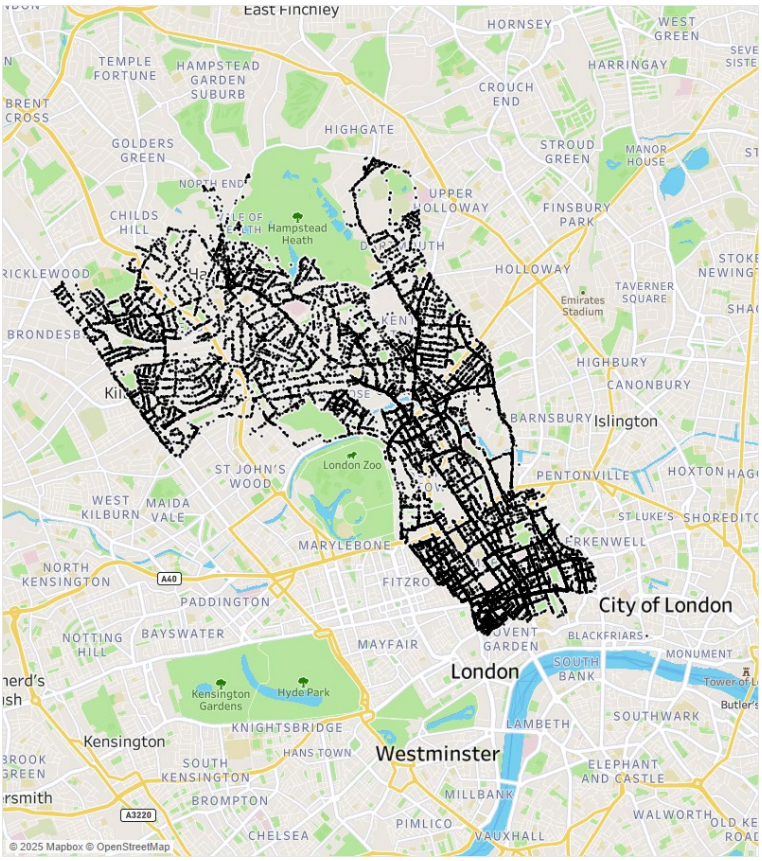
London Permit Scheme
Year 15 Evaluation

Document Content

Foreword

The London Borough of Camden is in the heart of London, north of Westminster and the historic City of London and borders the London Boroughs of Barnet, Haringey, Islington, Westminster, and Brent. The borough covers an area of 8.4 square miles and consists of 20 wards.



The Borough has a population of approximately 210,000 residents with a total road length of 277 kilometres and is well-connected to the A406 (London's North Circular Road), facilitating access to various parts of London.

Camden Borough features approximately 435 bus stops, accommodating 58-day bus routes, 1 Elizabeth line station, 17 London Underground stations, and 9 London overground train stations.

5% of the roads in the Borough are designated as part of the Transport for London Road Network (TLRN). Transport for London (TfL) is the Highway Authority for these routes Camden's '24-hour' economy is extraordinarily diverse with major tourist, leisure and entertainment attractions, education establishments, teaching hospitals, national transport hubs and a large retail sector.

The HS2 project in the Borough of Camden is a significant part of the UK's new high-speed railway network, with the London terminus located at Euston Station wish is one of the busiest parts of the borough and northwest of the borough.

Camden, like the rest of London, faces transport challenges on several fronts: rising congestion and delays, poor air quality and continued carbon emissions, noise, overcrowding on public transport networks and streets, traffic dominance, the cutting-off of communities by heavily trafficked road networks, road danger and personal security.

As shown in the graphic (top-right) works undertaken across the Borough in the three years of the permit scheme analysis covered nearly the entire network and therefore significantly contributed towards disruption and congestion across an already busy and in demand network.

Key Findings

Figures quoted are based on averages over years 2022 to 2024 unless marked with a * which denotes findings from the life of the permit scheme.

9,959
works undertaken across Camden

27
works starting every day (on average)

28,203
days with highway occupation per year

44%
works with a live site inspection

86%
permits granted on first application

13%
of work involves positive traffic control on the carriageway

38%
work undertaken with an applied permit condition

£5.8
Estimated benefit returned for every £1 spent to operate the Scheme *

996 tonnes
carbon emissions savings from reduced delays *

Introduction

The role of a permit scheme

In 1991 the New Roads and Street Works Act (NRSWA) placed a duty on the Council, as a highway authority, to coordinate activities (works) of all kinds on the highway under the control of that Authority.

In 2004 the Traffic Management Act (TMA) and associated secondary legislation widened the NRSWA coordination duty. The scope of this increased duty has the following main considerations and Part 3 of the TMA allows for an Authority [the Council] to introduce a permit scheme to support the delivery of this duty.

The powers under a permit scheme enable the Council to take a more active involvement in the planning and coordination of works, from the initial planning stages through to completion. This includes:

- organisations book occupation for work instead of giving notice, essentially obtaining a permit for their works.
- any variation to the work needs to be agreed, before and after works have started, including extensions to the duration.
- the Council can apply conditions to work to impose constraints; and
- sanctions with fixed penalty notices for working without a permit or in breach of conditions (of the permit).

These powers enable a Council to deliver a more effective network management service, through the increased capability to control the planning and undertaking of work across their network.

In 2010 the Council introduced the **London Permit Scheme** (the Permit Scheme) also known as **LoPS.** The scheme was brought into legal effect through an Order created by the Council under the provisions of the Traffic Management Permit Scheme (England) Regulations.

Regulatory requirement for a permit scheme evaluation

Permit Scheme Regulations (16A) states that permit schemes [should] be evaluated following the first, second and third anniversary of the scheme's commencement and then following every third anniversary.

The regulation further states that, in its evaluation, the Permit Authority [Council] shall include consideration of:

- whether the fee structure needs to be changed in light of any surplus or deficit.
- the costs and benefits (whether or not financial) of operating the scheme; and
- whether the permit scheme is meeting key performance indicators where these are set out in the Guidance.

This report has been developed by an external consultant, Open Road Associates, for the Council to provide an evaluation for the most recent scheme year (Year 15) with analysis, wherever possible, for scheme years 13 to 15 (2022 to 2024 inclusive) and includes the provisions set out within the regulations.

The regulations reference key performance indicators set out in [Statutory] Guidance. A HAUC (England) Advice Note (001/2016) **Report Template for the Evaluation of Permit Schemes** sets out permit scheme measures which have been used for this purpose.

Annex B of this report contains the performance indicator results for each permit scheme year (as available).

Executive Summary

This report sets out the operational evaluation of Camden's permit scheme over a three-year period from January 2022 to January 2025 which covers permit scheme years 13, 14 and 15.

The permit scheme offers benefits to the Council by improving communication and working relations with Promoters, which have led to increasing numbers of collaborative works.

The number of days of disruption saved through effective coordination continues to grow year-on-year and demonstrates how pro-active the Council are in minimising disruption on its road network. This measure remains one of the best ways to demonstrate the benefits of operating a permit scheme. Without such a scheme in place this would not be possible.

In the period of analysis 1,909 days of disruption has been saved by working with Promotors to identify collaborative opportunities.

In October 2024 Camden, Cadent Gas. Marlborough Highways and the Greater London Authority (GLA) were the recipients of Streetworks UK 'Award for Collaboration' in following a successful project delivering a joint utility gas replacement and sustainable drainage system for flood alleviation (SuDS) scheme in Parliament Hill. The Council continue to actively seek ways to capitalise on this with further schemes.

Camden were on of the first authorities to work with the GLA's Infrastructure Co-ordination team to improve co-ordination and collaboration on key major projects. This also included utilising the IMA mapping tool which brings together advance and speculative data on long-term utilities work programmes – from 6 months in the future to 30 years ahead.

Major projects Coordinated

In the period of this report the Council have successfully coordinated many large-scale infrastructure projects, which include:.

- Gas Mains Replacement in High Holborn and Covent Garden areas.
- UKPN works to support the National Grid.
- Thames Water mains replacement programmes.
- Kentish Town Bridge replacement/ Station upgrade with new signalised junction and multiple diversionary works.
- Agar Grove Bridge replacement and multiple diversionary works.

Camden actively encourage innovation from Promoters to reduce their disruption, such as and non-dig technologies, and were the first London Borough to trial a technique of Cissbot with gas companies. We actively encourage the use of Core and Vac methodologies.

