The Royal Borough of Kingston Upon Thames

Lane Rental Scheme

2025

Supporting Cost Benefit Document

The London Borough Lane Rental Scheme

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London Borough Lane Rental Scheme.
Reducing disruption on the Borough Road Network

1. Introduction

The Royal Borough of Kingston Upon Thames

Image 1: Kingston upon thames is situated in south west London

1.1   The Royal Borough of Kingston upon Thames is a borough in southwest London. It includes the main town of Kingston and local centres including Surbiton, Chessington, Malden Rushett, New Malden, Old Malden and Tolworth.

168,000 people in 65,600 households (the third smallest population of any London borough)
A growing population, increasing by 5% over 10 years, with 19% growth in those aged over 65.
Area of approximately 37km2
The oldest of the four royal boroughs in England, where the coronation of the first kings of all England - including the first, King Athelstan in 925 - took place.

1.2   The corporate plan details working with partners and communities to ensure the borough is

Greener: We are a greener and more sustainable borough and on track to meet our net zero carbon targets.
Fairer: Our children and young people have a fairer start in life and residents are supported when needed throughout their lifetime. Inequality has been reduced and every resident has increased opportunities for a happy and healthy life.
Safer: Our borough stays safe, well maintained and resilient so individuals and communities can thrive and prosper.
Together: We have strong relationships with partners and work together with our communities to achieve our shared ambitions.

We have a **Future Council** commitment to ensure that the council is ready for the future, is managed effectively and responsibly in the best interests of our communities and delivery is supported by high quality services.

1.2 London's roads are vital in supporting our city and allowing it to function. They connect our communities, opening opportunities and creating the conditions for London's global economy to flourish. But they are also some of the most congested streets in the world. The London Road network is shared between Transport for London (TfL), National Highways, 32 London boroughs and the City of London.

1.3 1.3 'Making Kingston Better, Together' - the 2019 - 2023 Corporate Plan - is the council's most important strategic document. It articulates our vision for the borough and for the council to 2023, together with our most important strategic outcomes that we'll strive to achieve over the next four years.

1.4. Roadworks are inevitable in a growing and prospering town like Kingston. Utilities and highways infrastructure needs maintenance and modernisation; new housing and commercial developments need connections to services; and the Mayor continues to invest in transforming London's streets to make them easier and safer to walk and cycle. The resulting road works often cause congestion, delays to commuters within the borough such as bus passengers and are an inconvenience to people walking and cycling.

1.5. Since 2012, TfL has been operating a successful Lane Rental scheme on the Transport for London Road Network, which has delivered significant disruption related benefits. In May 2024, the London Mayor published his election manifesto[1], which included a pledge to "drastically reduce disruption on our roads by working with TfL and councils to extend the lane rental scheme to borough roads. This will mean that utility companies and others will have to pay when they dig up borough roads, incentivising them to co-ordinate and finish roadworks much more quickly. All the revenue raised will be reinvested to fix potholes and reduce road congestion. This will be done in partnership with TfL, boroughs and my Infrastructure Coordination Service".

1.6. The Department for Transport (DfT) produced Lane Rental guidance[2] for highway authorities in England to support their applications to bid for approval to operate lane rental, setting out advice on developing proposals.

1.7. On 16th December 2024 the government published its English Devolution white paper, which includes the following:

Subject to consultation, it is proposed that the government will devolve approval of local Lane Rental schemes to Mayoral Strategic Authorities. Lane Rental schemes enable Local Highway Authorities to charge for works on busy roads at busy times with the aim of minimising disruption.

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[1] A-Fairer-Safer-Greener-London-for-everyone-Manifesto-2024.pdf (sadiq.london)
[2] https://www.gov.uk/government/publications/street-works-lane-rental/lane-rental-schemes-guidance-for-english-highway-authorities#evaluation

1.8. On 20th December the DfT launched a stakeholder consultation about the future of lane rental schemes and how they will be approved. The proposals set out three options, including a preferred option that aligns with the intention stated in their English Devolution white paper, which provides:

Authority to approve lane rental would be delegated to Mayors where the highway authority is part of a Mayoral Strategic Authority, which includes London Boroughs that are part of the Greater London Authority.

1.9. Other than consulting on powers for approving Lane Rental schemes, the Government has also decided, following consultation earlier in 2024, to proceed with an amendment to regulations with the proposal that will require at least 50% of surplus funds to be spent on road maintenance.

