

Future Roadways with Co-operative Autonomous Vehicle Networks (CAVN)

Duncan Campbell
Principal Traffic Engineer
TRAFFESSIONALS
TRAFFIC ENGINEERING PROFESSIONALS

Driverless cars in the headlines

Secretary Foxx Unveils President Obama's FY17 Budget Proposal of Nearly \$4 Billion for Automated Vehicles and Announces DOT Initiatives to Accelerate Vehicle Safety Innovations

Ford's Driverless Cars Ready To Hit California Streets In 2016

Cars with no drivers becoming a reality

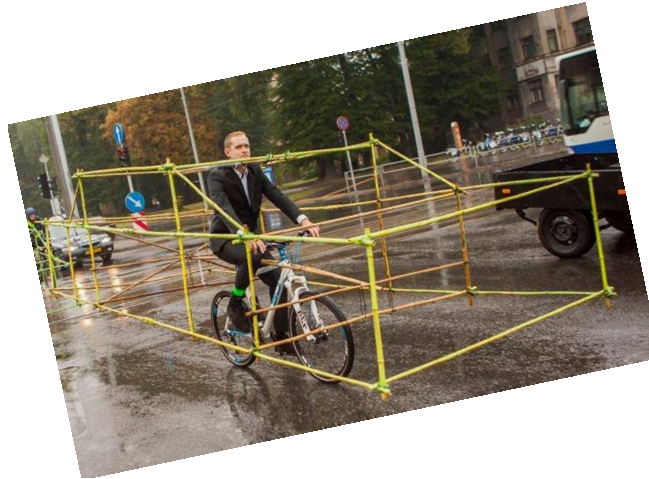
The Big Read: The robot cars are coming

Autonomous truck cleared to drive on US roads for the first time

Co-operative Autonomous Vehicle Networks (CAVN)

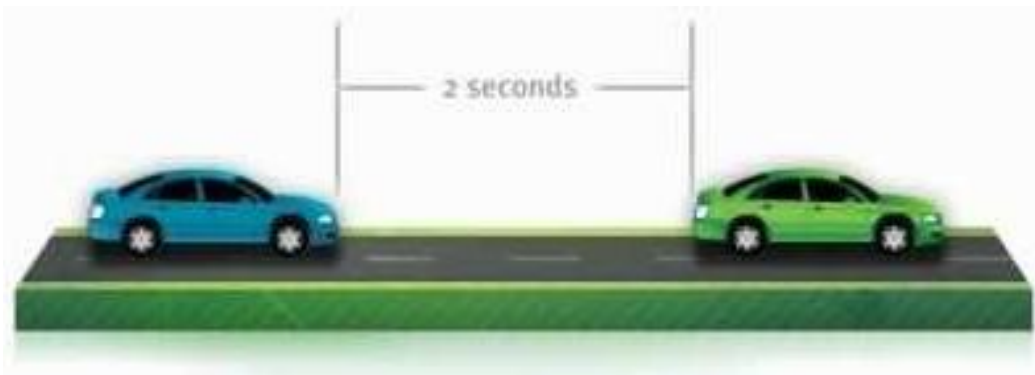
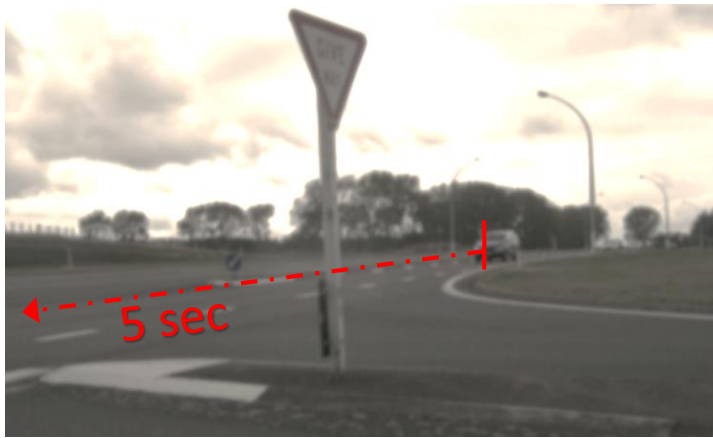
- Roadways today, in hindsight
- CAVN and what it could do
- So what does this mean for us now

Roadways today, in hindsight



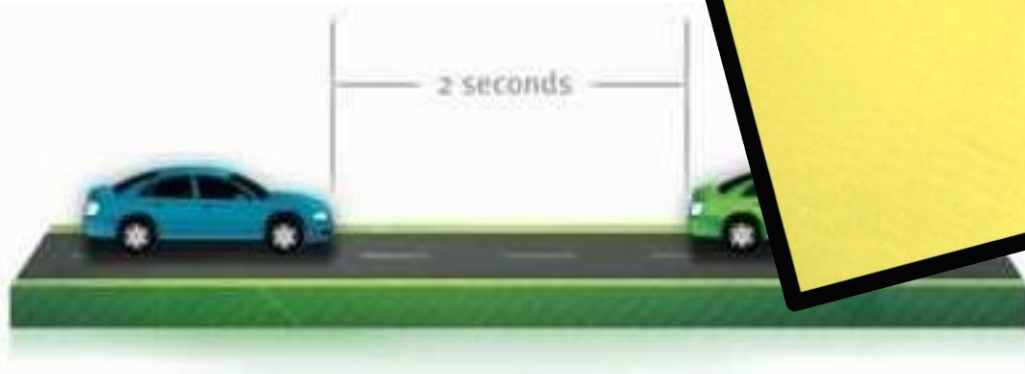
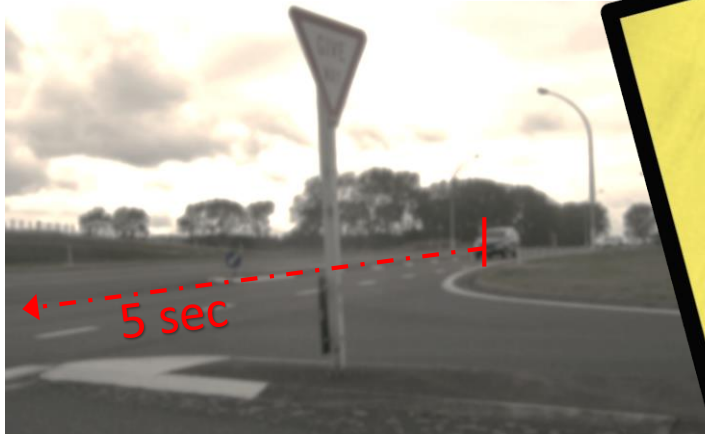
Roadways today:

