West & Shires Permit Scheme
Year 3 Evaluation

Warwickshire County Council

Forward

Warwickshire County Council has a statutory duty to …

Warwickshire County Council introduced a common Permit scheme in partnership with Coventry City Council on 16th March 2015.

As part of the Authorities Local transport the scheme was intended as a mechanism to improve network management through more proactive control of roadwork's.

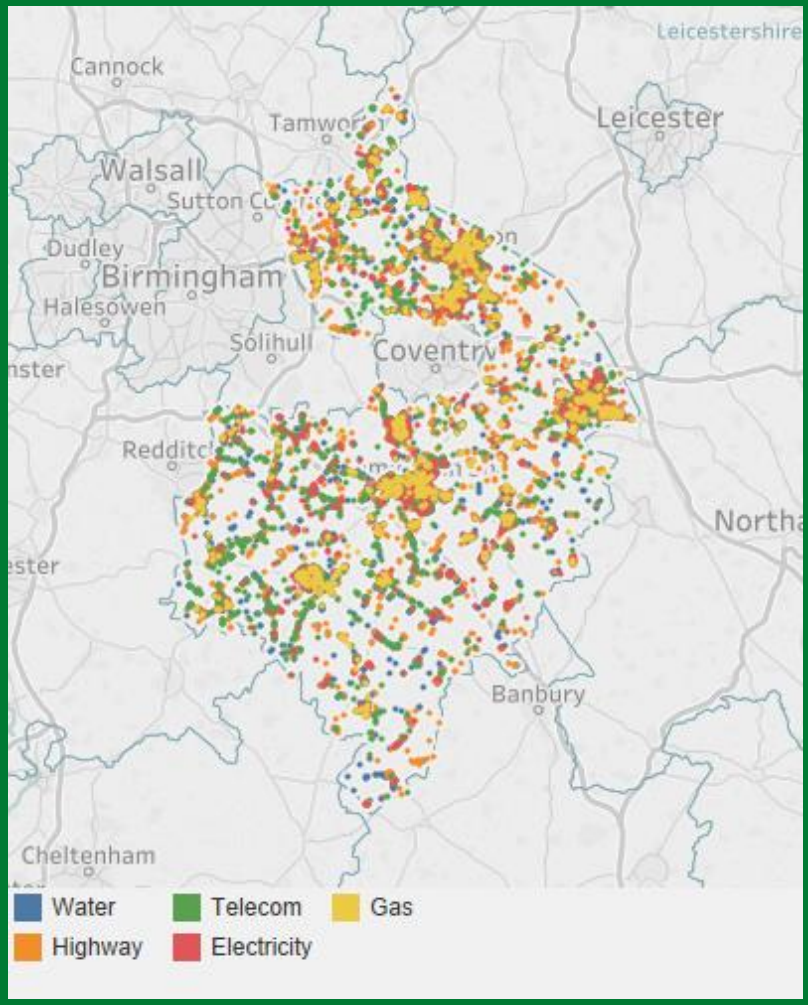
The fundamental benefit that both Authorities wished to see delivered by the Permit scheme was an increase in the overall control of roadwork's by the Authorities and a consequent reduction in the days of occupation on the road network.

Looking ahead, with projects such as the high-speed rail project (HS2) due to commence in 2019 (?), other national initiatives for improved utility services, and extended housing development across the County, the Council does not foresee any change in the demand for access onto the road network to undertake works, and the continued need to operate a permit scheme.

Keith Davenport

Traffic Manager for Warwickshire County Council

Roadworks in Warwickshire during year 3 (2017/18)



Warwickshire County Council

Key Findings

Figures quoted are based on data for the period April 2017 to March 2018 inclusive (Year 3)

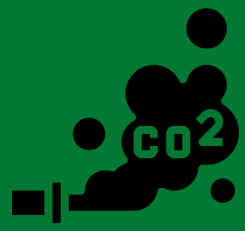
- 20,000 applications to work per year
- 14,000 works carried out across the County

- 70,000 days of highway occupation for works per year

- On average, 1.6 works start per hour with over 37 starting per day

- 4,528 days of planned occupation reduced through coordination

- Average cost impact of £2,298 per work
- Annual scheme benefits of £2.7million with a cost-to-benefit of 1:12



- Annual carbon emission savings of 3,629 tonnes CO2 from reduced delays - over 30 million annual car kilometres

Warwickshire County Council

Executive Summary

The running of the permit scheme is now fully embedded within Warwickshire, with many of the benefits and objectives being realised, and more importantly improved and maintained.

Works carried out within Warwickshire continue at historic levels, *although with the expected changes to type and category*. The Council is confident that 99% of the registerable works carried out on the highway are under a **granted permit**, thereby providing full opportunity for control and visibility of works.

This confidence is demonstrated through this evaluation, and analysis shows that the lead time for applications has increased, which in turn provides greater visibility of works to the road user through the public facing website roadworks.org.

The evaluation shows that overall **durations are decreasing, and the average duration of works is also decreasing**. There is quantifiable evidence to suggest that the ability to request and enforce changes at the planning stage of works does lead to reductions in durations

The Council does not expect this trend to continue, and durations should stabilise to accepted levels, however the Council can continue to challenge proposed durations of works and ensure they remain at a suitable level for the work and impact to the road user.

Another area where the introduction of the permit scheme has seen a meaningful change in the use of traffic management during works. At the start of the scheme, works were typically carried out under a non-defined traffic management category, this has now been replaced with more defined traffic management approach, *including road closures where necessary*.

This change could be viewed as a dis-benefit – more road closures and temporary traffic lights in use – however the Council has a statutory role to ensure working practices align to established industry safety codes of practice. This evaluation shows that it undeniable that **works are now being carried out more safely and with less risk to the road user and those undertaking the works.**

Year 3 saw a decrease in the volume of conditions applied to permits. This is a result of a focus by the Council to ensure conditions applied to permits were fit-for-purpose and relevant to the works being carried out. In previous years conditions were typically applied in a uniform manner, without due consideration to the works.

A permit scheme represents a cost-burden to the Council. The permit scheme regulations allow the Council to recover the administration costs related to statutory undertaker permits, but not for highways permits. It is therefore critical for the permit scheme to deliver value for money.

A cost-benefit analysis produced for the evaluation follows the same methodology used for the national permit scheme evaluation and contains data specific for Warwickshire, **not aggregated results from evaluations for other highway authorities.**

This cost-benefit analysis shows in the third year of operation a benefit to cost ratio (BCR) of 12, and therefore the permit scheme can be defined as demonstrating '**Very High Value for Money**'. A quantifiable reduction of £2.7million of cost impact from roadworks was demonstrated in Year 3.

Common Terms

Works categories

Every work is assigned a category, based on the following:

- **Major** works are works that are over 10 days 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.

Application lead times

Each works category has a defined lead time – for either the initial notice or the permit application (under a permit scheme).

For Major and Standard works the lead time is **10 working days** prior to the proposed works start date. Major works also require 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 on a non-working day.

Duration of works

A works 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.

Permit conditions

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 to be used
- Consultation and publicity of works
- Environmental considerations for noise.

Road category

The highway is delineated by carriageway, footway, footpath and cycle track.

Typically, the carriageway is categorised into five types (0 to 4), each with a limiting capacity expressed in millions of standard axles (msa). Type 0 is the highest category (roads carrying over 30 msa) and type 4 the lowest (road carrying up to 0.5msa).

For this analysis, type 0, 1 and 2 roads AND roads with a traffic sensitive designation are defined as strategic significant.

Legislation

The Network Management Duty

The New Roads and Street Works Act (1991) places 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.

The Traffic Management Act (2004) and associated regulations widened this NRSWA coordination duty to include other prescribed activities that involve temporary occupation or use of road space. Part 3 of the TMA allows for an Authority to introduce a permit scheme to support the delivery of this duty.

The fundamental objective of a permit scheme is to create a common procedure to control activities on the highway. It is essential that all activities in the highway are effectively coordinated and managed to ensure that traffic disruption and inconvenience is minimised whilst allowing the Promoters of those activities (such as utility companies or the Council) the necessary time and space to complete their work.

Under the New Road and Street Works Act (NRSWA) organisations intending to carry out works on the Council's road network notify the Council of their intention to carry out these works. The Council has powers under NRSWA to provide direction to these works and apply penalties for non-compliance, for instances where the works are not carried out according to the notice served.

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 their completion.

Permit Schemes

The powers provided under a permit scheme differ from previous powers for managing works in many key ways:

- 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 works to impose constraints; and
- new sanctions with fixed penalty notices for organisations working without a permit or in breach of conditions (of the permit).

The capability provided through these powers is proving essential for the Council to deliver the network management duty and ensure the most effective and efficient use of the network.

The WaSPS was brought into effect under the provisions of the Traffic Management Permit Scheme (England) Regulations 2007, as amended in October 2015.

Initially the permit scheme was brought into legal effect on 16th March 2015 through a Statutory Instrument (2014 No. 3310) by authority of the Secretary of State for Transport.

Following the subsequent amended of the regulations in 2015 the Council made a new legal Order for the WaSPS. A copy of this Order is available on the Councils website.

Permit Scheme Evaluation

Permit Scheme Objectives

From the outset of the introduction of a permit scheme the Council established the objectives and benefits expected from the WaSPS. Section 2.3 of the WaSPS sets out the key objectives of the permit scheme, which are to achieve the following

- increase the efficient running of the highway network by minimising the disruption and inconvenience caused by road works and other highway events and activities through proactive management of activities on the highway;
- improve the quality and timeliness of information received from all activity promoters to increase and improve the publicly available data for integration into the Council-wide travel information;
- encourage a proactive approach to planning and undertaking of works on the highway from promoters and thus lessen the impact of activities on road users;
- protect the structure of the street and the integrity of the apparatus in it;
- ensure safety of those using the street and those working on activities that fall under the Scheme, with particular emphasis on people with disabilities;
- ensure parity of treatment for all activity promoters particularly between statutory undertakers and highway authority works and activities.

It was recognised that the successful performance of the WaSPS should bring many subsidiary benefits. These benefits include:

- maximising the safe and efficient use of road space;
- providing reliable journey times;
- improving the resilience of the network;
- minimising inconvenience to all road users;
- improving public satisfaction.

It is not possible to specifically isolate the use of a permit scheme to the above benefits, however intermediate benefits from the permit scheme can be associated to these objectives and end benefits.

The report will seek to identify these, and where possible provide a quantifiable measure to demonstrate the effect and outcome.

Permit Scheme Evaluation

Regulatory Responsibility

Regulation 10 of the 2015 Traffic Management Permit Scheme (England) (Amendment) Regulations inserts a new regulation (16A) into the 2007 Regulations.

This new regulation makes provision for the content and timing of permit scheme evaluations which states that permit schemes be evaluated following the first, second and third anniversary of the scheme's commencement and then following every third anniversary. The regulation states that, in its evaluation, the Permit Authority 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 the Council to provide an evaluation for the thurd year of operation of the WaSPS and includes the provisions set out within the regulations. The content of this report, including many of the measures, has been based on guidance and advice issued by the Highway Authorities and Utilities Committee (HAUC) for permit scheme evaluations.

Evaluation Methodology

This evaluation used data collected from the councils system to process and record works. The data collected contained the content of notifications sent between those organisations undertaking works, *such as utility companies*, and the Council.

Analysis of these notifications and their content enables the Council to produce metrics on which performance indicators and measures can be produced.

Within this period of analysis only works that have reached the end of their lifecycle are included, which is identified either from either the status of the works or where sufficient time has passed since the estimated work end date.

To ensure that interpretation of the data provides an evaluation that is not only fit-for-purpose, but is also consistent with industry standards, measurements were predicated on current specifications, *such as the HAUC TMA Performance Indicators.*

Many additional meta-data fields were added to this data for analysis, which included:

- text definition from free-text fields,
- business process analysis, during the lifecycle of the work
- additional data, such as OS Mastermap data.

For some measures, aggregating the data for analysis does not provide an accurate picture of the results, for example for the analysis of <u>all</u> durations provides a falsely inflated picture of changes over time. This evaluation therefore delineates many of the measures into sub-categories, *like works category*, to provide a more true and accurate result and trend.

To complete the analysis, many of the measure were analysed with sub-categories to ensure accuracy in the results. These have not all been 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.

Performance Measures and Indicators

The measures and indicators contained within this evaluation align to the WaSPS Objective Measurements, but also to the HAUC Advice Note: Guidance Operation of Permit Schemes. Appendix 2 of this document sets out a report template for the “Evaluation of Permit Schemes” together with performance indicators and measures.

The HAUC TMA Performance Indicators do not include any target values or an acceptable level of performance, therefore an acceptable level is assumed for the measures.

