

MORE Final Conference

17th February 2022



Assessment of potential for new technologies

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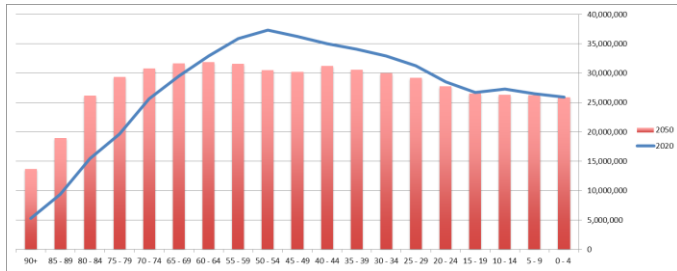


This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 769276.

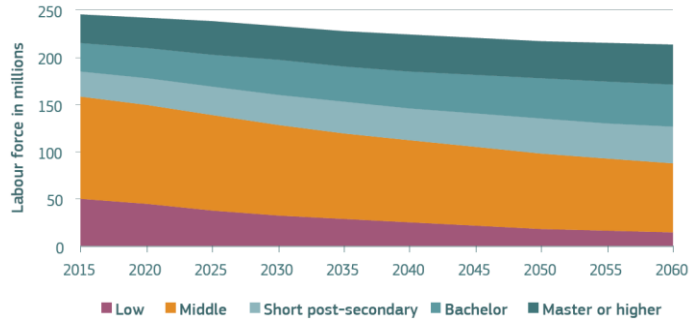
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Future patterns of demand



EU-28 population projections 2020-2050

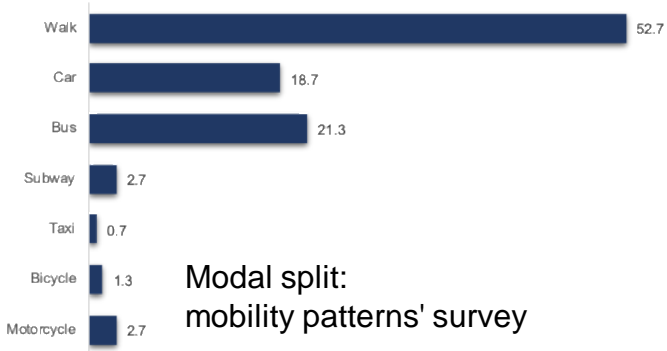


EU labour force by education level 2015-2060

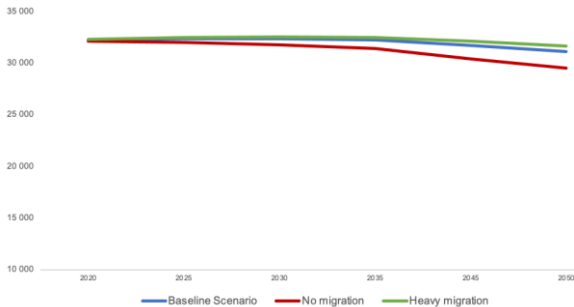
Future needs						
More attractive public spaces	●	●	●	●		●
Seamless mobility integration	●	●	●	●	●	●
Regulations for new transport modes		●		●	●	●
Safe streets for all	●	●	●	●		●
Cyber security for mobility	●	●				●
Personalised mobility	●		●			●
Adapted parking policy to future mobility				●	●	●
Alternative fuels provision			●	●	●	●
Increased capacity for public administration						●
Embracing new operating/business models and new modes of governance			●		●	●
Environmental quality	●	●	●	●	●	●
Vision and validate						●

