Coventry City Council

A3

The West & Shires Permit Scheme

Year One Evaluation Report

Coventry City Council

Document Content

Version: A3 Release Date: 17 March 2017

Foreword

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

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

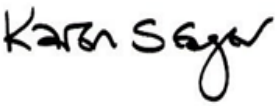
The fundamental benefit that both councils wished to see delivered by the permit scheme was an increase in the overall control of roadwork's by the authorities and a consequent reduction in the days of occupation on the road network.

A reduction of some 10% has been achieved with the first year of operation of the scheme, which means there is a knock on reduction in the delay and disruption caused by them.

The application of conditions on permits has been a great success especially when considering the needs of vulnerable road users; the scheme has enabled better management of routes through or around works sites for these users.

As the scheme places more control over occupation of the highway with the Council it has meant closer working relationships with all works promoters, improving information workflow leading to reduced occupation and better use of traffic management through early engagement.

The Council is pleased with the way in which the operational of the permit scheme has been embedded in the initial year, and are pleased that the cost-benefit analysis has returned an overall cost-benefit-ratio of 5, which places the scheme in the very high value for money category.



Head of Traffic and Network Management

Coventry City Council

Introduction

In March 2016 Coventry City Council, together with Warwickshire County Council, introduced a permit scheme: The West and Shires Permit Scheme (WaSPS).

The primary purpose of the permit scheme was to introduce more powers for the Council to fulfil their statutory network management duty.

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 in order to deliver 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 also apply penalties for non-compliance, *for instances where the works are not carried out according to the notice served.*

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

Powers under a Permit Scheme

The powers provided under a permit scheme differ from previous powers for managing works in a number of 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).

These powers are valuable for the Council to deliver the network management duty and ensure the most effective and efficient use of the network.

Specified Works

A permit scheme covers the same works as specified in NRSWA.

These works are defined as registerable activities and fall under different categories:

- **Major** – works with a planned duration of 11 days or more or require a temporary traffic regulation order, such as a road closure;
- **Standard** – works with a duration of between 4-10 days;
- **Minor** – works with a duration of less than three days: and
- **Immediate** – works that are required for urgent or emergency purposes and have to commence immediately due to their nature.

Permit Scheme Legal Order

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.3311) 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

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 first 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.

This report contains many technical terms and abbreviations, for which a glossary is provided.

Objectives of WaSPS

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 a number of 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.

Executive Summary

From the outset of the introduction of the West and Shires Permit Scheme, it was accepted that Year 1 would represent a period of embedding of new working practices and teams for the Council and works promoters, especially the Highways works promoter.

In preparing this evaluation the Council has faced a significant challenge with the collection and analysis of data from their street works system. Data from standard reports and an external provider, Elgin, was collected and had to be fused together to produce meaningful results.

This has led to a limitation on the level of analysis that could be undertaken, specifically looking beyond base-measures, such as permit volumes, and measuring the application and coordination processes.

The Council therefore consider the Year 1 evaluation as an opportunity to establish base-measure of working practices and performance.

In consideration to this, year 1 is viewed as a success as the ability to coordinate and monitor works, carried out under a permit, has been established.

In addition, the adoption of the permit scheme by the Council's highways works promoter is also viewed as a success. Parity treatment was introduced from the outset, and the measures included within this report demonstrate this approach.

- The objectives of the WaSPS are clearly set out in the scheme, and are based on the efficient and effective operation of the scheme. The results in this evaluation demonstrate that the efficient running of the permit scheme has been established, through:
- challenging and rejecting works, shown by the volume of rejections and permit modification applications – the latter from the promoter after the initial application normally containing a revision to the works at the request of the Council;
- applying conditions to works to control occupation and the way in works are carried out; and
- undertaking permit compliance inspections, to ensure works are being carried out under a permit and in accordance to the conditions of the permit.

To measure the effectiveness of these processes, specifically within the stated objectives of the permit scheme, the Council would need to clearly identify the change in proposed and actual works undertaken. Due to the data limitations this level of analysis was not possible.

The Council is determined to undertake this level of analysis and is seeking to collect a more robust dataset for subsequent evaluations. This dataset may also include year 1 data and therefore these results could be added for evaluations in years 2 and 3.

The data available has enabled the Council to develop a robust cost-benefit-analysis using established industry methods and assumptions, which has resulted is a benefit to cost ratio (BCR) of 5, which is classed as a very high value for money BCR.

Prior to the permit scheme coming into effect, a detailed analysis of the operating model, predicated on actual employees and costs, was undertaken and this employee structure was put in place.

This structure has done well in the initial year to process permits and undertake the coordination process, as demonstrated by the low volume of deemed (not processed) permit and permit-variation applications.

The costs recovered from permit fees have been in line with the projected recoverable costs, albeit with a reported loss from Year 1 permit fee income received.

This will have to be monitored in subsequent years to ensure the prescribed allowable costs are being fully recovered.

This evaluation sets out many areas where data and processes can be improved or developed and subsequent evaluations will seek to report on this, *where possible*, to improve this evaluation and demonstrate the effectiveness of the WaSPS.

Evaluation Methodology

This section of the Report outlines how the evaluation Report was produced, including the underlying data, interpretations and technical methodologies.

Performance Measures & 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.

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 Report.

The measures used within this Report, together with alignment to the HAUC and WaSPS measures, are outlined within a table in Appendix A.

Data & Limitations

The evaluations within this Report are based on works data collected for the period of 16th March to 31st March 2016. This period is slightly longer than an annual year, but allows subsequent evaluations to be based on dates from 1st April to 31st March.

The actual works data collected was obtained from the notifications sent between those organisations undertaking works, *such as the Councils Highways contractor and 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 the works analysed only include those that have reached the end of their lifecycle, which is identified either from their status or sufficient time has passed since the planned work end date.

The status of the work is determined by the work state reached, *for example work completed with excavation*, and the last notification type received, *for example if a work notification is:*

- "Grant Permit" then it is assumed this work did not progress to a start and therefore not undertaken;
- "Works Stop" then it is assumed the works were undertaken.

The Council use an EToN system for their street works register to collect and record the notifications. Unfortunately, the Council were unable to obtain a sufficient data extract from their EToN system for the purposes of this analysis.

Instead, the Council obtained an extract of archived works from Elgin, *who collect the works notification history for the roadworks.org website*, and merged this with high-level data extracted from their EToN system.

The end result was a dataset containing a thorough sequence history of the notifications for each work lifecycle during the evaluation period.

Having this sequence history, together with other key metadata, *such as traffic management, street category, and notification type*, enabled the Council to undertake a deep level of analysis and evaluation.

For analysis of pre-scheme measures the data used to produce the initial permit scheme business case was used. This data covered the period April 2011 to March 2012 (Year -4) and April 2012 to March 2013 (Year -3). The content of this data is however limited as it was collated for the purpose of developing a high-level business case, not analysis of performance. Where possible, this data has been used for pre-scheme analysis.

Interpretation

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.

As an example of the application of this, durations contained within this Report are based on the dates provided within the works start and works stop notifications.

Within the **Evaluation Results** section, a summary explanation for the measure is provided for clarity.

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.

It is accepted by the Council that the Year 1 evaluation would provide a base-level of performance on which subsequent years of operation can be measured.

Cost-Benefit Analysis

The purpose of the cost-benefit analysis (CBA) undertaken for this Evaluation is to re-evaluate whether the scheme is delivering the benefits anticipated in the preparatory stages, and to demonstrate that when set against the additional costs of running the scheme, these benefits represent value for money.

Reviewing the value for money delivered by the scheme will involve:

- analysis of the impact on the number, duration and characteristics of works against previous data;
- a review of out-turn scheme costs; and
- estimation of the scale of impact of the observed changes in roadworks occurrences in terms of delay, vehicle operating costs, accidents and emissions.

These activities are explained in further detail within the sections below.

Analysis of Historical Trends

Before the introduction of a permit scheme, benefits were estimated based on a default assumption relating to a reduction in roadworks impact of 5%.

This assumption has been accepted by the Department for Transport, which is substantiated within their Advice Note entitled “For local highway authorities developing new or varying existing permit schemes”, which states:

“Until the results of evaluation schemes are known it is a standard assumption that permit schemes will reduce [the impact of] street works by 5%. A higher figure can be assumed if there are good evidence based reasons for doing so”.

With the benefit of a number of years of post-implementation data it might be expected that this assumption could be reviewed against observed trends.

It is recognised however that the means of establishing impact is not as straightforward as the before and after comparison. The number, duration and characteristics of roadworks undertaken are observed to fluctuate year on year, often by much more than the level change expected as a result of the scheme.

The change to quantify is in fact not before scheme compared to after, but for each year of operation to establish what would have occurred in the absence of the scheme. This hypothetical, or counterfactual, scenario is unobservable, and it is only through careful analysis of the pre and post scheme data that an impact can be estimated.