Section 2.4 of the WaSPS contains a number of Key Performance Indicators and Operational Measures for the scheme, which form the overall Objective Measurement (evaluation), of the WaSPS. Section 14 of the WaSPS sets out a number of measures for the evaluation of operational performance, these include:

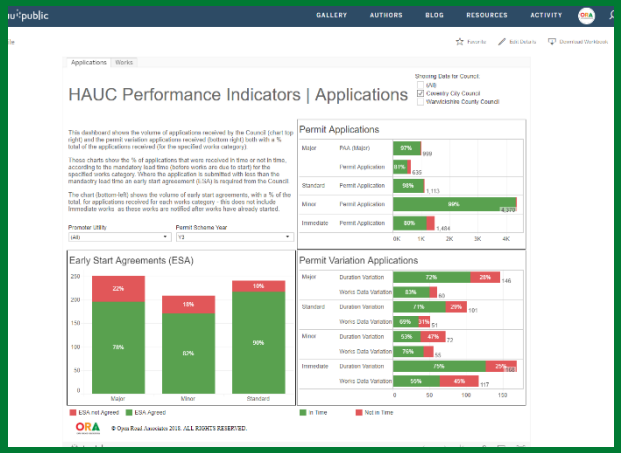
- number of overrun incidents;
- average road occupancy and number of days of reduced occupation;
- number of collaborative works and the days of saved occupation;
- number of refused permit by refusal reason;
- number of cancellation as a percentage of granted permits;
- first-time permanent registrations;
- Category A ‘in-progress’ inspection results; and
- Permit condition inspection results.

Where data is available and a sound measure can be provided, the above measure have been included within this evaluation or can be accessed via an online tool.

Tableau Workbook

For this evaluation the Council has published an online tool which allows free access to view data they may be interested in. This replaces published tables and charts containing base volumes and data, *including the performance indicators and measures required by HAUC.*

The online tool is a **Tableau workbook**, which contains instructions for use and a series of dashboards for measurement areas. The online tool provides the capability for the user to select specific categories, and therefore view the measures and indicators for their interest area. This is deemed a far more efficient and effective tool than static charts and tables within this evaluation.



The online tool is available via a public facing website and is free to access. In addition, a packaged workbook containing the underlying data (which cannot be accessed) is available if required.

The online workbook can be accessed at the following url:

https://public.tableau.com/profile/ open.road.associates

Warwickshire County Council

Findings of the Evaluation

Applications to work on the highway

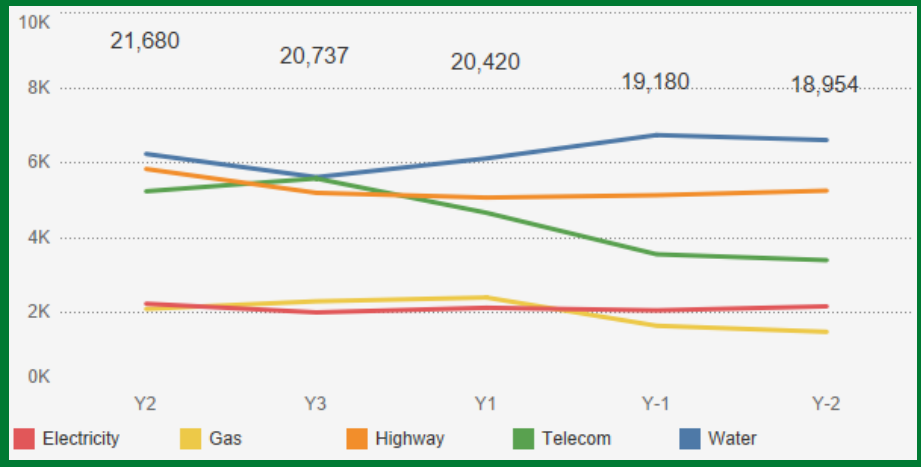
On average the Council receives c.20,000 applications for works, or works phases, per year. There has not been a significant variance to the volume of applications since the introduction of the permit scheme, which would demonstrate a level of effective noticing by promoters, including highways, prior to the implementation of the scheme.

The chart right shows the total volume of applications and by promoter. It does not include applications from rail or other promoter types as these volumes were too low for presentation purposes (< 1% of total).

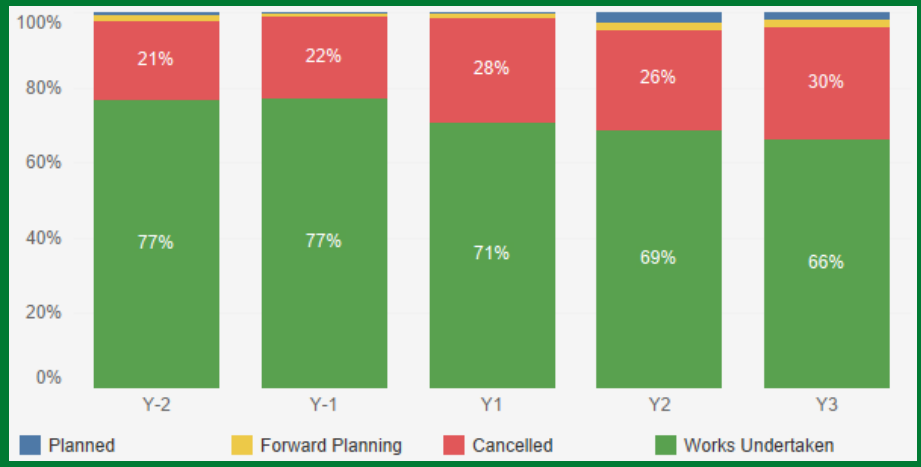
It should be noted that not all application to work progress into actual works (undertaken). Further evaluation shows that the volume of works cancelled or abandoned before they start is consistently high.

On average 66%of applications progress towards an actual work, with c.30% of applications being cancelled or superseded. This not only introduces an administration burden to the Council, to review and process these applications, but also reflects cost from permit fees charged for granted permits, not actually used for works.

Applications to work received by the Council



Final status of applications for works



Warwickshire County Council

Findings of the Evaluation

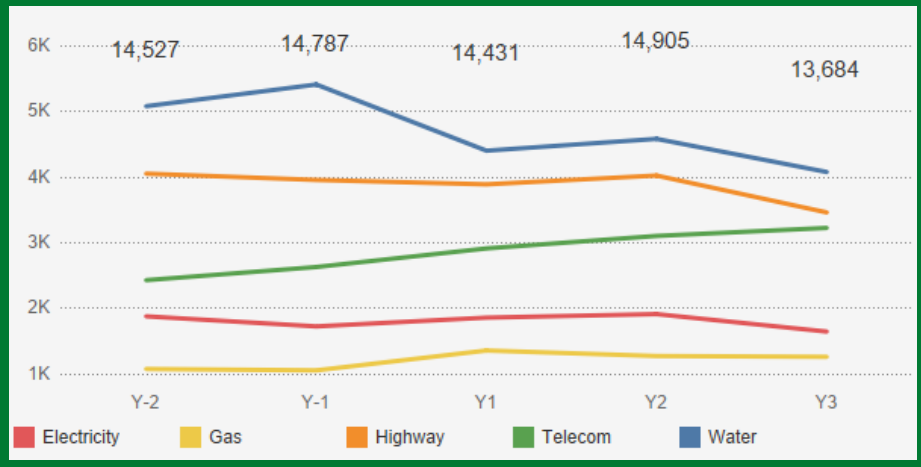
Works undertaken

It is natural for the volume of works undertaken to vary year-on-year because of projects, customer needs and reactive maintenance, which explains the variances seen.

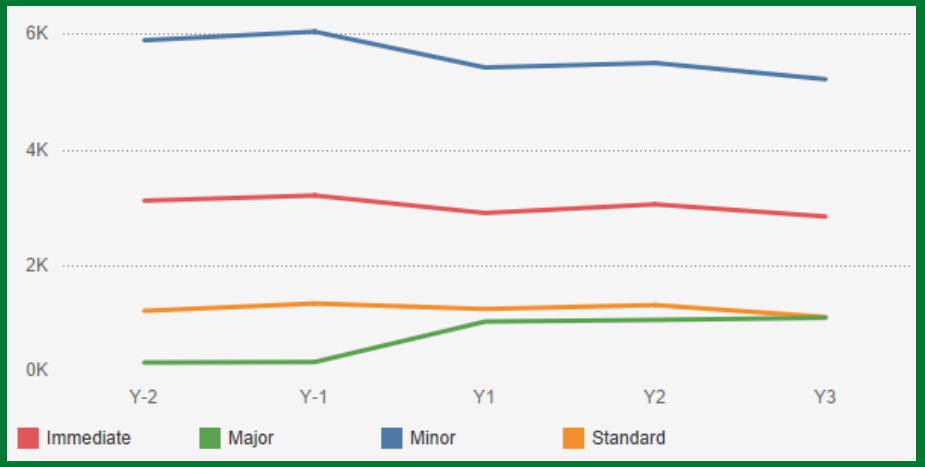
In comparison to statutory undertaker works, the volume of immediate works seems low for highways. This is due to the planning of short duration works, such as pot-hole repair, as a minor work – using immediate works category for genuine emergency or urgent works.

The consistent level of works undertaken enables the Council to more effectively plan and mitigate-for works, and the introduction of the permit scheme ensures that these controls remain in place.

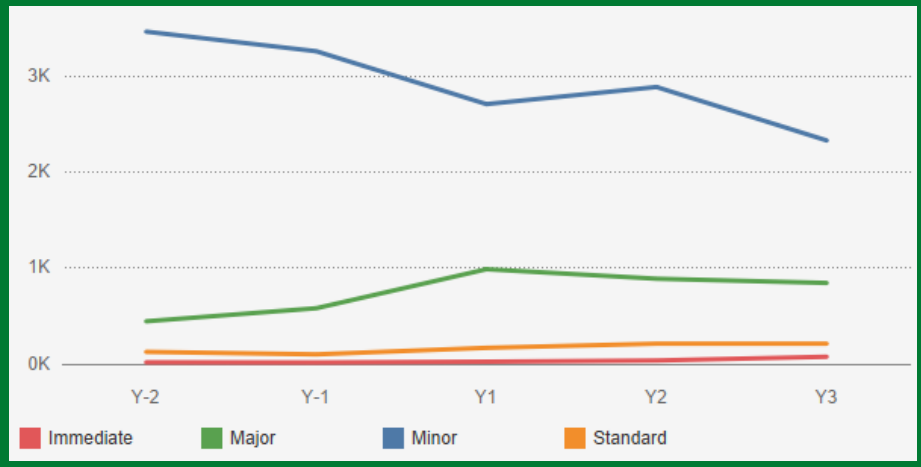
Works undertaken by promoter utility type



Works undertaken by statutory undertakers



Works undertaken by highways



Warwickshire County Council

Findings of the Evaluation

Duration of works undertaken

Like the volume of works undertaken, the duration of works overall has remained broadly similar, with no immediately discernible significant changes. The exception to this is for highways works – these durations have seen a decrease, from before the introduction of the permit scheme.

This decrease can be attributed to a period of investment, by the Council, to the roads within Warwick, which resulted in larger scale, longer duration, major works. The following sections contain more detailed analysis of durations and their trends.

Analysis of durations over time

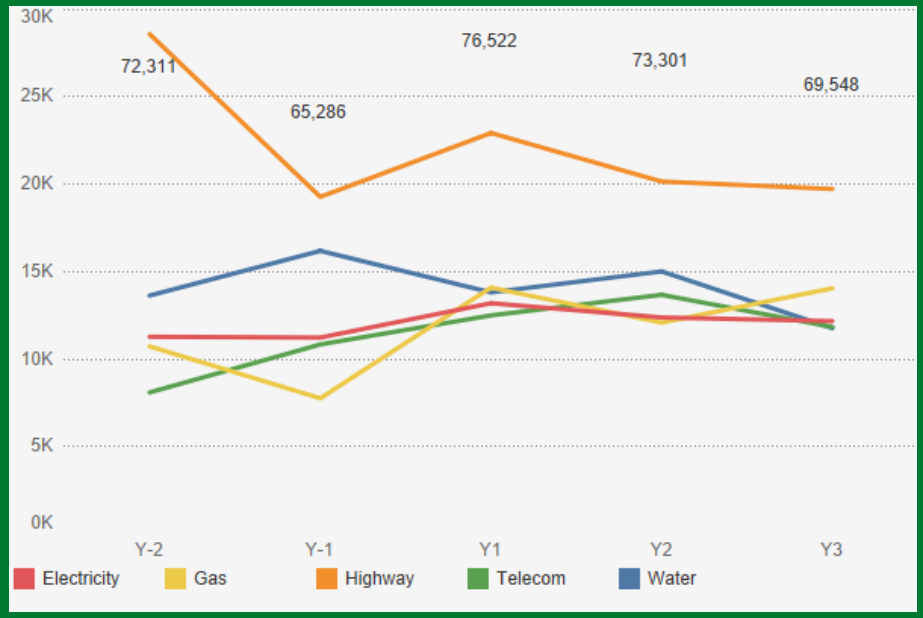
Analysing works durations to identify trends and changes over time is difficult. There are many different work characteristics and scenarios to consider, *from lifting a manhole cover to inspect a drain through to large scheme major projects* – the volume of which can vary over time depending on work required.

