

AUTONOMOUS VEHICLES AND THE TRUCKING INDUSTRY

**Presentation for the Maine State
Agencies Working Group on Connected
and Autonomous Vehicles**

August 14, 2017

Brian Parke – bparke@mmta.com

Tim Doyle – timd@mmta.com



DIFFERENT KINDS OF AUTOMATION

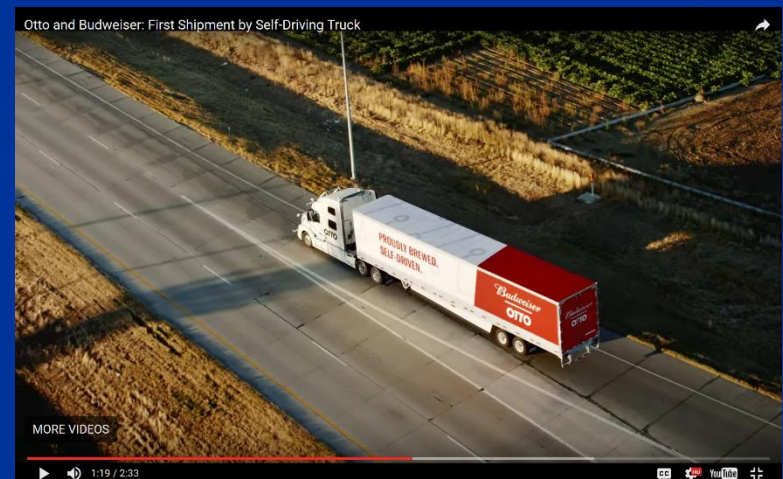
- Crash avoidance technology intervenes when things go wrong
 - Forward Collision Avoidance
 - Lane Departure
- Platooned vehicles can travel close together at highway speeds
- Automated vehicles don't need another vehicle to benefit from the automation



Freightliner Inspiration Truck Platooning Technology



Otto and Budweiser: First Shipment by Self-Driving Truck



WHY THE PUSH FOR AUTOMATION FROM TRUCKING'S PERSPECTIVE?

- Opportunity to improve safety
- Mitigate traffic congestion
- Improve fuel economy
- Increase vehicle productivity
 - Address driver shortage – opportunity to improve drivers jobs and retain good drivers
 - Can reduce need to expand infrastructure with economic growth – highway funding



LEVELS OF AUTOMATION – AN OVERLY- SIMPLIFIED VIEW

- Level 0: hands and feet ON
- Level 1: hands or feet OFF
- Level 2: hands and feet OFF, eyes ON
- Level 3: hands, feet, eyes OFF, brain on
- Level 4: hands, feet, eyes, brain OFF
 - controlled environments
- Level 5: hands, feet, eyes, brain OFF
 - unrestrained



POTENTIAL PROBLEMS FOR TECHNOLOGY TO OVERCOME

- Navigation in complex and dynamic environments
 - Pedestrians, animals, unpredictable driving behavior, etc.
- Environmental and weather conditions
 - Snow, ice, fog, dust, road debris, unpaved surfaces (construction), etc.
- Technology, Equipment and Infrastructure Costs
- Cybersecurity and privacy concerns
- Manufacturer and personal liability – insurance issues become complicated



A LOOK AT OTHER STATES

(source: National Conference of State Legislatures)

- In 2017, 33 states have introduced legislation. Last year, 20 states introduced legislation
- Sixteen states introduced legislation in 2015, up from 12 states in 2014, nine states and D.C. in 2013, and six states in 2012
- Since 2012, at least 41 states and D.C. have considered legislation related to autonomous vehicles



A LOOK AT OTHER STATES

(source: National Conference of State Legislatures)

- 20 States that have passed legislation related to autonomous vehicles
 - Alabama, Arkansas, California, Colorado, Connecticut, Florida, Georgia, Louisiana, Michigan, New York, Nevada, North Carolina, North Dakota, Pennsylvania, South Carolina, Tennessee, Texas, Utah, Virginia and Vermont — and Washington D.C.