1.10. Both government measures compliment the Mayor's manifesto pledge to expand Lane Rental across London.

1.11. The Borough wishes to implement a Lane Rental scheme to achieve better control of works which take place on its network, with a core objective of reducing disruption to the most sensitive parts of the Borough network, at the most sensitive times. The Borough successfully operates a Permit Scheme, however, feel that a Lane Rental Scheme will give better control of the durations of works, and provide an incentive for work to be undertaken quicker, and outside of peak times.

1.12. To develop a collective framework for a London Borough Lane Rental Scheme, a strategic group was convened to oversee its delivery. The group comprised of TfL, the London Boroughs of Hounslow, Lambeth, and Hounslow, and the Royal Borough of Kensington and Chelsea.

1.13. The government has advised individual boroughs will still be required to consult and apply to the DfT to operate Lane Rental. Each borough must also produce a supporting cost benefit document and scheme definition that is unique for their borough, which should be predicated on the outputs from the pan-London analytical work TfL has undertaken to support each LBLRS.

1.14. This document is specific to the relevant borough and aligns with the pan-London data analysis approach developed to support the London Borough Lane Rental Scheme (LBLRS) framework. This uniform model applies common principles, theories and a set of analytical rules across all London Boroughs on a pan-London basis.

1.15. This report sets out the data-led evidence-based approach taken to justify the following principal elements of the relevant Borough's Lane Rental scheme:

- Road Network Coverage
- Charge Categories
- Chargeable Hours
- Estimated Charges

1.16. This report will also discuss the DfT's cost-benefit analysis, which will be specifically populated for the relevant borough and form part of the application pack submitted to the DfT for assessment.

1.17. TfL became the first authority in the country to introduce a Lane Rental scheme (TLRS), which covers 69 per cent of TfL's Road Network (TLRN). In 2021 the TLRS was modified to account for the latest changes to the DfT's guidance at the time, but also to reflect the way London's Road network had evolved. The way people travel on London's highways necessitated significant reconfiguration of road space to accommodate more active travelers, such as cyclists and walkers, and for that reason the original algorithm used to define the TfL Lane Rental network was updated to reflect the utilisation of limited capacity, by all travel modes, so that the scheme delivered the most efficient movement of people. In 2021 the DfT approved TfL's application to modernise its scheme, which retained cycle track designations from the original scheme and introduced footway designations for the first time.

1.18. The equivalent principles, approach and methodology adopted for TfL's approved updated scheme application are being refreshed for the purposes of defining the LBLRS and the relevant borough's Lane Rental network, with the key objective to reduce overall disruption caused by roadworks remaining the same, which is achieved by:

- Treating all works covered by the scheme and works promoters on an equal basis,

- Minimising the duration of occupation of the street at the busiest locations on the network,

- Minimising the number of works taking place during traffic sensitive times; and

- Effectively managing roads disruption from both unplanned and planned works.

1.19. The purpose of this document is to present the data-led proposal for the relevant borough, including defining the applicable Lane Rental locations on the London Borough Road Network (LBRN), together with suggested charging bands and applicable timings for each location.

1.20. This analysis was undertaken in August 2024 using data from 2022/23.

2. Pan-London Borough Approach

2.1 To deliver a consistent approach across London by maintaining alignment with TfL's established Lane Rental scheme, it is logical to adopt a similar data analytical approach to the one established by TfL for each London borough. As a result, the basis of the algorithm used to calculate the TLRS locations has been retained to calculate the LBLRS network extent and charge band distribution.

2.2 Applying this concept across the entirety of a pan-London borough road network ensures that Lane Rental is only applied to the most problematic sections of London's streets when capacity is constrained at the highest level. This holistic methodology means only the most truly sensitive streets in London are identified regardless of the proportion of the network that exists in each individual borough.

2.3 TfL's Common Operational Road Network (CORN) is an aggregated road network created from the OS Mastermap Highways Network. The CORN covers the strategic road network in London, including the Borough Priority Road Network (BPRN) and Strategic Road Network (SRN). It includes several other minor roads with notable characteristics, such as

higher traffic flows or transport links; and also the majority of roads on which buses travel. TfL holds many datasets for the entire road network across London which have been mapped to the CORN. This allows data analysis to be carried out for all boroughs, either individually or on a pan-London basis.