The current structure of the works data does not provide sufficient meta-data to delineate works by their type or methodology, and thereby allow for a comparison of like-for-like for analysis.

Instead, analysis of duration must be concluded from an analysis of trend over time and average duration of all works. Works can be delineated into their 'works category', which is typically based on bands of duration, *i.e. a Minor work is one of less than 3 days duration.*

Many anomalies can exist within the data, such as spurious notice dates, which can cause false durations and therefore corrupt any analysis.

Duration of works undertaken by promoter utility



To take this in account, records analysed were limited by duration, based on their works category:

- Major works between 1 and 365 days
- Standard works between 1 and 20 days
- Minor and Immediate works between 1 and 10 days

It should be noted that the duration analysis is based on **works undertaken only.**

Findings of the Evaluation

The following charts show **total durations** and **average durations**, per month for each of the works categories. Each chart includes a linear trend model (red line) which is computed for natural log of duration for each of the observed 59 points (month).

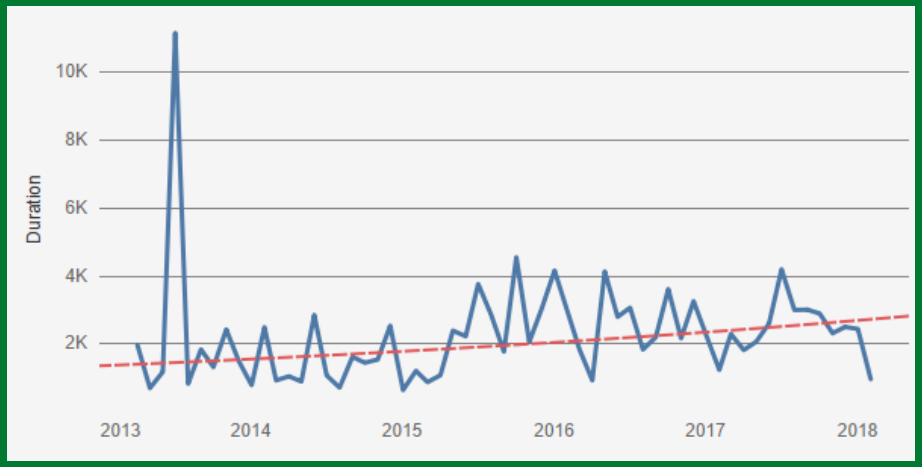
As shown within the charts above and below, there is a varying degree of scale and variation for works durations, however observed trends can identify whether these durations are overall increasing or decreasing.

The overall duration of major works is increasing, however the average duration for these works is decreasing.

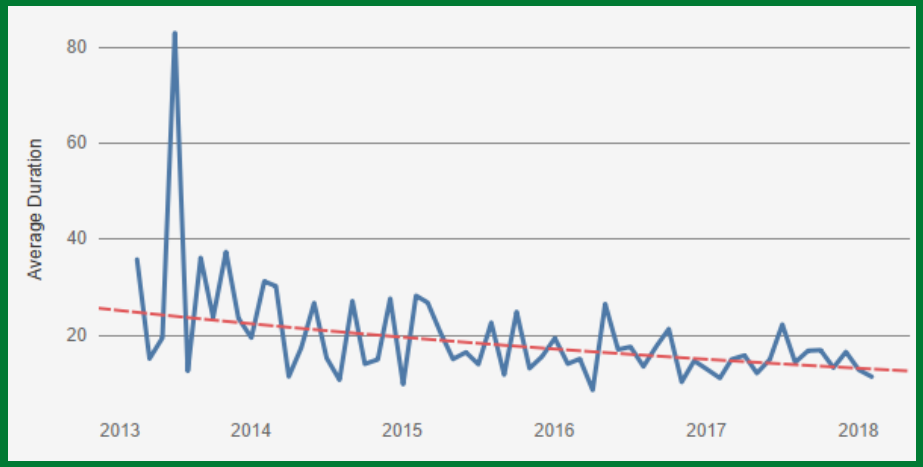
In consideration to the volume of works undertaken this could be explained by the increase in the volume of major works (see previous section). This has caused the overall durations to increase, even though the typical (average) duration has decreased.

The increase in major works could be associated to changes in the use of traffic management, *because of the permit scheme*, (refer to section **Use of traffic management** below) whereby more works are being carried out under a road closure, and therefore become major works (irrespective of their duration).

Duration of Major Works



Average Duration of Major Works



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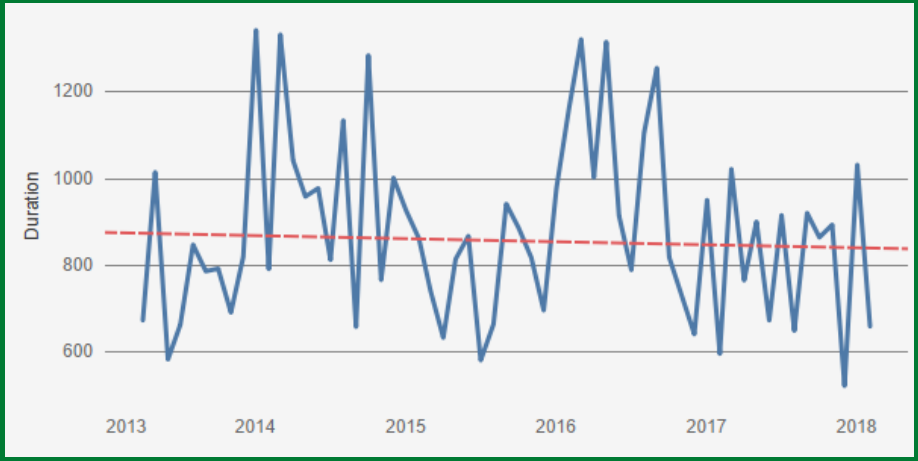
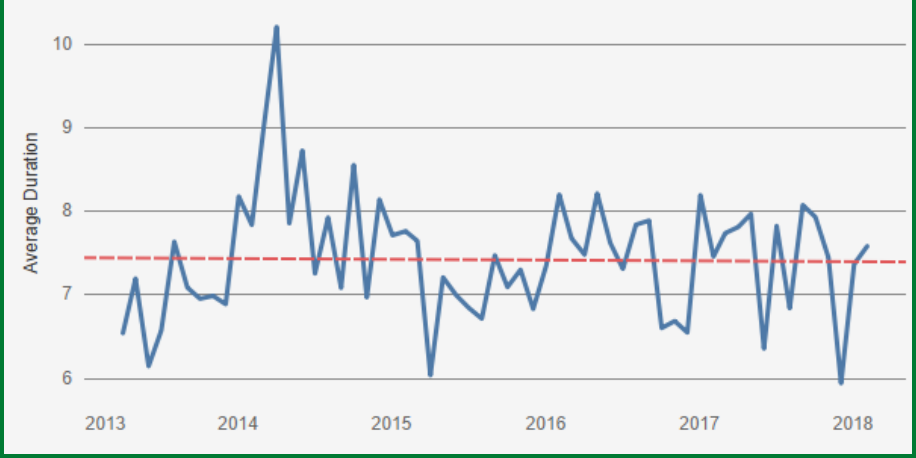
Findings of the Evaluation

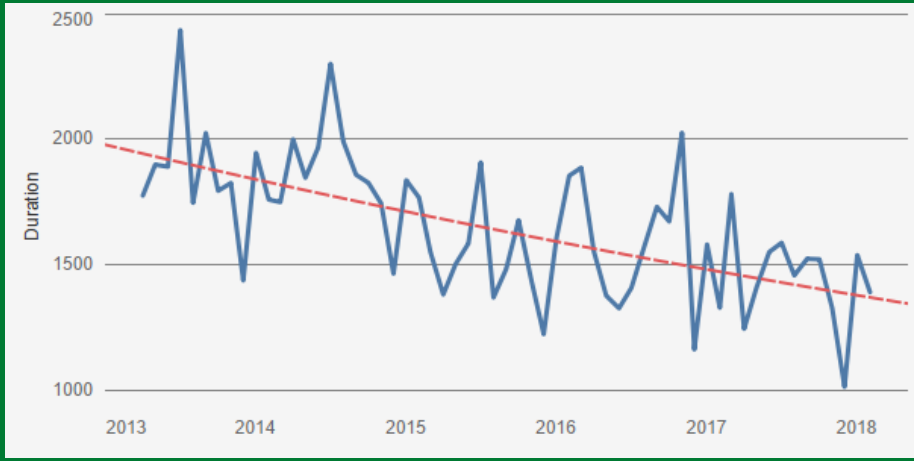
Duration of Standard Works



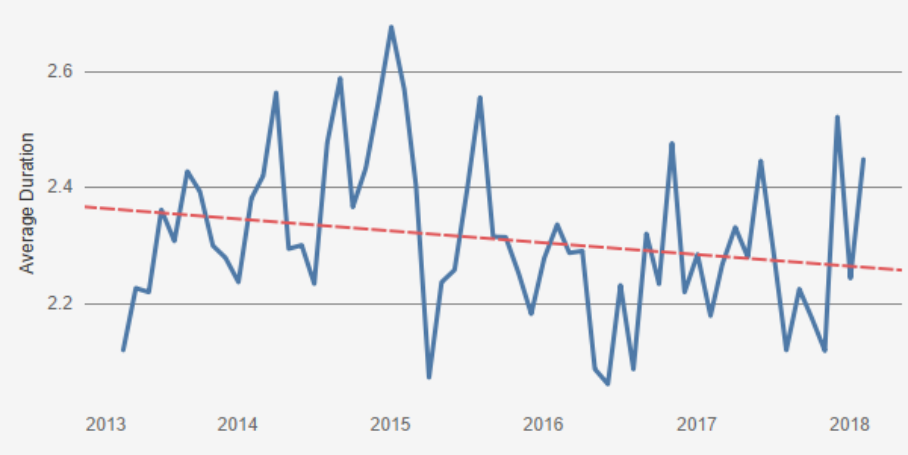
Average Duration of Standard Works



Duration of Minor Works



Average Duration of Minor Works



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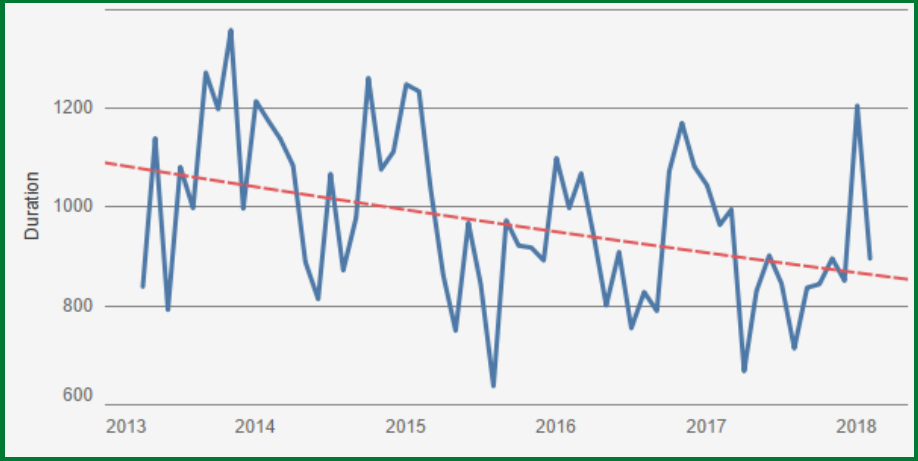
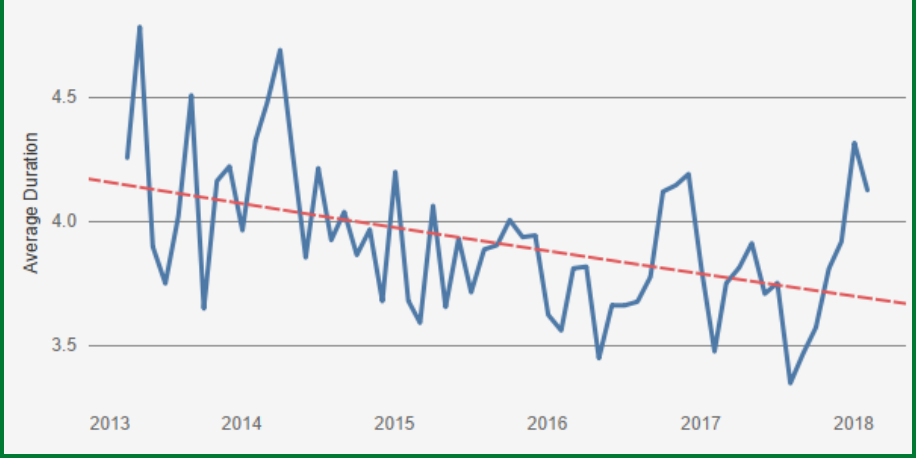
Findings of the Evaluation

Duration of Immediate Works



Average Duration of Immediate Works

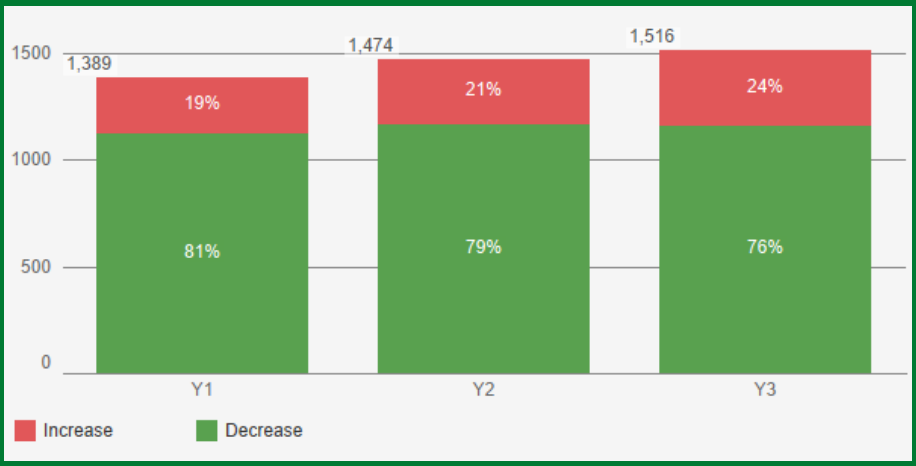


Since the introduction of the permit scheme there is an observed trend towards lower total and average durations within each works category.