Key Highlights

Some of the key highlights from this report include:

- Increased levels of application challenges, with justification reasons for refusal, with low levels of deemed (granted) permits.
- Increased use of permit conditions to control the delivery of work to minimise impact.
- Continued collaboration between Promoters;
- A continual trend towards a reduction in average work duration for both planned and unplanned work across most sectors and work categories; .
- An increase in permit variations issued by the Council to both Promoter working behaviours and constant changes and demands across the network.
- High levels of live site inspections leading to reduction in sample failures.
- Continued parity treatment across all Promoters.

Challenges

The data shows that there are far more extension requests being assessed, validated, and granted for utility Promotor works than there is for Highway Authority works which creates coordination issues.

This is largely reflecting that highway works by nature are more straightforward.

The Councils own works (Highway Authority) are undertaken by one term contractor for each set of works, whereas utility Promotor works are generally undertaken by several different contractors.

The Council assesses each extension request fairly and consistently regardless of which Promoter it has come from and has a high level of grants.

This can cause more planning issues resulting in a higher volume of extension requests for utility Promotors. In many cases a separate reinstatement contractor may have failed to attend within the last few days of their agreed duration, thereby causing the Promoter to request an extension (from the Council) to allow the Promoter to return the highway back to its original (operational) condition.

Camden still have a large level of reactive unpanned (Immediate) works, however these are typically small in scale and for a limit time so do not impact our coordination

Improvements could be made in the levels of first-time permanent reinstatement, which analysis showing c.3% level of interims reinstatement, which would require a return work for complete the interim-to-permanent reinstatement.

Analysis shows that 14% of works have an early start request, which is considered high. However, many of these are attributed to opportunities for collaboration between Promoters (bringing dates forward) and are therefore deemed beneficial for overall coordination.

Although there is a demonstrable level of collaborative work between Promoters, the Council still consider that this could be further improved with better planning and engagement between Promoters.

Working with Promoters

As demonstrated by this report, the Council use the permit scheme as an effective way to coordinate works with Promoters.

The Council seeks to improve co-ordination and work management of high impact unplanned (Immediate) and Major works on traffic sensitive roads by having regular progress meetings throughout the life of the work.

Camden are a member of the Transport for London (TfL) BusSENSE initiative and work closely with all stakeholders and Promoters which mitigates disruption to bus journey times and road users.

Camden are members of the London Joint Authorities Group (LJAG) working closely with other London Boroughs with the overall aim of driving consistency across the operation of the London Permit Scheme.

Communication is key in delivering schemes and Camden focus on working with Promoters to improve communications – to provide more accurate information to the road users.

Working with internal parking teams helps ensure that communication to the Public clearly shows when parking bays are impacted with the date ranges.

Promoter Compliance

The Council continue to inspect a high number of live site (in progress) works to ensure safety and any working arrangement to minimise disruption are in place.

Where Promoters do not comply with the permit scheme the Council act by issuing a variation or permit revocation. Additionally, any offences for working without a permit and breach of permit conditions are recorded and issued, both of which incur a fixed penalty notice payable by Statutory Undertakers.

Analysis of Applications

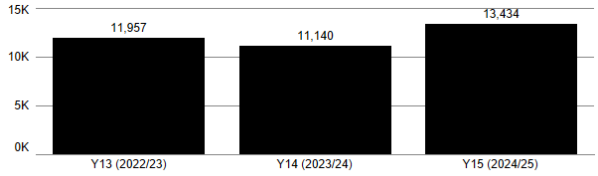
Applications for work

All **registerable works** require an application to the Council to obtain a permit. Prior to the introduction of the permit scheme, the Council was notified of these works.

Throughout this evaluation the term **application** refers to both the initial notice or permit application and the three-month advance notice application (Provisional Advanced Authorisation) for a Major work, unless stated otherwise. Non-statutory forward planning notices are not included.

Applications received

The chart below shows the volume of applications received per Scheme year.



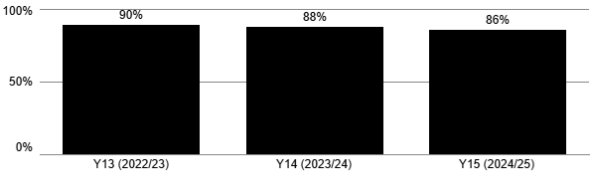
Application lead time

For the Council to effectively carry out the coordination of works, including the advanced publicity of works, it is essential that applications are submitted with sufficient lead time based on the work category, as set out within primary legislation.

- Major and Standard work requires an application lead time of 10 working days prior to the proposed work start date. Major work also requires a 3-month advanced notice, which becomes a provisional advanced authorisation under a permit scheme.
- Minor works require 3 working days lead time.
- Immediate works can be submitted after works start and must be received within 2 hours of works start or by 10:00 on the next working day if work started outside of non-working hours.

Applications for planned work received in time

The charts below shows (top) the proportion of initial applications received in time (of total) for planned work (excluding Immediate work category), in accordance with the minimum lead time, per Scheme year; and (bottom) the.

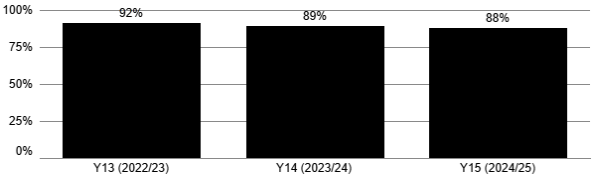


The Council can choose to grant, or refuse, this application, thereby allowing the work to commence with “an early start”.

For example, in Year 15 86% of applications were in time, so 14% not in time required an early start. Of that 14%, 88% were granted by the Council (refer to chart below).

Early starts granted by the Council

The chart below shows the proportion of applications received not in time granted by the Council (as a % of total received) per Scheme year.



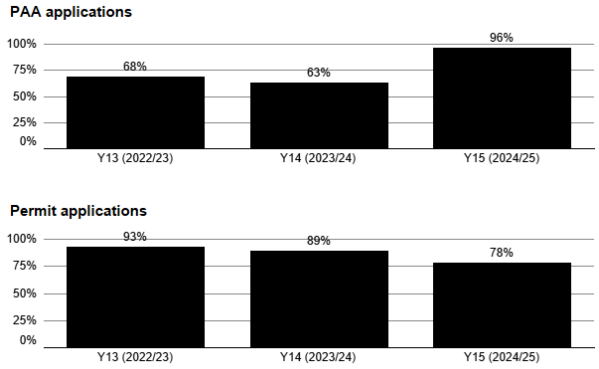
Response to applications

For a permit scheme to be effective the Council must process and respond to each application. Where the Council accept an application, this is granted.

Where the Council do not accept an application, or want to make changes to the proposed work, it is refused, and a response code (based on a set of national codes[i]) **must** be provided.

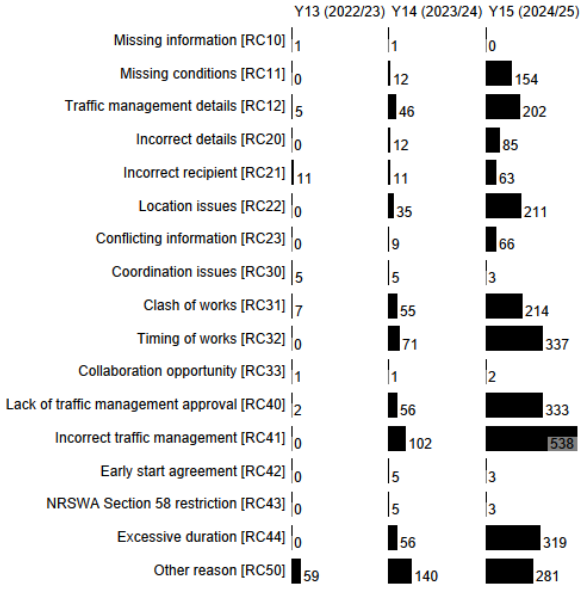
Applications granted (% of total)

The charts below show (top) PAA applications and (bottom) permit applications granted by the Council as a proportion of the total received. PAAs and permits that were cancelled or superseded before a response was given have been removed from this analysis.



Reasons for refusals

The chart below shows the response codes used on rejected applications in Scheme years 13 to 15. A refusal can contains more than one reason and therefore code.