2.4   The algorithm uses a more rigorous criteria to define the pan-London Lane Rental network compared to the DfT's traffic sensitive designation criteria. In December 2024 a traffic sensitive review was undertaken on all proposed Lane Rental streets identified by the algorithm with all streets meeting one or more of the following criteria:

- the street is one on which at any time the authority estimates traffic flow to be greater than 500 vehicles per hour per lane of carriageway, disregarding bus or cycle lanes;
- the street is a single carriageway two-way road, the carriageway of which is less than 6.5 metres wide, having a traffic flow in both directions of not less than 600 vehicles per hour;
- the street is one on which the traffic flow in both directions includes more than eight buses per hour;
- the street is within 100 metres of a critical signalised junction or a critical gyratory or roundabout system

The relevant borough has provided stakeholder notification of its intention to update its traffic sensitive designations for its proposed Lane Rental network, which have been updated, as required, to consider any stakeholder responses received.

3. London Borough Lane Rental Network Definition

Carriageway Coverage

3.1 The algorithm applied to the pan-London borough road network and used to determine the most sensitive carriageway locations, and therefore where the Lane Rental should be located on the relevant boroughs' road network, calculates the sensitivity to capacity, the number of people affected and how likely works are to take place in that location as detailed in the following equation:

<div style="border:1px solid #ccc;">

Sensitivity (to capacity)   **People movement rate**   **How necessary it is**

$$[\text{PCU flow} / (\text{carriageway width} - 0.5)]^2 \times \text{flow} \times \text{occupancy} \times \text{minkm} \times (\text{unplanned works})^{1/2}$$

</div>

Equation 1: *Algorithm used to determine Lane Rental coverage on carriageways.*

3.2 The algorithm combines vehicle movements (PCU flows) and vehicle occupancy to account for areas with reduced physical capacity and those with a high number of people travelling through them. Unplanned works are also included to incorporate the likelihood of works taking place in each location.

3.3 The algorithm has been updated slightly to the version previously used to identify the TLRS. A change in definition of the CORN network to include all major nodes meant it was not necessary to include the number of signals on a road section because all signals occur at node ends. The factor to adjust carriageway width for Borough roads was changed to be lower because Borough roads are narrower in aggregate compared to the TLRS. Also, the people movement function was amended to take account of the efficiency of moving people by car and buses separately, by expressing this as a people movement rate given that buses, due to regular stops, will travel at a slower rate than general motor vehicular traffic. On Borough roads buses account for a much larger portion of customer trips overall compared to those made on TfL's road network. This enables the algorithm to provide a higher traffic sensitivity overall rating to those road sections in Boroughs that move more people by buses.

3.4   The algorithm uses a variety of different datasets, including the following:

| Dataset	Source
Motor vehicle flows	DfT Annual Average Daily Traffic Flow (AADF)
Motor vehicle people movement rate	INRIX journey time data
Bus flows	iBus automatic vehicle location system
Bus load	Origin destination interchange
Bus people movement rate	iBus automatic vehicle location system
Unplanned works	Works permit data

Table 2: LBLRS Datasets and Data sources

This data is held in various systems, such as TfL's AWS hosted Redshift consumer database, with the outputs generated through executing a specially configured R-script.

3.5   Applying the outputs from the above algorithm to the relevant borough's Lane Rental network would provide an overall coverage of 12.5% This is in keeping with the overall 15 per cent coverage identified for the entire pan-London Lane Rental network, safeguarding the most sensitive parts of London's Road network thus ensuring resilience.

3.6   If capacity is reduced further at these key carriageway locations, such as the introduction of roadworks, then the resulting disruption impact contributes to a greater than expected increase in road congestion.

3.7   It is worth commenting on Lane Rental segments that are congested at some point every day because queuing takes place, upstream from a congested junction. Beyond these queues, the traffic can be freer flowing and there is capacity to accommodate road works more readily. What matters is not the total volume of traffic on each road link but its distribution at the end of the link where the traffic must enter a junction. The framework can allow the mid link section to be less sensitive to disruption, and the junction to have higher sensitivity to traffic. The goal of the Lane Rental Scheme is to prevent works from impacting the throughput at the junction as any impedance here has the largest overall

impact on road network performance. Lane Rental would apply at the most critical junctions, in the road network.

