

House Energy and Commerce Committee
Subcommittee on Digital Commerce and Consumer Protection

Hearing:

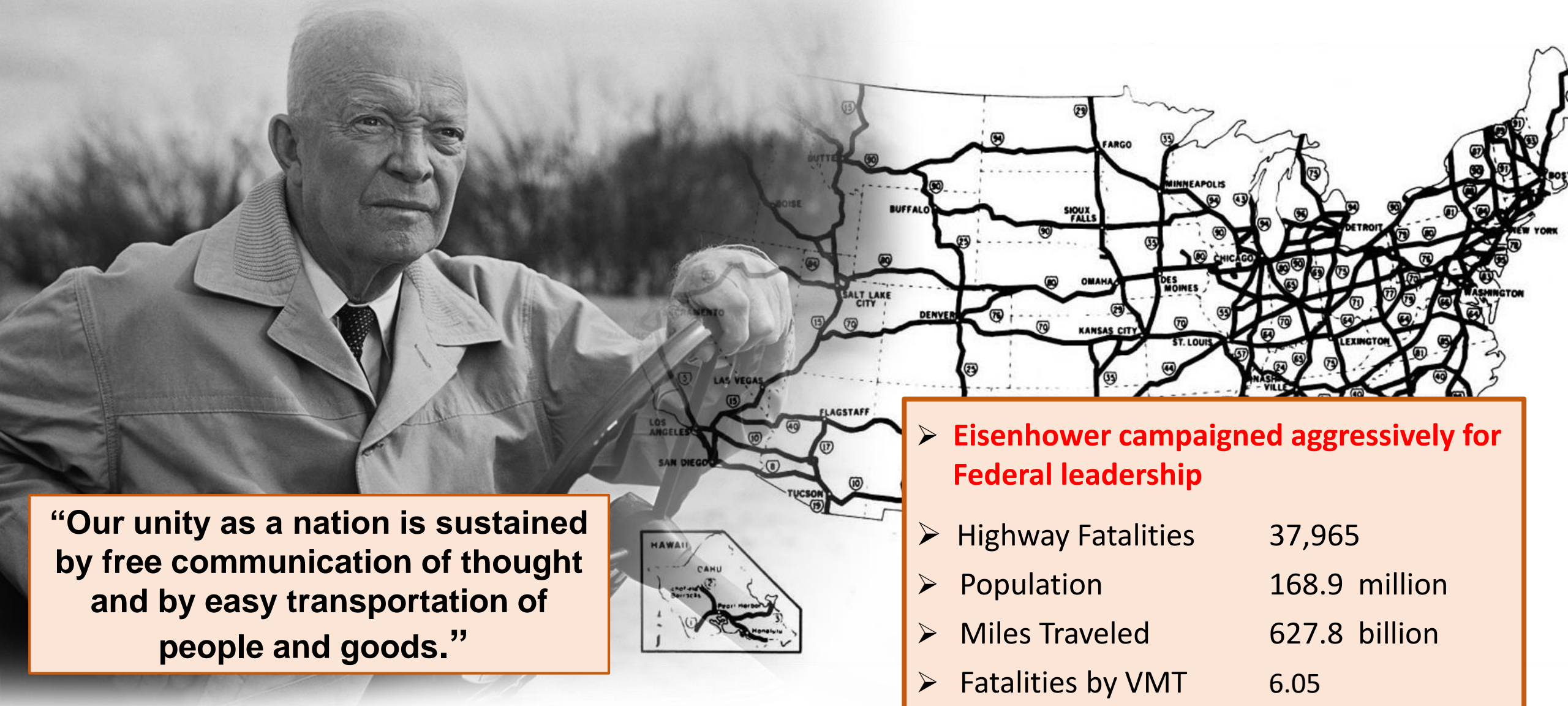
Self-Driving Vehicle Legislation

Testimony by Mitch Bainwol

6/27/2017

Alliance of Automobile Manufacturers

1956: Interstate Highway System



“Our unity as a nation is sustained by free communication of thought and by easy transportation of people and goods.”