In isolation this cannot be directly attributed towards the introduction of the permit scheme, however further analysis of duration changes between the initial application and works start, where there has been a direct response by the Council, shows a significant amount of works where the duration has decreased (further to chart right).

Overall, it is fair to assume that the permit scheme is supporting the Council in verifying and challenging durations of works, which in turn is resulting in a decrease to durations.

Duration changes between application and works start



Warwickshire County Council

Findings of the Evaluation

Lead times for applications to work

In order for the Council to effectively carry out any coordination of the works, including the advanced publicity of works, it is essential that the correct and sufficient lead time (submission) of the application is made.

To reduce any anomalies, only notices and applications between 1 and 100 were included in the analysis, and 1 to 365 days for major works advanced notice (3-month and PAA).

The introduction of the permit scheme places more control with the Council to refuse an application where the minimum lead time has not been provided, or it is deemed that more notice is required.

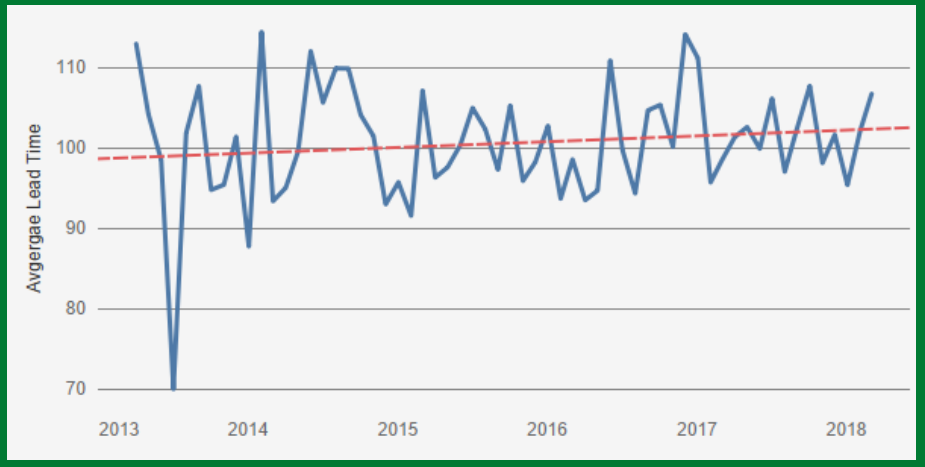
Analysis of the lead times, *by works category*, shows an overall increase in the average application lead times (refer to charts below).

For all the works categories, the average application lead time is more than the minimum required under legislation.

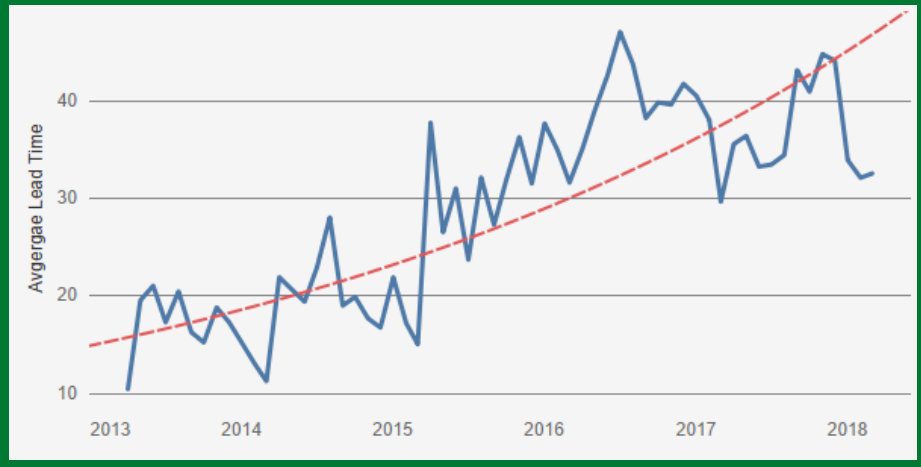
In instances where the promoter cannot provide a minimum lead time, and therefore requires an 'early start' the Council has established more controls to ensure any increased potential impact or inconvenience from a reduced notification is acceptable.

Analysis of these early starts shows that on average 4% of works require an early start and of these 76% of allowed in year 3. The volume of early stats accepted has increased from 66% in year 1 to 76% in year 3, which demonstrates a greater understanding by the promoter on the acceptable requirement for an early start and whether this would be accepted by the Council.

Application lead time for major works (advance)



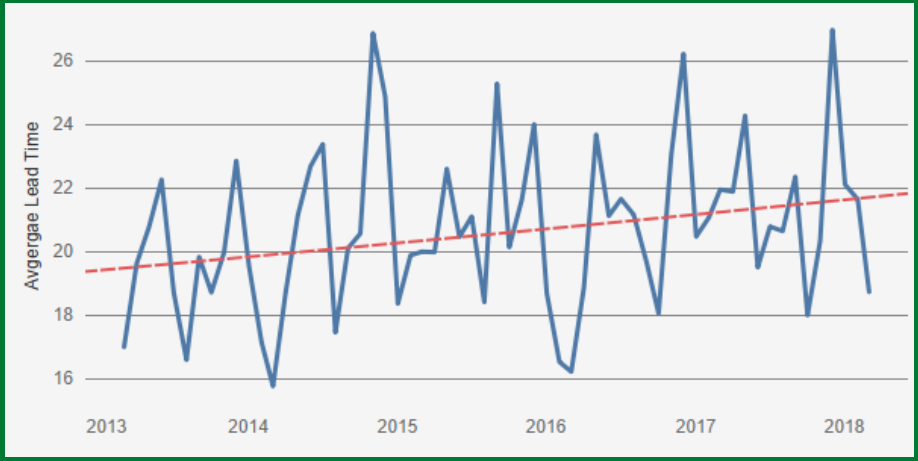
Application lead time for major Works



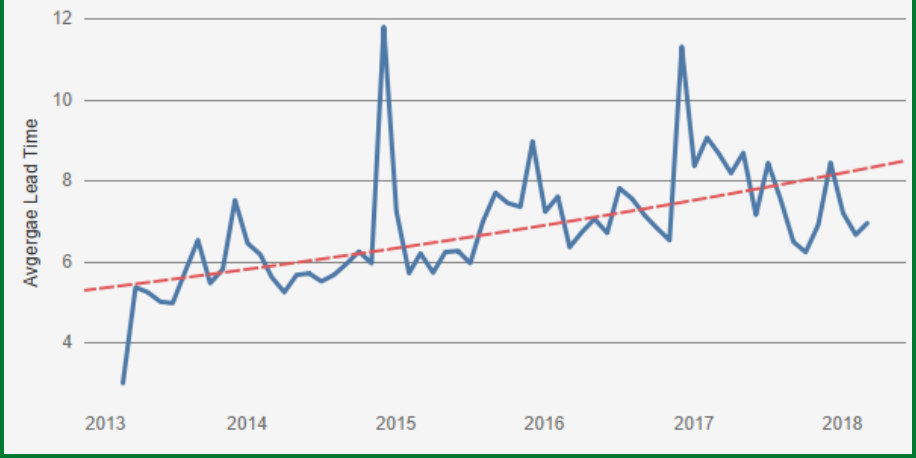
Warwickshire County Council

Findings of the Evaluation

Application lead time for standard Works



Application lead time for minor works

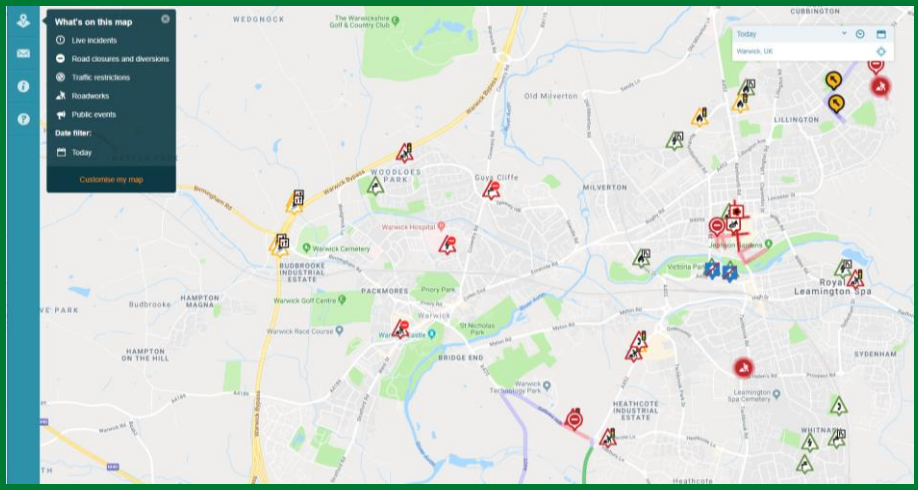


Publicity of works

The Council publishes all planned and undertaken roadworks through a public facing website, roadworks.org, which is the most comprehensive source of roadworks, road closures and other live and planned traffic disruption information in the UK (refer to screenshot right).

Through roadworks.org the council can inform the road users and all affected parties on the advanced warning and status of works. A work will appear on roadworks.org as soon as it is received, so it is therefore essential for works to be given the earliest visibility to the public through application lead times.

Example screenshot of roadworks.org



Warwickshire County Council

Findings of the Evaluation

Use of traffic management

All works must be undertaken using an appropriate form of traffic management, which is aimed at ensuring works are carried out 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.

Different forms of traffic management have varying impacts to the network, *especially the use of traffic lights, lane closures and road closures,* so the need to undertake works safely whilst also controlling the impact of works needs to be balanced carefully.

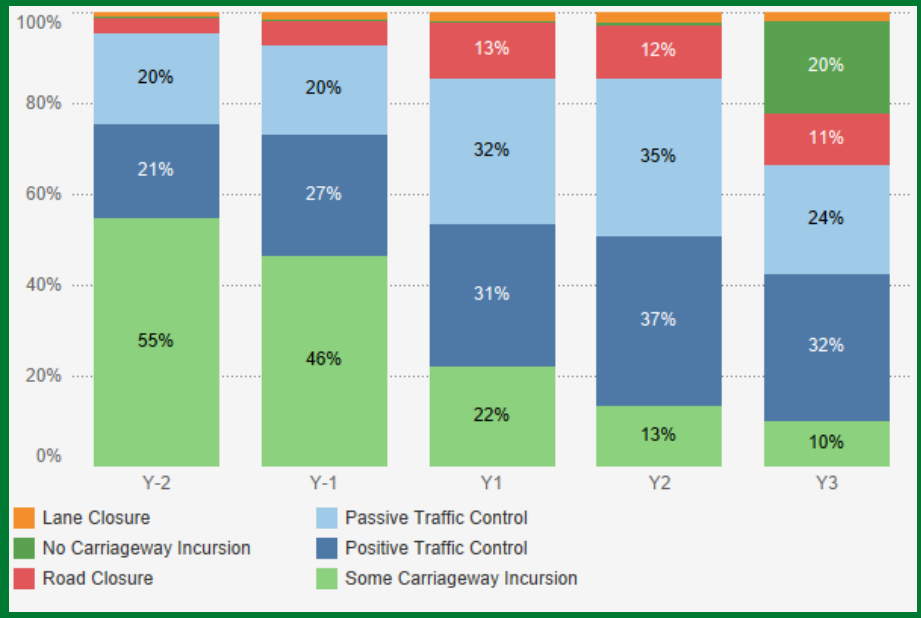
The analysis of traffic management for works undertaken, and carried out in the carriageway, shows some significant changes (refer to chart on right).

Through the introduction of a permit scheme the Council has been able to challenge traffic management arrangements proposed by promoters, and as a result works have been undertaken with more appropriate forms of traffic management.