The approach taken not only undertook a simple review of the overall roadwork duration, but also analysis of the characteristics of each work, to see how the changes expected to occur through scheme operation, *such as shorter occupation, use of more suitable traffic management, the imposing of conditions*, have been borne out in the data.

Review of Outturn Costs against Benefits

This first year of scheme operation also provides the opportunity to compare actual scheme costs incurred and revenues generated against those estimated in the scheme planning phase.

The analysis will focus on identifying the actual incremental costs incurred through the operation of the permit scheme compared with those experienced in general operation prior to scheme implementation.

Estimation of Benefits of the Scheme

Building on the analysis of observed trends and the estimated changes resulting from the introduction of a permit scheme, the Council then sought to quantify these benefits and assign a monetary value to the impact.

The following categories were used to model the impact of the observed roadworks experienced during the year:

- user delays,
- business impacts,
- accidents;
- and emissions,

Once identified, these impacts were compared as an overall impact against the estimated cost in the counterfactual 'without-scheme' scenario.

This analysis was undertaken using the QUADRO roadwork delay model, populated with local traffic and roadwork data.

By monetising the impact of the scheme, the Council were able to revisit the cost-benefit analysis of the scheme and assess how the scheme has performed in meeting original value for money estimates.

It is recognised that scheme benefits are likely to extend beyond impacts which can be quantified and monetised within the standard cost-benefit analysis framework.

The Council therefore sought to identify scheme impacts of a qualitative nature, such as improved reporting of roadworks and enhanced safety at roadwork locations, in addition to quantitatively capturing the impact of improved highway governance to the extent possible.

Lessons for Scheme Enhancement

The evaluation process will generate valuable information relating to the societal cost of roadworks in the local authority area, and the impact of different types of types of possession.

The Council intend to use this information for the future potation to the WaSPS to provide those responsible for issuing permits with clear picture of the associated impact, support optimal decision making and overall enhance the operation of the scheme.

Evaluation Results

This section of the Report provides the specific performance indicators and measures set out within the WaSPS and HAUC Advice Note.

The performance indicators and measures have been grouped or combined, where applicable, to avoid any duplication and also for continuity.

The tables referenced within this section are contained within Appendix A of this report.

Where any of the performance indicators or measures are unavailable or have been adjusted, the reason for this is detailed within the relevant section.

The charts and tables within this report are generally delineated into a number of different categories, with a higher level detail contained within the charts and a lower level detail contained within the tables.

These categories are:

- **Works Category**: Major, Standard, Minor and Immediate (including both immediate- urgent and immediate – emergency);
- **Works Promoter**: Highway Authority (road works) and Statutory Undertaker (street works) – who can also be delineated further by their utility type: Electricity, Gas, Telecoms and Water;
- **Permit Category:** PAA**,** permit application or permit variation; and
- **Works Status**, such as works started or works completed.

Permit Applications

The volume of permit applications and permit-variations received during the period provide the base-data for permit scheme evaluation.

The evaluation measure comprises the number of permits and permit variation applications received, delineated into the number of applications granted, including deemed-granted, and refused of the total received.

This measure does not include applications that were superseded, by another application, or subsequently withdrawn.

Although this measure provides a base-data, it should not be used as a direct comparison for other measures, for instance the number of applications will not represent the volume of works undertaken as many of the works will have been applied for within this period, to commence within the next period (year 2).

Results

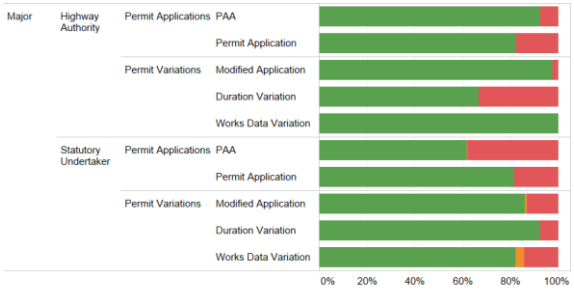
The tables in Appendix A provide volumes of permit applications and permit variations received, delineated into each work category and permit-variation type.

These applications are then delineated further into the final decision – grant or refused.

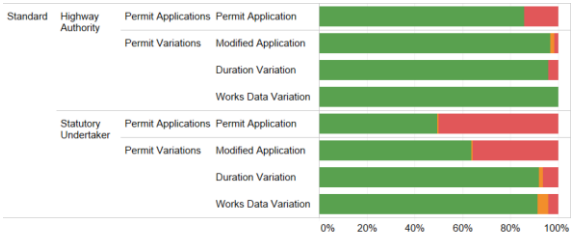
A table is % of total applications for the specific category is also provided.

The charts below show the status of applications, as a stacked 100% of the total, for each work activity, promoter and permit/permit variation type.

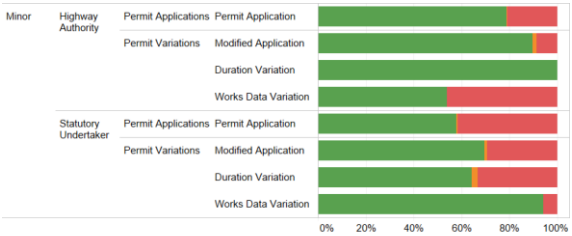
PAA and Major Permit Applications & Variations



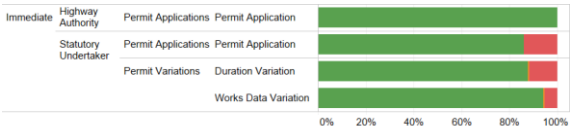
Standard Activity Permit Applications & Variations



Minor Activity Permit Applications& Variations



Immediate Activity Permit Applications& Variations



Analysis

It is difficult to derive meaningful analysis from the permit and permit variation volumes, especially for the initial year of operation and when comparing to volumes of notices from previous years.

There are many different factors that contribute to a variance in volumes of notifications and works, including:

- programmed works as part of upgrade, maintenance and renewal programmes, *such as project lightening*;
- unplanned reactive emergency or urgent works;
- new customer connections; and
- investment into the area.

For the first year of operation, the volume of refused permit and permit variations was expected vary between promoters and works types.

This is as a result of a learning curve between the works promoters and the Council, to get the content of the permit correct and ensure the coordination function was carried out correctly.

The main reasons for rejection were:

- Incorrect or insufficient detail on the permit;
- Incorrect use of traffic management, predominately the use of ‘some carriageway incursion’, when a type of traffic control is required for the specific worksite;
- Inappropriate durations for the proposed works, normally far more excessive than would be expected for the work methodology;

The above reasoning’s apply to some specific works promoters, especially inappropriate proposed works durations, and hence lead to a large volume of refusals.

In addition, the Council has noticed bulk uploads of works for a particular programme which contain systemic incorrect details.

There are also a number of works under lane or road closures where the PAA is granted, but the traffic management plan and/or Order has not been received, therefore preventing the works from being granted.

The volume of deemed (granted) applications is at an acceptable level across all works and promoters and sets an excellent benchmark for subsequent years of operation.

The volumes of permit variations are not shown as a % of the permit applications as it was not possible to clearly identify the instances of multiple permit variations for a single work or work phase. Therefore, the volume of % permit variations would be hard to interpret and analyse effectively.

The development of this specific measure will be undertaken for the Year 2 analysis and retrospectively applied for the Year 1 data.

The volume of modification applications is primarily as a result of:

- the use of this transaction to apply for an early start after the initial permit application has been submitted to correct dates;
- response to the high-level of rejections, based on the reasons noted above.

Applications of Conditions

The conditions applied to permits comprise reference codes that align to Statutory Guidance for Permits. For the purpose of this measure, the use of this reference code has been used to identify a specific condition type. A table of the condition references can be found within Appendix A.

The conditions measures are shown as the number applied to works that were undertaken, i.e. started. For these works the conditions applied are broken down into condition types. The number of each type is further shown as a percentage of the total works undertaken.

Results

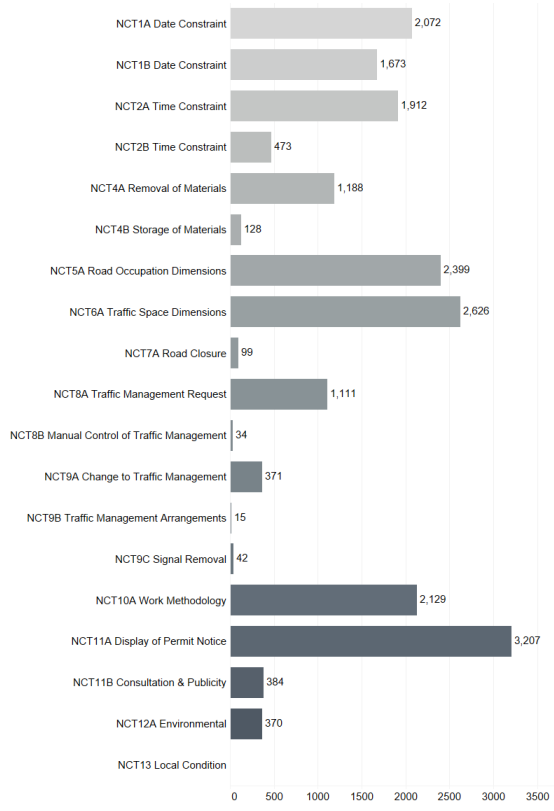
The tables in Appendix A show the number of conditions applied for each condition type, for each promoter and works category type. The table also include a % of the application of the condition for the total works started.

