of Transportation San Francisco Municipal Transportation Agency
Mark R. Rosekind, Ph.D.	Zoox
Noah Budnick**	Zendrive

* Consumer Watchdog submitted a supplement to its comment entitled *Self-Driving Vehicles: The Threat to Consumers*, which was dated June 13, 2017. Because the modified regulatory text was made public on October 11, 2017, the department determined that the contents of the supplement were not related to the modified regulatory text. The comments received by Consumer Watchdog dated October 25, 2017, are summarized and responded to below.

** Zendrive submitted comments that urged the department to develop standards that requires the inclusion of human driver behavior data. The comments contained in the letter from Zendrive were not directly related to the modified regulatory text.

Paula Kutansky-Brown NIO

<p>The deletion of 228.00(c) regarding the article becoming effective 120 days after the date of adoption creates uncertainty regarding the effective date timeline. NIO would appreciate guidance on when the article will become effective.</p>	<p>Senate Bill 145 amended subdivision (f) of Vehicle Code Section 38750 and deleted the 120 day requirement and replacing it with a requirement that the department publish a notice on its internet web site when the regulations are adopted and prohibiting the approval of an application until 30 days after the publication of the notice. The deletion of the specific requirement in subdivision (f) means that the general provision with respect to the effective date of regulations in Government Code Section 11343.4 applies.</p>
<p>NIO would like additional clarification on whether, once the amended application is approved, is immediate deployment permitted, or must the manufacturer wait another 180 days.</p>	<p>Senate Bill 145 amended subdivision (e) of Vehicle Code Section 38750 by deleting the 180 day requirement. The procedures for approving an application are specified in Section 228.08 and 228.10 of the proposed regulations.</p>
<p>Grayson Brulte Brulte & Company</p>	
<p>Brulte Company want the regulations to allow for the transport of paying customers.</p>	<p>Section 227.02 (k) defines “passenger” and specifies that a passenger may not be charged a fee to ride in an autonomous test vehicle. The regulations do not prohibit the charging of a fee to ride in a deployed vehicle. To the extent that the comment refers to the definition of passenger it is not on the changed text that is the subject of this notice.</p>
<p>David Kidd – IIHS</p>	
<p>Companies seeking a permit to deploy autonomous vehicles sold or leased in California are only asked to supply the make and model of each vehicle. We believe that companies also should be required to provide the vehicle identification number (VIN) of each vehicle. Researchers use VINs to evaluate the safety benefits of vehicle features when VINs can be tied to crash and exposure data.</p>	<p>Manufacturers applying to deploy autonomous vehicles will be applying for a permit to deploy the vehicles that they will sell, lease, or make available for use by the public. This comment would require a manufacturer and the time of applying for a permit, or an amendment application, to identify by VIN every vehicle that it will be deploying into the future. A large manufacturer could be deploying hundreds or thousands of vehicles. This suggestion would create an unreasonable burden on manufacturers and the department.</p>
<p>Currently, the DMV requires that vehicles with automated driving systems deployed on public roads have an autonomous technology data recorder to capture and store sensor data for all vehicle functions at least 30 seconds prior to a crash. However, DMV does not specify a minimum set of variables that need to be recorded. Event data recorders can collect objective information about the performance of automated driving systems in crashes.</p>	<p>Vehicle Code Section 38750 (c)(1)(G) specifies the data that must be recorded as “autonomous technology sensor data.” Regulation section 228.06 (a)(6) clarifies that the device must record data for all of the vehicle functions that are controlled by the autonomous technology. No further clarification is necessary.</p>

<p>It is unreasonable to expect that owners will always choose to apply safety-critical updates to automated driving systems when they are available. Additionally, companies should prohibit the use of automated driving systems that are out-of-date.</p>	<p>The regulations require manufacturers to provide updates to technology. Vehicles that pose an unreasonable risk to safety are subject to the recall authority of NHTSA and section 228.20 allows the department to suspend a manufacturer’s permit to deploy vehicles subject to an open recall and requires manufacturer to deactivate the autonomous technology of the vehicles subject to the recall.</p>
<p>Jamie Boone – Consumer Technology Association</p>	
<p>Section 227.38(a) – Requiring written notification to local authorities in jurisdictions could create unnecessary backlogs and delay testing.</p>	<p>The section only requires the written notification and does not require an approval process by local authorities. Other than a general comment about theoretical backlogs and delays, the comment does not specify how a notification process could impede testing.</p>
<p>Section 228.06(a)(5) – Requirement that sensor data be accessible and retrievable by a commercially available tool remains a concern. Neither technology exists.</p>	<p>Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. However, the department notes that Federal Regulations at 49 C.F.R. Part 563, Section 563.12 specify that manufacturers of vehicles equipped with a data recorder shall ensure that a tool is commercially available that is capable of accessing and retrieving the data stored in the data recorder.</p>
<p>Section 228.06(b)(1), requiring a communication link between the vehicles and the remote operator, appears to cross over into NHTSA’s jurisdiction over vehicle safety standards. NHTSA specifically addresses fallback safeguards in the FAVP. As the modified NPRA references several times NHTSA’s authority over vehicles performance and safety standards, this section causes confusion. We ask the state to revise this section to make it consistent with the rest of the document’s clear delineation of state and federal roles.</p>	<p>Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.</p>
<p>Section 228.24 (Information Privacy), which would require passengers’ written approval for personal information collected that is not necessary for the safe operation of the vehicle, could have unintended consequences and limit the advancement of self-driving vehicles. Advancing and improving connected</p>	<p>This comment does not seem to recognize that the proposed section allows for the collection of information, but requires either disclosure of the personal information that is collected that is not necessary for the safe operation of the vehicle or that collection of such information be anonymized.</p>

<p>and automated cars depends on the collection and sharing of information – some of which is personal – among devices.</p>	
<p>CTA expresses disappointment that the department continues to ban self-driving trucks.</p>	<p>Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.</p>
<p>Robert Grant – Lyft</p>	
<p>Section 227.38(a) – Requiring written notification to local authorities in jurisdictions could create unnecessary backlogs and delay testing. Consider ways to make the notification requirement less time consuming and burdensome, such as removing the requirement in 227.38(a)(2).</p>	<p>The section only requires the written notification and does not require an approval process by local authorities. The department has balanced concerns about the potential burden of requiring local notifications with the benefits of ensuring that local authorities are aware of driverless testing activities occurring on their local roads. The required data elements strike the appropriate balance and provide flexibility for manufacturers to determine the most appropriate method for completing the written notifications.</p>
<p>Katherine Yehl – Volvo</p>	
<p>A requirement for written notification is inconsistent with the Privacy Principles and seems to be an antiquated method for providing such notice. We suggest the DMV consider further revisions to this section to reflect the advanced technology contained within these systems.</p>	<p>The proposed section requires either disclosure of the personal information that is collected that is not necessary for the safe operation of the vehicle or that the information be anonymized. DMV has not mandated a particular method or technology for how the written notification will be provided, and manufacturers have the flexibility to determine the notification method that is most appropriate for their business model.</p>
<p>Shane Gusman - Broad and Gusman</p>	
<p>227.42, which deals with circumstances under which an autonomous vehicle testing or deployment permit may be suspended or revoked. While there were some modifications to the section, it still does not go far enough. The grounds for suspension or revocation remain focused on certain conduct of the manufacturer and not on the safety record of the vehicles the manufacturer is putting on the road. There absolutely should be provisions for suspension and revocation where autonomous vehicles have a poor safety record and there should be a provision for temporary suspension accidents occur at some unacceptable rate to give regulators a</p>	<p>Vehicles that pose an unreasonable risk to safety are subject to the recall authority of NHTSA. The regulations also provide DMV with the ability to suspend or revoke a testing or deployment permit when the operation of the vehicles present a risk to public safety. The regulations take into account that some collisions will occur that are not the fault of the autonomous vehicle and may not warrant suspension of a permit.</p>

<p>chance to investigate before the public is put at further risk. Additionally, at least for an initial period under a permit, any accident while testing should result in a temporary suspension until an investigation has occurred and regulators are adequately satisfied that any defects in design, engineering, and mechanics have been satisfactorily addressed to prevent further accidents.</p>	
<p>Ross Buckley - National Association of Mutual Insurance Companies</p>	
<p>Section 227.38(b) The use of modifiers seems to condition or modify a manufacturers liability and a clearer and more explicit statement may be helpful. Suggestion: <i>(b) The manufacturer certifies and agrees that the manufacturer shall be fully responsible for all damages caused by an autonomous vehicle at fault in a collision, subject to applicable law.</i></p>	<p>Subdivision (b) of Section 227.38 has been deleted.</p>
<p>Should add a section to require reporting of injuries and fatalities. Information should include the identification of all persons involved in bodily injury or death and a full description of how the bodily injury or death occurred.</p>	<p>Per Section 227.48, accidents are required to be reported on revised Form OL 316. Section 4 of Form OL 316 requires information related to personal injuries or fatalities. Moreover, Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.</p>
<p>Should add a section requiring the reporting of failures. The report should include all persons involved in the failure and a full description of how the failure occurred. Should include details of any communication link between the vehicle and remote operator, vehicle location, status.</p>	<p>Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.</p>
<p>Section 228.06(a)(6) Data Recorder – This provision requires that the data recorder capture and store autonomous technology sensor data, but is not clear what data is required to be captured and stored.</p>	<p>Vehicle Code Section 38750 (c)(1)(G) specifies the data that must be recorded as “autonomous technology sensor data.” Regulation section 228.06 (a)(6) clarifies that the device must record data for all of the vehicle functions that are controlled by the autonomous technology. No further clarification is necessary.</p>
<p>Jacqueline Serna – Consumer Attorneys of California</p>	

