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## 1. Introduction

### 1.1 About the ReVeAL project

Urban vehicle access regulations (UVARs) are one of the tools that can help make cities more liveable, healthier and more attractive for all. The goal of the EU Horizon 2020 project ReVeAL is to support cities producing good practice in UVAR and to add UVARs to the standard range of urban mobility approaches across Europe and beyond.

The ReVeAL project supports UVAR implementation in six pilot cities and is developing a tool to help other cities decide what UVAR measures may be appropriate for them and what to be aware of when implementing. The project is also producing a number of guidance documents on specific UVAR-related topics – this document on exemptions and permits is one of them.

To find out more about ReVeAL, please see the [ReVeAL website](#).

### 1.2 Purpose and context of this document

This document is one in a series of ReVeAL UVAR guidance documents. It is intended to support both the ReVeAL pilot cities and any other cities considering UVAR measures. Exemptions and/or permits are used in the implementation of low emission zones (LEZs) and limited traffic zones (LTZs). LEZ and LTZ each have a different aim, premise and approach, especially with respect to exemptions and permits. This document aims to explain a range of possible uses of permits and exemptions in LEZs and LTZs, and the related effects. The published documents can be found [on the ReVeAL website](#).

*This document is for information and guidance. ReVeAL and its partners take no responsibility for any action taken based upon its content.*

## 2. Definitions and terminology

Terminology and clear definitions help to avoid misunderstanding, particularly when dealing with terms and concepts that are new, still in development or used in different ways in different contexts. Exemptions and permits are commonly used in UVARs, but they may be applied in different ways or for different purposes in different UVARs. For more UVAR-related terminology, please see the online ReVeAL [UVAR glossary](#).

A **low emission zone** (LEZ) requires that all vehicles entering the zone meet a set emission standard (e.g., at least Euro 3) in order to reduce pollution emissions. Emissions standards are generally valid for all relevant LEZs, and exemptions generally either local or national.

A **limited traffic zone** (LTZ) aims to restrict the number of vehicles entering the zone to certain user and/or vehicle categories (e.g., residents, public transport). A vehicle may enter the LTZ only if the user has been granted a permit in advance.

It is important to underline that low-emission zones and limited-traffic zones follow two different approaches and philosophies:

- an LEZ aims to reduce *emissions* by excluding the most polluting vehicles
- an LTZ aims to reduce *traffic* by limiting access only to essential motorised trips

While stricter LEZs (e.g., the London Ultra-Low Emission Zone) can also contribute to traffic reduction (at least in the early stages when the number of compliant vehicles is still low), basically an LEZ accelerates the shift to cleaner vehicles with no discrimination in terms of user category.

On the other hand, a limited traffic zone builds on the principle that some motorised access is non-essential and can therefore simply be banned, thus forcing the shift to walking, cycling and public transport. Stricter LTZs can also include emission standards (in addition to user categories) thus incorporating the low emission zone principle to reduce emissions in permitted vehicles.<sup>1</sup>

A complying vehicle may enter an LEZ if it is visually identified through a sticker, as being registered in a database<sup>2</sup> or an LTZ if it has a permit or exception that permits entry through a physical barrier.

In a limited traffic zone, the basic situation is no vehicle access to the zone. However, certain vehicles, such as postal or refuse vehicles, are essential to the running of the zone; these vehicles are generally identified by the vehicle livery and are given exceptions. For all other vehicles, each individual entry (or vehicle) is given individual permission to enter according to the importance or priority of that vehicle or trip entering the zone. A **permit** therefore serves as proof of compliance to the rules set by the LTZ scheme.

In a low emission zone, the term **exemption** is used more broadly to refer also to those categories 1) for which meeting the standard would be a disproportionate effort for few kilometres, 2) where the user may have difficulty using other transport modes or 3) for emergency vehicles.

The type of entry that might be called an exemption in a low emission zone, could be eligible for a **permit** in a limited traffic zone. This may cause some confusion, which is why this guidance document describes the two UVAR concepts separately.

The general design of the scheme, user needs and stakeholder engagement all help identify which exemptions or permits might be needed in the UVAR (see [ReVeAL Guidance on User Needs and Public Acceptance](#) and other guidance documents as they are published).

### 3. Exemptions in low emission zones

In principle, in a low emission zone, all vehicles must meet an emission standard to be allowed access. All schemes allow for exemptions to the established rules for certain vehicles and for certain user categories.

In general, long or complex lists of exemptions with different requirements should be avoided. The fewer exemptions, the more impact and credibility a LEZ has. Ideally public vehicles should comply with all requirements (i.e., not require exemptions) so as to lead by example. On the other hand, complying with LEZs often costs money, so exemptions can be used to lessen the financial impact on particular groups and to avoid disproportionate costs for high-cost vehicles that are rarely

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<sup>1</sup> This conceptual distinction also exists when we refer to zero emission zones (part of the LEZ family) and car-free or pedestrian areas (part of the LTZ family).

needed in the area. And exemptions, if carefully administered, can help increase acceptability and feasibility of the scheme and can allow the implementation date to be brought forward.

