



South East Permit Scheme for
Road Works and Street Works
Year 9 Evaluation

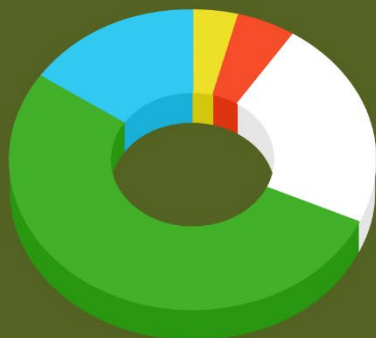
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Key Findings

Work split by service provider



Gas Electricity Highway
Telecoms Water



5,336

works undertaken across
Bracknell Forest per year



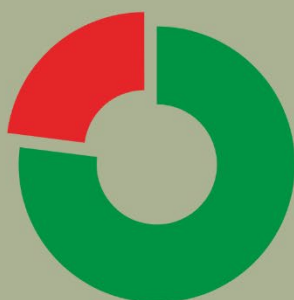
15

works starting every
day (on average)



25,442

total days of highway
occupation per year



77%

permits granted on first
application



26%

all work involves a form of
positive traffic control



62%

work undertaken
with an applied
permit condition



£833,116

Estimated net present value of the permit
scheme to Bracknell Forest per year



194,876

equivalent saving of annual car
kms of CO2 emissions (373 tonnes)

Figures quoted are based on averages across Scheme years 7, 8 and 9.

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 October 2015 the Council introduced the **South East Permit Scheme for Road Works and Street Works** (the Permit Scheme). 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 scheme years 1 to 9 (October 2015 to March 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 are used for this purpose.

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

Executive summary

Works across the Borough

In March 2024 the Council had completed their 9th permit scheme year, taking into account a shortened year in 2018/19 to align the scheme years to financial years. Since then, from Scheme year 5 there was a year-on-year increase in the volume of work undertaken across the Borough with a peak of 5,904 works in year 8 (2022/23).

The volume of works decreased in Scheme year 9, compared to the previous years. Analysis of Promoter sector shows the increase from 2020 to 2023 can be mainly attributed to work within the Telecoms sector – the rollout of national full-fibre broadband to meet Government targets.

These types of peaks within Sectors are typical, with Water sector work for mains replacement and asset maintenance peaking between 2016 and 2018. During this period the Covid pandemic also impacted the volume of work undertaken, with this period (2020 – 2021) showing the lowest relative volume of works.

The work category has remained proportionality similar over the nine years of the Scheme, with c.60% of work for planned minor (1-3 days).

The proportion of unplanned Immediate (urgent or emergency) work has steadily decreased since a high in 2020 (30%) to a low in 2023/24 (20%). This could be attributed to a change in working behaviour and potentially less Immediate works across the Borough.

Work undertaken with a form of collaboration remains low, with only 53 works totalling 221 days in a peak year 2021/22). This is a recognised challenge across the industry, with many difficulties in aligning Promoters and work timings for the potential to collaborate successfully.

Occupation of the highway

In the most recent three years of analysis (2021 – 2024) 35% of work undertaken was on the footway with only c.60% of work impacting the carriageway. This demonstrates the type of work predominantly being carried out across the network during this time, especially for telecoms work along the footway.

In line with the volume of works, the overall occupation of the highway (duration) proportionality increased over Scheme years 6 to 8, decreasing into year 9, with a peak of 30,995 days in 2020/21.

More detailed analysis of average duration and trend over the nine years of the Scheme shows fluctuations in planned Major and Standard works (peaks between 2018 – 2022) which is to be expected for these types of works.

For the higher volume minor works (60% of total undertaken) there was a minor peak above average in 2020/21, but since 2023 there is an overall decreasing trend in duration. Overall, the average duration (2.2 days) and trend has remained below the maximum 3 days allowed for these types of work.

Analysis of unplanned work (Immediate) shows an average duration of 4.5 days, with a peak above average in 2018 – 2021. Since 2022 this trend is showing a relatively positive decreasing trend, well below the average over the nine years of the Scheme.

Analysis of work timing on streets with a traffic-sensitivity designation shows on average c.75% of work on the carriageway is undertaken at a designated traffic-sensitive (peak) time. This has remained broadly similar in Scheme years 7, 8 and 9.

Work exceeding its planned duration at over 10% of work undertaken each year, however the total duration of unplanned work is relatively low compared to the overall duration of work each year (459 of 30,995 in Scheme year 6).

Coordination of work

On average, 76% of applications made to the Council result in a work undertaken. The remainder of applications, which are still reviewed and processed, are either cancelled, superseded or work did not proceed.

Of all the applications processed, 80% of Provisional Advanced Authorisation (PAA) for Major works and 77% of permits are granted – the remainder are refused, mostly with a request to modify the permit.

Analysis of reasons given, by the Council, for a refusal typically fall within three distinct areas:

- Missing information or permit conditions on the application;
- A clash with other planned or active work; and
- Lack of approval for the proposed traffic management.

Across the nine years of the Scheme, work undertaken with an applied permit condition (% of total) fluctuates between 47% to 68%. A wide range of the conditions available are applied, with the use of a condition to control timing applied the most.

Further analysis of application of conditions shows that on traffic-sensitive streets a condition for limiting the times of occupation or manually controlling the lights (where applicable) is applied on a large proportion of the works. Since Scheme year 7 (2021/22) the use of advanced publicity for works involving a road closure has increased significantly (to c.85% of works).

Permit scheme compliance

The volume of permit scheme compliance inspections has varied year on year, with overall pass rates between 82% and 92%. This reflects the varied levels of offences issued for working without a valid permit or a breach of permit condition.

Where an offence is issued this is predominantly for working without a permit or not displaying a permit number on site. Offences for other condition breaches are minor, especially compared to the volume of work with a permit condition applied.

Parity treatment

Analysis of parity treatment, by the Council to the different Promoters sectors, shows variance within each measure. In consideration to different working practices and behaviours, and the different volumes of works undertaken across these sectors, these variables are to be expected. Overall, the indicators suggest the Council are applying their permit scheme without discrimination across the different sectors.

