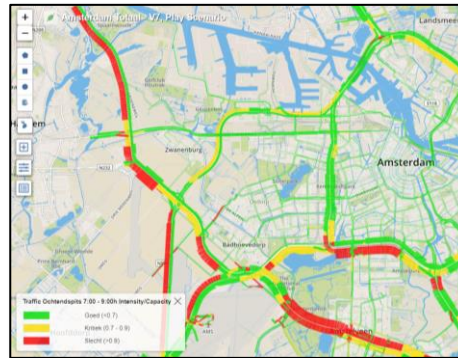
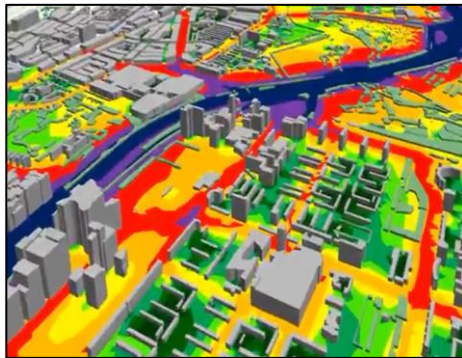


THE GOAL
NO MORE
THAN ZERO

SOCIETAL IMPACT FOR ACCESSIBLE & LIVABLE CITIES



“a data driven, digital platform for **integral urban planning & design** that enables cities to **strategically plan and manage urban mobility** in relation to the **environmental & spatial impact.**”



TRENDS & TRANSITIONS

› Urbanization trends

- › Growing & Ageing population
- › Scarcity of Space, Healthy Environment & Energy
- › Cities struggle to remain (or become) Accessible, Sustainable & Liveable



› Transition in Mobility > New Mobility

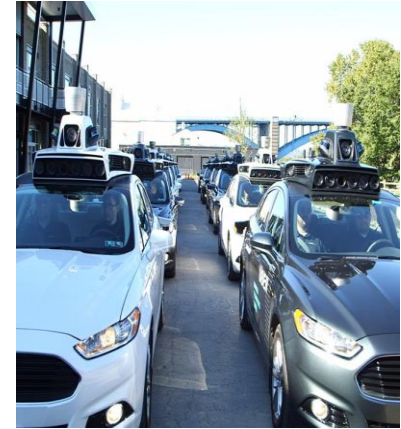
- › Digitalization: IoT, “data economy”, MaaS
- › Automation: Connected Automated Driving
- › Electrification: Energy transition, Zero Emission, H2



- › The combination of these trends & transitions have a profound impact on the city, creates opportunities but also challenges.

OPPORTUNITIES & CHALLENGES

New Mobility (automated / electric vehicles, connected, on demand) has an enormous potential to create much better conditions for **livable, accessible and sustainable** cities.