- **Eisenhower campaigned aggressively for Federal leadership**
- Highway Fatalities 37,965
- Population 168.9 million
- Miles Traveled 627.8 billion
- Fatalities by VMT 6.05

1966: Highway Safety Act



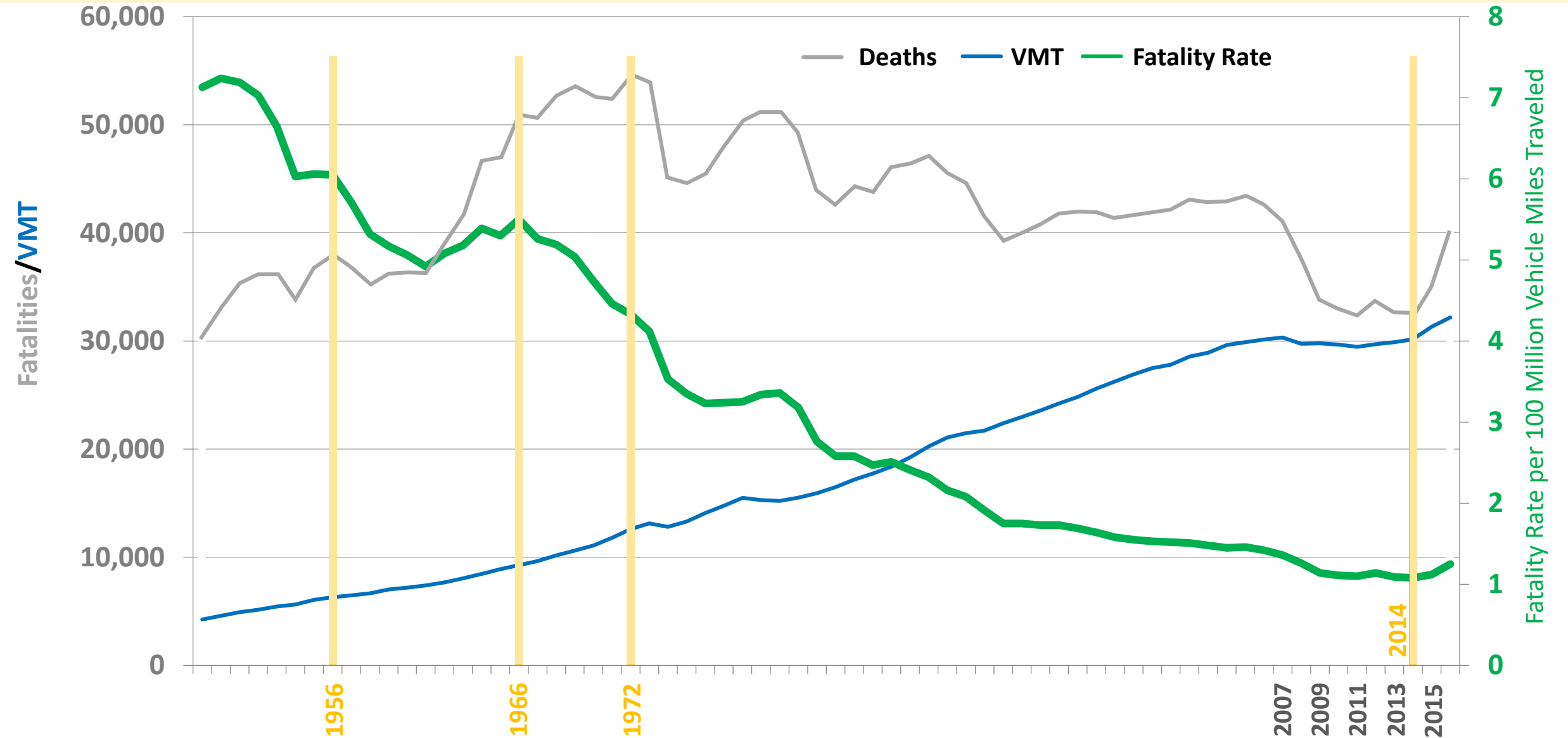
➤ LBJ SOTU in '66 proposed Safety Act and creation of the DOT