The equality impact assessment shows a positive impact from a permit scheme for the disability protected characteristic group, whilst the other groups are classified as not applicable.

Cost and benefits of the Scheme

The economic appraisal of the Scheme, in accordance with DfT transport appraisal guidance, shows that the Scheme is delivering greater benefit than its cost, and can be classified at high value for money. The estimated benefit-to-cost ratio is £2.6 of reduced impact (to society) for every £1 it costs to operate the Scheme.

Looking ahead

Whilst the Council can clearly demonstrate that after nine years, they operate an efficient and effective permit scheme, there are areas where few changes could improve some of the Scheme benefits. These areas include:

- changes to work from the coordination process;
- timing of works on traffic-sensitive streets;
- continued review in the use of permit conditions; and
- checks for compliance to all permit conditions.

Many Councils are considering the introduction of a lane rental scheme as a way to build upon the operation of their permit scheme. Bracknell Forest should also consider the benefits of this scheme, especially with consideration to work at peak times, lack of collaboration between promoters, and compliance with timing conditions.

Analysis of Applications

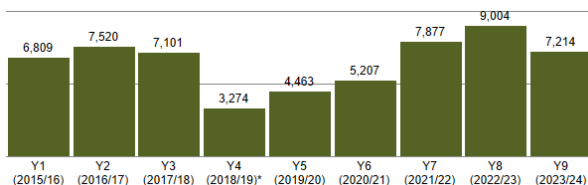
Applications for work

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.



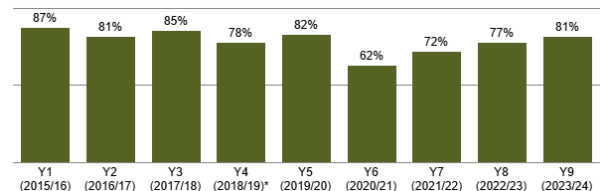
Application lead time

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 chart below shows 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.



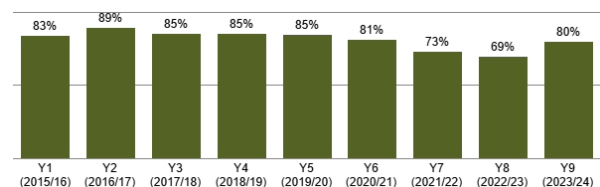
When an application for planned work is not received in time this is referred to as an “early start” as the Promoter wishes to start earlier than the prescribed lead time.

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

For example, in Year 9 81% of applications were in time, so 19% not in time required an early start. Of that 19%, 80% 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.



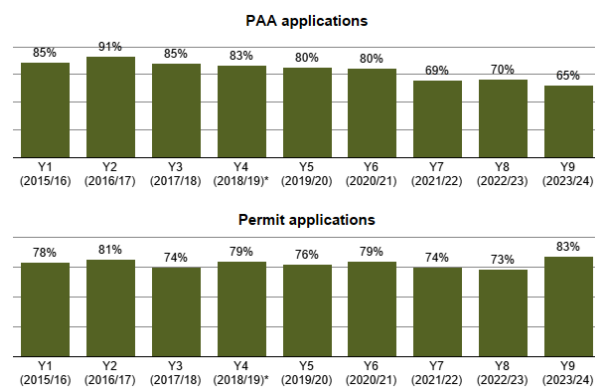
Analysis of Coordination

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 codes¹) **must** be provided.

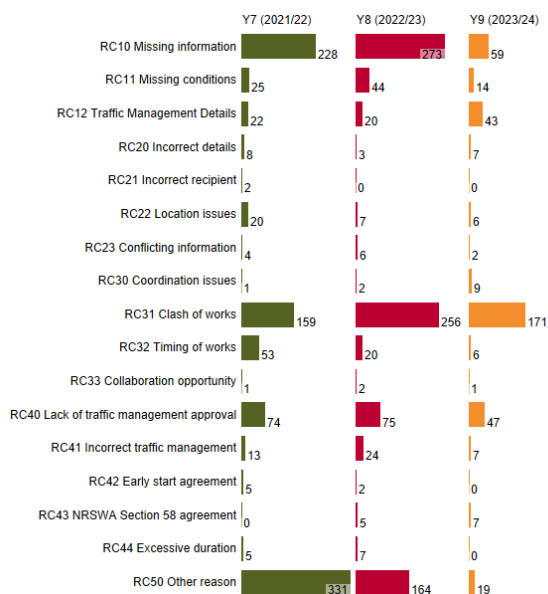
Responses to applications

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 for Scheme years 7, 8 and 9. A refusal can contains more than one reason and therefore code.



Changes during the life of a permit

Processing permit applications provides an opportunity for the Council to undertake their network management duty, with an aim to reduce the potential disruption of the work. The sections below show analysis of changes to permits during the planning stage - between the initial application and work start - based on the content of the notices received and issued.

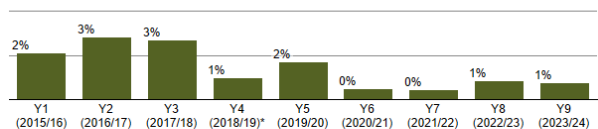
This analysis should demonstrate the ability to use the Scheme for coordination, through changes being made to a permit. The analysis considers changes to four key areas:

- (1) proposed duration
- (2) permit condition (where a work had a condition applied)
- (3) traffic management
- (4) Collaboration (where a work was undertaken with a form of collaboration)

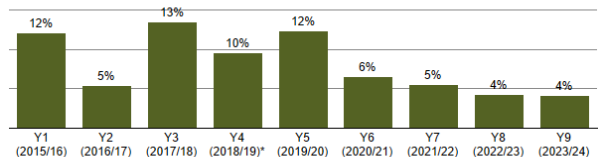
Changes to work during the planning stage

The charts below show the proportion of work (% of total) where a change was made to a permit during the planning stage (planned work only) per Scheme year.