It must be noted that if a permit application is submitted with conditions that are not applicable to the works, CCC do not request for these to be removed. CCC focus on ensuring the correct conditions are applied to a permit, not that all of the conditions are correct.

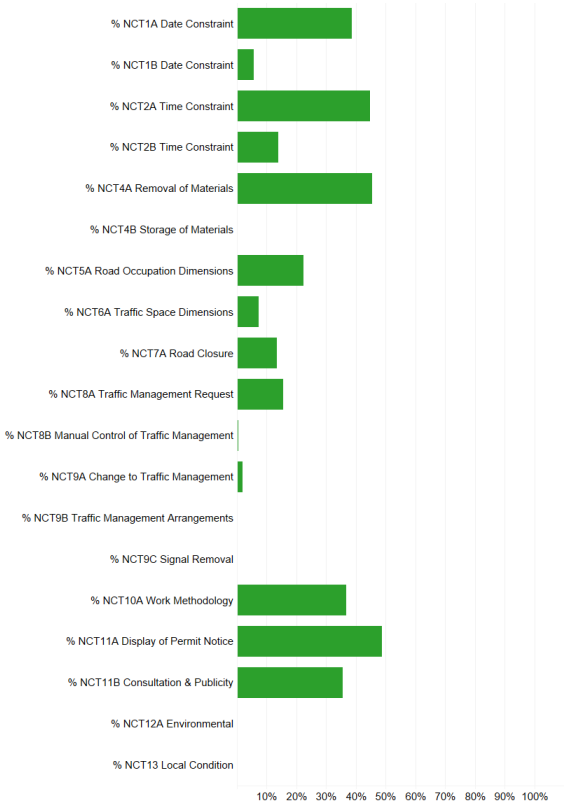
The process to correct conditions that are not required is deemed to be an onerous tasks and would result in a significant amount of rejections and additional effort by the works promoter.

The chart below shows the overall number of conditions applied to all works undertaken for all promoters and work categories.

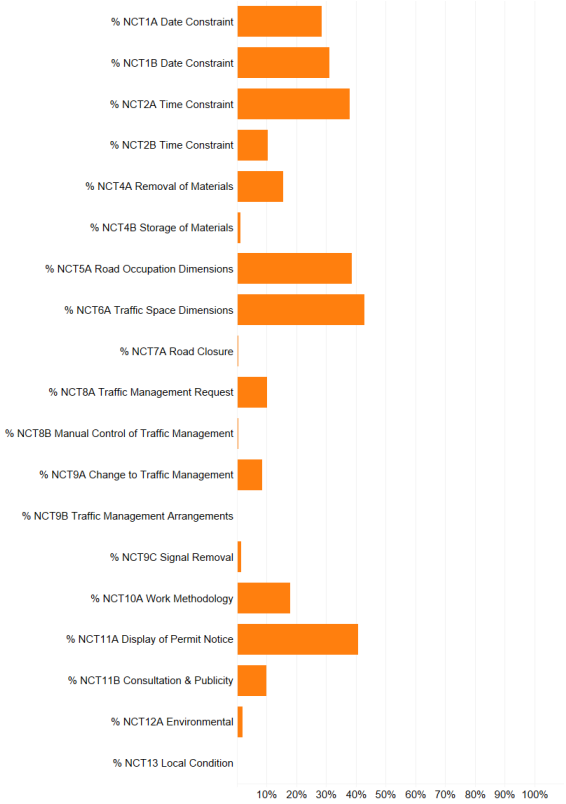
Volume of Conditions Applied to Started Works



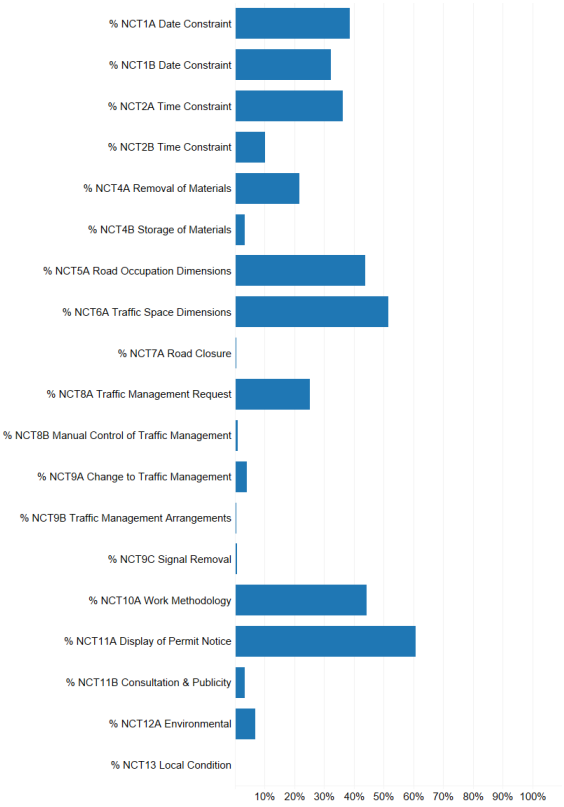
% of Conditions Applied to Major Works Started



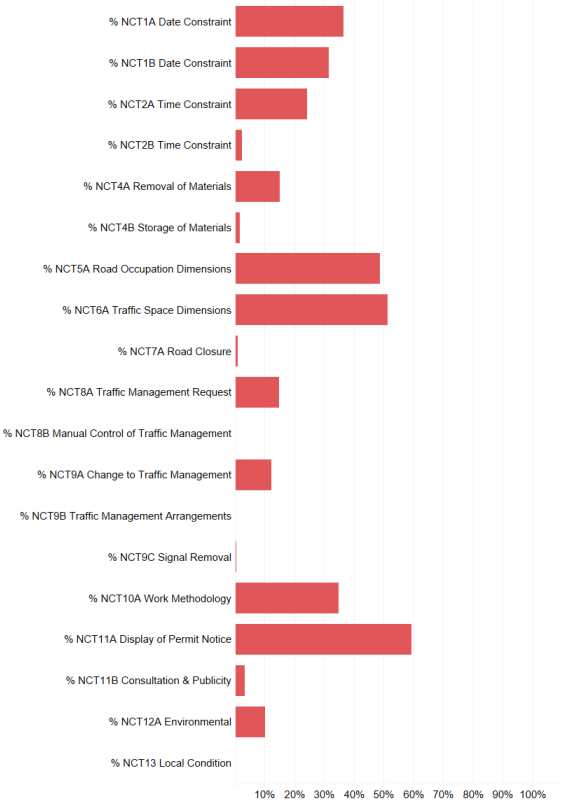
% of Conditions Applied to Standard Works Started



% of Conditions Applied to Minor Works Started



% of Conditions Applied to Immediate Works Started



Analysis

The charts show the number of instances where a condition reference was applied within a permit, however a number of factors need to be considered for the true application of conditions:

- as stated earlier, this condition measure includes conditions applied by the promoter that were not required on a permit;
- a high proportion of the conditions did not have any parameters set to them, and just reference numbers were used, thereby rendering them non-specific; and potentially ineffective; and
- of the conditions where parameters had been applied, the parameters were incorrect as they did not relate to the specific permit reference.

CCC have observed that typically either no conditions are applied to permit applications or the conditions being received from the statutory undertakers are a uniform text, *not in consideration the specific works or location*.

Where conditions are included on applications these included NCT1A and NCT11A. These are both implied conditions, and therefore do not need to be applied to a permit. NCT11A is the highest applied condition, however it does not need to be included within a permit.

The use of NCT5A and NCT6A for road occupation and space dimensions is to control vehicles being used on site during the works.

Further analysis on the specific content of the conditions is required for meaningful analysis. This level of analysis is being developed and will be used within the Year 2 report with retrospective of Year 1 analysis.

In addition, the Council intend to complete an analysis for the application of conditions at three key stages of the permit lifecycle: permit application, works start and works complete to identify the coordination process from the planning to completion of works.

On this basis, the analysis for the application of conditions for this evaluation has not been completed in-depth and the data available does not provide an insightful or true picture of reality.

Once the capability to measure the actual text being applied to conditions is available the Council intend to conduct further investigation and analysis to identify areas of improvement, and where necessary ensure there is a common-understanding for the use and application of conditions within a permit between the Council and works promoters.