- Highway Fatalities 50,894
- Population 196.6 million
- Miles Traveled 925.9 billion
- Fatalities by VMT 5.50

Public Works Chairman George Fallon stated, “[This bill] continues the policy of meaningful cooperation between the States and the Federal Government on highway matters. I believe it is a firm step forward in the struggle to save lives, and I urge that we act with strong voice to put it into effect.”

Profound Improvement in Fatalities by VMT

Advanced Technology Promises Continued Gains



10 Great Public Health Achievements

- **The reduction of the rate of death attributable to motor-vehicle crashes in the United States represents the successful public health response to a great technologic advance of the 20th century--the motorization of America.**
- Systematic motor-vehicle safety efforts began during the 1960s.
- In 1966, passage of the Highway Safety Act and the National Traffic and Motor Vehicle Safety Act authorized the federal government to set and regulate standards for motor vehicles and highways
- Changes in driver and passenger (host) behavior also have reduced motor-vehicle crashes and injuries.
- Government and community recognition of the need for motor-vehicle safety prompted initiation of programs by federal and state governments, academic institutions, community-based organizations, and industry.



Achievements in Public Health, 1900-1999 Motor-Vehicle Safety: A 20th Century Public Health Achievement

The reduction of the rate of death attributable to motor-vehicle crashes in the United States represents the successful public health response to a great technologic advance of the 20th century--the motorization of America. Six times as many people drive today as in 1925, and the number of motor vehicles in the country has increased 11-fold since then to approximately 215 million (1). The number of miles traveled in motor vehicles is 10 times higher than in the mid-1920s. Despite this steep increase in motor-vehicle travel, the annual death rate has declined from 18 per 100 million vehicle miles traveled (VMT) in 1925 to 1.7 per 100 million VMT in 1997--a 90% decrease (Figure 1) (1).

Systematic motor-vehicle safety efforts began during the 1960s. In 1960, unintentional injuries caused 93,803 deaths (1), 41% were associated with motor-vehicle crashes. In 1966, after 5 years of continuously increasing motor-vehicle-related fatality rates, the Highway Safety Act created the National Highway Safety Bureau (NHSB), which later became the National Highway Traffic Safety Administration (NHTSA). The systematic approach to motor-vehicle-related injury prevention began with NHSB's first director, Dr. William Haddon (2). Haddon, a public health physician, recognized that standard public health methods and epidemiology could be applied to preventing motor-vehicle-related and other injuries. He defined interactions between host (human), agent (motor vehicle), and environmental (highway) factors before, during, and after crashes resulting in injuries. Tackling problems identified with each factor during each phase of the crash, NHSB initiated a campaign to prevent motor-vehicle-related injuries.

In 1966, passage of the Highway Safety Act and the National Traffic and Motor Vehicle Safety Act authorized the federal government to set and regulate standards for motor vehicles and highways, a mechanism necessary for effective prevention (2,3). Many changes in both vehicle and highway design followed this mandate. Vehicles (agent of injury) were built with new safety features, including head rests, energy-absorbing steering wheels, shatter-resistant windshields, and safety belts (3,4). Roads (environment) were improved by better delineation of curves (edge and center line stripes and reflectors), use of breakaway sign and utility poles, improved illumination, addition of barriers separating oncoming traffic lanes, and guardrails (4,5). The results were rapid. By 1970, motor-vehicle-related death rates were decreasing by both the public health measure (deaths per 100,000 population) and the traffic safety indicator (deaths per VMT) (Figure 2) (1).

Changes in driver and passenger (host) behavior also have reduced motor-vehicle crashes and injuries. Enactment and enforcement of traffic safety laws, reinforced by public education, have led to safer behavior choices. Examples include enforcement of laws against driving while intoxicated (DWI) and underage drinking, and enforcement of safety-belt, child-safety seat, and motorcycle helmet use laws (5,6).