Analysis of Work

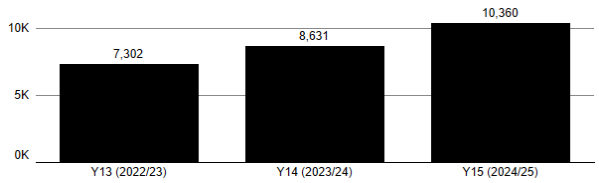
Work undertaken

Works are treated as 'undertaken' when they have reached a stage of 'in progress', *i.e. work has started.*

Not all applications for work or where a permit has been obtained (granted) result in work undertaken. Across Scheme years 13-15 an average of 79% of work phases result in an actual work, with the reminder cancelled, superseded or not used.

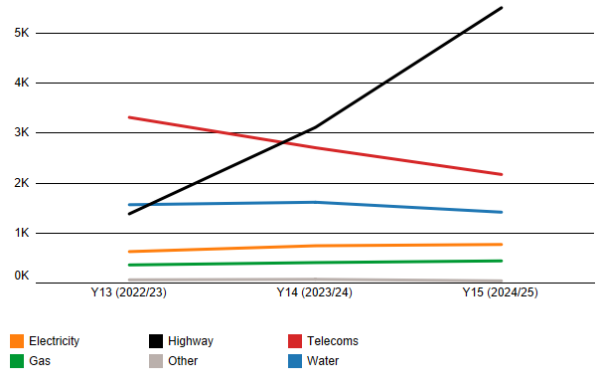
Work undertaken

The chart below shows the volume of work undertaken per Scheme year.



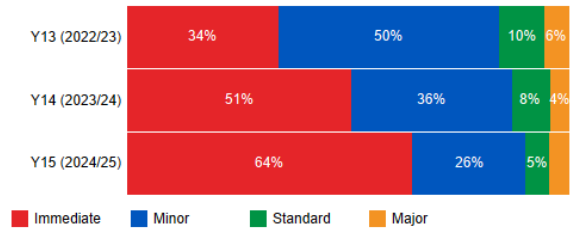
Work undertaken by sector

The chart below shows the proportion of work undertaken per Scheme year delineated by sector.



Work undertaken by work category

The chart below shows the proportion of work undertaken per Scheme year by work category.

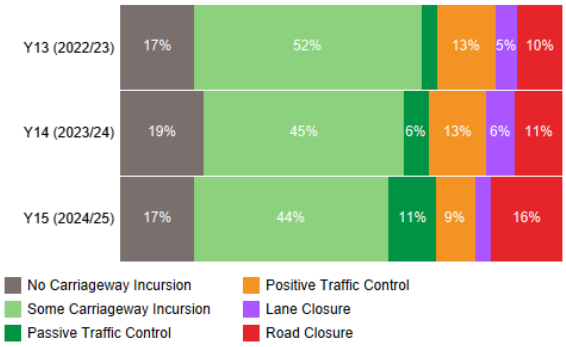


Use of traffic management

All works must be undertaken using an appropriate form of traffic management (control) to ensure work is undertaken safely - for those undertaking the works as well as the road user, *including pedestrians, cyclists and in particular the needs of disabled people and vulnerable groups.*

Traffic management used for work

The chart below shows traffic management (colour legend) for all works undertaken as a proportion of the duration (calendar days) per Scheme year.

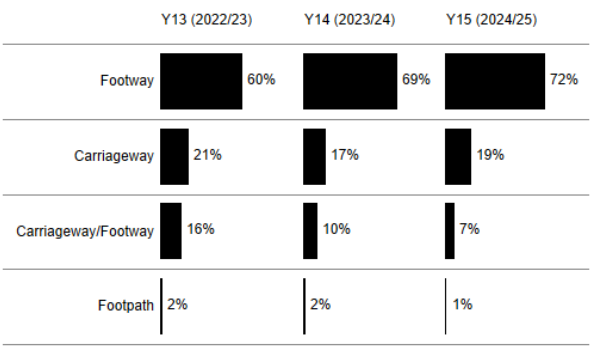


Work location

Work is undertaken across all different sections of the highway, not just the carriageway. Work location has been recorded since the introduction of Street Manager.

Work location by type

The chart below shows the recorded location of work (% of total) by type(s) for work undertaken per Scheme year.



Work duration

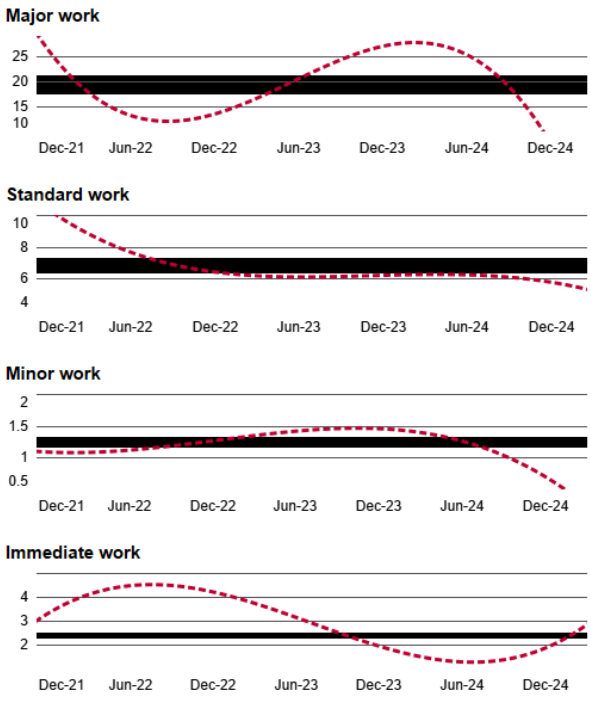
Analysis of work duration is based on work undertaken and calculated using timings provided in work start and work stop notices issued by Promoters. Durations are aggregated to whole days, however in reality a work may only take a few minutes or hours.

Analysis of duration over time considers trend, compared to the average duration, delineated by work category. This shows both the typical duration of this work category, and whether works are remaining similar, increasing or decreasing compared to this average.

This analysis is based on individual work durations providing a more comprehensive and accurate overview of duration compared to an aggregation of duration into a single "average duration". Whilst it is likely that there are more distinct variances between sectors and/or different types of work it does provide a strong indicator of overall trend.

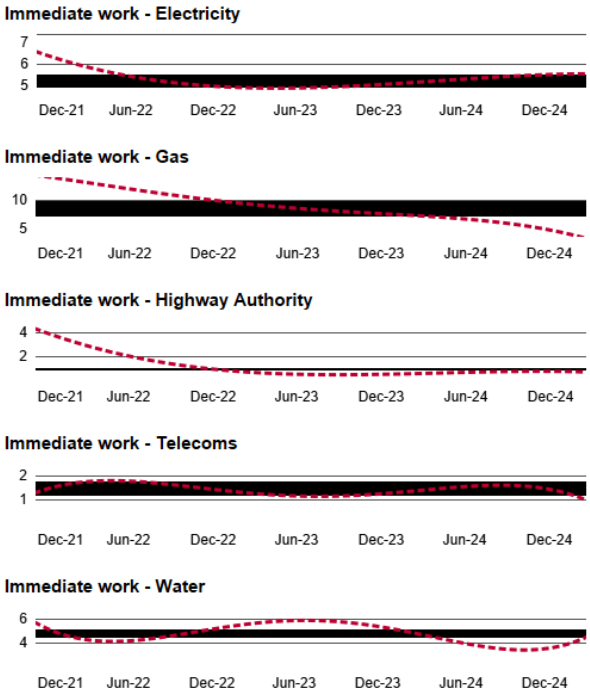
Average duration and trend

The charts below show an average duration with trend for the four work categories across the period January 2022 to January 2025 (inclusive) based on the actual duration for work undertaken. The trend line (red-solid) shows a polynomial model computed for each duration of work and an average duration (black-band) is shown with a 95% confidence level distribution.



Average duration and trend

The charts below show an average duration with trend for the Immediate works delineated by sector across the period January 2022 to January 2025 (inclusive) based on the actual duration for work undertaken. The trend line (red-solid) shows a polynomial model computed for each duration of work and an average duration (black-band) is shown with a 95% confidence level distribution.