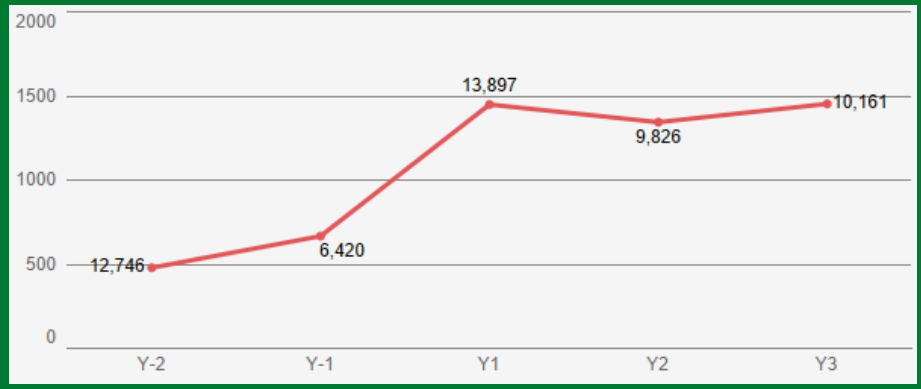
Analysis shows a significant decrease in the category “some carriageway incursion” and an increased in more defined forms of positive and passive traffic control, which would be more appropriate for the works and importantly considerate to location and network impact. One area of change is the use of road closures – which have seen a threefold increase (refer to chart right).

It could be viewed that this is a dis-benefit from the introduction of a permit scheme – more impact and inconvenience from increased forms of traffic management. This analysis should therefore be taken into the context of the Council’s duty to ensure safety; works were possibly carried out previously with the incorrect designation; and previous work methods may have required a better form of traffic management.

Use of traffic management for works undertaken



Works undertaken under a road closure



Warwickshire County Council

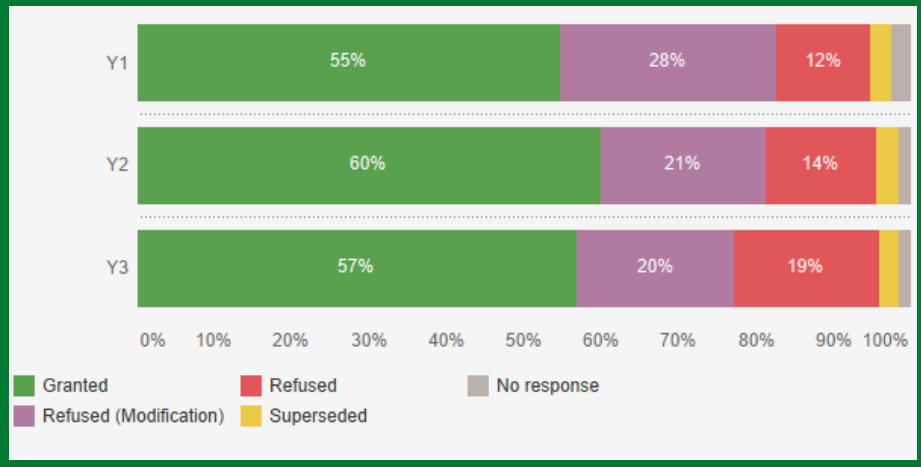
Findings of the Evaluation

Responses to permit applications

For a permit scheme to be effective the Council must process each application and take an action necessary to control and coordinate the works. Findings within this evaluation clearly demonstrates the Council is taking such action (refer to chart right) and there are positive benefits from this. Analysis shows the Council is granting most applications, whilst also rejecting and requesting modifications where changes to the proposed works is necessary.

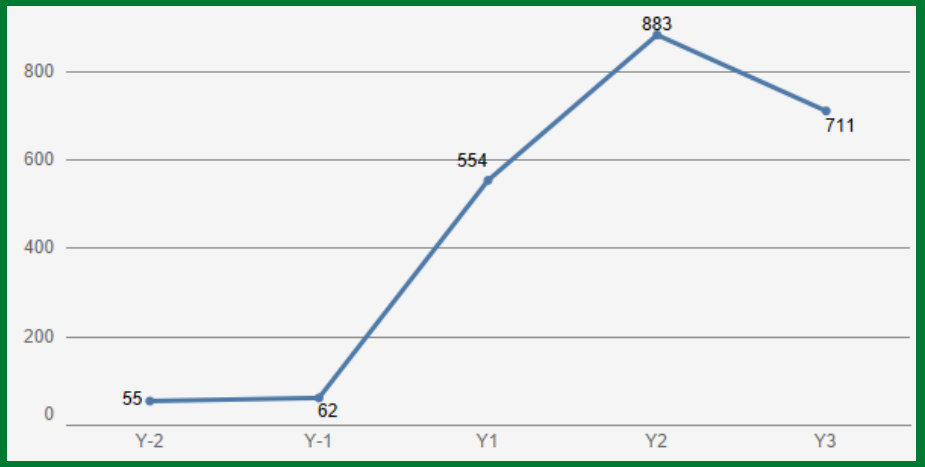
Analysis of the changes between the proposed works (within the initial application) and the actual works carried out, together with a requested by the Council for a modification, shows quantifiable changes within two areas - traffic management (refer to chart below – left) and durations (refer to chart below – right).

Responses to permit applications

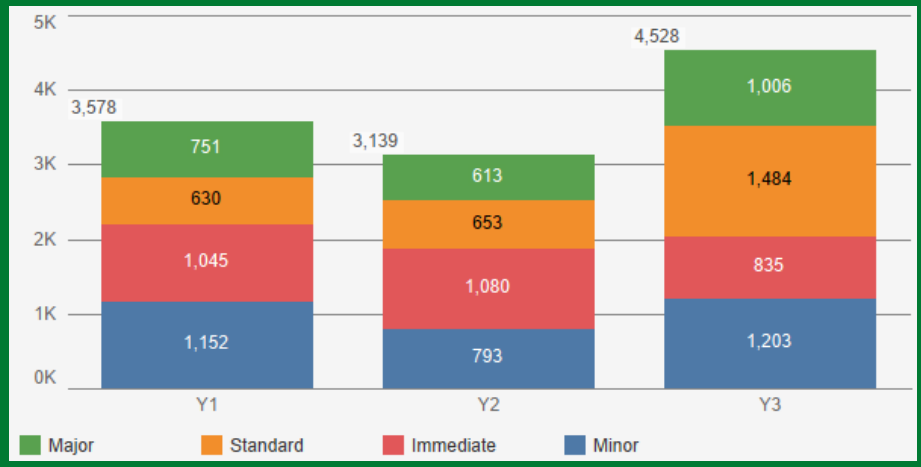


As demonstrated elsewhere within this report, by applying this process of modification to permit applications, the introduction of a permit scheme has enabled the Council to request and enforce these changes. This power was not effective under the previous notice regime.

Changes to TM arrangements after application



Days of planned works reduced through coordination



Warwickshire County Council

Findings of the Evaluation

Application of Conditions

The application of a condition to a permit is one of the key 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 works start, *e.g. advanced publicity.*

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 Statutory Guidance sets out the conditions that can be applied to permits and the potential parameters that can be associated to these conditions.

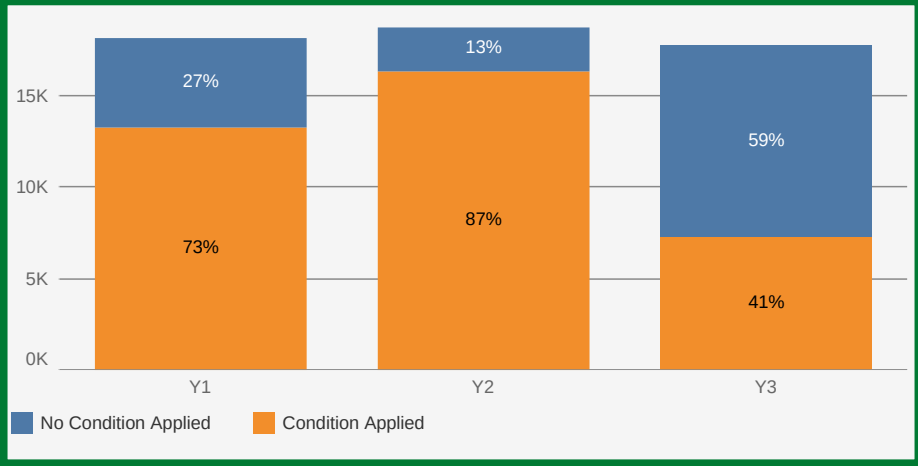
Analysis and evaluation for the use of conditions is difficult to undertake as there are many variables for a work that need to be taken into consideration, *such as the work methodology, location, use of materials or plant, timing or date of the works.*

It can be impracticable with current data 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.

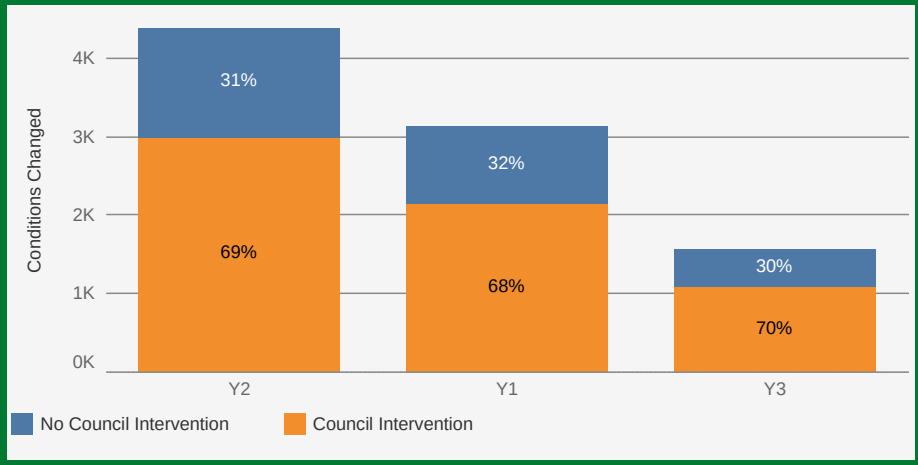
Analysis of conditions shows a decrease in the volume of conditions applied to permits. This decreased is noticeable in the initial application (refer to chart right-top). This is as a result of a focus by the council to ensure conditions applied to permits are relevant to the proposed works. In previous years the approach by Promoters on conditions written into permit applications has typically been 'to include everything' instead of relevant conditions.

As shown by the analysis (chart right-bottom) conditions are still amended after initial application, with c.70% as a result of council intervention.

Permit applications with conditions



Condition changes after application



Warwickshire County Council

Findings of the Evaluation

Conditions for Date & Time Constraints

There are two date constraint conditions that can be applied to permits, NCT1a and NCT1b. These conditions limit the days on which works can be carried out in alignment to legislation and the permit scheme. The application of this condition varies depending on the road category.

These conditions do not need to be attached (defined within) to the permit, therefore no evaluation on the use of this conditions has been carried out.

There are two time constraint conditions which can be applied to permits:

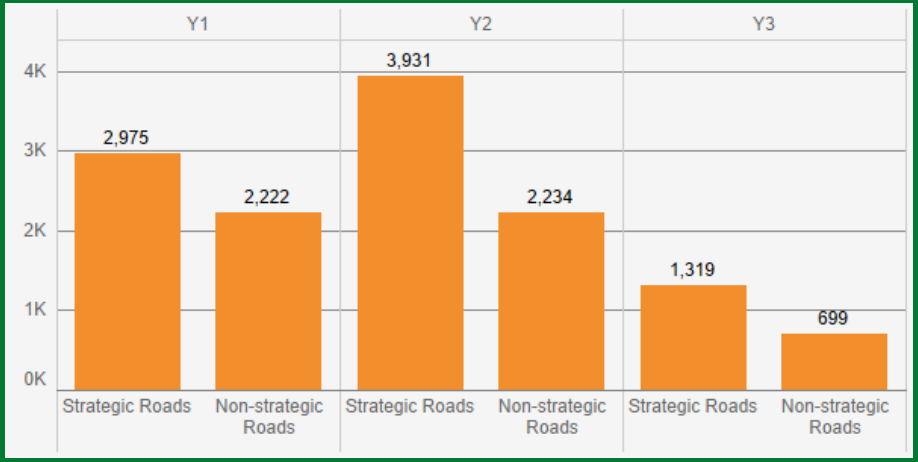
- NCT2a - to limit the days and times of day; and
- NCT2b – to specify extended working hours.

The charts below show the number of works undertaken, per year, where this condition has been applied.