Government and community recognition of the need for motor-vehicle safety prompted initiation of programs by federal and state governments, academic institutions, community-based organizations, and industry. NHTSA and the Federal Highway Administration within the U.S. Department of Transportation have provided national leadership for traffic and highway safety efforts since the 1960s (2). The National Center for Injury Prevention and Control, established at CDC in 1992, has contributed public health direction (7,8). State and local governments have enacted and enforced laws that affect motor-vehicle and highway safety, driver licensing and testing, vehicle inspections, and traffic regulations (2). Preventing motor-vehicle-related injuries has required collaboration among many professional disciplines (e.g., biomechanics has been essential to vehicle design and highway safety features). Citizen and community-based advocacy groups have played important prevention roles in areas such as drinking and driving and child-occupant protection (6). Consistent

Safety Act Effectively Balances Safety Innovations and Consumer Protection

1. Private sector Self-Certification
2. NHTSA retains broad enforcement authority (defect and recall) under the Safety Act both for conventional and highly automated vehicles
3. Liability exposure also inhibits premature deployment
4. Rule development (FMVSS) is data driven - after extensive objective testing - and LOCKS IN rather than TRIGGERS market innovations
5. Enforcement authority and liability both always apply
 - Whether or not a rule has been issued
 - Whether it is a test or a deployment
 - Whether or not introduction is by temporary exemption



Improve on the 1% - Laser Focus on 99%

35,092: 2015 Total Fatalities from
Motor Vehicle Traffic Crashes

96.5% (33,877)

Fatalities Related to Human Error/No Possible Vehicle Defects

1% (353)

Fatalities Related to Motorcycles, Medium-Heavy Duty Trucks and Misc. Vehicles

2.5% (862)

Fatalities Related to Possible Defects or Maintenance in Light Duty Vehicles

- 68.18% of fatalities from a vehicle defect were the result of tire maintenance
- 80% of the vehicles in this category are MY 2000-2004, 70% were older than 11.5 years
- 20 fatalities from defects were autos MY 2010 or newer (4 involved an impaired driver)

- More than 2/3 of the 862 resulted from maintenance faults
- Thus less than 1% of fatalities in LDV are defect related
- Huge correlation to age of cars

Clearing Hurdles = Huge Social Benefits

- ❖ Government
- ❖ Consumer acceptance
- ❖ Data risks
- ❖ Dislocation
- ❖ Technology itself



- ❖ Saving lives
- ❖ Reducing injuries / damage
- ❖ Access for disabled
- ❖ Enhanced quality of life
- ❖ Less carbon per mile
- ❖ More fuel efficiency
- ❖ Faster travel
- ❖ More productive commerce
- ❖ More flexible space utilization



