

California Air Resources Board

INTRODUCTION TO NEW VEHICLE CERTIFICATION

HIGHWAY MOTORCYCLE (HMC) AND OFF-HIGHWAY RECREATIONAL VEHICLE (OHRV)

October 18, 2019

What is an HMC & OHRV?

- Highway Motorcycle (HMC) [Ref. CA HSC § 39041 & CA VC §400]
 - Seat or saddle for rider
 - 3 or fewer wheels (4 wheels if 2 wheels are part of sidecar)
- On-road motor scooters that meet the definition of a HMC are certified for emissions compliance as a HMC.
- Off-Highway Recreational Vehicle (OHRV) [Ref. 13 CCR §2411]
 - All-Terrain Vehicle (ATV), width \leq 50 inches, 4 or more low pressure tires, 1 operator-straddled seat, or 1 operator-straddled seat plus 1 passenger seat, handlebar, IC engine
 - Off-Road Motorcycle (OFMC), a.k.a., “trail bike” or “dirt bike”
- Other OHRV Classifications, Off-Road Sport Vehicle (OFRSV), Off-Road Utility Vehicle (OFRUV), Sand Car (SCAR), Electric Golf Cart (eGC)

Examples Of HMC & OHRV



HMC



ATV



OFRUV



OFMC



eGC

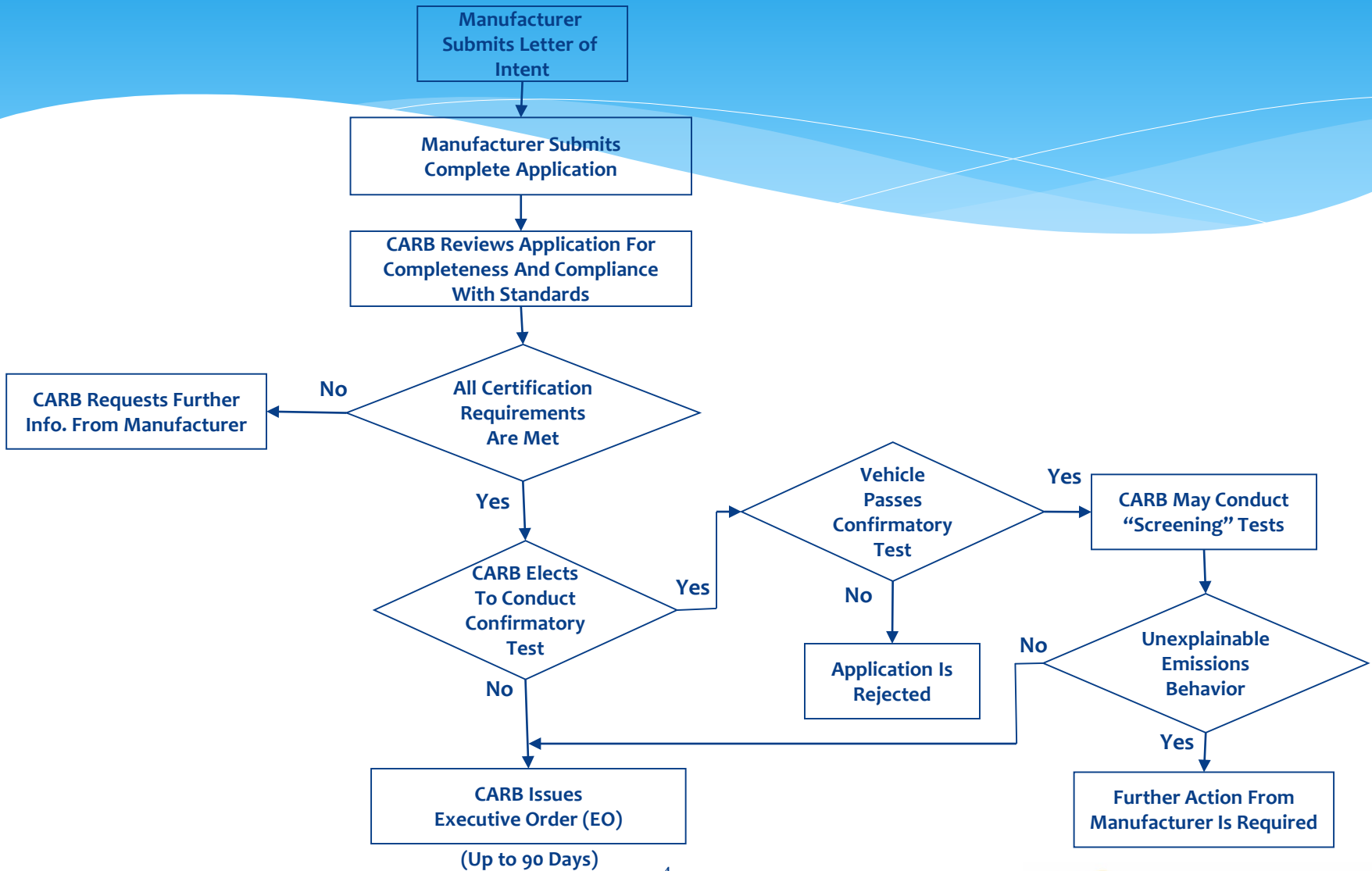


SCAR



OFRSV

Certification Process



CA HMC Emission Standards