<p>§ 228.28 regarding driver and manufacturer responsibility is a gross overreach of the DMV’s authority and creates a dangerous loophole in manufacturer responsibility. The new language states: the manufacturer is responsible (under Level 3 and 4/5) only when the vehicle has “been maintained in compliance with manufacturer’s specifications and any modifications to the vehicle that affect the operation of the vehicle’s autonomous technology are in compliance with the manufacture’s specifications.” (§ 228.28 Driver and Manufacturer Responsibility). CAOC has consistently argued that the DMV is not the appropriate body to decide issues of liability.</p>	<p>Section 228.28 has been deleted.</p>
<p>Sections 228.28(a) and (b) apply the maintenance exception to both Level 3 and Level 4/5 vehicles. This means the loophole is likely to apply to both consumer owned AVs and fleet operated AVs. On the consumer side, there is no provision for instances where companies fail to adequately explain what “maintenance” and “manufacturer specifications” the consumer is responsible for. On the fleet side, it may be that the manufacturer keeps the data necessary to adequately monitor the fleet. Yet, the rule makes no exception for these instances.</p>	<p>Section 228.28 has been deleted.</p>
<p>The civil justice system is better placed than any regulatory mechanism or legislative body to ensure innovations develop in the safest manner possible. Our courts are best suited to address new technologies and how liability should be allocated. Absent any interference, traditional theories of accident liability under California law will and should apply.</p>	<p>Section 228.28 has been deleted.</p>
<p>Section 227.38(b) The new regulations erode the certification that manufacturers must give regarding responsibility for test vehicles that do not have a human driver in them. Certifying that you accept responsibility when the vehicle is at fault is pointless. Including</p>	<p>Section 228.28 has been deleted.</p>

<p>this certification could give manufacturers and the public the wrong impression that a manufacturer's liability is limited in some obscure way. This language is confusing, unnecessary, and should be stricken. Again, we urge that the courts, not the DMV, should deal with liability issues.</p>	
<p>§ 227.32(c) now states that the AV test driver shall obey all provisions of law, "except when necessary for the safety of the vehicle's occupants and/or other road users." Again, this kind of language is unlawful, unnecessary, and should be struck. California VC 38750 does not allow the DMV to create exemptions or exceptions to the requirements of the California Vehicle Code.</p>	<p>DMV's authority to specify the roles and responsibilities with respect to the safe operation of autonomous vehicles clearly derives from subdivisions (d)(2), (d)(3), (e)(1), and (e)(2) of Vehicle Code Section 38750. NHTSA's Automated Vehicle policy released in September 2017 recognizes that in certain safety-critical situations (such as having to cross double lines on the roadway to travel safely past a broken-down vehicle on the road) human drivers may temporarily violate certain state motor vehicle driving laws. The department is not creating an exemption to the requirements of the Vehicle Code because Vehicle Code Section 21462 provides that the driver of a vehicle shall obey applicable traffic signals except when it is necessary for the purposes of avoiding a collision or in case of other emergency.</p>
<p>§ 228.06(a)(8)(C) is an unnecessary and unlawful shift in potential responsibility away from the vehicle manufacturer and onto the vehicle owner. This proposed section requires that the registered owner of the vehicle take responsibility for ensuring the latest manufacture updates are installed in the vehicle. Such safety critical updates should be required by the manufacturer prior to the operation of an AV. However, §228.06(a)(8)(C) ensures that such updates will remain optional by shifting the responsibility for vehicle safety away from the party with control and onto the vehicle owner.</p>	<p>This comment is actually on renumbered subdivision (a)(9)(C). Subdivision (a)(9)(C) has been revised to require that a manufacturer notify registered owners of the availability of update and provide instructions on how to access those updates.</p>
<p>Draft deletes the requirement that they also collect at least 5 seconds after a collision or until the vehicle comes to a complete stop, whichever is later. We have consistently pushed for additional pre-collision time (at least 60 seconds) and some period of post-collision data collection and see this change as unfortunate.</p>	<p>Vehicle Code Section 38750 (c)(1)(G) requires data related to the operation of the autonomous technology <i>prior</i> to a collision. As explained in the Statement of Reasons for the modified text the deletion of the 5 second requirement was necessary to make the subdivision consistent with the Vehicle Code.</p>

Shaun Kildare – Advocates for Highway & Auto Safety	
RE: Sections 227.18(b) and 228.06(a)(11) In neither section is the term “safe” quantified. Moreover, it should not be left entirely up to the manufacturer to “reasonably determine” or “be satisfied” that their AVs have met an unspecified requirement to be “safe” without any independent review. The DMV should reconsider this language and determine reasonable milestones for safety performance, milestones that should be more stringent in the case of deployment as compared to testing.	Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required
Professor Robert W. Peterson (emeritus) Santa Clara University, School of Law	
Section 227.02(j) – “[N]ecessary for the safe operation of the vehicle” has no workable meaning and is too narrow. Manufacturers should be allowed to collect information that is helpful in improving the safety of AVs.	Subdivision (j) is the definition for “operational design domain.” This comment is likely related to subdivision (l) of Section 227.02. Use of the term “safe operation of the vehicle” is consistent with the use of that same term in Vehicle Code Section 38750 subdivisions (d)(2), (d)(3), (e)(1), and (e)(2).
Section 227.32(c) – in addition to safety reasons, an AV should be able to reasonably violate the vehicle code for adequate mobility reasons, such as safely crossing a double yellow line to get around a blockage, as these kind of maneuvers are common and accepted for human drivers.	Subdivision (c) has been amended to allow deviation when necessary for safety. NHTSA’s Automated Vehicle policy released in September 2017 recognizes that in certain safety-critical situations human drivers may temporarily violate certain state motor vehicle driving laws. Vehicle Code Section 38750 (d) allows the department to include requirements that are necessary to ensure the safe operation of vehicles.
Section 227.38(b) – this section will cause more confusion and litigation than it is worth. “[B]ut subject to applicable law” either adds nothing to existing tort law or adds something new and as-yet undefined regarding the standard of the “fault” of a machine.	Subdivision (b) of Section 227.38 has been deleted.
Section 227.38(f) – “[I]n the vicinity of” is too vague, if it means the “nearest” it should say that.	Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.
Section 227.38(i), 228.24(a)(1), 228.24(b) – Written disclosure to passengers is in many cases either impractical or meaningless. Manufacturers may sell or lease fleets to	Section 227.38(i), which applies to the testing of driverless vehicles does not mention a written disclosure. With respect to Section 228.24 the comment overlooks the fact that the section provides an alternative, either provide the written notification

<p>TNCs, and thus would have no way of either giving the notice, knowing what information is collected, or controlling what is collected or how it is used. Section 228.24(b) suggests that the written approval of the TNC is all that is required. The TNC owner or lessee can effectively give itself approval to collect information on its passengers.</p>	<p>of anonymize the data. Manufacturers have the flexibility to select the alternative that works best for their business model.</p>
<p>Section 228.10(b)(3) – DMV likely meant to increase the maximum speed of the vehicle by more than 15 miles per hour when in autonomous mode, as there seems to be no reason to require an amended application if the vehicle can only be driven faster in conventional mode.</p>	<p>The department is approving applications for the deployment of autonomous vehicles. This section must be read in the context of an amendment to an existing permit to deploy an autonomous vehicle and necessarily refers to an increase in the speed capability of that vehicle when operating in autonomous mode.</p>
<p>Russ Brooks, Transportation for America</p>	
<p>Commenter recommends disengagement reports should be monthly rather than annually and provided to law enforcement.</p>	<p>This provision was not amended in the modified regulatory text.</p>
<p>Summarizing disengagements should be expanded to provide more useful, real-time information. Examples given.</p>	<p>Form OL 311R has been added to provide a more uniform and consistent format for reporting information related to disengagements. The department has determined that the report requires the information necessary for the department’s purposes.</p>
<p>Section 228.06 – Regulations are too reliant on the manufacturer’s self-certification. Amend section to require submission to the department of data and methods used to determine safety. DMV should have the ability to review the certification and verify manufacturer’s assertions.</p>	<p>The certifications in Section 228.06 are for the most part unchanged. Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.</p>
<p>Section 227.02(j) – Amend definition of Operational Design Domain to include vehicle-to-infrastructure requirements such as traffic signals, signs, lane markings, etc.</p>	<p>Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.</p>
<p>Ross Buckley – PIFC</p>	
<p>Section 228.02(a) of the regulations now strikes language related to the post-collision data recording. We believe this could</p>	<p>Vehicle Code Section 38750 (c)(1)(G) requires data related to the operation of the autonomous technology <i>prior</i> to a collision. As explained in the Statement of Reasons for the</p>

