



Autonomous Vehicles in California



September 10, 2019

Bernard C. Soriano, Ph.D.
Deputy Director, California Department
of Motor Vehicles

Testing Regulations *Summary*

\$5 MILLION

INSURANCE, bond,
or self-insurance

EXCLUDES

Commercial vehicles
>10,000 lbs GVWR
motorcycles



2 YEARS

TEST PERMIT valid

TEST DRIVER MUST

DRIVING RECORD clear of
DUI, at-fault, no more than
1 point

COMPLETE
test driver
training
program



EMPLOYEE
contractor, or
designee of
manufacturer



SEATED IN
driver seat
during test

MANUFACTURER MUST

REPORT COLLISIONS
within **10** days

REPORT
disengagements
annually



Approved Testing Permits Manufacturers





Manufacturers



Permit	Manufacturer
AVT001	Volkswagen Group of America
AVT002	Mercedes Benz
AVT003	Waymo LLC
AVT004	Aptiv (Delphi)
AVT005	Tesla Motors
AVT006	Bosch
AVT007	Nissan
AVT008	GM Cruise LLC
AVT009	BMW
AVT010	Honda
AVT011	Ford
AVT012	Zoox Inc
AVT013	Drive.AI Inc
AVT014	Faraday & Future Inc
AVT015	Baidu USA LLC
AVT016	Wheego Electric Cars
AVT017	Valeo North America, Inc.
AVT018	NIO USA Inc
AVT019	Telenav
AVT020	NVIDIA Corporation
AVT021	AutoX Technologies
AVT022	Subaru
AVT023	Udacity Inc
AVT024	Navya Inc
AVT025	Renovo Motors Inc
AVT026	UATC LLC (UBER)
AVT027	PlusAi Inc
AVT028	Nuro, Inc
AVT029	CarOne LLC (Udelv)
AVT030	Apple Inc
AVT031	Bauer's Intelligent Transportation, Inc
AVT032	Pony.AI
AVT033	TuSimple
AVT034	WeRide Corp (Formerly Jingchi)

Permit	Manufacturer
AVT035	SAIC Innovation Center, LLC
AVT036	Aimotive Inc
AVT037	Aurora Innovation
AVT038	Nullmax
AVT039	Samsung Electronics
AVT040	Continental
AVT041	Voyage
AVT042	CYNGN Inc
AVT043	Roadstar.AI
AVT044	Changan Automobile
AVT045	Lyft, Inc.
AVT046	Phantom AI
AVT047	Qualcomm Technologies, Inc.
AVT048	aiPod, Inc.
AVT049	SF Motors Inc
AVT050	Toyota Research Institute
AVT051	Apex.AI
AVT052	Intel
AVT053	Ambarella
AVT054	Gatik AI Inc
AVT055	DiDi Research America LLC
AVT056	TORC Robotics Inc
AVT057	Box Bot Inc
AVT058	EasyMile
AVT059	Mando America Corp
AVT060	Xmotors.ai, Inc
AVT061	Imagry Inc
AVT062	Ridecell
AVT063	AAA NCNU
AVT064	ThorDrive
AVT065	Helm.AI Inc
AVT066	Argo AI, LLC
AVT067	Qcraft.a
AVT068	Atlas