A balance must be found between ensuring access to those who really need it but are unable to afford a compliant vehicle, and a long list of exemptions that weakens the LEZ. Exemptions should be (and be seen as) fair, clear and simple, and should not give the appearance that large numbers of vehicles are exempted. See Table 1 for a list of types of exemptions and their uses.

**Table 1: Types of exemptions in low emission zones**

<b>Type of exemption</b>	<b>Explanation</b>	<b>Further consideration/details</b>
<i>Key roads</i>	Legally required for roads needed for inter-European travel e.g. Trans-European Network (TEN) road network, motorways, harbour access roads due to the EU freedom of movement principle	The motorway LEZ Austrian A12 <sup>3</sup> has a relatively low standard for this reason.
<i>Military vehicles</i>	Usually exempt	Military vehicles are also rarely used in urban areas.
<i>Emergency vehicles</i>	Widely used as their entry is essential and vehicles such as ambulances are expensive specialist vehicles.	Good practice is for the city to work with the providers to aim to comply with the scheme.
<i>Specific expensive low-mileage vehicles</i>	Widely used when such vehicles are needed. These include off-road going vehicles which are allowed to drive on the highway, mobile cranes, concrete mixers, mobile suction machines, show/circus vehicles, agricultural vehicles, (non-commercial) historic vehicles.	The aim should be to keep this list short. An alternative would be to allow a certain number of paid exemptions per year.
<i>Hardship</i>	<p>These exemptions are designed to reduce disproportionate impact on low-income drivers/operators and reduce the potential negative socio-economic impact without significantly reducing the positive environmental impact.</p> <p>These are used in the Netherlands and Germany for individuals or companies where compliance would cause significant financial difficulties.</p>	In practice, few were applied for but it increased acceptance by ensuring that compliance didn't endanger businesses. In Germany, one must prove that retrofitting is not possible and that either a) the applicant's income per dependent is below a given level or b) purchasing a compliant vehicle would risk bankruptcy. In the Netherlands applicants are assessed on a case-by-case basis.

<sup>3</sup> <https://www.urbanaccessregulations.eu/countries-mainmenu-147/austria-mainmenu-78/a12-motorway-tirol>

Type of exemption	Explanation	Further consideration/details
<i>Retrofits</i>	<p>These are used to allow more cost-efficient compliance. Sometimes retrofitting to the emissions standards is included as an exemption. Sometimes retrofitting is made part of the standard.</p>	<p>The actual particulate reduction is also increased with diesel particulate filter retrofits, compared with meeting the next Euro standard.</p> <p>A later phase of an LEZ may remove the permission to use retrofitting to comply when the retrofit does not address all pollutants.</p>
<i>Interim/sunset clauses on exemptions</i>	<p>Any exemptions can be of limited duration, for example those at the start of a scheme or phase, including:</p> <ul style="list-style-type: none"> <li>• where local residents/businesses had little lead-in time to comply (and the vehicle was owned before the LEZ was announced),</li> <li>• to give some types of drivers (e.g., disabled) additional time to comply due to the (expensive) modifications made to the vehicles.</li> </ul>	<p>An alternative is to give sufficient lead time before initiating or to have an interim period (perhaps six months), where notices are given instead of penalties (e.g., a letter saying “if we had enforced, you would have received a €XX fine”). This can also help inform affected parties.</p> <p>Another option is to bring in restrictions of certain categories of vehicles or drivers at a later phase of an LEZ, with standards tightened over time.</p> <p>The time period of any exemptions with sunset conditions should be clearly defined and should not be extended. As with any exemptions, they should not be used too widely.</p>
<i>Specific journeys or temporary exemptions</i>	<p>Specific vehicles entering the zone may be able to apply for exemptions in some LEZs. Usually this is limited to certain specialised high-cost vehicles (e.g., crane lorries). In weaker schemes, they may be available for specific or individual trips.</p>	<p>Either individual entries for “the common good” or a certain number of entries can be purchased (see below). These need to be carefully and strictly given.</p>
<i>Vehicles for registered disabled persons</i>	<p>Disabled vehicle tax class, national vehicle database or Blue Badge are often used, but increasingly LEZs are focusing on exempting vehicles that would require expensive adaptations.</p>	<p>Different to LTZs, affected disabled persons can still access the area if they comply with the emissions standard (although disabled vehicles are still exempted in some countries). This includes Italy, where LEZs are based on the same legislation as LTZs (and where there are also generally more exemptions than in other countries).</p>
<i>Limited purchased exemptions</i>	<p>These give the potential for wide ranging exemptions that would otherwise mean a high administrative burden. They are a form of exemption where a certain number of entries can be purchased. These avoid the bureaucracy of exemptions while allowing those vehicles that occasionally need/wish to enter the zone the opportunity to do so.</p>	<p>The premise is that regular visitors will have more impact on air quality (and congestion) than those entering rarely. The Belgian model allows for a maximum of 8 entries per year for an administrative fee of €35. The London model has a high daily charge that works as both a penalty and a charge (€130-260 for a single daily entry depending on vehicle type).</p>