<p>unnecessarily hamper the development of autonomous vehicles.</p>	<p>modified text the deletion of the 5 second requirement was necessary to make the subdivision consistent with the Vehicle Code.</p>
<p>Section 228.28 - Our interpretation is this section could still be used to determine liability. Our membership is concerned that this section, in particular, might unduly impact courts or juries attempting to apportion liability in any given case, as it attempts to set forth the division of responsibility “for the safe operation of the vehicle” between driver and manufacturer.</p>	<p>Section 228.28 has been deleted.</p>
<p>John Krafcik – Waymo</p>	
<p>Recommend striking the requirement in Section 228.06(a)(6) that the data stored by an autonomous technology data recorder be retrievable by a “commercially available tool” because this requirement would unduly constrain how manufacturers design data recorders at this early stage of the technology. In particular, this requirement would pose privacy and security risks. Requiring that data be accessible and retrievable via a commercially available tool would potentially expose autonomous vehicles to breaches of this important protection.</p>	<p>Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. However, the department notes that Federal Regulations at 49 C.F.R. Part 563, Section 563.12 specify that manufacturers of vehicles equipped with a data recorder shall ensure that a tool is commercially available that is capable of accessing and retrieving the data stored in the data recorder.</p>
<p>Recommend striking the language in §228.20(b)(5). This provision would effectively insert the California DMV into the middle of a NHTSA-managed recall and could lead to inconsistent application of a federal recall across the nation. Deferring to NHTSA on this core area of their authority preserves a nationally uniform approach on implementation of federal safety recalls, as NHTSA has the longstanding and relevant expertise to manage the recall and remedy process.</p>	<p>The regulations leave authority for determining a recall to NHTSA. The language in subdivision (b)(5), coupled with the requirement in subdivision (c), is that manufacturer cease deployment of the affected vehicles with the autonomous technology engaged once NHTSA has issued a recall. This is consistent with the requirements of Vehicle Code Section 38750 (d)(2), (d)(3)and (e)(1) that the proposed regulations include additional requirements that the department determines is necessary to ensure the safe operation of the vehicles on public roads.</p>
<p>Section 227.02(b) “autonomous test vehicle” Recommend adding “...but requires a human test driver to continuously supervise, <u>or in the case of an autonomous test vehicle without a test driver, requires the</u></p>	<p>Subdivision (b) has been amended to add that an “autonomous test vehicle” is a vehicle that “requires a human test driver or remote operator...” The amendment removes the inconsistency noted in this comment.</p>

<p><u>manufacturer to remotely monitor</u>, the vehicle’s performance...” Recommended language will make clear that an autonomous test vehicle can be tested without a human test driver in the driver’s seat, consistent with the express provisions permitting fully driverless testing (see § 227.38). The proposed language tracks the requirement in §227.38(c)(1)(A) that a manufacturer remotely monitor the status of the test vehicle during driverless testing.</p>	
<p>Section 227.38(b) – Recommend deleting subdivision (b). Existing tort law already contains well-established principles to establish fault and apportion liability among tortfeasors, and DMV should not disturb those principles through this regulation.</p>	<p>Subdivision (b) of Section 227.38 has been deleted.</p>
<p>Recommend replacing 227.38(b) with <u>“Nothing in this regulation is intended to limit or expand liability for damages caused by autonomous vehicles under applicable law.”</u></p>	<p>Subdivision (b) of Section 227.38 has been deleted.</p>
<p>Section 228.02(b) Recommend adding <u>“The presence of a natural person who is an employee, contractor, or agent designee of the manufacturer in the vehicle to monitor a vehicle’s autonomous performance shall not affect whether a vehicle meets the definition of autonomous vehicle.</u> Recommend adding to Section 227.02(b)(3) as well.</p>	<p>Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.</p>
<p>Section 228.02(c) – Recommend amending subsection as follows: “Deployment” means the operation <u>use</u> of an autonomous vehicle on public roads by members of the public who are not employees, contractors, or designees of a manufacturer or for purposes of through sale, lease, providing transportation services for a fee, or otherwise making the vehicle commercially available outside of a testing program.” This amendment clarifies that the use of autonomous vehicles in transportation services for a fee—where members of the public who are passengers in the vehicle do</p>	<p>Vehicle Code Section 38750 (d)(1) requires the department to adopt regulations setting forth the requirements for the submission and approval of an application to “operate autonomous vehicles pursuant to subdivision (c).” Subdivision (c) specifies that “an autonomous vehicle shall not be operated on public roads until a manufacturer submits an application to the department, and that application is approved by the department pursuant to the regulations adopted pursuant to subdivision (d).” Defining deployment to mean the “operation” of vehicles is consistent with the requirements of Vehicle Code Section 38750. The language of subdivision (c) as proposed addresses providing transportation services and otherwise making the vehicles available commercially outside of testing. Further amendments are not necessary.</p>

<p>not operate the vehicle—is encompassed within the definition of deployment. Changing "for purposes of" to “through”; failing to make this change would mean that the definition of “deployment” would cover “members of the public” using an autonomous vehicle “for purposes of” “providing transportation services for a fee,” while not covering manufacturers providing such services.</p>	
<p>Section 228.06(a)(6) Recommend amending to “...capable of being accessed and retrieved <u>by the manufacturer and, upon proper legal request, delivered in a format that is readable</u> by a commercially available tool.” As written, this requirement would unduly constrain how manufacturers design data recorders at this early stage of the technology. This requirement would pose privacy and security risks that have not been fully accounted for in this regulation. Autonomous technology sensor data should be encrypted to ensure vehicle security and individual privacy, and protect intellectual property.</p>	<p>Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.</p>
<p>Section 228.10(c) – Recommend adding “<u>The department shall review an amended application submitted pursuant to this section and notify the manufacturer of its decision within 10 days of receipt of the application.</u>” The Department should set and abide by defined time limits to ensure that the review process does not drag on indefinitely and that the applicant can have sufficient certainty about the timing of the review process to facilitate business planning and investment decisions. A process that lacks defined time limits creates excessive uncertainty and is a disincentive to testing and deployment.</p>	<p>This comment is not on the text of the subdivision (c) that is subject of the 15 – Day Notice of Changed Text. Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.</p>
<p>Paul Hemmersbaugh – General Motors</p>	
<p>GM asks the Department to consider whether disengagement reporting has proven to</p>	<p>Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of</p>

<p>effectively track safety and the development of the technology. GM believes these reports offer limited insight into the safety of the technology</p>	<p>a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.</p>
<p>Section 227.02(b) - The current proposed definition would create an internal contradiction in the regulations for driverless vehicles. Because the term “autonomous test vehicle” applies to driverless testing, referencing a “human test driver” in this definition would create internal conflict and ambiguity. To clarify, we recommend deleting this reference (i.e., “but requires a human test driver to continuously supervise the vehicle’s performance of the dynamic driving task”). This technical correction would eliminate the conflict for driverless vehicles, but not change the meaning and requirements of the regulation of testing vehicles with a human driver.</p>	<p>Subdivision (b) has been amended to add that an “autonomous test vehicle” is a vehicle that “requires a human test driver or remote operator...” The amendment addresses the concern noted in this comment.</p>
<p>§ 227.02(l): “Personal information” – Amend to “...reasonably linkable to <i>the identity of the vehicle’s registered owner...</i>” The addition of “the identify of” clarifies that data that has been de-identified does not fall within the scope of “personal information.”</p>	<p>The department is concerned about the collection of information that may be more than just the identity of the registered owner, lessee, or passengers. The section adequately conveys that personal information includes information collected by the vehicle that is linked or reasonably linkable to those using the vehicle.</p>
<p>§ 228.06(a)(8): Amend section to “...does not make inoperative any <i>systems required by applicable Federal Motor Vehicle Safety Standards...</i>” The current text requiring certification that the autonomous technology does not “make inoperative any Federal Motor Vehicle Safety Standards” is ambiguous. The edit would clarify this provision to ensure it is consistent with federal law and § 228.20(b)(4) of the Modified Proposed Regulations.</p>	<p>Vehicle Code Section 38750 (d) requires that the regulations include the requirements for the submission of an application pursuant to subdivision (c) of that section. Vehicle Code Section 38750 (c)(1)(F) requires manufacturers to certify in the application to the department that “the autonomous technology does not make inoperative any Federal Motor Vehicle Safety Standards for the vehicle’s model year” The language proposed by the department is consistent with the requirements of Vehicle Code Section 38750.</p>
<p>§ 228.08(f): Amend to “...will be effectively <i>immediately.</i>” Discussion: The proposed edit reflects changes to § 38750 included in SB 145, signed into law on October 12, 2017.</p>	<p>The effective date mentioned in this subdivision as proposed is inconsistent with the amendment of Vehicle Code Section 38750 by SB 145. The department cannot approve an application for deployment cannot be approved application until 30 days after the department provides the notice required</p>

