SHARED AUTONOMOUS CARS WILL TRANSFORM CITY TRANSPORT AND TRAFFIC OPERATIONS:
CURRENT CPB PARTNERS
SHARED AUTONOMOUS VEHICLES?

50 Min
real city
real* trips
real* routes
SHARED AUTONOMOUS VEHICLES?

- TaxiBot | ride-sharing
- AutoVot | car-sharing
- Public Transport | High-Capacity
WHAT WE WANTED TO TEST

24 hours vs. peak hours

5 minutes

all day vs. peak hours

maximum delay from base case trips
WHAT WE WANTED TO TEST

number of vehicles required to provide the same trips as before:

24 hrs.

24 hrs.

peak hrs.

TaxiBots

Ride sharing

+ Public transport

(high capacity)
THE IMPACT ON VEHICLE NUMBERS

Scenario: 24 hours

TaxiBots + Public transport
Ride sharing (high capacity)

number of vehicles required to provide the same trips as before: 10%
THE IMPACT ON VEHICLE NUMBERS

number of vehicles required to provide the same trips as before:

35%
- 80%

Off Street Parking
In our modelled city a shared self-driving fleet would potentially remove the need for all on-street parking freeing an area equivalent to 210 football fields.
+20% Kerb to Kerb space
NOT ALL IS GOOD NEWS

+30% to +90% kilometres travelled
TaxiBots and AutoVots will travel more than today’s cars.

More kilometres travelled due to bus replacement, pick-ups, drop-offs and re-positioning:

- 6% to 25%
- 44% to 103%
On Demand
8-16 Person Capacity

30 min advance Booking
< 300 m to “pop-up” stop
10 min tolerance for boarding time
Scenario: 24 hours

+ TaxiBots Ride sharing
+ TaxiBus Ride sharing
+ Public transport (high capacity)

number of vehicles required to provide the same trips as before: 5%
BETTER USE OF CAPACITY

+ 230%

8-16 person bus capacity vs 80 person bus capacity
WHAT WE COULD ACHIEVE

-22% & -27%

kilometres travelled & CO₂ emissions

TaxiBots - TaxiBus - Public transport

Ride sharing + Ride sharing + (high capacity)

24hrs
LAND USE AND PUBLIC REALM INFRASTRUCTURE
VEHICLES AN EXTENSION OF THE CITY?
THE ROAD OF TOMMOROW?
SAFETY

Collisions

Autonomous driving levels

- 0 non automated
- 1 assisted
- 2 partial automation
- 3 conditional automation
- 4 high automation
- 5 full automated

%SAE

1-5 mixed & learning curve
OPERATIONAL ISSUES
FUTURE MODE SPLIT
URBAN LOGISTICS
HOW DO WE DELIVER THE CARGO
A BASE FOR STRATEGIC ASSESSMENT

Strategic
What if
Planning
Simulation
EXAMPLE 1: CAV AT SIMPLE URBAN INTERSECTION
EXAMPLE: C2X OPTIMUM SIGNALS
PTV GROUP
the mind of movement