Low Emission Zones and other Access Regulations: What and Why

Lucy Sadler
ReVeAL: https://civitas-reveal.eu
Sadler Consultants (Germany)
www.urbanaccessregulations.eu

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Sadler Consultants Europe GmbH
Specialists in air quality policy

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Around 800 urban vehicle access regulations (UVARs) in Europe, incl

- 325 Low Emission Zones (LEZs)
- 130 Pollution Emergency Schemes

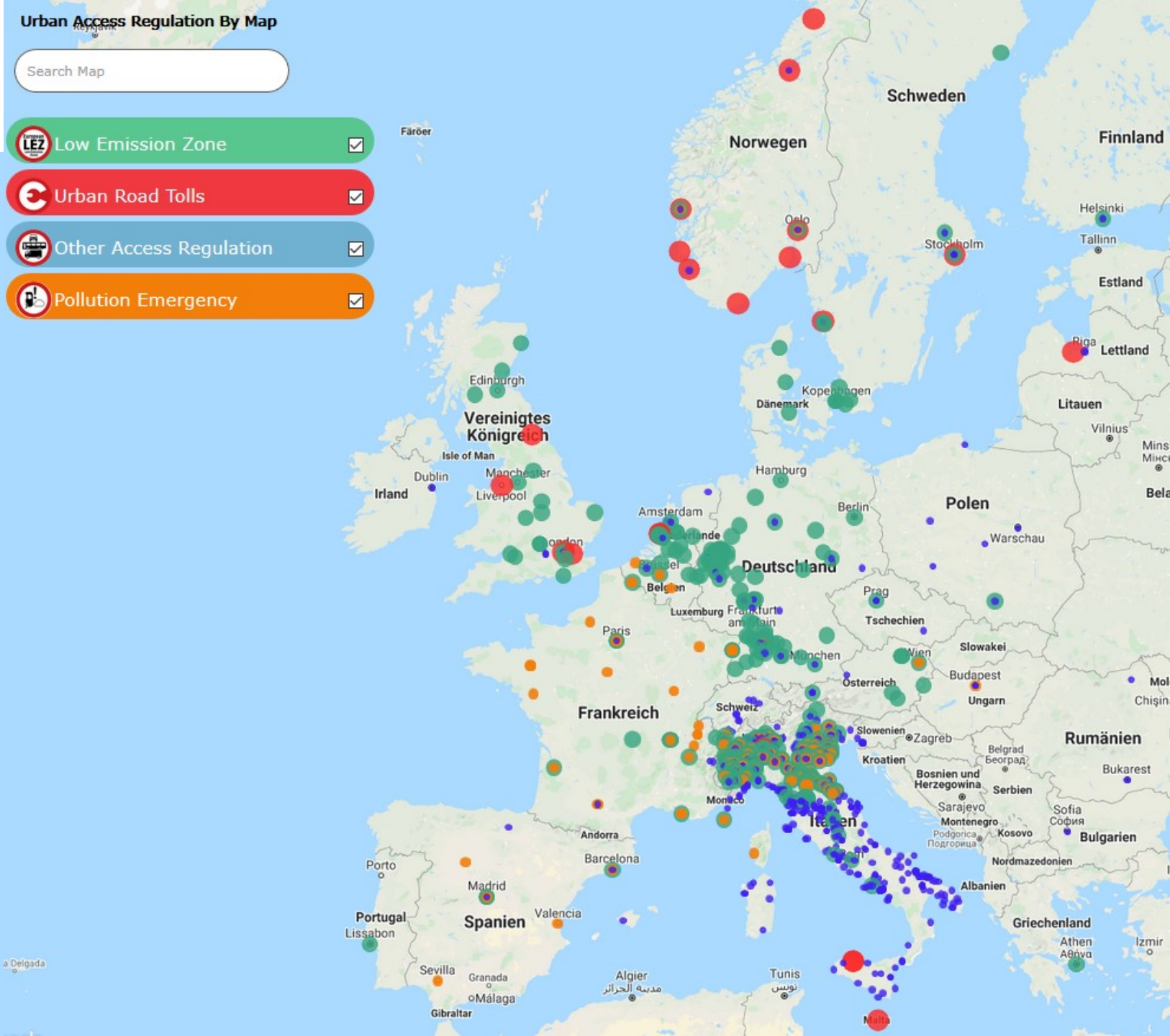
Source:
www.urbanaccessregulations.eu

Find info on European UVARs

2 Low Emission Zones in Israel

Jerusalem www.avirnaki-jr.co.il

Haifer www.sviva.gov.il/English/...Stage-2-of-Low-Emission-Zone-in-Haifa-Launched



Different types of UVAR

Low Emission Zones

Emissions Standards to enter the area (eg Euro 4, fit a DPF, <10 years)

Urban Toll Schemes / Congestion Charging

Pay a fee to enter, some charge more for higher polluters (funds raised → sustainable mobility)