Autonomous Testing Permits—by the numbers

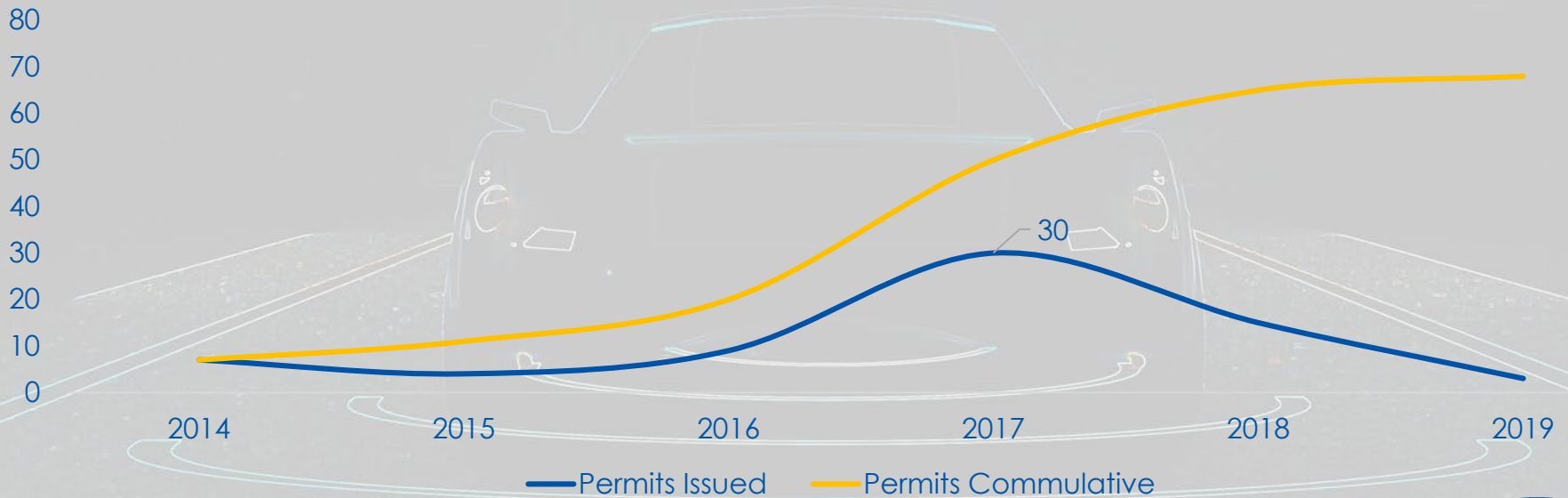
ISSUED **68**
testing permits
1 DRIVERLESS
permit issued