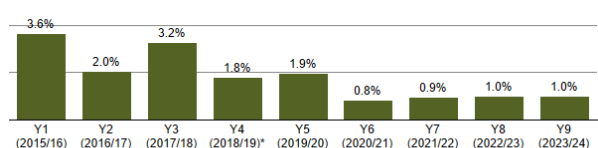
Work with a duration decrease



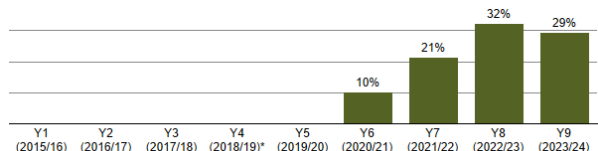
Work with a condition change



Work with a traffic management change



Work with a collaboration change



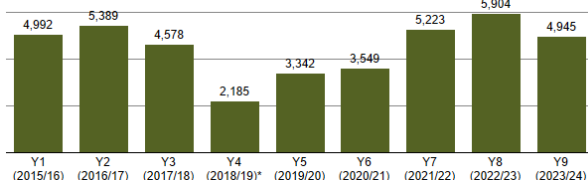
Analysis of Work

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. On average 70% of applications received result in an actual work, with the remainder cancelled or superseded.

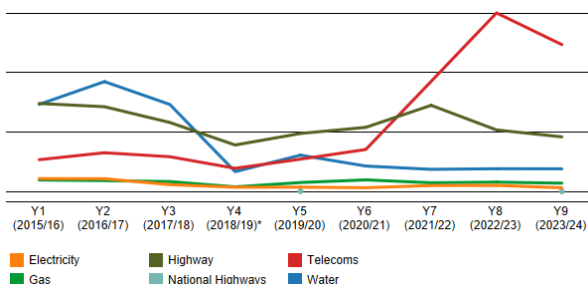
Work undertaken

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



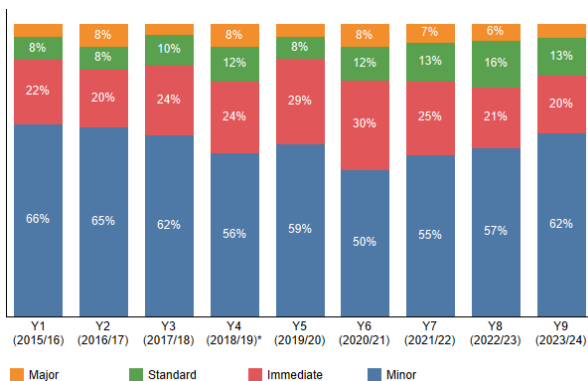
Work undertaken by sector

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 delineated by work category.

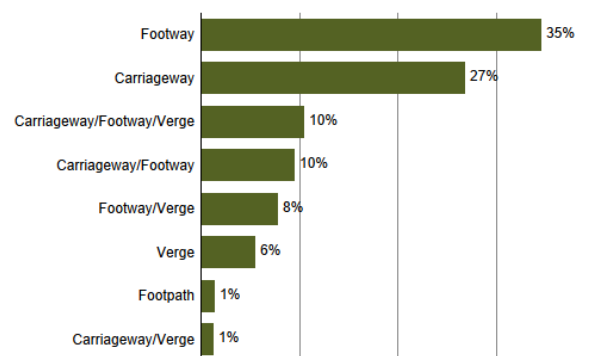


Work location

Work is undertaken across all different sections of the highway, not just the carriageway. Since the introduction of Street Manager in July 2020 the location of work has been recorded on permits.

Work location by type

The chart below shows the recorded location of work by type(s) for work undertaken in Scheme years 7, 8 and 9.

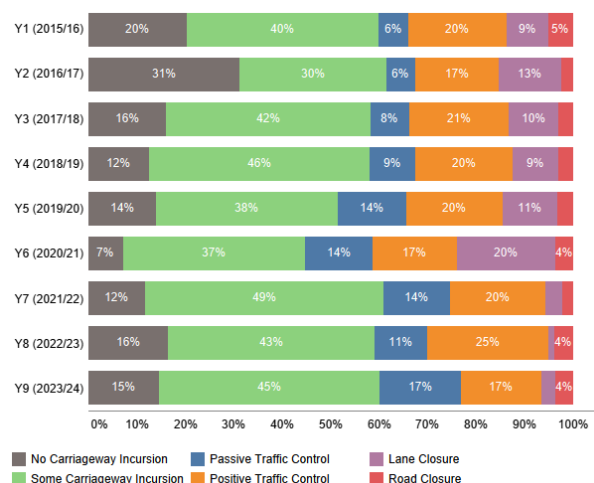


Use of traffic management

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.

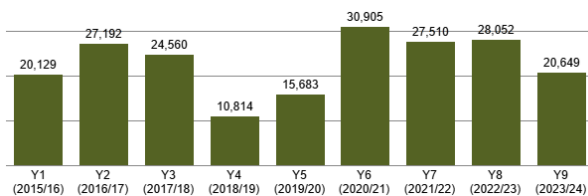


Work duration

Analysis of work duration is based on works undertaken only. Durations are typically calculated in whole calendar days, however in reality a work, *such as an asset inspection or pothole repair*, may only take a few minutes or hours.

Duration of work (whole days)

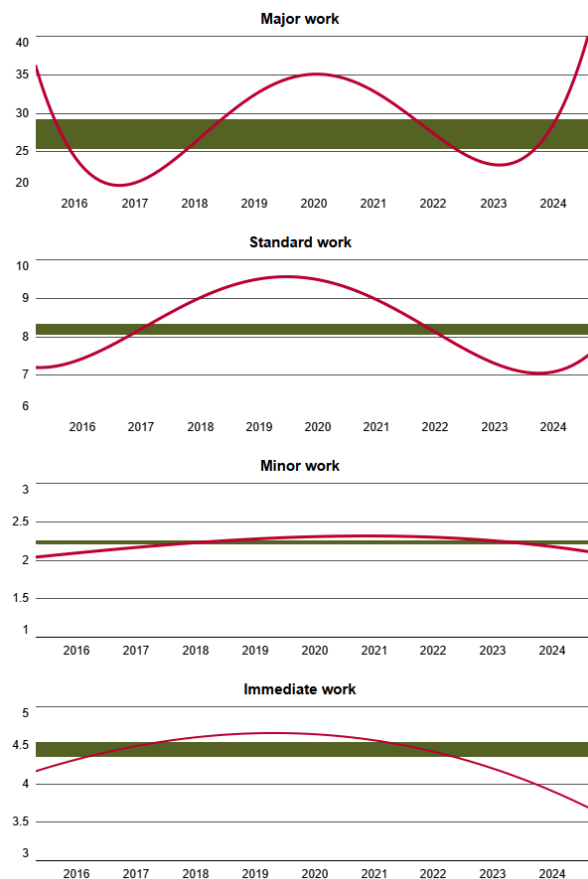
The chart below shows the total duration of work by whole calendar days per Scheme year.