Coordination & Timing

Application Lead Times

The WaSPS sets out clear timings for permit applications, as a minimum “lead time”, depending on the category of the works, for example a standard permit application has to be made a minimum ten days before works are planned to start.

The timings related to permit variation applications are not included within this evaluation as the data was not available for this analysis.

Where a promoter wishes to commence work without providing the sufficient minimum lead time, and therefore reduce the application period, they should seek an early start agreement from the Council.

This evaluation will be shown as the volume of permit application in time or not in time, of the total applications received. This measure directly relates to the base-data set out within the previous section Permit Applications.

Results

The chart(s) below show

- the number of permit applications that were received in time and not in time; and
- the percentage of applications in time and not in time as a stacked 100% of the total; and
- the average lead time for PAA (calendar days) and permit applications (working days).

Volume of PAA and Permit Applications in Time

			Grand Total	Highway Authority	Statutory Undertaker
Grand Total			7,402	1,574	5,828
Major	PAA	In Time	658	146	512
		Not in Time	34	29	5
	Permit Application	In Time	357	71	286
		Not in Time	183	71	112
Standard	Permit Application	In Time	852	192	660
		Not in Time	43	32	11
Minor	Permit Application	In Time	3,675	966	2,709
		Not in Time	171	48	123
Immediate	Permit Application	In Time	1,086	19	1,067
		Not in Time	343		343

% of PAA and Permit Applications in Time (of Total)

Average Lead Time for PAA and Permit Applications

			Grand Total	Highway Authority	Statutory Undertaker
Major	PAA	In Time	71.41	67.55	72.52
		Not in Time	2.35	3.03	-1.60
	Permit Application	In Time	26.97	46.54	22.11
		Not in Time	1.79	2.89	1.09
Standard	Permit Application	In Time	18.13	14.53	19.18
		Not in Time	4.47	4.47	4.45
Minor	Permit Application	In Time	7.55	9.09	7.01
		Not in Time	1.19	-0.21	1.73
Immediate	Permit Application	In Time	-0.03	0.00	-0.03
		Not in Time	-2.87		-2.87

Analysis

Overall, the volume of permit applications submitted on time is at an acceptable level, with the exception of a few specific promoters and works categories. For these instances the overall volume of permits were low, for which a proportion were not within the minimum lead time is also low.

The average lead time for applications (in time) is also very positive, however because of the early start process adopted by WaSPS the volumes of requests to reduce the application period after the initial permit application should be also taken into consideration for analysis.

The average lead time for application not in time is unacceptable, however as long as these applications remain at a low percentage effective coordination can still be achieved.

Early Start Requests

The number of requests to reduce the notification period by the works promoter with a formal acceptance from CCC.

Results

The charts below show the HAUC TPI 13 number of early start agreements, the percentage of early starts as a percentage of the works phases started, and the reasons provided for early starts, as recorded by CCC.

Volume of Early Start Requests

	Highway	Statutory Undertaker	Grand Total
Major	116	266	382
Standard	117	102	219
Minor	69	106	175
Immediate	0	0	0
Grand Total	302	474	776

% of Early Starts for Work Phase Started

	Highway	Statutory Undertaker	Grand Total
Major	75.82%	81.35%	79.58%
Standard	59.09%	21.03%	32.06%
Minor	6.72%	5.51%	5.93%
Immediate	0.00%	0.00%	0.00%
Grand Total	21.65%	11.29%	13.87%

Recorded Reasons for Early Start Requests

	Major	Standard	Minor	Grand Total
Collaboration	3	1	3	7
Customer Request		4	17	21
Not Specified	359	169	98	626
Planning of Works	24	7	13	44
Pre-works Complete	24	1	1	26
Urgency of Works	4	2	30	36
Grand Total	414	184	162	760

Analysis

When compared to the work phases started, the overall level of early starts is at acceptable level, except for Standard and Major activities. The percentage of works started outside of the minimum lead times will need monitoring during subsequent years of operation and further discussion with the relevant works promoters.

Early observation by CCC shows that a majority of the early start requests are as a result of contractors scheduling works prior to the permit application, normally within the minimum lead time. CCC are actively liaising with the promoter to resolve this practice.

When considering the recorded reasons for early start requests, the large portion was assigned to not specified. This obviously limited the capability to analyse the reasons further and processes will be changed in subsequent years to ensure a sufficient reason is provided by the works promoter and this is recorded.

Duration (Occupation) of Works

The duration of the work relates to the occupation of the highway during the works undertaken. This duration is calculated from the timings provided in the promoter's work start and work stop notice – in calendar days. For example, if works started on the 1st January and stopped on the 10th January this would be a duration of 10 days, *inclusive of the start and stop day*.

It is not possible to analyse specific instances where works were carried out during specific periods, with the highway being returned to full utilisation outside of these times over the period of works. It is assumed for all works that during the start and finish the highway was occupied.

Works may be undertaken in multiple phases, however the WaSPS set outs out clear limitations to the use of phases for works and in the majority of cases the works cover a single phase, even if they relate to a collective group of works.

For the purpose of this evaluation the analysis is completed on all works as a single phase.

Works Phases

The evaluation of works phases is based on the following HAUC Performance Indicators:

- TPI1 Works Phases Started;
- TPI2 Works Phases Completed; and
- TPI5 Phases Completed on Time.

Results

The table below shows the HAUC performance indicator measures for works phases (as above).

Works Phases Started and Completed

		Works Phases Started	Works Phases Completed	Works Phases Completed after the Reasonable Period	% Started Works Phases Completed after Reasonable Period
Highway	Major	153	170	16	10.5%
	Standard	198	204	11	5.6%
	Minor	1,027	1,008	14	1.4%
	Immediate	17	16	1	5.9%
	Total	1,395	1,398	42	3.0%
Statutory Undertaker	Major	327	320	20	6.1%
	Standard	485	484	37	7.6%
	Minor	1,925	1,936	84	4.4%
	Immediate	1,461	1,453	48	3.3%
	Total	4,198	4,193	189	4.5%
Grand Total		5,593	5,591	231	4.1%

Analysis

The volume of works phases completed after the reasonable period for statutory undertakers is an area that requires focus within subsequent years of operation of the WaSPS.

Occupancy

The evaluation of occupancy is based on the following HAUC Performance Indicators:

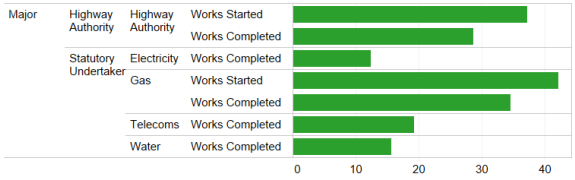
- TPI3 Days of Occupancy Phases Completed;
- TPI4 – Average Duration of Works;
- AM 1 – Average duration of works by permit type.

Results

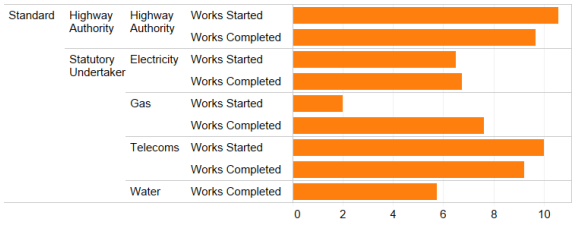
The tables within Appendix A show the average duration of works, in days, together with the total occupancy of works, delineated by promoter type and works category.

The charts below provide the average duration of works by each promoter for each activity type.

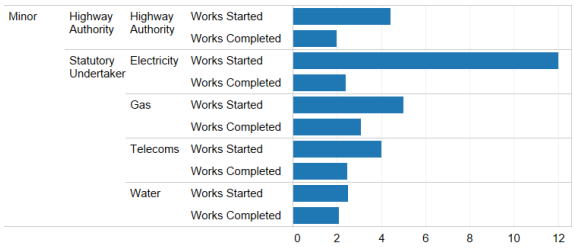
Average Duration of Major Works



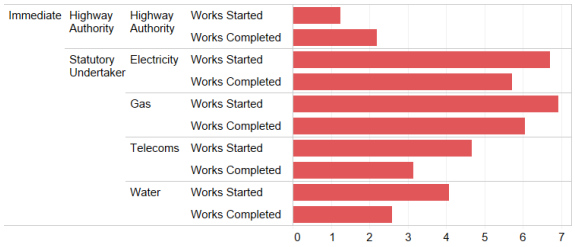
Average Duration of Standard Works



Average Duration of Minor Works



Average Duration of Immediate Works



Average Duration of Works including Pre-scheme

		Aggregate Average	Highway Authority	Statutory Undertaker
Major	Total	15.20	13.46	34.50
	Year 1	32.43	32.61	32.34
	Year -3	13.48	12.81	29.94
	Year -4	14.37	13.19	45.59
Standard	Total	7.61	7.88	7.46
	Year 1	7.84	9.49	7.14
	Year -3	7.95	8.22	7.80
	Year -4	6.95	6.50	7.35
Minor	Total	2.62	2.50	2.68
	Year 1	2.27	2.14	2.34
	Year -3	2.73	2.48	2.82
	Year -4	2.80	2.82	2.79
Immediate	Total	4.73	4.04	4.74
	Year 1	4.53	2.27	4.55
	Year -3	4.63	1.61	4.68
	Year -4	4.97	6.97	4.94

Analysis

The average duration of works is at an acceptable level, with an exception for some promoters and minor works where they are close-to or exceed 3 days and therefore should be registered as a standard activity.