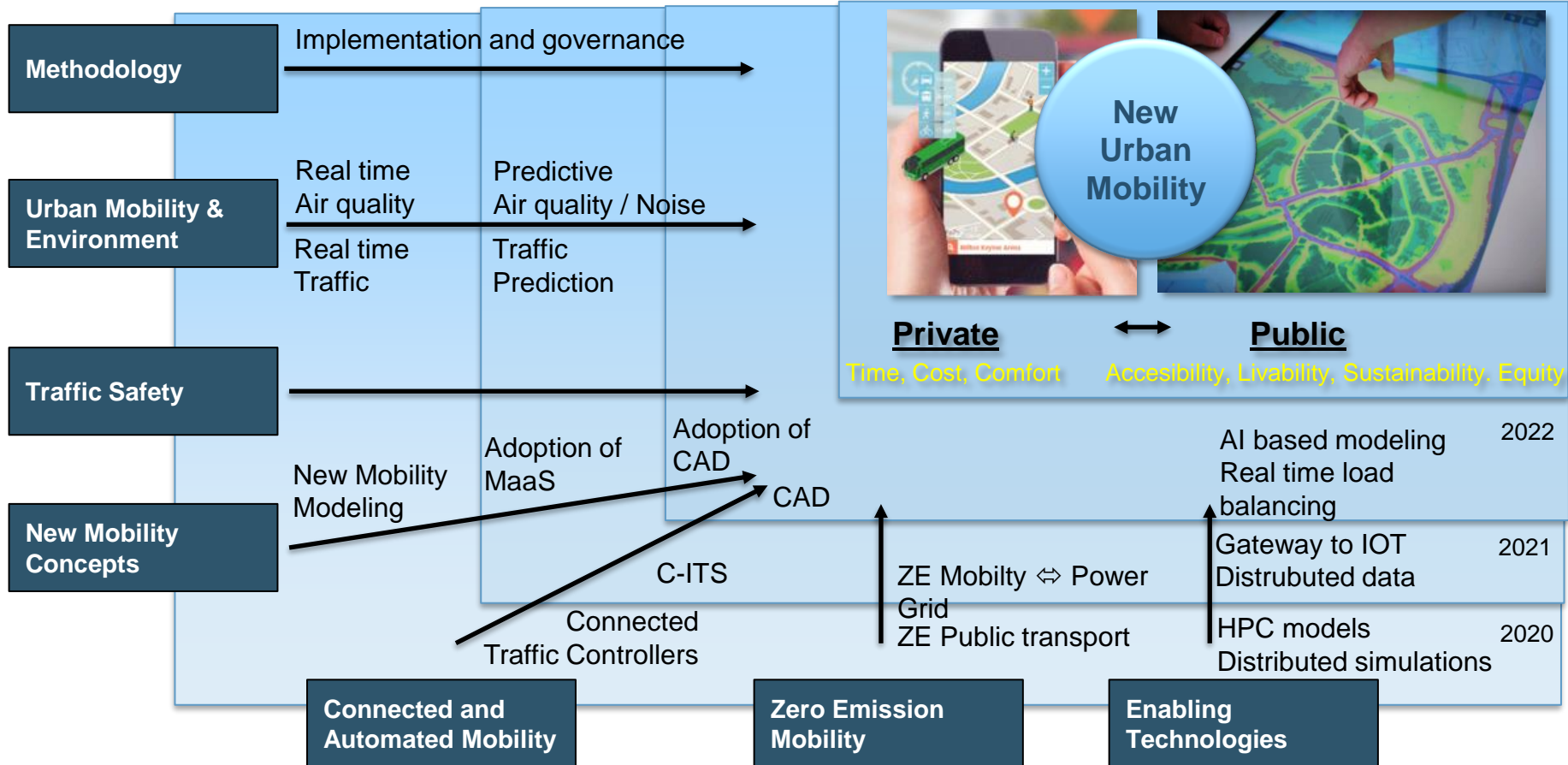


However, poorly managed New Mobility may very well lead to the opposite:

- › Exponential increase of traffic volume > more congestion & more pollution
- › Unbalanced traffic mix > Infrastructure mis-match, public investment mis-match
- › Shift from public to private transport > unwanted “winner takes all” scenario’s (oligopoly)

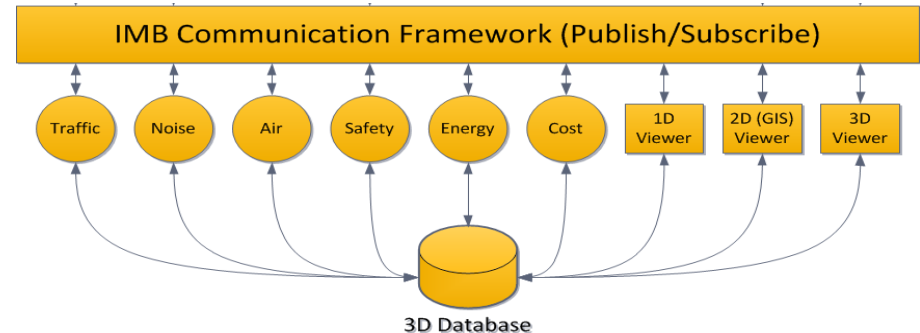
(!) High risk of prioritising individual/commercial interests over public interests (e.g. spatial, financial, environmental).