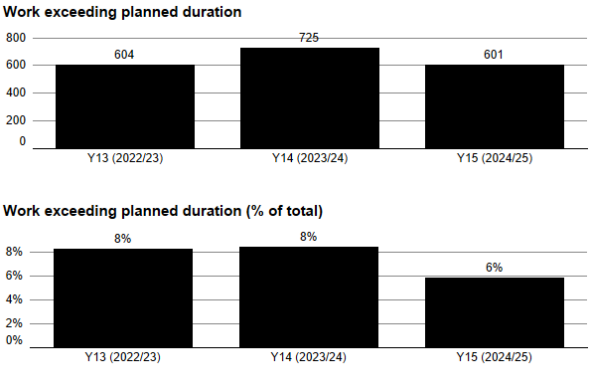


Work exceeding agreed duration

For this evaluation a work exceeding the agreed duration is identified when a work's **actual duration** exceeds the **proposed duration** (at work start).

Works with overruns

The charts below show (top) the total number of works undertaken where the actual duration exceeds the planned duration, (bottom) the proportion of all works undertaken (% of total) that exceeded the planned duration, per Scheme year.

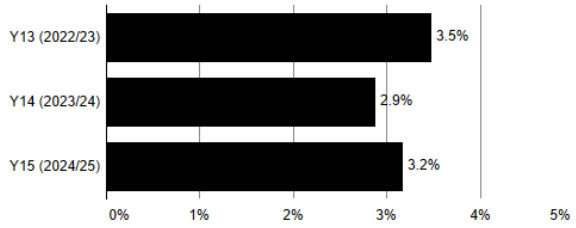


Reinstatement

After completing a work with excavation, a Promoter can choose to undertake a permanent reinstatement or an interim reinstatement, where the latter requires follow-up work to make the reinstatement permanent within six months.

Work with an interim reinstatement

The chart below shows the number of works involving excavation with an interim reinstatement (% of total) per Scheme year.

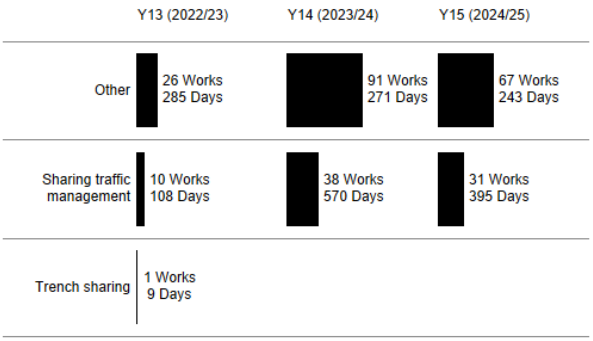


Collaboration between Promoters

One of the most effective methods for the Council to reduce the potential disruption is for Promoters to collaborate, thereby undertaking work in the same section of highway, or in close proximity, at the same time.

Work with a form of collaboration

The chart below shows the number of works with a form of collaboration per Scheme year.



Activity type

Since the introduction of Street Manager an activity type has been recorded for each work allowing for analysis of types of work undertaken.

Activity type by sector

The table below shows the % (of total) works by activity type for Scheme years 13 to 15 by Promoter sector.

Activity Type	Electricity	Gas	Highway	Other	Telecoms	Water	Total
Disconnection or alteration of supply	6%	15%	0%		1%	2%	2%
Diversionary works	0%				0%		0%
Highway improvement works	0%		3%		0%		1%
Highway repair and maintenance works			94%	2%	0%	0%	38%
New service connection	28%	2%	0%	2%	7%	7%	6%
Permanent reinstatement	0%	0%	0%	2%	3%	2%	2%
Remedial works	1%	6%	0%		5%	4%	3%
Statutory Infrastructure Works	2%	0%	0%		1%	0%	1%
Utility asset works	9%	14%	1%		37%	20%	16%
Utility repair and maintenance works	52%	63%	0%	2%	45%	65%	31%
Works for Rail Purposes				89%		0%	0%
Works for road purposes	1%		1%	2%			0%

Analysis of Permit Variations

Variations to permits

Both regulations and the Scheme includes a provision for the Council to vary or revoke a permit Therefore, a permit variation (*change request or alteration as named in Street Manager)* can be issued either by the Promoter for the Council to grant or refuse, or by the Council to the Promoter as an imposed change.

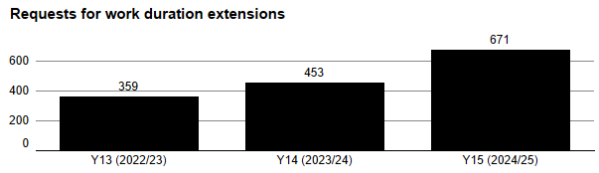
There are many reasons permits are varied, which include: changes to planned work dates, because of unforeseen issues, *such as bad weather or plant breakdown*, limiting work or changes required to meet customer demands to mitigate network impact.

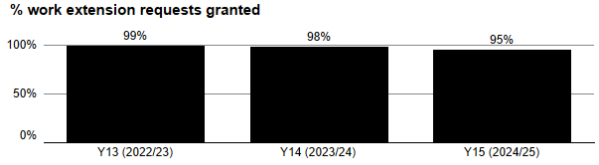
The types of permit variation fall within one of three different categories, which include;

- **imposed change** where the Council want to make a change to the permit;
- **Permit modification** where a Promoter responds to a modification request from the Council during the application stage.
- **Promoters change request** where a Promoter wants to vary the permit, including a **work extension** to change the end date once work has commenced.

Work duration extension request

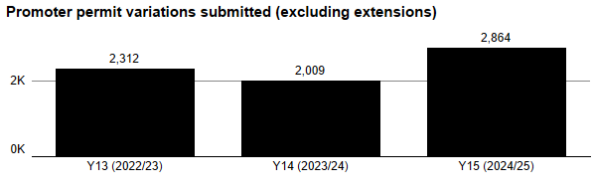
The charts below show (top) requests for a work duration extension and (bottom) the proportion of extensions granted, challenged or refused per Scheme year.

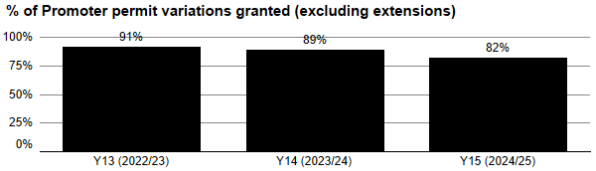




Variations from Promoters

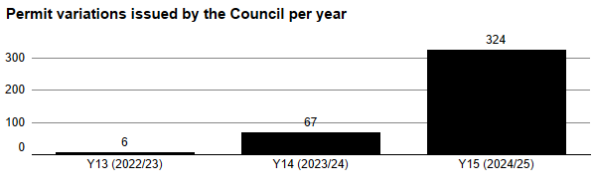
The charts below show (top) variations (excluding duration extension) from Promoters and (bottom) the proportion of Promoter variations granted (% of total) per Scheme year. Applications cancelled or superseded before a response have been removed from this analysis.

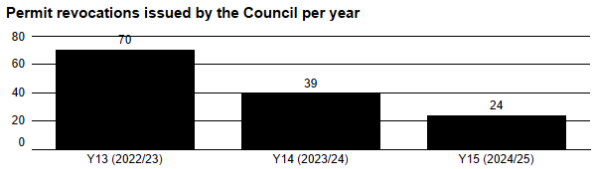




Variations issued by the Council

The chart below shows (top) the volume of authority-imposed variations and (bottom) permit revocations issued by the Council to Promoters per Scheme year.





Analysis of Permit Conditions

Use of permit conditions

Applying a condition to a permit is one of the primary methods for achieving the objectives of a permit scheme.

The process of a Promoter applying for a permit allows the Council to make changes to the work and where necessary apply conditions, within pre-define categories, to control and minimise the impact of the works, sometimes even before work starts, *for example advanced publicity of a road closure.*

The sub-sections below outline the conditions available to the Council. These are based on the categories defined in the Statutory Guidance for Permit Conditions. This Guidance sets out the conditions that can be applied to permits and the potential parameters that can be associated to these conditions.

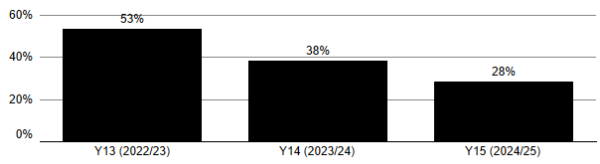
Analysis and evaluation for the use of conditions can be difficult to undertake as there are many variables for a work that need to be taken into consideration, *such as the work methodology, location, use of materials or plant, timing of the work.*

It can be impracticable to determine the criteria for a work and whether a condition could, or should, have been applied or not. In addition, it is not always possible to determine the effect of the condition or an outcome that can be quantified.