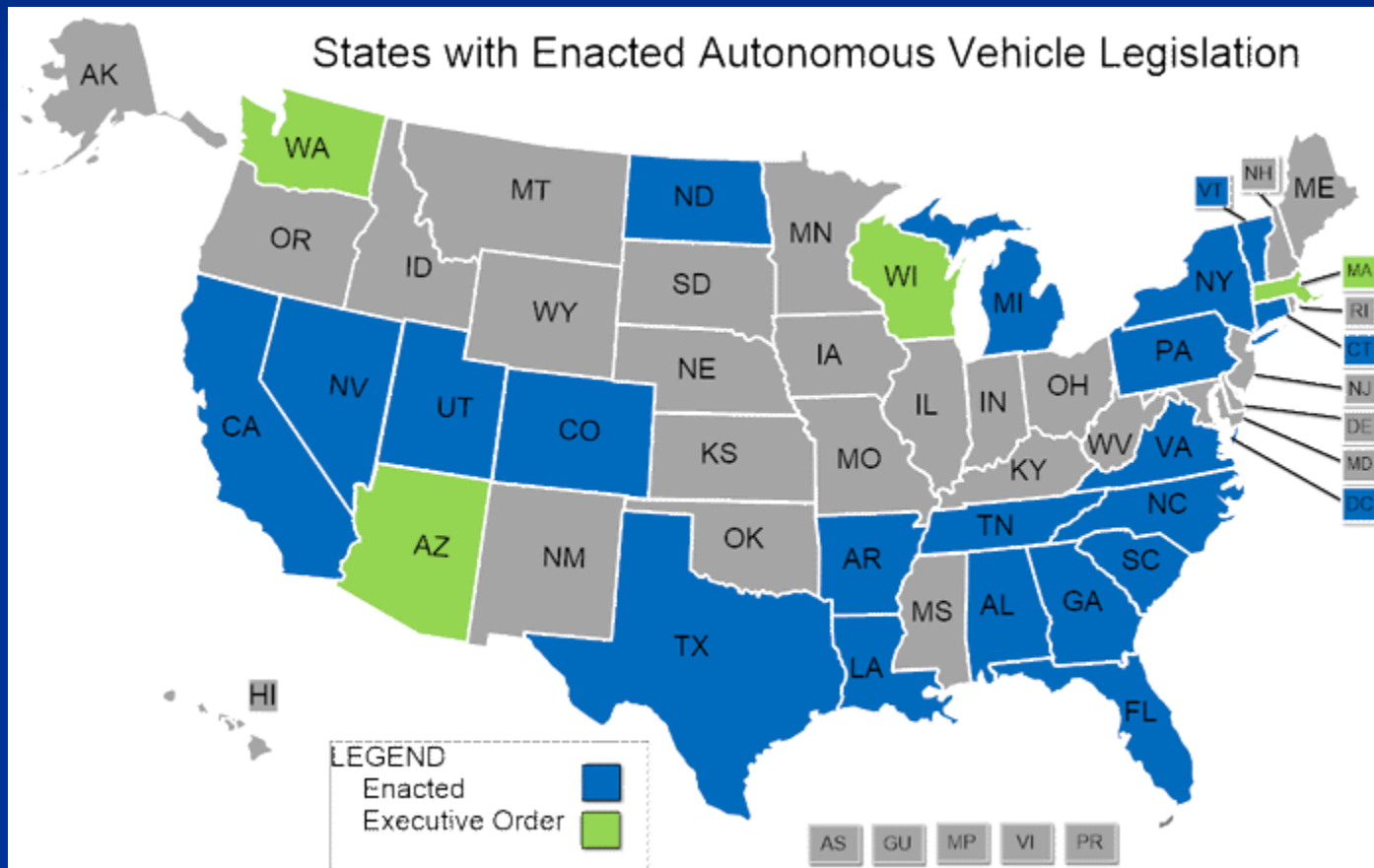
- 4 Governors have issued executive orders related to autonomous vehicles:
 - Arizona, Massachusetts, Washington and Wisconsin.



A LOOK AT OTHER STATES

(source: National Conference of State Legislatures)

* Legislation can be anything from studying the impacts of the technology to adopting standards and authorizing operation of AV's on state roads.



CONSIDERATIONS FOR INCORPORATING AUTOMATED TRUCKS INTO STATE LAWS

- Review existing state laws and remove or amend sections that could impede or prohibit the testing, deployment or operation of AVs in the state such as:
 - Following too closely;
 - Designating certain corridors for testing;
 - “Operator” or “human driver” definitions.
- Develop common legal and regulatory definitions
- Harmonizing laws between states



CONSIDERATIONS FOR PLANNING AND INFRASTRUCTURE

- Lane striping
- Quality of data on truck restrictions
 - Bridge heights
 - Load restrictions
 - Truck routes
 - Operational constraints – turning radius
- Understanding future demand
- V2I infrastructure
 - DSRC stoplights, work zone units, signage



MMTA GUIDING PRINCIPLES

(June, 2017)

1. New technologies must unequivocally improve highway safety;
 - Other benefits (economy, environment, convenience, etc.) are irrelevant if safety improvements cannot be clearly identified.
 - Technologies must account for Maine's climate and road conditions – ice, snow, pavement markings due to plowing, etc.
2. We support consistency with laws from state to state that don't impede commerce;
3. Maine should consider removing impediments in existing Maine laws that would prevent the testing and deployment of automated vehicles;
 - Review MRSA 29-A to remove or amend sections that could impede or prohibit the testing, deployment or operation of AVs in the state such as:
 - Following too closely (2066);
 - Designating certain corridors for testing;
 - "Operator" or "human driver" definitions.
4. Insurance and liability issues need to be addressed as the technology becomes more prevalent.



MMTA GUIDING PRINCIPLES

FEDERAL VS. STATE ROLES/RESPONSIBILITIES

The DOT's Federal Automated Vehicles Policy summarized the Federal and State Roles as follows:

NHTSA responsibilities include:

- Setting Federal Motor Vehicle Safety Standards (FMVSS) for new motor vehicles and motor vehicle equipment (to which manufacturers must certify compliance before they sell their vehicles);
- Enforcing compliance with the FMVSS;
- Investigating and managing the recall and remedy of non-compliances and safety-related motor vehicle defects and recalls on a nationwide basis;
- Communicating with and educating the public about motor vehicle safety issues;
- Issuing guidance for vehicle and equipment manufacturers to follow, such as the Vehicle Performance Guidance for HAVs presented in this Policy.

States' responsibilities include other aspects of motor vehicle regulations:

- Licensing (human) drivers and registering motor vehicles in their jurisdictions;
- Enacting and enforcing traffic laws and regulations;
- Conducting safety inspections, where States choose to do so; and
- Regulating motor vehicle insurance and liability.



Any Questions ?

Maine Motor Transport Association
www.mmta.com

