Nevada’s Autonomous Vehicle Project

“Welcome to the Future”
Welcome to Las Vegas!!!

This image is on the back of a cargo truck travelling on the Las Vegas strip. This photo was taken from the inside of an autonomous vehicle.
The autonomous system does not see the sign but detects the vehicle, so you won’t get in an accident and receive a ticket from these guys.
Autonomous Vision

• Through the Eyes of Google’s Technology, the World Appears Much Less “Curvaceous”
The Nevada Statute (AB 511) - 2011

• Autonomous Vehicle Drivers License Endorsement
• The Law Required the DMV to Adopt Regulations that:
  • Set Forth Requirements Before an Autonomous Vehicle Can Be Operated on Highways Within the State
  • Set Forth Insurance Coverage Requirements
  • Establish Minimum Safety Standards
  • Provide for the Testing of Vehicles
  • Restrict the Testing of Vehicles Within Specified Geographic Areas
Nevada Definitions – UPDATE

- **Autonomous Technology** – *(SB313)* “Technology which is installed on a motor vehicle and which has the capability to drive the motor vehicle without the active control or monitoring of a human operator.”

- **Artificial Intelligence** – *(SB313)* – Repealed this definition.
Draft NHTSA Definitions - UPDATE

• Level 0 (Non-Automated): The human is in complete and sole fundamental control at all times.

• Level 1 (Function-Specific Automation): The driver has overall control, and is solely responsible for safe operation, but can choose to cede limited authority.

• Level 2 (Combined Function Automation): Vehicles at this level of automation can utilize shared authority when the driver cedes active control in certain situations. Ex: Adaptive cruise control in combination with lane centering.
• Level 3 (Limited Self-Driving Automation): Vehicles at this level of automation enable the driver to cede full control of all safety-critical functions under certain traffic or environmental conditions.

• Level 4 (full Self-Driving Automation): The vehicle is designed to perform all safety-critical driving functions and monitor roadway conditions for an entire trip.
Regulation Development Stakeholders

- Nevada Highway Patrol
- Nevada Department of Business & Industry – Insurance Division
- Nevada Department of Transportation
- National Highway Traffic Safety Administration (NHTSA)
- Nevada Attorney Generals Office
- State Farm Insurance
- American Family Mutual Insurance Company – Allstate & AAA Insurance
- Travelers Insurance
- Reno Police Department
- The Alliance of Automobile Manufacturers
- Property/Casualty Insurers Association of America
- Carson City Sheriffs Office
- Washoe County Sheriffs Office
- Stanford University – CARS Program
- Nevada Automotive Test Center
- Google Corporation
- Association of Global Automakers
Regulation Development Stakeholders

- BMW
- Hyundai
- Bosch
- Volkswagen

- DENSO
- Nissan
- Honda
- Ford

- Toyota
- Subaru
- General Motors
Nevada Regulation

Testing:

• Vehicle Must have Switch to Disengage Autonomous Mode & Must be Able to Alert Driver of Tech Failure.
• Must have Mechanism to Capture and Store Technology Sensor Data for at Least 30 Seconds Prior to a Collision.
• A Minimum of 10,000 Miles of Driving in Autonomous Mode in Varying Conditions.
• Geographical Considerations Dependent Upon Technology.
• A Surety Bond of $5 million (Change due to passage of Senate Bill 313).
Nevada Regulation

Testing:

- Two Persons Required in the Vehicle;
  - One for Operation of the Vehicle.
  - One for Monitoring Autonomous Systems.
- Special License Plates
Autonomous Vehicles

The Nevada Legislature and the Department of Motor Vehicles have enacted legislation and administrative regulations to enable the testing and operation of autonomous vehicles in the Silver State.

Administrative Regulations - LCB File R-084-11 | Digest | Statement

Nevada Revised Statutes Chapter 482A - Autonomous Vehicles

2011 Legislature Assembly Bill 511

Currently, the DMV is accepting applications for testing only. Autonomous vehicles are not available to the general public.

Application for Testing

Manufacturers, software developers and others interested in testing their vehicles in Nevada must submit an application to the Department along with proof that one or more of your autonomous vehicles have been driven for a combined minimum of at least 10,000 miles, a complete description of your autonomous technology, a detailed safety plan, and your plan for hiring and training your test drivers. Additional requirements and information are detailed in the application packet.
Nevada Regulation

- The “Driver” is Responsible for the Vehicle.
- Driver’s License Endorsement Requires Affidavit.
- Vehicle May Not be Operated Unless Certificate of Compliance has been Issued by an NV licensed automobile manufacturer or a NV licensed Autonomous Technology Certification Facility.
- Special License Plates Required for Registered Owners
Senate Bill 313:

1) **Section 4**: An autonomous vehicle cannot be registered in NV unless it meets all federal standards and regulations.

2) **Section 5**: Removes liability from automobile manufacturers if a third party has installed autonomous technology of the vehicle.
Governor Brian Sandoval operating Google’s autonomous vehicle!!!!!!