Future needs & corresponding users groups

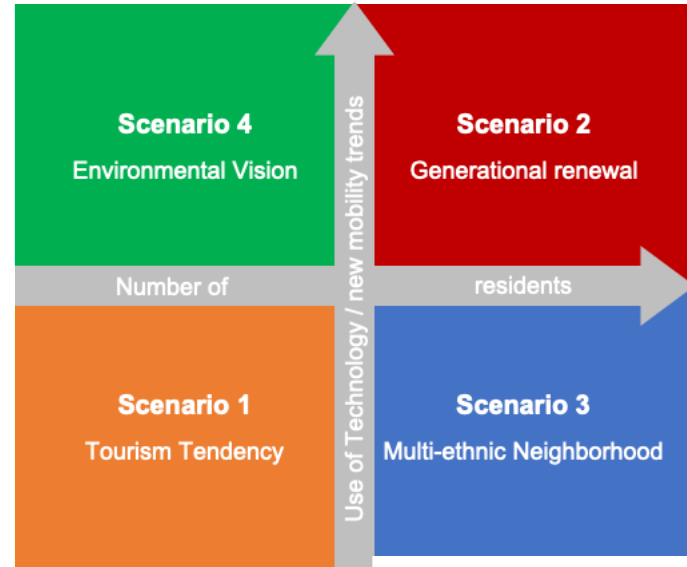
Future demand pattern: Lisbon



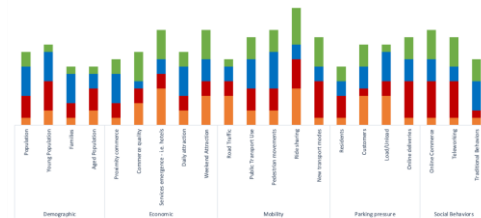
Modal split:
mobility patterns' survey



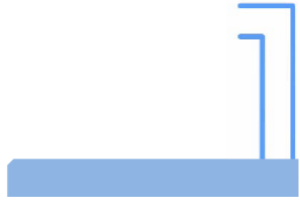
Population forecast 2020-2050 and density evolution



Potential impacts of each scenario:
Demographic,
Economic, Mobility,
Parking pressure,
Social behaviour



Future demand pattern: London



Innovating London:

The story of London re-inventing itself as a young, urban innovator, where technology changes how people live and work, but leaves some behind



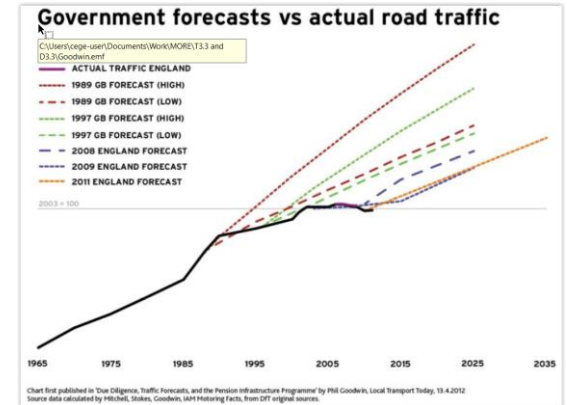
Rebalancing London:

The story of a more equal but ageing society with lower economic growth, that focuses on self-sufficiency and liveability as world power moves East



Accelerating London:

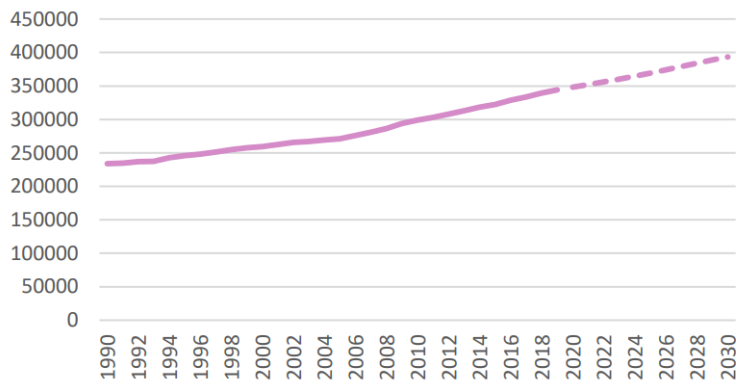
The story of an ever-growing, expanding London which acts as the beating heart of the world financial system, but struggles to deliver high quality of life for all



Consistent inaccuracy of UK traffic forecasting

TfL: 3 Stories about the future

Future demand pattern: Malmö



Population growth forecasting - City of Malmö



Masterplan Nyhamnen, City of Malmö



- Road building
- Car parking
- Lower density
- Dispersion



- Public transport
- Cycle networks
- Roadspace reallocation



- Public realm
- Street activities
- Traffic restraint
- ToD/mixed use developments

