Planning for Autonomous Vehicles?

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Presenters

- Jim Summerbell, Jacobs
- Ellen Dunham-Jones , Georgia Institute of Technology
- David Haynes, Atlanta Regional Commission

Terminology

Technically not all the same, but in everyday speech used interchangeably

Autonomous Vehicles (AVs)

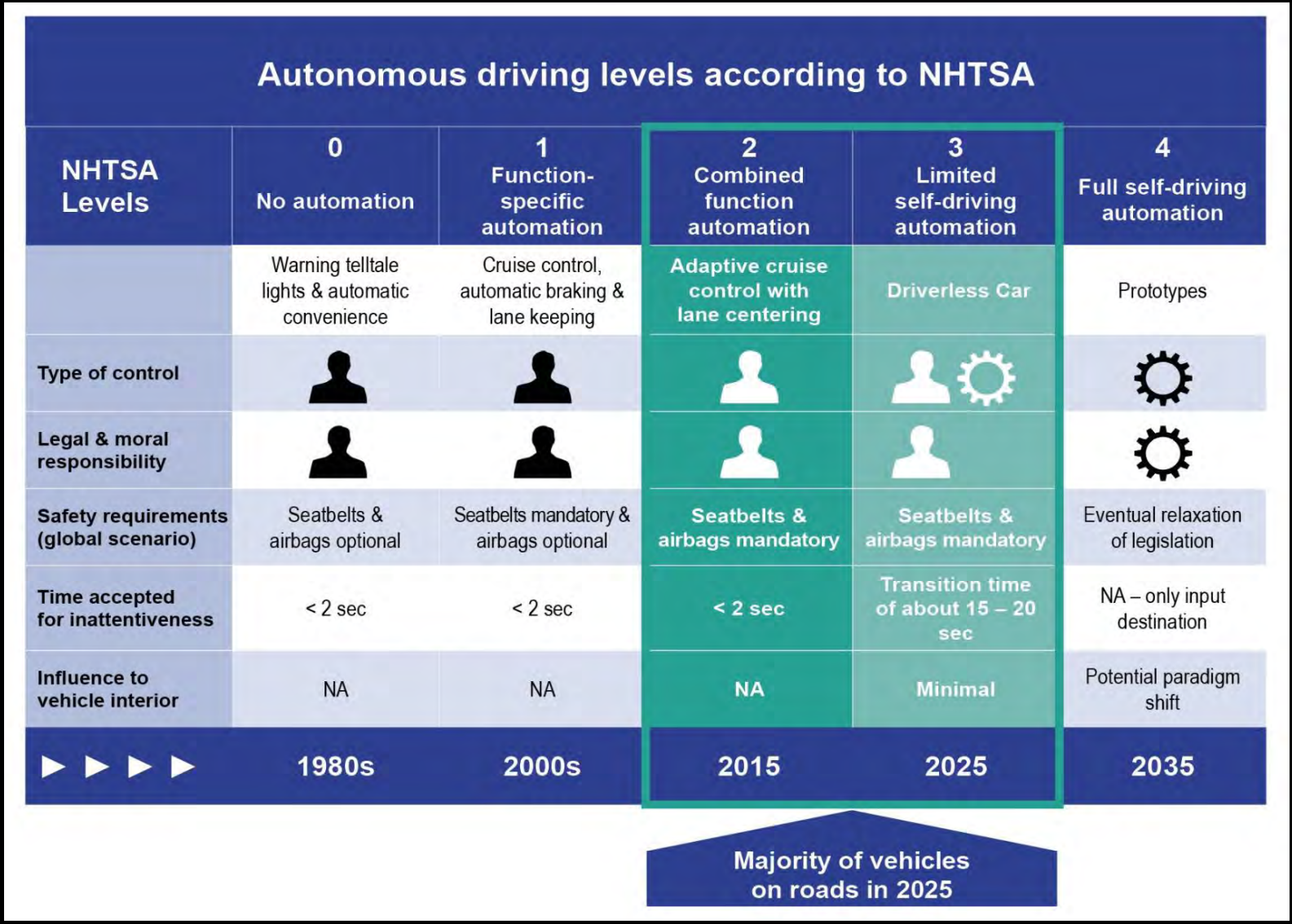
Driverless Cars

Automated Cars

Connected Autonomous Vehicles (CAVs)

Robotic Cars

Levels of Autonomy



Benefits

- Save time and reduce driver stress
- Reduce accidents, safer journey
- Reduce lane widths and parking space
- Mobility for non-drivers, elders and disabled
- Increased Municipal Revenues
- Reduce the number of cars
- Mobility on Demand Transit
- Reduce costs