Other Access Regulations

Eg limited traffic zones (permit to enter), no vehicles >3.5T, buses only, car-free areas….

Emergency Air Pollution Schemes

When pollution is /will be / has been high → fewer / cleaner / slower vehicles

Increasingly Zero Emission Zones

Removing the emitting engine (Electric/Fuel cell Vehicles) or removing vehicles with engines

Also included in ReVeAL project are Spatial Interventions

Traffic calmed areas with eg traffic filters, one way streets, bus / cycle streets, school streets, ‘park-lets”, road blocks/bollards…. so eg only residents enter, deliveries at certain times/conditions

Can be complimentary to other UVARs, or instead of

Picture Source: Florian Lorenz on behalf of City of Vienna

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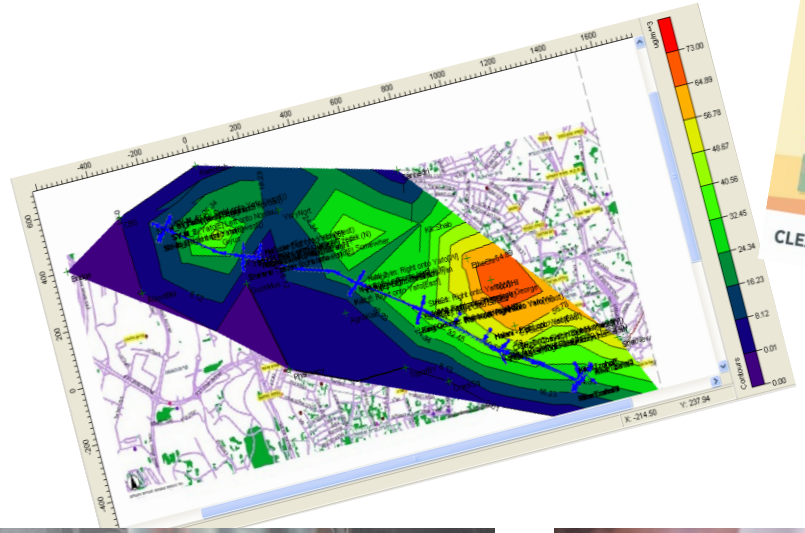
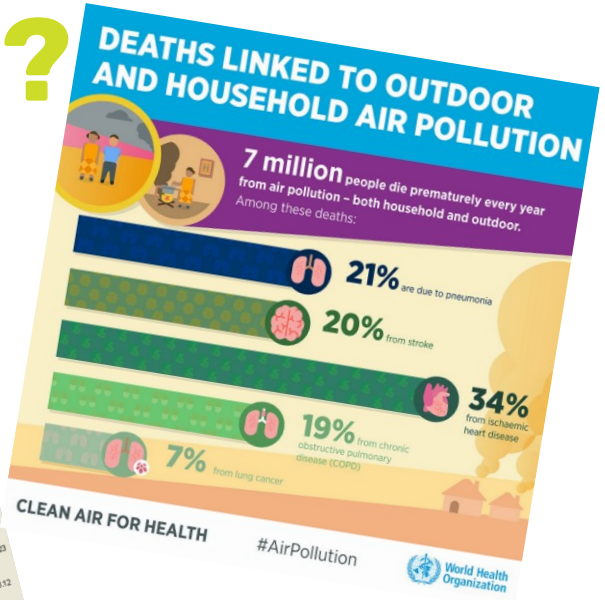
Changing transport Why? 1: Pollution kills