The human problem



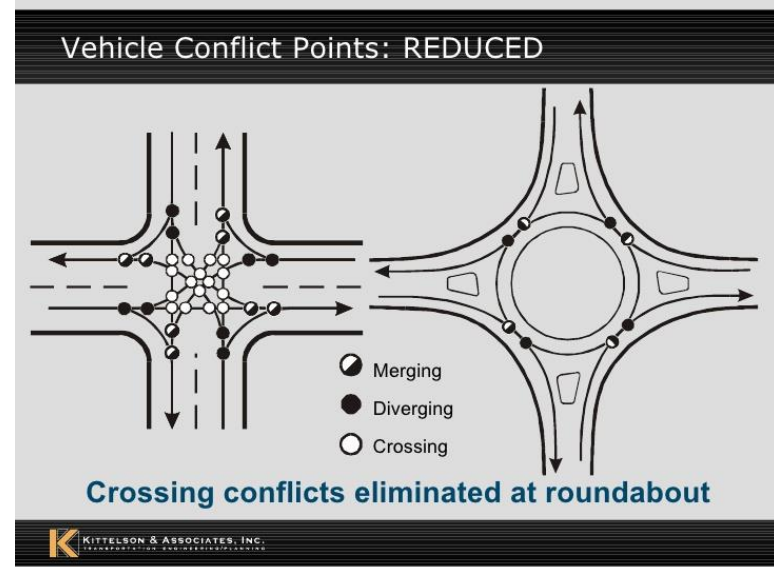
Roadways today:

The human problem



Roadways today:

Hazardous



Roadways today:

Hazardous



Roadways today:

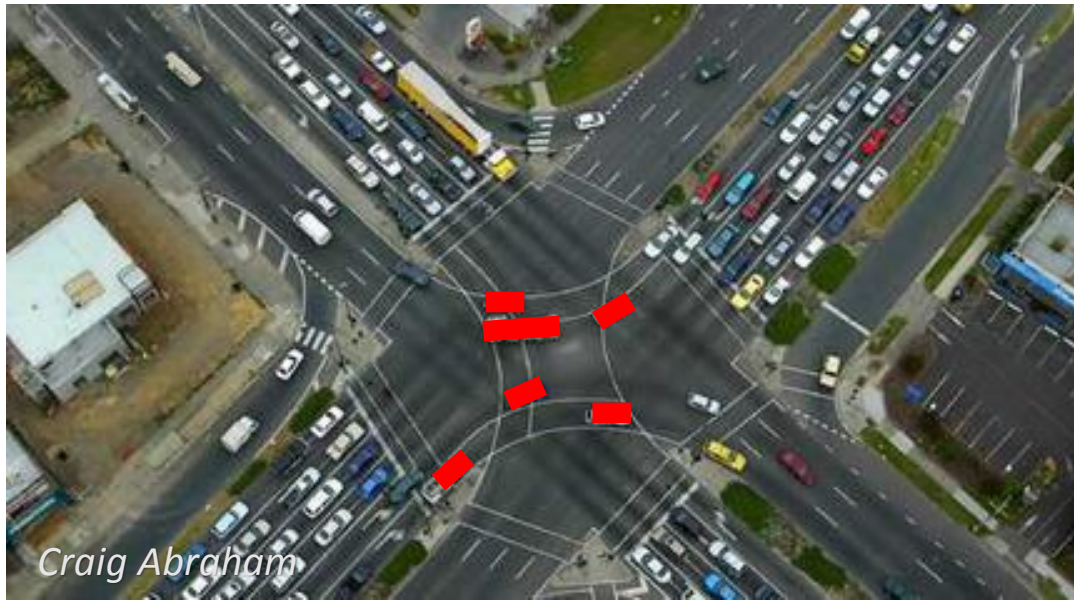
Inefficient use of space



Craig Abraham

Roadways today:

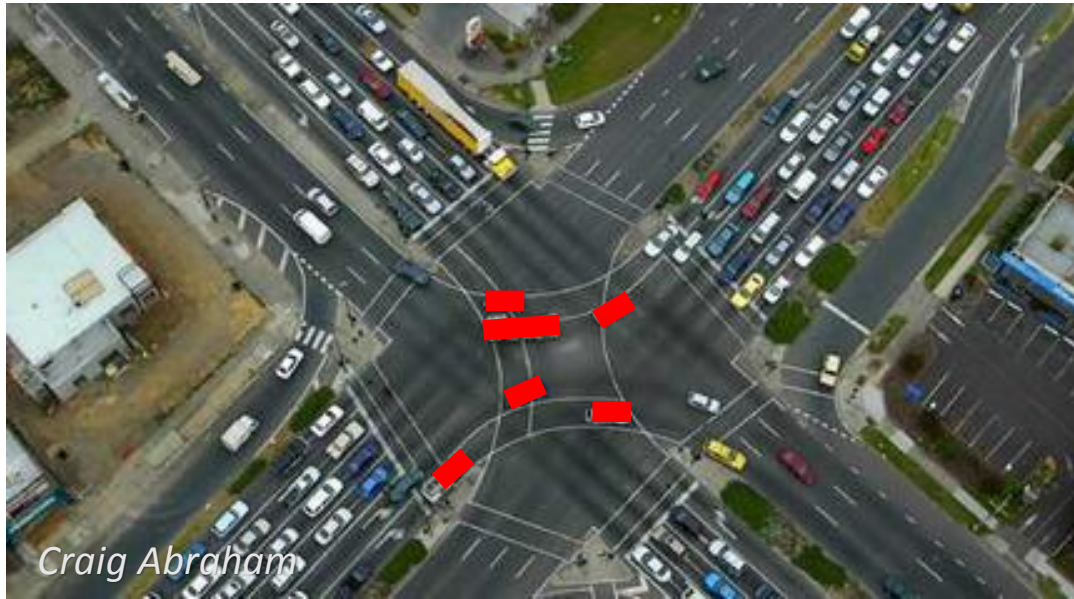
Inefficient use of space



Craig Abraham

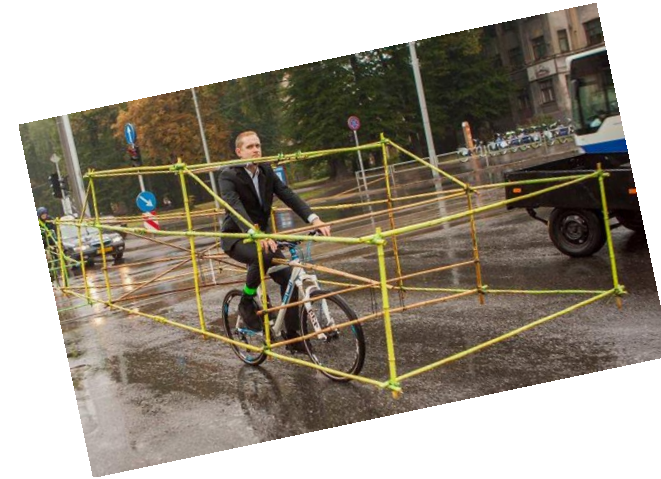
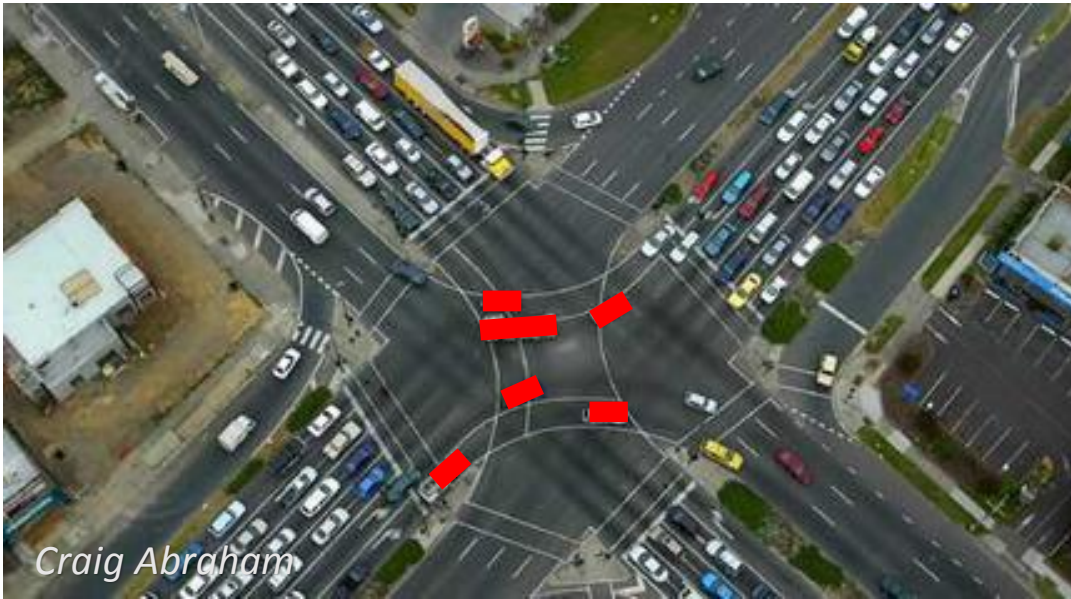
Roadways today:

Inefficient use of space



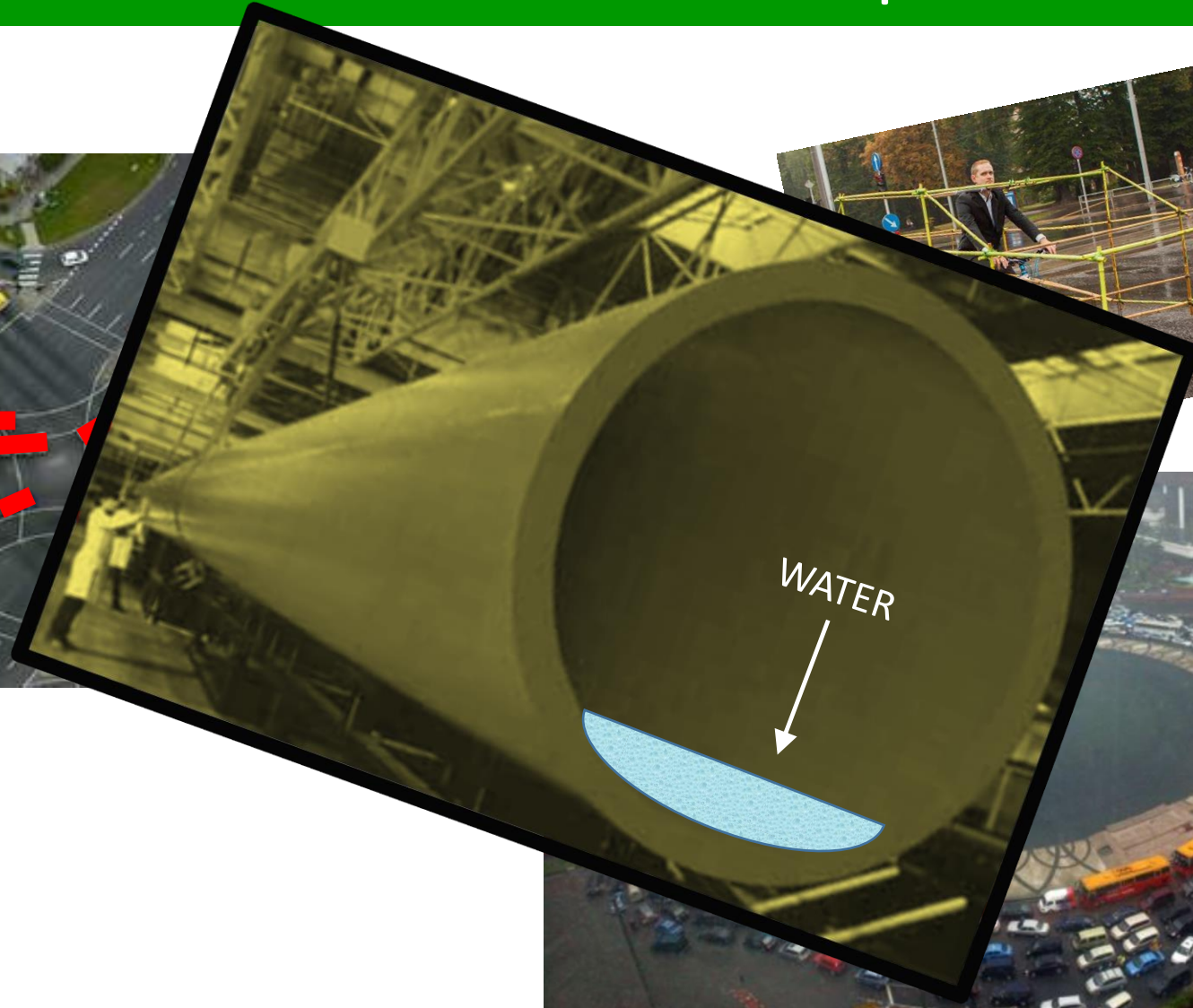
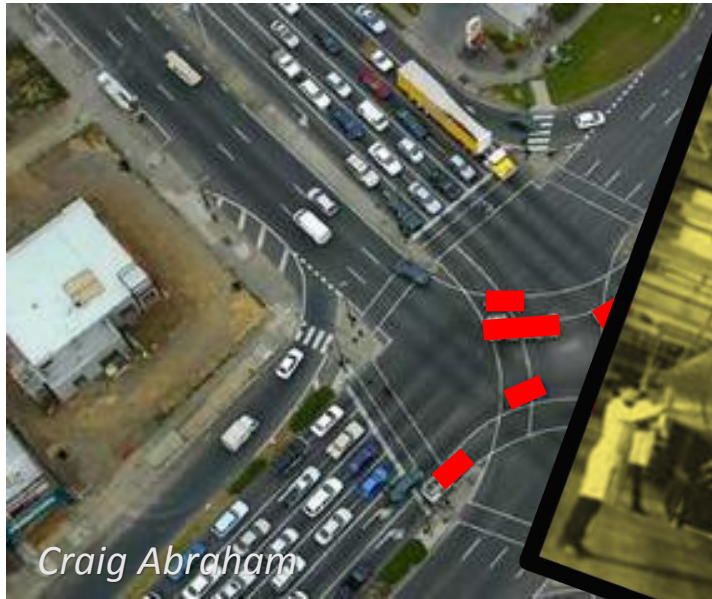
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Inefficient use of space



