



EURO standard

This ReVeAL building block fact sheet is one of a series of 33, each describing one Urban Vehicle Access Regulation (UVAR) building block and providing an example of its use in a city. The ReVeAL building blocks can be combined with one another to create a structured UVAR package for a city. Try out the ReVeAL online tool, www.AccessRegulationsForYourCity.eu, to receive suggestions of appropriate UVAR building blocks for your city as well as guidance in their implementation.

The EU-funded research and innovation project, CIVITAS ReVeAL, aims to add Urban Vehicle Access Regulations and associated policies and technologies to the standard range of urban mobility measures in cities across Europe. The project mission is to enable cities to optimise urban space and transport networks use to improve urban accessibility, sustainability, and liveability.

For more information, please visit: www.civitas-reveal.eu.

Spatial Interventions

Spatial interventions are where the road layout has been altered to favor more sustainable mobility and prevent vehicles entering. Examples of these are removing road and parking space taken for vehicles and using the space for sustainable mobility or amenities (bus lanes, logistics hubs, parklets, restaurants and more)

Speed reduction

Traffic filter:

- Recirculation of traffic
- Road block
- Capacity restraint

Reallocating parking space:

- Parklet
- Drop-off zone shared mobility
- Logistics bay (mini-hub)
- Kiss & Ride (K&R)

Reallocating road space for pedestrians:

- Widen pavement
- Pedestrian priority street or zone

Reallocating road space for cycling:

- Cycle lane
- Cycling street

Reallocating road space for public transport:

- Bus or tram priority lane

Pricing Aspects

Pricing aspects are when the entry to an area or to the entirety of the city is given a price tag to encourage more sustainable transport. Pricing aspects also include the (differential) levels of penalty fees to encourage (and enforce) compliance.

Road charges / tolls:

- Charge applied to a perimeter or an area (congestion charge)
- Charge applied to specific points
- Distance-based charge
- Time-based charge
- Permit charge
- Charge based on emission standards (pollution charge)

Parking charge:

- Dynamic price (real time)
- Fixed price
- Charge based on emission standards (pollution charge)
- Workplace levy
- From on-street to off-street parking

Regulatory Measures

Regulatory measures are those where there is a legal instrument that states who can and cannot enter an area. They could often also be called "bans" and include Zero Emission Zones, Low Emission Zones, and Limited Traffic Zones.

Regulation by emissions:

- Euro standard
- Zero-emission vehicles

Regulation by vehicle type and dimensions:

- Vehicle type
- Dimensions

Regulation by trip purpose:

- Delivery and logistics
- Through traffic ban

Regulation by permit:

- Permit to travel
- Parking permit
- Planning permit conditions



Definition of the building block

Vehicle access is regulated by its EURO standard emissions. This is usually phased and differentiated by fuel type, vehicle type, location of the scheme area or trip purpose. It can be part of an LEZ, LTZ (including delivery scheme) or charging scheme, and can be extended to a ZEZ.

Timing, phasing, scaling and replication

Phasing is often used to tighten regulations. Tightening can include reducing the number of eligible vehicle types, increasing the size of the affected area, tightening emissions standard, reducing the number or length of time windows or reducing the number of exemptions. A new phase can also introduce a new enforcement method (e.g., from manual to ANPR) or new penalties (e.g., warning letter in first phase and higher penalties for subsequent infringements). All planned phases should be announced at the beginning to allow users to make informed decisions about their long-term options.

If the long-term aim is a ZEZ, this in particular should be communicated from the beginning as drivers may decide to invest directly in a ZEV rather than retrofit or install a filter on a vehicle that would later need to be replaced anyway.

The start date of each phase should be set when sufficient vehicles, retrofits or complementary measures are available to ensure compliance (e.g., start an LEZ after Euro 7 vehicles have been released).