Analysis of duration considers trend over time, with work delineated by work category.

Average duration and trend

The charts below show an average duration with trend for the four work categories across Scheme years 1 to 9. The trend line (red-solid) shows a polynomial model computed for each duration of work and an average duration (grey-band) is shown with a 95% confidence level distribution.

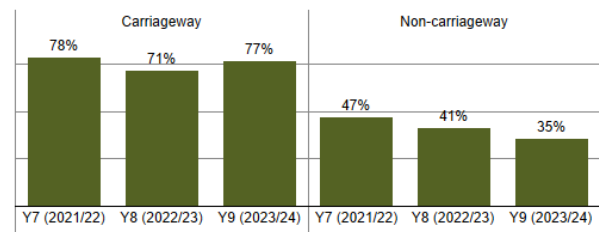


Timing of work

Since the introduction of Street Manager in 2020 Promoters have provided a more accurate record of actual start and stop times for their works. This allows a more detailed analysis on the timing of work, related to duration, and the use of timing conditions to control occupation of the highway as specific times.

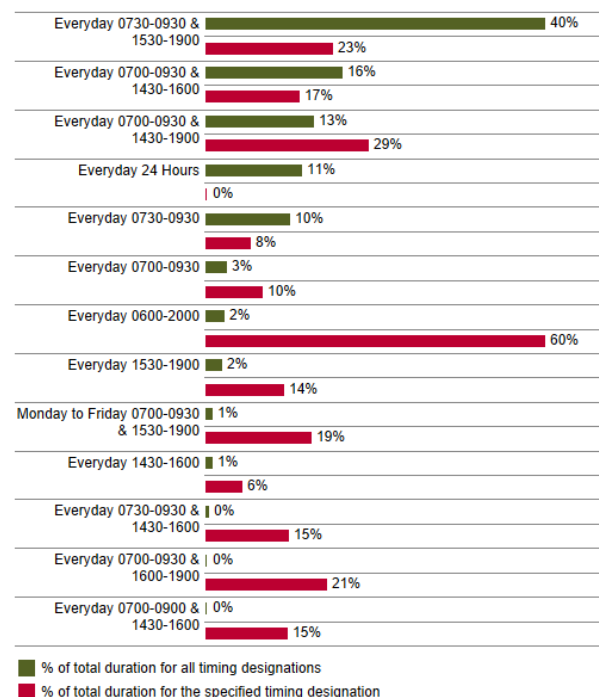
Work at peak times on traffic-sensitive streets

The chart below shows the proportion of work (% of total) undertaken on a street with a traffic-sensitivity designation where there was occupation of the highway during the designated traffic-sensitive time. The works have been delineated into carriageway and non-carriageway work using the permit location. Only works in Scheme years 7, 8 and 9 are included.



Work at traffic-sensitive times

The chart below shows work undertaken on traffic-sensitive streets delineated by the timing designation. The charts show (top line - green) the proportional (% of total) duration for all designations; and (bottom line - red) the proportional (% of total) duration at traffic-sensitive times for each timing designation. Only works in Scheme years 7, 8 and 9 are included.



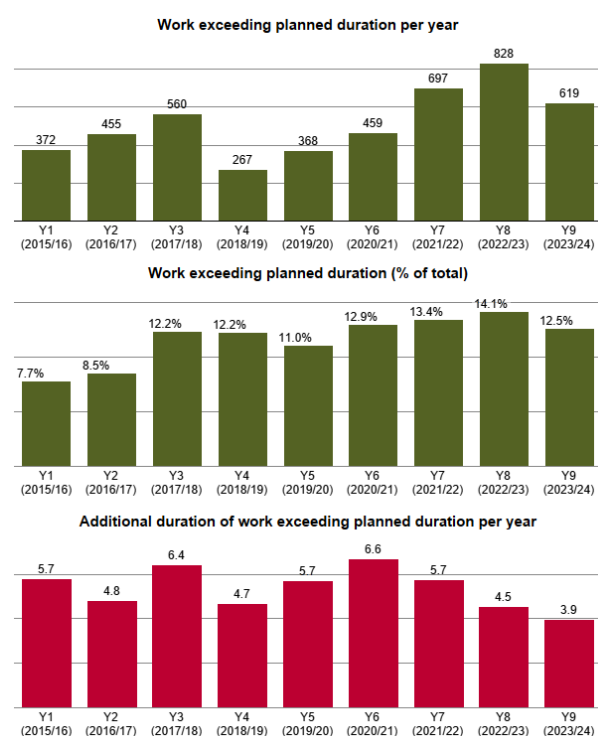
Work exceeding agreed duration

Works that exceed their agreed reasonable period (of duration) can create significant coordination issues and can apply a 'domino effect' on work programmes and the potential need to reschedule or revoke other active or planned works that may clash with adjacent over running works.

For this evaluation a work exceeding the agreed duration is identified when a work's **actual duration** is exceeded by the **proposed duration**. The duration of the unplanned duration is measured in **calendar days**.

Works with overruns

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



Collaborative works

One of the most effective methods for the Council to reduce the potential disruption is for Promoters to collaborate their works, thereby undertaking work on the same section of the highway at the same time.

Collaboration between Promoters is recognised as an industrywide challenge, with limited opportunities and practical limitations within work delivery constraints, resource schedules and methodology.

Works with a form of collaboration

The chart below shows the number of works with a form of collaboration and the total days of the work per Scheme years 6 to 9.

Years 6 and 9 will show a reduced figure due to the introduction of the collaboration field in Street Manager partway through year 6 and works with a form of collaboration agreed in year 9 taking place after this year.