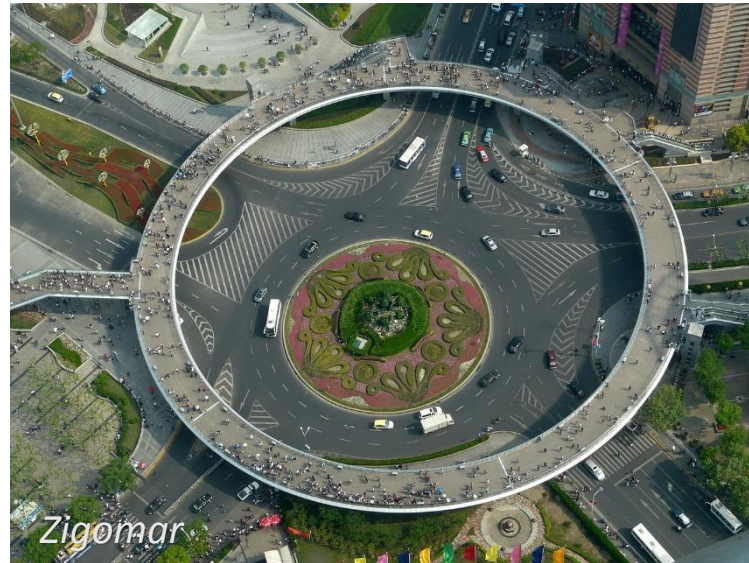
Roadways today:

Inefficient use of space



Roadways today:

BIG infrastructure



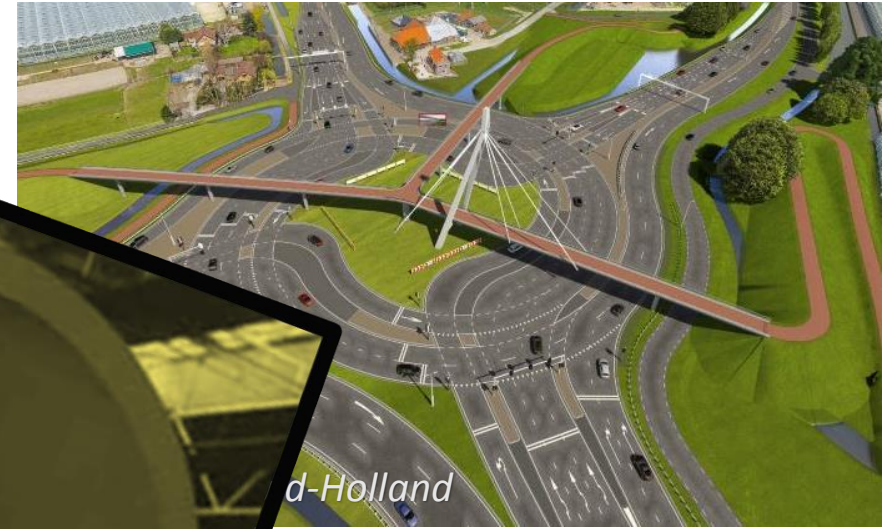
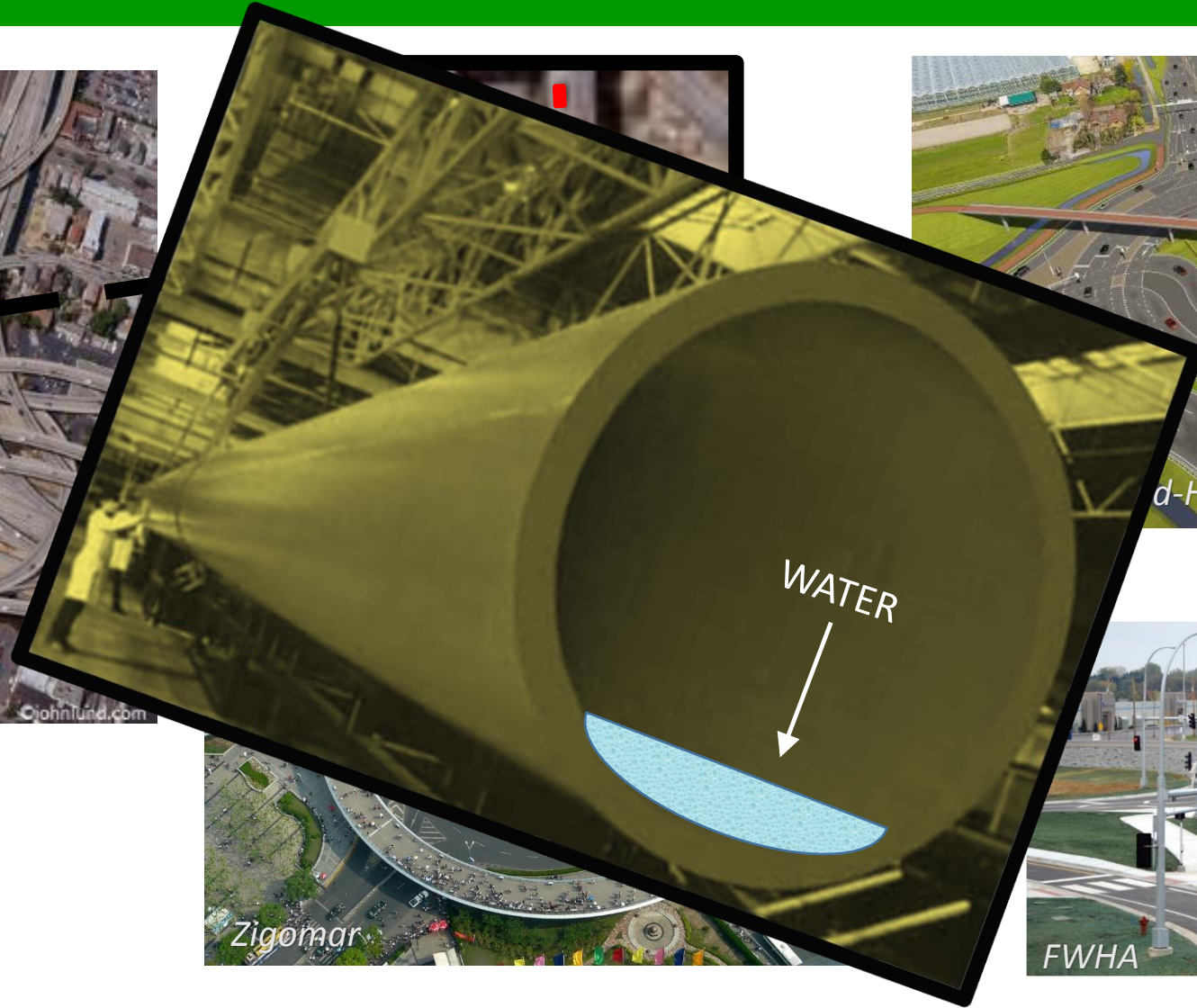
Roadways today:

BIG infrastructure



Roadways today:

BIG infrastructure



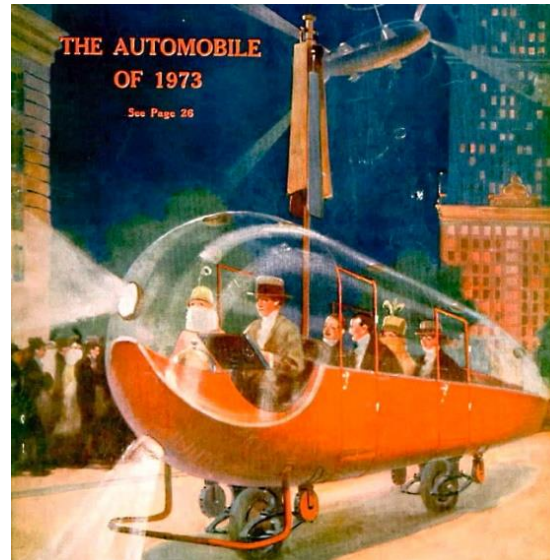
Roadways today:

Environmental effects

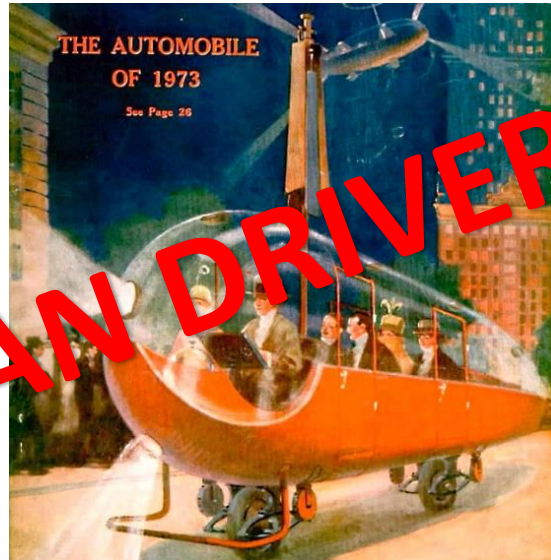


Kingston Guardian

CAVN and what it could do



CAVN and what it could do



NO HUMAN DRIVERS ALLOWED

CAVN:

Analogies in nature



CAVN:

Analogies in nature



CAVN:

Personal Transportation



CAVN:

Personal Transportation



CAVN:

Personal Transportation



NO HUMAN DRIVERS ALLOWED

CAVN:

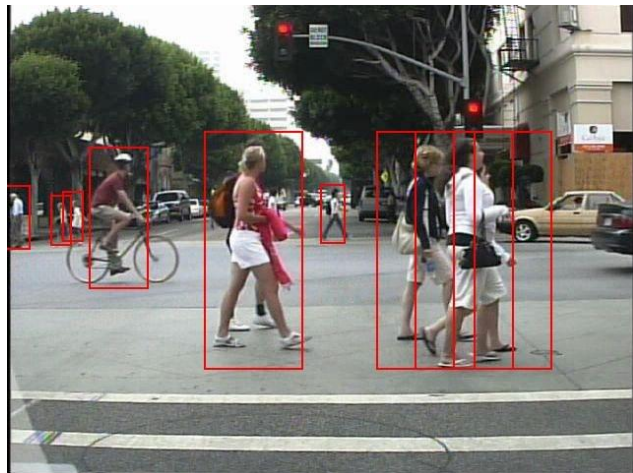
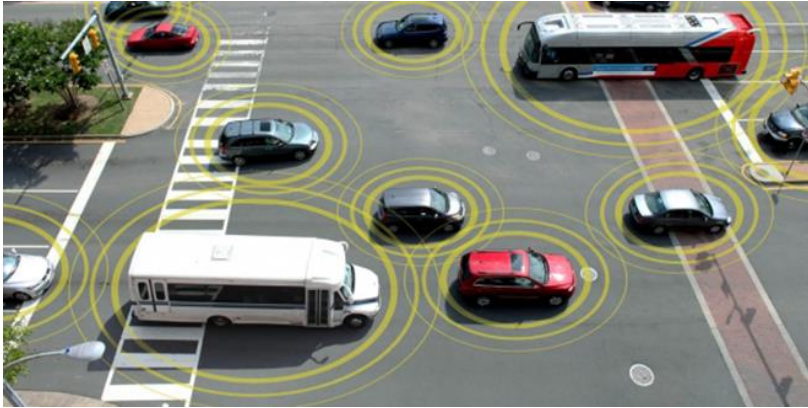
Goods transportation



Thomas Schloch

CAVN:

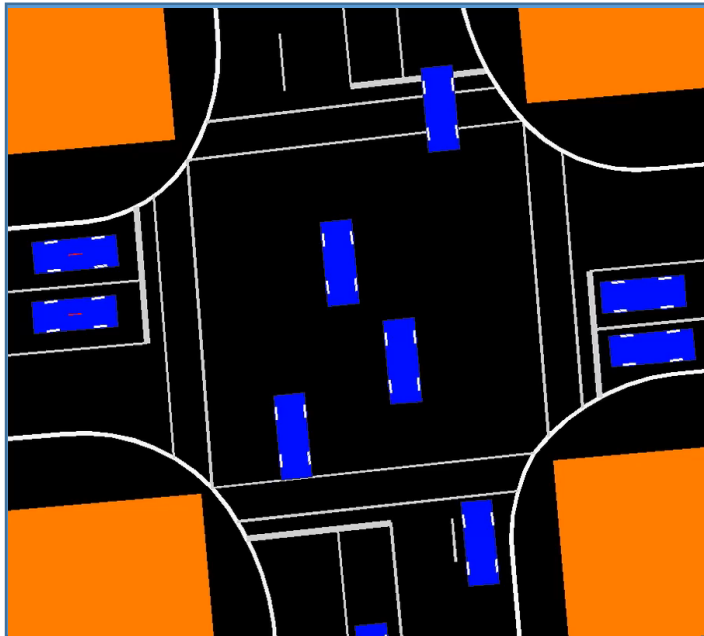
Safety negotiable



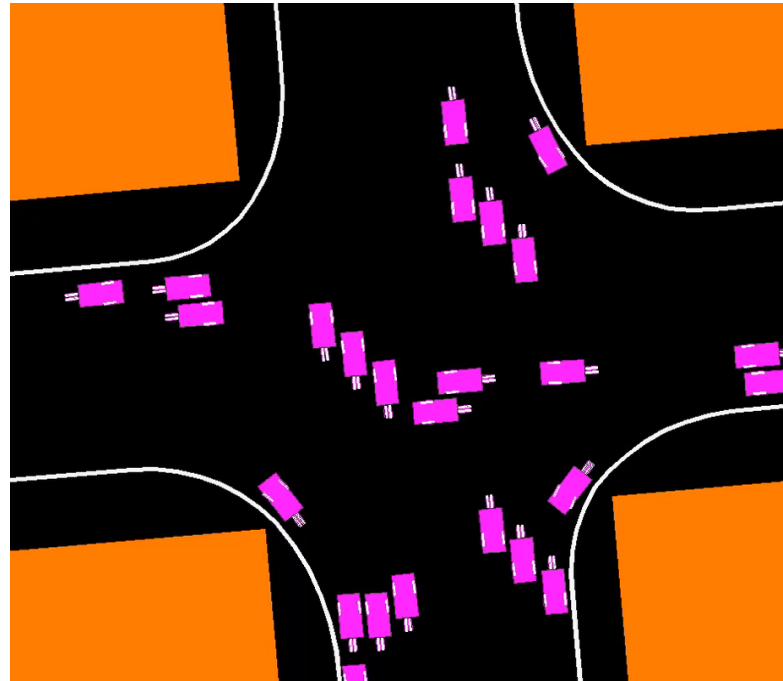
1 M dead / yr

CAVN:

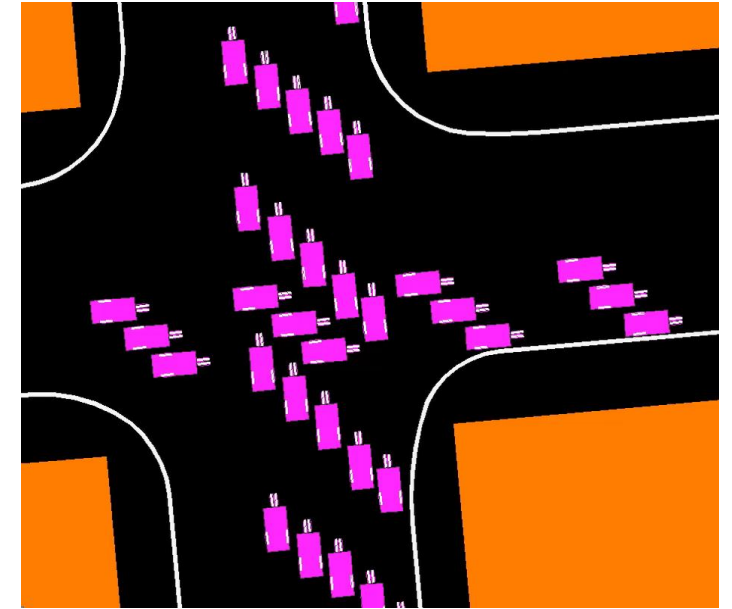
High capacity intersections



X 1 @40 km/hr



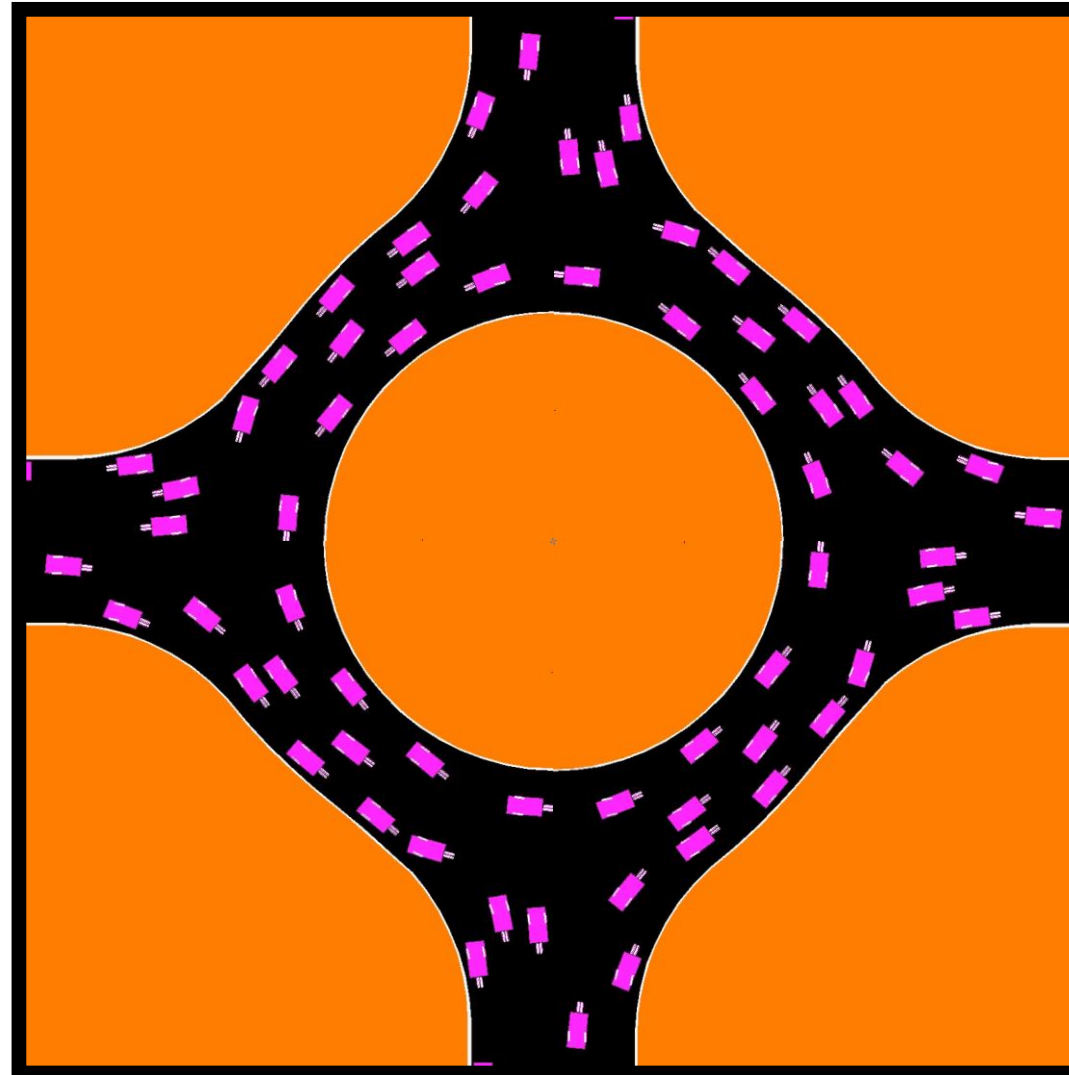
X 3 @20 km/hr



X 5 @20 km/hr

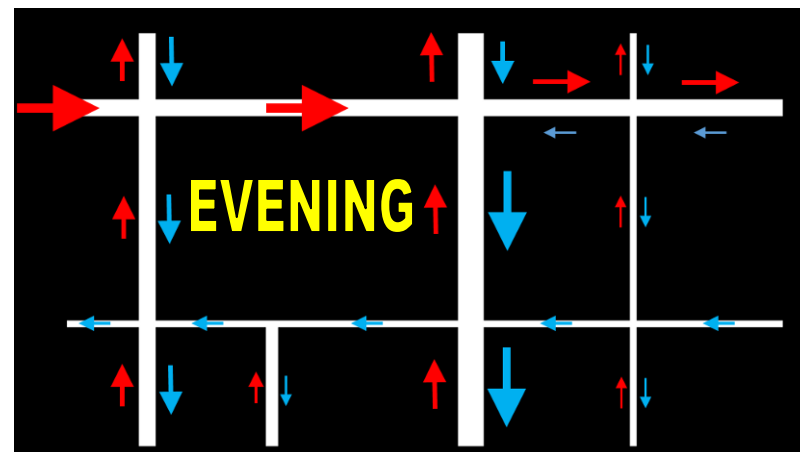
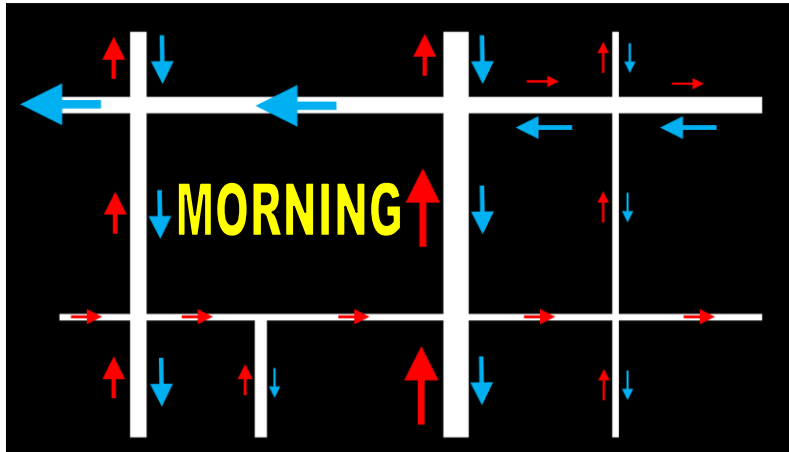
CAVN:

High capacity intersections



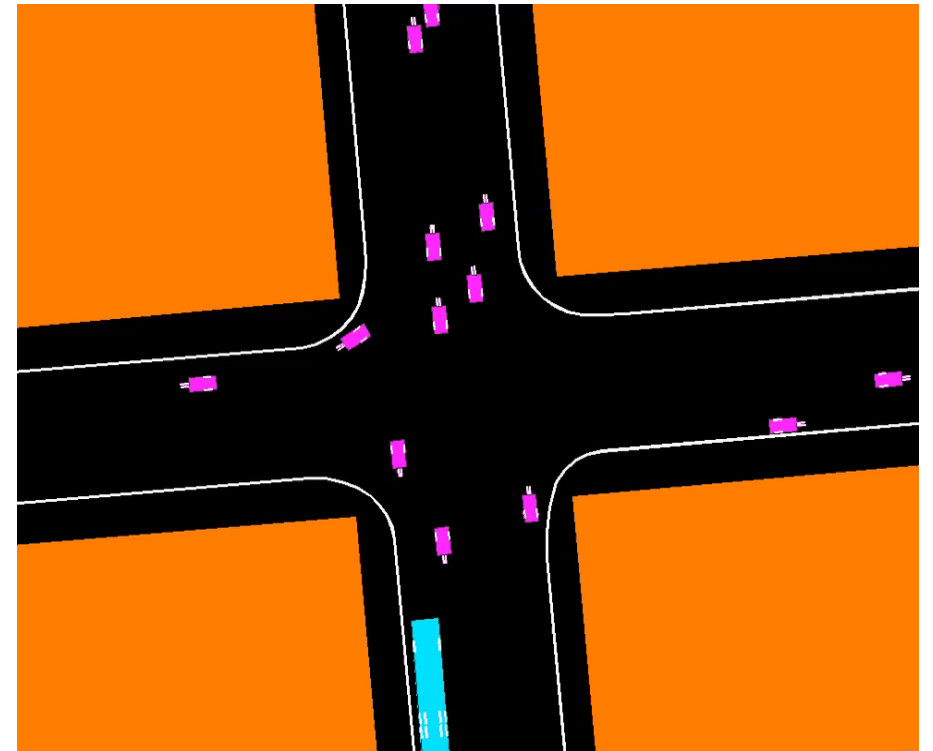