The average duration of works in comparison to previous works durations shows an decrease in the averages, however it is recognised that many different factors need to be taken into account to analyse these figures, including further analysis during subsequent years of operation.

Duration Extensions & Overruns

After starting work, if the promoter requires additional duration to the proposed duration then this must be agreed with the Council.

The promoter would request a duration extension through the use of a 'duration variation application notification', *also called a Duration Variation within this report.*

Results

The chart below shows the number of duration variation application received by the Council. This data is a repeat of the data included within the Permit Applications section.

Duration Variation Applications

			Grand Total	Highway Authority	Statutory Undertaker
Grand Total			432	55	377
Major	Total		93	14	79
	Duration Variation	Granted	82	9	73
		Refused	11	5	6
Standard	Total		93	28	65
	Duration Variation	Granted	87	27	60
		Deemed	1		1
		Refused	5	1	4
Minor	Total		56	13	43
	Duration Variation	Granted	40	13	27
		Deemed	1		1
		Refused	15		15
Immediate	Total		190		190
	Duration Variation	Granted	164		164
		Deemed	1		1
		Refused	25		25

At the start of the work the promoter has indicated on their permit application the proposed number of days (total duration) for the work.

After this period, which can be amended through a duration variation, there is a reasonable period for the works to commence. The period after the reasonable period and the actual works competition is defined as overrun day(s).

This evaluation contains the following HAUC Performance Indicator for these overrun days:

- TPI6 – Number of Overrun Days.

The chart below shows the total number of overrun days for each works category and promoter type.

Total Overrun Days

	Grand Total	Highway	Statutory Undertaker
Immediate	79	3	76
Major	625	418	207
Minor	937	37	900
Standard	138	42	96
Total	1,779	500	1,279

Analysis

The overall volume of duration variation applications is at an acceptable level, with the majority of these for statutory undertaker immediate works.

More detailed analysis of the measure shows that: the highest overall proportion is found within SU immediate works, which would be accepted as a result of the time required to find and fix leaks, for which the majority of immediate permits are required.

Reduction in Occupation

A measure for reduction in occupation is based on the HAUC measure:

- AM 3 - Days of Disruption Saved/ Number of Collaborative Works

This measure is the number of days of disruption saved by an authority through the various co-ordination methodology available to them e.g. collaborative works or challenging initial duration and/or proposed methodology of working (whether formally through the S74 mechanism or through informal discussion at the planning stage).

The authority data of the number of collaborative works and the number of days saved as a result of collaborative works on the Authority road network

Results

No data was available for this measure.

Analysis

Subject to the availability of sufficient data, the Council would measure the effect of the coordination process on several factors, including planned duration and occupational timing on the network, to identify the changes between planned and actual works carried out.

The collection of this data is being assessed for subsequent evaluations.

Reinstatements

The measure for reinstatements in this evaluation are based on the following HAUC performance indicators:

- TPI7 Number of Phase One Permanent Registrations; and
- TPI8 Number of Phase 1 Permanent Registrations.

Results

The table below shows the results of the HAUC performance indicators for each promoter type and works category.

Phase 1 and Permanent Registrations

		TPI 7 Number of Phase 1 Registrations	TPI 8 Number of Phase 1 Permanent Registrations
Highway	Major	169	41
	Standard	201	159
	Minor	1,006	635
	Immediate	16	2
	Total	1,392	837
Statutory Undertaker	Major	318	299
	Standard	464	398
	Minor	1,773	1,444
	Immediate	1,425	1,264
	Total	3,980	3,405
Grand Total		5,372	4,242

Analysis

There are no specific observations on the volumes of phase 1 and permanent registrations. These volumes will be monitored for future evaluation.

Inspections

Works in Progress Sample Inspections

When works are in progress the Council can carry out a sample inspection, known as a Category A inspection.

Purpose of this inspection by the Council is to ensure those organisations undertaking works are doing so correctly and within any associated regulations, statutory guidance and codes of practice.

This measure was intended to provide the following performance indicators:

- Number of failed Sample A (works in progress) inspections shown as a percentage of the total undertaken within a period.

Results

The table below shows the volume of category A inspections carried out, together with the % failure of these inspections.

Category A Sample Inspections

	TPI 18 Sample Category A Inspections	TPI 19 Sample Category A Failures	% Sample Inspection Failure
Highway	310	0	0.0%
Statutory Undertaker	1,240	13	1.0%
Grand Total	1,550	13	0.8%

Analysis

There are no specific observations on the Category A inspections and resulting failures. These volumes will be monitored for future evaluations.

Permit Compliance Inspections

The volumes shown are of fixed penalty notices related to a failed permit compliance inspection. A notice was served for either an offence under:

- Regulation 19: working without a permit; and/or
- Regulation 20: working in break of a permit condition.

These volumes include fixed penalty notices that were issued and created, but not those that have been withdrawn by the Council.

Results

The table below shows the number of FPN's as a result of permit compliance inspections.

FPN's from Permit Compliance Inspections

	Highway Authority	Statutory Undertaker	Grand Total
Working in Breach of Permit Conditions	38	224	**262**
Working Without a Permit	39	65	**104**
Grand Total	**77**	**289**	**366**

Analysis

In consideration to the volume of works started and the number of category A (works in progress) inspections carried out the volumes for failed permit compliance inspections are deemed as high, however this could be attributed to the initial year of operation.

Analysis of this measure for subsequent years and the nature of the offences, speciality for breach of conditions, will determine what action, if any, the Council needs to take to prevent the impact from these failures.

Other Measures

Information to Road Users

This measure is based on how provision of information to promoters has assisted road users, HAUC measure:

- AM 6 Levels of Customer Enquiries

It is suggested that the Council may wish to provide details and levels of customer enquiries relating to road and streetworks and provide a comparison with previous year.

Results

Detailed data on the nature of enquiries into the Council was not available to complete this analysis.

Permit Fee Income

This section of the Report outlines the income received from the WaSPS and the prescribed (operating) costs.

The Traffic Management Permit Scheme (England) (Amendment) Regulations 2015 require that the permit authority shall give consideration to whether the fee structure needs to be changed in light of any surplus or deficit;

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 Council did not use the DfT Permit Fee Matrix to calculate their permit fee levels as this was found to return an artificially high fee level, and a subsequently artificially high income.

The operating structure introduced by the Council, which included the recruitment of new employees, was based on this operating model.

The of cost incurred by the Council to operate the permit scheme in Year 1 was £273,243.

In Year 1 the total income received through permit fees, including permit variation fees, was £263,017, therefore providing a loss of £10,226.

The Council will continue to monitor the income from permit and permit-variation fees in the subsequent Year 2 and Year 3 evaluations, from which a more realistic projected of future levels can be assessed. If the loss is sustained, then the permit fee levels should be revaluated and adjusted.

Costs and Benefits

This section of the Report provides an analysis of the cost and benefits for Coventry for operating the permit scheme in Year 1.

The Traffic Management Permit Scheme (England) (Amendment) Regulations 2015 require that the permit authority also shall give consideration to the costs and benefits (whether or not financial) of operating the scheme.

A cost-benefit analysis was undertaken before scheme implementation to assess whether the permit scheme was likely to deliver societal benefits in excess of the cost of implementing and operating the scheme, and hence whether the scheme should go ahead.

With a year 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 roadwork and how these may differ under the permit scheme.

A headline summary of the approach adopted is as follows:

- Identify the scale and characteristics of roadworks which have taken place in the first year of permit scheme operation, and quantify the scale of societal impact that these roadworks will have had;
- Estimate the change in roadworks impact resulting from the permit scheme and quantify the benefits of this change;
- 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

In the period 2015/16, 3734 individual roadwork events were recorded, representing over 27,000 days of roadworks.

The estimated impact of these roadworks was modelled using QUADRO, with multiple model runs undertaken to provide estimates of the daily impact of different types of roadwork disaggregated by location, road type and traffic management arrangements.

The modelled impact of typical roadworks in Coventry forms the basis of the benefits calculation. The roadwork 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)

The modelled monetary cost of a single day of roadworks provides the means of estimating the total impact of roadworks each year, calculated as follows:

- Societal cost of a single day of ‘typical’ roadworks - £810 (2010 prices)
- Total duration of roadworks in 2015/16 in Coventry – 27,489 days
- Total cost impact of roadworks in Coventry in 2015/16 - £22,269,115

Quantification of scheme benefit

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

The default assumption relating to anticipated impact of a permit scheme is to expect a 5% reduction in roadwork impact, as set out in the DfT Permit Scheme Evaluation Guidance, 2016.

