Low Emission Zones and other Access Regulations: What and Why

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ReVeAL: https://civitas-reveal.eu
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www.urbanaccessregulations.eu
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.avrnaki-ir.co.il
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
Changing transport Why?
1: Pollution kills

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? Other reasons

• Quality of life
• Protecting historic buildings
• More attractive (tourist, business....)

In addition, particularly for those reducing traffic
• Climate Change
• Noise
• Congestion – & cost of congestion
• Allowing more **people** to access rather than more **vehicles**
• Space for people, cycling, walking, public transport
• Deliveries more predictable.....
Ravensburg Centre (DE)  

1970  

2018  

Ghent Braun Square (BE)  

1987  

2018  

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
“a toy shop owner had to clean the toys every day because they were covered in black stuff from the passing vehicles...”
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\textsubscript{2} by 32 µg/m\textsuperscript{3}, traffic by 9%, CO\textsubscript{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 ½
- 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 (NO\textsubscript{x}) and Particulate Matter (PM\textsubscript{10}) reduced by 12%; CO\textsubscript{2} & fuel reduced by 20%
- No significant negative impact on business & economy
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
  • Transport, air quality, climate change

• Different aspects can be combined
  • Eg Charging for higher polluting vehicles, paying for permits

• Including ‘Complimentary measures’
  • Eg grants for diesel particulate filters, improved public transport, cycling/walking facilities…
ReVeAL Methodology Building Blocks

Measure Fields

Transition Areas
- Mobility concepts
- User needs / acceptance
- Governance and financing
- System design / technology

Zero-emission zones

Spatial interventions

Pricing measures

Future options

Additional Complementary measures
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)
ReVeAL

- 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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