Type of exemption	Explanation	Further consideration/details
<i>Electric and hybrid vehicles</i>	Although they would meet the standards, electric vehicles are often officially exempted in LEZs. Hybrid vehicles are best targeted with their Euro standard, possibly using geofencing for plug-in hybrids in zero emission zones. <sup>4</sup>	In practice exempting electric vehicles it is not necessary (unless perhaps as a political statement), as EVs meet the emissions standards.
<i>Where and when public transport is not available</i>	Some German and Italian schemes have made exemptions for individuals unable to afford a compliant vehicle and whose work hours (with proof) are when no public transport is available;	These exemptions are rarely used any more.

## 4. Exemptions and permits in limited-traffic zones

Different from a low emission zone, the purpose of a limited traffic zone is to reduce the number of vehicles in an area. This is done principally by permitting access to a limited set of user categories (mostly to guarantee essential access needs) but can also include vehicle-based restrictions. LTZs use both exemptions and permits to function properly.

Here too, long or complex lists of exemptions and permits with different requirements should be avoided.

### 4.1 Exemptions in limited traffic zones

Commonly exempted motor vehicles (i.e., those that do not need to request and show a permit to enter an LTZ) are vehicles that operate public services in the city. These are often vehicles that are obvious visually identifiable, and include:

- Emergency service vehicles (police, ambulances and emergency doctors, fire service)
- Waste collection and street cleaning
- Public transport including taxi and car-hire with driver services
- Postal / parcel services<sup>5</sup>
- Utility vehicles (electricity, digital, gas, water and sewerage network operators)
- Surveillance vehicles (parking wardens, security firms)
- Funeral vehicles
- Transport of money and valuables

<sup>4</sup> See this [ReVeAL guidance document on geofencing for UVAR](#).

<sup>5</sup> These are sometimes exempted and sometimes require a permit. Because of their large number, parcel services may require a permit – sometimes also with conditions for operation; see overlap with freight carriers below.

These vehicles are normally (and sometimes automatically) included in the “white list” (if a camera-based enforcement system is in place) or given a transponder (for physical boundaries) or not penalised by the local police if the exemption is indicated in the regulation.

## 4.2 Permits in limited traffic zones

LTZ permits are linked to the categories indicated in the local regulation or ordinance, and are primarily divided into four main groups:

1. the user’s **place of residence** (i.e., LTZ residents or resident businesses)
2. **health/physical condition** (people with reduced mobility, people who need assistance)
3. **regular and ongoing need for access** (e.g., garage owners/tenants, couriers, maintenance workers, caregivers, etc.)
4. **occasional access** (e.g., hotel clients)

A permit can be **permanent** (but with a predefined duration e.g., 1 to 5 years and easily renewable), **temporary** (e.g., limited to some months or days) or **short term/occasional** (e.g., a day pass or hourly pass).

Sometimes **costs** are attached to permits; these can be differential to influence the type of vehicle/permit applied for. In Bologna for example, the second and third permits in a household are much more expensive than the first to discourage multi-car households.

Those who would like to access the LTZ, must demonstrate that they meet the requirements named above and must formally request a permit. Different rules indicate whether a vehicle may circulate and load/unload or pick up/drop off or if it may also park in the LTZ.

### *Main LTZ permit holders*

The following list gives the main user categories generally allowed to hold a permanent or temporary permit for a limited traffic zone:

- **Residents** permanently living in the LTZ (as stated by the municipal registry office as owners/tenants of a property)
- **Owners/tenants of a garage** in the LTZ
- **Freight carriers\*** – professional third-party operators (e.g., express couriers, parcel delivery services, logistics companies) or companies delivering goods on an own-account basis (e.g., retailers located in the LTZ, food and beverage producers/distributors, companies transporting heavy or voluminous goods, street/public market vendors, pharmacies, catering services, florists, etc.)
- **Maintenance and tradespeople** providing regular and ongoing services in the LTZ\* – e.g., providers of technical assistance on IT systems, elevators, bar equipment, cleaning companies, electricians, plumbers and other tradespeople
- **People with disabilities** with e.g., an EU parking card<sup>6</sup> or disabled vehicle tax class
- **Caregivers** – either professionals or relatives who provide assistance to someone living in the LTZ who is dependent on their help (e.g., elderly or disabled persons, children)
- **Doctors** of the local health service and/or with a clinic in the LTZ
- **Public institutions** – for their official fleet only

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<sup>6</sup> This is often abused, so cities are increasingly considering other options for enabling disabled access.

\* allowed in specific time windows.