This analysis does not include conditions that apply to all permits, *such as displaying a permit number on a site board*, but only those that can be applied to a permit.

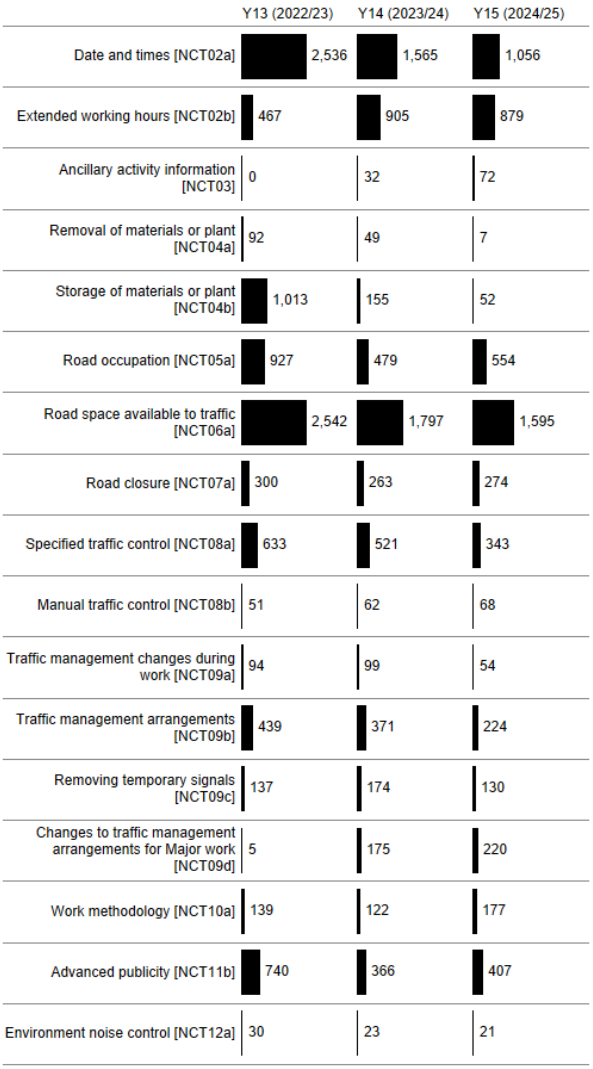
Work with an applied permit condition

The chart below shows the proportion of work undertaken with an applied permit condition (% of total) per scheme year.



Conditions applied by type

The chart below shows conditions applied, by their type, applied to work undertaken in Scheme years 13, 14 and 15.



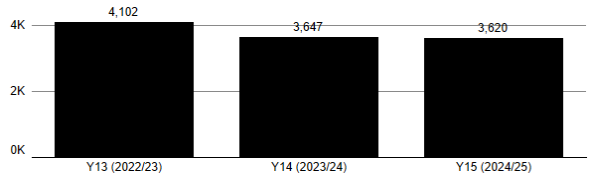
Analysis of Permit Compliance

Permit compliance inspections

Under a permit scheme the Council can undertake additional inspections during work for permit compliance to ensure that (a) work is being undertaken with a valid permit and (b) in accordance with the stated conditions (as applicable).

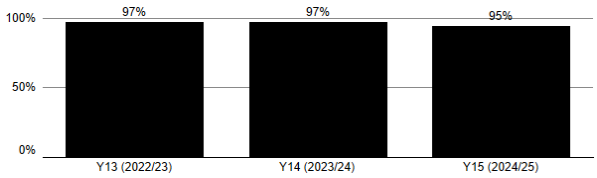
Permit compliance inspections

The chart below shows the proportion of works (% of total) with a live site inspection, per Scheme year.



Permit compliance inspection pass rate

The chart below shows the proportion of works (% of total) with a live site inspection, per Scheme year.



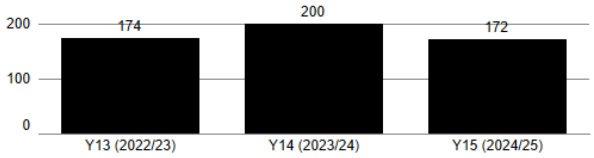
Permit offences

A permit scheme introduced two new offences, with financial penalties for statutory undertakers where there is a failure to comply.

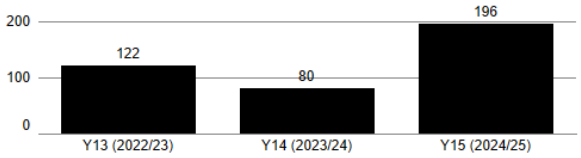
Permit offences issued to Promoters

The charts below show the number of offences issued to Promoters (not withdrawn) for (top) working without a permit and (bottom) breach of permit conditions, per Scheme year.

Offences for working without a valid permit

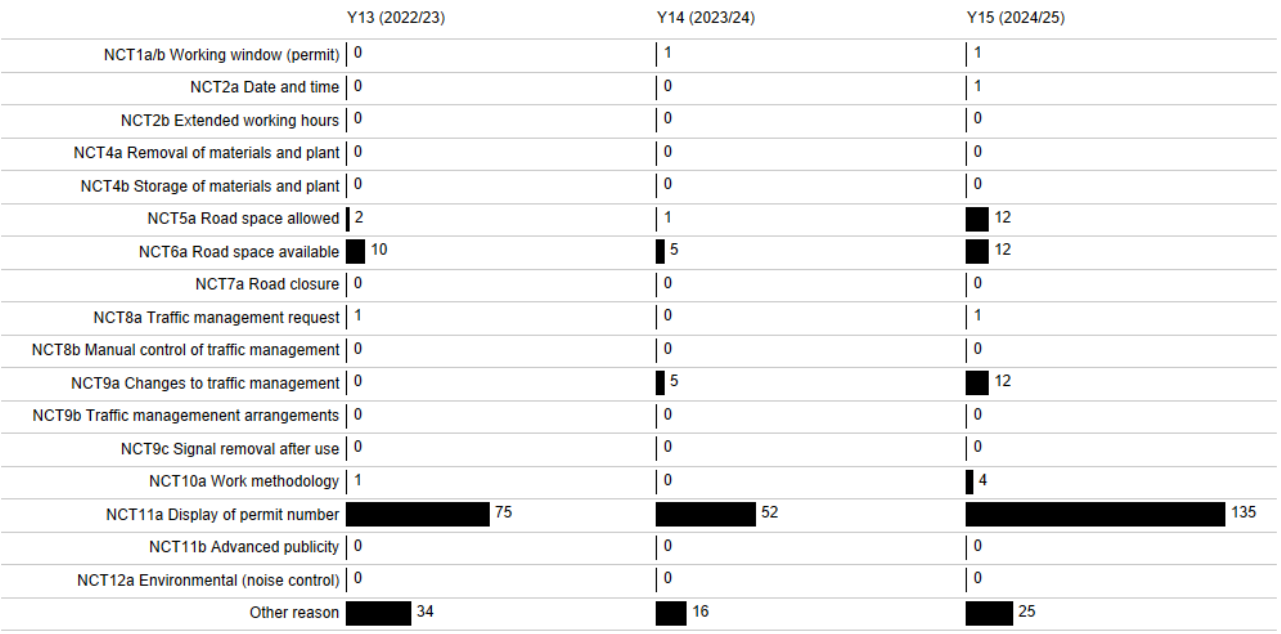


Offences for breach of permit condition



Reasons for permit compliance offence

The chart below shows the reason for permit condition offences per Scheme year



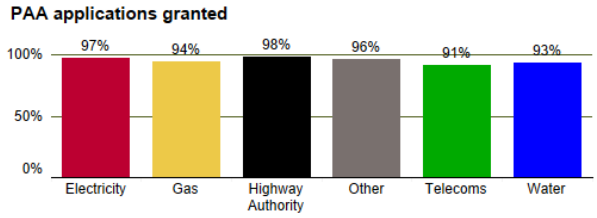
Analysis of Parity Treatment

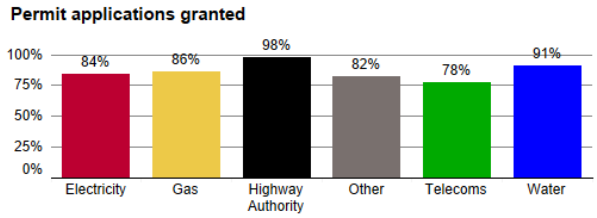
Section 40: Non-discrimination of the Permit Scheme Regulation state that the Council must apply the regulations (Parts 5 and 6) *without any discrimination between different classes of application for permits or for provisional advanced authorisation*. Statutory Guidance defines this further a **parity treatment** with *each permit application received are treated equally regardless of the works' promoter* .... and [Highway] *works will be treated in the same way as any undertaker (except that they are not liable for the fees or sanctions).*

Parity treatment will be analysed using specific measures for each sector across Scheme years 13 to 15 (inclusive).