Concept of the 3 visions: Mobility, Sustainability, Liveability

Technologies changed our life

- ~1760 Industrial Revolution
transition to new manufacturing processes
- 1968-1972 NASA Apollo program
landing the first humans on the Moon
- ~ 30 Y internet
internet concept 1960s; World Wide Web invented in 1989

Advanced technologies and services

- *Traffic* control and management
 - seamless sustainable mobility for people and goods (all modes)
- Connected, cooperative and automated *mobility* and *services*
 - data exchange, (tele)communication, multi-model / VRU services
- Physical and digital *infrastructure* for smart cities
 - advanced materials, integrated sensor, communication, control systems

~ 40 years ITS development and deployment for road safety, traffic efficiency, energy efficiency, environment and comfort

Assessment method selected

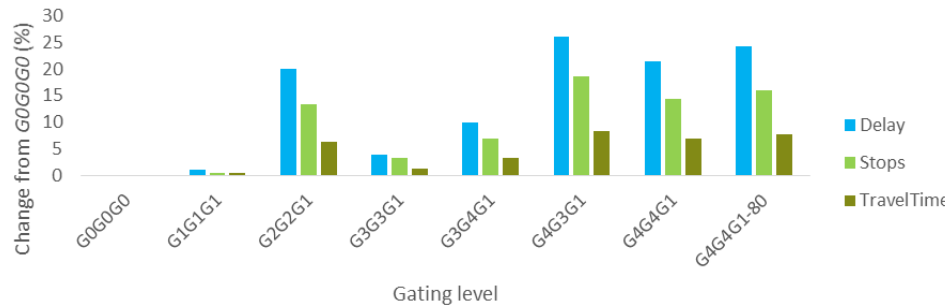
- *Technical* assessment through traffic simulation studies
 - social, environmental and economic impacts
- *Users* assessment through group discussions and interviews
 - road space users, experts, decision/policy makers
 - potential implementation of advanced technologies in European cities
- Use cases selected in MORE
 - intelligent traffic control for urban feeder routes in Malmö
 - automated vehicles for public transport and city logistics in Helmond
 - dynamic road space allocation through LED (Light-Emitting Diode) road markings and signing

Assessment result

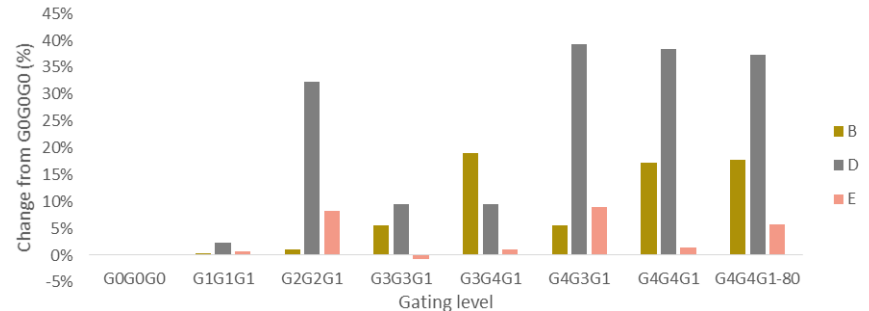
intelligent traffic control for urban feeder routes in Malmö

- Traffic signal control: static, actuated, semi-fixed time, adaptive
- Gating (or perimeter control): to hold vehicles back upstream of a Protected Network, such that the accumulation does not exceed the critical value, in order to maximize the outflow