Picture Sources: World Heath Organisation, The Independent Newspaper, The Guardian Newspaper, Jerusalem City, Greenpeace, iStock

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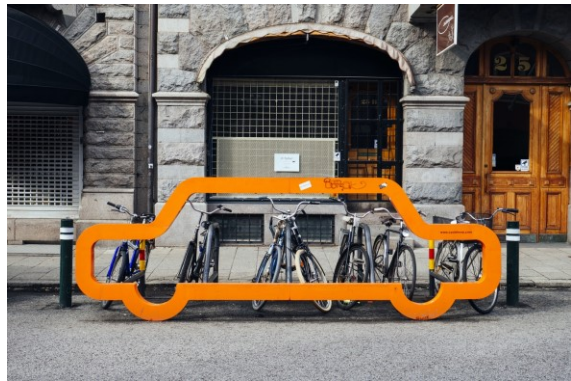
Why UVARs? Pollution & Costs

- Air pollution is greatest environmental threat to health (World Health Organisation)
  - Killing 7 million people prematurely every year
- Air pollution health damage costs the world $5.7 trillion
  - 4.8% of global GDP (World Bank)
- Costs (Europe)
  - Air pollution costs each European €1,276 per year
  - Up to 33% of new childhood asthma cases could be prevented if EU met tougher $PM_{2.5}$ standards
- Affects particularly the young, the old, & those with pre-existing heart & lung conditions
  - Evidence that air pollution also worsens Covid impact

Why UVARs? Quality of life

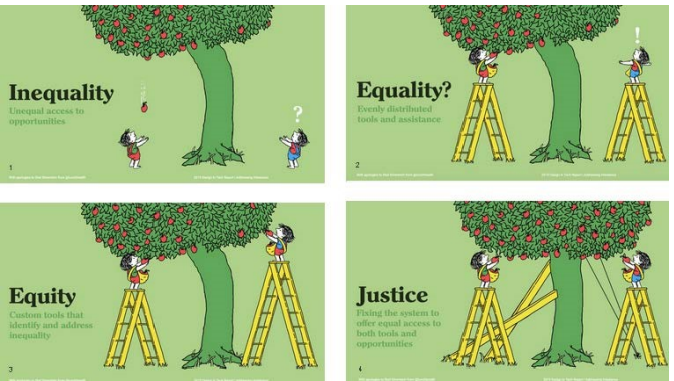
- **Quality of life**
- Protecting historic buildings
- More attractive (tourist, business….)
- More urban space for recreational activities (parklets, street cafes…)
- Reducing traffic noise, and its health impacts

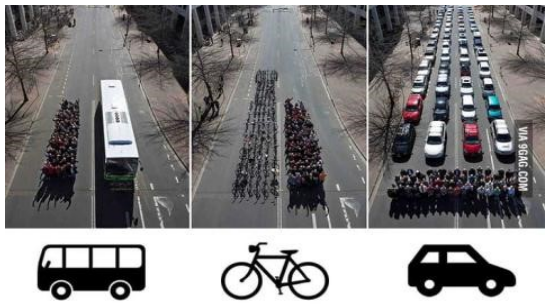


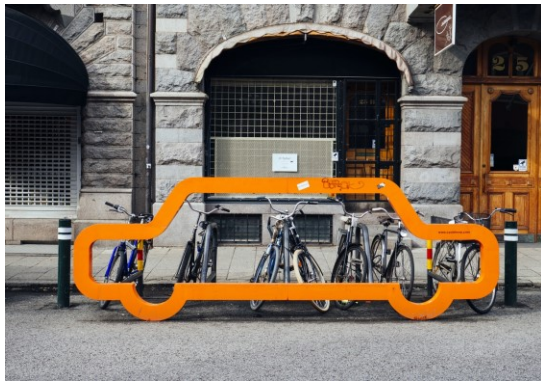
Picture sources: Oslo city, Databank Publieke Ruimte (Database Public Space),