EXHAUST (g/km.)			
	HC	HC+NO _x	CO
Class I & II [50-279 cc)	1.0	-	12
Class III [280+ cc]			
2008 And Later	-	0.8 ⁽¹⁾	12
2008 And Later For SVM	-	1.4 ⁽¹⁾	12
EVAPORATIVE (grams per 1-hr. diurnal + hot soak SHED test)			
All		2.0	

⁽¹⁾ May be met on a corporate average basis.

⁽²⁾ If evaporative emissions are at or below 1.8 grams/test, the HMC does not need to meet CARB's fuel fill pipe specifications.

CA OHRV Emission Standards

EXHAUST EMISSION STANDARDS BASED ON CHASSIS-BASED TESTING (g/km.)

Vehicle Classification	HC	HC+NO _x	CO
OFMC, ATV, OFRUV, OFRSV, SCAR	1.2 ⁽¹⁾	-	15.0

EXHAUST EMISSION STANDARDS BASED ON ENGINE-BASED TESTING (g/kW-hr.)

ATV < 225cc	-	16.1 ⁽¹⁾	400
ATV ≥ 225cc	-	13.4 ⁽¹⁾	400
OFRUV, OFRSV	-	12.0 ⁽¹⁾	400
SCAR	-	13.4 ⁽¹⁾	400

⁽¹⁾ May be met on a corporate average basis.

CA OHRV Emission Standards 2018 Model Year and Later

EVAPORATIVE EMISSIONS - PERMEATION FROM FUEL TANK AND FUEL HOSE

Vehicle Classification	Emission Component	Permeation Standard (g/m ² /day)	Test Temperature
All OHRVs	Fuel Tank	1.5	28 °C (82 °F)
	Fuel Hose	15.0	23 °C (73 °F)