END IN MIND: MANAGE NEW URBAN MOBILITY



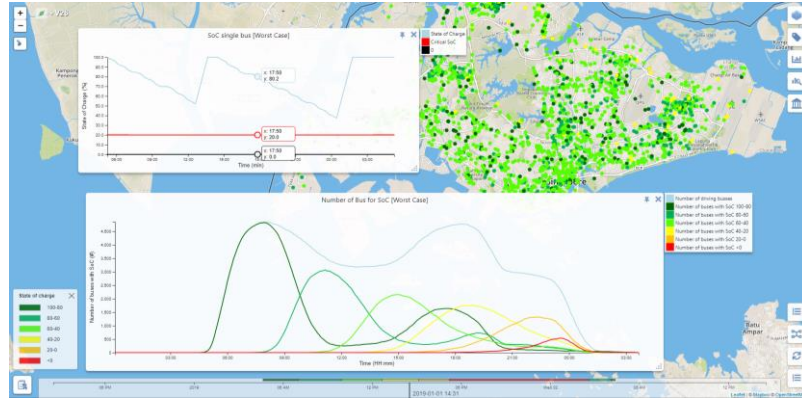
NEXT GENERATION PLATFORM FOR INTERACTIVE INTEGRAL PLANNING

- › **Integral view** on city development projects, which is complex and time consuming
 - › Strategic urban (mobility) planning
 - › Environmental impact analysis
 - › Integral urban development
- › Make city data applicable for addressing **multi domain challenges**
- › **Enabling cooperation across multiple expert domains** and levels of decision making
- › Distributed application (across platform)
- › Extremely fast GPU based parallel computation

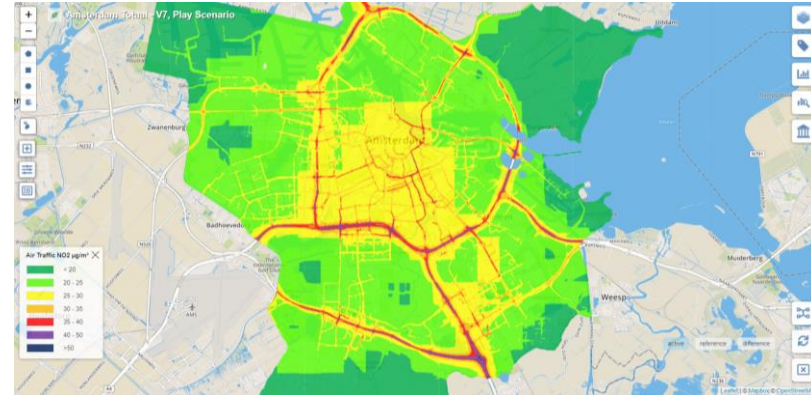


URBAN STRATEGY INTEGRAL VIEW

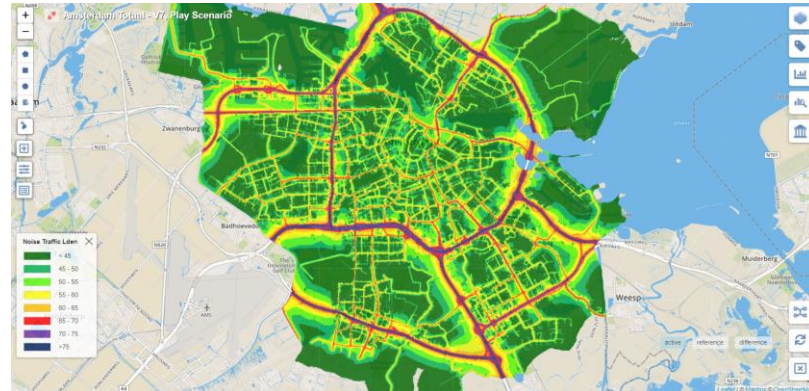
ENERGY FOR ELECTRIC VEHICLES



AIR QUALITY



NOISE POLLUTION



TRAFFIC

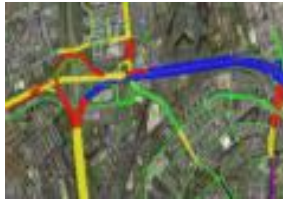


INTEGRATING TOPICS (NEW/EXTRA MODELS CAN BE ADDED)

NEW MOBILITY DEMAND



MOBILITY TRAFFIC



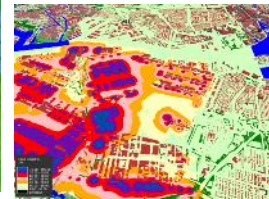
TRANSPORTATION ITS MICROSIMULATION



AIR POLLUTION (INDUSTRY + ROAD)