Applications granted

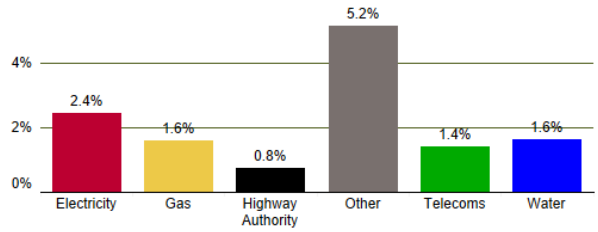
The charts below show applications granted (as a % of total received) by sector. The charts do not include applications deemed (granted), superseded or cancelled before a response was given.





Applications deemed

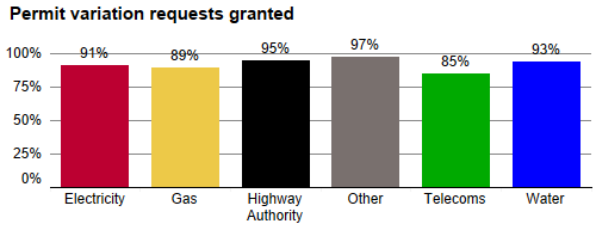
The chart below shows the % (of total) PAA and permit applications that were deemed (granted) by sector. The charts do not include applications superseded or cancelled before a response could be given.

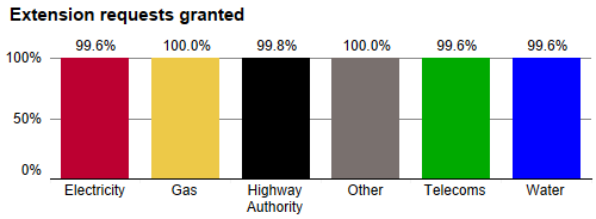


Permit variations granted

The charts below show the permit variation applications granted (as a % of total received) by sector.

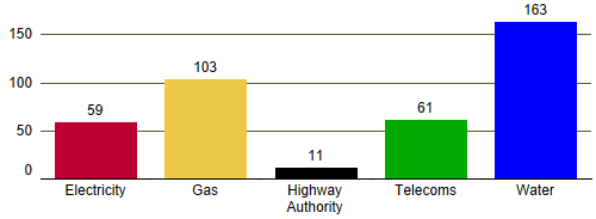
The variations are delineated by (top) requests for extensions and (bottom) other variations. The charts do not include applications deemed (granted), superseded or cancelled before a response was given.





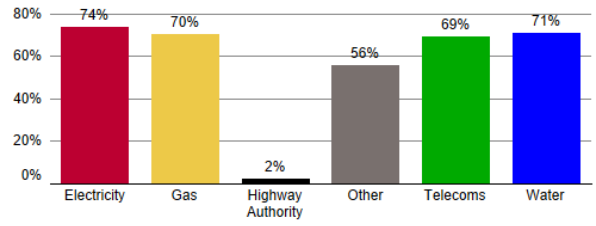
Authority issued variations

The chart below shows the number of variations issued to Promoters by the Council.



Work with a live site inspection

The chart below shows the number of works % (of total) with a live site inspection.



Analysis of Cost and Benefit

Review of income from permit fees

The Permit Scheme Regulations allows the Council to charge a fee to recover the prescribed costs for the administration of a permit, a provisional advanced authorisation, and the variation (alteration) of a permit. These fees are applied to statutory undertaker works only, not for work for road purposes (highway authority work).

The regulations require that the Council (as a permit authority) consider whether the fee structure needs to be changed in light of any surplus or deficit, to only recover the *prescribed* cost. The table below shows the income, (prescribed) cost and balance (income – cost) per scheme year.

Year	Income £	Cost £
Y13 (2022/23)	428,421	432,211
Y14 (2023/24)	421,150	423,416
Y15 (2024/25)	418,00	422,968

Across the three years of analysis there has been a slight deficit in the recovery of scheme costs (income – cost). Considering the relative low level of deficit the Council are not considering any adjustment to the permit fee levels but will continue to monitor both the application volumes and income going forward.

Impact of work

The societal impact of each work is estimated based on impact calculations derived from the **QUeues And Delays at ROadworks** (QUADRO) model taking account of local traffic flow for different types of road (refer to Evaluation methodology).

Whilst this impact is estimated, it should be accepted as a robust indicator of overall impact. Considering QUADRO is predicated only on carriageway impact, and a large volume of work also impact other forms of traffic, this indicator could be considered very conversative.

Cost-benefit-analysis

A cost-benefit analysis (CBA) provides a framework within which the impacts of a scheme can be compared against the cost of setting up and operating the scheme.

The approach to the CBA is as follows:

- Identify the scale and characteristics work historic works and quantify the societal impact of these works to the road user, residents and local economy;
- Estimate the reduction in impact resulting from the permit scheme and quantify the social benefit of this reduction;
- Quantify the costs of operating the permit scheme; and
- Undertake the cost benefit analysis to determine the benefit to cost ratio and net present value delivered by the scheme.

Further detail on the appraisal methodology is detailed within Annex A.

Appraisal Results

The cost benefit analysis takes the benefits and costs from each year of operation and projects these into the future to provide a 25-year appraisal period as per DfT Guidance.

The cost and benefit streams are discounted using the standard discount rate of 3.5%, meaning that near term costs and benefits are valued more highly than those occurring later in the appraisal period. Refer to table below.

Appraisal Metric	Value
Net Present Benefit of Scheme	£10,489,816
Net Present Cost of Scheme	£1,818,652
Net Presented Value of Scheme	£8,671,164
Benefit to Cost Ratio	5.77

An analysis of monetised costs and benefits includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. Refer to table below.

Analysis of Monetised Costs and Benefits

Noise	
Local Air Quality	
Greenhouse Gases	907,621
Journey Quality	
Physical Activity	
Accidents	780,509
Economic Efficiency: Consumer Users (Commuting)	4,125,092
Economic Efficiency: Consumer Users (Other)	6,187,639
Economic Efficiency: Business Users and Providers	-39,206
Wider Public Finances (Indirect Taxation Revenues)	1,471,838
Present Value of Benefits (see notes) (PVB)	10,489,816
Broad Transport Budget	1,818,652
Present Value of Costs (see notes) (PVC)	1,818,652
OVERALL IMPACTS	
Net Present Value (NPV)	8,671,164
Benefit to Cost Ratio (BCR)	5.77

There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does not provide a good measure of value for money and should not be used as the sole basis for decisions.

The benefit to cost ratio (BCR) is a measure of value-for-money exhibited by a scheme. With a BCR of 5.77 the permit scheme can be defined as delivering greater benefit than it costs and classified as 'High Value for Money'.

Carbon Emissions

A component to the costed benefits is a reduction in carbon emissions. These emissions savings are driven by more efficient vehicle movements, and the avoidance of the 'stop-start' movements associated with works. QUADRO places a monetary value on emissions savings by applying a 'cost of carbon' to the amount of carbon generated because of works, such as additional fuel due to idling, or diversions.

Taking the average calculated works impact, the carbon emission generated by works within the area (as calculated within QUADRO) are valued at £1.3million (2010 prices), which represents around 6% of overall work impact cost.

The implied carbon emissions attributable to works in the area amounts to 18,447 tonnes. This amounts to around 6% of total vehicular emissions on local roads in area. The improved efficiency of works under the permit scheme means that the scale of carbon emissions generated because of works may be expected to be reduced post-scheme implementation.