	<p>by amended subdivision (f) of Section 38750. Subdivision (f) of section 228.08 has been amended comply with the change in the law. The deletion of the specific requirement in subdivision (f) means that the general provision with respect to the effective date of regulations in Government Code Section 11343.4 applies.</p>
<p>Amitai Bin-Nun – Securing America’s Future Energy</p>	
<p>227.28(a)(4) blocks the permitting, testing, and deployment of autonomous vehicles weighing over 10,000 pounds. An inclusive framework is imperative, and continued delay on autonomous trucks has the potential to send a negative signal to markets and delay the important social benefits the technology can deliver.</p>	<p>Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.</p>
<p>Paul Scullion – Global Automakers</p>	
<p>Unclear as to whether 227.38(a)(4) would require manufacturers to provide specific testing schedules or a listing of the general days of the week and times that testing is likely to occur. Given that detailed testing schedules may be subject to change, we believe it is necessary for the DMV to provide some additional flexibility on the information that is communicated to local authorities. We request that the DMV make the following revision. (4) <u>A description of the expected days of the week and/or times</u> that testing will be conducted on public roads.</p>	<p>Subdivision (a)(4) simply requires manufactures to notify local authorities of the days and times vehicles will be tested on public streets. The section provides manufacturers with ample flexibility to identify days of the week and times of the day that vehicles will be tested. Further revisions are not necessary.</p>
<p>Section 228.02(c) - DMV has opted to define deployment as both <i>making automated vehicles commercially available</i> and <i>operation of the vehicle on public roadways</i>, we continue to believe these are entirely different concepts that should be addressed independently, with differing regulatory consequences, such as having a significant effect on both inter- and intra-state mobility.</p>	<p>The definition of deployment is designed to cover any operation of vehicles, except those specifically excluded by the regulations, outside of a testing program. While different modes of operation may include different models of deployment, the definition adequately provides the flexibility for those different models of deployment.</p>
<p>Section 228.06 (a)(3) - For consistency with other sections of the regulation, we recommend that the DMV change term “react” to “respond” in 228.06 (a)(3).</p>	<p>The use of the word “react” does not create an inconsistency with other provisions of the regulations. The suggested amendment is not necessary.</p>

<p>Section 228.06 (a)(9) - We recommend the following revision that is consistent with language that was included in the DMV’s October 10, 2017, Statement of Reasons, but that was apparently inadvertently excluded from the Modified Express Terms. Suggested edit:</p> <p>(9) The manufacturer shall certify that the autonomous technology is designed to detect and respond to roadway situations in compliance with all provisions of the California Vehicle Code and local regulation applicable to the performance of the dynamic driving task in the vehicle’s operational design domain, except when necessary to enhance the safety of the vehicle’s occupants and/or other road users, when necessary to complete a trip, <u>provided the safety of the vehicle’s occupants and/or other road users is maintained.</u></p>	<p>The proposed amendment is unnecessary. The revised text of the section requires that manufacturers certify that the autonomous technology is designed to operate in compliance with state laws and local regulation applicable to the areas where the vehicles will be driving, except when necessary to enhance the safety of the occupants of the vehicle or others using the roads.</p>
<p>Sections 228.20(b)(5) and 228.20(b)(6) We do not believe it is practical or appropriate for the DMV to determine that any “open” NHTSA recall related to the vehicle’s autonomous technology should result in “immediate suspension” of a permit to deploy. It is not clear what is meant by an “open recall.” Recall notifications to owners generally do not result in 100% owner response leading to completion of the recommended remedy. Would all recalls relating to autonomous driving systems lead to suspension of permits to deploy, even if all new vehicles being sold in California after the initial recall notice have implemented all appropriate repairs?</p>	<p>The term “open recall” is a commonly understood term within the automotive industry and further clarification is not required. A vehicle that has received necessary repairs are not subject to the recall – unless a further recall is ordered for those repairs. The language in subdivision (b)(5), coupled with the requirement in subdivision (c) that manufacturer cease deployment of the affected vehicles with the autonomous technology engaged, is consistent with the requirements of Vehicle Code Section 38750 (d)(2), (d)(3) and (e)(1) that the proposed regulations include additional requirements that the department determines is necessary to ensure the safe operation of the vehicles on public roads.</p>
<p>The proposed regulations ignore the fact that even Level 4 and 5 automated vehicles can be designed to operate in autonomous mode or conventional mode (so-called “dual-use” vehicles.) Given that “deployment” has been defined to include the operation of an automated vehicle by the public, the proposed</p>	<p>The proposed regulations do not require a consumer to cease the use of their vehicle in conventional mode when a manufacturer’s Permit to Deploy has been suspended. Section 228.20 (c) requires that manufacturers cease deployment of vehicles with the technology engaged when a Permit to Deploy is suspended or revoked. This provision allows manufactures to deactivate the autonomous technology so the “dual-use”</p>

<p>regulation would prohibit the use of the vehicle in conventional mode even where a temporary remedy may be applied. A consumer that had the necessary recall remedy repairs completed would be unable to operate their vehicle in the state, until the manufacturer’s Permit to Deploy had be reinstated.</p>	<p>vehicles described in this comment can continue operation.</p>
<p>Edward D. Reiskin/ Tilly Chang –SFMTA</p>	
<p>Section 227.02(k) - San Francisco recommends the DMV review the CPUC rulemaking on TNCs operating AVs as it applies to the definition of "passenger" to address this concern.</p>	<p>The department has been in communication with the CPUC regarding their rulemaking on TNCs operating autonomous vehicles. The two state agencies will work together to ensure that their respective rulemakings apply state law consistently.</p>
<p>227.02 (n): San Francisco believes that a "remote operator" should not take the place of a human driver inside AVs Level 3 or below. Thus, the definition should say: "A remote operator shall not take the place of a human driver inside AVs Level 3 or below.</p>	<p>Section 227.04 states that except as provided in Section 227.38, which establishes the requirements for driverless test vehicles, an autonomous vehicle must be operated by an “an autonomous vehicle test driver.” Section 227.02 (c) defines an autonomous vehicle test driver as a person seated in the driver’s seat of an autonomous test vehicle. The regulations as proposed do not allow a Level 3 vehicle to be operated without a driver inside the vehicle.</p>
<p>227.32 (c): San Francisco believes autonomous test drivers shall obey all provisions of the Vehicle Code and local regulation in <i>all situations</i> with the exception of potential injury or death to the AV occupant or other road users, not out of convenience under the guise of safety. Thus, the phrase "except when necessary for the safety of the vehicle's occupants and/or other road users" is problematic as there are situations that may be safer for the occupants of the AV but that could potentially reduce the safety of other road users.</p>	<p>Section 227.32 (c) requires autonomous vehicle test drivers to comply with traffic laws except in situations where doing so would be unsafe either for the vehicle’s occupants and/or other road users. This responsibility is no different than the responsibility of all drivers on California’s roadways.</p>
<p>227.36: San Francisco suggests adding the requirement that manufacturers must submit a certification that all AV test drivers included in the permit application have been trained prior to operating the AV, including the date the training was completed.</p>	<p>Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.</p>

<p>227.38 (c) (1): San Francisco believes communication with local law enforcement is key. Thus, the two-way communication link should also be able to be used to communicate between a remote operator and local law enforcement.</p>	<p>The law enforcement interaction plan required by Section 227.38 (f)(1)(A) already requires manufacturers to provide an explanation on how law enforcement officers can communicate with the remote operator, including a telephone number. No further amendment of this section is necessary.</p>
<p>227.38 (g): San Francisco recommends adding a requirement that training should include safe interaction with other road users, including people walking and bicycling.</p>	<p>Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.</p>
<p>227.38 (h): Understanding that the NHTSA safety assessment is voluntary, San Francisco recommends that the state should impose a requirement for manufacturers to disclose the safety assessment for their vehicles before they are deployed.</p>	<p>NHTSA does not require that manufacturers actually complete the safety-self assessment. NHTSA only encourages that manufacturers that perform the assessment make them available publicly. The department is requiring that those manufacturers that perform the voluntary assessment and make it publicly available as suggested by NHTSA provide a copy to the department.</p>
<p>221.50 (b) (3): San Francisco strongly recommends that the annual report shall summarize disengagements "for each month" so that trends can be established. Without this information, it could be several years before it can be determined if the cause of a disengagement is being adequately addressed.</p>	<p>This change is not necessary. The entire data set will be reported. And entities wishing to evaluate the disengagement reports can summarize the data for each month.</p>
<p>227.50 (c): San Francisco appreciated the addition of a standard form to be used to report vehicle disengagements. However, in addition to the type of roadway facility in which the disengagement occurred, it is also important to report the location of the disengagement, preferably the latitude/longitude coordinates.</p>	<p>The disengagement reports provide the department and the public with greater understanding of testing activities occurring in California and a broad view of the technology's capabilities and limitations while it is in a developmental stage. The data suggested in this comment is not necessary for the department's purposes.</p>
<p>228.02 (a): In its previous comments, San Francisco recommended that the recorder capture at least 90 seconds prior to a collision. San Francisco also recommends that requirement for the 5 seconds after a collision not be deleted.</p>	<p>This is actually a comment on Section 228.06 (a). Vehicle Code Section 38750 (c)(1)(G) requires data related to the operation of the autonomous technology 30 seconds <i>prior</i> to a collision. The department cannot amend this statutory requirement by regulation. As explained in the Statement of Reasons for the modified text the deletion of the 5 second requirement was necessary to make the subdivision consistent with the Vehicle Code.</p>