Post scheme data provides the opportunity to review trends, although as highlighted earlier, the comparison should not be 'before' vs. 'after', but 'with' vs 'without' scheme. 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. For Coventry, this challenge is further compounded by the lack of detailed pre-scheme data available.

We therefore draw on established practice in the estimation of scheme impact, taking the benchmark 5% reduction in roadwork impact value. As such, the societal impact of roadworks observed in 2015/16 can be expected to represent 95% 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 hence be calculated as follows

- Societal cost of roadworks with scheme - £22,269,115
- Societal cost of roadworks without scheme - £23,441,174
- Benefit to society of permit scheme (Year 1) - £1,172,059

A scheme benefit of £1.17 million is estimated to have been generated through implementation of the permit scheme in its first year of operation.

The cost benefit appraisal requires that scheme benefits are appraised against scheme costs over the whole appraisal period, which in this case guidance defines as being 25 years. Consequently, the first-year benefits are projected forward over following years, increasing in real terms to reflect growth in values of time, vehicle operating costs, accident savings and emissions costs.

Scheme 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 with regard to roadwork applications. By considering the incremental costs, this fairly compares the 'with permit scheme' scenario with the 'business as usual (ie no permit scheme) scenario.

The cost assumptions relating to the scheme are detailed below:

- 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 costs a proportion of each role within the Councils network management service was assigned to permit scheme administration.
- Operating costs for Year 1 of operations, incremental to those incurred previously, are estimated to be £273,243 (2016).
- 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.

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)	£25,287,285
Net present cost of scheme (C)	£4,990,457
Net Present Value of scheme (B-C)	£20,296,828
Benefit to Cost Ratio (B/C)	**5.07**

The benefit to cost ratio (BCR) is a measure of value-for-money exhibited by a scheme. With a BCR of above 4, the Coventry permit scheme can be defined as demonstrating '**Very High Value for Money'**.

The DfT standard Analysis of Monetised Costs and Benefits (AMCB) table summarising the appraisal results is presented in Appendix B.

Glossary

"**Council**" means Coventry City Council including their capacity as a Local Highways Authority, also referred to as 'CCC'.

"**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

"**Permit Variation**" means

"**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 has to be legally registered to the Council carried out by a statutory undertaker, *as a street work*, or for the Council, *as a road work*.

Appendix A – Tables

SECTION	SUB-SECTION	REPORT TABLE / CHART	WaSPS MEASURE	HAUC MEASURE
Permit Applications	Not Applicable	Charts: [PAA and/or Activity] Permit Application & Variations Table: Permit Applications Table: Permit Applications (% of Total) Table: Permit Variations Table: Permit Variations (% of Total)	KPI 1 – The number of permit and permit variation applications received, the number granted and the number refused.	The total number of permit and permit variation applications received, excluding any applications that are subsequently withdrawn
				The number of applications granted as a percentage of the total applications made.
				TPI6 Number of deemed permit applications.
				The number of applications refused as a percentage of the total applications made.
		Not Available	Number of refused permits by refusal reason.	AM4 – Response Code – broken down by promoter
Application of Conditions	Not Applicable	Chart: Volume of Conditions Applied to Started Works Table: Permit Conditions	KPI 2 – The number of conditions applied by condition type.	The number of conditions applied, broken down into condition types. The number of each type being shown as a percentage of the total permits issued.
Coordination & Timing	Application Lead Times	Table: Volume of PAA and Permit Applications in Time Chart: % of PAA and Permit Applications in Time (of Total)	Not Applicable	The total number of permit and permit variation applications made, and whether they conformed to the stated lead times – in time or not in time.
	Early Start Requests	Table: Volume of Early Start Requests	KPI 4 – The number of occurrences of reducing the application period ('early start' requests)	The number of requests to reduce the notification period as a percentage of total applications made (early starts).
				The number of agreements to reduce the notification period and lead time compliance as a percentage of requests made.
Duration (Occupation) of Works	Works Phases	Table: Works Phases Started and Completed	Not Applicable	TPI1 Works Phases Started
				TPI2 Works Phases Completed
				TPI5 Phases Completed on Time

	Occupancy	Table: Average Duration of Works (Days)	Average road occupancy and number of days of reduced occupation	TPI3 Days of Occupancy Phases Completed
		Chart: Average Duration of [Activity] Works	Not Applicable	TPI4 – Average Duration of Works
				AM 1 – Average duration of works by permit type.
		Table: Total Overrun Days	Number of Overrun Incidents	TPI6 – Number of Overrun Days
	Duration Extensions & Overruns	Chart: Duration Variation Applications		The number of requests for revised durations shown as a percentage of works started.
		Table: Duration Variation Applications	KPI 3 – The number of approved extensions	The number of agreed revised durations as a percentage of revised durations applied for.
	Reduction in Occupation	Not Included	Number of collaborative works and the days of saved occupation	AM 3 - Days of Disruption Saved/ Number of Collaborative Works
Reinstatements	Not Applicable	Table: Phase 1 and Permanent Registrations	First-time permanent registrations	TPI7 Number of Phase One Permanent Registrations
				TPI8 Number of Phase 1 Permanent Registrations.
Inspections	Works in Progress Sample Inspections	Category A Sample Inspections	Category A 'in-progress' inspection results	Number of failed Sample A (works in progress) inspections shown as a percentage of the total undertaken within a period.
				AM 2 – Inspections (Failed Category A)
	Permit Compliance Inspections	Table: FPN's from Permit Compliance Inspections	Permit condition inspection results	Number of failed permit conditions checks (where one or more permit conditions have been breached) shown as a percentage of the total undertaken within a period.
				AM 2 – Inspections (Failed Condition Checks)
				AM 5 FPNs (Permit Breaches)
Other Measures	Information to Road Users	Not Available	Not Applicable	AM 6 Levels of Customer Enquiries

Permit Applications

				Grand Total	Highway Authority		Statutory Undertaker				
					Total	Highway Authority	Total	Electricity	Gas	Telecoms	Water
Grand Total				**7,402**	**1,574**	**1,574**	**5,828**	**821**	**1,716**	**1,730**	**1,561**
Major	Total			**1,232**	**317**	**317**	**915**	**18**	**840**	**8**	**49**
	Permit Applications	Total		**1,232**	**317**	**317**	**915**	**18**	**840**	**8**	**49**
		PAA	Granted	**481**	**162**	162	**319**	7	292	4	16
			Deemed	**1**			**1**				1
			Refused	**210**	**13**	13	**197**	3	178		16
		Permit Application	Granted	**441**	**117**	117	**324**	6	304	2	12
			Deemed	**1**			**1**		1		
			Refused	**98**	**25**	25	**73**	2	65	2	4
Standard	Total			**895**	**224**	**224**	**671**	**187**	**304**	**110**	**70**
	Permit Applications	Total		**895**	**224**	**224**	**671**	**187**	**304**	**110**	**70**
		Permit Application	Granted	**523**	**192**	192	**331**	98	154	41	38
			Deemed	**4**			**4**	1	2		1
			Refused	**368**	**32**	32	**336**	88	148	69	31
Minor	Total			**3,846**	**1,014**	**1,014**	**2,832**	**156**	**233**	**1,336**	**1,107**
	Permit Applications	Total		**3,846**	**1,014**	**1,014**	**2,832**	**156**	**233**	**1,336**	**1,107**
		Permit Application	Granted	**2,438**	**798**	798	**1,640**	78	112	761	689
			Deemed	**15**	**4**	4	**11**		1	6	4
			Refused	**1,393**	**212**	212	**1,181**	78	120	569	414
Immediate	Total			**1,429**	**19**	**19**	**1,410**	**460**	**339**	**276**	**335**
	Permit Applications	Total		**1,429**	**19**	**19**	**1,410**	**460**	**339**	**276**	**335**
		Permit Application	Granted	**1,231**	**19**	19	**1,212**	432	232	246	302
			Deemed	**1**			**1**			1	
			Refused	**197**			**197**	28	107	29	33

Permit Applications (% of Total)