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 why variations are issued, which include:

- Changes for planned work dates, because of lack of resources, *such as a contractor or work gang availability*;
- Changes to work details, such as a change in traffic control or work methodology once a work has been started;
- Requests to extend the planned duration of the work, because of plant breakdown or other factors, *such as bad weather*, preventing or limiting work.
- Other unplanned activities on the network such as emergency diversion route caused by an accident or other emergency work.

The types of permit variation fall within one of four different categories, which includes;

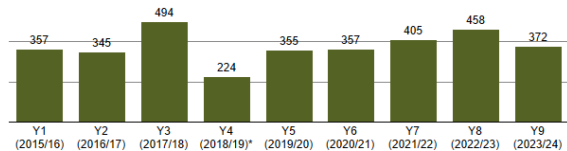
- **Highway Authority imposed change** where the Council want to make a change to the permit, either before or after work has commenced.
- **Permit modification** where a Promoter is responding to a permit modification request (refusal) from the Council during the application stage.
- **Promoter change request** where a permit has been granted and the Promoter wants to vary the permit, including a **work extension** where a Promoter wants to change the proposed end date of work once a work has commenced.

In most instances Promoters submit a work duration extension request when it is apparent that the work will take longer than planned. Other variations from Promoters are mainly to make changes to permits prior to work start or at Council request.

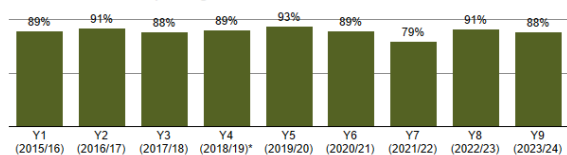
Work duration extension request

The charts below show (top) requests for work duration extensions and (bottom) as a proportion of work undertaken per Scheme year.

Requests for work duration extensions



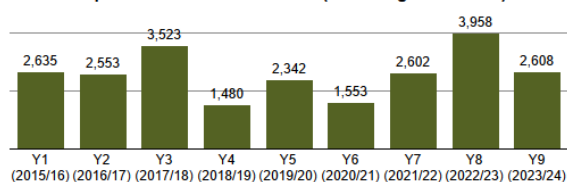
% work extension requests granted



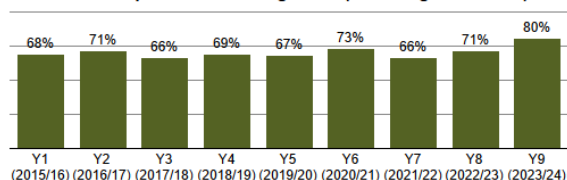
Variations from Promoters

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

Promoter permit variations submitted (excluding extensions)



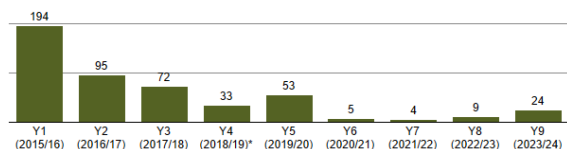
% of Promoter permit variations granted (excluding extensions)



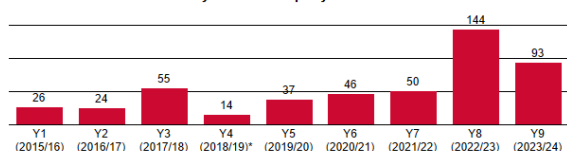
Variations issued by the Council

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

Permit variations issued by the Council per year



Permit revocations issued by the Council per 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*.

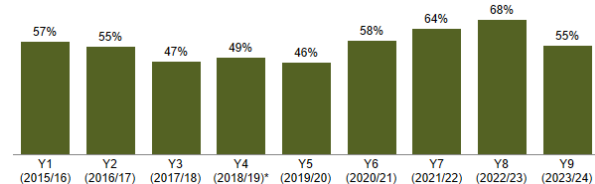
The sub-sections below outline the conditions available to the Council. These are based on the categories defined in the Statutory Guidance for Permit Conditions. This Guidance sets out the conditions that can be applied to permits and the potential parameters that can be associated to these conditions.

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.**

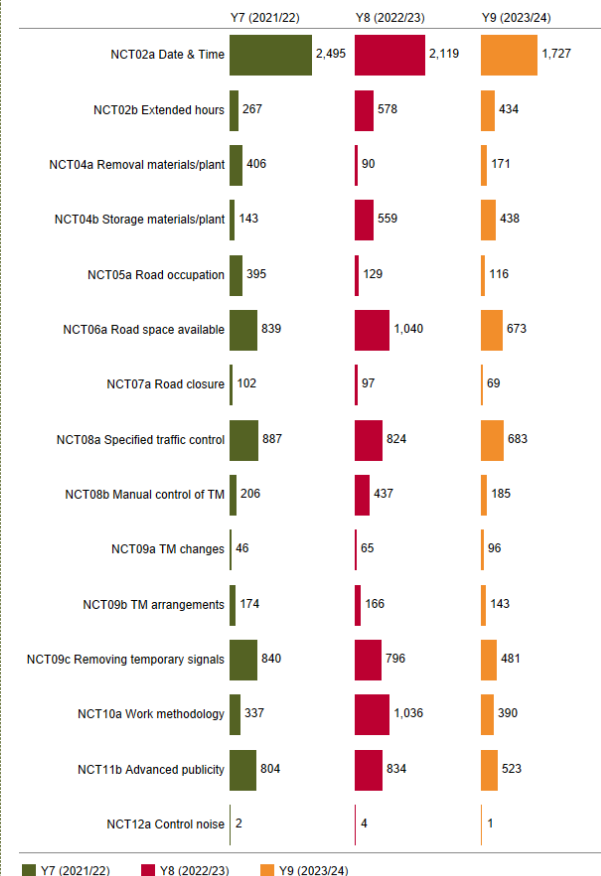
Work with an applied permit condition

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 7, 8 and 9.



Benefits of conditions applied

It is difficult to effectively delineate work where a condition could *or may* be applied as relevant elements of the work are not specified within the data for analysis, *such as whether the work involved surplus spoil or materials or required a specific work methodology*.