Why UVARs? Fairness & modal shift

- Transport is about moving people & goods, not vehicles
  - Well designed UVARs can place restrictions to facilitate access for ***people*** & **goods** rather than more ***vehicles***
- Space / equal rights/opportunities / justice for people, cycling, walking, public transport, other non-car users
  - *Soft & sustainable mobility takes less space per person than personal mobility, yet urban road space is often prioritised for cars*
  - Transport externalities for car are 18 times higher than bus (EC)







Picture sources: Tony Ruth for Design in Tech Report, Sadler, Unsplash

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Why UVARs? Congestion

- Congestion – & cost of congestion
  - Congestion in the EU costs nearly EUR 100 billion, or 1 % of the EU's GDP, annually (DG MOVE).
- Safety
  - 9120 urban EU road traffic deaths annually, 70% of which are vulnerable road-users
  - Pedestrians have a 90% chance of survival when hit by a car travelling at ≤30 km/h, but ≤50% chance of surviving at 45 km/h (WHO)
- Make deliveries and journeys more predictable
  - Unpredictability leads to wasted time, and requires more staff

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Why UVARs? Climate Change

- Most Europeans live in urban areas
- Urban mobility accounts for 40 % of all CO_2 emissions of road transport (EC), around 10% of all CO_2
- Transport CO_2 emissions are ***increasing*** when they need to be decreasing
- Sustainable transport options already exist in urban areas
  - BEVs are more effectively used in urban delivery than elsewhere
- Urban transport is key to meeting the Climate Change targets
- Cities need to act - and are acting - **NOW** on Climate Change

And because sometimes, Carrots aren’t enough

Picture sources: Pixabey, Sadler,

Ravensburg Centre (DE)

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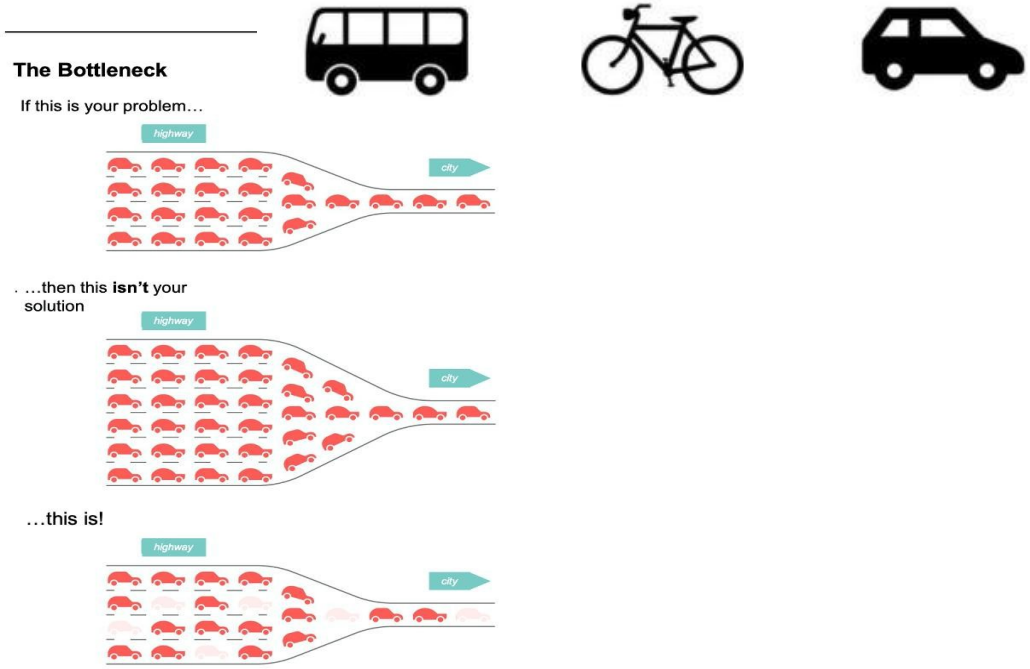
Ghent Braun Square (BE)