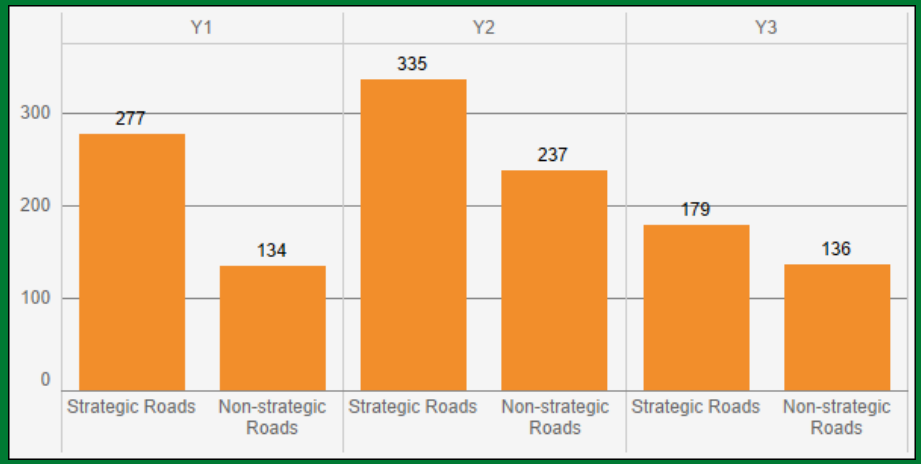
The use of these conditions has fallen in Year 3, to a level that now reflects a more realistic level of works where this condition is effective.

As shown within the charts, this condition is applied more to works carried out on the strategic roads, i.e. higher volumes of traffic and/or subject to traffic sensitive designation. Within Warwickshire, works carried out on strategic roads typically account for 55% of the total works undertaken (in year 3).

Application of condition NCT2a



Applicaton of condtion NCT2b



Warwickshire County Council

Findings of the Evaluation

Cost impact analysis of condition NCT2a

To demonstrate a potential benefit from the application of condition NCT2a, if it is assumed that all works undertaken where this condition was applied resulted in off-peak working, *and therefore the associated traffic management was also in place off-peak*, a cost impact reduction can be determined.

The cost impact figure is based on the figures estimated within the cost-benefit-analysis, therefore an estimated societal impact cost from a reduction of road capacity and the associated impacts, *such as queues or diversion routes.*

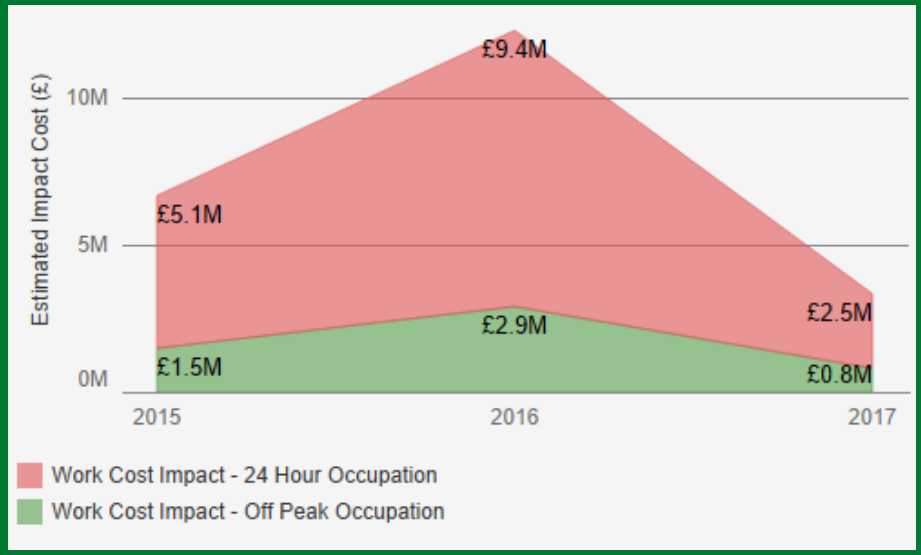
The chart right provides an estimated of the cost impact for works where NCT2a is applied and different costs for 24-hour occupation and off-peak occupation.

Across this period, the average annual cost impact shows an average annual reduction of £4million, where works have resulted in an occupation at off-peak times instead of 24-hour. However, as the overall volume of conditions applied to works has fallen, so too has the cost impact reduction.

It could be assumed that estimates for years 1 (2015) and year 2 (2016) are inflated as applied conditions (contained within the permit) are unnecessary, but there is no effective way within the data available to determine this or isolate the relevant works.

It should therefore be further assumed that the year 3 (2017) figures represents a more realistic estimate, and there is a cost reduction of £800k per annum from the use of this condition.

Cost impact of works with timing condition (NCT2a) applied



	Cost Impact (£million) per Scheme Year		
	Y1	Y2	Y3
24 Hour Works	7.03	8.58	1.71
Off Peak Works	2.07	2.65	0.52
Cost Impact Reduction	4.96	5.93	1.19

Warwickshire County Council

Findings of the Evaluation

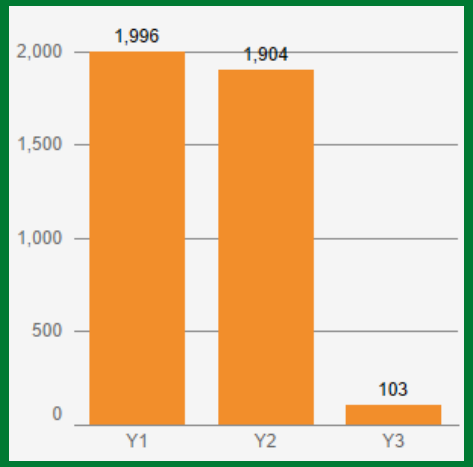
Conditions for Material and Plant Storage

The charts (below) show the volume of conditions applied to works undertaken for two material and plant storage conditions:

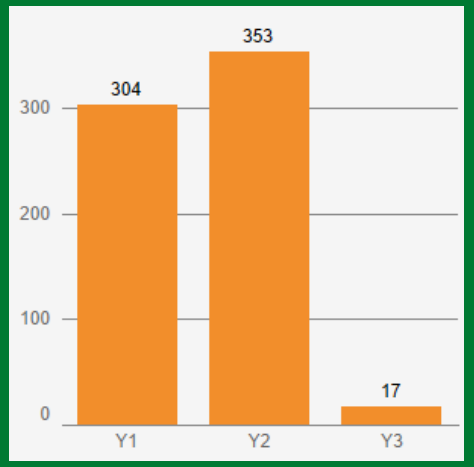
- NCT4a -removal of surplus materials and/or plant; and
- NCT4b – the storage of surplus materials and/or plant.

The volume of works where these conditions have been applied has reduced dramatically in year 3, in comparison to previous years 1 and 2.

Application of condition NCT4a



Application of condition NCT4b



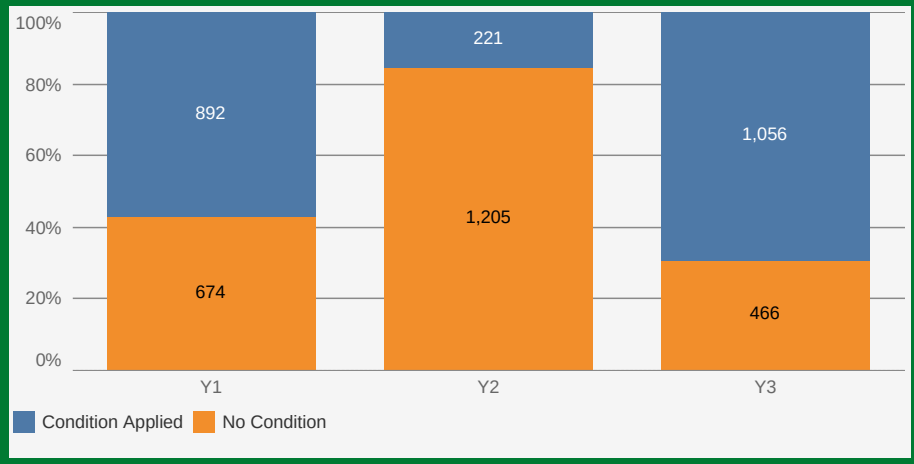
Conditions for Road Closures

The charts (below) show the volume of conditions applied to works undertaken for a condition where a road closure is required for the works:

- NCT7a – limiting activities when the specified road is closed to traffic.

The application of this condition has been analysed only for works where the traffic management type is specified as ‘road closure’. Year 3 saw an increase in the proportion of works where this condition was applied.

Application of condition NCT7a



Warwickshire County Council

Findings of the Evaluation

Conditions for Road Occupation and Traffic Dimensions

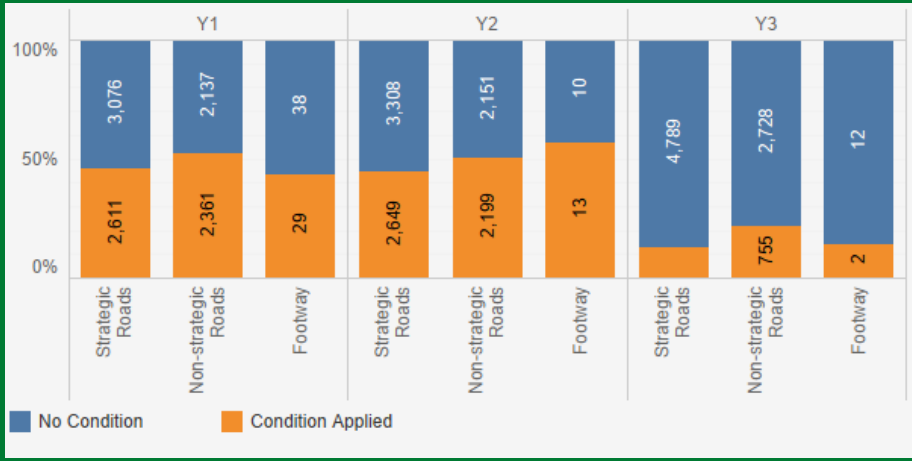
The charts (below) show the volume of conditions applied to works undertaken for a road occupation and traffic space dimension conditions:

- NCT5a – specifying the width and/or length of road space that can be occupied; and
- NCT6a – specifying the road space to be available to traffic (inc. pedestrians) at certain times of the day.

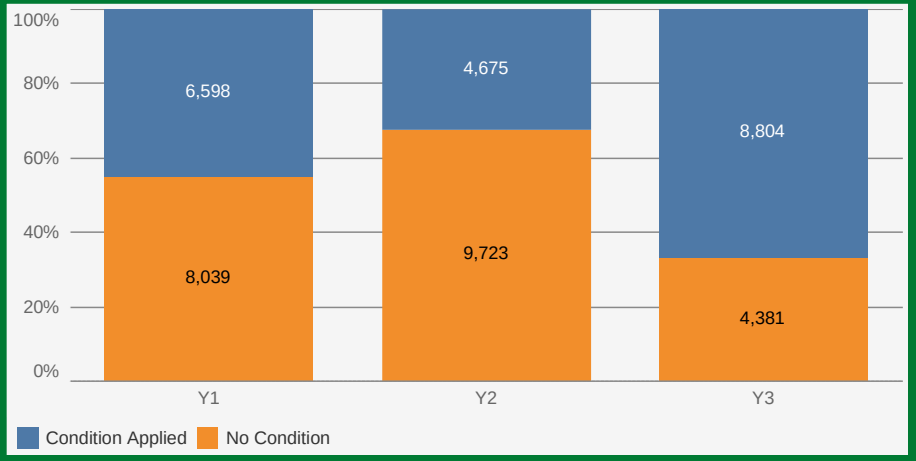
It is not possible within the works data to identify the specific works where this condition would apply, therefore it has been shown as a percentage total of all works.

The overall use of these conditions has fallen in year 3, however as with the analysis of overall conditions this should be viewed as a reflection of the works that require this condition.

Application of condition NCT5a



Application of condition NCT6a



Warwickshire County Council

Findings of the Evaluation

Conditions for Light Signals and Shuttle Working

The charts (below) show the volume of conditions applied to works undertaken for two conditions for light signals and shuttle working:

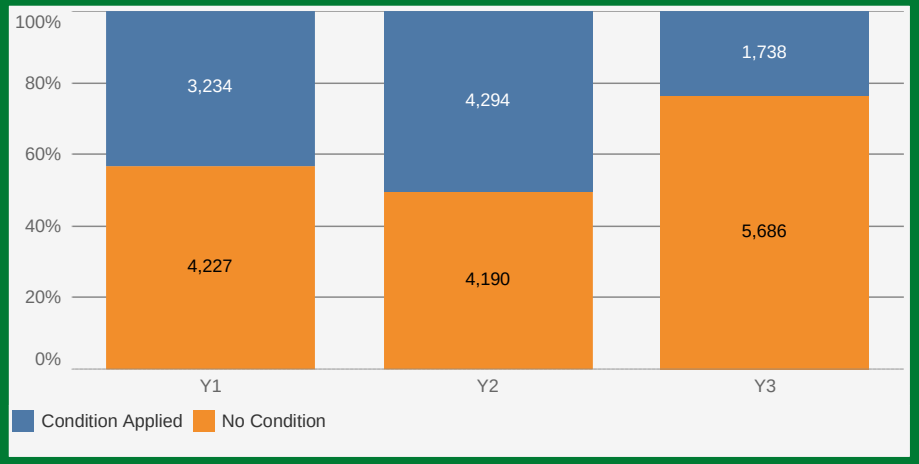
- NCT8a – limiting activities to the deployment of specified temporary traffic control; and
- NCT8b – specifying the manual control of traffic management at specified times.