				Grand Total	Highway Authority		Statutory Undertaker				
					Total	Highway Authority	Total	Electricity	Gas	Telecoms	Water
Major	Permit Applications	PAA	Granted	69.5%	92.6%	92.6%	61.7%	70.0%	62.1%	100.0%	48.5%
			Deemed	0.1%			0.2%				3.0%
			Refused	30.3%	7.4%	7.4%	38.1%	30.0%	37.9%		48.5%
		Permit Application	Granted	81.7%	82.4%	82.4%	81.4%	75.0%	82.2%	50.0%	75.0%
			Deemed	0.2%			0.3%		0.3%		
			Refused	18.1%	17.6%	17.6%	18.3%	25.0%	17.6%	50.0%	25.0%
Standard	Permit Applications	Permit Application	Granted	58.4%	85.7%	85.7%	49.3%	52.4%	50.7%	37.3%	54.3%
			Deemed	0.4%			0.6%	0.5%	0.7%		1.4%
			Refused	41.1%	14.3%	14.3%	50.1%	47.1%	48.7%	62.7%	44.3%
Minor	Permit Applications	Permit Application	Granted	63.4%	78.7%	78.7%	57.9%	50.0%	48.1%	57.0%	62.2%
			Deemed	0.4%	0.4%	0.4%	0.4%		0.4%	0.4%	0.4%
			Refused	36.2%	20.9%	20.9%	41.7%	50.0%	51.5%	42.6%	37.4%
Immediate	Permit Applications	Permit Application	Granted	86.1%	100.0%	100.0%	86.0%	93.9%	68.4%	89.1%	90.1%
			Deemed	0.1%			0.1%			0.4%	
			Refused	13.8%			14.0%	6.1%	31.6%	10.5%	9.9%

Permit Variations

				Grand Total	Highway Authority		Statutory Undertaker				
					Total	Highway Authority	Total	Electricity	Gas	Telecoms	Water
Grand Total				3,169	548	548	2,621	420	852	561	788
Major	Total			370	63	63	307	8	271	5	23
	Permit Variations	Total		370	63	63	307	8	271	5	23
		Modified Application	Granted	224	40	40	184	3	166	2	13
			Deemed	2			2		1	1	
			Refused	29	1	1	28	3	16	1	8
		Duration Variation	Granted	70	10	10	60	2	56		2
			Refused	10	5	5	5		5		
		Works Data Variation	Granted	30	7	7	23		22	1	
			Deemed	1			1		1		
			Refused	4			4		4		
Standard	Total			770	207	207	563	172	241	90	60
	Permit Variations	Total		770	207	207	563	172	241	90	60
		Modified Application	Granted	472	167	167	305	98	114	50	43
			Deemed	6	3	3	3	1	2		
			Refused	174	3	3	171	28	101	34	8
		Duration Variation	Granted	79	23	23	56	34	12	4	6
			Deemed	1			1		1		
			Refused	5	1	1	4		3	1	
		Works Data Variation	Granted	31	10	10	21	11	6	1	3
			Deemed	1			1		1		
			Refused	1			1		1		
Minor	Total			1,564	278	278	1,286	88	135	444	619
	Permit Variations	Total		1,564	278	278	1,286	88	135	444	619
		Modified Application	Granted	1,080	226	226	854	66	58	287	443
			Deemed	18	4	4	14		2	4	8
			Refused	381	22	22	359	21	72	135	131
		Duration Variation	Granted	40	13	13	27	1		5	21
			Deemed	1			1				1
			Refused	14			14			9	5
		Works Data Variation	Granted	23	7	7	16		3	4	9
			Refused	7	6	6	1				1
Immediate	Total			465			465	152	205	22	86
	Permit Variations	Total		465			465	152	205	22	86
		Duration Variation	Granted	164			164	101	28	3	32
			Deemed	1			1	1			
			Refused	22			22	11	4	2	5
		Works Data Variation	Granted	262			262	37	164	16	45
			Deemed	1			1	1			
			Refused	15			15	1	9	1	4

Permit Variations (% of Total)

				Grand Total	Highway Authority		Statutory Undertaker				
					Total	Highway Authority	Total	Electricity	Gas	Telecoms	Water
Major	Permit Variations	Modified Application	Granted	87.8%	97.6%	97.6%	86.0%	50.0%	90.7%	50.0%	61.9%
			Deemed	0.8%			0.9%		0.5%	25.0%	
			Refused	11.4%	2.4%	2.4%	13.1%	50.0%	8.7%	25.0%	38.1%
		Duration Variation	Granted	87.5%	66.7%	66.7%	92.3%	100.0%	91.8%		100.0%
			Refused	12.5%	33.3%	33.3%	7.7%		8.2%		
		Works Data Variation	Granted	85.7%	100.0%	100.0%	82.1%		81.5%	100.0%	
			Deemed	2.9%			3.6%		3.7%		
			Refused	11.4%			14.3%		14.8%		
Standard	Permit Variations	Modified Application	Granted	72.4%	96.5%	96.5%	63.7%	77.2%	52.5%	59.5%	84.3%
			Deemed	0.9%	1.7%	1.7%	0.6%	0.8%	0.9%		
			Refused	26.7%	1.7%	1.7%	35.7%	22.0%	46.5%	40.5%	15.7%
		Duration Variation	Granted	92.9%	95.8%	95.8%	91.8%	100.0%	75.0%	80.0%	100.0%
			Deemed	1.2%			1.6%		6.3%		
			Refused	5.9%	4.2%	4.2%	6.6%		18.8%	20.0%	
		Works Data Variation	Granted	93.9%	100.0%	100.0%	91.3%	100.0%	75.0%	100.0%	100.0%
			Deemed	3.0%			4.3%		12.5%		
			Refused	3.0%			4.3%		12.5%		
Minor	Permit Variations	Modified Application	Granted	73.0%	89.7%	89.7%	69.6%	75.9%	43.9%	67.4%	76.1%
			Deemed	1.2%	1.6%	1.6%	1.1%		1.5%	0.9%	1.4%
			Refused	25.8%	8.7%	8.7%	29.3%	24.1%	54.5%	31.7%	22.5%
		Duration Variation	Granted	72.7%	100.0%	100.0%	64.3%	100.0%		35.7%	77.8%
			Deemed	1.8%			2.4%				3.7%
			Refused	25.5%			33.3%			64.3%	18.5%
		Works Data Variation	Granted	76.7%	53.8%	53.8%	94.1%		100.0%	100.0%	90.0%
			Refused	23.3%	46.2%	46.2%	5.9%				10.0%
Immediate	Permit Variations	Duration Variation	Granted	87.7%			87.7%	89.4%	87.5%	60.0%	86.5%
			Deemed	0.5%			0.5%	0.9%			
			Refused	11.8%			11.8%	9.7%	12.5%	40.0%	13.5%
		Works Data Variation	Granted	94.2%			94.2%	94.9%	94.8%	94.1%	91.8%
			Deemed	0.4%			0.4%	2.6%			
			Refused	5.4%			5.4%	2.6%	5.2%	5.9%	8.2%

Permit Conditions – National References

REFERENCE	CONDITION TYPE	DESCRIPTION	APPLICATION
NCT1a	Date Constraints	Duration	Standard
NCT1b	Date Constraints	Duration	Standard
NCT2a	Time Constraints	Limit the days and times of day	Applied
NCT2b	Time Constraints	Working hours	Applied
NCT4a	Material and Plant Storage	Removal of surplus materials/plant	Applied
NCT4b	Material and Plant Storage	Storage of surplus materials/plant	Applied
NCT5a	Road Occupation Dimensions	Width and/or length of road space that can be occupied	Applied
NCT6a	Traffic Space Dimensions	Road space to be available to traffic/pedestrians at certain times of day	Applied
NCT7a	Road Closure	Road Closed to Traffic	Applied
NCT8a	Light Signals and Shuttle Working	Traffic Management Request	Applied
NCT8b	Light Signals and Shuttle Working	Manual Control of Traffic Management	Applied
NCT9a	Traffic Management Changes	Changes to traffic management arrangements	Applied
NCT9b	Traffic Management Changes	Traffic management arrangements to be in place	Applied
NCT9c	Traffic Management Changes	Signal Removal from operation when no longer required	Applied
NCT10a	Work Methodology	Employment of appropriate methodology	Applied
NCT11a	Consultation and Publicity	Display of Permit Number	Standard
NCT11b	Consultation and Publicity	Publicity for proposed works	Applied
NCT12a	Environmental	Limit timing of certain activities	Applied
NCT13	Local		Applied

Permit Conditions

		NCT1A Date Constraint	% NCT1A Date Constraint	NCT1B Date Constraint	% NCT1B Date Constraint	NCT2A Time Constraint	% NCT2A Time Constraint	NCT2B Time Constraint	% NCT2B Time Constraint
Highway Authority	Major	18	12.2%	16	10.8%	53	35.8%	61	41.2%
	Standard	27	12.8%	115	54.5%	108	51.2%	45	21.3%
	Minor	254	24.4%	187	18.0%	144	13.8%	174	16.7%
	Immediate	2	10.0%			2	10.0%	10	50.0%
	Total	301	21.2%	318	22.4%	307	21.6%	290	20.4%
Statutory Undertaker	Major	166	50.8%	11	3.4%	160	48.9%	5	1.5%
	Standard	173	35.4%	103	21.1%	158	32.3%	27	5.5%
	Minor	885	46.3%	765	40.0%	925	48.4%	125	6.5%
	Immediate	547	36.9%	476	32.1%	362	24.4%	26	1.8%
	Total	1,771	42.1%	1,355	32.2%	1,605	38.1%	183	4.3%
Grand Total		2,072	36.8%	1,673	29.7%	1,912	34.0%	473	8.4%