ACTIVE PERMITS
to test with
a driver **63**

2,698 TEST DRIVERS

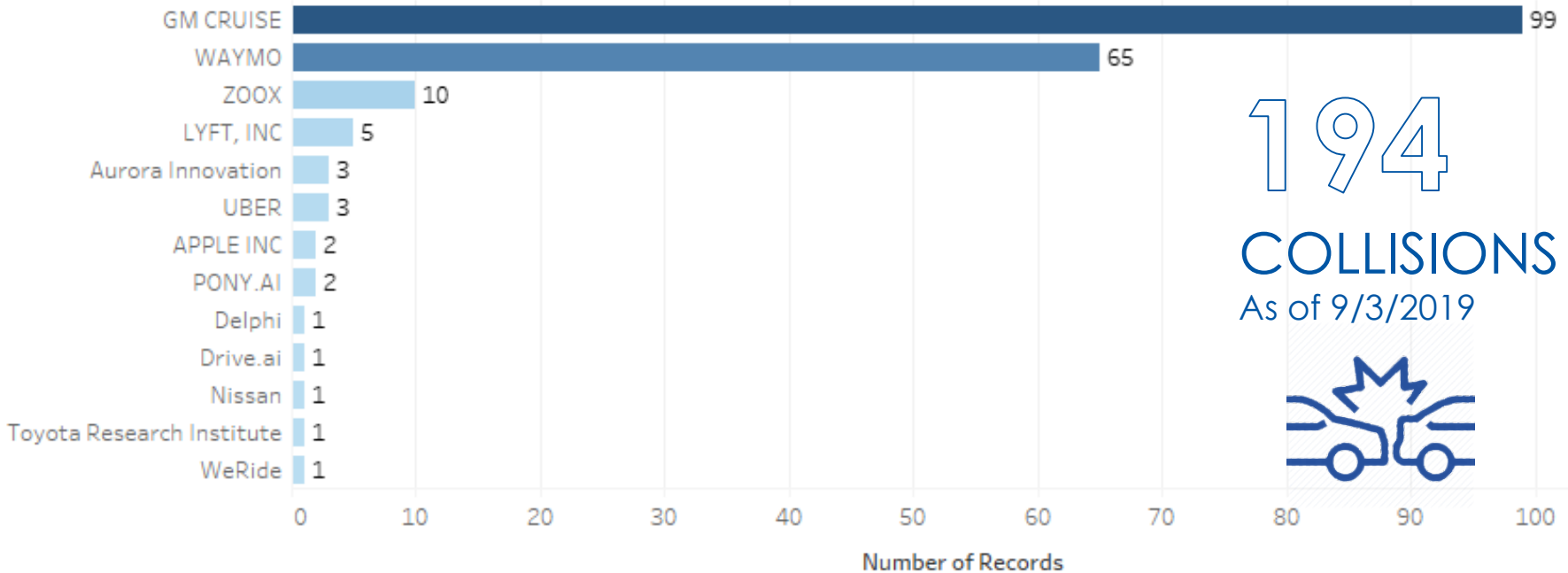


831 VEHICLES
permitted on
public roads



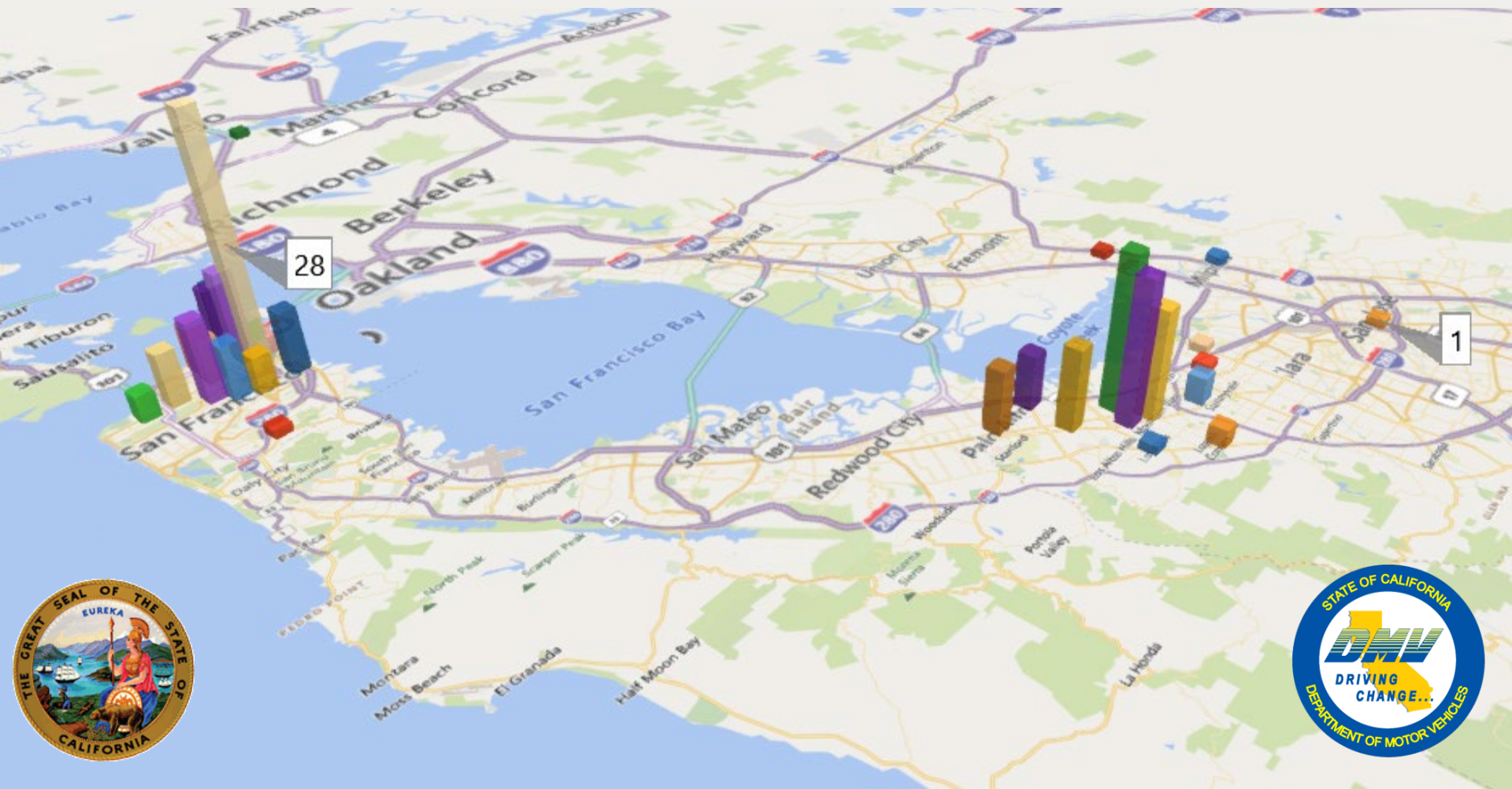
Autonomous Testing

Collisions—by the numbers



Autonomous Testing Collisions—by the numbers

Geographic concentration volumes



Driverless Testing and Deployment Regulations *Summary*



Safe Operation

NHTSA's Federal Automated Policy

Motor vehicle safety responsibility



Manufacturers Certify

AV has been tested under controlled conditions and is safe to operate

Vehicle meets **FMVSS** and complies with state traffic laws



Application Requirements

Notification to local authorities

Defines communication link with remote operator

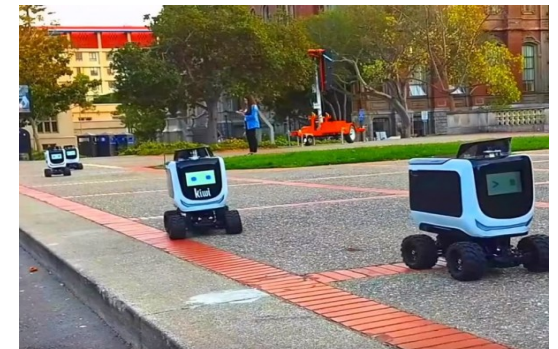
Law Enforcement & First Responder Interaction Plan



Driverless Autonomous Vehicles



Driverless Autonomous Vehicles



Remotely Controlled Vehicles



Statements of Policy California & NHTSA

2013 PRELIMINARY concerning automated vehicles

- Levels of automation
- Recommendations testing autonomous vehicles
- Recommend states do not authorize operation of autonomous vehicles



2014 COLLABORATED Federal Automated Vehicles Policy

- Vehicle Performance Guidance for Automated Vehicles
- Model State Policy



Statements of Policy

Federal & International

AAMVA

American Association of Motor Vehicle Administrators



AV WORKING GROUP

20 representatives
US states &
Canadian
provinces



USDOT, NHTSA,
FMCSA Licensing,
technology, law
enforcement



NHTSA funded
AAMVA to develop
MODEL STATE
POLICY



Vice-Chair

Minimize risk of
patchwork
regulations

DELINEATION OF FEDERAL & STATE RESPONSIBILITIES



Framework for states to
follow as technology
develops

INTERNATIONAL INTEREST



IT IS NOT EASY



Dear Bernad Soriano,
Thank you so much for
coming to Bohannon
Middle school's collage
career Day and
talking to us about
your career! Something
I learned from you
is what you have to
do to become an
engineer. One thing
that impressed me
about your career
is how you work

ON SELF driving
cars. Because of
your presentation,
I have decided to
become a Lawyer.
I really appreciated
you coming.

Sincerely,
Alejandro

For more information CONTACT

Bernard.Soriano@dmv.ca.gov
(916) 657-7626



@Bernard45