Picture Sources: Ravensburg Blaserturm um 1970 Copyright Landesmedienzentrum Baden-Württemberg 01 08 1970; Lucy Sadler

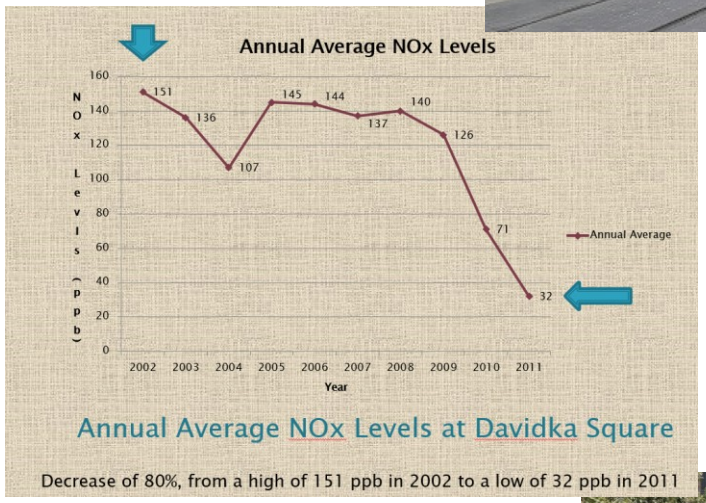
Picture sources: Beeldbank from the city of Ghent; Databank Publieke Ruimte (Database Public Space).

Urban Space is valuable resource



Picture Sources: Pixabey, Cycling promotion fund, https://www.cambridgema.gov, "Het recht van de snelste" by Thalia Verkade & Marco te Brömmelstroet

Jaffa Street before & after



Annual Average NOx Levels at Davidka Square

Decrease of 80%, from a high of 151 ppb in 2002 to a low of 32 ppb in 2011

"a toy shop owner had to clean the toys every day because they were covered in black stuff from the passing vehicles… "

Picture Source: Left www.Greatmirror.com, middle Jerusalem city authority, right Michal Gelbart

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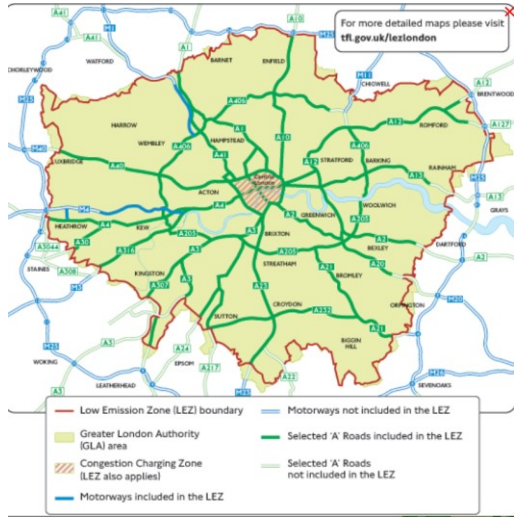
Impacts London