Time windows

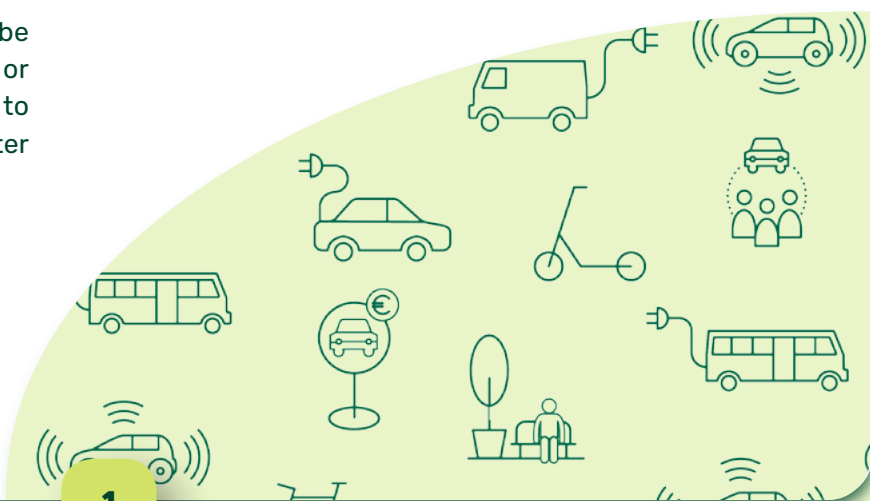
- Allowing vehicle access at particular times of day
- Allowing vehicle access on given days of the week (e.g., weekends)
- Allowing seasonal vehicle access
- Having no time differentiated vehicle access
- Triggered access restrictions (e.g., by pollution levels)

Enforcement options

- Cameras with automated number plate recognition (ANPR)
- Manual enforcement through visual inspection
- Physical barriers
- Radio frequency identification (RFID)

Gender and equity

There may be concerns about the ability of people with low incomes to afford zero-emission vehicles. Complementary measures of additional sustainable mobility options or grants for new, retrofitted or adapted vehicles may help address this. Exemptions can also be considered in individual cases.



Complementary measures

Exemptions

The types of exemptions will be different depending on the scheme type, but some examples are:

- Key exemptions for police, fire department, waste collection, etc.
- User needs exemptions, e.g. for people with disabilities with forced car dependency, taxis, classic car owners, residents, deliveries
- Exemptions for adapted vehicles (e.g., retrofitted or converted electric or hybrid vehicles)
- Limited numbers of purchased exemptions for entry (e.g., per day/month/year) to a specific zone
- Specified maximum amount of kilometre “credits” allocated to individuals or businesses

Increased mobility options

The types of increased mobility options will be different depending on the scheme type, but some examples are:

- Creation of mobility hubs
- Increasing/improving walking or cycling facilities
- Increasing/improving public transport
- Facilitating vehicle hire and/or car sharing
- Providing parking spaces in alternative locations (e.g., Park & Ride)

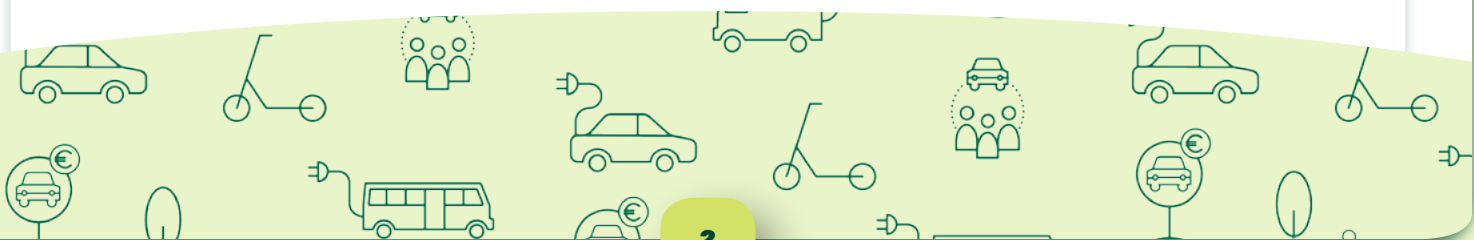
Financial incentives

These will differ depending on the planned UVAR measures, but some options include:

- Financial incentives for fleet renewal, e.g., for the purchase, renting or leasing of greener vehicles (including tax exemption)
- Membership or vouchers for sustainable mobility options (e.g., public transport and shared mobility services) such as discount cards, free rides or annual passes for public transport or consolidation centres
- Monetary incentives for cycling trips (e.g., for bike-to-work) or for (e-)cycle or (e-)cargobike purchases
- Grants towards retrofits (e.g., diesel particulate filters, new engine or fuel conversion)
- Compensation for scrapping an old vehicle (either financial or through a voucher), often differentiated by emission standards, vehicle type or owner income.