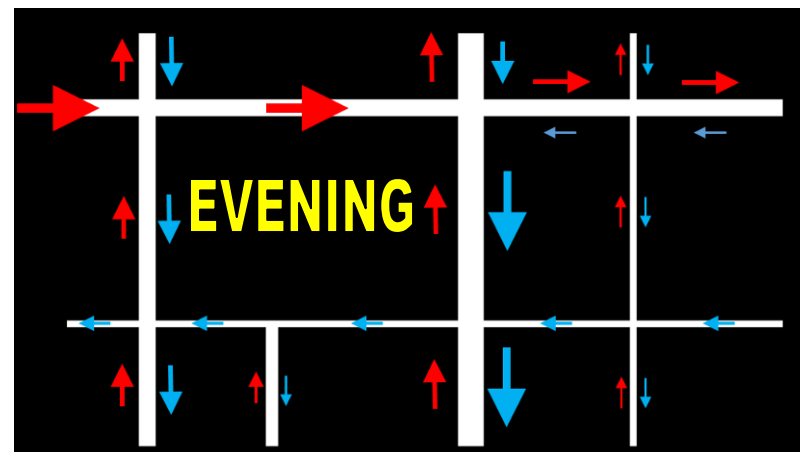
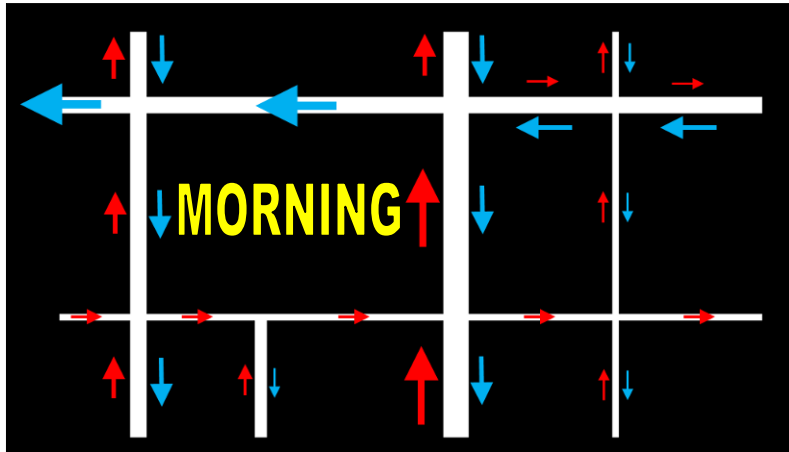
CAVN:

Dynamic traffic flow management



CAVN:

Dynamic traffic flow management



CAVN:

Questions and uncertainties



CAVN:

Undoubted benefits



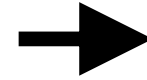
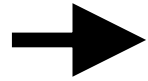
CAVN:

Undoubted benefits



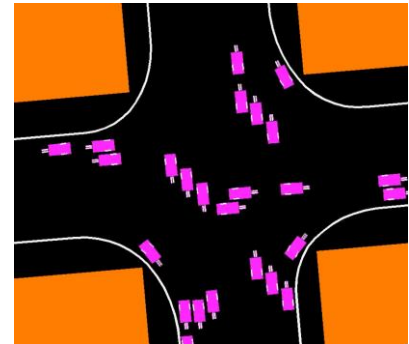
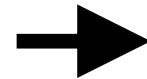
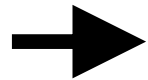
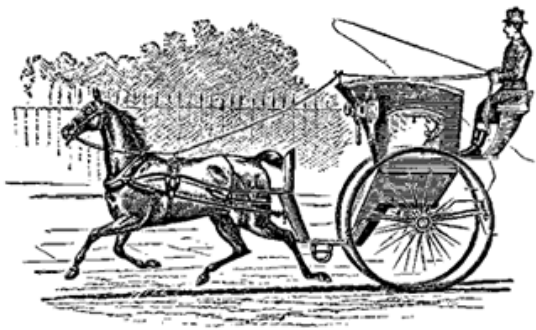
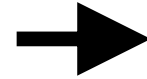
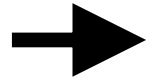
CAVN:

Historical Parallels



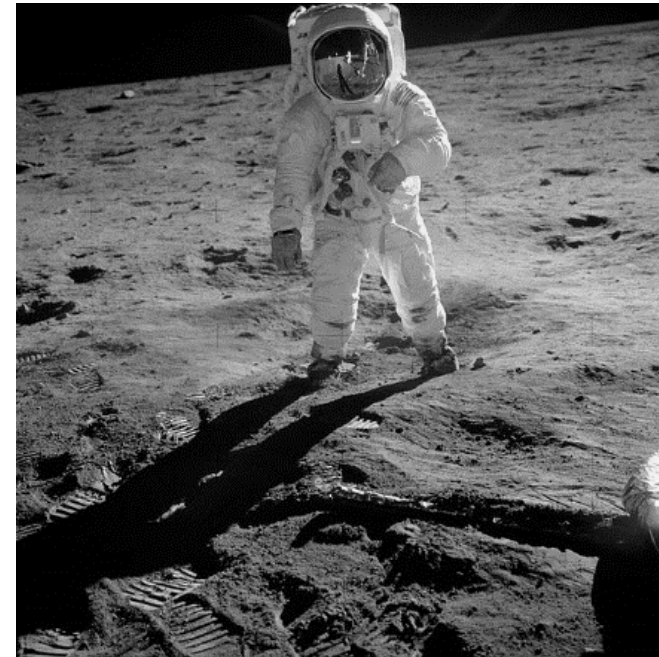
CAVN:

Historical Parallels



CAVN:

Historical Parallels



\$110 Billion over 10 years (today's dollars)

So what does this mean for us now ?

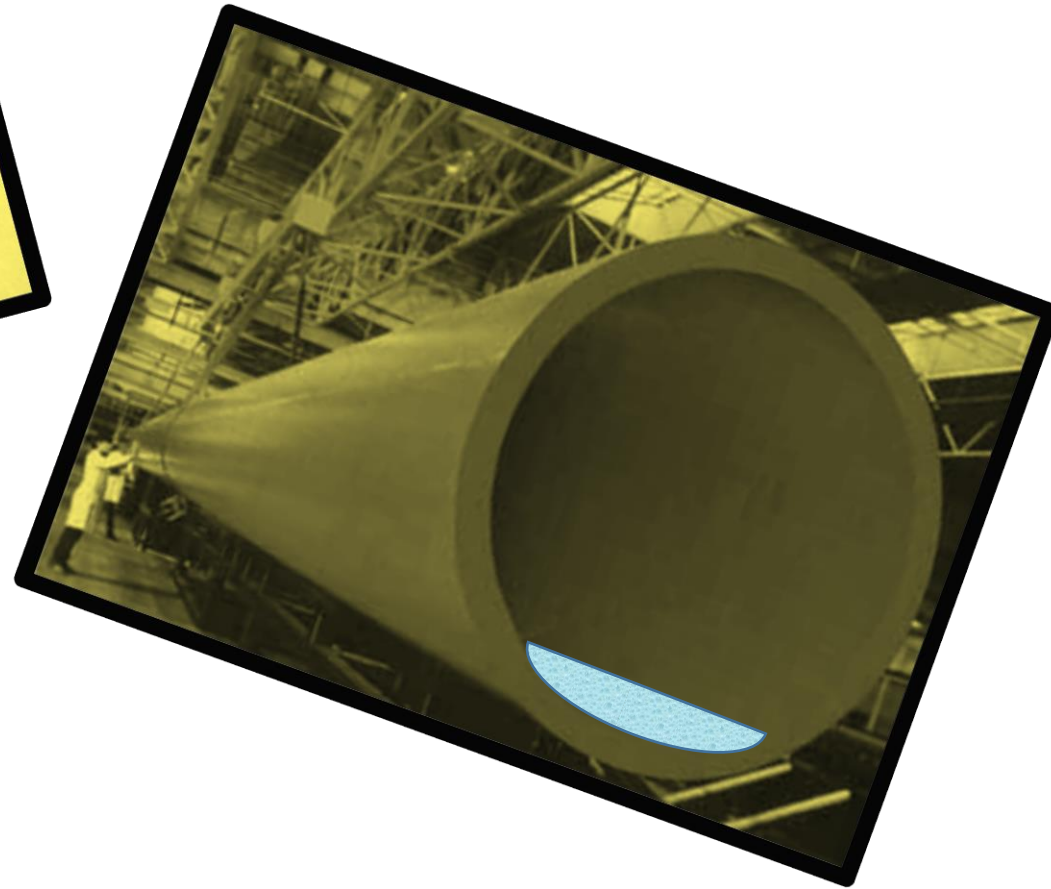
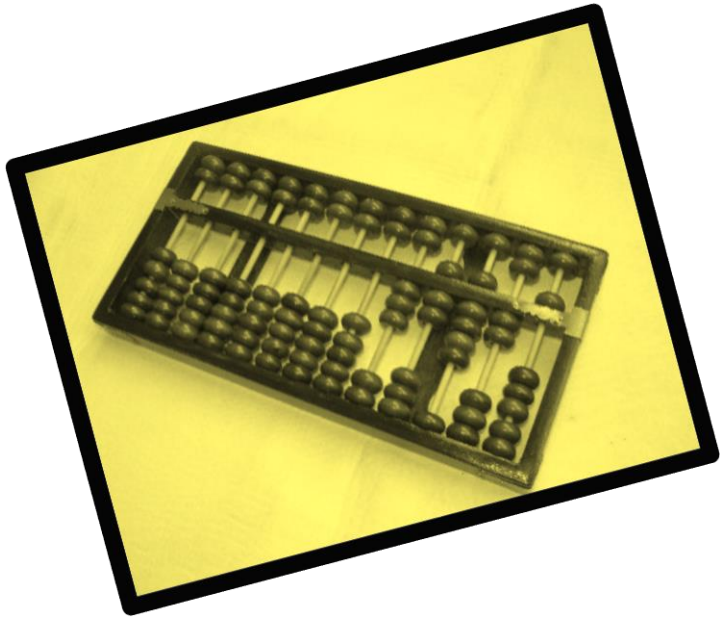


So what does this mean for us now ?



To conclude:

Roadways today



To conclude: Today's infrastructure tomorrow



Autonomous Car Networks: Just do it