Ultra Low Emission Zone

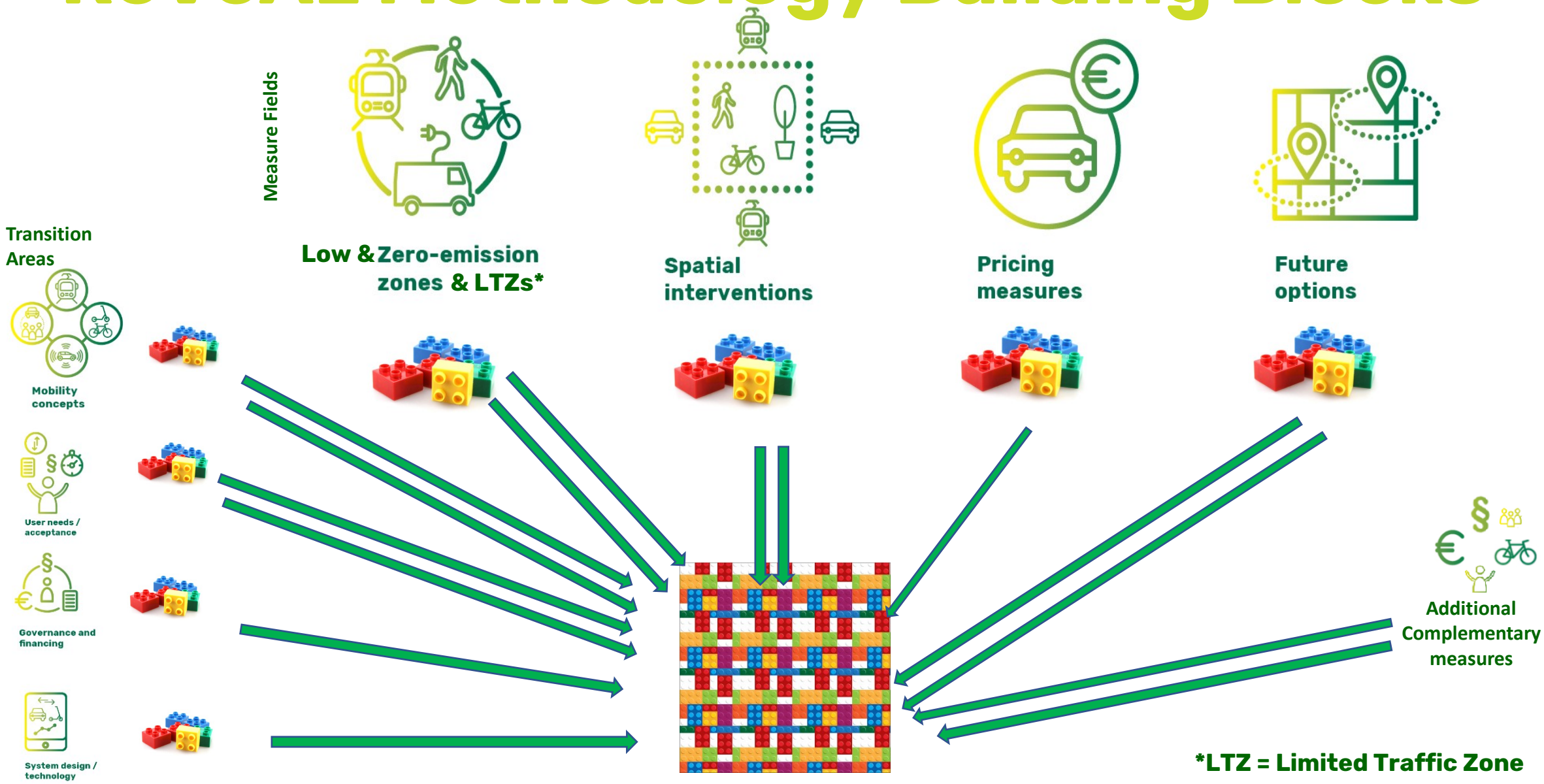
- Vehicles ≤ Petrol Euro 4, diesel Euro 6, m/cycles Euro 3 charged £12.50/100 (55/440 Shekels)
- 13,500 fewer older, polluting vehicles entering central London
- Average compliance rate with standards 77 %
- Reduced NO_2 by 32 µg/m^3, traffic by 9%, CO_2 by 13%



Congestion Charge

- £5 (21 Shekel), since increased to £10, now £15
- Congestion reduced by 30%, volume of traffic by 15%
- % time drivers stationary / moving slowly in queues reduced by up to ⅓
- Journey times shorter & more reliable and more predictable – particularly for buses.
- Bus usage increased by 38%, with 23% more public transport provided (as more space on roads)
- Surveys of Londoners 'on-street' suggest that people appreciate better environmental quality
- Nitrogen oxides (NOx) and Particulate Matter (PM_{10}) reduced by 12%; CO_2 & fuel reduced by 20%
- No significant negative impact on business & economy

ReVeAL Methodology Building Blocks



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How do the Building Blocks work?