<p>228.02 (c): San Francisco wants the DMV to be aware of how defining "deployment" here could affect the CPUC rulemaking on TNCs operating AVs. San Francisco recommends reviewing the CPUC definition of "deployment" so that definitions are consistent.</p>	<p>The department is charged with regulating the deployment of autonomous vehicles on public roads. The department has been in communication with the CPUC regarding their rulemaking on TNCs operating autonomous vehicles. . The two state agencies will work together to ensure that their respective rulemakings apply state law consistently.</p>
<p>228.06 (b) (l): San Francisco recommends that the phrase "if any" in relation to a remote operator should be removed. The occupants of an AV in deployment must have a way for occupants to communicate with a person in the event of a vehicle failure.</p>	<p>Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.</p>
<p>228.28 (a): San Francisco appreciates the clarity provided in identifying the responsibility for Level AVs between a human operator and autonomous operations since responsibility is shared between both parties.</p>	<p>Section 228.28 has been deleted. The department notes that existing law already provides that a person may not drive a motor vehicle on public roads unless the person holds a driver license for the class of vehicle being driven.</p>
<p>Auto Alliance</p>	
<p>Section 228.06(a)(10) Suggests replacing 'industry standards' with 'industry best practices' to ensure consistency with upcoming federal guidance.</p>	<p>Best practices are agreed upon procedures that standardize the best method for accomplishing a desired outcome. Since a best practice relies on agreed upon industry standards, the suggested amendment is unnecessary.</p>
<p>The guidance in Section 228.06(a)(6) is inconsistent with the definition provided in Section 228.02.</p>	<p>The two provisions are consistent and do not conflict because they both address the same substantial requirement for an autonomous technology data recorder.</p>
<p>Dave Ferguson – Nuro</p>	
<p>Nuro respectfully requests a technical clarification in the final version of the Proposed Regulations' exclusions clause, to ensure that it does not preclude the testing and operation of a particular subcategory of AVs that do not present the safety concerns that motivate the other exclusions. Specifically, as currently written, one recently added clause of the Proposed Regulations could exclude a broad class and purpose of vehicle — i.e., small, purpose-built cargo carrying vehicles.</p>	<p>Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.</p>

<p>CVC §34500(j) creates conflicts and ambiguities; It sweeps within the testing and operation preclusion various vehicles that present none of the size, weight, human, or cargo risks presented by the hazmat and heavy vehicles noted above, such as motortrucks.</p>	<p>Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.</p>
<p>Michael Brooks – Center for Auto Safety</p>	
<p>§ 228.28(a)(2) and (b) suggest that manufacturers are only responsible for the safe operation of autonomous vehicles “where such vehicle has been maintained in compliance with the manufacturer’s specifications and any modifications to the vehicle that affect the operation of the vehicle’s autonomous technology are in compliance with the manufacturer’s specifications.” This is a standard that is poorly worded, ill-defined and fails to meet basic common-sense tests.</p>	<p>Section 228.28 has been deleted.</p>
<p>§228.06(a)(9)(C) of the proposed regulation, owners of autonomous vehicles “shall be responsible for ensuring that the vehicle is operated using the manufacturer’s most recent update as specified in this subsection.” This would once again seem to have placed the burden for something that simply cannot be done by the consumer alone – exclusively on the consumer.</p>	<p>Subdivision (a)(9)(C) has been revised to require that a manufacturer notify registered owners of the availability of update and provide instructions on how to access those updates.</p>
<p>Armand Feliciano –ACIC</p>	
<p>To satisfy government Code § 11349 (b)1, the DMV should delete § 228.28. The legislative declaration does not encompass the determination of liability as proposed in §228.28.</p>	<p>Section 228.28 has been deleted.</p>
<p>§ 227.38(b) The goal of subdivision (b) is to make it explicitly clear that when a manufacturer’s autonomous technology “causes” the autonomous vehicle to be at fault then the manufacturers shall assume all liability. Striking “any and all responsibility for” lacks clarity to satisfy the clarity standard; therefore, we request that DMV re-</p>	<p>Subdivision (b) of Section 227.38 has been deleted.</p>

insert that language.	
We believe the law enforcement interaction plan should be included as part of the reporting of collisions in § 227.48, so that parties involved in a collision have access to them to help facilitate insurance claims process.	Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.
228.10(b)(3) We believe that it would be helpful to add the following underlined language to clarify a potential loophole in the application process regarding changes to maximum speed: (3) Increase the maximum speed of the vehicle by more than 15 miles per hour <u>over the maximum speed stated in the approved permit.</u>	The suggested amendment is unnecessary, as the context for this section is amendments being submitted to the department for a previously approved permit.
§ 227.50(b)(3)(D) We would propose that instead of deleting the provision, it be slightly rewritten to address that concern: “When a driver was in the vehicle, <u>unless the disengagement was initiated by the driver</u> , the period of time that elapsed from when the autonomous vehicle test driver was alerted of the technology failure and to when the driver assumed manual control of the vehicle.”	Pursuant to Vehicle Code Section 38750 (d)(2), in developing the proposed regulations the department consulted with Partners for Advanced Transportation Technology (PATH) from the University of California Berkeley. PATH recommended that 227.50 (b)(3)(D) be deleted because takeover time is difficult to measure and is not an indicator of vehicle safety.
Nicole Barranco – VW	
Section 227.02(1) Personal Information – <i>Reasonably linkable</i> should be defined and include ‘ <u>and the manufacturer using such information has the capability to actually establish such a secure link</u> ’	The section requires that the information is either linked to or reasonably linkable to those using the vehicle. If Information cannot be linked or is not reasonably linkable to a user, it would not fit the definition of this section.
Section 227.02(b) Autonomous test vehicle – Consider removing requirement for a <i>human test driver</i> within the definition. Currently conflicts with Section 227.38(c)(1)(A) as that section refers to operation without a driver.	Subdivision (b) has been amended to add that an “autonomous test vehicle” is a vehicle that “requires a human test driver or remote operator...” The amendment removes the inconsistency noted in this comment.
Section 227.02(b) – Suggests replacing the term “supervise” with the term “monitor” as is consistent with the statute and is consistent with Section 227.26(c).	Prior comments to the text of this subdivision that was noticed on March 10, 2017, pointed out that the word “monitoring” mistakes monitoring the environment with supervising an automated driving systems’ performance of the dynamic driving task and that supervising includes monitoring and responding as needed. The word supervise more accurately

	describes what the test driver does.
Section 227.38(f) – Define ‘law enforcement’ so manufacturers know exactly who should be provided the law enforcement interaction plan.	The term “Law enforcement agencies” used in this section remains unchanged the text of this subdivision that was noticed on March 10, 2017. Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.
Section 227.38(l) OL 318 – Unclear how long the department will need to process the revised OL 318. Suggests providing a processing timeline to allow manufacturers to adequately plan for implementation and testing.	Section 227.20 establishes the time frames by which the department will review applications and providing notice of deficiencies. Section 227.40 has been revised to provide the procedures to be followed when an application is disapproved.
Section 228.06(a)(3) – This section overlaps with details that would be included in NHTSA’s voluntary safety self-assessment letter. VW has concerns that there could be confidential business information involved.	Vehicle Code Section 38750 subdivisions (d)(2), (d)(3), (e)(1), and (e)(2) require that the regulations include additional requirements that the department has determined are necessary to ensure that safe operation of autonomous vehicles on public roads. The department has determined that this subdivision is necessary to understand how vehicles will operate safely on public roads. Moreover, manufacturers are not required to actually perform NHTSA’s “voluntary safety self-assessment.” Manufacturers are not required to provide confidential business information and can describe their vehicle’s operation in ways that do not disclose such information.
Section 228.06(a)(6) – VW suggests making autonomous driving data easily accessible could pose a safety risk for the autonomous driving function and also risk exposing a manufacturer’s proprietary information.	Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.
Section 228.06(a)(9)(B) Clarification is needed as to how frequently manufacturers will be required to update their maps based on changing road conditions, including sudden changes such as a mud slide. Similar comments are made about (a)(9)(A) and (a)(9)(C).	Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.
Section 228.06(c)(7)(A) – States don’t permit sale of normal vehicles based on development testing. Why should automated vehicles be	This comment overlooks the fact that Vehicle Code Section 38750 requires that automated vehicles be treated differently by requiring DMV to approve a manufacturer for operation on