There are however a few indicators that can be used to identify whether conditions are being applied to good effect, and therefore of benefit to the road user. These include:

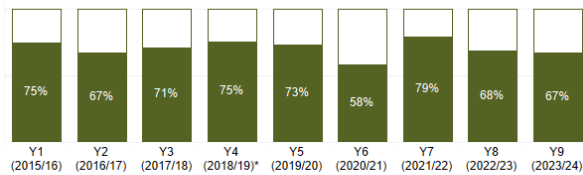
- Planned work outside traffic-sensitive times (on a traffic-sensitive street) with a timing condition (NCT2a) to ensure compliance to this arrangement;

- Work at traffic-sensitive times (on a traffic-sensitive street) involving temporary traffic lights with a condition (NCT8b) to manually control the lights at specified times, *typically peak traffic times; and*
- Planned work under a road closure with advanced publicity of the work.

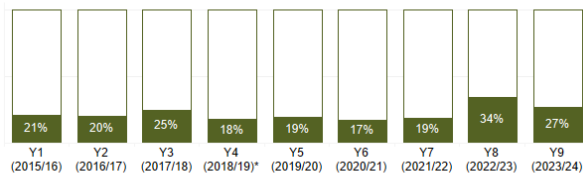
Work scenarios with conditions applied

The charts below show the proportion of work (% of total) with an applied condition (as detailed above) per Scheme Year.

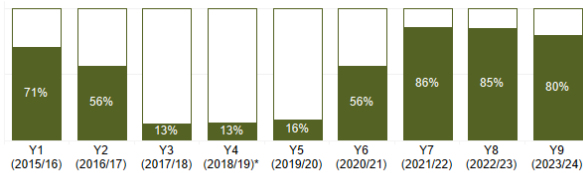
Planned work on traffic-sensitive streets with a timing condition



Planned work on traffic-sensitive streets with manual control of lights



Planned work under a road closure with advanced publicity



□ No condition ■ Condition applied

Analysis of Permit Compliance

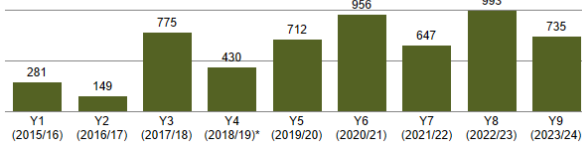
Permit compliance inspections

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).

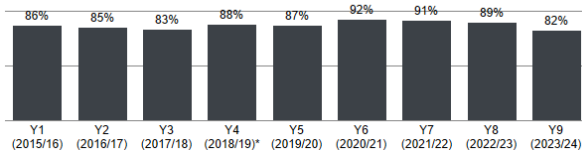
Permit compliance inspections

The charts below show (top) the volume of permit compliance inspections and (bottom) the proportion (%) of total of works with a permit compliance inspection, per Scheme year.

Permit condition inspections carried out per year



Permit condition pass rate per year



Reasons for permit compliance failure

The chart below shows the reason for failed permit condition inspections for Scheme years 7, 8 and 9.

	Y7 (2021/22)	Y8 (2022/23)	Y9 (2023/24)
NCT2a	0	1	0
NCT4b	0	3	7
NCT5a	1	0	0
NCT6a	0	2	1
NCT8a	0	3	1
NCT8b	1	2	1
NCT9c	1	1	1
NCT11a	51	93	76
NCT11b	0	0	1
No Permit	31	43	67
Other	3	5	43

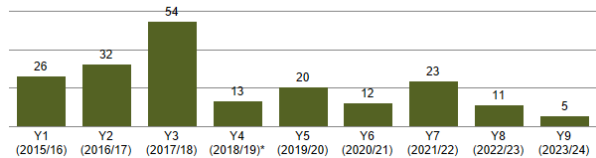
Offences for working without a valid permit or breach of condition

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

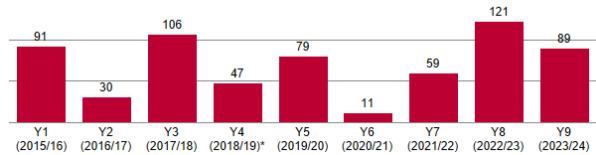
Permit offences issued to Promoters

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



Analysis of Parity Treatment

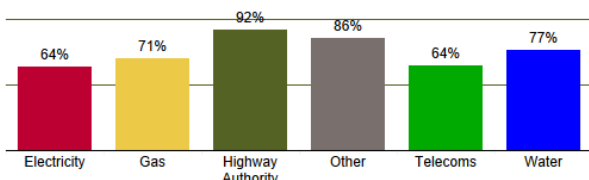
Section 40: Non-discrimination of the Permit Scheme Regulation state that the Council must apply the regulations (Parts 5 and 6) *without any discrimination between different classes of application for permits or for provisional advanced authorisation*. Statutory Guidance defines this further **parity treatment** as *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 specific measures for each sector across Scheme years 1 to 9.

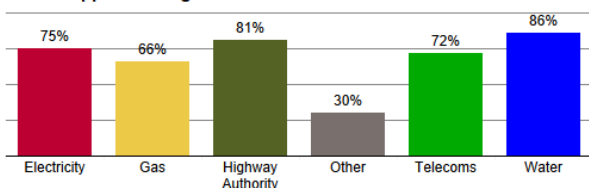
Applications granted

The charts below show applications granted (as a % of total received) by sector during Scheme years 1-9. The charts do not include applications deemed (granted), superseded or cancelled before a response was given.

PAA applications granted

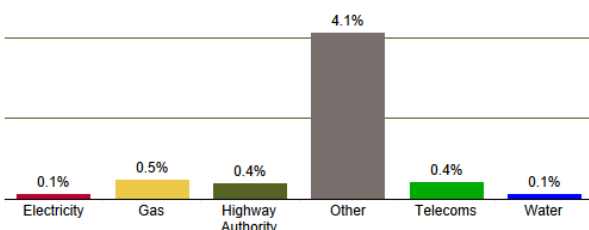


Permit applications granted



Applications deemed

The chart below shows the % of PAA and permit applications (of total) that were deemed (granted) by sector during Scheme years 1-9. The charts do not include applications superseded or cancelled before a response could be given.

