

Zero Emission Zones

Taking forward the Mayor's Transport Strategy proposal for Zero Emission Zones

Guidance Note for Local Zero Emission Zones

Version 1: September 2019

1. Introduction

This guidance note provides further detail on the design and implementation of Zero Emission Zones (ZEZs) proposed in the 2018 Mayor's Transport Strategy (MTS)¹. ZEZs are areas that prohibit vehicles which do not meet the specified exhaust standards set out in this guidance note. The establishment of ZEZs will be an essential part of the move towards zero emission transport.

The principles contained in this guidance note should also be applied to the design and implementation of similar schemes, such as Low Emission Neighbourhoods, ultra low emission streets, and local low emission zones.

The primary audience for this guidance note are London boroughs wishing to pursue ZEZs in their local authority area. However, the guidance note may also be relevant for other stakeholders, such as Business Improvement Districts, developers and landowners.

It is important to recognise that the guidance note has been prepared in the policy and technology context at the time of publication. The timeframe of the guidance note is three years to take into account current zero emission transport capabilities.

The guidance note will form the basis of decisions by Transport for London (TfL) and the Greater London Authority (GLA) for funding requests by boroughs to support local ZEZs, through existing programmes such as Liveable Neighbourhoods, the Mayor's Air Quality Fund (MAQF) and borough Local Implementation Plans (LIPS). The alignment of local ZEZ proposals to the principles set out in this document will be taken into consideration during any funding decisions. For boroughs intending to apply for funding through the MAQF, this note should be read in conjunction with the MAQF guidance².

Structure of this document

The guidance note is divided into five sections:

- **Policy context** – provides the policy context for local ZEZs to improve air quality and to deliver zero emission transport in London
- **Approaches** – sets out suggested approaches and objectives for local ZEZs to deliver the MTS
- **Design** – provides parameters for the design of local ZEZs
- **Implementation** – sets out the key considerations for the process of implementing a local ZEZ
- **Supporting measures** – details other measures that could be considered as part of a local ZEZ

¹ Mayor of London. Mayor's Transport Strategy. Transport for London. March 2018.

² Mayor's Air Quality Fund guidance is available via www.london.gov.uk/air-quality-fund

2. Policy context

This part of the guidance sets out the background and policy context for local ZEZs within the framework of the MTS.

Zero emission road transport

Reducing greenhouse gas emissions and harmful air pollution emissions is essential for London's future as a healthy, economically successful and sustainable city. The Mayor's London Environment Strategy³ and the MTS set out the Mayor's goal that by 2050 London will become a 'zero carbon city' and will have the best air quality of any major world city, going beyond the legal requirements to protect human health and minimise inequalities.

The Mayor's ambitions for a zero carbon London by 2050 can only be achieved if all vehicles are zero emission by that date, which refers to vehicles that produce zero harmful emissions at the exhaust. The MTS sets out a roadmap to achieving zero emission transport and to encourage the update of ultra low and zero emission technologies.

To deliver the Mayor's ambition of zero emission transport, an increase in trips undertaken by walking, cycling and public transport will be required, with all remaining vehicle trips conducted with zero emissions.

Specifically, the MTS sets out the following aims to achieve zero emission road transport by 2050:

- 80 per cent of all trips in London to be made on foot, by cycle or using public transport by 2041;
- Reduction in overall traffic levels by 10-15 per cent by 2041; and
- Remaining vehicles on London's roads to be zero emission by 2050, including:
 - All licensed taxis and private hire vehicles being zero emission capable by 2033 at the latest; and
 - A zero emission bus fleet by 2037 at the latest.

Zero Emission Zones

The MTS identifies ZEZs as an essential part of the move towards zero emission transport. The MTS sets out the following proposal for ZEZs:

Proposal 35

The Mayor, through TfL and the boroughs, and working with Government, will seek to implement zero emission zones in town centres from 2020 and aim to deliver a zero emission zone in central London from 2025, as well as broader congestion reduction measures to facilitate the implementation of larger zero emission zones in inner London by 2040 and London-wide by 2050 at the latest.

³ Mayor of London. London Environment Strategy. Greater London Authority. May 2018.

Guidance time horizon

The number of zero emission vehicles is increasing, growing year on year across London and the UK. One in every 36 new cars registered in London are now plug-in. However, overall numbers are expected to still be relatively low by 2020 (at less than 10 per cent), the date from which local ZEZs are to be implemented.