Analysis of the application of this condition is limited to works that have a relevant traffic management category, *i.e. two-way lights.*

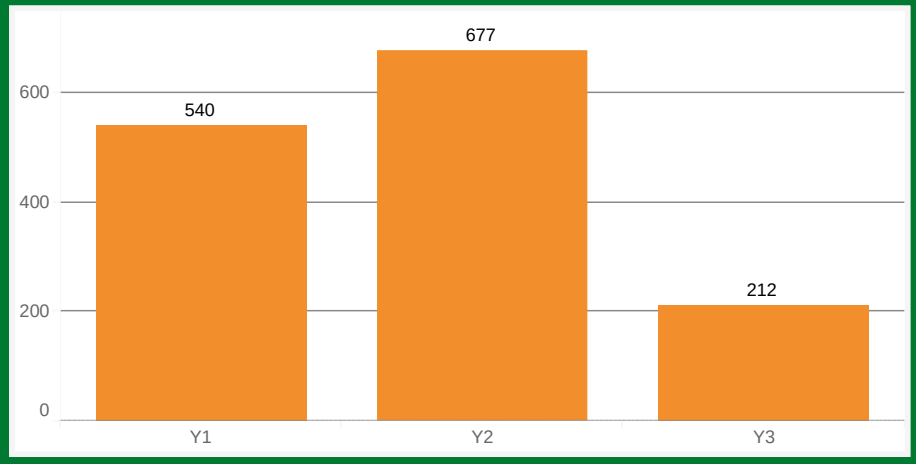
Analysis of NCT8a, which shows a proportion of total works with a condition, shows an increase in the use of the condition, from c.50% to 75%.

The application of NCT8b has reduced, by volume, in comparison to previous years 1 and 2.

Application of condition NCT8a



Application of condition NCT8b



Warwickshire County Council

Findings of the Evaluation

Conditions for Traffic Management Changes

The charts (below) show the volume of conditions applied to works undertaken for three conditions for traffic management changes:

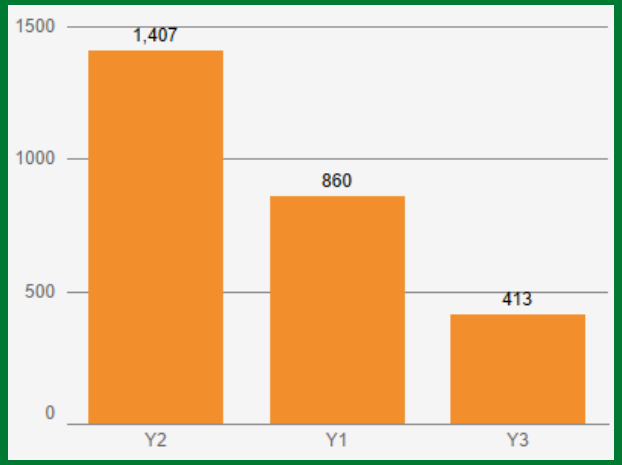
- NCT9a – notifying the Authority when traffic management changes during works;
- NCT9b – specifying the traffic management arrangements to be in place before activities can commence; and
- NCT9c – removing portable traffic signals from operation when no longer in use.

Analysis for the use of this condition has been undertaken only on works where a traffic management type is specified and relevant to the condition, e.g. two-way lights for NTC9c.

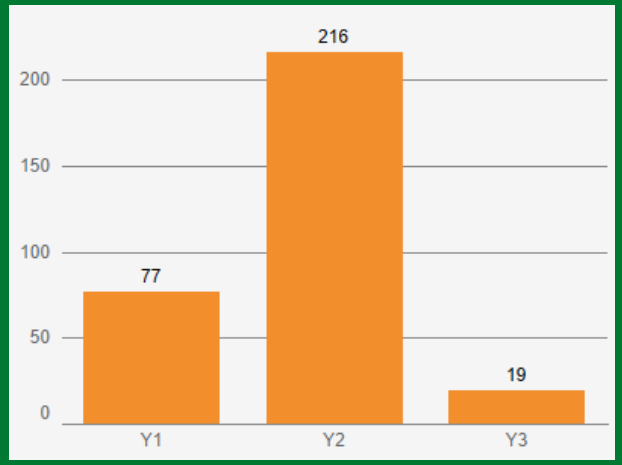
The application of NCT9a and NCT9b has seen a decrease in year 3, in comparison to years 1 and 2., whereas the application of NCT9a, as a proportion of total works, has seen an increase.

Over 90% of works involving portable traffic signals therefore have a condition applied to ensure they are removed when no longer in use. This demonstrates an effective use of this condition, to applicable works.

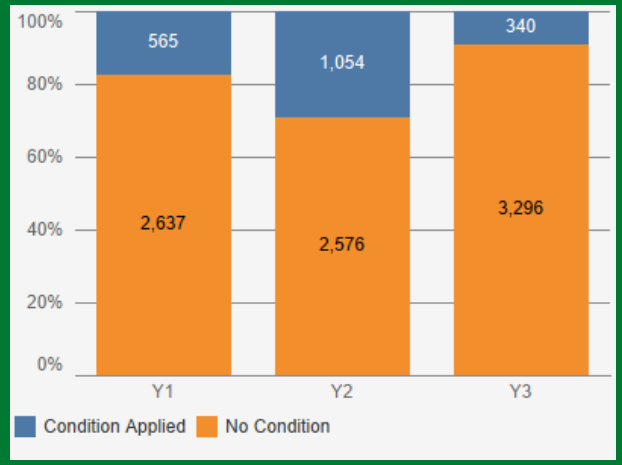
Application of condition NCT9a



Application of condition NCT9b



Application of condition NCT9c



Warwickshire County Council

Findings of the Evaluation

Conditions for Work Methodology

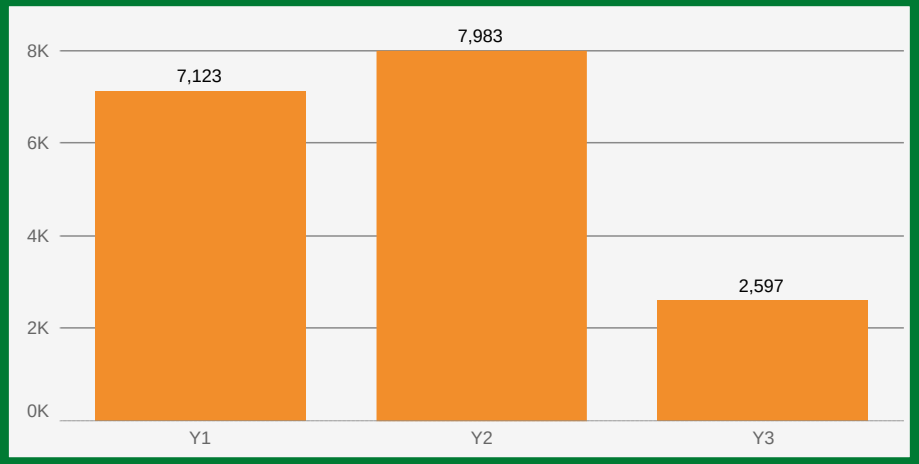
The charts (below) show the volume of conditions applied to works undertaken for a work methodology condition:

- NCT10a – specifying the work methodology to be used for the proposed activities.

As with many other conditions, the application of this condition, by volume, has decreased in year 3 in comparison to years 1 and 2.

This is taken as an indicator of more applicable application of this condition to relevant works.

Application of condition NCT10a



Conditions for Consultation and Publicity

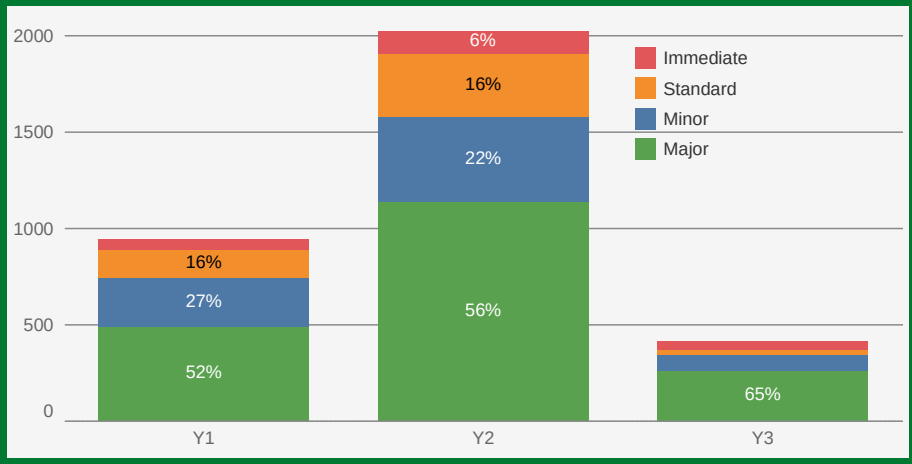
NCT11a display of permit number on a site information board during the duration of the works is a condition that is implied on all permits and therefore does not need to be applied, or attached to the permit as a condition.

The chart (below) shows the volume of conditions applied to works undertaken for a consultation and publicity road condition:

- NCT11b – specifying the advanced publicity of works.

The chart shows the proportion of works where this condition has been applied by works category. As expected, the majority of works fall within the major works category – 65% in year 3.

Application of condition NCT11b



Warwickshire County Council

Findings of the Evaluation

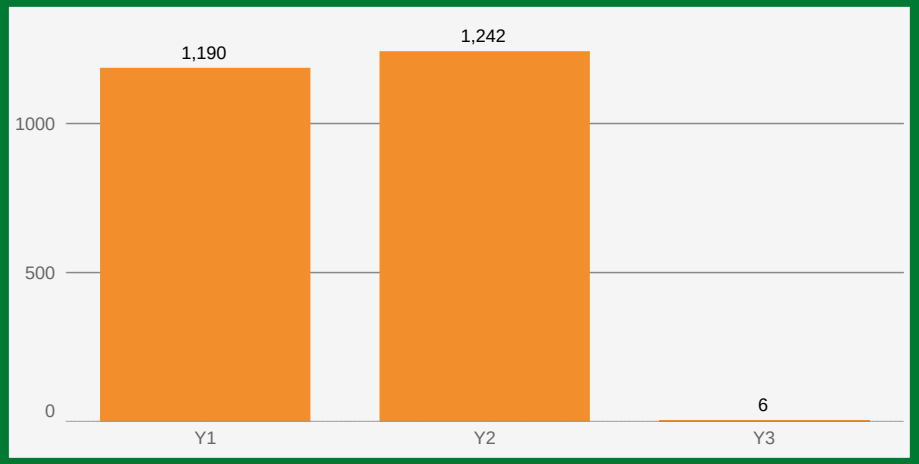
Conditions for the Environment (Noise)

The chart (below) shows the volume of conditions applied to works undertaken within Year 1 and Year 2 for an environmental (noise) condition:

- NCT12a – limiting the timing of certain activities for the environment.

The application of this condition has reduced significantly in year 3, in comparison to years 1 and 2. Although there has been an overall reduction in the application of conditions, the council should ensure in future years of operation that this condition is applied to relevant works where noise, as a result of the works, needs to be controlled.

Application of condition NCT12a



Local Conditions

The Statutory Guidance for Permit Conditions allows for a non-defined condition to be agreed between the Council and a works promoter – this is called a local condition.

No local conditions have been applied by the Council in either Years 1, 2 or 3.

Cost and Benefit Analysis

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

With three years of post-scheme data, we take this opportunity to review the value of the scheme with the benefit of the outturn scheme operating costs and revenues, and updated estimates of the societal impact of roadworks and how these may differ under the permit scheme.

A summary of the approach adopted is as follows:

- Identify the scale and characteristics of roadworks which have taken place in the first three years of permit scheme operation, and quantify the scale of societal impact that these roadworks will have had;
- Estimate the reduction in roadways resulting from the permit scheme and quantify the benefits of this reduction;
- Identify the cost of setting up and operating the permit scheme;
- Undertake the cost benefit analysis to determine the benefit to cost ratio and net present value delivered by the scheme.

Scale and characteristics of roadworks

The table (right) shows the number and durations of roadworks (undertaken) recorded in the last four years.

In the period 2017/18 (Year 3), 13,751 individual roadwork events were recorded, representing almost 70,000 days of roadworks. Of these, over 60,000 days of works involved at least some incursion into the carriageway and hence likely to have resulted in some disruption to road users.

Permit Scheme Year	Works Duration	No. of Works
Y-2 (2013/14)	73,110	14,622
Y-1 (2014/15)	65,713	14,901
Y1 (2015/16)	77,086	14,516
Y2 (2016/17)	74,362	14,974
Y3 (2017/18)	69,738	13,751

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

The 2004 Halcrow study , upon which much of the DfT Permit scheme guidance is based, suggested that around 30% of footway works typically encroach on the highway.