Organisational support

This can include logistical, administrative, promotional or other support provided by the city. This might include supporting alternative business models (e.g., for car parks that have no/fewer customers), facilitating changes and working on individual solutions to resolve issues.



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Consider combining with:

Pricing Aspects

Road charges/tolls:

- Permit charge
- Charge based on emission standards (pollution charge)

Parking charge: Charge based on emission standards (pollution charge)

Road charges/tolls can be an alternative method of implementing regulation by emissions; instead of regulating (banning) 'undesirable' vehicles, these vehicles are charged a fee at the level of a fine, and 'compliant' vehicles are charged no fee. A parking charge can be one of the phases of this measure or a linked measure.

Future considerations

Regulating by emission is a tool to push the change towards lower emissions. As EU emission standards tighten, the differential improvement may be less (depending on the real world emissions of newer vehicles). Putting in place tight emissions standards (e.g., Euro 6/VI) can currently also cause a reduction in overall traffic; this effect will lessen when more low-emitting vehicles are on the road. Additional measures may be needed to maintain this traffic-reducing effect.

Regulatory Measures

Regulation by vehicle type and dimensions: Vehicle type

Regulation by trip purpose:
Delivery and logistics

Regulation by permit:

- Permit to travel
- Parking permit
- Planning permit conditions

Further guidance

- Communicating the aim of the scheme
- Exemptions
- Financial or in-kind incentives
- Enforcement options
- Legal framework
- Managing permits (and exemptions)

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*Example: Stuttgart, Germany*Description

The city of Stuttgart has a single low-emission zone covering the entire urban area, where only vehicles displaying an appropriate sticker are allowed. In some areas of the city, there is a diesel ban that prevents diesel passenger cars from driving or parking.

Enforcement methods

Law enforcement officers

Time windows

In effect at all times

Phasing and upscaling

- 2005. State of Baden-Württemberg passes its first clean air plan
- 2008. Introduction of the low-emission zone
- 2018-2019. Particulate matter alarm in place based on predictions on conditions from the German Weather Service
- 2019. Introduction of a diesel traffic ban for Euro 4
- 2020. Update of the diesel traffic ban to include Euro 5

Other building blocks put in placeRegulatory Measures

Regulation by vehicle type and dimensions: Vehicle type

Regulation by trip purpose:
Delivery and logistics

Regulation by permit: Permit to travel

On the right, the road sign for the German Low Emission Zone. From *Umweltzone Neu-Ulm*, by Kereul, 2018, April 22. Wikimedia Commons. CC BY-SA 4.0



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Stuttgart, Germany

Complementary measures

Exemptions

- Two- and three-wheeled motor vehicles
- Mobile machines and equipment, work machines, agriculture and forestry tractors/towing machines
- Emergency vehicles
- Vehicles of people with limited mobility
- Classic cars
- Vehicles for which special rights can be claimed (Paragraph 35 of the German Road Traffic Regulations)
- Vehicles belonging to non-German troops from NATO non-contractual states, operating under military cooperation, and for journeys required for urgent military reasons
- Civilian vehicles being used by order of the German Federal Armed Forces, as long as this concerns undelayable journeys required to fulfil official duties for the German Federal Armed Forces

Increased mobility options

- E-scooter and pedelec sharing
- Bike sharing
- Car sharing
- More cycle paths
- More pedestrians pathways
- New tariff scheme for public transport, reduced from 52 zones to 5 ring zones for the entire Stuttgart region

Additional information

The city administration uses electric cargo bikes and electric wheel loaders, as well as electric watering vehicles. In addition, there are some pilot projects as with all-electric light trucks, all-electric sweepers and hydrogen-powered cargo bikes.

References

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