Because of the lack in variety of zero emission vehicles in the UK market, the design and implementation of local zero emission zones will need to be considered at this stage as complementary to other policy measures to deliver zero emission transport by 2050, namely Healthy Streets and improving air quality.

The time horizon for this version of the guidance is three years at which point it will be reviewed and updated to ensure it remains relevant.

Healthy Streets

A key goal of the MTS is for 80 per cent of all trips to be on foot, by cycle or using public transport, and central to achieving this modal shift is the Mayor's Healthy Streets Approach.

The Healthy Streets Approach provides a framework for street improvement projects to prioritise walking, cycling, and public transport, taking space away from other less efficient modes, such as private vehicles.

Local ZEZs offer the opportunity to complement Healthy Streets projects as ZEZs may help to reduce traffic in the near term by prioritising zero emission vehicles and can therefore make way for wider streetscape changes that support active, efficient and sustainable transport.

Improving air quality

Reducing harmful air pollution from road transport is key to supporting the Mayor's wider vision of a zero carbon city by 2050.

The Mayor wants London to go beyond achieving legal compliance with NO₂ limits to deliver further improvements in public health. In particular, the MTS sets the goal for London to achieve the World Health Organization (WHO) recommended targets for Particulate Matter (PM) 2.5 by 2030. While measures such as the Ultra Low Emission Zone (ULEZ) are critical to achieving compliance with legal limit values for NO₂, particulate matter is damaging to health at any level and must be reduced. Further action, such as the introduction of ZEZs, is therefore needed to protect human health and achieve WHO air quality guidelines.

The most effective way to reduce exposure to pollutants and to improve air quality is to continue to reduce the overall amount of vehicle miles travelled in London, alongside a shift to zero emission vehicles.

Local ZEZs offer the potential to both reduce traffic and improve air quality at specific air pollution hotspots to deliver health benefits to a local area.

Future Zero Emission Zones

The MTS states that a central London ZEZ will be delivered from 2025, which will be progressed by TfL in collaboration with boroughs and other stakeholders. As technologies and the zero emission vehicle market mature, and vehicle compliance levels increase, TfL will begin measures to implement larger ZEZs in inner London by 2040 and London-wide by 2050.

Consideration will be given to the local ZEZs in operation and planned within London, as well as other UK cities, during the development of larger ZEZs, to ensure they align.

3. Approaches

This section sets out suggested approaches and objectives for local ZEZs in order to deliver the goals of the MTS.

The overall vision for ZEZs as set out in the MTS is to form an essential part of improving air quality and to facilitate a move towards zero emission transport by 2050.

At a local level, ZEZs are to act as demonstration and intensification areas to complement Healthy Streets public realm schemes, achieve improvements in air quality and contribute to greenhouse gas emissions reductions in London.

Approach 1: Neighbourhood Healthy Streets schemes

- To complement Healthy Streets projects to prioritise walking, cycling and public transport supported by zero emission transport to bring air quality benefits
- These local ZEZs should form part of comprehensive, area-based urban realm improvement schemes to physically transform an area to prioritise walking, cycling and public transport over motorised vehicles. This could be a large-scale intervention, perhaps as part of another scheme, such as a Liveable Neighbourhood, or it could be achieved through smaller-scale interventions to allow access to the cleanest vehicles while enhancing the local area for pedestrians, those on cycles and public transport users.
- Local ZEZs should be an exemplar element of Healthy Streets projects, taking advantage of any reductions in traffic from prioritising zero emission vehicles to encourage other sustainable modes.

Approach 2: Local air quality hotspot schemes

- To tackle specific air pollution hotspots.
- These local ZEZs should be used as an intervention to improve air quality and protect sensitive receptors and user groups, such as schools or hospitals, to decrease exposure to air pollution and deliver health benefits.
- Local ZEZs are most likely best suited to apply to a tightly defined local area for a specific time period, such as certain hours of the day. If timings are extensive then issues related to access for freight, servicing and accessible forms of transport (including taxis) or services such as Dial-a-Ride will need to be mitigated. This could include the introduction of micro-consolidation facilities which enable freight and servicing to be conducted by sustainable last mile modes and vehicles.

It is important to consider carefully which of the two approaches is most suitable for the intended scheme and which objectives the local ZEZ is aiming to meet in order to inform its design. It is acknowledged that there are overlapping benefits that will be gained from either approach. The guidance recommends focusing scheme development around one of these approaches to help determine how the scheme will

be developed and in which location. Any crossover benefits will positively contribute to the ZEZ scheme as a whole and are encouraged.