## *Occasional and temporary permit holders*

Following is a list of those who are usually issued occasional or temporary permits to a limited traffic zone:

- **Tradespeople**
- **Construction companies**
- **Event organisers**
- **Wedding cars**
- **Removal companies** performing house moving operations
- **Visitors** of a LTZ resident (with the resident applying on behalf of visitors, contractors or suppliers)
- **Clients of hotels** in the LTZ – usually only for check-in and check-out with hotels applying on behalf of their guests
- **Justified urgent and/or occasional needs** (normally with a maximum number of accesses per month)

## *Other possible (permanent) permit holders*

Less restrictive LTZs might also include the following categories as holders of a permanent permit (instead of an occasional one):

- **Dwellers not residing in the city** – individual citizens or families who live for certain months/ weeks of the year in the LTZ, e.g., university students or owners/tenants of a vacation apartment)
- **Retailers and tradespeople** located in the LTZ
- **Professionals** located in the LTZ
- **Owners of private properties** in the LTZ but not living in the LTZ
- **Minors not living in the LTZ** who need to be accompanied to school or to relatives in the LTZ
- **Private vehicles of people acting in an institutional role or working for a public entity**, e.g., police officers, city council officers, city council members
- **Journalists and media companies**

## *Further vehicle-related restrictions*

In addition to user-related eligibility categories, LTZ regulations and ordinances may also include vehicle-based or other conditions/restrictions. This means that some vehicles might be totally excluded from the possibility to obtain a permit, even if the user is eligible.

The most common ones are **type or size restrictions** (e.g., excluding heavy duty vehicles entirely or limiting their permitted weight or length or car-free areas where bicycles should be the predominant vehicles).

The most relevant restriction is **the number of vehicles** allowed per permit holder (e.g., maximum 2 or 3 vehicles per resident family). In some LTZs, permit-holders may associate more vehicles to the permit but can only access the zone with one vehicle per day/time (i.e., they are fined if two vehicles enter the LTZ at the same time).

As with LEZs, some LTZ schemes allow irregular permits to be purchased (perhaps with a limited number allowed per year), with or without other criteria. This can reduce the administrative burden of checking each permit requirement. Care needs to be taken and a balance struck between a high-cost permit or the risk of high number of permits being applied for that jeopardise the scheme.

As noted, emission standards can also be part of the scheme, thus embedding aspects of an LEZ into the LTZ. This can also happen with zero emission zones where the few vehicles allowed in are zero emission, or delivery restrictions where cleaner vehicles are given priorities.



Figure 1: Phasing out polluting vehicles in the new “Environmental LTZ” of Bologna, Italy (<https://www.tper.it/ztlambientale>)

## 5. Managing permits (and exemptions)

For every limited-traffic zone, eligible users must complete and submit a permit request. Such request is processed by a **permit management system**. This system receives the application, performs or facilitates the verification processes necessary to validate the user’s request, and finally issues the respective permit.

In the most basic configuration, all of the tasks associated to the permit management system, are done manually. Applicants submit a request in person at the front office of the LTZ manager (a public authority or a mobility/parking company), here personnel receive and process the application. Depending on the type of permit, this request may include supporting documents (e.g., proof of residence, vehicle registration, medical documents) whose validity should be verified. In case of a positive assessment of the application, the corresponding permit is issued.

Some LTZ schemes require a printed permit to be clearly visible in the vehicle (usually for manual enforcement), while some require an RFID transponder to open gates or pay fees. For others, the “permit” is simply the vehicle registration number’s inclusion in the ‘white list’ of a database of vehicle number plates for camera enforcement. If the request cannot be produced or validated on the day of the application, permits or transponders can be sent by post or applicants can be asked to pick them up in the issuing office. Sometimes printed and visible permanent permits are preferred to virtual ones for transparency reasons and for easy check/identification by the local

police and the community. In the absence of camera/RFID transponder-based enforcement systems, hologram stickers on permits can help to avoid falsification.

An effective LTZ scheme should have a limited number of categories eligible for permanent/long term permits. Hourly or daily passes with no or few prerequisites (but a limited number possible per year to be granted with little/no checking) can be preferable to manage occasional motorised access needs than a large number of permit categories. Therefore, depending on the design and impact of the LTZ, the number of permit requests may pose a challenge to cities. It is crucial then to simplify the application and validation processes as much as possible to ensure compliance and reduce the administrative burden for both applicants and city. For example, the application form may include declarations and information that negate the need to attach official certificates/documents.<sup>7</sup>

To manage a high number of applications and reduce the burden on personnel, some cities opt for a digital permit management system. It may be possible for a city's internal IT/website service to design and implement an online permit management system (e.g., [Pamplona](#) or [Siena](#)). Alternately, third parties offer products to support cities with permit management systems; these can be embedded into the city website or use a tailored portal (Figure 3). The LTZ websites of Cortina and Martina Franca in Italy have LTZ websites provided by [Parkforfun](#), and Ghent's permit management system software, *City Permit*, is provided by [Sigmax](#) (Figure 2).