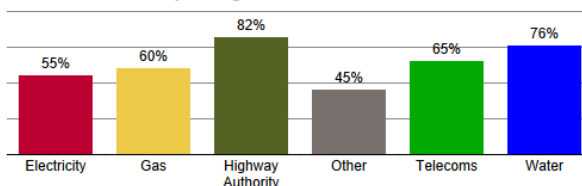


Permit variations granted

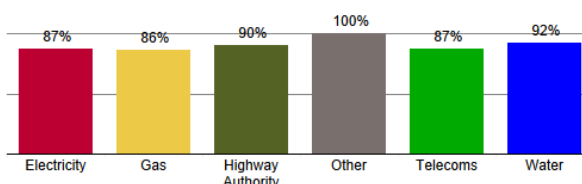
The charts below show the permit variation applications granted (as a % of total received) by sector during Scheme years 1-9.

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.

Permit variation requests granted

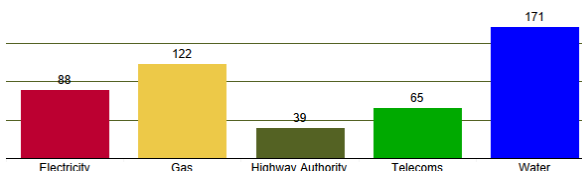


Extension requests granted



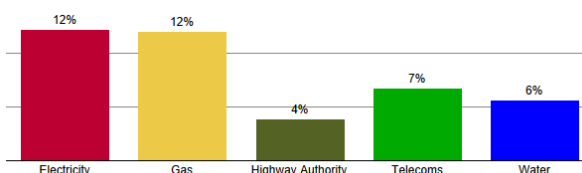
Authority issued variations

The chart below shows the number of variations issued to Promoters by the Council during Scheme years 1-9.



Work with a permit compliance inspection

The chart below shows the number of works (% of total) with a permit compliance inspection during Scheme years 1-9.



Equality Impact Assessment

The Equality Act 2010 introduced the Public Sector Equality Duty, which requires all public bodies, including councils, to have due regard to the need to:

- Eliminate unlawful discrimination, harassment and victimisation and other conduct prohibited by the Act;
- Advance equality of opportunity between people who share a protected characteristic and those who do not; and
- Foster good relations between people who share a protected characteristic and those who do not.

In consideration to this Duty an **Equality Impact Assessment** aims to prevent discrimination against people who are categorised as being disadvantaged or vulnerable within society. An Assessment will therefore:

- Demonstrate due regard for the provisions of the Public Sector Equality Duty;

- Identify possible negative impacts of decisions on individuals and **groups with protected characteristics** and plan mitigating action accordingly; and
- Identify additional opportunities to advance equality within policies, strategies, and services.

The table (below) shows **protected characteristic groups** with a potential impact and the nature of any impact to that group from the operation of a permit scheme.

The only group with a perceived impact is Disability, which is considered a positive impact as under a permit scheme the Council can further ensure work is carried out in consideration to the needs of **all vulnerable road users**.

It is recommended that the Council continue assessing the role of the permit scheme to meet the Councils Public Sector Equality Duty.

Protected Characteristic Group	Potential for Impact	Positive or Negative Impact
Disability	Yes	Positive
Gender reassignment	No	Not applicable
Marriage or civil partnership	No	Not applicable
Race	No	Not applicable
Religion or belief	No	Not applicable
Sexual orientation	No	Not applicable
Sex (gender)	No	Not applicable
Age	No	Not applicable

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 costs. The table below shows the income, and (recoverable) cost per scheme year.

Year	Income £	Cost £
Y1 (2015/16)	43,138	111,139
Y2 (2016/17)	181,870	190,713
Y3 (2017/18)	183,372	185,258
Y4 (2018/19)	273,560	200,691
Y5 (2019/20)	213,871	224,857
Y6 (2020/21)	215,636	240,485
Y7 (2021/22)	368,349	248,654
Y8 (2022/23)	435,329	424,053
Y9 (2023/24)	356,711	426,462

The level of income from permit fees has varied considerably over the nine scheme years, resulting in surplus and deficits. After nine years the overall running balance is a **deficit** of £58,475.

In consideration to the recent trend towards reduced works, and therefore permits and associated income, it is likely that the Council will need to review their operating model in future years with consideration to adjusting fee levels to ensure they don't maintain a deficit over several years.

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 conservative.

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.

Historical works data provides a basis on which to evaluate the impact of works on motorists and the local economy, and to review the value of the scheme against the actual costs and revenues of operations of the scheme since implementation.

The approach to the 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, using the most detailed information available;
- 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	£1,652,017
Net Present Cost of Scheme	£818,900
Net Presented Value of Scheme	£833,116
Benefit to Cost Ratio	2.02

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		(12)
Local Air Quality		(13)
Greenhouse Gases	372,600	(14)
Journey Quality		(15)
Physical Activity		(16)
Accidents	320,418	(17)
Economic Efficiency: Consumer Users (Commuting)	1,693,450	(1a)
Economic Efficiency: Consumer Users (Other)	2,540,175	(1b)
Economic Efficiency: Business Users and Providers	-2,670,401	(5)
Wider Public Finances (Indirect Taxation Revenues)	604,225	- (11) - sign changed from PA table, as PA table represents costs, not benefits
Present Value of Benefits (see notes) (PVB)	1,652,017	(PVB) = (12) + (13) + (14) + (15) + (16) + (17) + (1a) + (1b) + (5) - (11)
Broad Transport Budget	818,900	(10)
Present Value of Costs (see notes) (PVC)	818,900	(PVC) = (10)
OVERALL IMPACTS		
Net Present Value (NPV)	833,116	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	2.02	BCR=PVB/PVC

It should be accepted that there may also be other significant costs and benefits, some of which cannot be presented in monetised form.

The benefit to cost ratio (BCR) is a measure of value-for-money exhibited by a scheme. With a BCR of 2 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 £5,090,433 (2010 prices), which represents around 6% of overall work impact cost.

The implied carbon emissions attributable to works in the area amounts to 4,331 tonnes. This amounts to around 3.61% 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 234 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 194,876 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 October 2015 and September 2016 (inclusive).

In Year 4, the Council amended the Scheme years to align with financial years (April to March), so this year was a shorter period (6 months).