Local ZEZs will also contribute to wider policy objectives of the MTS to deliver changes to London streets, such as: the Liveable Neighbourhoods initiative to improve neighbourhoods for walking, cycling and public transport; making more efficient use of the less traffic-dominated street network; reducing road danger; and managing freight and servicing trips.

4. Design

This section sets out further guidance for the design of local ZEZs, providing detail on key parameters of: size and location, hours of operation, vehicle emissions standards, vehicle type, signage, enforcement, and exemptions.

The design section is set out in two parts, with specific design guidance depending on the objective of the local ZEZs; either to complement Healthy Streets projects, or to tackle specific air pollution hotspots. In developing local ZEZs, the objective of the ZEZ should be determined first in order to follow the relevant design guidance.

This guidance should be followed for all local ZEZs. There are some differences in approach depending on whether a Healthy Streets ZEZ or local air quality ZEZ is being introduced, where this is the case the differences are separated out for clarity.

Size and location

Healthy Streets ZEZ

While the MTS refers to town centre ZEZs, the expectation is not that ZEZs should be restricted to town centres (as defined in the London Plan and local plans), or cover the entirety of a town centre if not appropriate.

Instead, ZEZs should be incorporated into wider public realm and streetscape improvement schemes. These interventions are particularly effective in town centres.

Local air quality ZEZ

ZEZs that focus on meeting air quality objectives should be located immediately surrounding specific sensitive receptors and limited in size.

Due to the limited variety of zero emission vehicles at the time of this guidance, local ZEZs should target areas or be implemented at times of day that will generally affect few heavy vehicles (ie lorries, buses and coaches) and in particular avoid strategic roads with a large amount of through traffic. In addition, the location of a ZEZ in relation to other ZEZs needs to be taken into account to ensure appropriate access or servicing of the area.

Hours of operation

Healthy Streets ZEZ

ZEZs might operate on an all day, every day basis (ie as part of a pedestrianisation scheme) or at certain defined time periods. Access requirements for buildings within the ZEZ will need to be carefully considered along with the corresponding Healthy Streets scheme.

Local air quality ZEZ

ZEZs should be limited to an effective time period that would address air pollution for a specific sensitive receptor (eg a local ZEZ surrounding a school could operate during the school run and during recess periods when children are playing outside adjacent to the street). Limited hours of operation would help to reduce emissions at

the busiest times but allow flexibility for deliveries and servicing, complementing local freight and servicing plans.

Vehicle type and emission standards

A ZEZ is defined in the MTS as a zone with exclusive access for vehicles with zero-pollutant emissions at the exhaust and other non-polluting forms of transport.

The long-term ambition is for the emissions standards for ZEZs to be zero emission. However, it is clear there will be a gradual progression towards this standard to ensure they remain practical to operate. This is owing to the limited variety of zero emission vehicles on the road and currently available to purchase, although this is forecasted to improve significantly in the coming years.

In the near term, to encourage the switch to the cleanest possible vehicles, an 'effectively zero emission' standard should be implemented. 'Effectively zero emission' is defined in the following section and currently aligns with the Cleaner Vehicle Discount for the Congestion Charge. It should be made clear that an effectively zero emission standard is time-limited; as zero emission vehicles become more widely available and the switch increases, these standards can be tightened to zero emission with sufficient notice to those affected.

Cars, vans, motorcycles and mopeds

Currently it is recommended that for light vehicles the ZEZs adopt TfL's standards for the Cleaner Vehicle Discount for the Congestion Charge:

- Maximum 75 g CO₂/km.
- Minimum 20-mile zero emission range.
- Euro 6 equivalent NO_x emission standard.

As zero emission vehicles become more widely available and the switch increases, these standards can be tightened to zero emission with sufficient notice to those affected. From 25 October 2021 only pure electric vehicles (including hydrogen fuel cell vehicles) will be eligible for the Cleaner vehicle discount.

Taxi/private hire vehicles (PHVs)

Since 1 January 2018 all newly licensed taxis need to meet zero emission capable standards. As these vehicles meet the vehicle emission standard prescribed above they should be allowed access to a ZEZ.

For PHVs, from 1 January 2020 all newly licenced vehicles less than 18 months old will need to meet zero emission capable standards and from 1 January 2023 all new PHVs will have to meet these standards. These requirements meet the standards outlined above and so these vehicles should be allowed access to a ZEZ.