		NCT4A Removal of Materials	% NCT4A Removal of Materials	NCT4B Storage of Materials	% NCT4B Storage of Materials	NCT5A Road Occupation Dimensions	% NCT5A Road Occupation Dimensions	NCT6A Traffic Space Dimensions	% NCT6A Traffic Space Dimensions	NCT7A Road Closure	% NCT7A Road Closure
Highway Authority	Major	56	37.8%			66	44.6%	7	4.7%	50	33.8%
	Standard	22	10.4%			50	23.7%	24	11.4%	2	0.9%
	Minor	339	32.6%			352	33.8%	42	4.0%	17	1.6%
	Immediate	11	55.0%			12	60.0%	6	30.0%	2	10.0%
	Total	428	30.2%			480	33.8%	79	5.6%	71	5.0%
Statutory Undertaker	Major	160	48.9%	1	0.3%	40	12.2%	28	8.6%	14	4.3%
	Standard	86	17.6%	8	1.6%	220	45.0%	276	56.4%	1	0.2%
	Minor	298	15.6%	94	4.9%	939	49.1%	1,478	77.3%		
	Immediate	216	14.6%	25	1.7%	720	48.5%	765	51.5%	13	0.9%
	Total	760	18.0%	128	3.0%	1,919	45.6%	2,547	60.5%	28	0.7%
Grand Total		1,188	21.1%	128	2.3%	2,399	42.6%	2,626	46.6%	99	1.8%

Permit Conditions

		NCT8A Traffic Management Request	% NCT8A Traffic Management Request	NCT8B Manual Control of Traffic Management	% NCT8B Manual Control of Traffic Management	NCT9A Change to Traffic Management	% NCT9A Change to Traffic Management	NCT9B Traffic Management Arrangements	% NCT9B Traffic Management Arrangements	NCT9C Signal Removal	% NCT9C Signal Removal
Highway Authority	Major	56	37.8%			7	4.7%				
	Standard	23	10.9%			8	3.8%				
	Minor	305	29.3%			11	1.1%	1	0.1%	1	0.1%
	Immediate	5	25.0%			2	10.0%				
	Total	389	27.4%			28	2.0%	1	0.1%	1	0.1%
Statutory Undertaker	Major	18	5.5%	2	0.6%	2	0.6%	1	0.3%		
	Standard	48	9.8%	3	0.6%	51	10.4%	1	0.2%	10	2.0%
	Minor	437	22.9%	26	1.4%	108	5.7%	10	0.5%	23	1.2%
	Immediate	219	14.8%	3	0.2%	182	12.3%	2	0.1%	8	0.5%
	Total	722	17.1%	34	0.8%	343	8.1%	14	0.3%	41	1.0%
Grand Total		1,111	19.7%	34	0.6%	371	6.6%	15	0.3%	42	0.7%

		NCT10A Work Methodology	% NCT10A Work Methodology	NCT11A Display of Permit Notice	% NCT11A Display of Permit Notice	NCT11B Consultation & Publicity	% NCT11B Consultation & Publicity	NCT12A Environmental	% NCT12A Environmental	NCT13 Local Condition	% NCT13 Local Condition
Highway Authority	Major	3	2.0%	57	38.5%	14	9.5%				
	Standard	7	3.3%	22	10.4%	8	3.8%				
	Minor	5	0.5%	344	33.1%	21	2.0%				
	Immediate			10	50.0%						
	Total	15	1.1%	433	30.5%	43	3.0%				
Statutory Undertaker	Major	171	52.3%	175	53.5%	155	47.4%				
	Standard	119	24.3%	264	54.0%	61	12.5%	13	2.7%		
	Minor	1,299	68.0%	1,451	75.9%	77	4.0%	204	10.7%		
	Immediate	525	35.4%	884	59.6%	48	3.2%	153	10.3%		
	Total	2,114	50.2%	2,774	65.9%	341	8.1%	370	8.8%		
Grand Total		2,129	37.8%	3,207	57.0%	384	6.8%	370	6.6%		

Average Duration of Works (Days)

		Aggregate Average	Highway Authority		Statutory Undertaker				
			Average	Highway Authority	Average	Electricity	Gas	Telecoms	Water
Major	Total Average	34.33	27.80	27.80	35.75	14.35	37.13	15.78	14.51
	Works Started	34.57	25.07	25.07	37.18	14.46	39.14	14.00	12.46
	Works Completed	34.20	29.80	29.80	35.03	14.28	36.14	16.29	16.12
Standard	Total Average	8.49	9.86	9.86	7.98	6.98	8.73	10.12	6.37
	Works Started	9.31	10.86	10.86	8.73	7.25	10.41	10.03	6.80
	Works Completed	8.00	9.25	9.25	7.55	6.81	7.84	10.18	6.02
Minor	Total Average	2.60	2.35	2.35	2.70	2.63	3.33	2.90	2.40
	Works Started	2.92	2.90	2.90	2.92	2.90	3.57	3.21	2.61
	Works Completed	2.42	2.10	2.10	2.55	2.51	3.23	2.72	2.22
Immediate	Total Average	5.11	2.50	2.50	5.14	6.13	6.30	3.47	3.13
	Works Started	5.43	2.73	2.73	5.46	6.79	6.81	3.73	3.50
	Works Completed	4.92	2.21	2.21	4.94	5.76	6.04	3.34	2.77

Total Occupancy (Days)

		Grand Total	Highway Authority		Statutory Undertaker				
			Total	Highway Authority	Total	Electricity	Gas	Telecoms	Water
Grand Total		32,658	7,337	7,337	25,321	4,373	14,234	3,561	3,153
Major	Total	14,195	3,520	3,520	10,675	99	10,267	58	251
	Works Completed	13,412	3,243	3,243	10,169	99	9,761	58	251
	Works Started	783	277	277	506		506		
Standard	Total	5,442	1,995	1,995	3,447	1,188	1,409	545	305
	Works Completed	5,343	1,921	1,921	3,422	1,175	1,407	535	305
	Works Started	99	74	74	25	13	2	10	
Minor	Total	6,213	1,782	1,782	4,431	311	377	2,111	1,632
	Works Completed	6,104	1,707	1,707	4,397	299	372	2,099	1,627
	Works Started	109	75	75	34	12	5	12	5
Immediate	Total	6,808	40	40	6,768	2,775	2,181	847	965
	Works Completed	6,559	35	35	6,524	2,681	2,098	833	912
	Works Started	249	5	5	244	94	83	14	53

Appendix B Cost-Benefit Analysis Tables

Average Roadwork Cost / day £ 2010 prices		Average (2017)	Annual (2015/16)
Consumer Travel Time	Cars and Private LGVs	239	6,576,526
	Goods Vehicles and Business LGVs	0	0
	Bus and Coach	28	777,265
Consumer VOC	Cars and Private LGVs	242	6,659,609
	Goods Vehicles and Business LGVs	0	0
	Bus and Coach	0	0
Business Travel Time	Cars and Private LGVs	72	1,982,926
	Goods Vehicles and Business LGVs	66	1,826,242
	Bus and Coach	7	203,642
Business VOC	Cars and Private LGVs	27	751,417
	Goods Vehicles and Business LGVs	75	2,055,180
	Bus and Coach	0	0
Private Sector Provider VOC	Bus and Coach	24	666,119
Accident Costs		51	1,392,664
Carbon Emission Costs		58	1,585,721
Indirect Tax Revenues		-80	-2,208,197
Total			**22,269,115**

Analysis of Monetised Costs and Benefits

Noise		*(12)*
Local Air Quality		*(13)*
Greenhouse Gases	1,800,637	*(14)*
Journey Quality		*(15)*
Physical Activity		*(16)*
Accidents	1,581,414	*(17)*
Economic Efficiency: Consumer Users (Commuting)	6,365,064	*(1a)*
Economic Efficiency: Consumer Users (Other)	9,547,596	*(1b)*
Economic Efficiency: Business Users and Providers	8,500,053	*(5)*
Wider Public Finances (Indirect Taxation Revenues)	2,507,478	*- (11) - sign changed from PA table, as PA table represents costs, not benefits*
Present Value of Benefits (see notes) (PVB)	25,287,285	*(PVB) = (12) + (13) + (14) + (15) + (16) + (17) + (1a) + (1b) + (5) - (11)*
Broad Transport Budget	4,990,457	*(10)*
Present Value of Costs (see notes) (PVC)	4,990,457	*(PVC) = (10)*
OVERALL IMPACTS		
Net Present Value (NPV)	**20,296,828**	**NPV=PVB-PVC**
Benefit to Cost Ratio (BCR)	**5.07**	**BCR=PVB/PVC**

Note : 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.