a) Network level average delay, stops, and travel time

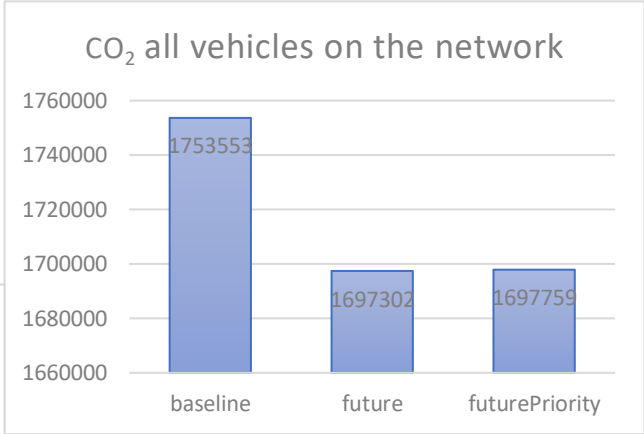


b) Average feuel consumption at intersections B, D, and E



Assessment result

electric automated vehicles for public transport and logistics



Assessment result

dynamic road space allocation through LED markings/signing

- Understanding of existing signs and markings
 - e.g. What do they mean? Do they make sense?
- Reactions to new types of signs
 - e.g. What do they mean? Do they make sense?
- LED vs. conventional signs and markings
 - e.g. How well do they compare under different lighting conditions? Reactions to scope for flexibility? General reactions to use of LED?
- LED road surfaces and transitions
 - e.g. Methods of signalling transitions and reactions to the idea?
- Overall reflections

Interview results (1/2)

- Perspective of cities

- “Advanced technologies” are considered, e.g. IT, digitalization, ITS, (mobile) apps
- Technology is changing a lot. Cities should think carefully about what they should (not) do; how they can use new technologies to solve the existing problems
- City nodes need to be protected from car-centric technologies; development and deployment of the technologies have to be human-centric
- Limited practices of flexible use of road space
- Certain level of automation could be beneficial. AV pilots should be widely available for people to understand and experience the potential and challenges
- Plan to integrate data/information, provide real-time information access, use information in automated ways to make decisions on network performance
- Concerns, e.g. data sharing between organizations, security, safety

Interview results (2/2)

- Perspective of experts/users
 - The level of urbanization through the world is so extensive that the simple conventional ways in which mobility is organized will no longer be able to handle
 - Technology helps to create an overview of the activity of every object in the mobility domain, based on which mobility policies can be changed
 - Technology has helps us to make more efficient use of available infrastructure; also created more data which allow us to extrapolate and get better insight
 - ITS and internet-based services create new business, influence human (travel) haviour
 - AV is developed for improving safety, efficiency, air quality and economy; inappropriate use and organization may create higher demand (double) and negative impacts

Conclusion

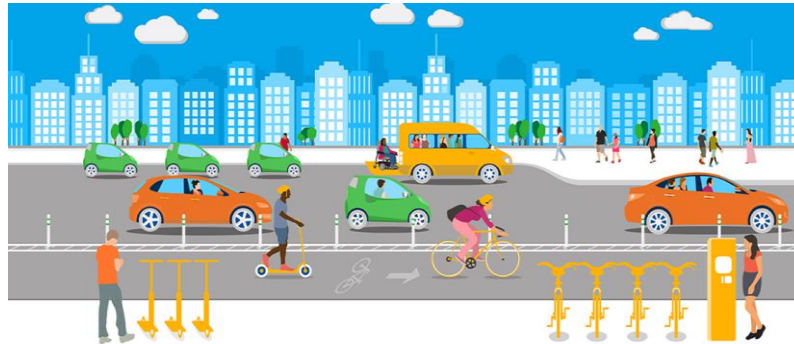
- Advanced technologies may impact cities of the future
 - Advanced technologies (\neq apps) have been changing mobility (people and goods)
 - Technology will not solve all the problems
 - What is right for the future of cities matters
 - Best practices (public space, health streets) towards sustainable liveable city
- Challenges
 - Technical maturity needs to be proven (e.g. 5G, L3-L4 AV)
 - Physical and digital infrastructure readiness and compliance
 - Legislation, regulatory, organisational issues
 - Public awareness, confidence, acceptance

Invitation

MORE WEBINAR ADVANCES IN TECHNOLOGIES AND FUTURE SCENARIOS

WEDNESDAY 23 FEBRUARY 2022 AT 11:00 CET

CONTACT: FRANCESCO RIPA (FRIPA AT POLISNETWORK DOT EU)





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