For older taxis and PHVs that do not meet this emissions standard, dialogue with the taxi and PHV trade is required and consideration should be given to their access needs. Older taxis and PHVs may also be used to provide transport services to customers who require a door-to-door service, such as Taxicard or Capital Call

members, and so it is essential to consider the potential requirements of people coming into and out of a ZEZ, as well as the vehicle requirements.

Some businesses within a ZEZ may generate a higher number of taxi or PHV journeys so this must also be considered. ZEZs may be set up around schools but taxis and PHVs may provide transport for some pupils, including those who have accessibility or mobility needs and so this must also be taken into account.

It should be noted, that with the growing market share of Zero Emission Capable (ZEC) taxis, access restrictions could strengthen incrementally over time.

Buses

There is a roadmap to achieving a fleet of zero emission buses set out within the MTS, with the entire fleet to be zero emission by 2037 at the latest. In 2020, all single decker buses entering the Congestion Charge zone will be zero emissions. While zero emission double-decker buses are being rolled out, the market is currently not as mature as single-decker zero emission bus technology. The double-decker zero emission market will take some time to develop with suitable solutions designed for London's bus routes.

The introduction of zero emission vehicles within the bus fleet generally falls in line with the start of a new route contract and the suitability of routes for conversion. In order to secure best value, it will not be possible for all buses to meet ZEZ requirements from 2020.

Bus services are an important part of public transport trips. Delivering Healthy Streets projects and allowing bus services access to ZEZs benefits the MTS goal for 80 per cent of trips to be made by walking, cycling or public transport. Buses should therefore be given close consideration in the design of local ZEZs, noting that all buses will be at least Euro VI emissions standard in 2020.

We encourage boroughs to discuss any ZEZ proposals that involve bus routes to engage with TfL as early as possible in the design process for the scheme. We can then advise and support on the best way to include buses within the zone as the scheme develops. Initial enquires should be sent through to your TfL Local Communities & Partnerships contact.

Heavy vehicles and approach to freight and servicing

In designing a local ZEZ as part of a Healthy Streets scheme, access for freight and servicing trips will need careful consideration to ensure the continued functioning of the area. This is due to potential pedestrianisation within the area as well as the current rate of switch to ultra low emission vehicles in the freight and servicing sector, which remains limited. At present the market for zero emission heavy vehicles has not developed, and the Government is still developing the standard for an ultra low emission truck. The lack of zero emission heavy vehicles needs to be carefully considered when developing a scheme in terms of the access requirements that may be necessary for such vehicles.

An existing example of how freight and servicing might be accommodated as part of a Healthy Streets ZEZ is Leicester Square. The square is pedestrianised for much of

the day, but access for deliveries and servicing is granted in the morning when the area is quieter in terms of pedestrian footfall.

The overall management of freight needs careful planning in consultation with businesses and freight and servicing operators. The design of ZEZs will need to demonstrate and provide appropriate drop-off and consolidation that meet the delivery and servicing requirements of the area.

For heavy vehicles, plus lighter freight and servicing vehicles that do not meet the vehicle standard defined above, dialogue with the freight industry is required and consideration should be given to access needs for drop-off purposes only.

We continue to work closely with the freight industry on air quality related issues. TfL's Freight and Servicing Action Plan outlines how we're working with the industry on cleaner freight initiatives in London. Boroughs may wish to refer to the action plan as they develop ZEZs, in particular the section on clean freight. Boroughs can also refer to LoCITY for further advice and guidance on the latest information relating to low emission commercial vehicles: www.locity.org.uk

Mobility needs

The design of ZEZs should consider access requirements for people with accessibility and mobility needs, such as vehicles specially adapted for disability needs, taxis and wheelchair accessible PHVs and blue badge holders. Where an exemption is granted it should be on the basis of access only rather than allowing through traffic.

Consideration should be given to the fact that all London taxis are wheelchair accessible. In addition to this, around 500 PHVs are licensed by TfL as designated wheelchair accessible vehicles (WAVs).

Some people may also use Dial-a-Ride services and so access for these vehicles must also be considered.

Signage

A local ZEZ should be clearly signed, including information such as hours of operation and, where appropriate, vehicles exempted.

TfL is working on a London-wide logo for ZEZs that should be adopted by boroughs and included on all ZEZ signage. The logo will ensure consistency of standards across the various local ZEZs and reduce customer confusion. The logo will be shared with boroughs in due course.

A variation of Traffic Signs Regulations General Directions (TSRGD 619) should form the basis of signage design. Approval by the Department of Transport may also be required depending if the design deviates from standard signage requirements.