Other Countries Nationalizing Self-Driving Frameworks

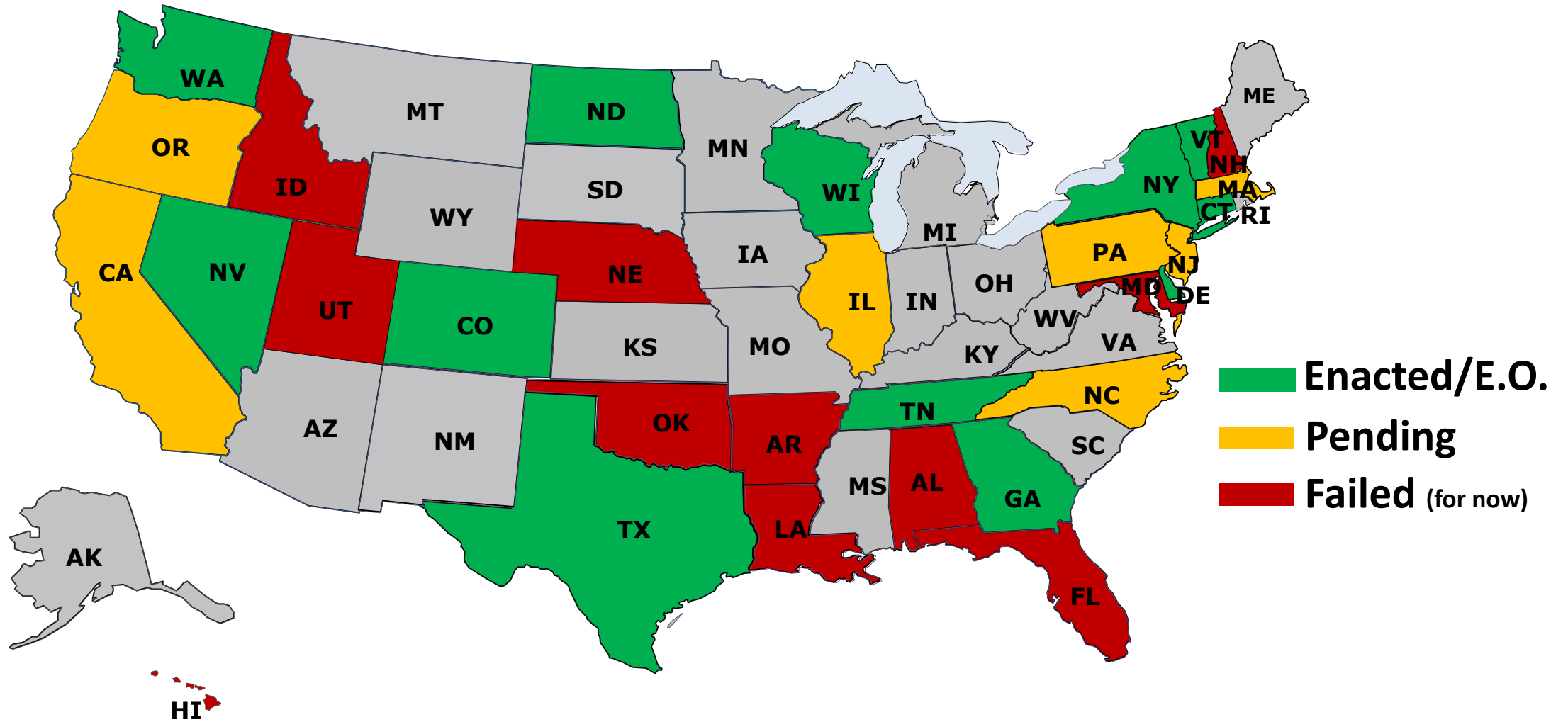


United Kingdom | Germany | Sweden | Japan | South Korea



MOTOR AUTHORITY
Queen paves way for autonomous cars in U.K.
MAY 18, 2016

But the U.S. is Moving in a Different Direction



Draft Bills are Critically Important

- ✓ **By increasing the number of vehicles eligible for temporary exemptions, the draft**
 - *Stimulates the generation of data necessary to later develop FMVSS*
 - *Provides the market incentive to draw significant investment in related technologies*
 - *Enhances U.S. competitiveness in this space*
- ✓ **By providing a uniform national framework to address state patchwork, the draft**
 - *Clarifies roles, accelerating testing and deployment*
- ✓ **By adopting a forward leaning approach, the draft**
 - *Sends a clear signal to the American people that will enhance public acceptance*
 - *Sends a clear signal to states and cities that will trigger the planning necessary for adjusting to this transformation*

100 Years: Interstate Highways to AV Ubiquity

Year	Fleet Share
2020	Available
2030	Common
2035	Standard
2045	Majority
2055	Ubiquitous

AV Penetration Projection Source: Moody's

- 61 years ago Eisenhower recognized a moment
- Decisions this committee will make this summer can foster a second great revolution in safe mobility
- Some say full ubiquity is almost 40 years away, but the journey offers increasing benefits each and every year
- Once there, from Eisenhower to Ubiquity – 100 years
- **Will America lead – or will innovation be imported?**