Digitalisation and a user-friendly design of the permit management system can make it easier and more convenient for vehicle operators (thereby increasing acceptance) and can significantly reduce the city's resources needed for permit management. Martina Franca is a small town in Southern Italy with a population of 50,000. The permit management solution provided by Parkforfun accelerated the productivity of front office subscriptions by a factor of 5 and online requests by a factor of 10 compared with manually processing the requests.

It's important to stress that every permit must be checked and validated by the authority's personnel. The time needed for processing a single permit can be greatly reduced by using tablets with cameras at the front office for immediate upload of digital attachments and/or by including tick boxes for validation. This has a positive impact on both personnel costs and administrative burden.

Such systems can allow applicants to register their application using an electronic ID card or a security code via mobile app (see Figure 2), apply for a specific permit category and submit the supporting documentation digitally. Payment of any fees, either for permits or one-off exemptions/permits, can also be carried out within the website application. Some schemes have the possibility to buy immediate permits from parking meters. This is done, for example, in the city of Parma.

The requirements for a permit request vary depending on the permit type. Permanent or temporary permits, for instance, require applicants to submit supporting documentation. Occasional permits, on the other hand, require little to no documentation and can in some cases be generated immediately. An online process can therefore deal with all applications for occasional permits and also deal with issuing of permit (doing so automatically for 'white list' entries) and notifying applicants of the outcome. This enables a city to focus its personnel time and resources on validating and verifying documentation for permanent and temporary permits.

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<sup>7</sup> The process is more rigorous for those applying for a permanent permit, usually requiring at least some documentation in attachment.

Exceptions could also be managed through such an online system. On the other hand – particularly for low emission zones where few exemptions are desirable – making the process of applying for an exemption easy may increase the number of applications, which might be counter-productive. However, the same approach for occasional exemptions may be useful. The [Antwerp LEZ](#) is an example that offers the online purchase of day passes that can be bought up to 8 times a year.

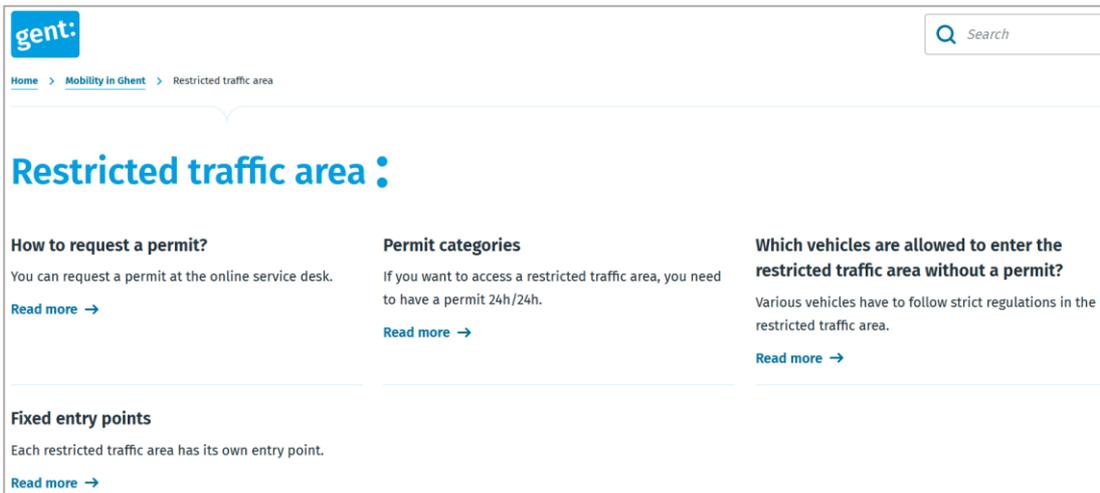
A digital permit management system would also facilitate the application of permits by non-local users, as it would mean they could apply for a permit online in advance – otherwise permits that need time to be granted or issued are difficult for visitors. Hotels and sometimes also residents or doctors in an LTZ can usually apply for occasional permits for their guests, visitors or patients. The LTZ schemes in the cities and towns in the Italian region of Veneto can connect to the [ZetaTiElle Network](#), a system that certifies EU blue badges and automatically allows drivers with disabilities access to several LTZs with just one application.<sup>8</sup>

Users should always be able to request a permit without the need of an electronic device, i.e., in-person or postal applications should always be an option. Providing different means to apply can increase compliance; it also creates a user-friendly system for more user groups.<sup>9</sup>

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<sup>8</sup> The European Commission is working on measures for cross-border foreign vehicle enforcement; access to these future options may well be easier with digital data. Upcoming ReVeAL guidance documents will address privacy and camera enforcement and foreign vehicle enforcement.

<sup>9</sup> ReVeAL also provides [guidance on user needs and public acceptance of UVARs](#).