<p>different? Clarification should be provided whether the test information is just in California, or in the US or in the world, and if these test miles include simulations.</p>	<p>public roads in California. Section 228.06 (a)(11) clearly provides manufacturers flexibility in conducting their testing by requiring a certification that the manufacturer has conducted test and validation methods and is satisfied based on those tests and validations that the vehicles are safe to be deployed. Section 228.06(c)(7) indicates that the testing summary should include data for all locations where testing was conducted. While it does not require manufacturers to report information on test miles in simulation, it does not preclude such reporting.</p>
<p>Section 228.06(c)(7)(B) – Testing methods VW suggests this provision overlaps with details included in the NHTSA voluntary safety self-assessment letter. The wording is too vague and could impinge on confidential business information.</p>	<p>The section does not require that a manufacturer provide confidential business information, manufacturers are free to describe their testing methods in ways that do not disclose such information. Manufacturers are not required by NHTSA to perform the “voluntary safety self-assessment.”</p>
<p>Section 228.06(c)(7)(C) VW recommends changing the damage value to \$3,500 to more realistically reflect the cost of today’s vehicle repairs.</p>	<p>The \$1000 threshold is consistent with other provisions of California law, specifically the accident reporting threshold established in Vehicle Code Section 16000.</p>
<p>Section 228.10(b) It is unclear how much time DMV will need to process the amended application for public deployment prior to implementing changes. VW suggests providing a timeline for the time needed for processing the application so manufacturers can adequately plan.</p>	<p>Section 228.08 establishes the time frames by which the department will review applications and provide notice of deficiencies.</p>
<p>Section 228.20 Suspension for open recall These sections are duplicative and redundant of federal regulation, as recalls are under NHTSA’s jurisdiction. Do not duplicate NHTSA’s administration of recalls.</p>	<p>This is not a comment on the changed text and does not require a response.</p>
<p>Section 228.28(a)(2) Places responsibility on the manufacturer for safe operation of the vehicle. VW points out that manufacturers cannot guarantee that the driver will follow all traffic laws.</p>	<p>Section 228.28 has been deleted.</p>
<p>Alisa Reinhardt – California New Car Dealers Association</p>	
<p>228.24 (b) With respect to a vehicle the manufacturer sells or leases to a customer [emphasis added], if the information is not anonymized, the manufacturer shall obtain the written approval of the registered owner or</p>	<p>Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.</p>

<p>lessee of an autonomous vehicle to collect any personal information by the autonomous technology that is not necessary for the safe operation of the vehicle.</p> <p>As noted in our previous letter to the Department regarding deployment of autonomous vehicles, CNCDA takes issue with the above emphasized provision of the proposed regulations because manufacturers do not sell or lease vehicles directly to customers.</p>	
<p>Section 228.20 (Suspension and Revocation of Permit) This proposed section is overbroad due to the fact that the existing vehicle recall process does not distinguish between the seriousness of vehicle issues. Giving the Department the ability to force a manufacturer to “cease all further deployments of affected autonomous vehicles with the affected autonomous technology feature enabled on public streets” does not include any specific information as to how this will actually be accomplished. Does the Department foresee forcing manufacturers to initiate a stop-sale? Or will this be an over-the-air change to vehicle capability?</p>	<p>Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.</p>
<p>David Grow – State Farm</p>	
<p>DMV should reconsider its decision to delete the requirement in § 228.06(a)(6) and related provisions that autonomous technology data recorders capture data for “at least 5 seconds after a collision or until the vehicle comes to a complete stop, whichever is later.” Collecting data occurring after a crash is essential to helping determine causation and liability, and provides a more complete version of what factors were involved in an incident.</p>	<p>Vehicle Code Section 38750 (c)(1)(G) requires data related to the operation of the autonomous technology <i>prior</i> to a collision. As explained in the Statement of Reasons for the modified text the deletion of the 5 second requirement was necessary to make the subdivision consistent with the Vehicle Code.</p>
<p>Al Prescott – Tesla</p>	
<p>Section 227.54 - The Rulemaking should not prohibit the sale or re-sale of a vehicle on the basis of its previous use as an autonomous test vehicle. Prohibiting resale stands without reason or safety benefit, imposes a significant</p>	<p>Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.</p>

<p>financial penalty to conducting AV testing in California equal to the entire cost of each and every test vehicle, and incentivizes manufacturers to test outside of the state.</p>	
<p>Paul Escobar – Silicon Valley Leadership Group</p>	
<p>Section 228.06(a)(6) Stipulates that the data captured and stored by the ATDR be capable of being accessed and retrieve by a commercially available tool. At present neither of these technologies exists and SAE is only now working to develop standards for AV event data recorders (EDRs). We urge the DMV to remove this provision, wait until SAE has concluded its process and then to coordinate with industry regarding the implementation and use of this technology.</p>	<p>Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. However, the department notes that Federal Regulations at 49 C.F.R. Part 563, Section 563.12 specify that manufacturers of vehicles equipped with a data recorder shall ensure that a tool is commercially available that is capable of accessing and retrieving the data stored in the data recorder. No response is required.</p>
<p>Section 228.06(b)(1) requires that a manufacturer certify that its vehicle has a communication link with a remote operator, if any. This provision seems to venture into defining vehicle safety standards, which is properly within NHTSA’s jurisdiction—and NHTSA’s 2017 FAVP provides guidance that specifically addresses the transition to a minimal risk condition (fallback). We recommend that that the DMV modify this section to make it consistent with NHTSA’s guidance and authority on this matter.</p>	<p>Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.</p>
<p>Jarrell Cook – CA Manufacturers & Technology Assn</p>	
<p>Section 227.38 requires manufacturers to provide written notice to local authorities in the jurisdiction in which they intend to test the vehicle. However, the regulation does not designate which local authority shall receive notice, leaving that discretion to the legislative body of every city and county to decide. This invites the development of an inconsistent, confusing, and piecemeal regulatory system that will needlessly delay testing and deployment.</p>	<p>The local authorities to receive that notification are those that are defined in California law at Vehicle Code Section 385. The section only requires the written notification and does not require an approval process by local authorities.</p>
<p>Section 228.06(a)(6) requires autonomous vehicles to be equipped with an “autonomous</p>	<p>Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of</p>

<p>technology data recorder” whose data can be accessed and retrieved by “a commercially available tool.” This technology does not yet exist.</p>	<p>a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. However, the department notes that Federal Regulations at 49 C.F.R. Part 563, Section 563.12 specify that manufacturers of vehicles equipped with a data recorder shall ensure that a tool is commercially available that is capable of accessing and retrieving the data stored in the data recorder. No response is required.</p>
<p>Section 228.06(b)(1) establishes requirements regarding a communication link between autonomous vehicles and remote operators, creating a potential conflict between the draft regulations and NHTSA guidance, as well as proposed federal legislation.</p>	<p>Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.</p>
<p>John Simpson – Consumer Watchdog</p>	
<p>Section 227.38 as amended makes important clarifications about local authorities that must be notified about a manufacturer’s testing plans. Nonetheless, it falls far short of what should be required. It requires notification, not approval. Municipal authorities must be able to grant – or refuse – permission before a city’s public roads are used as private laboratories and threaten residents’ safety.</p>	<p>Vehicle Code Section 38750 (c) provides that autonomous vehicles shall not be operated on public roads until a manufacturer applies to, and receives approval, from the department. Section 38750 (a)(3) defines “department” to mean the Department of Motor Vehicles. Pursuant to California law, the approval of an application to operate autonomous vehicles on public roads rests with the Department of Motor Vehicles.</p>
<p>Laura Bennett – TechNet</p>	
<p>Sections 227.38(a)(2) and (4) could delay testing and ultimately deployment of autonomous vehicles in California, as well as create a new burden on local jurisdictions that would receive notifications on a daily basis. Suggestions: Remove (a)(2) and (4) or at the very least the notification requirement would benefit from being up-leveled to a disclosure of each jurisdiction in which testing is taking place or as it relates to (a)(4) amend to read “the time period during which testing will occur.”</p>	<p>Subdivision (a)(2) and (a)(4) simply require manufactures to notify local authorities of the public roads and days and times vehicles will be tested on those roads. The section provides manufacturers with ample flexibility to identify days of the week and times of the day that vehicles will be tested. Further revisions are not necessary.</p>
<p>Section 228.10 - Section now mandates filing an amended application for public deployment prior to implementing the specific changes to the vehicle. This will result in significant delays and could drastically slow</p>	<p>Section 228.08 establishes the time frames by which the department will review applications and provide notice of deficiencies. The department is requiring amendment in these limited circumstances because they represent a major change in the operational design domain that was included on a</p>