Enforcement

Enforcement will be the responsibility of the borough and will be left to the discretion of the borough. Enforcement options include use of automatic number plate recognition (ANPR) cameras at entry points into the zone or manual enforcement. In

addition, physical interventions that form part of Healthy Street schemes can provide barriers to vehicle access.

The source of vehicle compliance data with the ZEZ standards is the DVLA. A period of warning notices should be employed and levels of compliance monitored before PCNs are issued. The focus of ZEZs is to drive compliance. A successful ZEZ should minimise the number of penalty charge notices (PCNs) issued.

Case study for local Healthy Streets ZEZs

Ultra Low Emission Streets, Shoreditch

Hackney and Islington Councils jointly introduced two time-restricted pedestrian and cycle only zones in Shoreditch where ultra low emission vehicles (ULEV) are exempted, known as ultra low emission streets, or ULEV streets. During peak commuting hours (Monday to Friday, 7-10am and 4-7pm) the ULEV streets are restricted to walking, cycling and ultra low emission vehicles only (vehicles that restrict less than 75g/km of CO₂). Signs are placed at each entrance alongside ANPR cameras, with PCNs issued automatically for traffic violations.

Prior to introducing ULEV streets, a range of public realm improvements were undertaken across the zones to improve the pedestrian and cycling experience. Physical interventions in line with the Healthy Streets approach included the transformation of Leonard Circus to de-prioritise vehicles and create an attractive public space forming part of Cycle Superhighway 1.

Local residents and businesses with on-street car parking or an off-street parking space are exempted from the scheme, along with essential vehicles (ie police or waste collection vehicles) and blue badge holders who need to park at a property within the zones. Taxis and private hire vehicles and delivery and service vehicles are not exempted from the scheme. Businesses therefore have to accept deliveries outside of the ULEV streets' operational hours or on streets nearby, unless the vehicles are ultra low emission. Unauthorised vehicles that are already in the zones during the operational times are able to exit the zones.



Other supporting measures include a discount card for residents and businesses in the area that gives special offers on low emission taxi and delivery services.

For more information, see borough websites:

Hackney: <https://hackney.gov.uk/article/5270/Ultra-low-emission-streets>

Islington: <https://www.islington.gov.uk/roads/ultra-low-emissions-vehicle>

Case study for local air quality ZEZs

Healthy School Streets, Camden

Healthy School Streets is a Camden Council initiative to improve children's health and safety, and encourage more active and sustainable journeys to school.

During school drop-off and pick-up times (ie Monday to Friday, 8.30-9.15am and 3.00-4.15pm during school term time), streets surrounding schools are closed to vehicle traffic. The streets are closed by signage and enforced either by bollards raised and lowered by school staff or by using ANPR cameras. Signs are covered or taken down outside of term time.

Local residents and businesses are consulted extensively before introducing the road closures. Supporting measures include pedestrian and cycle awareness and training to reduce the number of car journeys and minimise the risk of displacing parking problems to surrounding streets.

Camden has introduced a number of Healthy School Streets projects to date and is looking to roll out the initiative across the borough.

For more information, see the borough website: <https://www.camden.gov.uk/healthy-school-streets>.



Exemptions for both Healthy Streets ZEZs and Air Quality ZEZs

Generally, exemptions should be avoided unless there is a specific requirement for vehicle types to access the ZEZ during operational hours.

As options for the design of ZEZs are assessed, exemptions can be used to balance negative impacts and improve the feasibility. Exemptions should be considered alongside the other scheme variables such as the size of scheme.

Use of a permit system may be appropriate to enable scheme exemptions. Some exemptions should be common across all ZEZs, with other discretionary exemptions to be decided for individual ZEZs.

Recommended common exemptions for all ZEZs

In addition to the four key vehicle types that require special consideration previously mentioned, the following exemptions should be in place for ZEZs.

Emergency service vehicles

Emergency service vehicles are currently exempt from the Congestion Charge, but in scope for the ULEZ and LEZ, although with a memorandum of understanding that non-compliant vehicles entering in response to emergencies will not be charged. While the London Environment Strategy sets out a long-term strategy for all emergency service vehicles to be fully zero emission, we recommend that boroughs exempt operationally critical emergency service vehicles from local ZEZs. TfL can assist in facilitating discussions between boroughs wishing to introduce ZEZs and emergency service fleet managers, who have committed to deliver an entirely zero emission capable car support fleet by 2025.