**gent:** Home > Mobility in Ghent > Restricted traffic area

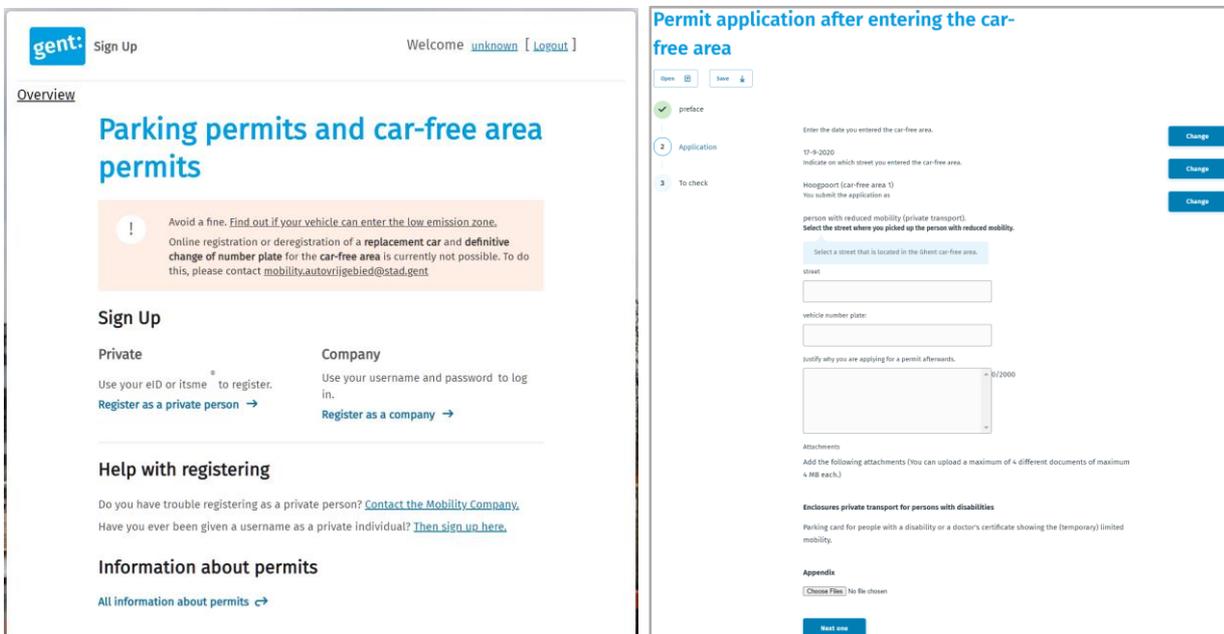
**Restricted traffic area :**

**How to request a permit?**  
You can request a permit at the online service desk.  
[Read more →](#)

**Permit categories**  
If you want to access a restricted traffic area, you need to have a permit 24h/24h.  
[Read more →](#)

**Which vehicles are allowed to enter the restricted traffic area without a permit?**  
Various vehicles have to follow strict regulations in the restricted traffic area.  
[Read more →](#)

**Fixed entry points**  
Each restricted traffic area has its own entry point.  
[Read more →](#)



**gent:** Sign Up Welcome [unknown](#) [Logout]

**Overview**

**Parking permits and car-free area permits**

**Sign Up**

**Private**  
Use your eID or itsme to register.  
[Register as a private person →](#)

**Company**  
Use your username and password to log in.  
[Register as a company →](#)

**Help with registering**  
Do you have trouble registering as a private person? [Contact the Mobility Company.](#)  
Have you ever been given a username as a private individual? [Then sign up here.](#)

**Information about permits**  
[All information about permits ↗](#)

**Permit application after entering the car-free area**

Open Save

1 preface

2 application

3 To check

Enter the date you entered the car-free area.  
17-9-2020  
[Change](#)

Indicate on which street you entered the car-free area.  
Hoogpoort (car-free area 1)  
[Change](#)

You submit the application as  
person with reduced mobility (private transport).  
Select the street where you picked up the person with reduced mobility.  
Select a street that is located in the Ghent car-free area.  
street  
vehicle number plate:

Justify why you are applying for a permit afterwards.  
0/2000

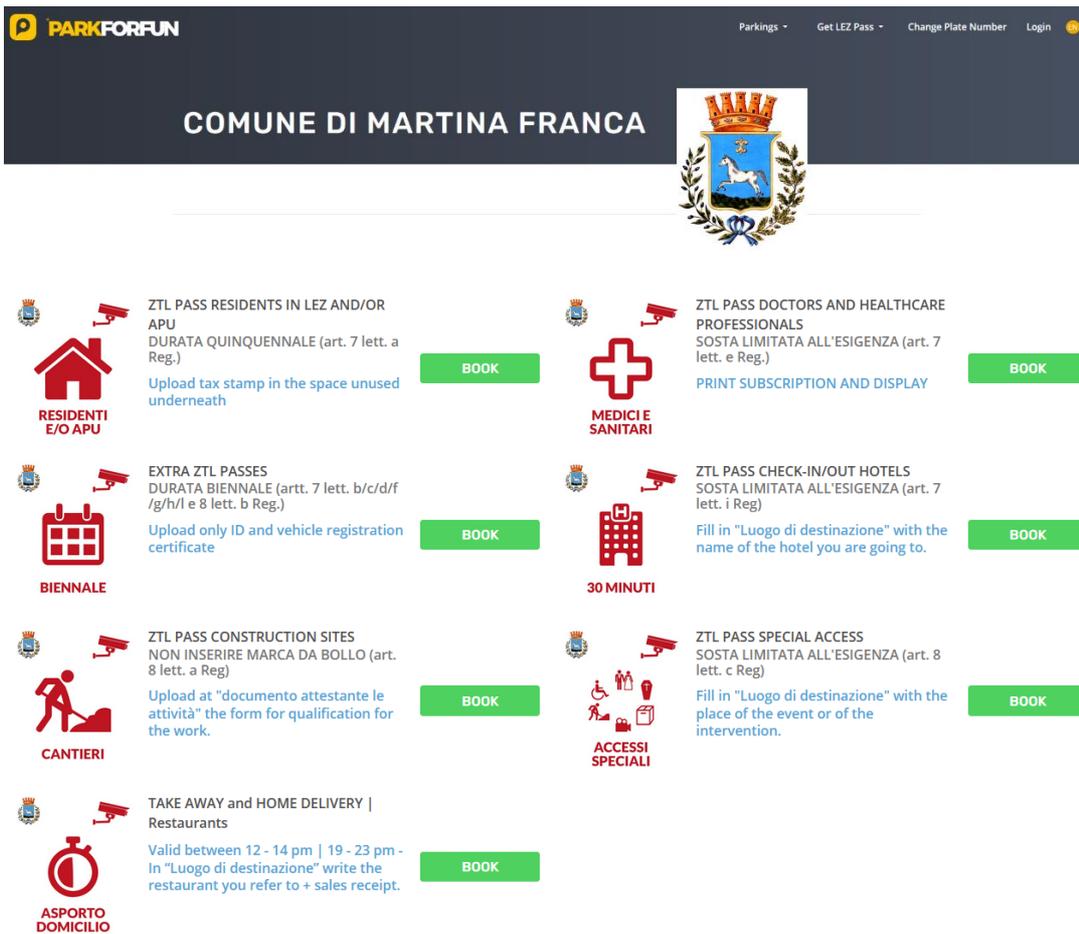
Attachments  
Add the following attachments (You can upload a maximum of 4 different documents of maximum 4 MB each.)

**Enclosures private transport for persons with disabilities**  
Parking card for people with a disability or a doctor's certificate showing the (temporary) limited mobility.

**Appendix**  
[Choose File](#) No file chosen

[next step](#)

Figure 2: The LTZ information and permit management system of Ghent, Belgium (<https://stad.gent/en/mobility-ghent/restricted-traffic-area>)



The screenshot shows the website interface for the Comune di Martina Franca. At the top, there is a navigation bar with 'PARKFORFUN' logo and links for 'Parkings', 'Get LEZ Pass', 'Change Plate Number', and 'Login'. Below the navigation bar is the header for 'COMUNE DI MARTINA FRANCA' with the city's coat of arms. The main content area displays several permit categories, each with an icon, a title, a description, and a 'BOOK' button. The categories include:
 

- RESIDENTI E/O APU**: ZTL PASS RESIDENTS IN LEZ AND/OR APU. DURATA QUINQUENNALE (art. 7 lett. a Reg.). Upload tax stamp in the space unused underneath.
- MEDICI E SANITARI**: ZTL PASS DOCTORS AND HEALTHCARE PROFESSIONALS. SOSTA LIMITATA ALL'ESIGENZA (art. 7 lett. e Reg.). PRINT SUBSCRIPTION AND DISPLAY.
- BIENNALE**: EXTRA ZTL PASSES. DURATA BIENNALE (art. 7 lett. b/c/d/f /g/h/i e 8 lett. b Reg.). Upload only ID and vehicle registration certificate.
- 30 MINUTI**: ZTL PASS CHECK-IN/OUT HOTELS. SOSTA LIMITATA ALL'ESIGENZA (art. 7 lett. i Reg.). Fill in "Luogo di destinazione" with the name of the hotel you are going to.
- CANTIERI**: ZTL PASS CONSTRUCTION SITES. NON INSERIRE MARCA DA BOLLO (art. 8 lett. a Reg.). Upload at "documento attestante le attività" the form for qualification for the work.
- ACCESSI SPECIALI**: ZTL PASS SPECIAL ACCESS. SOSTA LIMITATA ALL'ESIGENZA (art. 8 lett. c Reg.). Fill in "Luogo di destinazione" with the place of the event or of the intervention.
- ASPORTO DOMICILIO**: TAKE AWAY and HOME DELIVERY | Restaurants. Valid between 12 - 14 pm | 19 - 23 pm - In "Luogo di destinazione" write the restaurant you refer to + sales receipt.