- Just like with Lego, taking different common aspects
- and combining them to make something new
- Every city is different
- but there are common themes running through most cities and their problems
- Taking different Measures, together with the underlying aspects that Transition them all, with some Complimentary measures to oil the wheels
- Can help develop a good quality UVAR

Access Regulations

- Not necessarily a silver bullet
  - But can large hammer & hit several nails at once if well designed
  - Often the most significant measure a city can do
- Work best if part of a wider strategy
  - SUMP, Transport, air quality, climate change
- Different aspects can be combined
  - Taking aspects from each Measure Field & Transition Area
  - Eg Charging for higher polluting vehicles, paying for permits
- Including additional 'Complimentary measures'
  - Eg grants for diesel particulate filters, improved public transport, cycling/walking facilities…
  - To make it possible

ReVeAL Building Blocks for Gent

Measure Fields

Zero-emission zones

Regulation by trip purpose – residents (2017)

Scheme timescale - Phasing: Introductory warning letters (2017)

Spatial interventions

Traffic filter – road block (2017)

Traffic filter – visual ban (2017)

Cycle lane – redistribution of road space (2017)

Pedestrian street (2017)

Pricing measures

Pollution charge – applied to a perimeter or area (2020)

Parking charge – fixed price (2016)

Future options

Dynamic traffic signaling/management/ITS/rerouting -

Free public transport first Sunday of the month (2019)

Park & ride + shuttle service (2017)

Pedestrian bus (electric) (2017)

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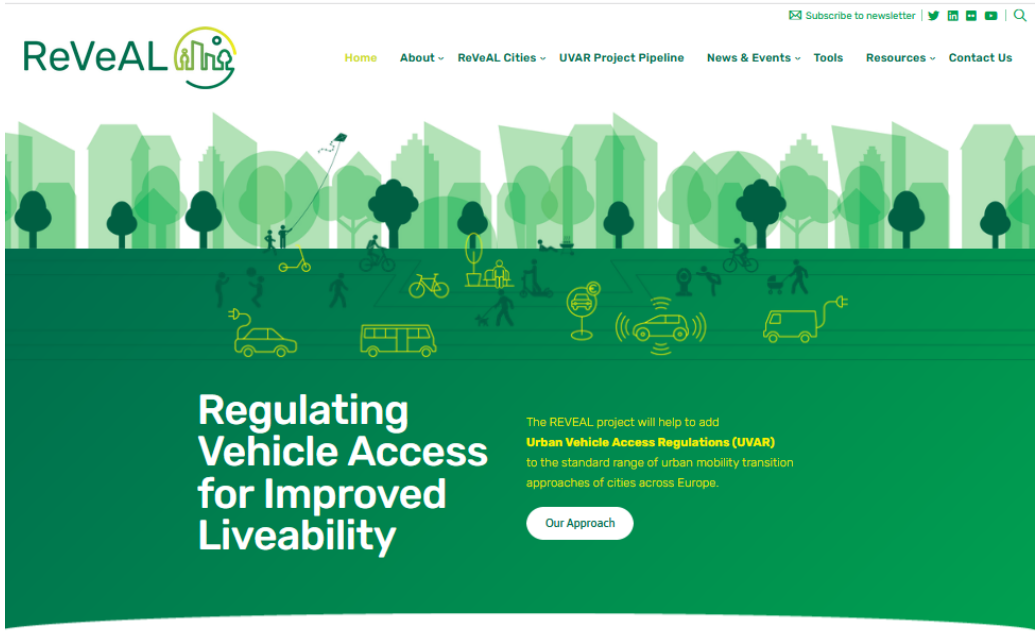
- Producing a decision support tool to help develop good quality UVARs
- Range of guidances on key issues
- Watch the ReVeAL website for news, sign up for updates
  - https://civitas-reveal.eu



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Thank you for your attention

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