The proposed Lane Rental scheme network resulting from all these considerations can be seen in Map 1.
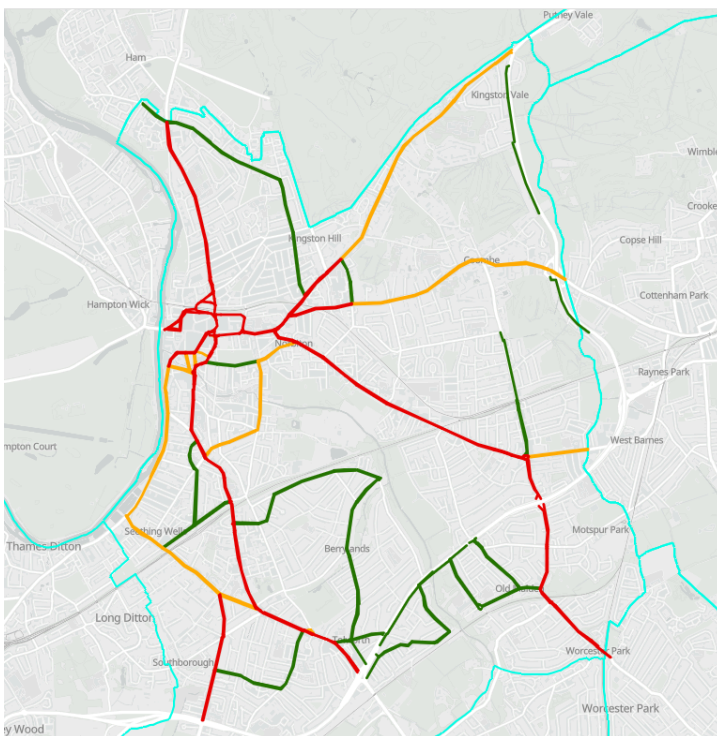
Map 1: *Proposed Lane Rental Scheme network extent*

3.8   The data driven network outputs are sense-checked to identify any data anomalies, and from a network knowledge perspective, suggest any sections of the Lane Rental network that ought to be removed or added, including for continuity purposes. The Lane Rental network is subsequently finalised and serves as a basis for deriving the Lane Rental schedule of locations and additional street data designations.

3.9   The result of this network knowledge-based sense-checking exercise is set out in table 3 below.

Table 3:	London Borough	Data-led Extent	Finalised Extent (sense-checked)	Variance
Variance between data-led outputs and network	Kingston Upon Thames	12.8%	12.1%	0.7%

knowledge-based sense-checking

Footway Coverage

3.10 To compliment the Mayor's Healthy Streets policy by promoting active travel, in addition to the proposed core Lane Rental network detailed above, there is an ambition to designate a small number of footways as chargeable.

3.11 In 2021 TfL became the first Lane Rental authority to introduce footway charging in pedestrian sensitive locations and at peak period travelling times only. In total 20 suitable locations were identified using Pedestrian Comfort Levels (PCL), the majority of which are adjacent to major transport hubs. The PCL classifies the level of comfort based on the level of crowding a pedestrian experience on the street and is measured in pedestrians per metre of clear footway width per minute. This was calculated from data on pedestrian activity and the street environment using the algorithm shown in Equation 2. The DfT had previously cleared TfL's approach for designating footway as Lane Rental, which will be adopted for London boroughs.

People affected

pedestrian flow per minute during busiest peak

Sensitivity (to capacity)

((pavement width – X) x signal factor)

Equation 2: Lane Rental Footway Charging Algorithm

3.12 Pedestrian flow data across a pan-London borough road network is currently extremely limited and is only predominantly available for Central London locations. TfL are progressing with arrangements to collect this data more widely, but it is not currently available.

There are no locations within the relevant borough that currently meet the above criteria, but the situation will be reviewed again when more data becomes available.

4. Charge Bands

3.13 Since 2012 it is estimated that the overall amount of delay experienced on the roads within Greater London has increased by 33%. It is well documented that TfL's Lane Rental Scheme has had a positive impact in reducing congestion overall. However, since the start of TfL's scheme this positive impact has been eroded as roads across London pre Covid carried 3% more vehicles compared to when the TLRS was introduced in 2012. If this congestion benefit had been locked away by removing the extra demand the TLRS has

enabled, the congestion benefit would have remained, and we would have likely been able to report a substantial improvement in journey times or a reduction in congestion. The overall cost of congestion across all London has grown from £4.2bn in 2010/11 to circa £5.6bn in 2019/20. The underlying congestion, measured as the increase in excess delay in minutes per kilometer (a key component of the cost of congestion), continues to grow at a few per cent per annum. Part of this increase has resulted in a recovery in traffic levels post COVID, and some arises because of capacity re-allocation to promote sustainable mode movement in line with London's mayoral policy.

3.14   Sensitivity to works varies across the borough network, it is therefore logical to have a hierarchy of charge bands apportioned to the sensitivity of the road network. This means that works are always charged an amount smaller or equal to the cost of congestion they may cause. The principle of identifying network sensitivity has been a long-established industry-wide rule that is documented in the DfT's Code of practice for the co-ordination of street and road works, which sets criteria for designating streets that are traffic sensitive. This criteria predominantly uses traffic flow data to set qualification thresholds for these designations.