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

Cost and Benefit Analysis

	Traffic Management						
Permit Scheme Year	No Carriageway Incursion	Some C'way Incursion	Passive Traffic Control	Positive Traffic Control	Lane Closure	Road Closure	Grand Total
Y-2 (2013/14)	32	30,277	11,570	13,773	4,198	13,260	73,110
Y-1 (2014/15)	8,766	21,850	9,469	16,165	2,550	6,913	65,713
Y1 (2015/16)	9,075	11,721	18,335	22,488	960	14,507	77,086
Y2 (2016/17)	9,291	7,752	19,593	24,585	1,053	12,088	74,362
Y3 (2017/18)	9,401	7,853	15,745	23,242	2,612	10,885	69,738

A large number of QUADRO model runs were undertaken to provide estimates of the daily impact for all types of roadwork taking place on the local authority's road network. These runs were disaggregated as follows:

- by road type (A road, B road, C road, D/U road), reflecting different traffic volumes
- by number of lanes (single, dual) reflecting different traffic volumes and implications in case of incursion into a single lane
- rural and urban roads, with different diversion length implications
- by traffic management type (carriageway incursion, traffic management (lights), lane closure, road closure)
- by period (weekday, weekend, peak time, off-peak time)

Having developed costs for every roadwork type, each work within the Warwickshire database has been assigned an impact cost, according to its characteristics and the duration of the work.

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 roadworks in Warwickshire 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 roadworks)
- 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 as a result of higher fuel consumption)

Aggregation of the modelled impacts of roadworks occurring in Warwickshire defines the scale of social cost of these works. The totals are summarized below for the two years pre- and post-implementation of the permit scheme (refer to table below).

Cost and Benefit Analysis

In line with the falling number of roadwork days since the implementation of the permit scheme, the estimated impact of roadworks has also fallen.

The average annual impact of roadworks post permit-scheme implementation is £26m per year compared to an average pre-scheme impact of £40m. It should be noted that roadwork volumes vary year on year for a range of reasons, and therefore variance cannot be solely attributable to the permit scheme introduction. Whilst QUADRO covers the majority of the standard monetised elements of roadwork 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%, and this analysis has adopted a factor of 15% in order to be consistent.

Quantification of benefit of permit scheme

The benefits of the permit scheme are expected to be achieved through more efficient and better managed roadwork 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 roadwork occurrences. For the cost—benefit analysis, the comparative scenario is one in which the permit scheme had not been implemented and is therefore by very nature hypothetical and unobservable.

The default assumption relating to anticipated impact of a permit scheme has been to take an assumed 5% reduction in roadwork impact in the absence of local evidence (as stated in the DfT Permit Scheme Evaluation Guidance, 2016).

	Traffic Management					
Permit Scheme Year	Some C'way Incursion	Passive Traffic Control	Positive Traffic Control	Lane Closure	Road Closure	Grand Total
Y-2 (2013/14)	97,011	534,742	1,600,786	7,825,514	45,571,107	55,629,160
Y-1 (2014/15)	79,479	469,519	1,818,797	6,713,003	15,183,596	24,264,393
Y1 (2015/16)	44,281	478,631	2,965,542	3,427,971	24,711,791	31,628,217
Y2 (2016/17)	29,554	533,948	2,633,071	2,741,733	15,138,994	21,077,300
Y3 (2017/18)	57,469	457,356	2,491,197	8,227,039	13,389,547	24,622,609

Note: All figures expressed in 2010 prices and £'s.

Cost and Benefit Analysis

Post scheme data does however provide the opportunity to review trends, although as highlighted earlier, the comparison should not be 'before' vs. 'after', but 'with' vs 'without' scheme.

The analysis of overall roadwork impact cost in Warwickshire demonstrates a significant reduction in overall impact. Taking the average before and after roadwork monetised impacts identifies an average 35% fall following scheme implementation. However, general year-to-year fluctuations in the number of roadworks occurring and changes in the practice and quality of reporting events makes determining the underlying trend challenging.

Recent time series analysis undertaken on roadwork data as part of scheme evaluation in Derby found an observed and statistically significant 10% reduction in typical roadwork duration following implementation of the permit scheme.

Transport for London also took 10% as the estimated reduction in its ex-ante cost-benefit analysis of permit scheme implementation in the London Boroughs.

Therefore, taking an assumed 10% reduction in roadwork impact attributable to permit scheme implementation is supported by locally derived evidence and represents a conservative assumption by comparison with the actual observed impact reduction within Warwickshire.

Accordingly, the societal impact of roadworks observed in 2015/16 and 2016/17 can be expected to represent 90% of the overall societal cost of roadworks which would have been incurred in the absence of the permit scheme.

The benefit of the scheme can therefore be calculated as follows:

Year 1 2015/16	Societal cost of roadworks with scheme	£33,970,934
	Societal cost of roadworks without scheme	£22,661,167
	Benefit to society of permit scheme (yr 1)	£3,774,548
Year 2 2016/17	Societal cost of roadworks with scheme	£22,661,167
	Societal cost of roadworks without scheme	£25,179,074
	Benefit to society of permit scheme (yr 2)	£2,517,907
Year 3 2017/18	Societal cost of roadworks with scheme	£24,543,091
	Societal cost of roadworks without scheme	£27,270,101
	Benefit to society of permit scheme (yr 2)	£2,727,010

Scheme benefits of £3.77m, £2.52m and £2.73m are estimated to have been generated through implementation of the permit scheme in its first three years of operation.

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 following years, taking an average of the three observed post-implementation years, with impacts increasing in real terms to reflect growth in values of time, vehicle operating costs, accident savings and emissions costs.

Scheme benefits must be set against scheme costs to determine value for money. Importantly, the permit scheme costs within the appraisal are the additional costs of operating the permit scheme - these costs are covered in more detail within the **Permit Scheme Operating Cost** section of this report.

Cost and Benefit Analysis

Emissions savings

A component to the costed benefits presented above 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 roadworks. QUADRO places a monetary value on emissions savings by applying a 'cost of carbon' to the amount of carbon generated as a result of roadworks (additional fuel due to idling, or diversion etc).

In the first year of the WCC scheme (2015/16), the carbon emission generated by roadworks within the Warwickshire area, as calculated within QUADRO, were valued at £1.869m (2010 prices), which represents around 6% of overall roadwork impact cost.

The implied carbon emissions attributable to roadworks amounts to 32,660 tonnes for year 1 of operations, which is 3.6% of the total carbon emissions generated by motor vehicles within Warwickshire (Based on LA CO2 emissions data for 2016). The improved efficiency of roadworks under the permit scheme means that the carbon emissions generated as a result of roadworks may be expected to be lower than they would have been without the scheme.

In line with the broader assumptions about permit scheme impacts, on the basis that GHG emissions resulting from roadworks are 90% of the level they would have been in the absence of the scheme, would lead to estimated carbon emission savings of 3,629 tonnes CO2 per year. To set this emission saving in context, if we take the typical emissions of new cars sold in the UK currently, this reduction amounts to an **equivalent saving of over 30 million annual car kilometres.**

Appraisal results

The cost benefit analysis takes the benefits and costs established from the first year of operation projects these over the 25-year appraisal period. The future 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.

The results of the cost benefit analysis are as follows:

Net present benefits of scheme (B)		£53,893,600
Net present cost of scheme (C)		£4,191,142
Net Present Value of scheme (B-C)		£49,702,458
Benefit to Cost Ratio	(B/C)	**12.86**

The benefit to cost ratio (BCR) is a measure of value-for-money exhibited by a scheme. With a BCR of 12, the Warwickshire permit scheme can be defined as demonstrating 'Very High Value for Money'. It should be noted that with schemes generating significant revenues (like the permit scheme), the benefit to cost ratio can become very sensitive to inputs.

It should be interpreted alongside the net present value of the scheme to provide a complete picture of scheme performance. The full breakdown of the costs and benefits are shown in the Analysis of Monetised Costs and Benefits (AMCB) table below.

The principal benefits of the scheme are derived from time savings for commuters and others. There are also positive benefits related to reduced accident rates (roadwork sites tend to have higher accident rates than non-work sites) and greenhouse gas emissions savings, *as referred to earlier in this evaluation*.

Cost and Benefit Analysis

Analysis of Monetised Costs & Benefits

Noise		*(12)*
Local Air Quality		*(13)*
Greenhouse Gases	3,737,283	*(14)*
Journey Quality		*(15)*
Physical Activity		*(16)*
Accidents	2,112,242	*(17)*
Economic Efficiency: Consumer Users (Commuting)	19,642,695	*(1a)*
Economic Efficiency: Consumer Users (Other)	29,464,042	*(1b)*
Economic Efficiency: Business Users and Providers	8,030,221	*(5)*
Wider Public Finances (Indirect Taxation Revenues)	9,092,882	*(11) See Notes*
Present Value of Benefits (see notes) (PVB)	53,893,600	See Notes
Broad Transport Budget	4,191,142	*(10)*
Present Value of Costs (see notes) (PVC)	4,191,142	*(PVC) = (10)*
OVERALL IMPACTS		
Net Present Value (NPV)	49,702,458	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	12.86	BCR=PVB/PVC

- For (11) - sign changed from PA table, as PA table represents costs, not benefits
- (PVB) = (12) + (13) + (14) + (15) + (16) + (17) + (1a) + (1b) + (5) - (11)
- This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. 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.

Conclusions

The results of the cost-benefit analysis demonstrate that as in the previous years' evaluation, the impact of the Warwickshire permit scheme is found to be strongly positive, with the benefits to road users and wider society significantly outstripping the cost of scheme operation and scheme promotor cost burden.

A reduction in overall roadwork duration and impact can be observed, although it should be noted however that background factors mean that we must be careful in attributing this solely to the permit scheme. Also, many of the benefits of a permit scheme, such as ensuring appropriate and safe use of traffic management, are by nature very difficult to capture within the appraisal framework.

The council can ensure that the benefits of the scheme are maximised through effective use of the permitting regime to maximise efficiency and co-ordination of works.

Permit Scheme Operating Costs

Permit Fee Income

The Permit Scheme Regulations sets out powers for the Council to charge a fee to recover the prescribed costs for the administration of a permit and provisional advanced authorisation. These fees are applied to statutory undertaker works only but should be recorded for highways works.

The regulations also require that the Council (as a permit authority) to consider whether the fee structure needs to be changed in light of any surplus or deficit, to only recover the prescribed costs.

Prior to the implementation of the permit scheme, the Council undertook a detailed analysis of the future operating model for the permit scheme, based on a new structure and real-term costs for the employees, including overhead costs.

This operating model provided the fee levels required, based on historic noticing volumes, to recover the prescribed costs for operating the permit scheme, *i.e. the costs to administer statutory undertaker permits above those incurred under a NRSWA noticing regime.*

The charts right shows the income from permit fees, and shadow fees (accrued) for Highways works, for Year 1, 2 and 3.

With consideration to the recovery of prescribed costs from permit fees, the council continues to recover only costs and does not have a sustained surplus, instead reinvesting monies into the operation of the permit scheme, including resources.

Income from permit fees

Warwickshire County Council

Permit Scheme Operating Costs

Cost for the Cost-Benefit-Analysis

The permit scheme cost-benefit-analysis establishes scheme benefits which must be set against scheme costs to determine value for money. Permit scheme costs elements include the following:

- Setup costs
- Scheme operating costs (staff, 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 with regard to roadwork 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. The cost assumptions relating to the scheme are detailed below:

Scheme **setup costs** include consultancy fees and internal staff time in the preparation and implementation of the scheme. These were estimated to be £119,000 (2016 market prices).

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.

Operating costs for Years 1 to 3 of operations, incremental to those incurred previously, are estimated to be £768,170, £885,256 and £901,219 respectively.

The **capital costs** for the permit scheme implementation can include elements such as new IT hardware and software etc.

Overhead costs for additional software licenses have been accounted for within the staff overhead costs. These licensing costs are deemed more appropriate to be reflected in the operational costs as these represent ongoing annual costs. Therefore, no specific capital costs are identified in relation to permit scheme implementation.

Cost factors are also projected over the period of the appraisal, growing in line with real wages.

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 LHA, 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.

Glossary

"Council" means Warwickshire County Council including their capacity as a Local Highways Authority, also referred to as 'WCC'.

"DfT" means Department for Transport;

"EToN" means the Electronic Transfer of Notifications, the nationally agreed format for the transmission of information related to works between the Council and those undertaking works.

"ETS" means the Technical Specification for the Electronic Transfer of Notifications (EToN).

"HAUC" means the Highway Authorities and Utilities Committee.

"LHA" means Local Highway Authority.

"NRSWA" means New Roads and Street Works Act 1991.

"PAA" means 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 Scheme Regulations" means 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" means the permission sought be a Promoter to undertake works on the Highway, in accordance to the WaSPS.

"Permit Variation" means the process to change an agreed permit to reflect current or proposed changes in the works.

"Promoter" means 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" means the Traffic Management Act (2004) Statutory Guidance for Permits.

"TMA" means Traffic Management Act 2004;

"Undertaker" means Statutory Undertaker as defined within Section 48(4) of NRSWA.

"WaSPS" means [the] West and Shires Permit Scheme

"Works", also referred to as "Activities", means any 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.