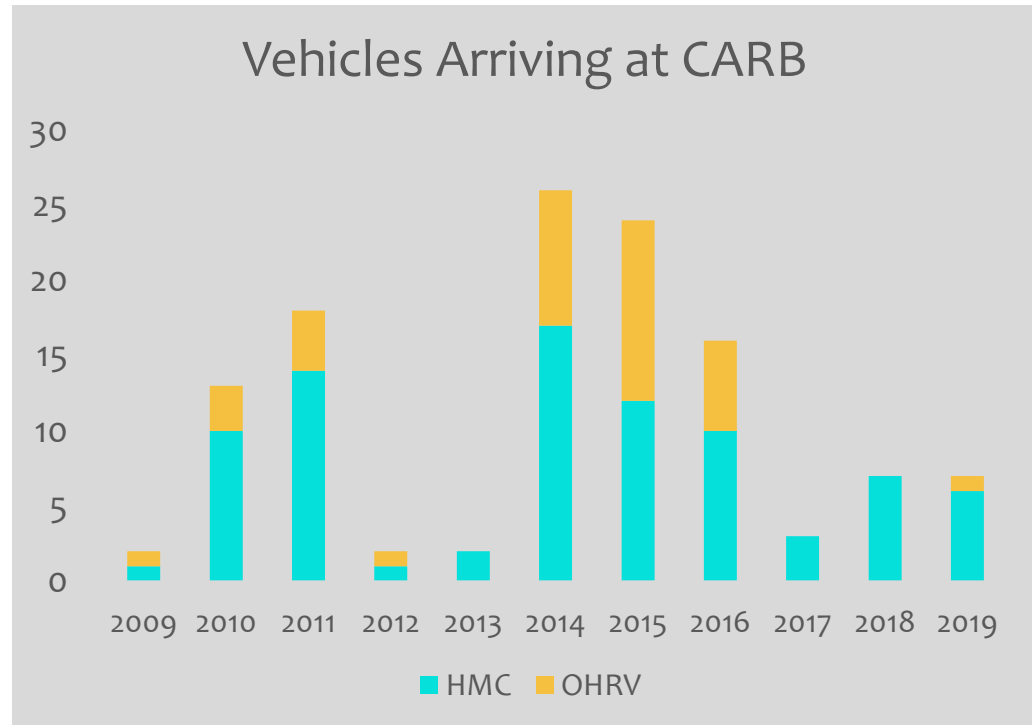
EVAPORATIVE EMISSIONS⁽¹⁾ - WHOLE VEHICLE SHED-BASED TEST

Test Type Mfr. Selects Option 1 or Option 2.	72-Hour Diurnal (Option 1)	24-Hour Steady State (Option 2)	Fuel Leakage Tip Test
All OHRVs	1 g/test TOG/day	1 g/test TOG/day	No visible fuel leakage

⁽¹⁾ Additionally, ATVs with fuel tanks that are re-designed to be geometrically different from 2017 and earlier model years and have nominal capacity > 3.5 gallons must meet CARB's fuel filler pipe sealing surface requirement.

HMC and OHRV Confirmatory Test Program

- * Approximately 250 HMCs and 250 OHRVs are certified each year
- * About 120 vehicles brought in for testing since 2009



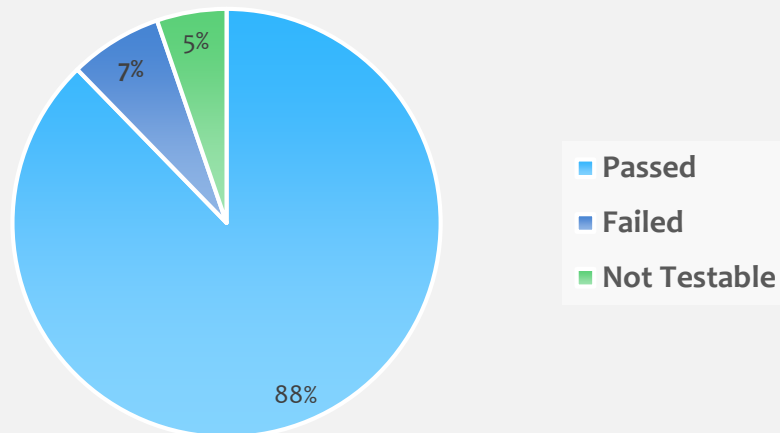
HMC and OHRV Confirmatory Test Program

- Selection Criteria of candidate HMC and OHRV
 - Certification values close to the standard
 - Sales
 - Testing laboratory
 - New engine or emissions control technology
- Test Procedure
 - Ensure vehicles are properly equipped for testing
 - Verify part numbers
 - Confirmatory testing (FTP for all vehicles, 1 hour diurnal + hot soak test for HMC)
 - Screening tests- Started 2016. Testing on modified and alternate cycles to look for unapprovable or undisclosed AECDs or defeat devices.

HMC and OHRV Confirmatory Test Program

CONFIRMATORY TESTING RESULTS					
CY	Arrived at Lab	Passed	Failed	Not Testable	% Passing
2015	24	19	4	1	79%
2016	16	14	0	2	88%
2017	3	3	0	0	100%
2018	7	7	0	0	100%
2019	7	7	0	0	100%
Total 15-19CY	57	50	4	3	88%