Showman's vehicles

Showman's vehicles are currently subject to the Congestion Charge but exempt from the LEZ and ULEZ. We would recommend that ZEZ locations do not include areas where there are regular travelling shows, which will negate the need to exempt showman's vehicles. While it is at the discretion of individual boroughs, where this is unavoidable, we suggest that consideration is given to an exemption for these vehicle types. This would keep the ZEZ scheme consistent with existing similar schemes. Where exemption is granted it should be on the basis of access only rather than allowing through traffic.

Historic vehicles

Historic vehicles are currently exempt from LEZ and ULEZ but are required to pay the Congestion Charge. Generally, it is not recommended to exempt these vehicle types unless there is a specific need for them to access the ZEZ within operating hours. While it is at the discretion of individual boroughs, for consistency, boroughs may wish to exempt these vehicles. Where exemption is granted it should be on the basis of access only rather than allowing through traffic.

Disabled tax class vehicles

Disabled tax class vehicles are not subject to the Congestion Charge, but are in scope for the ULEZ, with a time-limited sunset period. As these vehicles often require special adaptation to drive, they should be exempted from ZEZs. This includes TfL Dial-a-Ride vehicles, which have a disabled tax class. Where an exemption is granted it should be on the basis of access only rather than allowing through traffic.

Discretionary additional exemptions for individual ZEZs

Local circumstances for ZEZs may require additional discounts and exemptions in order to operate. The following exemptions are outlined for consideration based on experience developing the Congestion Charge and ULEZ. However, decisions as to whether or not to exempt these vehicles will be at the discretion of boroughs.

Public service vehicles

Public service vehicles include refuse collection and road maintenance vehicles that are currently exempt from the Congestion Charge, but subject to the LEZ and ULEZ. In deciding if these vehicles should be exempt, boroughs should consider whether these vehicles are required to access the zone during operational hours and whether alternative vehicles compliant with the ZEZ emissions standards exist.

Breakdown/recovery vehicles

Breakdown/recovery vehicles are currently exempt from the Congestion Charge, but subject to the LEZ and ULEZ. As with public service vehicles, when deciding if these vehicles should be exempt, boroughs should consider whether these vehicles are required to access the zone during operational hours and whether alternatives compliant with the ZEZ emissions standards exist. Where exemptions are granted this should be on the basis of access only to carry out breakdown/recovery work rather than for through traffic.

5. Implementation

This section sets out the key considerations in the process of implementing a local ZEZ.

As with the design of local ZEZs, consistency in the approach to implementation is important to reduce customer confusion and the successful delivery of ZEZs across London.

Boroughs should contact the officer for their area in TfL's Local Communities & Partnerships team at the initial stage of developing ZEZs to discuss ways in which TfL can support implementation as well as allowing us to keep track of ZEZs being introduced across London).

Date of introduction

The MTS sets the intention for local ZEZs to be implemented from 2020. However, there is no restriction on delivery of local ZEZs before 2020.

Early versions of ZEZs that cover a small area and are based on an 'effectively zero emission' vehicle standard could be introduced relatively quickly, subject to the necessary design, statutory consultation, local engagement, approvals and assessment processes.

Delivery mechanism

The MTS defines a ZEZ as:

A zone within which vehicles not capable of operating with zero-pollutant exhaust emissions are subject to road user charges (similar to ULEZ or LEZ) and/or other vehicle prohibitions or restrictions

However, rather than adopting a road user charge, a Traffic Regulation Order (TRO) is considered the most appropriate means of introducing local ZEZs at this stage.

A TRO will prohibit non-compliant vehicles under Road Traffic Regulation Act 1984 powers. TROs will need to be made by the relevant Highway Authority, which in most instances will be the borough. TROs involve statutory public and stakeholder consultation.

Consultation and engagement

An early and collaborative stakeholder engagement process, which pro-actively identifies the likely significant impacts of the scheme, is critical to the successful implementation of a local ZEZ.

Understanding the needs and addressing concerns of residents and relevant stakeholder and business groups located in the ZEZ is vital. Those businesses and operators involved in servicing the area and requiring access should be consulted early in the ZEZ process, particularly for freight and servicing operators, taxi/PHV organisations, and people with mobility needs. Suitable mitigation and complementary measures should be provided.

As part of engagement with the freight and servicing industry relevant trade organisations should be consulted at an early stage including the Freight Transport Association (FTA) and the Road Haulage Association (RHA).

TfL will assist by advising stakeholder groups on the principles and common requirements for ZEZs and the direction of travel set out in the MTS. However, engagement on the details of individual ZEZs will be the responsibility of the individual boroughs.