Costs

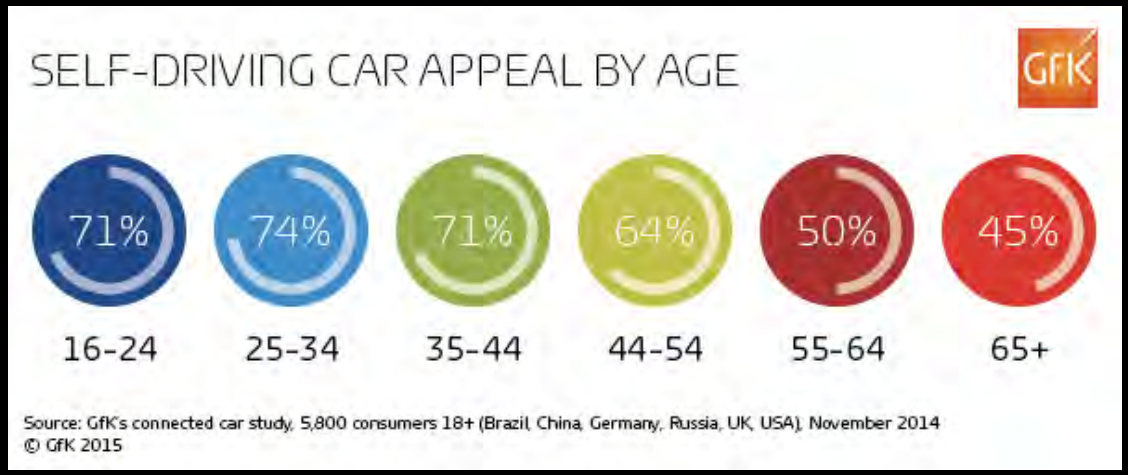
- Loss of traditional driver related jobs
- Technological vulnerabilities
- Ethical dilemmas
- Increased VMT

Impact on the City Form

- Sprawl inducer or urban lifestyle promotor?
- Future roadway design?
- Public infrastructure requirements?
- Needed changes in zoning regulations?
- Parking needs?

Acceptance by the Public?

Public willingness to adopt this new technology will have a major impact on the timing of related physical changes in our built environment



They are already here

- Tesla: Level 2 (monitored driving) available today
- Audi: Level 3 (driver in position, but not full monitoring) in 2017
- Google/Waymo: Level 4 (no steering wheel) in 2018-20
- Uber/Otto: completed 120-mile shipment in driverless truck in 2016
- Bishop Ranch, CA office park has 2 fully autonomous shuttle buses
- Phoenix is running a ride-hailing program w Waymo's minivan AVs
- Customers can request a driverless uber in Pittsburgh today

Lack of Planning for the Age of Autonomous Vehicles

6% OF PLANS CONSIDER THE POTENTIAL EFFECT OF DRIVERLESS TECHNOLOGY

3% OF PLANS TAKE INTO ACCOUNT PRIVATE TRANSPORTATION NETWORK COMPANIES (TNCS) SUCH AS UBER OR LYFT, DESPITE THE FACT THAT THEY OPERATE IN 60 OF THE 68 MARKETS

20% OF PLANS INCLUDE ROAD DIETS OR OTHER PLANS TO REDUCE ROAD CAPACITY OR LONG-TERM MAINTENANCE COSTS

50% OF PLANS CONTAIN EXPLICIT RECOMMENDATIONS FOR NEW HIGHWAY CONSTRUCTION

12% OF PLANS ARE CLEAR THAT NO NEW HIGHWAYS ARE UNDER CONSIDERATION

Source, “City of the Future: Technology and Mobility”, National League of Cities, 2015

Changes in the past year

- May 2017, Nathan Deal signed bill that allows self driving cars to operate on public roads
- Tests of self driving cars conducted this fall in ATL
- $3M infrastructure upgrade for North Ave “Smart Corridor”
- Reconsideration of rail expansion plans
- APA to craft policy guide on AVs in 2018

Plans being made today

- Oslo will ban private vehicles from the city center by 2019
- Helsinki has planned a publically-owned mobility-on-demand system that will make private car ownership obsolete by 2025
- US DOT: 2016 $40M Smart City Challenge grant
- Columbus OH to develop fleet of AV shuttles to aid in first/last mile connectivity
- Ohio Turnpike has installed fiber optic cables along 241 miles – to relay traffic and weather info
- Palo Alto has 11 “smart” intersections