Figure 3: The LTZ information and permit management system of Martina Franca, Italy (<https://www.parkforfun.com/en/company/48>)

## 6. Recommendations

Despite the different underlying philosophies, the distinction between a low or zero emission zone and a limited traffic or car-free zone is increasingly blurring.

As we have seen, there are both limited traffic zones which embed aspects of a low emission zone as well as zero emission zones implemented via a limited traffic/car-free zone mechanism. In some contexts, a scheme is “marketed” as a zero-emission zone as this is its main objective, and also to facilitate public acceptance and understanding even if the legal implementation mechanism used is permitting. There are also differences that exist purely in name, as in low emission zones with “exemptions” that need to be demonstrated (these would be seen as a permit with a request mechanism as in a limited traffic zone).

That said, the effectiveness of an LEZ or LTZ scheme is largely based on the details of its design and – importantly! – on the effectiveness of its enforcement. As a general rule, the aim should be as few exemptions (LEZ and LTZ) and permit types (LTZ) as possible, and these – and the entire scheme – should be clear and understandable and well enforced.

A stakeholder process is likely to result in calls for many exemptions or permits. The role of the scheme designer is to balance the initial scheme popularity and its political feasibility against ensuring sufficient impact to achieve the goals of the scheme.

All permits granted should have limited validity (e.g., one year) to enable the phasing/tightening of a scheme. Phasing can be done by:

- Reducing the number of permits issued (e.g., by limiting the number of vehicles that are given certain permit types)
- Increasing the number of occasional permits at the cost of permanent ones
- Adding more or stricter requirements
- Penalising offenders, with special penalties for persistent offenders (e.g., those with permits who regularly breach the time frames can be given no/fewer permits in future years)

For both LTZs and LEZs, it is wise to give as much warning as possible of the next phase so that vehicle owners and eligible users can plan and choose the most appropriate adaptation for their individual circumstances. If they know that the final goal of an LTZ is to only allow zero emission vehicles, this may play a role in how they adapt at earlier phases.

While any scheme is likely to have both positive and negative impacts, the design should aim to minimise negative impacts through appropriate complimentary measures, permits/standards/requirements and, where necessary, exemptions.

Factors that raise the quality of any scheme, and can also help minimise the need for exemptions include:

- Tackling a widely acknowledged problem
- Addressing a legal necessity e.g., air quality or larger goal such as the climate emergency
- Strong political leadership or consensus
- A well-designed scheme
- Overcoming potential problems or resistance, for example by providing a zero-emission shuttle service for people with disabilities, micro-mobility, MaaS, delivery hub(s) or viable alternatives for car parks no longer used or ground floor rooms that were previously converted into garages.<sup>10</sup>
- A good communication strategy with clear facts and explanations and visual presentation of the scheme goal and assessment of its impacts
- Good “marketing”, so that people are more convinced to comply than to attempt to get an exemption/permit.
- Spreading information about the scheme with sufficient time for people to be aware of it and make adaptations
- Introducing the scheme in phases rather than all at once
- Providing a user-friendly (online) permitting process
- Making exemptions and permits time limited (e.g., one year)

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<sup>10</sup> This was done quite extensively in the ReVeAL city of Padua.

## 7. References and Links

ReVeAL UVAR guidance (all available at: <https://civitas-reveal.eu/resources-overview/publications/guidances/>)

- Geofencing
- Permits and exemptions
- Mobility concepts
- System design/technology
- User needs and public acceptance of UVARs
- Data and monitoring\*
- Stakeholder involvement\*
- Communication, awareness raising (incl. digitising UVARs)\*
- Privacy and camera enforcement\*
- Foreign vehicle enforcement\*
- General – What to think about when planning an UVAR?\*

\*available summer 2021

- Pamplona (<http://www.accesocascoantiguo.com/>) and Siena (<https://www.comune.siena.it/Servizi-Online/Accesso-ZTL>) used their cities' internal IT/website service to design and implement online permit management systems.
- The LTZ websites of Cortina and Martina Franca in Italy have LTZ websites provided by Parkforfun: <https://www.parkforfun.com/en/company/48>
- ZetaTiElle Network, a system that certifies EU blue badges and automatically allows drivers with disabilities access to LTZs in the cities and towns in the Italian region of Veneto with a single application: [https://www.regione.veneto.it/web/informatica-e-e-government/ztl\\_vivipass](https://www.regione.veneto.it/web/informatica-e-e-government/ztl_vivipass)
- Ghent's permit management system software (*City Permit*) provided by Sigmax: <https://www.sigmax.nl/oplossing/citypermit/>
- Antwerp LTZ: <https://www.slimnaarantwerpen.be/en/LEZ>