Full statutory consultation on TROs should be undertaken. However, boroughs should go beyond statutory requirements and develop a robust stakeholder engagement and consultation plan that specifically:

- Assesses the affected community
- Plans consultation at a point in the design process where the scheme can be changed in response to feedback
- Uses appropriate mechanisms based on the affected community to promote the consultation, explain the ZEZ, and capture feedback
- Sets out governance processes to review feedback and, if appropriate, make changes
- Sets out how to feedback the outcome of the consultation process

Postcode data and main mode of travel within the zone (ie walking, car, public transport, taxi driver, taxi passenger, etc.) for respondents should be collected as part of the consultation process to understand the nature of the responses (ie local residents and businesses, external residents and business or campaign groups). TfL can provide a template and guidance to assist with this if required.

In terms of communication material, it is important that any ZEZs are clearly communicated and differences between ZEZs and the LEZ and ULEZ are easy to understand. TfL can assist by providing appropriate wording for borough websites and can provide details of borough ZEZs on the TfL website.

Equalities and other Impact Assessments

Boroughs are advised to ensure a robust Equalities Impact Assessment (EqIA) is undertaken in developing local ZEZs. A comprehensive EqIA document should be produced that demonstrates the due regard to any impacts on those with protected characteristics and the need to ensure their interests are taken into account such as access requirements for people with accessibility and mobility needs (e.g. vehicles specially adapted for disability needs, taxis and wheelchair accessible PHVs and blue badge holders. Additionally, other likely significant impacts should be identified covering topics such as economic, environmental, safety, business and health. These impact assessments should be made available in the consultation to inform consultation responses.

Please contact the Local Communities & Partnerships officer for your area if you'd like any further guidance on producing impact assessments for a ZEZ scheme.

Local strategies

Boroughs are advised to include local ZEZs in any relevant local strategies they are developing to ensure a sound policy justification.

TfL approvals

Boroughs will need to be mindful of the Traffic Management Act and their network duties when designing ZEZs.

Consideration should be given to the likely traffic diversionary impacts of ZEZs, particularly where:

- There are other planned interventions in the vicinity
- There is a possible impact on the TLRN or SRN
- There is a potential impact on the bus network

Boroughs should engage with TfL's Network Performance team early in the process for a view on the likely levels of assessment and modelling that may be required for a ZEZ, and TfL's Network Sponsorship team to understand other planned interventions that may impact on the proposed ZEZ area. Please contact the Local Communities & Partnerships officer for your area to liaise with both teams.

Evaluation, monitoring and appraisal

A robust evaluation and monitoring system should be in place to measure the impacts of a ZEZ and evaluate its success, which is crucial to building the case for further ZEZs across London.

Data should be collected before and after introducing a ZEZ that measure traffic and emissions levels within the ZEZ and in the surrounding area. This data should be continually evaluated, monitored and reported post-implementation to ensure that benefits have been realised and to provide information to inform future ZEZs.

Data in relation to the impact of the ZEZ on the following vehicle types should be included: taxis/ PHVs, buses, freight, vehicles for people with mobility needs.

In addition, the following data should be collected to develop a robust view on further benefits of local ZEZs:

- Healthy Streets design check, where relevant
- Air quality monitoring
- Collision statistics for roads within the ZEZ
- Pedestrian and cyclist surveys
- Changes in attitude surveys
- Freight and servicing requirements in the area
- PCN data

When appraising the benefits of a ZEZ, boroughs are encouraged to conduct hyperlocal monitoring. Detailed air quality assessments and concentration models are not necessary as the London Atmospheric Emissions Inventory (LAEI) provides a robust existing picture of emissions in an area. However, what is required is an analysis of the activity data that feeds in to the LAEI and the likely impact of ZEZ on this, including:

- Traffic modelling in line with TfL Traffic Model Auditing Process (TMAP), where appropriate
- Use of emissions factor toolkit to convert traffic flow and composition changes into emissions changes. TfL will be developing a simplified version of the toolkit to help with an indicative assessment, which is expected to be available by summer 2019
- Where a ZEZ is likely to result in collision savings, these should be assessed and calculated according to the Royal Society for the Prevention of Accidents (RoSPA) best practice

6. Supporting measures

Boroughs may wish to consider supporting and complementary measures as part of ZEZs to ensure its successful operation. Such supporting measures could include:

Non-transport emissions

Boroughs should consider additional measures within ZEZs to tackle other sources of pollution. This could include, for example:

- Restrictions on solid fuel burning and reducing combustion generally
- Ensuring mains power or hydrogen generators are used for events within the ZEZ rather than diesel. The GLA has published research on hydrogen generators through the Hydrogen London Partnership
- Ensuring Non-Road Mobile Machinery used on construction sites and for roadworks is as low emission as possible
- Focusing retrofit programmes for homes and workplaces within ZEZs

Charge points

Provision of additional charging infrastructure, particularly rapid charging that can be used by vans and zero emission capable (ZEC) taxis, should be considered as part of a ZEZ proposal. The Mayor's EV Infrastructure Delivery Plan to 2025 provides clarity for the medium term (to 2025) and sets out the scale and type of likely infrastructure needed alongside actions to facilitate installation and overcome barriers to implementation. TfL will also be publishing EV installation guidance later in 2019 to support boroughs installing new EV infrastructure. Funding for residential on-street charge points and rapid charge points may be available to boroughs via the Go Ultra Low City Scheme (GULCS) programme (please contact goultralowcityscheme@tfl.gov.uk for more information). London Councils is also leading on the development of a pan-London coordination body to facilitate charge point installation, which will continue, and build on, the work of the GULCS programme.

Taxi ranks

TfL is responsible for appointing taxi ranks in all London boroughs except for the City of London, where ranks are normally appointed by the City of London Police. Taxi ranks are an important part of the Capital's transport network. As well as helping passengers access taxis and managing the supply of taxis at busy locations, ranks can also help reduce emissions by limiting the time drivers spend on the road while waiting to be hired.

Rapid Charge Points (RCPs)

When developing ZEZs, consideration should be given to including rapid charging points to support ZEC taxis in the zones.

RCPs would only be appointed on rest ranks, or other on-street or off street locations (not working taxi ranks). RCPs would encourage the use of ZEC taxis in the locality

and would help ensure that people in the ZEZs who need to use a taxi can continue to do so.

Business engagement

Successful ZEZs will require engagement and buy-in from the local business community. Shared procurement, waste consolidation and out-of-hour delivery can help reduce the overall environmental impact of delivery and servicing trips and reduce the costs of complying with ZEZ requirements.

TfL has produced guidance on improving the efficiency of deliveries, which should be used to complement any proposed ZEZ, available online here: <https://tfl.gov.uk/info-for/deliveries-in-london/delivering-efficiently/deliveries-toolkits>

To complement ZEZs, boroughs may wish to consider the feasibility of consolidation or microconsolidation hubs that enable deliveries to be made via electric vans or cargobikes. There are examples of successful microconsolidation projects in Waltham Forest, City of London, Hackney and Islington.

Other relevant publications and sources of information

Mayor's Transport Strategy (2018) – Sets policy context for introduction of ZEZs across London: <https://tfl.gov.uk/corporate/about-tfl/the-mayors-transport-strategy>

London Environment Strategy (2018) – The Mayor's strategy for improving London's environment: <https://www.london.gov.uk/what-we-do/environment/london-environment-strategy>

Freight and Servicing Action Plan (2019) – Includes actions for cleaner freight in London: <http://content.tfl.gov.uk/freight-servicing-action-plan.pdf>

London Electric Vehicle Infrastructure Delivery Plan (2019) – Sets out a clear way forward towards the right type and amount of charging infrastructure to serve London's needs: <http://ruc.content.tfl.gov.uk/london-electric-vehicle-infrastructure-taskforce-delivery-plan.pdf>

Guidance for the implementation of electric vehicle charging infrastructure (2010) – There is existing guidance on the implementation of electric vehicle charging infrastructure available from TfL. An outcome of the recently published EV Infrastructure Delivery Plan has been to produce an updated version of this guidance which will be published by TfL in 2019/20. The existing guidance is available at the following link: [http://app.thco.co.uk/WLA/wt.nsf/Files/WTA-3/\\$FILE/EVCP-guidance-version-1-Apr10%5B1%5D.pdf](http://app.thco.co.uk/WLA/wt.nsf/Files/WTA-3/$FILE/EVCP-guidance-version-1-Apr10%5B1%5D.pdf)

Van Scrappage Scheme - The Mayor of London has launched a scrappage scheme to help tackle London's air quality crisis. It supports micro businesses, sole traders and charities to replace vehicles that don't meet the Ultra Low Emission Zone (ULEZ) standards. Information may be useful in the development of ZEZ schemes and more details can be found on TfL's website at the following link: <https://tfl.gov.uk/modes/driving/ultra-low-emission-zone/scrappage-scheme?cid=scrappage-scheme>