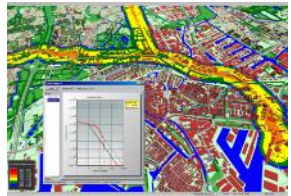
NOISE (TRANSPORT + INDUSTRY)



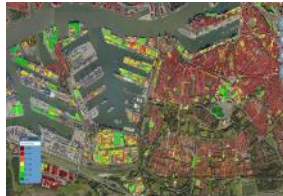
SAFETY HAZARDS (INDUSTRY)



SAFETY HAZARDS (TRANSPORTATION)



SOLAR POTENTIAL



ENERGY CONSUMPTION



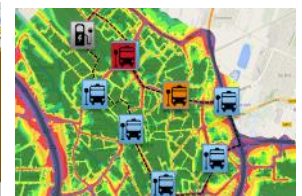
GLOBAL WARMING POTENTIAL



HEALTH IMPACT EFFECTS



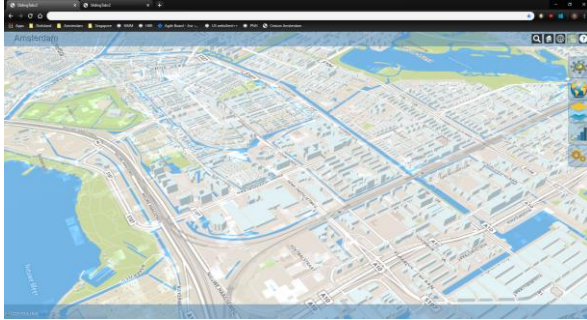
ELECTRIC BUS SIMULATION



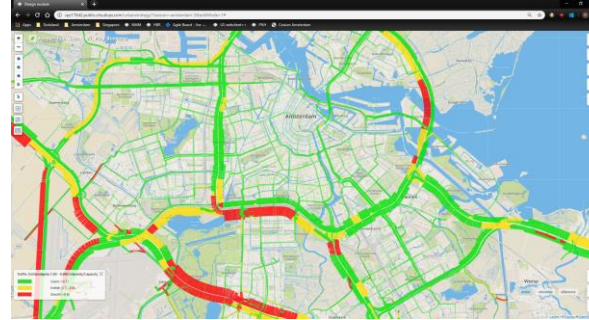
URBAN STRATEGY PUT INTO PRACTICE

WEB INTERFACE

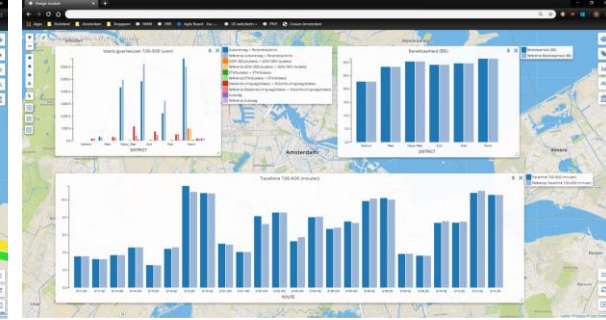
3D VIEW



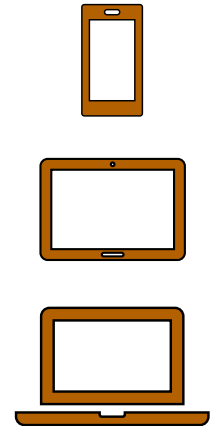
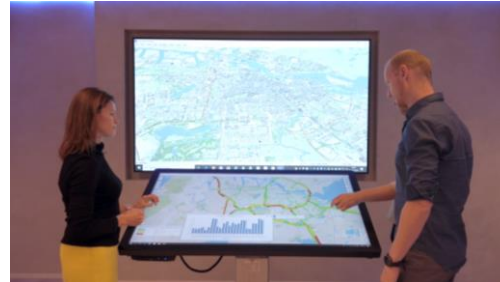
2D MAP VIEW



1D INDICATOR VIEW



WORKSHOPS



MULTI DEVICE

Delivering fast and interactive insights for decision support

TAKE AWAYS

TNO's Urban Strategy is designed to provide cities with

- › Integral, strategic urban planning, covering multiple interrelated domains
- › Interactive & realtime scenario comparison for key problem statements
- › De-risking government policies & infrastructure decisions