3.15   The pan-London approach builds on the DfT's traffic sensitive theory by applying a similar approach to Lane Rental networks, but incorporates additional sensitivity factors such as network capacity, people movement and vulnerability to works. This approach essentially means that the relevant charge band for each street is applied according to the level of disruption caused by the works taking place at a specified location, rather than simply applying a flat rate charge ranked by traffic management type to all streets, regardless of sensitivity, that is arbitrarily set according to the type of traffic management proposed. Calculations suggest the simplified charging regime could increase charges by as much as 40 per cent.

3.16   The daily charge therefore focuses on the correct road links and junctions to provide returns for a borough that are proportional to the cost of congestion and correspond with the level of disruption caused to people commuting within the borough.

3.17   To maintain alignment with the previously endorsed TLRS approach and deliver a consistent pan-London model it is proposed to replicate the TLRS charge band regime and its proportionate distribution across the LBLRS.

Table of Charges				
Area of Occupation	**Daily Charge**			
	Footway	Low	Medium	High
Footway *- Kingston Upon Thames do not have any footways within the proposed Lane Rental network*	£350	-	-	-
Carriageway		£1,000	£1,500	£2,500

Table 4: Pan-London Lane Rental charging model

3.18   The distribution of the charge bands across the boroughs lane rental network is shown in Map 1 above and Table 5 below, with the data-led outputs aligning with how the network operates from a network management perspective.

	Low Charge	Medium Charge	High Charge
Pan-London	54%	30%	16%
Kingston Upon Thames	39.2%	22.2%	38.7%

Table 5: Distribution of charge bands

4.   Chargeable Hours

3.19   Charging hours will be simplified so that a uniform set of times are applicable across the LBLRS based on network sensitivity. The specified times are largely consistent with TfL's timing range, but because of the increased proximity of residential properties on borough roads the window of applicability has been reduced to provide an enlarged window of opportunity to undertake works at more sociable hours.

3.20   Again, for simplicity, weekend timings will mirror the midweek peak period chargeable times, which essentially reduces the timing permutations down to two, which are as follows:

Area of Occupation	Days of Applicability	Lane Rental Chargeable Hours			
		Footway Charge Band	Low Charge Band	Medium Charge Band	High Charge Band
Footway	Weekdays	07:00 – 10:00 15:00 – 19:00	-	-	-
	Saturdays or all weekend	07:00 – 10:00 15:00 – 19:00	-	-	-
Carriageway	Weekdays	-	07:00 – 10:00 15:00 – 19:00	07:00 – 10:00 15:00 – 19:00	07:00 – 19:00
	Saturdays or all weekend	-	07:00 – 10:00 15:00 – 19:00	07:00 – 10:00 15:00 – 19:00	07:00 – 10:00 15:00 – 19:00

3.21   Adopting a standardised applicable timing range set-out in the pan-London approach will ensure work promoters are confident when charges will apply throughout the borough, and also within any other Lane Rental boroughs aligned with this key principle.

3.22   Crucially, the compact time bands provide work promoters with an increased ability to reduce their exposure to charges and also limit any noise impacts from their works on borough residents.

6. DfT Lane rental cost-benefit analysis form

3.23 The DfT have provided a Lane rental cost-benefit analysis form, which will be fully completed and submitted as part of the application pack to operate a Lane Rental scheme.

3.24 A primary element of the form estimates the overall lane rental charges faced by Utility Companies and the Highway Authority after behavioral changes have occurred. The calculation uses the total number of work days eligible for charges and discounts this baseline down to factor in behavioral change, which considers:

- Work days moved outside of chargeable hours to avoid lane rental charges,
- Work days undertaken in a way that triggers a waiver, such as the use of new technology,
- Work days undertaken in a way that triggers a discount, such as through collaborative working,
- Increase in Emergency and Urgent work days being completed before charge periods apply,

3.25 The outputs from the DfT's cost benefit analysis form suggests the overall annual estimated Lane Rental charges that could be faced by Utility company works and Highway Authority works by the relevant borough is as follows:

Lane Rental Charges faced by Utility Companies	£1,368,000
Lane Rental Charges faced by Highway Authorities	£280,500
TOTAL	£1,648,500

Table 7: Estimated Overall Lane Rental Charges

3.26 Although the output factor in behavior change at a similar level to other approved Lane Rental applications, the relevant borough considers the highway authority charge exposure will reduce further due to an increased volume of works being undertaken at non-Lane Rental chargeable hours.

Appendix A: Finalised schedule of Traffic Sensitive Designations

Making Kingston a "cleaner, greener, fairer, safer, and stronger" borough.