<p>or halt the ability of companies to deploy autonomous vehicles or install much needed updates or other system changes.</p>	<p>previously approved permit. There is no evidence that the process implemented by the department will cause delays.</p>
<p>Section 228.06(a)(6) - A "commercially available tool" for data recorders. The SAE's committee on advanced event data recorders has yet to release a draft standard to address this topic and SB 1298 (Padilla) did not speak to the commercial availability of tools for crash reconstruction. Crash reconstruction data is proprietary and often encrypted, thus such a tool doesn't exist today.</p>	<p>Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. However, the department notes that Federal Regulations at 49 C.F.R. Part 563, Section 563.12 specify that manufacturers of vehicles equipped with a data recorder shall ensure that a tool is commercially available that is capable of accessing and retrieving the data stored in the data recorder. No response is required.</p>
<p>Section 227.50 – Disengagements of autonomous mode are not an accurate indicator of autonomous vehicle safety or technological development. Section 227.50 (b) should be amended to include an end date for the requirement annual submission, but no later than the end of 2018.</p>	<p>Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.</p>
<p>Matt Burton – UBER</p>	
<p>Clarify that minimal risk engagement and dynamic driving are not requirements for the remote operator.</p>	<p>Section 227.02 (n) clearly defines a remote operator and specifies that a remote operator may also have the ability to perform the dynamic driving task or cause the vehicle to achieve a minimal risk condition. Further clarification of a remote operator's responsibilities can be found in Section 227.38 (g) with requires that the remote operator receive instruction on the autonomous driving system being tested including instruction on how to respond to emergency situation and hazardous driving scenarios encountered by the vehicles.</p>
<p>Clarify that testers of driverless vehicles may anonymize data to protect privacy. the Department should update Sec. 227.38(i) to track this new language and make clear that testers of driverless vehicles may anonymize data as an option to protect privacy and that, consistent with Sec. 227.02(1), Sec. 227.38(i) does not cover information necessary for the safe operation of the vehicle.</p>	<p>For the purposes of testing where a passenger will voluntarily participate in that testing, the regulation merely requires that the passenger be notified of the personal information that the vehicle is collecting. Anonymization is not necessary because passengers that do not consent to the data that is collected are not required to participate in the testing.</p>
<p>Clarify local jurisdiction notice requirements to provide flexibility for protection of</p>	<p>Manufacturers are not required to provide confidential business information to local jurisdictions. Manufacturers have the</p>

<p>commercially sensitive information. recommend that the language in Sec. 227.38(a)(2) and (4) be clarified to instill further flexibility so that manufacturers can achieve the right balance between providing reasonable written notice to local jurisdictions, while protecting more sensitive information from the risk of wider disclosure.</p>	<p>flexibility to provide the information required by Section 227.38 (a) in a way that does not disclose such information.</p>
<p>Clarify assumption of responsibility language in modified 227.38(b). the Department should clarify that this regulation requires manufacturers to certify they will assume <i>responsibility</i> for damages when their technology causes the vehicle to be <i>found</i> at fault in a collision. We encourage the Department to adopt our suggested clarification on this point.</p>	<p>Subdivision (b) of Section 227.38 has been deleted.</p>
<p>Update Sec. 228.06(a)(1) to reflect changes to (a)(2) and (a)(3), regarding methods of addressing operations outside of ODD.</p>	<p>Subdivision (a)(1) requires the identification of the operational design domain and a certification that the vehicles are incapable of operation in autonomous mode outside of the disclosed domain. Subdivision (a)(2) requires the identification of commonly occurring restrictions under which the vehicles are incapable of operating, and (a)(3) merely requires describing what the vehicle will do when it is outside of the domain described in (a)(1) or meets the conditions described in (a)(2). The three subdivisions are complimentary and do not require further revision.</p>
<p>Provide flexibility in 228.06(a)(6) regarding access to autonomous data in the event of a collision. further revise this provision to ensure manufacturers have flexibility in designing secure data collection and access systems. The requirement to build access for a commercially-available autonomous vehicle data access tool is premature, as no such tool exists. As a result, we urge the department to remove this requirement.</p>	<p>Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.</p>
<p>Clarify 228.06(a)(9) and 227.32(c) to include text and reasoning suggested in Statement of Reasons. As the Department’s Statement of Reasons indicates, “for safety” has been replaced with “enhance safety” to clarify that</p>	<p>Further clarification is not necessary. The language of the regulations already provide the specificity that the vehicles must operate in compliance with state and local traffic laws and regulations, with the exception that they may have to deviate from those laws and regulations only when necessary</p>

<p>autonomous technology may be programmed to take action necessary to enhance the safety of vehicle occupants and surrounding road users, which could include a variety of commonplace vehicle maneuvers to maintain normal, expected traffic flow. We believe industry, local jurisdictions and the public would benefit from express clarification of this point in the regulation to prevent confusion.</p>	<p>to enhance the safety of the vehicle’s occupants or others using the road.</p>
<p>Clarify “continual” basis in 228.06(a)(9)(B) to “ongoing” basis to accommodate data processing and validation. The term could have other interpretations that that would be difficult to comply with. Map and localization updates typically must be processed and validated prior to incorporation into maps used for localization. Suggest using “ongoing” rather than “continual” updates.</p>	<p>Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.</p>
<p>Correct definition of “Autonomous test vehicle” in 227.02(b) to clarify that a test driver is not required in all circumstances. The revised definition of “Autonomous test vehicle” in the Modified Proposed Regulations could be misconstrued to imply a requirement that such a test vehicle have a “test driver” in all circumstances, which is clearly not the intent of an overall regulation that provides an express path for driverless testing and eventual deployment.</p>	<p>Subdivision (b) has been amended to add that an “autonomous test vehicle” is a vehicle that “requires a human test driver or remote operator...” The amendment removes the inconsistency noted in this comment.</p>
<p>Strike 180-day in 228.08(f) to align with recent amendment to Vehicle Code. Department should remove the 180-day delay in deployment approval and substitute a 30-day delay after the Department’s final rules are made available online. This would align with recently enacted SB 145.</p>	<p>The effective date mentioned in this subdivision as proposed is inconsistent with the amendment of Vehicle Code Section 38750 by SB 145. An effective date of an approved application will be no sooner than 30 days after the department provides the notice required by amended subdivision (f) of Section 38750. Subdivision (f) of section 228.08 has been amended comply with the change in the law. Pursuant to Government Code Section 11343.4, regulations become effective on a quarterly basis depending on the date that they are required to be filed with the Secretary of State.</p>
<p>Rosemary Shahan- CARS</p>	
<p>Section 228.28 – Amendments are egregious and an abuse of the DMV’s authority, favors</p>	<p>Section 228.28 has been deleted.</p>

<p>irresponsible auto companies who fail to provide adequate safety technology, potentially placing what would likely be an insurmountable burden on the consumer to prove that the vehicle was maintained at all times in compliance with specifications that may be designed specifically and solely to evade liability, or that may not even be related to the causes of a crash.</p>	
<p>Section 227.38(b) – This proposal fails to take into account instances where other manufacturing defects in the vehicle may cause failures of the autonomous technology, limiting certification only to the narrow category of autonomous technology, to the exclusion of other components that may directly and adversely affect that technology, harming the public.</p>	<p>Manufacturing defects fall under the jurisdiction of the National Highway Traffic Safety Administration and are subjects to NHTSA’s recall authority. Subdivision (b) maintains the department’s authority to regulate the safe operation of vehicles as authorized in Vehicle Code Section 38750 by focusing on how modifications made subsequent to manufacture impact the operation of the autonomous technology.</p>
<p>Jennifer Cohen – Departments of Transportation</p>	
<p>Form OL 311R - The fields on this form will not determine or verify whether engineering, pavement condition, striping, street lighting, or signals play a role in disengagement, or the safe, reliable operation of these vehicles. The open-ended nature of the fields for location and description of facts does not provide uniform, objective information that can be reliably analyzed. We suggest that the classification of the condition of disengagement (weather, road conditions, construction, system failure, etc.) have a discrete list of objective options so that some data to inform city planning can be gained.</p>	<p>The disengagement reports provide the department and the public with greater understanding of testing activities occurring in California and a broad view of the technology’s capabilities and limitations while it is in a developmental stage. The department has determined that the information required in the OL 311 is sufficient for the department’s regulatory purpose.</p>
<p>The Law Enforcement Interaction Plan’s content and dissemination processes are inadequate and do not sufficiently equip local authorities. Information on how to interact with automated vehicles in testing and deployment must be easily accessible and clear.</p>	<p>Pursuant to Vehicle Code Section 38750 (d)(3) the department consulted with the Department of the California Highway Patrol to determine the elements that would be necessary for law enforcement entities interacting with autonomous vehicles. Section 227.38 (f)(4) adopts a common method for conveniently distributing information by requiring manufacturers to provide an internet web site address where the interaction plans can be accessed.</p>
<p>Section 227.38 should include clear</p>	<p>Section 227.38 requires that the notification to the locals must</p>