HMC/OHRV Confirmatory Testing at CARB: 2015-2019

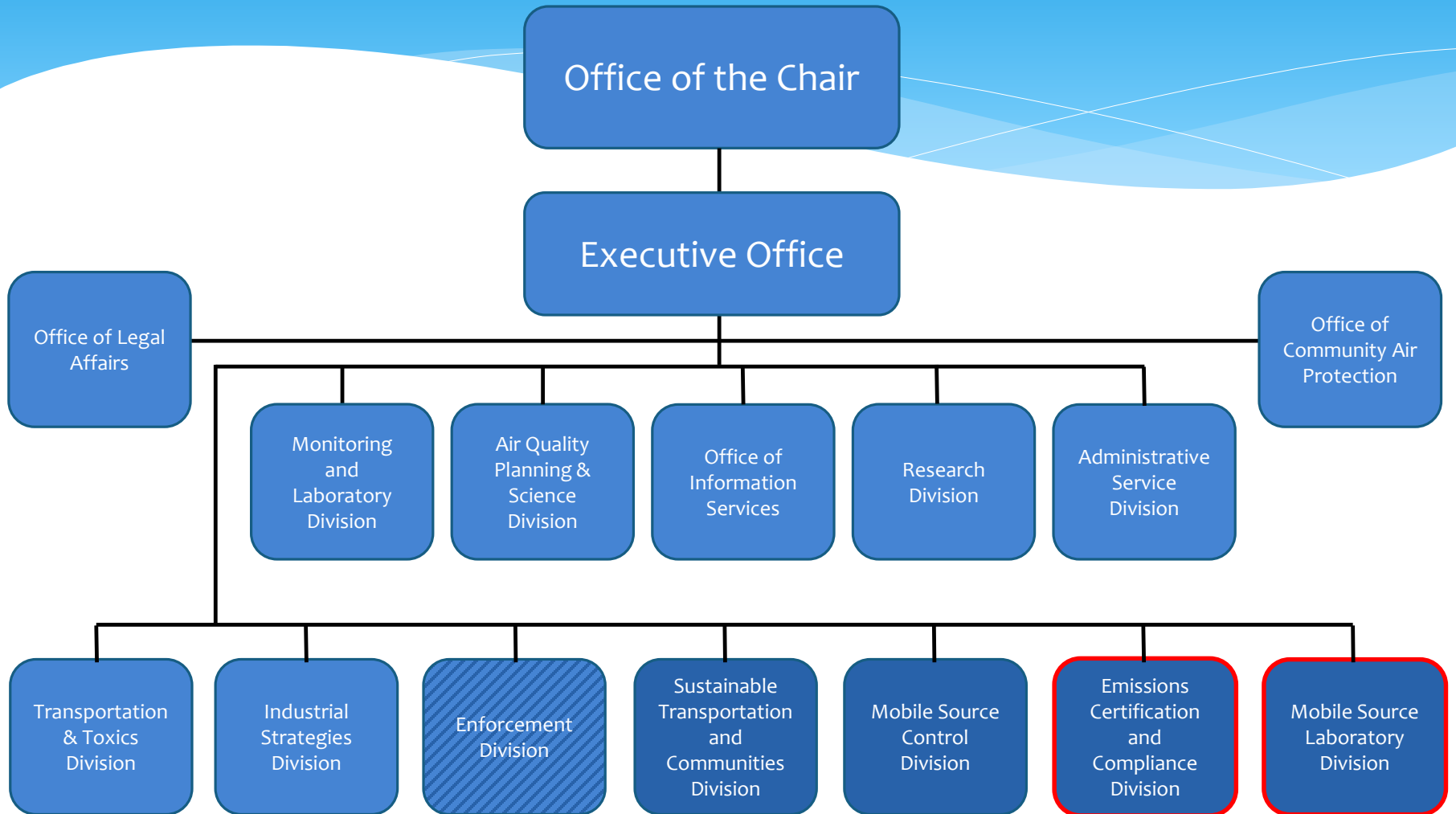


Contacts for HMC/OHRV Certification

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Extra Slides

California Air Resources Board



California Air Resources Board

Mobile Source Divisions

Steven Cliff
Deputy Executive Officer
Annette Hebert
Assistant Executive Officer

Jennifer Gress

Sustainable
Transportation and
Communities Division

Core Activities

- Climate Investments
- Transportation Planning
- Development of Advance Clean Cars Regulations
- Mobility Analysis

Jack Kitowski

Mobile Source Control
Division

Core Activities

- Technology Assessment
- Regulatory Development
- Incentives
- Implementation of Fleet Rules

Allen Lyons

Emissions Certification
and Compliance
Division

Core Activities

- **Certification of New Vehicles and Engines**
- OBD Systems
- **In-Use Compliance**
- Aftermarket Parts