In line with the broader assumptions about permit scheme impacts, adopting the national permit scheme evaluation evidence as the basis for the reduction in works duration, scheme implementation would lead to estimated carbon emission savings of 996 tonnes CO2 per year. To set this emission saving in context, using the typical emissions of new cars sold in the UK currently, this reduction amounts to an equivalent saving of 830,000 annual car kms.

Annex A: Evaluation Methodology

Period of analysis

Throughout this evaluation there is a reference to "**years."** Unless stated otherwise, these reference Scheme operational years where the first year of the Scheme (Year 1) is between January 2010 January 2011 (inclusive).

Defining Promoters

Within this evaluation Promoters can be defined by their sector, *e.g. water*. The Promoter type Highway Authority is included in this definition, *as works for road purposes*.

The sector Other includes other organisations who need to undertake work on the highway, *such as Network Rail.*

Source data for analysis

This evaluation uses data collected from both Street Manager and the Council's system to process and record works. The data collected contains the content of notifications (events) sent between Promoters undertaking work, *such as utility companie*s, and the Council.

Analysis of these notifications enables the Council to produce metrics for performance indicators and further measures.

For some measures aggregating data for analysis does not provide an accurate picture of the results, for example for the analysis of duration for all work categories can provide a falsely inflated picture of changes over time.

This evaluation therefore delineates many of the measures into sub-categories, *such as works category*, to provide a more accurate result and trend.

Many of the measures contained in this evaluation were analysed to ensure accuracy in the results. This level of analysis may not be included within this evaluation report; however, it should be accepted than any findings presented have been tested for certainty and any anomalies investigated and defined.

Work phases

In this evaluation work is analysed in logical phases. A work is typically identified by a work reference number, which often applies to multiple phases of work, for example a work reference number may contain the following individual phases:

- work with a temporary reinstatement;
- follow-up work changing the temporary reinstatement to a permanent reinstatement;
- defect work to rectify a fault with the permanent reinstatement.

To logically delineate work phases, a phase is identified from the initial application through to work completion notices within the same work reference. Therefore, the analysis shown for work in this evaluation is for a work phase, *i.e. the total works undertaken are the total work phases undertaken*.

Duration analysis

Analysis of works duration is calculated using the dates provided within the work start and work end notifications, inclusive of these dates.

As would be expected within a significant dataset from multiple different organisations spurious data can be found, such as work end dates before a work start date therefore giving a negative duration, or work with an incorrect year, thereby giving a significantly high duration. Whenever possible, these anomalies are identified and removed from the analysis to provide a more realistic result.

Since the introduction of the DfT's digital service, Street Manager, and associated regulatory changes in July 2020 it is possible to determine the timings more accurately and reliably from the works data. This means a work duration can be calculated by minutes instead of whole days. As such, analysis using Street Manager derived data provides a more realistic insight and result.

Analysis of total duration based on the notice dates (whole calendar day) and notice times shows that there can be noticeable differences between these two types of measure.

For this evaluation, analysis of work duration and trend is predominantly based on dates of the work notices, not timings, as the pre-scheme historic data does not contain accurate timings. Any variations to this approach will be clearly defined in the report.

Economic cost-benefit-analysis

Appraisal methodology

A cost-benefit analysis (CBA) provides a framework in which the impact of a scheme can be compared against the cost of setting up and operating the scheme. Annual evaluation of the Permit Scheme CBA provides opportunity to review the value of the scheme with the benefit of the outturn scheme operating costs and revenues, updated estimates of the societal impact of work and to compare this not operating a permit scheme.

The approach to the permit scheme CBA is as follows:

- identify the scale and characteristics and quantify the scale of societal impact these works will have had to the residents and local economy;
- estimate the reduction in impact resulting from the permit scheme and quantify the social benefit of this reduction;
- identify the cost of setting up and operating the permit scheme; and
- undertake the cost benefit analysis to determine the benefit to cost ratio and net present value delivered by the scheme.

The societal impact of each work is estimated based on impact calculations derived from the **QUeues And Delays at ROadworks** (QUADRO) model. Originally QUADRO was developed for the DfT and designed to assess and monetize the impact of delays due to works. QUADRO is currently maintained by National Highways.

QUADRO captures loss of time to travellers, increased vehicle operating costs because of idling in queues and/or diversion, vehicle emissions and accident impacts. Impact modelling is based on local traffic flow data (within the Council's boundary), disaggregated by road type, to provide locally relevant impact values.

Promoter Costs

In addition to the costs of operating the permit scheme, it is important to recognise that there are costs borne by works promoters also in operating under the permit scheme. These will include:

- Permit Fee costs which represent a business cost to the promoter.
- Within the CBA this is treated as a business cost to the promoter, netted from overall scheme benefits. However, the transaction is effectively a transfer payment between promoter and the Council, so the payment is treated as a revenue and is subtracted from scheme operating costs.
- Additional administration costs in complying with the permit scheme.
- Costs related to changes in working practices such as greater use of traffic management or off-peak and weekend working.

Detailed promoter cost data has not been available, but in line with evidence gathered from other permit scheme evaluations and adopted as the default assumption in the National Permit Scheme Evaluation, an estimate of 20% of local authority operating costs relating to Statutory Undertaker works has been applied.

Assessing the scale and impact of work

To ensure the most rigorous analysis for the CBA, the Street Manager data from the most recent complete year has been used as the basis for estimating works impact costs and permit scheme benefits.

For the purposes of the CBA, works are disaggregated by type of traffic management, which has important implications on the scale of impact of those works on highway users.

The remainder of the work involved no incursion into the carriageway and has been assumed to have no impact on road users. It should be noted that this is a conservative assumption as even non-carriageway works are likely to incur some impact, whether road users or on wider society.

The estimated impact of the works with incursion into the carriageway have been modelled using the QUeues And Delays and ROadworks (QUADRO). QUADRO was originally developed for the DfT and designed to assess and monetize the impact of delays due to works.

Whilst no longer hosted by the DfT, the QUADRO model continues to be maintained, under the responsibility of National Highways, and is considered the most appropriate tool to quantifying the impact of works for this evaluation.

Having developed costs for every work type, each work within the data used for this evaluation has been assigned an impact cost, according to its characteristics and the duration of the work taken from the more robust data contained within Street Manager.

This provides highly granular results, especially when compared with the typical aggregated CBA approach adopted in other scheme evaluation documents. The modelled impact of typical works forms the basis of the benefits calculation.

These impact estimates include the following elements:

- Road user travel time (delay caused to consumer and business as a result of works)
- Road user vehicle operating costs (the impact of delay and diversion on vehicle operating costs for consumers and business)
- Accident costs
- Emissions costs (resulting from congested conditions and diversion)
- Indirect tax revenue (increased tax revenue to the exchequer because of higher fuel consumption)

Whilst QUADRO covers most of the standard monetised elements of work impact, an off-model adjustment was made to account for reliability impacts.

DfT guidance recommends that this be captured through application of an uplift to journey time costs/benefits. The recommended uplift factor is 10-20%. A factor of 15% has been adopted for this evaluation to be consistent with this recommendation.

Quantification of benefit of permit scheme

The benefits of the permit scheme are expected to be achieved through more efficient and better managed work events taking place compared to the patterns observed before scheme implementation.

Relating observed changes directly to the scheme is complicated by the range of factors which influence work occurrences. For the CBA, the comparative scenario is one in which the permit scheme had not been implemented and is therefore by its very nature hypothetical and unobservable.

A national evaluation of permit scheme impacts was commissioned by the DfT in 2017[ii]. This study adopted a rigorous cross region evaluation of the observed pattern of roadworks under authorities with and without permit schemes. It concluded that the impact of work was typically 6.4%, which aligned closely with the default assumption of 5% works impact reduction previously adopted in assessments (DfT Permit Scheme Evaluation Guidance, 2016).

To ensure the most rigorous assessment of the impact of the permit scheme, the national evaluation estimate of 6.4% reduction in impact under a permit scheme has been paired with the impact cost estimate derived from the works.

The cost benefit appraisal requires that scheme benefits are appraised against scheme costs over the whole appraisal period, which in this case is recommended as being 25 years in the DFT permit scheme appraisal guidance.

Consequently, the benefits are projected forward over subsequent years, with impacts and benefits increasing in real terms to reflect growth in values of time, vehicle operating costs, accident savings and emissions costs.