<p>timeframes for notification of local authorities. A week notice is a minimum. Local authorities should receive more than a written notification to fulfill this obligation; cities need to acknowledge that they have received notice and do not object to the time and location of the testing.</p>	<p>occur <i>prior</i> to applying for an application to test; consequently the section establishes that local authorities will be notified prior to the approval of a testing application. Vehicle Code Section 38750 does not provide authority for the creation of a local approval process for the testing of autonomous vehicles.</p>
<p>Mark R. Rosekind – Zoox</p>	
<p>§ 227.02(b). Definition of Autonomous Test Vehicle. The department should consider adding “remote operator” into the “autonomous test vehicle definition: ...but requires a human test driver <u>OR REMOTE OPERATOR</u> to continuously supervise the vehicle’s performance in the driving environment of the dynamic driving task.</p>	<p>Subdivision (b) has been amended to add that an “autonomous test vehicle” is a vehicle that “requires a human test driver or remote operator...”</p>
<p>Section 227.38 – Remains challenging to go through a notice period with potentially thousands of different jurisdictions across the state. Suggested Amendment: (2) A list <u>OR MAP</u> of all public roads in the jurisdiction where the vehicles will be tested.</p>	<p>The section only requires the written notification and does not require an approval process by local authorities. The department has balanced concerns about the potential burden of requiring local notifications with the benefits of ensuring that local authorities are aware of driverless testing activities occurring on their local roads. The regulations do not mandate the format for such a notification, which could include the submission of a map for purposing of identifying the roads where the vehicles will be tested.</p>
<p>Section 227.38(g)(2). We recommend amending this section to more clearly reflect the relationship between the remote operator and the system: The instruction shall <u>ADEQUATELY PREPARE A REMOTE OPERATOR TO COLLABORATE EFFECTIVELY WITH</u> the automated driving system.</p>	<p>Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.</p>
<p>Section 227.42(a)(3) and (b)(5). Recommend the following change to clarify the scope: Any <u>INTENTIONAL</u> act or omission of the manufacturer or one of its agents, employees, contractors, or designees which the department finds, <u>AFTER NOTICE TO THE MANUFACTURER AND AN OPPORTUNITY FOR THE MANUFACTURER TO RESPOND OR CORRECT THE ACT OR OMISSION</u>, makes the conduct of</p>	<p>Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.</p>

<p>autonomous vehicle testing on public roads by the manufacturer <u>UNSAFE AND an INJURIOUS OR LIFE THREATENING</u> risk to the public.</p>	
<p>Section 228.06 - There is significant technological and commercial development still needed to deploy the autonomous vehicle data recorders as currently defined by the department. It is not possible to record data to "read-only" media unless that memory is "write-once." The department should clarify its intent for this requirement.</p>	<p>Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required.</p>
<p>Section 228.06 (a)(9)(C). Most recent updates. Different jurisdictions across the state may vary in terms of ODD. We recommend that this section be amended to state "the registered owner of the autonomous vehicle shall be responsible for ensuring that the vehicle is operated using the manufacturer's most recent updates, <u>AS APPLICABLE TO THE OPERATIONAL DESIGN DOMAIN THAT THE OWNER OPERATES THEIR VEHICLE IN</u> as specified in this subsection."</p>	<p>Government Code Section 11346.8 (c) requires the department to respond to comments regarding changes made to the text of a regulation that is the subject of the 15-day notice. This comment is not on a change to the text of the regulation. No response is required. However, subdivision (a)(9)(C) has been revised to require that a manufacturer notify registered owners of the availability of update and provide instructions on how to access those updates.</p>

5) Summary of Comments Received during the Second 15-day Comment Period and Department Response

After receiving and reviewing comments received during the 15-day comment period that began on October 11, 2017 and ended on October 25, 2017, the department made further modifications to the proposed regulations and conducted a second 15-day comment period that began on November 30, 2017 and ended on December 15, 2017. The Notice of Modifications of Proposed Regulations, specifically stated, ***“Only comments on the changes proposed in this Notice will be considered by the department. Pursuant to Government Code Section 11346.8 (c), comments that are not regarding the proposed changes will not be responded to in the final statement of reasons.”*** The Notice of Modifications also stated, ***“Any interested person may submit written comments regarding only the new changes to the proposed text.”*** During that time, the department received comments from 7 interested parties. Many of those comments were not regarding changes to the proposed text. Government Code Section 11346.8(c) specifies that the department is only required to respond to comments received regarding the changed text.

The following individuals provided written comment on the modified regulatory text.

1. Prof. Robert W. Peterson	University of Santa Clara, School of Law
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2. Mike Bradley	
3. Armand Feliciano	ACIC
4. Kathrine Pettibone and Lawrence K. Eckhouse	American Insurance Association
5. Edward D. Riskin, Tilly Chang, Seleta Reynolds, Jim Ortbal	City and County of San Francisco, SF County Transportation Authority, Los Angeles Department of Transportation, San Jose Department of Transportation
6. Ross Buckley	Personal Insurance Federation of California
7. Matthew Burton	Uber Advanced Technologies Group

Of the comments submitted, only comments numbers 1 and 7 addressed changes proposed in the Notice of Modifications of Proposed Regulations. Comments 2 through 6 are not related to the proposed changes and are not responded to in this final statement of reasons.

Prof. Robert W. Peterson – Santa Clara University, School of Law	
Section 228.06 (a)(9)(C): Requiring manufacturers to notify registered owners of updates and to provide information on how to access those updates is too feeble. It is unrealistic to expect owners to update software. Owners should agree to automatic updating and if a vehicle is not updated, autonomous mode should be disabled until it is updates.	Section 228.06 requires manufacturers to certify that they will make available updates to the autonomous technology as needed to comply with changes to California Vehicle Code, location, or mapping information. Amended subdivision (a)(9)(c) requires the manufacturer to notify registered owners of the availability of updates and provide instructions on how to access those updates. The regulations do not mandate the mechanism through which these updates are applied and do not preclude the manufacturer from creating a mechanism to automatically update their vehicles.
Matthew Burton – Uber Advanced Technologies Group	
Section 227.02 (b): A remote operator may have a range of responsibilities that differ from the type of continuous supervision exercised by a driver behind the wheel. Suggests clarifying that supervising the dynamic driving task would apply to the human driver and remote operator performs the tasks outlined in operative testing regulations.	Section 227.02 (b) merely defines the term “autonomous test vehicle.” The duties of a remote operator are already specifically provided in Section 227.38. Further clarification in Section 227.02 (b) is not necessary.

6) Forms Incorporated by Reference

The department incorporated the following forms by reference:

- Autonomous Vehicle Tester (AVT) Program Application for Manufacturer’s Testing Permit, form OL 311
- Annual Report of Autonomous Vehicle Disengagement, form OL 311R
- Autonomous Vehicle Testing (AVT) Program Test Vehicle Permit, form OL 313

- Autonomous Vehicle Testing (AVT) Program Manufacturer Permit-Driverless Vehicles, form OL 315A
- Report of Traffic Collision Involving an Autonomous Vehicle, form OL 316
- Autonomous Vehicles Manufacturer Deployment Program Surety Bond, form OL 317A
- Autonomous Vehicle Tester (AVT) Program Application for Manufacturer's Testing Permit Driverless Vehicles, form OL 318
- Autonomous Vehicle Tester (AVT) Program Application for Certificate of Self-Insurance, form OL 319
- Autonomous Vehicle Manufacturer's Deployment Program Application for Certificate of Self-Insurance, form OL 319A
- Application for a Permit to Deploy Autonomous Vehicles on Public Streets, form OL 321

These documents will not be published in the California Code of Regulations because it would be impractical and cumbersome to do so; however, the documents were made available during the comment periods to interested parties on the department's website.

7) Determination of Alternatives

The department has determined that no reasonable alternative considered by the department or that has otherwise been identified and brought to the attention of the department would be more effective in carrying out the purpose for which the action is proposed, or would be effective as and less burdensome to affected private persons than the proposed action, or would be more cost-effective to affected private persons and equally effective in implementing the statutory policy or other provisions of law.

The only alternatives that were identified or brought to the department's attention were those already discussed in the initial statement of reasons and those received as comments, which were rejected for the reasons specified in the responses to those comments.

8) Documents Relied Upon

The Statements of Reason for first modified text and the second modified text were documents relied upon. During the first and second 15-day comment periods, the department provided interested parties the Notice of Modification to the Proposed Text, the Modified Statements of Reason, and the Modified Regulatory Text. The documents were made available interested parties for at least 15 days.

9) Business Report

Section 228.12 requires a manufacturer who identifies a safety-related defect in their autonomous technology that creates an unreasonable risk to safety to submit to the department a copy of the report prepared in compliance with the timeframe and requirements specified in Part 573, Title 49 of the Code of Federal Regulations. The department has determined that receiving a copy of the report is necessary to monitor the potential defects in vehicles.

10) Non substantive amendments made during OAL review

The following non substantive amendments were made to the regulation text during OAL review:

Section 227.00

This section is removed because there are no changes being proposed. The department originally proposed adding subsection (c), but that provision was removed during the 15-day comment period.

Section 227.02

Subsection (b)(2) – The revision date was added to the SAE document

Subsection (l) – The word ‘linkable’ was replaced with ‘capable of being linked.’

Section 227.12

Subsection (c) – The word ‘collision’ is replaced with ‘accident.’

Section 227.26

Subsection (d) – The language was changed to ensure consistency with the language already in the regulation.

Section 227.38

Subsection (c) – The revision date was added to the SAE document.

Section 227.42

Subsection (b) – The word ‘the’ is inserted before the words ‘Manufacturer’s Testing Permit.’

Section 227.48

The word ‘collision’ is replaced with the word ‘accident.’

Section 227.52

Subsection (d) – The outdated version of the form is added and struck through.

Section 228.04

Subdivision (a)(2) – The words ‘incorporated by reference’ is added after form OL 317A.