Mark Fuentes

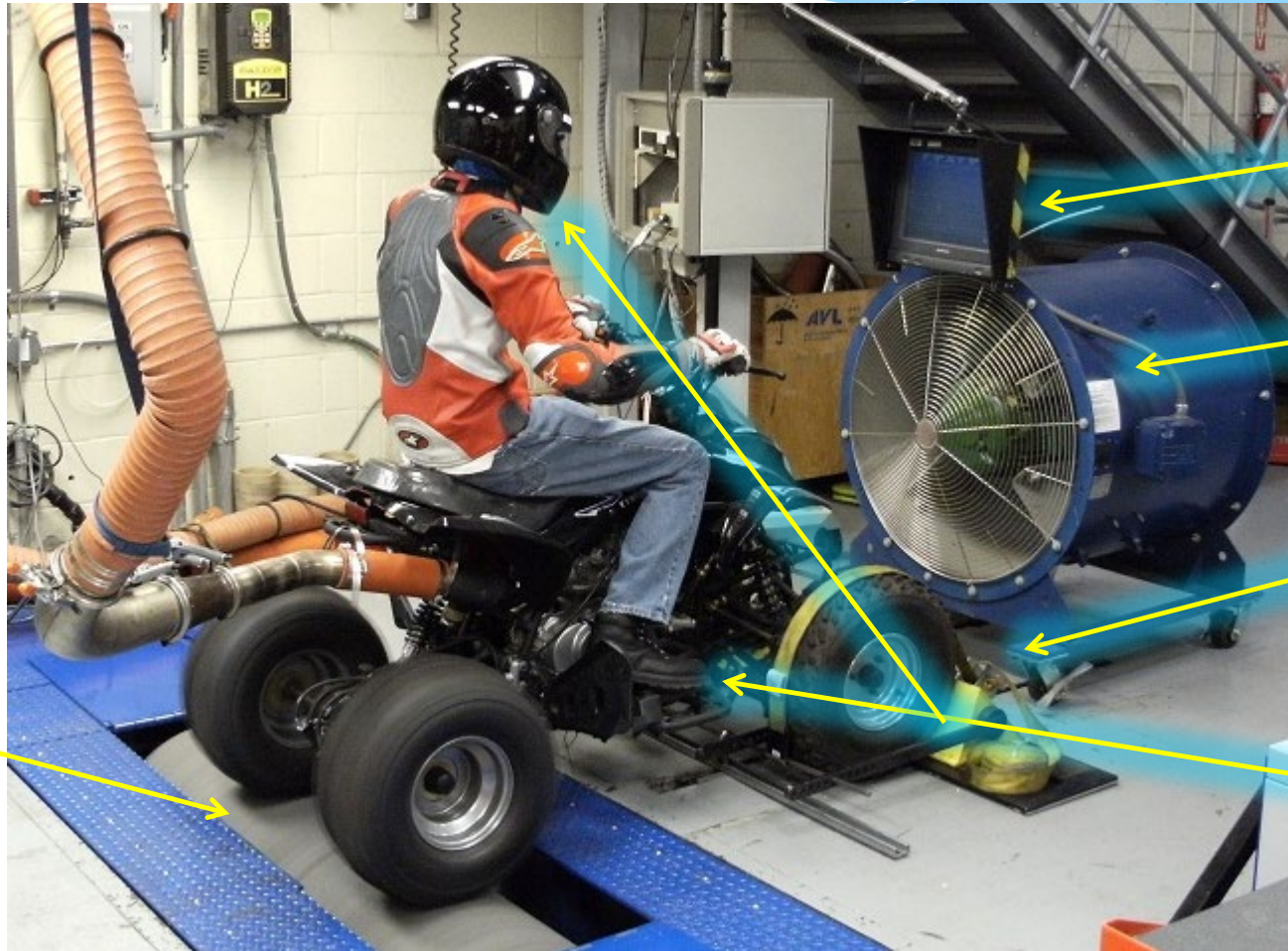
Mobile Source
Laboratory Division

Core Activities

- LD Testing
- HD Testing
- PEMS Testing
- **Motorcycles and Off-Road Testing**
- Evaporative

Dynamometer for Motorcycles/ATVs

Simulation of real-world operation including speed variations moving through an air mass and road resistance (chassis dynamometer)



exhaust to CVS

dyno roller

drivers aid

proportional fan

vehicle restraints

protective gear