Year	From	To
Y1(2015/16)	1-Oct-15	30-Sep-16
Y2(2016/17)	1-Oct-16	30-Sep-17
Y3(2017/18)	1-Oct-17	30-Sep-18
Y4(2018/19)	1-Oct-18	31-Mar-19
Y5(2019/20)	1-Apr-19	31-Mar-20
Y6(2020/21)	1-Apr-20	31-Mar-21
Y7(2021/22)	1-Apr-21	31-Mar-22
Y8(2022/23)	1-Apr-22	31-Mar-23
Y9(2023/24)	1-Apr-23	31-Mar-24

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 companies*, 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 that 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 2017ⁱⁱ. 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.

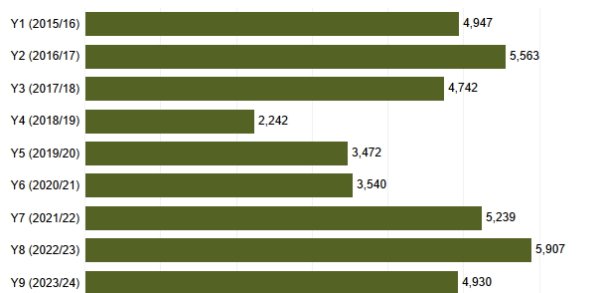
Whilst the scheme has now been running for several years, the appraisal focuses on the projected costs of operation over the coming years, to align with the benefit estimate.

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. To identify an operational cost a proportion of each (relevant) role within the Councils network management service was assigned to permit scheme administration.

Annex B: HAUC Performance Indicators

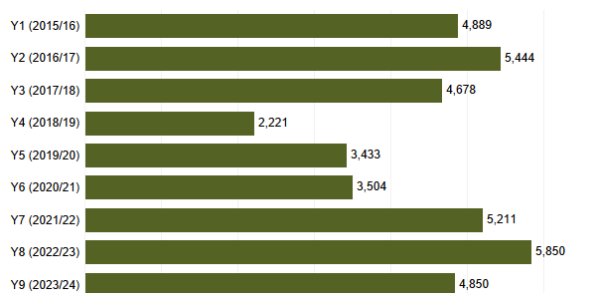
TPI 1 | Works Phases Started

The chart below shows works with an actual start date per Scheme year.



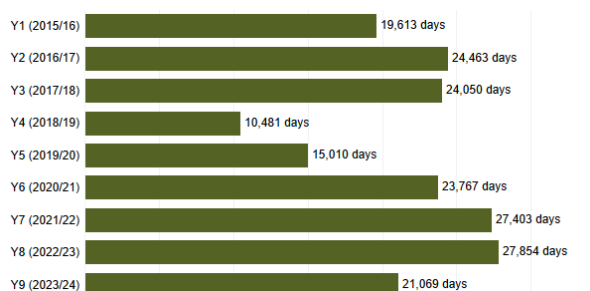
TPI2 | Works Phases Completed

The chart below shows works with an actual end date per Scheme year.



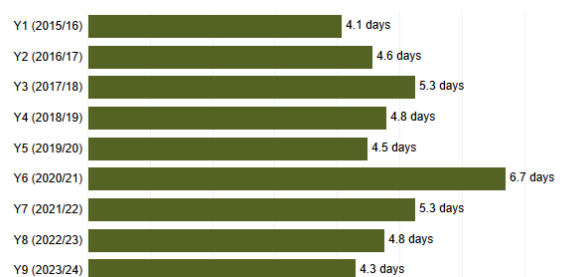
TPI3 | Days of Occupancy Phases Completed

The chart below shows the total duration (whole calendar days) for work undertaken per Scheme year.



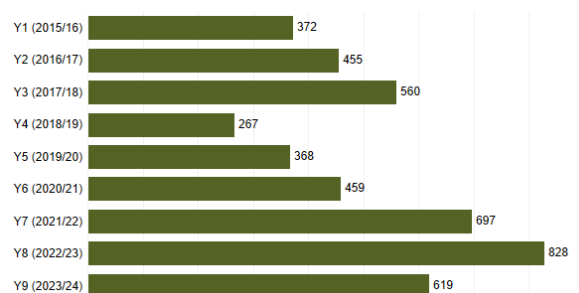
TPI4 | Average Duration of Works

The chart below shows the average duration (whole calendar days) for work undertaken per Scheme year.



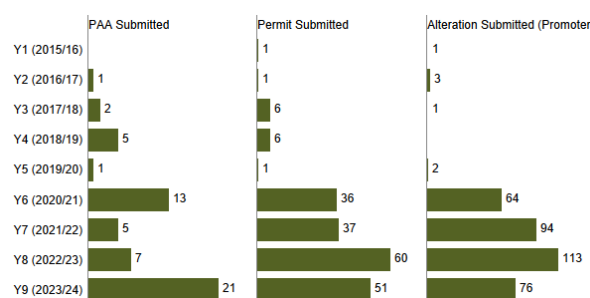
TPI5 | Phases Completed involving Overrun

The chart below shows the number of works exceeding the planned duration per Scheme year.



TPI6 | Number of deemed applications

The chart below shows the number of applications deemed (granted) per Scheme year delineated by application type. This data does not include permits that are auto granted by Street Manager.



TPI7 | Number of Phase One Permanent Registrations

The chart below shows the number permanent reinstatements per Scheme year.



Annex C: Glossary and common terms

Council	Bracknell Forest Council 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. Therefore, a works with an actual start date of 1st April and an actual end date of 5th April would equate to 5 days.
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.
NRSA	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	<p>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.</p> <p>The conditions that can be applied are set out within Statutory Guidance, <i>each with a reference code comprising NCT with a unique number</i>, 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.</p>
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	<p>Also referred to as an activity.</p> <p>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.</p>
Works category	<p>Every work is assigned a category, based on the following:</p> <p>Major works are works that are 11 days or more in duration <u>or</u> require a temporary traffic regulation order, <i>such as a road closure</i>.</p> <p>Standard works are non-Major works between 4-10 days.</p> <p>Minor works are non-Major works with a duration of 3 days or less.</p> <p>Immediate works are either emergency or urgent works that require an immediate start.</p>

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 or varying existing permit schemes, June 2016.

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