Scheme Operating Costs

Having established scheme benefits, these must be set against scheme costs to determine value for money. Permit scheme costs elements include the following:

- Setup costs
- Scheme operating costs (staff, consultants, maintenance/running costs)
- Scheme capital costs – IT equipment, software etc

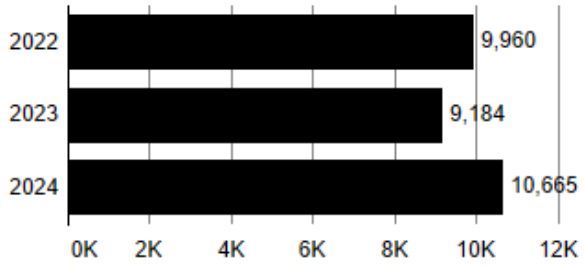
Importantly, the permit scheme costs included within the appraisal are the additional costs of operating the permit scheme above those incurred previously incurred in delivering the council duties regarding work applications. By considering the incremental costs, this fairly compares the 'with permit scheme' scenario with the 'business as usual (i.e. no permit scheme) scenario.

Whilst the scheme has now been running for several years, the appraisal focuses on the projected costs of operation over the coming years, to align with the benefit estimate.

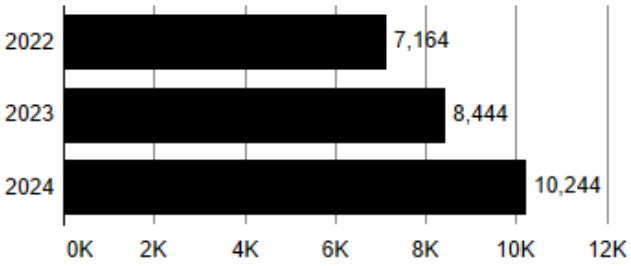
The operating costs of the permit scheme principally relate to the additional internal staff resources required to process permit applications and additional operating factors to administer the permit scheme, such as finance payment and reconciliation, performance and evaluation.

Annex B: HAUC Performance Indicators

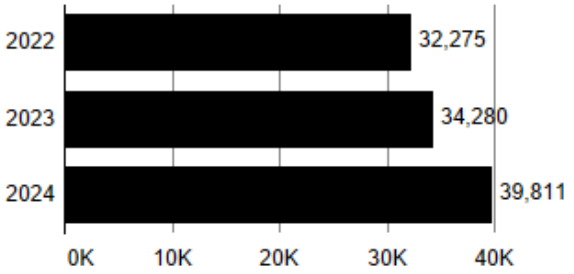
TPI 1 Works Phases Started (Base Data)
This measure shows the works started by calendar year



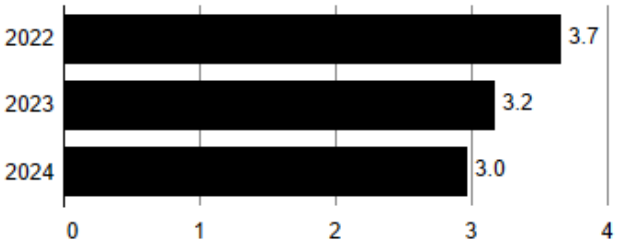
TPI2 Works Phases Completed (Base Data)
This measure shows the number of works completed per calendar year



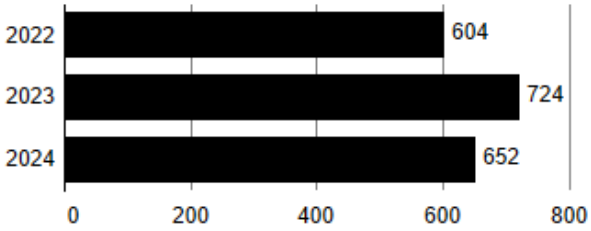
TPI3 Days of Occupancy Phases Completed
This measure shows the duration (aggregated whole calendar days) for works completed per calendar year



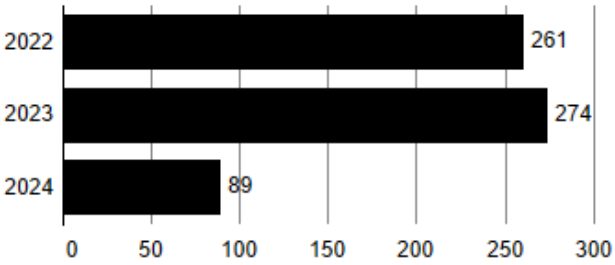
TPI4 Average Duration of Works
This measure shows the average duration (calendar days) for works completed per calendar year based on work timings.



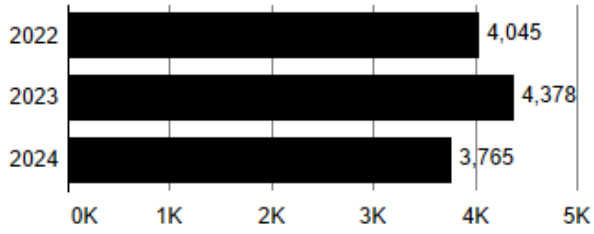
TPI5 Phases Completed involving Overrun
This measure shows the total works completed that exceeding the planned duration per calendar year



TPI6 Number of deemed permit applications
This measure shows the deemed applications per calendar year or that event



TPI7 Number of Phase One Permanent Registrations
This measure shows the total works completed with a permanent registration per calendar year



Annex C: Glossary and common terms

Council	London Borough of Camden including their capacity as a Local Highways Authority.
DfT	Department for Transport
Duration	A work duration is calculated in calendar days based on the actual or proposed works start date and the actual or estimated works end date, inclusive of both days. Refer to Evaluation methodology for further information.
EToN	The Electronic Transfer of Notifications, the nationally agreed format for the transmission of information related to works between the Council and those undertaking works.
HAUC	The Highway Authorities and Utilities Committee.
NRSWA	New Roads and Street Works Act 1991.
PAA	Provisional Advanced Authorisation, which is a notice sent only in relation for Major works 3 months in advanced of the proposed start with a higher-level of detail for the intended works.
Permit	Permission sought by a Promoter to undertake works on the highway, in accordance with the Permit Scheme.
Permit condition	The capability for the Council to apply conditions to a permit, and therefore the work, is one of the primary methods to control and coordinate works through a permit scheme. The conditions that can be applied are set out within Statutory Guidance, *each with a reference code comprising NCT with a unique number*, within the following categories: date and time constraints; storage of materials and plant; road occupation and traffic space dimensions; use of traffic management provisions; work methodology; consultation and publicity of works; and environmental considerations for noise.
Permit Scheme	The South East Permit Scheme from Road Works and Street Works
Permit Scheme Regulations	The Traffic Management Permit Scheme (England) Regulations 2007, Statutory Instrument 2007 No. 3372 made on 28 November 2007 and the Traffic Management Permit Scheme (England) (Amendment) Regulations, Statutory Instrument 2015 No. 958 made on 26th March 2015.
Permit Variation	The process to change an agreed permit to reflect current or proposed changes in the works.

Promoter	A person or organisation responsible for commissioning activities [works] in streets covered by the Permit Scheme - either an Undertaker or a participating Council as a highway or traffic authority.
Statutory Guidance	The Traffic Management Act (2004) Statutory Guidance for Permits.
TMA	Traffic Management Act 2004
Undertaker	Statutory Undertaker as defined within Section 48(4) of NRSWA
Work	Also referred to as an activity. Work that should be registered to the Council carried out by a statutory undertaker, as a street work, or for the Council, as a road work.
Works category	Every work is assigned a category, based on the following: Major works are works that are 11 days or more in duration or require a temporary traffic regulation order, *such as a road closure*. Standard works are non-Major works between 4-10 days. Minor works are non-Major works with a duration of 3 days or less. Immediate works are either emergency or urgent works that require an immediate start.

Annex D: References

i As defined in the HAUC(England) Advice Note: Standard Permit Response Codes.

2010 is the default base year for the DfT's Webtag appraisal guidance. A common base year allows costs and benefits from different years to be compared in a common unit of account.

HUSSAIN, R.S. ... et al, 2016. Evaluating the road works and street works management permit scheme in Derby, UK. 95th Transportation Research Board Annual Meeting, 10th-14th January 2016, Washington DC

DfT Advice Note For local highway authorities developing new of varying existing permit schemes, June 2016.

ii

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/700502/permit-schemes-evaluation-report.pdf